UNIVERSITY OF CALIFORNIA, RIVERSIDE
ABERDEEN - INVERNESS RESIDENCE HALL
COMMON AREA IMPROVEMENTS
Detailed Project Program

October 28, 2011
UCR Project #
950502
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ACKNOWLEDGEMENTS

Appreciation is extended to all who participated in the development of the Aberdeen-Inverness Residence Hall Common Area Improvements Detailed Project Program (DPP).
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EXECUTIVE SUMMARY

The 2008 Strategic Plan for Student Housing Update identified a program to enhance the common areas and amenities that support residence life in the Aberdeen-Inverness (A-I) Residence Hall. The Draft Dining Services Master Planning Study identified the need to renovate the 50 year old A-I residential restaurant and kitchen to support current student preferences, while also providing a significant portion of meal plan needs for the first phase of Dundee Residence Hall. In winter 2010-11 UC Riverside and Housing Services initiated programming and planning to renovate the residential restaurant, add a new retail emporium and upgrade the student common areas and resident services offices to address the following:

- Expand residential restaurant and kitchen, and establish a food emporium to support a larger residential population.
- Reconfigure common area and staff residences to support residents and resident life programs.
- Replace aging building infrastructure systems.
**PROJECT VISION**

A-I Residence Hall is an important component to UC Riverside’s east campus student experience. Some of the vision statements expressed during the DPP process include:

- Give back to the students
- The building is iconic - celebrate the building’s history
- Embrace the campus – create a sense of place
- Bring vitality to the common spaces - create a youthful feeling
- Residential Restaurant should provide a variety of dining environments.

**METHODOLOGY**

The project programming was realized through a series of on-campus workshops, plus an A-I building infrastructure evaluation. The workshops were organized and led by the Design Team in collaboration with a UCR Project Management Team represented by the offices of Capital Resource Management, Office of Design & Construction, and Housing, Dining & Residential Services. Consensus was reached on the project direction by virtue of an interactive, iterative and collaborative process.

**A-I RESIDENCE HALL BUILDING**

A-I is one of UC Riverside’s original student residence hall. Built in 1959, the building has a design occupancy of 792 beds and an overflow capacity of 892 beds contained in eight wings connected to a common circulation spine. The double-occupancy model exclusively for first-year students builds an exceptionally close knit student community, and is valued by the residents for that outcome. The central A-I residential restaurant has a current capacity of 500 seats.
PROJECT SCOPE

The A-I Residence Hall Common Area Improvements project will reconfigure common areas and other facilities to support residents and residence life programs. Expansion of the residential restaurant (dining room and kitchen) plus expanded Food Emporium, is necessary to accommodate a larger residential population. The program consists of approximately 44,800 assignable square feet (ASF) and approximately 53,700 gross square feet (GSF). To accommodate the program, the first floor of Wings B West and D West and all of Wing C East will be renovated. In addition, Wing C West will be demolished and replaced with a larger structure. The program is organized in five categories: Community Spaces, Resident Service Office, Food/Retail Emporium, Student Residential Restaurant and Staff Residences.

The Community Space program includes:

- 8 Meeting Rooms of varying sizes with Prefunction Space
- A Computer Lab
- A Fitness Center
- A Student Kitchen
- A Music Practice Room

The Resident Service Office program includes:

- Main Reception and Service Counter
- Private Offices and Workstations
- Conference and Workrooms
- Mailboxes and Package Room
The **Food / Retail Emporium** program includes:

- A late-night Diner with take-out meal options and limited on premise seats.
- A coffee / espresso bar
- A retail convenience store
- Table, counter and outdoor patio seating
- A lounge and game room

The **Residential Restaurant** facility program includes:

- A 575 seat Dining Room, plus 2 smaller private dining rooms and a secure outdoor patio
- A full-service Kitchen with central bakery
- An open Servery concept with dispersed food platforms and exhibition cooking ("action stations")
- A fully enclosed kitchen service loading dock with service elevator to the basement spine
- A Student Support alcove just outside the dining entry, for lockers and vending machines

The **Staff Residential** program consists of:

- 4 stand alone apartments for two Resident Directors and two Faculty in Residence
INFRASTRUCTURE & BUILDING RENEWAL

Infrastructure - Mechanical, Electrical, and Plumbing

The above Program spaces will all receive new Mechanical, Electrical, Plumbing (MEP) systems. The project scope also includes a complete renovation of the A-I Central Plant including new cooling towers, chillers, pumps, boilers, emergency generator and upgraded electrical service. The existing central steam boiler heating system will be replaced with a gas-fired boiler heating system. As a separate project, all eight Residential rooftop air handlers will be replaced in the future, along with their penthouse enclosures and the entire wing roofing.

Initial seismic analysis of the original structural drawings indicated that all of the A-I wings appear to be no better than “Fair”. A “Good” seismic rating is desired by UCR. Seismic computer modeling of the existing structure was therefore completed since it can provide detailed performance analysis that may result in a higher UC rating. The computer modeling revealed that all building wings should receive an improved seismic rating of “Good”, except for wings B West, D West and C East, which would remain “Fair” in their existing condition. It is recommended to remove the existing concrete loggias on the north and south of Wing C as part of the renovation scope, which would convert Wing C East to “Good” rating. Wings B and D West have discontinuous shear walls, requiring a certain amount of remedial structural work to bring these wings up to a “Good” rating. This recommended structural scope is described in greater detail in Section 4.1 Systems Narratives.
SITE DEVELOPMENT

In addition to the interior Program described above, the site scope includes new landscape and hardscape around Wing C East and Wings B, C and D West. The new entry courtyard will have a covered loggia alongside a trellised dining patio off the Emporium. The loop entry drive will be modified and a new vehicular drop off created. A new kitchen access drive from Linden Street to the service enclosure will be screened from Aberdeen Drive with earth mounds and planting. Other site work includes a two-story central plant enclosure adjacent to the existing east side dock, a new grease trap sewer system serving both kitchens and replacement of miscellaneous broken clay sewer laterals.

CONSTRUCTION PHASING

It is essential that the residential floors remain occupied and functional at all times during construction, save for the summer break (mid June – August). Any MEP or seismic work that passes through the upper floors of Wings B or D West must occur at this time. Phase One of the project will constitute all work west of the circulation spine in Wings B, C and D, plus the stand alone Central Plant. The existing dining facility will remain in operation. The circulation spine shall remain open for residents, with entry from the southern end. Temporary trailers will house the RSO functions.

When the new Residential Restaurant is ready for use, the existing dining facility will close and Phase Two of the project will commence. This scope includes renovation of Wing C East for the RSO and Community Spaces, plus the stand alone Staff Residential apartments. Again, the circulation spine will remain open for residents.

The proposed MEP improvements to the residential wings may occur incrementally or collectively, and are unrelated to the two phases described above. This work can only occur during the summer academic break. The existing steam boilers must remain in operation until hot-water heating boilers are installed in the basement space abandoned by the chillers, and the heating system conversion is completed.
DETAILED PROJECT PROGRAM PROCESS

The intent of the Detailed Project Program (DPP) process for the A-I building is to understand thoroughly and completely the implications of the planned project in terms of its functional requirements, the condition and recommended improvements of the existing building infrastructure, the schedule and construction phasing impacts, and budget considerations. While the process of programming necessarily includes elements of design, the result is not intended as a design solution, but rather as a rational and reliable basis for the design process that will follow.
THE APPROACH

Six interactive Workshops conducted by the Lead Consultant were held on the UC Riverside campus between December 2010 through June 2011. They were separated by intervals to allow Consultant Team reaction, response and synthesis. The Workshop participants included the Steering Committee, Project Management Committee and when appropriate for specific topics, various campus representatives. In addition, an evening student resident Workshop was held at the A-I building. The discussions and decisions were documented in meeting minutes (see Appendix 6.6).

The early development of a common understanding of the project goals was critical to the process. These goals served as a guide for subsequent programming inquiry and resolution. Interviews with key stakeholders - particularly representatives from HDRS - together with group discussion with the Steering Committee provided invaluable feedback in framing the DPP development. Several alternatives were created for review and comment. Ultimately, a preferred alternative was developed reflecting a balanced program, vision and budget.

Workshop 1 – Visioning Session

- Tour A-I Building
- Identify Key Stakeholders
- Define Project Goals
- Review Alternative Foodservice Models
- Identify Schedule Milestones & High Level Budget Issues
- Establish Project Vision
Workshop 2 – Data Gathering & Infrastructure Evaluation

- Investigate A-I Building Infrastructure & Engineering Evaluation
- Gather Detailed Criteria for Foodservice and other Program Areas
- Define Functional Relationships and Adjacencies of Key Program Areas
- Establish A-I Building Code Ratings and Constraints
- Identify Campus Regulatory, Engineering and Maintenance Issues

Workshop 3 – Program Synthesis & Initial Concepts

- Review Initial Concepts
- Identify Possible Franchise Considerations for Emporium Diner
- Obtain Additional Clarification of Program Criteria
- Identify Sustainability (LEED) Goals and Opportunities
- Review Proposed MEP Systems Alternatives
- Define Preliminary Schedule / Phasing Issues
- Gather A-I Resident Suggestions and Concerns (Student Workshop)
Workshop 4 – Review DPP Progress

• Identify Preliminary Seismic Analysis Recommendations
• Review Concept Alternatives
• Select Preferred Alternate Concept #1
• Reconcile Space Needs and Room Requirements (Draft Room Data Sheets)
• Review Preliminary Cost Model
• Identify Critical Schedule / Phasing Strategies

Workshop 5 – Review Draft DPP

• Review Residential Restaurant Alternative Locations
• Select Alternate Concept #2 for Development
• Review and respond to UCR’s comments on Draft DPP, including Program, Room Data Sheets, MEP and Structural Systems, Schedule, Phasing and Budget

Workshop 6 – Review Preferred Alternate

• Review Preferred Concept Development (Alternate #7)
• Review Kitchen Service Alternatives
• Review Central Plant
THE PROCESS

Developing a Common Basis of Understanding

- Review 2008 Strategic Plan for Student Housing, 2010 Draft UCR Dining Services Master Plan and A-I building documents
- Define project stakeholders:
  - Dining, Conference & Catering Services
  - Housing, Dining & Residential Services
  - Capital Resource Management
  - Office of Design and Construction
  - Resident Staff
  - Physical Plant
- Understand Dining Service goals:
  - Lessons Learned
- Evaluate Condition of the Existing Infrastructure
  - Develop MEP phasing strategies for Common and Residential areas

Envisioning Opportunities

- Promoting innovations in foodservice preparation and presentation
• Creating a renewed A-I “sense of place”

• Achieving significant reductions in energy and water usage

• Maximizing facility usage with flexibility for third parties

Defining the Goals for A-I Common Areas

• Scope
  - Sizes and functional requirements
  - Schedule / Phasing

• Vision
  - Project character
  - Give back to the students

Reconciling Scope, Vision, Budget

• Balancing program needs and infrastructure improvements with available budget

• Sequencing improvements to minimize impacts on residents

• Testing Alternatives:
  - Review Alternate Directions
  - Evaluate Pro’s amd Con’s
  - Arrive at Preferred Scheme
PROJECT GOALS

The following project goals were developed during the Visioning Session of Workshop #1 with the Project Steering Committee and Project Management Team.
GOALS

The renovated A-I Residence Hall Dining Facilities and Common Areas will:

- Provide a 575-seat Student Residential Restaurant which will employ an open Kitchen, exhibition cooking, dispersed Servery and multiple Dining environments
- Provide an Emporium which will offer a convenience store, coffee, and a late night diner that generates 140 meals per hour
- Provide multiple upgraded Meeting Rooms for student group use, with off-hours rental capability
- Provide upgraded student Common Spaces, Resident Service Offices and Support Functions
- Upgrade the building’s seismic performance and MEP infrastructure to lower energy use, improve system reliability and reduce maintenance
- Embrace environmentally sustainable strategies, with LEED Silver Certification as a minimum target
- Celebrate the building’s mid-century origins and its iconic character in the architecture of any exterior additions
- Embrace the campus character and pedestrian flow
• Establish a renewed “sense of place”

• Create inviting and useful exterior spaces for dining, studying and socializing

• Create interior spaces with a youthful feeling, bringing vitality to Student Common spaces

• Strive for zero impact on residents during the construction phases

• Give back to the Students by creating a physical environment that promotes scholarship and a memorable residence life experience
CAMPUS PLANNING PRINCIPLES

The A-I Residence Hall Common Area Improvement project will respond to the goals and objectives articulated in the 2005 LRDP and in the 2008 CAMPS, including:

- Create a regional model of planning, design and environmental stewardship, protecting the natural environment and incorporating sustainable planning and design practices
- Enhance the UCR image and identity
- Accommodate planned enrollment growth while retaining flexibility for unanticipated additional needs in the future
- Increase the size of the on-campus residential community and thereby improve opportunities for social interaction and socialization: a living / learning environment

Several other recent planning studies have been published to guide the anticipated growth of the campus enrollment. These include:

- Draft Dining Services Master Planning Study
- 2009 Physical Design Framework
- 2008 Strategic Plan for Student Housing Update
- 2007 Campus Design Guidelines
- 2002 East Campus Infrastructure DPP
PLANNING PRINCIPLES

2008 Strategic Plan for Student Housing Update

The 2008 Strategic Plan for Student Housing Update calls for creating a campus regional center and “primary civic space” in the west entry court surrounding the proposed Emporium in Wing D. Other recommendations relevant to the A-I project include:

• The Residential Restaurant Program Model calls for designing new (and renovated) foodservice opportunities to meet the diverse dining needs of residents.

• The Emporium Program Model calls for providing after-hours foodservice and retail operations. The proposed A-I location in Wing D West takes advantage of the pedestrian flow along Aberdeen Drive. An outdoor seating area takes advantage of the large shade trees around the drop-off. The Emporium is intended to supplement dining choices and address increased demand that will be generated by the first phase of the future Dundee Residence Hall and expanded Student Recreation Center.

• The Conference Services Program Model calls for expanding UCR capability to accommodate the current and potential demand from outside groups for conference and banquet space.

• The Parking Program Model was developed in the 2008 Strategic Plan for Housing Update. A preliminary study was conducted to evaluate the potential of providing a parking structure on Lot 22 on the east side of A-I Residence Hall. The garage program proposed a total of 500 cars including the quantity currently provided in Lot 22.

• The Maintenance Program Model proposes a service facility to replace existing buildings in the current Canyon Crest site (maintenance shop, grounds shed, warehouse, offices and dumpsters), while adding space to serve the additional housing proposed in the plan. The proposed location is integrated with the proposed parking structure.
2007 Campus Design Guidelines

The Design Guidelines, especially as they relate to architectural elements and materials will become more relevant in the Design Phase. The Guidelines offer the following goals that may be applicable to renovation projects:

- Provide visual connections to the surrounding landscape
- Respect the legacy of the clear, modernist design that established the original campus buildings, and utilize the buildings to support the campus open space system
- Strengthen the relationship between the buildings and landscape in new construction

Draft Dining Services Master Planning Study

In the 2010 Draft report, the Dining Master Planning Study contains market research to quantify the campus community’s expectations and perceptions of the campus dining program. It employs situational analysis to identify opportunities for improving customer satisfaction, increasing market capture, improving operational efficiencies and optimizing financial performance.

The Dining Master Planning Study provides an itemized survey of the existing A-I residential restaurant dining facility and numerically rates each room from 1 to 10 based on a Poor Practice / Best Practice system. It lists metrics for an expanded A-I residential restaurant, including peak meal participation rates, turnover and seat counts. The Dining Master Planning Study also provides qualitative recommendations including exhibition style service platforms and restaurant style seating environments.
The proposed A-I project addresses the major points in the Study in the following ways:

- Take-out options and late night meal opportunities are planned at the Emporium.

- Multiple island style serving platforms provide variety and “a la carte” cooking at the Residential Restaurant.

- The dining environment offers a range of seating options from high visibility/social to semi-secluded with low partitions at the Residential Restaurant, and from counter service to lounge soft seating at the Emporium.
SITE / BUILDING ANALYSIS

The A-I building is located on the southeast corner of Linden Street and Aberdeen Drive. The campus academic core lies to the south. The building is bounded by a +/- 320 space parking lot on the east and the arroyo open space on the south. Several large student residences lie to the east, beyond the parking lot. The area north of Linden Street is planned for future redevelopment as undergraduate student residences and related facilities. The Student Recreation Center on the west side of Aberdeen Drive is undergoing significant expansion, with construction timing likely to overlap with the A-I project.
SITE ANALYSIS

The primary pedestrian flow to the A-I Building from the campus academic core is along Aberdeen Drive to the main A-I entrance located in Wing C West. As residence halls are developed north of Linden Street the pedestrian traffic along Aberdeen Drive is anticipated to increase. There is secondary pedestrian flow from east of A-I: students from other residence halls such as Pentland Hills, Glen Mor 1 and future Glen Mor 2 come to the A-I dining facility for meals. The entry south of Wing C Dining is the more heavily used of the two east side entrances. The 2008 Strategic Plan for Student Housing proposes a future parking deck over the north half of the parking lot.

There is a horseshoe-shaped main entry drive off Aberdeen Drive that contains a drop off and a half a dozen temporary parking spaces. There are several very large trees within and around the main entry drive.

Building housekeeping and maintenance service is from a basement level loading dock at the south end of the circulation spine. There is also a Kitchen service yard with dock and enclosure walls at the east end of Wing C. Service vehicles access via the sloping drive off Linden, which also serves the parking lot. Main electrical service comes to the building from the east into the basement of Wing C East. Domestic and fire sprinkler water service feeds from Linden Street and enters A-I in Wing C East. Sanitary sewer laterals run from the west side of the circulation spine out to Aberdeen Drive.

Prevailing breezes and rainstorms are generally from the west / northwest, except for seasonal hot Santa Ana winds from the northeast. Riverside can be uncomfortably warm 5-6 months of the year, so the usability of exterior spaces is dependent on capturing any available breeze and providing shade devices. Some venues on campus have employed misters. The balance of the year is fairly temperate, and well-designed outdoor spaces can be used in the middle of winter.
BUILDING ANALYSIS

The A-I building is primarily a concrete slab and column structure, with brick infill panels between bedroom windows at the residential wings. The majority of the building is three stories, except that Wings A and E West are two stories high and the central spine is limited to one story. Wing C is also one story but the Dining Room portion is a higher bay with 15’ clear to the existing ceiling. There is a basement under the circulation spine and a portion of Wing C East, housing the central mechanical systems and small support rooms. The east and west extensions of the building wings each have a mechanical penthouse at the midpoint housing an air handler.

The residential levels are recessed 4’ back from the edge of the cantilevered floor slabs, creating a strong horizontal expression. The corresponding flat building roof, honest expression of materials and complete absence of ornament are representative of a prevailing mid-20th century design vernacular. South-facing bedrooms are shaded by a vertical metal fin on the west edge of each window, painted the same aqua color as the spandrel panels below the windows.

The building envelope is substantially unchanged since it was built in 1959. Therefore, the thermal performance of the exterior walls and roof insulation are well below current building standards. The scope of the project improvements does not include upgrading the existing cladding, except for first floor Program areas that are being renovated. The roof insulation will be upgraded and re-roofed, when the residential wing air handlers and penthouses are replaced (see 4.1 Systems Narratives for further discussion on phasing and Appendix 6.3 Roofing).

Each residential wing is served by a central elevator and stairwell adjacent to the circulation spine, with an additional egress stair at the extremities of the eight wings. Round the clock security for the residential wings is a priority. The circulation spine currently has card key access to the north and south of Wing C just beyond the two east side (back) entries. In the course of improving the Common Areas to make the spaces feel more open and interconnected, it will be critical to maintain security for the residential wings.
## A-I BUILDING AREA SUMMARY

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<th>All areas gsf, U.O.N.</th>
<th>Existing</th>
<th>Proposed Expansion</th>
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<td>Wing C West (existing to be demo’d)</td>
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<td><strong>Proposed Phase 1 &amp; 2:</strong></td>
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<td>Wing C West (new Resident. Restaurant)</td>
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<td>Wing B West (to be renovated)</td>
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<td>Wing D West (to be renovated)</td>
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<td><strong>223,799 (OGSF50)</strong></td>
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</table>
PREFERRED CONCEPT

During the DPP process several concept diagrams for the Program organization were investigated (see Section 6.2). Foodservice being a significant component of the project, multiple strategies for preparing and serving meals were also explored. The Preferred Scheme is a synthesis of the concepts that most effectively meet the programmatic requirements and project goals defined by the Steering Committee and Project Management Team.
CONCEPT DIAGRAM

The Concept Diagram is fundamentally based on a phasing strategy that keeps the existing Wing C East foodservice facility in operation until the new Residential restaurant venue can open. The new Emporium diner alone will not be enough to handle the dining demand. Two other key Concept determinants were the mandate to create a vibrant social hub for A-I residents and the campus neighborhood, plus the desire to enhance campus visual quality. Together with existing patterns of pedestrian flow and repurposing as much of the A-I shell as possible, the proposed Concept Diagram developed as follows.

Wing D West

Wing D West will house a retail area and the Food Emporium because it has the most ideal frontage to the primary flow of students from the main A-I entry to the rest of campus. The existing ground floor bike storage will be captured for interior Program uses. Secure bicycle storage will be relocated to a single enclosure just southwest of Wing D – closer to primary pedestrian access and visible from the street. The primarily north-facing glazing on the ground floor will be replaced with high performance clear glass to provide transparency and visibility of the retail and dining areas. The western end of Wing D will be General Merchandising featuring small retail items, snacks and beverages. The middle section of Wing D will have Coffee service and a late-night Dining facility supported by a full service prep area. Though a significant portion of meals are anticipated to be take away, on site dining for 56 patrons will be provided at tables, booths and counter, with additional seating for 40 in the adjacent lounge plus a north-facing outdoor patio (see “Foodservice Concepts” below for additional description of the Emporium dining concept). The eastern end of Wing D will be populated by a student Lounge, Game Room and public Restrooms.

Residential areas must remain secured from the public at all times. Wing D will have 24-hour card key access for A-I residents directly off the circulation spine, as well as exterior access on the north side which can be secured from nonresidents during later hours, when desired. The intention is to sequentially close off the more public (western) zones of Wing D as the evening progresses: first the Retail / Dining and points of
sale, followed by the Coffee Bar, with the eastern zone (Lounge, Games, Restrooms) remaining open around the clock. Service for the kitchen will be located on the south side of Wing D, including a trash/recycling enclosure and new underground grease trap system. The kitchen hood exhaust must be ducted to the roof of Wing D. A new service elevator to the basement spine will provide access to the building’s recessed south loading dock for receiving and waste removal. Receiving may also be routed through the basement spine from the Residential Restaurant kitchen dock and service elevator.

**Wing C West**

Existing Wing C West will be demolished and replaced with a much larger addition housing the Residential Restaurant facility, with new foodservice equipment and upgraded infrastructure support. The dining concept is to provide a more open Kitchen and Servery experience, so that students and staff alike have an increased sense of the food preparation that fosters enjoyment of meals (see “Foodservice Concepts” description below). The 575 seats in the dining room will be arranged in a variety of types and configurations, possibly employing occasional low partitions to provide a diverse dining experience. The central dining zone is subdivided by a satellite serv-ery that will facilitate an audience of approximately 300 on the east side facing a demountable stage with video projection capabilities, and seating for at least 55 on the west side for hall dinners or other special events. The dining room wraps around a secure patio for additional outdoor seating and increased perimeter daylighting. Two 16-seat private dining rooms face onto the patio from the north. The dining entry is accessed directly off the A-I building lobby, which is configured to better handle the peak mealtime queue and will have an adjoining alcove for backpack lockers and vending machines. The Dishwash enclosure for trayless drop off is located at the dining exit, directly adjacent to the entry.

Positioning the main A-I building entry between the Residential Restaurant wing and the Emporium is conceived as a vibrant social hub for the residents. The cantilevered dining building roof reaches out to Aberdeen Drive, creating a shaded loggia along the entry path. Transparent exterior building walls will display the high level of activity in the interior, visually connecting outside with inside. Trellised outdoor seating along
Section Looking East

A - I Entry Looking East

University of California, Riverside
2011 A-I Residence Hall Common Area Improvements DPP
10.28.11
the Emporium creates a hangout space for casual meeting among residents. The Concept Diagram suggests that the main entry be pronounced from the Aberdeen approach by a glazed two-story tower with a visitor waiting area at its base.

**Wing B West**

Wing B West will house the Residential Restaurant kitchen back of house spaces, including dry and refrigerated storage, foodservice staff offices, lockers and changing areas, as well as the two private dining rooms facing the patio. The existing ground floor bike storage will be captured for this interior use, and a roofed service enclosure will be added along the northern edge of Wing B for kitchen deliveries, food truck loading and trash/recycling. A new service drive will allow trucks to enter from Linden Street and exit onto Aberdeen Drive. An elevator adjacent to the dock will allow foodservice deliveries to be transported to the Emporium kitchen in Wing D West via the basement spine. An underground grease trap system serving the Residential Restaurant kitchen and the loading enclosure will be installed immediately to the north of Wing B. New kitchen and servery hood exhaust fans will be located on the roof of Wing B (above residential windows), with an enclosed duct riser on the south face of the stair tower.

**Wing C East**

The interior of Wing C East (existing dining facility) will be completely demolished and replaced with multiple meeting rooms in addition to the offices of the RSO. A reception area with 24/7 service counter faces onto the main building lobby, with student mailboxes positioned around the corner. Eight meeting rooms of varying sizes are situated deeper into Wing C, united by a prefunction space that is accessible from both the A-I circulation spine and directly from the exterior between new north-facing patios. This interior organization, combined with dedicated restrooms, allows the meeting room zone to be easily segregated for occasional nonresident usage, while maintaining direct access from the circulation spine for amenities. The north entrance provides convenient access from the parking lot for summer visitors.
The Computer Lab is centrally positioned where Wing C connects to the circulation spine, since the residents require convenient 24-hour access to the printers. Other Community program spaces including the Fitness Center, Music Practice Room and Student Kitchen, are located in the repurposed Resident Director apartment directly opposite the Wing D Game Room. Another Resident Director apartment opposite the Residential Restaurant kitchen will house the Staff Breakroom plus a single-occupancy ADA restroom and a large Housekeeping closet to serve the Community spaces.

Staff Residences

Four single-story Staff Residences are proposed to be located on the lawn immediately south of the A-I building. These two bedroom wood-framed units will house Resident Directors and Faculty in Residence. Operable windows on the north and south will allow flow though natural ventilation for most of the year, with air conditioning provided for the summer extremes. South-facing windows will be shaded by roof overhangs, and each unit will have a deck overlooking the arroyo. Privacy from A-I and passing pedestrians is a priority.

Central Plant

A new standalone mechanical equipment enclosure is proposed adjacent to the existing kitchen loading dock. This allows the existing basement central plant to remain in operation until the new chiller / cooling tower plant can be brought on line. Due to the impact on site open space that a single-story footprint would have (approximately 5,700 sf program area), the central plant is recommended to be a two-story structure with the unroofed cooling tower enclosure on top. This would also reduce noise and visibility of mechanical equipment from the upper floors of the A-I east wings. The ground level will house chillers, pumps and a water treatment system, and the upper level will contain the new emergency generator in addition to the cooling towers. To reduce the standalone mechanical enclosure footprint by an additional 1,500 gsf, it is recommended that the new heating hot water boilers and pumps, which will replace the existing steam boiler system, be installed in the abandoned chiller space in the Wing C basement.
FOODSERVICE CONCEPTS

A-I Residential Restaurant

A completely new Residential Restaurant facility, main kitchen/bakery, servery and dishroom will be built in the new A-I Wing C West, and includes all new infrastructure, utilities, equipment, dining room and exterior patio with secure enclosure. The facility will exclusively employ a pre-paid meal ticket program, but cash can be accepted for non-board plan diners.

The main kitchen will consist of the following areas and functions: dry storage room, walk-in refrigerator/freezer complex, employee changing and restrooms, lockers, offices, bakery, hot/cold food preparation, production cooking and utensil washing. The kitchen loading dock will have a leveler with two truck slots, a compactor, trash / cardboard / recycling bin area, cart wash, a single pallet bottle beverage walk-in refrigerator, a central C0² fill station, a central oil fill/dispensing system and a used oil accumulation unit. The kitchen will be located between the dock and the food court servery and the dining room.

The new dishwashing area will be located adjacent to the Dining Room entry / exit and includes an accumulator conveyor designed to self-bus dishes, flatware and glassware without the use of trays. The electric Hobart “Flight Type” dishwasher will be re-used (as it will be almost new), and a scrapping table and conveyor will be added. A new pulper will also be installed along with a new accumulator.

A new food court servery will be open to the kitchen and bakery as well as the dining room. The servery will have multiple serving platforms or “action stations” that will each have “a la carte” cooking to order or display cooking to re-supply self serve hot and cold stations with “just-in-time” food re-supply. Very little hot holding will be required for pre-cooked hot entrees and side dishes.

One proposed island-style cooking platform will include: International fare with hot/cold self-service displays with a cooking line of burners, grill and fryers; hot carving and classic hot entrees; pizza display self-service with a two deck conveyor pizza oven and pizza prep area. The conveyor oven will also bake other hot entrees, such as Shepherd’s pie, pot pies, etc.
The second island-style cooking platform will include: an appetizer bar with fryers and multiple hot/cold displays for self-service “small plate” multi-cultured finger foods and toppings. The island platform will also include a “grill to order” cooking line with broiler, grill and fryers to serve classic burgers, chicken and fries with self-service hot/cold displays of grilled foods. A full station of condiment pumps will also be part of the island station.

The third proposed island style cooking platform will revolve around a 60” diameter round grill (a.k.a. “Mongolian Grill”) which will be surrounded by chilled salad bar and ingredient bar stations that will have all cold ingredients for any entrees, including breakfast, lunch and dinner. The 60” grill chef will cook ingredients gathered by students from the salad and ingredients bars. An order counter will be designed around the 60” round grill so students can pass their ingredients to the chef and wait until their food is cooked. This “fire and ice” cooking platform is planned as a feature for the dining room.

The food court will also include a self-service bread, bagels and soup display with “Whole Foods” style cabinets, toasters and chilled smears. Another counter will feature yogurt, cereals, grains, trail mixes and bulk milk dispensers.

Two beverage counters will be provided with self-service coffee, juice, tea soda/ice and other specialty beverages.

Desserts will be a feature in front of the exhibition bakery with self-service cookies, bars and chilled displays.

**Food / Retail Emporium**

Wing D West will include a new 56 seat late-night Diner concept with table and counter seating, a Convenience Store, a Coffee / espresso bar, an outdoor patio plus an adjacent Lounge and Game Room with seating for up to 40.
The Convenience Store will include four 12’ long merchandising display gondolas with end caps, a walk-in freezer with three self-service glass doors and a walk-in refrigerator with six self-service glass doors. The Convenience Store will be controlled by a Point of Sale counter at the entry door with two cash registers and an impulse display case.

The all-day, late-night Diner platform will be a branded concept and include a la carte cooking with griddles, fryers and open burners. The short-order cooking line will be supported by refrigerators, freezer and back of house preparation area. The serving counter will have two cash registers as well as pastry display case and self-service food pick-up. All beverages and food will be “order and pay”. The kitchen will include prep sinks, hand sinks, pot sinks, dry storage, walk-in freezer, staff toilet and a janitor closet. Receiving and trash will be facilitated by a new one-stop elevator to the basement. Foodservice deliveries from large trucks will be routed from the new Residential Restaurant loading dock north of Wing B West through the basement circulation spine. Trash, recycling and smaller truck deliveries will utilize the south service yard. The entire pathway from service yards through basement spine to elevator to Kitchen back of house will be designed to accommodate full pallets (4’-6” wide minimum clear).

The Diner serving and food pick-up area will be adjacent to a full-service Coffee/espresso, blender beverage platform, which will operate independently of the branded late-night Diner concept. The Coffee/espresso bar will provide premium coffees, espresso and blended cold drinks, as well as pastries displayed in a euro-style glass case. The Coffee/espresso bar will be directly adjacent to the Lounge and Game Room. The Wing D layout will facilitate sequential closing of the Convenience Store followed by the late night Diner followed by the Coffee bar - with the latest entry remaining from the circulation spine for A-I residents only.

### FOODSERVICE SEATING CAPACITY

<table>
<thead>
<tr>
<th>Program Space</th>
<th>Seats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Restaurant – Main Dining Room</td>
<td>575</td>
</tr>
<tr>
<td>Residential Restaurant – 2 Private Dining Rooms</td>
<td>32 (total)</td>
</tr>
<tr>
<td>Residential Restaurant – Patio</td>
<td>120 (estimated)</td>
</tr>
<tr>
<td>Emporium Diner (including counter service)</td>
<td>56</td>
</tr>
<tr>
<td>Lounge</td>
<td>40</td>
</tr>
<tr>
<td>Emporium - Patio</td>
<td>50 (estimated)</td>
</tr>
<tr>
<td>Total Foodservice Seats (indoor and outdoor)</td>
<td>873</td>
</tr>
</tbody>
</table>
PROGRAM AREA SUMMARY

The following summary represents the project total assignable square footage required for the A - I Residence Hall Common Areas.

The program is organized into seven categories:

- Community Space
- Resident Service Office
- Retail/Emporium/Lounge
- Residential Restaurant
- Staff Residential
- Interior Non-Assigned
- Exterior Non-Assigned
### Program Group:

<table>
<thead>
<tr>
<th>Program Group</th>
<th>ASF</th>
<th>GSF</th>
<th>GSF - Existing Construction</th>
<th>GSF - New Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing C-East &amp; Spine - Community Space</td>
<td>8,875</td>
<td>12,678</td>
<td>17,425</td>
<td>0</td>
</tr>
<tr>
<td>Wing C ‘East’ - Resident Service Office</td>
<td>3,323</td>
<td>4,747</td>
<td>17,425</td>
<td>0</td>
</tr>
<tr>
<td>Wing D - Retail/Emporium/Lounge</td>
<td>5,838</td>
<td>6,486</td>
<td>5,707</td>
<td>779</td>
</tr>
<tr>
<td>Wing B &amp; C ‘West’ - Residential Restaurant</td>
<td>22,317</td>
<td>24,797</td>
<td>5,664</td>
<td>19,133</td>
</tr>
<tr>
<td>Staff Residential</td>
<td>4,460</td>
<td>4,956</td>
<td>0</td>
<td>4,956</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>44,813</strong></td>
<td><strong>53,664</strong></td>
<td><strong>28,796</strong></td>
<td><strong>24,868</strong></td>
</tr>
<tr>
<td>Non - Assigned Interior</td>
<td>1,544</td>
<td>1,716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle Storage</td>
<td></td>
<td></td>
<td>1,540</td>
<td></td>
</tr>
<tr>
<td>Dock Enclosure</td>
<td></td>
<td></td>
<td>3,600</td>
<td></td>
</tr>
<tr>
<td>Central Plant</td>
<td></td>
<td></td>
<td>2,100</td>
<td></td>
</tr>
<tr>
<td><strong>Overall Project GSF</strong></td>
<td></td>
<td></td>
<td><strong>62,510</strong></td>
<td></td>
</tr>
</tbody>
</table>
### WING C ‘EAST’ ( + SPINE) - COMMUNITY SPACE

<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prefunction</td>
<td>1</td>
<td>914</td>
<td>914</td>
<td></td>
<td></td>
<td>5 tables, 20 chairs</td>
</tr>
<tr>
<td>Very Large Meeting Room</td>
<td>1</td>
<td>900</td>
<td>900</td>
<td></td>
<td></td>
<td>16 tables, 32 chairs</td>
</tr>
<tr>
<td>Flexible Meeting Room</td>
<td>2</td>
<td>1,600</td>
<td>3,200</td>
<td></td>
<td></td>
<td>256 seats</td>
</tr>
<tr>
<td>Large Meeting Room</td>
<td>1</td>
<td>750</td>
<td>750</td>
<td></td>
<td></td>
<td>12 tables, 24 chairs</td>
</tr>
<tr>
<td>Student Support</td>
<td>1</td>
<td>400</td>
<td>400</td>
<td></td>
<td></td>
<td>Lockers, ATM and Vending</td>
</tr>
<tr>
<td>Medium Meeting Room</td>
<td>2</td>
<td>500</td>
<td>1,000</td>
<td></td>
<td></td>
<td>6-8 tables, 12-14 chairs (14 tables, 26 chairs)</td>
</tr>
<tr>
<td>Small Meeting Room</td>
<td>2</td>
<td>252</td>
<td>504</td>
<td></td>
<td></td>
<td>1 table, 8 chairs (2 tables, 16 chairs - total)</td>
</tr>
<tr>
<td>Chair Storage</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Computer Lab (at Spine)</td>
<td>1</td>
<td>450</td>
<td>450</td>
<td></td>
<td></td>
<td>12 tables, 12 chairs</td>
</tr>
<tr>
<td>Storage</td>
<td>1</td>
<td>35</td>
<td>35</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Music Practice Room (at Spine)</td>
<td>1</td>
<td>70</td>
<td>70</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student Kitchen (at Spine)</td>
<td>1</td>
<td>102</td>
<td>102</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fitness Center (at Spine)</td>
<td>1</td>
<td>450</td>
<td>450</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assignable Area Subtotal** 8,875

**Net to Gross 0.70** 3,803

**Subtotal Gross** 12,678
## Program Summary

### Aberdeen - Inverness Residence Hall

**Assignable square footage (ASF)**

<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reception</td>
<td>1</td>
<td>600</td>
<td>600</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mail</td>
<td>1</td>
<td>350</td>
<td>350</td>
<td></td>
<td></td>
<td>1,000 mailboxes</td>
</tr>
<tr>
<td>Package Room</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resident Director Office</td>
<td>2</td>
<td>120</td>
<td>240</td>
<td></td>
<td></td>
<td>Side entry required 3 chairs (6 chairs - total)</td>
</tr>
<tr>
<td>Head Resident Office</td>
<td>1</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td>3 chairs</td>
</tr>
<tr>
<td>RSO Manager Office</td>
<td>1</td>
<td>160</td>
<td>160</td>
<td></td>
<td></td>
<td>4 chairs</td>
</tr>
<tr>
<td>Staff Offices</td>
<td>4</td>
<td>120</td>
<td>480</td>
<td></td>
<td></td>
<td>3 chairs (12 chairs - total)</td>
</tr>
<tr>
<td>Staff work stations</td>
<td>4</td>
<td>60</td>
<td>240</td>
<td></td>
<td></td>
<td>1 chairs (4 chairs - total)</td>
</tr>
<tr>
<td>RSO Conference</td>
<td>1</td>
<td>325</td>
<td>325</td>
<td></td>
<td></td>
<td>Provide projection system/projection screen 1 table, 14 chairs</td>
</tr>
<tr>
<td>Breakroom</td>
<td>1</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td>1 table, 4 chairs</td>
</tr>
<tr>
<td>Workroom</td>
<td>1</td>
<td>228</td>
<td>228</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graphics Room</td>
<td>1</td>
<td>160</td>
<td>160</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Assignable Area Subtotal** 3,323

**Net to Gross 0.70** 1,424

**Subtotal Gross** 4,747
<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Merchandising</td>
<td>1</td>
<td>1,000</td>
<td>1,000</td>
<td></td>
<td></td>
<td>Provide 4 gondolas</td>
</tr>
<tr>
<td>Cashier</td>
<td>1</td>
<td>150</td>
<td>150</td>
<td></td>
<td></td>
<td>P.O.S. security cameras required</td>
</tr>
<tr>
<td>Merchandise Freezer</td>
<td>1</td>
<td>93</td>
<td>93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dining</td>
<td>1</td>
<td>720</td>
<td>720</td>
<td></td>
<td></td>
<td>48 seats - 13 tables, 40 chairs, 8 seats at banquetette</td>
</tr>
<tr>
<td>Counter Seating</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td>8 stools</td>
</tr>
<tr>
<td>Coffee</td>
<td>1</td>
<td>200</td>
<td>200</td>
<td></td>
<td></td>
<td>Separate counter/blended beverages</td>
</tr>
<tr>
<td>Condiment Station</td>
<td>1</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prep Area/Service</td>
<td>1</td>
<td>646</td>
<td>646</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Storage</td>
<td>1</td>
<td>180</td>
<td>180</td>
<td></td>
<td></td>
<td>Delivery 3x/week - not ok to walk through</td>
</tr>
<tr>
<td>Freezer Storage</td>
<td>1</td>
<td>112</td>
<td>112</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Beverage Cooler Retail</td>
<td>1</td>
<td>288</td>
<td>288</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>1</td>
<td>144</td>
<td>144</td>
<td></td>
<td></td>
<td>3 station office - 2 people use at a time, 1-3 chairs</td>
</tr>
<tr>
<td>Lockers/Toilet</td>
<td>1</td>
<td>100</td>
<td>100</td>
<td></td>
<td></td>
<td>Kitchen staff</td>
</tr>
<tr>
<td>Janitor</td>
<td>1</td>
<td>90</td>
<td>90</td>
<td></td>
<td></td>
<td>Services emporium kitchen</td>
</tr>
<tr>
<td>Lounge</td>
<td>1</td>
<td>1,200</td>
<td>1,200</td>
<td></td>
<td></td>
<td>Provide 1 flatscreen/40 seats @ 30 sq. ft. ea. 2 couches, 23 chairs, 10 tables</td>
</tr>
<tr>
<td>Game Room</td>
<td>1</td>
<td>800</td>
<td>800</td>
<td></td>
<td></td>
<td>Provide 1 flatscreen - wii station</td>
</tr>
</tbody>
</table>

**Assignable Area Subtotal** 5,838

**Net to Gross 0.90** 648

**Subtotal Gross** 6,486
## Program Summary

### ABERDEEN - INVERNESS RESIDENCE HALL

**Assignable square footage (ASF)**

<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>WING B &amp; C ‘WEST’ - RESIDENTIAL RESTAURANT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lobby</td>
<td>1</td>
<td>750</td>
<td>750</td>
<td></td>
<td></td>
<td>Includes queueing +eating, 9 chairs, 6 sidetables</td>
</tr>
<tr>
<td>Staff Breakroom</td>
<td>1</td>
<td>388</td>
<td>388</td>
<td></td>
<td></td>
<td>Leave current ‘B’ wing RD apartment as is</td>
</tr>
<tr>
<td>Main Dining Room</td>
<td>1</td>
<td>9,500</td>
<td>9,500</td>
<td></td>
<td></td>
<td>575 seats</td>
</tr>
<tr>
<td>Private Dining</td>
<td>2</td>
<td>330</td>
<td>660</td>
<td></td>
<td></td>
<td>16 chairs (32 seats - total)</td>
</tr>
<tr>
<td>Servery - primary</td>
<td>1</td>
<td>2,415</td>
<td>2,415</td>
<td></td>
<td></td>
<td>International/Hot carving/App. bar/Grill to order</td>
</tr>
<tr>
<td>Servery - secondary</td>
<td>1</td>
<td>1,584</td>
<td>1,584</td>
<td></td>
<td></td>
<td>Salad Bar and Grille + (2) Beverage stations</td>
</tr>
<tr>
<td>Dishwashing</td>
<td>1</td>
<td>1,158</td>
<td>1,158</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen</td>
<td>1</td>
<td>1,780</td>
<td>1,780</td>
<td></td>
<td></td>
<td>Kitchen requires 1 computer w/ high counter</td>
</tr>
<tr>
<td>Bakery</td>
<td>1</td>
<td>833</td>
<td>833</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dry Storage</td>
<td>1</td>
<td>800</td>
<td>800</td>
<td></td>
<td></td>
<td>Includes receiver station</td>
</tr>
<tr>
<td>Refrigeration</td>
<td>1</td>
<td>1,000</td>
<td>1,000</td>
<td></td>
<td></td>
<td>Includes blast chiller</td>
</tr>
<tr>
<td>Supervisor’s Office</td>
<td>1</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td>Services 4 people at 1 time, 4 chairs</td>
</tr>
<tr>
<td>Manager’s Office</td>
<td>1</td>
<td>256</td>
<td>256</td>
<td></td>
<td></td>
<td>Services 2 people at 1 time + conf., 1 table, 6-10 chairs</td>
</tr>
<tr>
<td>Culinary Office</td>
<td>1</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td>Services 3 people at 1 time, 3 chairs</td>
</tr>
<tr>
<td>Professional Employee Lockers</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
<td>40 -2 high X 18” wide in hallway</td>
</tr>
<tr>
<td>Student Employee Lockers</td>
<td>1</td>
<td>39</td>
<td>39</td>
<td></td>
<td></td>
<td>4 high X 18” wide; 50 in hallway</td>
</tr>
<tr>
<td>Employee Restrooms</td>
<td>2</td>
<td>250</td>
<td>500</td>
<td></td>
<td></td>
<td>Includes changing room</td>
</tr>
<tr>
<td>Cleaning Storage</td>
<td>1</td>
<td>90</td>
<td>90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Food Truck Storage</td>
<td>1</td>
<td>64</td>
<td>64</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Misc/Seasonal Storage</td>
<td>1</td>
<td>50</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catering Storage</td>
<td>1</td>
<td>150</td>
<td>150</td>
<td></td>
<td></td>
<td>A/V equip/stage(stored off site)/chairs/tables</td>
</tr>
<tr>
<td><strong>Assignable Area Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td>22,317</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net to Gross 0.90 +/-</strong></td>
<td></td>
<td></td>
<td></td>
<td>2,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Gross</strong></td>
<td></td>
<td></td>
<td></td>
<td>24,797</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
## STAFF RESIDENTIAL

<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 Bedroom Staff Housing</td>
<td>4</td>
<td>1,115</td>
<td>4,460</td>
<td></td>
<td></td>
<td>Min. one unit to meet ADA access</td>
</tr>
<tr>
<td>Master Bedroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bedroom</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Master Bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bath</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen/Dining</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Laundry Closet</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stora(atge Closets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patio/Deck</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assble Area Subtotal</strong></td>
<td></td>
<td></td>
<td>4,460</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net to Gross 0.90</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>496</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Gross</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,956</td>
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</tr>
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</table>
### PROGRAM SUMMARY
**ABERDEEN - INVERNESS RESIDENCE HALL**
Non - Assignable Square Footage

<table>
<thead>
<tr>
<th>AREA DESCRIPTION</th>
<th>QUANTITY</th>
<th>UNIT ASF</th>
<th>TOTAL ASF</th>
<th>PRECINCT GSF</th>
<th>TOTAL GSF</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>NON - ASSIGNED INTERIOR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary Restrooms/M-W</td>
<td>2</td>
<td>325</td>
<td>650</td>
<td></td>
<td></td>
<td>‘C’ East Wing &amp; ‘D’ Wing/M + W</td>
</tr>
<tr>
<td>Single Occupancy Restroom</td>
<td>1</td>
<td>64</td>
<td>64</td>
<td></td>
<td></td>
<td>ADA accessible/Centrally located</td>
</tr>
<tr>
<td>RSO Restroom</td>
<td>1</td>
<td>60</td>
<td>60</td>
<td></td>
<td></td>
<td>ADA accessible (Single Occupancy)</td>
</tr>
<tr>
<td>Janitor’s Closet</td>
<td>1</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Housekeeping Closet</td>
<td>1</td>
<td>80</td>
<td>80</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Telecom Closet</td>
<td>3</td>
<td>90</td>
<td>270</td>
<td></td>
<td></td>
<td>One telecom per wing - Kitchen, C East, Spine</td>
</tr>
<tr>
<td>Dining + Emporium Service Elevator</td>
<td>2</td>
<td>150</td>
<td>300</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Net Area Subtotal</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,544</td>
<td></td>
</tr>
<tr>
<td><strong>Net to Gross 0.90</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>172</td>
<td></td>
</tr>
<tr>
<td><strong>Subtotal Gross</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,716</td>
<td></td>
</tr>
<tr>
<td><strong>EXTERIOR</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle Storage</td>
<td>1</td>
<td></td>
<td></td>
<td>1,540 gsf</td>
<td></td>
<td>150 bikes, standalone structure</td>
</tr>
<tr>
<td>Dock Enclosure\NEW STRUCTURE W/ ROOF, WALLS + 30’ W/ DOOR</td>
<td>1</td>
<td></td>
<td></td>
<td>3,600 gsf</td>
<td></td>
<td>Security camera/Food digester &amp; Cardboard trash compactor/Power for trucks, Covered</td>
</tr>
<tr>
<td>Emporium Service yard</td>
<td>1</td>
<td></td>
<td>360 sf</td>
<td></td>
<td></td>
<td>Grease disposal/Cardboard &amp; food recycling, Uncovered</td>
</tr>
<tr>
<td>Patios</td>
<td>3</td>
<td>VARIES</td>
<td>6,500 sf</td>
<td></td>
<td></td>
<td>Patio sizes vary; provide 50% cover</td>
</tr>
<tr>
<td>Central Plant</td>
<td>1</td>
<td></td>
<td>2,100 gsf</td>
<td></td>
<td></td>
<td>Standalone Structure</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td></td>
<td>6,860 sf</td>
<td>7,240 gsf</td>
<td></td>
<td>Interior space for chillers &amp; pumps. Exterior for cooling tower &amp; generator. Boilers and pumps to be located in Wing C basement</td>
</tr>
</tbody>
</table>
Program Adjacency Diagrams illustrate desirable proximities between program components that were articulated by the Project Management Team in the Workshops. The bubble diagrams for each programmatic group graphically clarify relationships that the Room Data Sheets cannot. The size of the bubbles, though not to scale, are a representation of the various program area requirements. Smaller components that together comprise a larger subgroup are encapsulated by a circle or ellipse. Solid lines signify user (resident) connections; dashed lines represent staff connections.
ROOM DATA SHEETS

The following section contains schematic diagrams and descriptions of each typical room in the Program, including ceiling height, desired architectural finishes, systems and technical requirements, equipment/furnishings and critical adjacencies.
COMMUNITY SPACE - PREFUNCTION

WING 'C' EAST

GENERAL INFORMATION

Name  
Function  
No. of Occupants  
Area (Assignable)  
Minimum Ceiling Height  
Critical Adjacencies  
Additional Notes  

Prefunction  
Breakout room from meeting rooms  
20+  
914 ASF  
9'-0”  
Meeting Rooms/Restroom  
Facing courtyard - ideal  

ARCHITECTURAL MATERIALS/FINISHES

Flooring  
Low VOC carpet  

Ceiling  
Acoustical ceiling tile  

Walls/Base  
Low VOC painted GWB  

Windows  
New double-glazing if exterior exposure  

Doors/Frames  
Ext doors - glass aluminum door, Alum. frame  

Additional Notes  

SYSTEMS

Mechanical  
68 degrees F to 78 degrees F  
No humidity control  

Electrical (Power)  
Wall and floor duplexes per code, Duplex support for catered events to be served  

Lighting  
30-40 Fc  

Plumbing  
N/A  

Fire Protection  
Sprinklered/Fire alarm/Smoke detector  

Acoustics  
-  

Security  
Card key access  

Telecom/Data  
1 phone/6 data, Wireless internet  

Audio/Visual  
N/A  

EQUIPMENT/FURNISHINGS

Built-In Features  
-  

Fixed  
Window blinds, 1 Credenza  

Moveable Equipment/ Furnishings  
20 Lounge chairs/5 Coffee tables  

Special Requirements  
-
## COMMUNITY SPACE - VERY LARGE MEETING ROOM

### WING ‘C’ EAST

### GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Very Large Meeting Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Meeting room for students/staff</td>
</tr>
<tr>
<td>No. of Occupants</td>
<td>32</td>
</tr>
<tr>
<td>Area (Assignable)</td>
<td>900 ASF</td>
</tr>
<tr>
<td>Minimum Ceiling Height</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>Critical Adjacencies</td>
<td>Prefunction</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>1 Very large meeting room req. w/ 1 exit to exterior</td>
</tr>
</tbody>
</table>

### ARCHITECTURAL MATERIALS/FINISHES

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Low VOC carpet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Acoustical ceiling tile</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>Low VOC painted GWB</td>
</tr>
<tr>
<td>Windows</td>
<td>New double-glazing if exterior exposure</td>
</tr>
<tr>
<td>Doors/Frames</td>
<td>Solid core wood/Aluminum frame w/ sidelight</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>-</td>
</tr>
</tbody>
</table>

### SYSTEMS

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>68 degrees F to 78 degrees F No humidity control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical (Power)</td>
<td>Wall duplexes per code, Floor box, Ceiling projector</td>
</tr>
<tr>
<td>Lighting</td>
<td>Min. 50 Fc, Lighting controls N/A</td>
</tr>
<tr>
<td>Plumbing</td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>AWP on one wall</td>
</tr>
<tr>
<td>Acoustics</td>
<td>Card key access/Camera at entrance to room</td>
</tr>
<tr>
<td>Security</td>
<td>1 phone/4 data, One for clg. mount projector, Wireless AP</td>
</tr>
<tr>
<td>Telecom/Data</td>
<td>Ceiling mounted projector</td>
</tr>
<tr>
<td>Audio/Visual</td>
<td></td>
</tr>
</tbody>
</table>

### EQUIPMENT/FURNISHINGS

| Built-In Features     | Pull down projection screen |
|                       | 1 Magnetic whiteboard, Window blinds, Credenza |
| Fixed                 | 16 tables, 32 stackable chairs |
| Moveable Equipment/ Furnishings | - |
| Special Requirements  | - |
COMMUNITY SPACE - VERY LARGE MEETING ROOM

ROOM DIAGRAM

SCALE: 1/8" = 1'-0"

NOTES: 16 tables, 32 chairs
## General Information

**Name**  
Flexible Meeting Room

**Function**  
Meeting room for students/staff

**No. of Occupants**  
256 Max

**Area (Assignable)**  
1,600 ASF (x2)

**Minimum Ceiling Height**  
9'-0"

**Critical Adjacencies**  
Prefunction

**Additional Notes**  
1 divisible meeting room req. w/ 1 Exit to exterior per Jumbo meeting room

## Architectural Materials/Finishes

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Low VOC carpet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Acoustical ceiling tile</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>Low VOC painted GWB</td>
</tr>
<tr>
<td>Windows</td>
<td>New double-glazing if exterior exposure</td>
</tr>
</tbody>
</table>

## Systems

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>68 degrees F to 78 degrees F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical (Power)</td>
<td>Wall duplexes per code, Floor box, Ceiling projector</td>
</tr>
<tr>
<td>Lighting</td>
<td>Min. 50 Fc, Lighting controls</td>
</tr>
<tr>
<td>Plumbing</td>
<td>N/A</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
</tbody>
</table>

## Equipment/Furnishings

<table>
<thead>
<tr>
<th>Built-In Features</th>
<th>Operable partition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>2 pull down projection screens</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Moveable Equipment/ Furnishings</th>
<th>4 Magnetic whiteboards, Window blinds, 2 credenzas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined: 256 seats max</td>
<td></td>
</tr>
</tbody>
</table>
COMMUNITY SPACE - LARGE MEETING ROOM

WING ‘C’ EAST

GENERAL INFORMATION

Name: Large Meeting Room
Function: Meeting room for students/staff
No. of Occupants: 24
Area (Assignable): 750 ASF
Minimum Ceiling Height: 9'-0"
Critical Adjacencies: Prefunction
Additional Notes: 1 large meeting room req.

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Low VOC carpet
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB
Windows: New double-glazing if exterior exposure
Doors/Frames: Solid core wood/Aluminum frame w/ sidelight

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Wall duplexes per code, Floor box, Ceiling projector
Lighting: 30-40 Fc
Plumbing: N/A
Fire Protection: Sprinklered/Fire alarm/Smoke detector
Acoustics: AWP on one wall
Security: Card key access/Camera at entrance to room
Telecom/Data: 1 phone/4 data, One for clg. mount projector, Wireless AP
Audio/Visual: Ceiling mounted projector

EQUIPMENT/FURNISHINGS

Built-In Features: Pull down projection screen
Fixed: 1 Magnetic whiteboard, Window blinds, Credenza
Moveable Equipment/ Furnishings: 12 tables, 24 stackable chairs
Special Requirements: -
COMMUNITY SPACE - LARGE MEETING ROOM

ROOM DIAGRAM

SCALE: 1/8" = 1'-0"

NOTES: 12 tables, 24 chairs
COMMUNITY SPACE - STUDENT SUPPORT

WING ‘C’ EAST

GENERAL INFORMATION

Name: Student Support
Function: Locker area for students/staff
No. of Occupants: 400 ASF
Area (Assignable): 10’-0”
Minimum Ceiling Height: Main entrance/Dining
Critical Adjacencies: -
Additional Notes: -

ROOM DIAGRAM

SCALE: 1/8”=1'-0"

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Stone or tile
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB/Resilient
Windows: N/A
Doors/Frames: N/A
Additional Notes: -

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Electrical (Power): Provide electrical for ATM, Video camera, Vending machines
Duplexes on wall per code
Lighting: 15-25 Fc direct/indirect lighting
N/A
Plumbing: Sprinklered/Fire alarm/Smoke detector
N/A
Fire Protection: Security camera
1 Phone/ 2 data
N/A

Acoustics: N/A
Security: N/A
Telecom/Data: Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features: 280 Lockers (4 high), Vending machines (water only), ATM
Fixed: -
Moveable Equipment/ Furnishings: -
Special Requirements: -

WING ‘C’ EAST

University of California, Riverside
2011 A-I Residence Hall Common Area Improvements DPP
10.28.11
## General Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Medium Meeting Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Meeting room for students/staff</td>
</tr>
<tr>
<td>No. of Occupants</td>
<td>16</td>
</tr>
<tr>
<td>Area (Assignable)</td>
<td>500 ASF (x2)</td>
</tr>
<tr>
<td>Minimum Ceiling Height</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>Critical Adjacencies</td>
<td>Prefunction</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>2 medium meeting rooms req.</td>
</tr>
</tbody>
</table>

## Architectural Materials/Finishes

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Low VOC carpet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Acoustical ceiling tile</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>Low VOC painted GWB</td>
</tr>
<tr>
<td>Windows</td>
<td>New double-glazing if exterior exposure</td>
</tr>
<tr>
<td>Doors/Frames</td>
<td>Solid core wood/Aluminum frame w/ sidelight</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>-</td>
</tr>
</tbody>
</table>

## Systems

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>68 degrees F to 78 degrees F No humidity control</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical (Power)</td>
<td>Wall duplexes per code, Floor box, Ceiling projector</td>
</tr>
<tr>
<td>Lighting</td>
<td>Min. 50 Fc, Lighting controls</td>
</tr>
<tr>
<td>Plumbing</td>
<td>N/A</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
<tr>
<td>Acoustics</td>
<td>AWP on one wall</td>
</tr>
<tr>
<td>Security</td>
<td>Card key access/Camera at entrance to room</td>
</tr>
<tr>
<td>Telecom/Data</td>
<td>1 phone/4 data, One for clg. mount projector, Wireless AP</td>
</tr>
<tr>
<td>Audio/Visual</td>
<td>Ceiling mounted projector</td>
</tr>
</tbody>
</table>

## Equipment/Furnishings

<table>
<thead>
<tr>
<th>Built-In Features</th>
<th>Pull down projection screen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>1 Magnetic whiteboard, Window blinds, Credenza</td>
</tr>
<tr>
<td>Moveable Equipment/ Furnishings</td>
<td>8 tables, 16 stackable chairs</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>-</td>
</tr>
</tbody>
</table>
COMMUNITY SPACE - MEDIUM MEETING ROOM

WING ‘C’ EAST

ROOM DIAGRAM

SCALE:  $^{\frac{1}{8}}$ = 1’ - 0"

NOTES:
- 6-8 tables
- Chair amount varies
COMMUNITY SPACE - SMALL MEETING ROOM

GENERAL INFORMATION

Name  Small Meeting Room
Function  Meeting room for students/staff
No. of Occupants  8
Area (Assignable)  252 ASF (x2)
Minimum Ceiling Height  9'-0"
Critical Adjacencies  Prefunction
Additional Notes  2 small meeting rooms req.

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring  Low VOC carpet
Ceiling  Acoustical ceiling tile
Walls/Base  Low VOC painted GWB
Windows  New double-glazing if exterior exposure
Doors/Frames  Solid core wood/Aluminum frame w/ sidelight

SYSTEMS

Mechanical  68 degrees F to 78 degrees F
  No humidity control
Electrical (Power)  Wall duplexes per code, Floor box
  Min. 50 Fc
Lighting  N/A
Plumbing  Sprinklered/Fire alarm/Smoke detector
Fire Protection  AWP on one wall
Acoustics  Card key access
Security  1 phone/4 data under table,
Telecom/Data  Wireless AP
Audio/Visual  N/A

EQUIPMENT/FURNISHINGS

Built-In Features  -
Fixed  1 Magnetic whiteboard, Window blinds
Moveable Equipment/ Furnishings  1 table, 8 stackable chairs
Special Requirements  -

SCALE:  1/8"=1'-0"
NOTES:  8 chairs
COMMUNITY SPACE - CHAIR STORAGE

WING ‘C’ EAST

GENERAL INFORMATION

Name
Chair Storage
Function
Storage area for conference room chairs
No. of Occupants
-
Area (Assignable)
100 ASF
Minimum Ceiling Height
9'-0"
Critical Adjacencies
-
Additional Notes
-

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Low VOC carpet
Ceiling
Acoustical ceiling tile
Walls/Base
Low VOC painted GWB /Resilient
Windows
N/A
Doors/Frames
Solid core wood door/
Alum. frame
Additional Notes
-

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 6ACH
No humidity control
Electrical (Power)
N/A
Lighting
20-30 Fc
N/A
Plumbing
N/A
Fire Protection
Sprinklered/Fire alarm/Smoke
detector
Acoustics
-
Security
Card Key Access
Telecom/Data
N/A
Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
-
Fixed
-
Moveable Equipment/ Furnishings
-
Special Requirements
-
COMMUNITY SPACE - COMPUTER LAB

WING ‘C’ EAST

GENERAL INFORMATION

Name: Computer Lab
Function: Computer & printing area for students
No. of Occupants: 12
Area (Assignable): 450 ASF
Minimum Ceiling Height: 9'-0"
Critical Adjacencies: Prefunction/Meeting rooms
Additional Notes:

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Low VOC carpet
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB
Windows: New double-glazing if ext. exposure
Doors/Frames: Solid core wood door/Alum. frame w/ sidelight
Additional Notes: Wireless internet (in progress for bldg)

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control, may need ventilation for printers
(10) std. duplex outlets in floor, (12) computer power outlets in floor & (1) duplex outlet for copier; Projector
30-35 Fc
N/A
Sprinklered/Fire alarm/Smoke detector
AWP on one wall
Card key access/Video camera
1 phone/12 data in floor, 12 computer connections, 2 data for printers
Video projector

EQUIPMENT/FURNISHINGS

Built-In Features: Potential server closet/Counter for printers w/ locking cabinet doors
Fixed: 1 Magnetic whiteboard/Window blinds if req, Projection screen
12 task chairs/12 stations
Moveable Equipment/ Furnishings: 12 computers/2-3 printers/
Trash and recycling containers
Special Requirements:

Detailed Project Program
10.28.11
COMMUNITY SPACE - STORAGE

WING ‘C’ EAST

GENERAL INFORMATION

Name
Function

Storage
Storage area for educational supplies/seasonal decorations

No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames

Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 6ACH
No humidity control

Electrical (Power)
N/A
20-30 Fc

Lighting
- Sprinklered/Fire alarm/Smoke detector

Plumbing
- Card key access

Fire Protection

Acoustics

Security

Telecom/Data

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Special Requirements

Poly plastic adjustable shelving

-
COMMUNITY - MUSIC PRACTICE ROOM

GENERAL INFORMATION

Name
Music Practice Room

Function
Music practice room for students

No. of Occupants
70 ASF

Area (Assignable)
9'-0"

Minimum Ceiling Height
Emporium-Lounge/Game room

Critical Adjacencies
To fit upright piano

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Low VOC carpet

Ceiling
Acoustical ceiling tile

Walls/Base
Low VOC painted GWB

Windows
N/A

Doors/Frames
Solid core wood/Aluminum frame w/ sidelight

Additional Notes
Door to accommodate a piano

ROOM DIAGRAM

SCALE: 1/8"=1'-0"

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control

Electrical (Power)
Duplexes on wall per code

Lighting
30-35 Fc

Plumbing
N/A

Fire Protection
Sprinklered/Fire alarm/Smoke Detector

Acoustics
High STC rated partitions

Security
Card key access

Telecom/Data
- 

Audio/Visual
- 

EQUIPMENT/FURNISHINGS

Built-In Features
- 

Fixed
- 

Moveable Equipment/ Furnishings
Piano, Piano stool

Special Requirements
- 

Detailed Project Program
10.28.11
### GENERAL INFORMATION

**Name**
Student Kitchen

**Function**
Kitchen for student use

**No. of Occupants**
Per layout
102 ASF

**Area (Assignable)**
9'-0"

**Minimum Ceiling Height**
Meeting rooms/Exterior patio
Maximize counter space

**Critical Adjacencies**
Meeting rooms/Exterior patio

**Additional Notes**

---

### ARCHITECTURAL MATERIALS/FINISHES

**Flooring**
Resilient

**Ceiling**
Low VOC painted GWB

**Walls/Base**
Low VOC painted GWB/Resilient

**Windows**
New double-glazing if exterior exposure

**Doors/Frames**
Solid core wood door/Aluminum frame

**Additional Notes**

---

### SYSTEMS

**Mechanical**
68 degrees F to 78 degrees F
Minimum of 10ACH

**Electrical (Power)**
Duplexes on wall per code (counterheight), Dedicated circuit at fridge

**Lighting**
30-40 Fc

**Plumbing**
Double compartment sink w/disposal/Refrigerator-ice maker

**Fire Protection**
Sprinklered/Fire alarm/Smoke detector/Fire extinguisher

**Acoustics**
-Card key access

**Security**
N/A

**Telecom/Data**
N/A

**Audio/Visual**
N/A

---

### EQUIPMENT/FURNISHINGS

**Built-In Features**
Cabinets (upper and lower)

**Fixed**
Sink, Refrigerator, Oven, Cooktop, Microwave

**Moveable Equipment/Furnishings**
Trash and recycling bins, Tackboard

**Special Requirements**
-
**GENERAL INFORMATION**

Name: Fitness Center  
Function: Workout area for students  
No. of Occupants: Per layout  
Area (Assignble): 450 ASF  
Minimum Ceiling Height: 9'-0"  
Critical Adjacencies: Centralized location  
Additional Notes: -

**ROOM DIAGRAM**

[Diagram of the Fitness Center with dimensions and room layout]

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring: Rubber flooring  
Ceiling: Acoustical ceiling tile  
Walls/Base: Low VOC painted GWB  
Windows: New double-glazing if ext. exposure  
Doors/Frames: Solid core wood door/Aluminum frame w/ sidelight  
Additional Notes: If ext. windows, provide blinds

**SYSTEMS**

Mechanical: 68 degrees F to 78 degrees F  
No humidity control  
2 wall or ceiling-mounted fans  
Dedicated circuits for treadmill  
Provide plug mold multi-outlet strip on equip. wall.  
(2) duplex outlets/wall & type of outlet for appliances/equip. per manuf. req. power connections 30-35 Fc  
Provide for hydration station  
Sprinklered/Fire alarm/Smoke Detector  
-Card key access/Security camera  
Wireless internet  
Cable connection for individual tv monitors attached to machines

**EQUIPMENT/FURNISHINGS**

Built-In Features: Wall mounted hydration station  
Fixed: Towel hooks, Lrg. wall-mounted mirror  
Moveable Equipment/ Furnishings: 2 treadmills/2 elliptical machines w/ indiv. tv monitors, Tackboard  
Special Requirements: -  

Detailed Project Program: 10.28.11
GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Reception
Reception Area for students/staff
3 staff at counter
600 ASF
10'-0"
Student support package room
24 Hour security counter

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Stone or Tile
Ceiling
Acoustical ceiling tile
Walls/Base
Low VOC painted GWB/Resilient
Windows
New double-glazing if exterior exposure
Doors/Frames
Ext doors - Glass aluminum door, Alum. frame
Additional Notes
Window shades as necessary

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
Electrical (Power)
Counter Equip. & wall duplexes per code, Video cameras to view counter traffic, Monitors, Electrical powered security grille
Lighting
15-25 Fc - direct/indirect lighting
40-50 Fc - task lighting
Plumbing
N/A
Fire Protection
Main fire alarm annunciator panel
Acoustics
Card key access, Transaction window
Security
1 phone/3 data (counter height)
Telecom/Data
Flat screen info monitor
Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
42" high reception counter w/ ADA access
Fixed
Display board
Moveable Equipment/ Furnishings
Computers, Time clock
Special Requirements
Walk off grating (LEED)
**GENERAL INFORMATION**

Name

Function

Mail

*Mail drop-off/collection for student mail*

- Mail drop-off/collection for student mail

No. of Occupants

Area (Assignable)

Minimum Ceiling Height

Critical Adjacencies

Additional Notes

**ROOM DIAGRAM**

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring

- Resilient

Ceiling

- Acoustical ceiling tile

Walls/Base

- Low VOC painted GWB/Resilient

Windows

- N/A

Doors/Frames

- Solid core wood/Alum. frame

Additional Notes

**SYSTEMS**

Mechanical

- 68 degrees F to 78 degrees F

- No humidity control

Electrical (Power)

- Duplexes on wall per code/Doorbell at ext. drop off/Security camera

Lighting

- 30-40 Fc

Plumbing

- N/A

Fire Protection

- Sprinklered/Fire alarm/Smoke detector

Acoustics

- Card key access

Security

- 1 phone/2 data

Telecom/Data

- Cameras to view exterior of mailboxes and entry to back door

Audio/Visual

**EQUIPMENT/FURNISHINGS**

Built-In Features

- Fixed

- 1000 mailboxes w/ receiving slot

Moveable Equipment/ Furnishings

- Work tables, Computer, Tackboard

Special Requirements

-
## GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Name</th>
<th>Package Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Storage room for packages for the students</td>
</tr>
<tr>
<td>No. of Occupants</td>
<td>-</td>
</tr>
<tr>
<td>Area (Assignable)</td>
<td>100 ASF</td>
</tr>
<tr>
<td>Minimum Ceiling Height</td>
<td>9'-0&quot;</td>
</tr>
<tr>
<td>Critical Adjacencies</td>
<td>Reception counter/Resident offices.Mail</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>-</td>
</tr>
</tbody>
</table>

## ARCHITECTURAL MATERIALS/FINISHES

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Resilient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Acoustical ceiling tile</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>Low VOC painted GWB/resilient</td>
</tr>
<tr>
<td>Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Doors/Frames</td>
<td>Solid core wood door/Alum. frame</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>-</td>
</tr>
</tbody>
</table>

## SYSTEMS

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>68 degrees F to 78 degrees F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical (Power)</td>
<td>No humidity control</td>
</tr>
<tr>
<td>Lighting</td>
<td>Duplexes on wall per code, 15-20 Fc</td>
</tr>
<tr>
<td>Plumbing</td>
<td>N/A</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
<tr>
<td>Acoustics</td>
<td>Card key access</td>
</tr>
<tr>
<td>Security</td>
<td>-</td>
</tr>
<tr>
<td>Telecom/Data</td>
<td>N/A</td>
</tr>
<tr>
<td>Audio/Visual</td>
<td>-</td>
</tr>
</tbody>
</table>

## EQUIPMENT/FURNISHINGS

<table>
<thead>
<tr>
<th>Built-In Features</th>
<th>24&quot; Shelving</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Poly plastic adjustable shelving</td>
</tr>
<tr>
<td>Moveable Equipment/ Furnishings</td>
<td>-</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>-</td>
</tr>
</tbody>
</table>
RESIDENT SERVICE OFFICE - RESIDENT DIRECTOR OFFICE

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Resident Director Office
Office for the Resident Director
One and guest
120 ASF (x2)
9'-0"
Other resident offices
2 offices required. Direct and unobstructed egress out of room is required.

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control

Electrical (Power)
Duplexes on wall per code

Lighting
Min. 50 Fc
N/A

Plumbing

Fire Protection
Sprinklered/Fire alarm/Smoke detector
- Card key access/Panic button

Acoustics
1 phone/2 data
N/A

Security

Telecom/Data

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
- Window blinds, Enclosed overhead storage bins

Fixed

Moveable Equipment/ Furnishings
Executive desk/chair, 2 guest chairs, Computer, Printer, Lateral file, Bookcase, Task lighting

Special Requirements
-
**RESIDENT SERVICE OFFICE - HEAD RESIDENT OFFICE**

**WING 'C' EAST**

### GENERAL INFORMATION

**Name**  
Head Resident Office  
Office for Head Resident

**Function**  
One and guests

**No. of Occupants**  
120 ASF

**Area (Assignable)**  
9’-0”

**Minimum Ceiling Height**  
Other resident offices

**Critical Adjacencies**  
-

**Additional Notes**  
-

### ROOM DIAGRAM

![Room Diagram](image)

**SCALE:** 1/8”=1’-0”

### ARCHITECTURAL MATERIALS/FINISHES

**Flooring**  
Low VOC carpet

**Ceiling**  
Acoustical ceiling tile

**Walls/Base**  
Low VOC painted GWB

**Windows**  
New double-glazing if exterior exposure

**Doors/Frames**  
Solid core wood door/Aluminum frame w/ sidelight

**Additional Notes**  
-

### SYSTEMS

**Mechanical**  
68 degrees F to 78 degrees F  
No humidity control

**Electrical (Power)**  
Duplexes on wall per code  
35-40 Fc  
N/A

**Lighting**  
Sprinklered/Fire alarm/Smoke detector  
Provide sound attenuation  
Card key access  
1 phone/2 data  
N/A

**Plumbing**  
N/A

**Fire Protection**  
N/A

**Acoustics**  
N/A

**Security**  
N/A

**Telecom/Data**  
N/A

**Audio/Visual**  
N/A

### EQUIPMENT/FURNISHINGS

**Built-In Features**  
Window blinds, Enclosed overhead storage bins

**Fixed**  
Executive desk/chair, Guest chairs, Computer, Printer, Bookshelf, Lateral file, Task lighting

**Moveable Equipment/Furnishings**  
-

**Special Requirements**  
-
**RESIDENT SERVICE OFFICE - RSO MANAGER OFFICE**

**GENERAL INFORMATION**

Name  
Function  
No. of Occupants  
Area (Assignable)  
Minimum Ceiling Height  
Critical Adjacencies  
Additional Notes

**RSO Manager Office**
*Office for the RSO Manager*
One and guests
160 ASF
9'-0"
Other resident offices
Staff mtgs/Record storage

**ARCHITECTURAL MATERIALS/FINISHES**

**Flooring**
Low VOC carpet

**Ceiling**
Acoustical ceiling tile

**Walls/Base**
Low VOC painted GWB

**Windows**
New double-glazing if exterior exposure
Solid core wood door/
Aluminum frame w/ sidelight

**Doors/Frames**

**Additional Notes**

**SYSTEMS**

**Mechanical**
68 degrees F to 78 degrees F
No humidity control

**Electrical (Power)**
Duplexes on wall per code

**Lighting**
50 Fc
N/A

**Plumbing**
Sprinklered/Fire alarm/Smoke detector

**Fire Protection**
Provide sound attenuation

**Acoustics**
Card key access

**Security**
1 phone/2 data

**Telecom/Data**
N/A

**Audio/Visual**

**EQUIPMENT/FURNISHINGS**

**Built-In Features**

**Fixed**

**Moveable Equipment/ Furnishings**
Executive desk/4 chairs/Bookcase/
3 lateral files/2 overhead stor. bins/
1 pedestal storage, Task lighting

**Special Requirements**
Small meeting table
RESIDENT SERVICE OFFICE - STAFF OFFICES

WING ’C’ EAST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies

Additional Notes

ROOM DIAGRAM

1/8" = 1'-0"

WING 'C' EAST

University of California, Riverside
2011 A-I Residence Hall Common Area Improvements DPP
10.28.11

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Low VOC carpet

Ceiling
Acoustical ceiling tile

Walls/Base
Low VOC painted GWB

Windows
New double glazing if exterior exposure

Doors/Frames
Solid core wood door/
Aluminum frame w/ sidelight

Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F

No humidity control

Electrical (Power)
Duplexes on wall per code

50 Fc

N/A

Plumbing

Fire Protection

Acoustics
Sprinklered/Fire alarm/Smoke detector

Security
Provide sound attenuation

Telecom/Data
Card key access

Audio/Visual
1 phone/2 data ea. office

N/A

EQUIPMENT/FURNISHINGS

Built-In Features
- Window blinds, Enclosed overhead storage bins

Fixed
Executive desk/chair, 2 guest chairs, Computer, Printer, 1 lateral file, 1 bookcase, Task lighting

Moveable Equipment/ Furnishings

Special Requirements

-
RESIDENT SERVICE OFFICE - STAFF WORKSTATIONS

WING ‘C’ EAST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Staff Workstations
Workstations for the staff
1
60 ASF (x4)
9’-0”
Other resident offices/Reception counter
Need visibility to security monitors at reception desk

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes
Low VOC carpet
Acoustical ceiling tile
Low VOC painted GWB/Resilient
N/A
N/A
-

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
Electrical (Power)
Duplexes per code - at workstation height
Lighting
Indirect/direct lighting 5-10 Fc
Task lighting 50 Fc
Plumbing
N/A
Fire Protection
Sprinklered/Fire alarm/Smoke detector
Acoustics
N/A
Security
N/A
Telecom/Data
1 phone/2 data ea. workstation
Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Workstation desk/1 chair/ 1 lateral file, Desk lamp
Special Requirements
-
RESIDENT SERVICE OFFICE - RSO CONFERENCE

WING ‘C’ EAST

GENERAL INFORMATION

Name: RSO Conference
Function: Conference room for the staff
No. of Occupants: 14
Area (Assignable): 325 ASF
Minimum Ceiling Height: 10'-0"
Critical Adjacencies: Provide direct access from outside RSO
Additional Notes:

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Low VOC carpet
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB /Resilient
Windows: New double-glazing if exterior exposure
Doors/Frames: Solid core wood door/
Alum. frame with sidelight
Additional Notes:

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Electrical (Power): Floor box at center.
Duplexes on wall per code
Lighting: 50 Fc
N/A
Plumbing: Sprinklered/Fire alarm/Smoke detector
Fire Protection: AWP one wall
Security: Card key access
Telecom/Data: 1 phone/4 data ports
Audio/Visual: Ceiling mounted projector

EQUIPMENT/FURNISHINGS

Built-In Features: -
Fixed: Pull down screen/Window blinds if required/2 Magnetic whiteboards
Moveable Equipment/ Furnishings: 1 Table/14 chairs
Special Requirements: -
GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Breakroom
Breakroom for the staff
Four
120 ASF
9'-0"
Resident offices
Natural light desirable

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes

RESIDENT SERVICE OFFICE - BREAKROOM

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Exhaust fan

Electrical (Power)
68 degrees F to 78 degrees F
Ded. circuits at fridge. Duplexes on wall per code
(also counterheight)

Lighting
68 degrees F to 78 degrees F
20-30 Fc

Plumbing
68 degrees F to 78 degrees F
Double compartment sink w/ disposal/Refrigerator w/ Ice maker

Fire Protection
Sprinklered/Fire alarm/Smoke detector

Acoustics

Security

Telecom/Data
2 data and wireless access

Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed

Moveable Equipment/ Furnishings
1 table/4 chairs, Recycling bins

Special Requirements

WING C ‘EAST’

Detailed Project Program
10.28.11
RESIDENT SERVICE OFFICE - WORKROOM

WING C 'EAST'

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Workroom
Workroom for the staff
- 228 ASF
9'-0"
Resident offices
-

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Resilient
Ceiling
Acoustical ceiling tile
Walls/Base
Low VOC painted GWB/Resilient
Windows
N/A
Doors/Frames
Solid core wood door/
Aluminum frame sidelight
-

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Exhaust fan
Electrical (Power)
Floor outlet - Duplexes on wall
per code. Ded. circuit at copier
(and at counter height/copier area)
Lighting
20-30 Fc
Plumbing
N/A
Fire Protection
Sprinklered/Fire alarm/Smoke
detector
-
Acoustics
-
Security
Card key access
Telecom/Data
Dedicated power/Data req. at key
box level; 1 phone/4 data/Data
at copier
-
Audio/Visual
-

EQUIPMENT/FURNISHINGS

Built-In Features
Upper/lower cabinets
Fixed
62 staff mailboxes, Key storage -
3 wall mounts
Moveable Equipment/ Furnishings
Central copier, Computer, Paper
cutter
Special Requirements
-

SCALE: 1/8"=1'-0"
GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Graphics Room
Room for the staff to make posters
2-3 occupants at a time
160 ASF
9'-0"
Resident offices

ROOM DIAGRAM

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes

Resilient
Acoustical ceiling tile
Low VOC painted GWB/Resilient
N/A
Solid core wood door/
Alum. frame w/ sidelight

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 10ACH
Exhaust fan

Electrical (Power)
(1) duplex outlet/
Poster printer - ded. circuit

Lighting
30-40 Fc

Plumbing
N/A

Fire Protection
Sprinklered/Fire alarm/Smoke
detector

Acoustics
- 

Security
Card key access

Telecom/Data
4 data/data for poster printer; 1 voice

Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed

Moveable Equipment/ Furnishings
Special Requirements

Cabinets/Work counter
Poly plastic adjustable shelving,
Tackboard

Computer, Poster printer
-
RESIDENT SERVICE OFFICE - STORAGE

WING ‘C’ EAST

GENERAL INFORMATION

Name: Storage
Function: General storage room for the staff
No. of Occupants: 200 ASF
Area (Assignable): 9'-0"
Minimum Ceiling Height: Resident offices
Critical Adjacencies: -
Additional Notes: -

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Resilient
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB/Resilient
Windows: N/A
Doors/ Frames: Solid core wood/Alum. frame
Additional Notes: -

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
Minimum of 6ACH
No humidity control
Electrical (Power): Duplexes on wall per code
Lighting: 15-20 Fc
Plumbing: -
Fire Protection: Sprinklered/Fire alarm/Smoke detector
Acoustics: -
Security: Card key access
Telecom/Data: N/A
Audio/Visual: N/A

EQUIPMENT/FURNISHINGS

Built-In Features: Poly-plastic adjustable shelving
Fixed: -
Moveable Equipment/ Furnishings: -
Special Requirements: -

SCALE: 1/8”=1'-0"
GENERAL INFORMATION

Name
Emporium - General Merchandising

Function
Convenience Store in Emporium Facility

No. of Occupants
-

Area (Assignable)
1,000 ASF

Minimum Ceiling Height
10' - 0"

Critical Adjacencies
Emporium - Cashier/Coffee/Reach-in freezer and refrigerator

Additional Notes
4 merchandise gondolas with end caps

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceramic tile

Ceiling
FRP w/ metal T-bar -white

Walls
Tile on concrete curb

Base
6" coved tile

Windows
Aluminum frame - double glazed

Doors/Frames
-

Additional Notes
-

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control

Electrical (Power)
120/208/480v
50 Fc

Lighting
Coldwater, 120 degree hot water

Plumbing
floor sinks, Drains

Fire Protection
Sprinklered/Fire alarm/Smoke detector

Acoustics
-

Security
Security camera/Card key access

Telecom/Data
-

Audio/Visual
-

EQUIPMENT/FURNISHINGS

Built-In Features
End caps, Condiment counter

Fixed
Walk-in freezer and Refrigerator with glass doors

Moveable Equipment/ Furnishings
Gondola displays, Trash containers

Special Requirements
-

END CAPS, TYP.

Merchandise Freezer

Beverage Cooler Retail

SCALE: 1/8"=1'-0"
EMPORIUM - CASHIER
WING 'D' WEST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Emporium - Cashier
P.O.S. in Emporium Retail
- 150 ASF
10'-0"
Emporium Entry / General Merchandising
Sight lines to Retail Display

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frame
Additional Notes

Ceramic tile
Acoustical ceiling tile
On concrete bases
Double glazed aluminum
Visibility from exterior
N/A
-

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
2 emergency power outlets at both cash registers/Security camera, Phone, Emergency power
50 Fc on a rheostat dimmer
N/A
Sprinklered/Fire alarm/Smoke detector
-
Alarm/Security camera/Card key access
Connection for 2 P.O.S.; Phone at POS
Wireless internet, Music system

Electrical (Power)

Lighting

Plumbing

Fire Protection

Acoustics

Security

Telecom/Data

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Reception counter
Fixed
Display boards below all counter areas
Moveable Equipment/ Furnishings
Stool/2 P.O.S.
Special Requirements
Trash/Recycling
EMPORIUM - MERCHANDISE FREEZER

GENERAL INFORMATION

Name
Emporium - Merchandise Freezer

Function
Merchandise Freezer in Emporium Kitchen

No. of Occupants
-

Area (Assignable)
93 ASF

Minimum Ceiling Height
8'-6"

Critical Adjacencies
Emporium - Retail gondolas & Beverage refrigeration

Additional Notes
Floor recessed 7” to 8”

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Insulated with Diamond Plate/Walking surface flush with kitchen floor

Ceiling
Stainless steel

Walls
Stainless steel

Base
N/A

Windows
N/A

Doors/Frames
Double insulated glass with locks

SYSTEMS

Mechanical
Temp. between -10F and -5F/Min. of 10 ACH

Electrical (Power)
160 AMP-208V, 3 phase/Remote air cooled compressor/Rack mounted outside on slab/Provide emergency power

Lighting
40 Fc, Provide emergency power

Plumbing
Drains to floor sink outside the walk-in ref.

Fire Protection
N/A

Acoustics
- Door locks master keyed

Security
Temperature alarm system connected to central alarm

Telecom/Data
Alarm at door for temperature monitoring

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Side-lite glass doors with locks

Fixed
Poly plastic adjustable, angled shelves display

Moveable Equipment/ Furnishings
- 4’-6” door to allow pallet access

Special Requirements

WING 'D' WEST
**EMPORIUM - DINING**

**WING ‘D’ WEST**

**GENERAL INFORMATION**

Name: Emporium - Dining  
Function: Dining in Emporium Facility  
No. of Occupants: 48 seated  
Area (Assignable): 720 ASF  
Minimum Ceiling Height: 10'-0"  
Critical Adjacencies: Emporium - Counter Seating/ Game Room,  
Additional Notes: A significant amount of meals will be take-out

**ARCHITECTURAL MATERIALS/FINISHES**

- **Flooring**: Ceramic tile  
- **Ceiling**: Acoustical ceiling tile  
- **Walls/Base**: Painted GWB w/ coved base  
- **Windows**: New double-glazing if exterior exposure  
- **Doors/Frames**: Ext doors - glass aluminum door, alum. frame  
- **Additional Notes**: Washable, durable finishes/Fabrics

**SYSTEMS**

- **Mechanical**: 68 degrees F to 78 degrees F  
- **Electrical (Power)**: Duplexes on wall every 8 to 10 feet for computer use  
- **Lighting**: 10-50 Fc with Rheostat dimmer in accent areas. Lighting must be zoned - controlled by staff  
- **Plumbing**: Floor drain  
- **Fire Protection**: Sprinklered/Fire alarm/Smoke detector  
- **Acoustics**:  
- **Security**: Security camera/Card key access  
- **Telecom/Data**: Wireless internet, Music system

**EQUIPMENT/FURNISHINGS**

- **Built-In Features**: Banquette seating  
- **Fixed**: Countertop  
- **Moveable Equipment/ Furnishings**: 13 Tables, 40 chairs  
- **Special Requirements**: -
## General Information

**Name**
Emporium - Counter Seating

**Function**
Seating area in Emporium Dining Facility

**No. of Occupants**
8

**Area (Assignable)**
100 ASF

**Minimum Ceiling Height**
12'-0"

**Critical Adjacencies**
Emporium - Dining

**Additional Notes**
8 stools

## Room Diagram

![Diagram of Emporium - Counter Seating]

**Scale:** 1/8" = 1'-0"

## Architectural Materials/Finishes

<table>
<thead>
<tr>
<th>System</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td><strong>Flooring</strong></td>
<td>Ceramic tile</td>
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<tr>
<td><strong>Ceiling</strong></td>
<td>Acoustical ceiling tile</td>
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<tr>
<td><strong>Walls/Base</strong></td>
<td>Coved bases</td>
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<tr>
<td><strong>Windows</strong></td>
<td>N/A</td>
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<td>N/A</td>
</tr>
<tr>
<td><strong>Additional Notes</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

## Systems

<table>
<thead>
<tr>
<th>System</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mechanical</strong></td>
<td>68 degrees F to 78 degrees F</td>
</tr>
<tr>
<td><strong>Exhaust fan</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Electrical (Power)</strong></td>
<td>Duplexes in counter face - GFI</td>
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<tr>
<td><strong>Lighting</strong></td>
<td>Downlights 10-50 Fc</td>
</tr>
<tr>
<td><strong>Plumbing</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Fire Protection</strong></td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
<tr>
<td><strong>Acoustics</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Telecom/Data</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Audio/Visual</strong></td>
<td>Wireless internet, Music system</td>
</tr>
</tbody>
</table>

## Equipment/Furnishings

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Built-In Features</strong></td>
<td>Countertop w/ lower portion for ADA access</td>
</tr>
<tr>
<td><strong>Fixed</strong></td>
<td>8 Bar stools</td>
</tr>
<tr>
<td><strong>Moveable Equipment/Furnishings</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Special Requirements</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

**ADA accessible counter at +34" high**
EMPORIUM - COFFEE

WING 'D' WEST

GENERAL INFORMATION

Name
Emporium - Coffee

Function
Coffee prep and sales in Emporium Dining Facility

No. of Occupants
-

Area (Assignable)
200 ASF

Minimum Ceiling Height
10'-0"

Critical Adjacencies
Emporium - Diner/Grill, C-Store P.O.S., Condiment counter

Additional Notes

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Epoxy or Protect-ALL

Ceiling
FRP-T-Bar drop/Plastic coated T-bar

Walls/Base
Low VOC GWB on concrete bases or ceramic tile

Windows
N/A

Doors/Frames
N/A

SYSTEMS

Mechanical
Temperature at 68 to 72 degrees F in heat producing areas

Electrical (Power)
Required for espresso machine, Brewer, Blenders, Refrigeration - 120V, 1 phase/208 V, 3 phase. Refrigeration should be remote.

Lighting
Required for beverage counters

Plumbing
Hand sink, Cold water & Floor sinks

Fire Protection
Sprinklered/Fire alarm/Smoke detector

Acoustics
-

Security
2 security cameras over P.O.S.

Telecom/Data
Telephone and data lines for P.O.S.

Audio/Visual
P.O.S. monitor for beverages

EQUIPMENT/FURNISHINGS

Built-In Features
Countertops, Ice cream freezer, Ice machine, Pastry case, Dipper well, Sinks

Fixed
Remote refrigerators

Moveable Equipment/ Furnishings
Trash/recycling, Espresso maker, Coffee brewer(s), Cash registers, TV monitor, Freezer and Blenders

Special Requirements
-
**GENERAL INFORMATION**

Name
Emporium - Condiment Station

Function
Condiments in Emporium Dining Facility

No. of Occupants
- Area (Assignable) 15 ASF

Minimum Ceiling Height
12'-0"

Critical Adjacencies
Emporium - Dining

Additional Notes
On concrete base

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring
N/A

Ceiling
N/A

Walls/Base
N/A

Windows
N/A

Doors/Frames
N/A

Additional Notes
-

**SYSTEMS**

Mechanical
68 degrees F to 78 degrees F
No humidity control

Electrical (Power)
Duplexes on backsplash

Lighting
10 to 50 Fc

Plumbing
N/A

Fire Protection
Sprinklered/Fire alarm/Smoke detector

Acoustics
N/A

Security
N/A

Telecom/Data
N/A

Audio/Visual
N/A

**EQUIPMENT/FURNISHINGS**

Built-In Features
Stainless steel or Corian countertop

Fixed
Condiment dispensing system

Moveable Equipment/ Furnishings
Trash/Recycling, Coffee condiments

Special Requirements
Enclosed and locked counter
**EMPORIUM - PREP AREA/SERVICE**

**WING ‘D’ WEST**

### GENERAL INFORMATION

- **Name**: Emporium - Prep Area/Service
- **Function**: Food prep/production area
- **No. of Occupants - Area (Assignable)**: 646 ASF
- **Minimum Ceiling Height**: 10’-0”
- **Critical Adjacencies**: Emporium - Dining, C-Store P.O.S.
- **Additional Notes**: Emporium - Dining, C-Store P.O.S.

### ROOM DIAGRAM

![Room Diagram](image)

**SCALE:** 1/8” = 1’-0”

### ARCHITECTURAL MATERIALS/FINISHES

- **Flooring**: Stonehard Epoxy or Protect-ALL
- **Ceiling**: FRP & plastic coated T-bar
- **Walls**: FRP waterproof gyp on concrete base/Ceramic tile when visible to guests
- **Bases**: Epoxy 6” coved “Stonehard”
- **Windows**: N/A
- **Doors/Frames**: Eliason

### SYSTEMS

- **Mechanical**: (1) 4’ x 4’ Type 1 grease hood - water wash hood. Temp at 68 to 72 degrees F in heat producing areas. 120v, 208v, 480v Freezers on emergency power 50 Fc Drains to exist. 6” drain; 140 degree Hot water, Cold water & Gas, Floor/ Hand sinks Sprinklered/Fire alarm/Smoke detector. Req for 2 hoods
- **Security**: Security camera
- **Telecom/Data**: Telephone/data for 2 P.O.S.
- **Audio/Visual**: N/A

### EQUIPMENT/FURNISHINGS

- **Built-In Features**: Pot sinks, Prep sinks, Counters, Mop sink, Walk-in freezer Hood, Hand sinks, Under counter cab Racks, Tables, Ranges, Fryers, Convection ovens, Prep refrigerators, Slicers, Sandwich press, Beverage equip., Display refrigerator, Cash register, 3 door refrigerator, Monitors for menu boards
- **Fixed**:
- **Moveable Equipment/ Furnishings**:
- **Special Requirements**:

---

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10.28.11
GENERAL INFORMATION

Name
Emporium - Dry Storage
Function
Dry Food Storage in Emporium Kitchen
No. of Occupants
180 ASF
Area (Assignable)

Minimum Ceiling Height
Critical Adjacencies
Emporium - Prep area & receiving
Additional Notes

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Stonehard Epoxy or Protect-ALL
Ceiling
FRP & T-bar drop - white
Walls
FRP - light color
Bases
Concrete base w/ 6" covered
epoxy “Stonehard”
Windows
N/A
Doors/Frames
4'-6” door with vent at bottom
and pallet access
Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
Electrical (Power)
Wall duplexes per code
Lighting
50 Fc
N/A
Fire Protection
Sprinklered/Fire alarm/Smoke
detector
Acoustics
N/A
Security
Card key access
Telecom/Data
Connection for 1 computer
Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Poly-plastic adjustable shelving
Special Requirements

SCALE: 1/8” = 1’-0”

EMPORIUM - DRY STORAGE
WING ‘D’ WEST

Detailed Project Program
10.28.11
EMPORIUM - FREEZER STORAGE

WING 'D' WEST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Emporium - Freezer Storage
Bolt Freezer in Emporium Kitchen
- 112 ASF
8’-6”
Emporium - Cooler/Dry Storage
May enter via cooler if necessary,
Floor recessed 7” to 8”

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring    Diamond tred flooring
Ceiling     Stainless steel
Walls       Stainless steel
Base        -
Windows     N/A
Doors/Frames Stainless steel
Additional Notes -

SYSTEMS

Mechanical    Temp. between -10F and -5F/
No humidity control

Electrical (Power)    160 AMP-208V, 3 Phase remote
air cooled compressor, Provide
emergency power (similar to
cooler)
        40 Fc, Provide emergency power
Drains to floor sink outside
the walk-in freezer

Lighting
Plumbing

Fire Protection
Acoustics
Security
Telecom/Data
Audio/Visual

Temperature alarm system
connected to central alarm
Alarm at door for temperature
monitoring

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Special Requirements
Rack shelving
-
EMPORIUM - BEVERAGE COOLER RETAIL

GENERAL INFORMATION

Name
Emporium - Beverage Cooler Retail

Function
Beverage Cooler in Emporium General Merchandising

No. of Occupants
-

Area (Assignable)
288 ASF

Minimum Ceiling Height
8'-6"

Critical Adjacencies
Emporium - Freezer/Dry Storage

Additional Notes
Floor recessed 7” to 8”

ROOM DIAGRAM

SCALE: 1/8” = 1'-0"

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Insulated with Diamond Plate/ Walking surface flush with kitchen floor

Ceiling
Stainless steel

Walls/Base
Stainless steel

Windows
N/A

Doors/Frames
Stainless steel

Additional Notes
4’-6” door to allow pallet access

SYSTEMS

Mechanical
Temp. between 35F and 40F

Electrical (Power)
160 AMP-208V, 3 Phase/Remote air cooled compressor/Rack mounted outside on slab/Provide emergency power

Lighting
40 Fc, Provide emergency power

Plumbing
Drains to floor sink outside the walk-in ref.

Fire Protection
N/A

Acoustics
-

Security
Door locks master keyed

Telecom/Data
Temperature alarm system connected to central alarm

Audio/Visual
Alarm at door for temperature monitoring

EQUIPMENT/FURNISHINGS

Built-In Features
Side-lite glass doors with locks

Fixed
Poly-plastic adjustable shelving display

Moveable Equipment/ Furnishings
-
**EMPORIUM - OFFICE**

**WING ‘D’ WEST**

**GENERAL INFORMATION**

Name
Function
Emporium - Office
Manager’s Office in Emporium Dining Facility

No. of Occupants
Area (Assignable)
3
144 ASF

Minimum Ceiling Height
Critical Adjacencies
8’-0”
Emporium - Lockers/Toilet

Additional Notes

**ROOM DIAGRAM**

| Scale: | 1/8” = 1'-0” |

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring
Ceiling
Walls/Base
Windows
Doors/ Frames
Additional Notes
Epoxy/ Coved base
Acoustical ceiling tile
Low VOC painted GWB
Solid core wood/Alum. frame

**SYSTEMS**

Mechanical
68 degrees F to 78 degrees F
No humidity control

Electrical (Power)
Duplexes on wall per code
Min 50 Fc
N/A

Lighting
Sprinklered/Fire alarm/Smoke detector

Plumbing
Security camera/Alarm/Card key access

Fire Protection
Telecom/Data
Min. of one phone; Connection for 2 computers

Acoustics
Audio/Visual
Camera over cash counting

**EQUIPMENT/FURNISHINGS**

Built-In Features
Built in safe (on concrete curb)/ Counter/Storage cabinet over counter except at window to kitchen

Fixed
Moveable Equipment/ Furnishings
3 chairs/File cabinet

Special Requirements

---

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**GENERAL INFORMATION**

Name: Emporium - Lockers/Toilet  
Function: Employee Area in Emporium Kitchen  
No. of Occupants: 100  
Area (Assignable): 100 ASF  
Minimum Ceiling Height: 8'-0"  
Critical Adjacencies: Emporium - Office/Prep Area  
Additional Notes: Single Occupancy toilet - ADA accessible

**ROOM DIAGRAM**

![Room Diagram](image)

**SCALE:** 1/8" = 1'-0"  

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring: Stonehard epoxy or Protect-ALL  
Ceiling: Low VOC GWB  
Walls/Base: Tile wainscoat, Low VOC painted GWB/Resilient  
Windows: Solid core wood/Alum. frame

**SYSTEMS**

Mechanical: 68 degrees F to 78 degrees F  
Minimum of 10ACH  
Exhaust Fan  
Electrical (Power): Duplexes on wall per code-GFI  
50 Fc  
Lighting: Floor Drains/RR fixtures  
Plumbing: Sprinklered/Fire alarm/Smoke detector  
Fire Protection: Privacy Lock  
Acoustics: N/A  
Security: N/A  
Telecom/Data: N/A  
Audio/Visual: N/A

**EQUIPMENT/FURNISHINGS**

Built-In Features: Toilet, Urinal, Sink, Grab bar, Toilet accessories  
Fixed: Lockers, Mirror, Hardware  
Moveable Equipment/ Furnishings: -  
Special Requirements: -
GENERAL INFORMATION

Name: Janitor
Function: Janitor's cleaning area in Emporium Kitchen
No. of Occupants: -
Area (Assignable): 90 ASF
Minimum Ceiling Height: 8'-0"
Critical Adjacencies: Emporium - Prep Area/Pots
Additional Notes: -

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Stonehard Epoxy or Protect-ALL
Ceiling: Low VOC painted GWB
Walls/Base: Low VOC painted GWB/W.P. wainscoat around mop sink
Windows: N/A
Doors/Frames: Solid core wood/Alum. frame with vent at bottom of door
Additional Notes: -

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
Minimum of 10ACH
Exhaust fan
Electrical (Power): Duplexes on wall per code
20-25 Fc
Floor sink/Drain
Sprinklered/Fire alarm/Smoke detector
Acoustics: -
Security: Card key access
Telecom/Data: N/A
Audio/Visual: N/A

EQUIPMENT/FURNISHINGS

Built-In Features: Mop sink
Fixed: Poly-plastic adjustable shelving, Hook strip
Moveable Equipment/Furnishings: -
Special Requirements: -
**GENERAL INFORMATION**

Name  
Function  
No. of Occupants  
Area (Assignable)  
Minimum Ceiling Height  
Critical Adjacencies  
Additional Notes

**Lounge**  
*Lounging room for students*  
40 seated  
1,200 ASF  
10'-0"  
Emporium/Game room  
Accessory Dining - Area for Emporium

**ROOM DIAGRAM**

![Room Diagram]

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring  
Ceiling  
Walls/Base  
Windows  
Doors/Frame  
Additional Notes

- Low VOC carpet  
- Acoustical ceiling tile  
- Low VOC painted GWB/Resilient  
- New double-glazing if exterior exposure  
- Aluminum door/frame as appl.  
- Wireless internet

**SYSTEMS**

Mechanical  
Electrical (Power)  
Lighting  
Plumbing  
Fire Protection  
Acoustics  
Security  
Telecom/Data  
Audio/Visual

- 68 degrees F to 78 degrees F  
- No humidity control  
- Duplexes every 8 to 10 feet for computer usage/1 flat screen  
- 15-20 Fc for general lighting, 40-50 Fc for task lights, Place on staff controlled rheostat for mood zones  
- N/A  
- Sprinklered/Fire alarm/Smoke Detector  
- Security camera  
- 1 phone/3 data  
- 1 flat screen tv, Sound system

**EQUIPMENT/FURNISHINGS**

Built-In Features  
Fixed  
Moveable Equipment/ Furnishings  
Special Requirements

- Banquette seating  
- Window blinds  
- 2 Couches/23 Chairs/10 Tables/  
- 2 Coffee tables  
- -
**EMPORIUM - GAME ROOM**

**WING 'D' WEST**

### GENERAL INFORMATION

**Name**
- Game Room

**Function**
- Recreation for students

**No. of Occupants**
- Per layout
  - 800 ASF

**Area (Assignable)**
- 10'-0"

**Minimum Ceiling Height**
- Emporium Lounge

**Critical Adjacencies**
- Includes 2 pool tables

**Additional Notes**
- Foosball/Wii system

### ROOM DIAGRAM

![Room Diagram](image)

### ARCHITECTURAL MATERIALS/FINISHES

**Flooring**
- Low VOC carpet

**Ceiling**
- Acoustical ceiling tile

**Walls/Base**
- Low VOC painted GWB

**Windows**
- Aluminum frame double-glazed

**Doors/Frames**
- Solid core wood door/Aluminum frame w/sidelight

### SYSTEMS

**Mechanical**
- 68 degrees F to 78 degrees F
  - No humidity control

**Electrical (Power)**
- Connectivity for TV, Wii system and speakers, Duplexes on wall per code

**Lighting**
- 30-40 Fc

**Plumbing**
- N/A

**Fire Protection**
- Sprinklered/Fire alarm/Smoke detector

**Acoustics**
- Provide special sound attenuation

**Security**
- Card key access to/from A-I, Security camera

**Telecom/Data**
- 1 phone/2 data (1 for Wii)

**Audio/Visual**
- Speaker system/Flat screen monitor

### EQUIPMENT/FURNISHINGS

**Built-In Features**
- -

**Fixed**
- Window blinds

**Moveable Equipment/Furnishings**
- 2 Pool tables/1 Foosball table/TV console/Cue rack

**Special Requirements**
- -
GENERAL INFORMATION

Name: Lobby
Function: Queue for dining for students/staff/lounge
No. of Occupants: Per layout
Area (Assignable): 750 ASF
Minimum Ceiling Height: 10'-0"
Critical Adjacencies: Reception/Dining
Additional Notes: -

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Stone or Tile
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB/Resilient
Windows: N/A
Doors/Frames: N/A
Additional Notes: -

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Electrical (Power): Wall duplexes per code, Security cameras to monitor queue lines, 2 POS stations, 2 Monitors for display of food ‘specials’
Lighting: 15-25 Fc - direct/indirect lighting
40-50 Fc - task lighting
Plumbing: N/A
Fire Protection: -
Acoustics: -
Security: Security camera
Telecom/Data: 1 phone/4 data
Audio/Visual: -

EQUIPMENT/FURNISHINGS

Built-In Features: -
Fixed: Queue counter
Moveable Equipment/Furnishings: 2 Desk chairs, 9 lounge chairs, 6 side tables, 6 lamps, 2 POS and 2 Display monitors
Special Requirements: -
# General Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Breakroom</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Breakroom for the staff</td>
</tr>
<tr>
<td>No. of Occupants</td>
<td>388 ASF (approximation)</td>
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<tr>
<td>Area (Assignable)</td>
<td>Existing ceiling height</td>
</tr>
<tr>
<td>Minimum Ceiling Height</td>
<td>Main corridor</td>
</tr>
</tbody>
</table>

| Critical Adjacencies | Main corridor |

| Additional Notes | 3.3.49 |

# Architectural Materials/Finishes

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Low VOC carpet/Vinyl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Existing</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>Low VOC painted GWB/Resilient</td>
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<tr>
<td>Windows</td>
<td>Existing</td>
</tr>
<tr>
<td>Doors/Frames</td>
<td>Existing</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>Existing</td>
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# Systems

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>Existing</th>
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<tr>
<td>Electrical (Power)</td>
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<tr>
<td>Lighting</td>
<td>Existing</td>
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<tr>
<td>Plumbing</td>
<td>Existing</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Sprinklered/Fire alarm/Smoke detector</td>
</tr>
<tr>
<td>Acoustics</td>
<td>Existing</td>
</tr>
<tr>
<td>Security</td>
<td>Existing</td>
</tr>
<tr>
<td>Telecom/Data</td>
<td>Existing</td>
</tr>
<tr>
<td>Audio/Visual</td>
<td>Existing</td>
</tr>
</tbody>
</table>

# Equipment/Furnishings

| Built-In Features | Existing |
| Fixed             | -        |
| Moveable Equipment/ Furnishings | - |
| Special Requirements | - |
*Dimensions are approximate, existing dimensions to be field verified
**GENERAL INFORMATION**

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

**Main Dining Room**
*Dining and beverage area for UCR students*
575
9,500 ASF
12'-0"
Dish return/Lobby/Locker room
Private dining
Must have exits to exterior

**ARCHITECTURAL MATERIALS/FINISHES**

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes

Ceramic tile, carpet
Acoustical ceiling tile
Low VOC painted GWB/Resilient or ceramic tile base
Aluminum frame double glazed
Solid core wood/Alum. frame

**SYSTEMS**

Mechanical
Electrical (Power)
Lighting
Plumbing
Fire Protection
Acoustics
Security
Telecom/Data
Audio/Visual

68 degrees F to 78 degrees F
(1) duplex outlet space 25 ft. on center. Additional outlets at stage area for lights/speakers.
108 V single phase for beverages
10 to 50 Fc
Req. for beverage counters, Cold water & floor sinks
Sprinklered/Fire alarm/Smoke detector
Provide sound attenuation
Card key access
Wireless internet
Sound system, Speakers, TV/
Monitors throughout dining area

**EQUIPMENT/FURNISHINGS**

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Special Requirements

Booth & banquette seating,
Screen walls
6 Television monitors
Stage, 575 seats
-
RESIDENTIAL RESTAURANT - MAIN DINING ROOM

ROOM DIAGRAM

DINING AREA = 9,500 SF
( NOT INCLUDING SERVERY AREAS)
TOTAL SEAT = 575 SEATS
SCALE = N.T.S.

PATIO
PRIMARY SERVERY
SECONDARY SERVERY
CEREAL
QUEUE
BEV
EMERGENCY EXIT
EMERGENCY EXIT
RESIDENTIAL RESTAURANT - PRIVATE DINING ROOM

WING ‘B’ WEST

GENERAL INFORMATION

Name: Private Dining Room
Function: Private Dining area for UCR students
No. of Occupants: 16
Area (Assignable): 330 ASF (x2)
Minimum Ceiling Height: 12’-0”
Servery/Main Dining Room

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Ceramic tile, Carpet
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB/Resilient
Windows: Aluminum frame double glazed
Doors/Frames: Solid core wood/Alum. frame

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Electrical (Power): Duplexes on wall per code,
Power provided through conference table, Power for video camera
Lighting: 10 to 50 Fc
Plumbing: N/A
Fire Protection: Sprinklered/Fire alarm/Smoke detector
Acoustics: Provide sound attenuation
Security: Security camera, Card key access
Telecom/Data: Wireless internet
Audio/Visual: -

EQUIPMENT/FURNISHINGS

Built-In Features: -
Fixed: -
Moveable Equipment/ Furnishings: Large table, 16 stackable chairs
Special Requirements: Window blinds

ROOM DIAGRAM

SCALE: 1/8”=1'-0”
**GENERAL INFORMATION**

**Name**
Servery - Primary

**Function**
Service food 'stations' that serve dining

**No. of Occupants**
- 2,415 ASF (1,269 International / Hot carving
+ 1,146 Appetizers and Grille)

**Area (Assignable)**
12'-0"

**Minimum Ceiling Height**
Dining/Kitchen

**Critical Adjacencies**
Two island service platforms will have five cooking stations with Type 1 water wash grease hoods; All refrigeration should be remote to keep heat down

**Additional Notes**

---

**ARCHITECTURAL MATERIALS/FINISHES**

**Flooring**
Ceramic tile on customer side, Stonehard Expyo on staff side

**Ceiling**
FRP with metal T-bar white with plastic coating

**Walls**
Tile on concrete curbs

**Base**
6" coved tile

**Windows**
N/A

**Doors/Frames**
N/A

**SYSTEMS**

**Mechanical**
Temp at 68 to 72 degrees F in heat producing areas - negative pressure. Total CFM: 23,600 FM (4) 16' Lg water wash grease hoods Per equip. manufacturer's req. power connections -120/208/480V, TV's and Monitors at each station 50 Fc

**Electrical (Power)**
120 degree H.W. and floor sinks

**Lighting**
Req. at all grease hoods/Sprinklered/ Fire alarm/Smoke Detector

**Plumbing**
N/A

**Acoustics**

**Security**
TV/Monitors for display of food ‘specials’

**Telecom/Data**

**Audio/Visual**
N/A

**EQUIPMENT/FURNISHINGS**

**Built-In Features**
Soffits and graphics over cooking platforms

**Fixed**
Built-in custom counters for serving, ceiling hung ventilators (4) @ 8’-16’;
Specialty lighting, back lit graphics

**Moveable Equipment/ Furnishings**
Refrigerated display case, remote condensor

---

**3.3.54**

**WING ‘C’ WEST**
RESIDENTIAL RESTAURANT - SERVERY - SECONDARY

WING 'C' WEST

GENERAL INFORMATION

Name
Function
Servery - Secondary
Service food 'stations' - Salad bar and grille + 2 Beverage stations
No. of Occupants
Area (Assignable)
1,584 ASF (1,408 salad bar and grille + 88 beverage station x2)
Minimum Ceiling Height
12'-0"
Critical Adjacencies
Dining/Kitchen
Additional Notes
Station with Type 1 grease hood + 2 beverage stations; All refrigeration should be remote to keep heat down

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceramic tile on customer side,
Stonehard Epoxy on staff side
Ceiling
FRP with metal T-bar white
with plastic coating
Walls
- Base
6" coved tile
Windows
- N/A
Doors/Frames
N/A
Additional Notes
SYSTEMS

Mechanical
Temp at 68 to 72 degrees F in heat producing areas - negative pressure
(1) 8'Lg water wash grease hood
120/208V, TV's and Monitors at ea. station
50 Fc
3/4" Gas, Floor sinks
Fire Protection
Req. at all grease hoods/Sprinklered/
Fire alarm/Smoke Detector
Acoustics
- N/A
Security
TV/Monitors for display of food 'specials'
Telecom/Data
- N/A
Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Soffits and graphics over cooking platform
Built-in custom counters for serving; ceiling hung water wash ventilator & 6'-0" dia grille
(1) 8' x 8" dia., Specialty lighting, back lit graphics
Fixed
- Refrigerated display case, remote condesnor
Moveable Equipment/ Furnishings
Special Requirements
RESIDENTIAL RESTAURANT - DISHWASHING

WING 'C' WEST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignble)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Dishwashing
Dishwashing area/Tray drop-off
2 to 4
1,158 ASF
10'-0"
Dining, Exit from dining room
Room will be hot and humid.
All surfaces will be wet

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Epoxy “Stonehard”- light color

Ceiling
FRP-T-bar drop/plastic coated T-bar
FRP - on concrete curbs, light color

Walls
Epoxy cove" Stonehard“ finish on concrete curb

Base

Windows
Tray drop window to have stainless steel frame and sill shelf

Doors/Frames
N/A

Additional Notes
- 

SYSTEMS

Mechanical
68 F to 72 F/Negative pressure-30 air changes/hr vent -ensure proper ventilation and conditioning of space to minimize impact of heat and humidity producing equip.
Per equip. manuf’s req. power connections - 70 AMPS at 480V, 3 phase 50 Fc

Electrical (Power)
140 degree H.W., 3” drain

Lighting
Sprinklered/Fire alarm/Smoke detector

Plumbing
N/A

Fire Protection
N/A

Acoustics
N/A

Security
N/A

Telecom/Data
N/A

Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
Dishwasher (existing)/Conveyer,
Pulper (w/ water press system) &
Accumulator will all be added to
Conveyor (all new)

Fixed

Moveable Equipment/ Furnishings
Dish rack, Rollies, Metro shelves,
Soak sinks

Special Requirements
480V , 3 phase power
GENERAL INFORMATION

Name
Kitchen
Function
Food Preparation for Dining Commons
No. of Occupants
50
Area (Assignable)
1,780 ASF
Minimum Ceiling Height
10'-0"
Critical Adjacencies
Serving/Dining/Loading Dock
Additional Notes

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Epoxy “Stonehard” light color or Protect-ALL
Ceiling
FRP & 7 Bar DVLP - white
Walls
FRP waterproof gyp on concrete bases - light color
Base
Epoxy 6” coved “Stonehard”
Windows
N/A
Doors/Frames
N/A
Additional Notes

SYSTEMS

Mechanical
(2) 5’x 24’ type I water wash hoods, hoods, (1) 5’x 24’ type II vapor hood, 68 F to 72 F in heat producing areas/76 in prep areas
Electrical (Power)
120V, 208V, 480V/Computer station/UDS for cook lines
Lighting
50 Fc
Plumbing
Drains to exist 6” drain
140 degree hot water (for water wash hoods) & cold water & natural gas
Fire Protection
Required for two (2) 5’x 24’ type I water wash hoods. Sprinklered/Fire alarm/Smoke detectors
Acoustics
- Security
Security camera/Card key acces
Telecom/Data
1 wall mounted cook’s computer and phone, temp monitor for all walk-in refrigerators/freezers
Audio/Visual
-
EQUIPMENT/FURNISHINGS

Built-In Features
Vegetable/salad prep area w/ dedicated refrigeration, w/ (3) 2-compartment sinks, garbage disposal, 16' of prep table space
(2) double-stack combi ovens (similar to Lothian set-up); (2) tilt braising pans (1 a pressurized model); (2) 80 gallon steam jacketed kettles; (1) a pressurized model; (2) 20 gallon steam jacketed kettles; (1) 3 gallon steam jacketed kettle; (1) 10 burner range w/ 2 convention ovens below and above range salamander/broiler; (1) flattop griddle (48") w/ convention ovens below; (1) char-broiler (60"); (3) vat fryer w/ reach-in freezer nearby; (1) 80 qt Hobart floor mixer; (1) 2 wok cooker w/ plumbed water and drain; (1) 40 qt. Hobart floor mixer; (1) buffalo chopper; (2) 70 qt. rice cookers - gas; (1) meat slicer; (4) full size single door warming boxes (CVAPS), on casters but have a dedicated space for them; (4) full size single door reach-in coolers; (2) full size single door reach-in freezers; (1) Power soak system in pot wash; (1) blast chiller

Fixed

Moveable Equip/Furnishings
At least 4 distinct prep table/work areas w/ reach-in coolers in close proximity; spice rack & ready to use dry stock racks

Special Req
Max. room temp. 76 degrees

ROOM DIAGRAM

SCALE: 1/8" = 1'-0"
### General Information

**Name:** Bakery  
**Function:** Baked Food Preparation for Dining Commons  
**No. of Occupants:** Per layout  
**Area (Assignable):** 833 ASF (750 + 83 (display))  
**Minimum Ceiling Height:** 10'-0"  
**Critical Adjacencies:** Serving/Dining/Loading Dock/Kitchen  
**Additional Notes:** -

### Architectural Materials/Finishes

**Flooring:** Epoxy “Stonehard” light color or Protect-ALL  
**Ceiling:** FRP & 7 Bar DVLP - white  
**Walls:** FRP waterproof gyp on concrete bases - light color  
**Base:** Epoxy 6" coved “Stonehard”  
**Windows:** N/A  
**Doors/Frames:** N/A  
**Additional Notes:** -

### Systems

**Mechanical:** 68 F to 72 F in heat producing areas/76 in prep areas  
**Electrical (Power):** 120V, 208V, 480V  
**Lighting:** 50 Fc  
**Plumbing:** Drains to exist 6” drain; provide for sinks  
**Fire Protection:** Sprinklered/Fire alarm/Smoke detectors  
**Acoustics:** -  
**Security:** Security camera/Card key acces  
**Telecom/Data:** -  
**Audio/Visual:** -

### Equipment/Furnishings

**Built-In Features:** (1) rack oven; (1) double stack convention oven; (1) proofing oven/cabinet; 2 door reach-in cooler  
**Fixed:** -  
**Moveable Equipment/ Furnishings:** Large prep table  
**Special Requirements:** -
RESIDENTIAL RESTAURANT - DRY STORAGE

WING 'B' WEST

GENERAL INFORMATION

Name
Dry Storage
Function
Storage for dry goods and storage clerk
No. of Occupants
1- Supply Clerk
Area (Assignable)
800 ASF
Minimum Ceiling Height
10' - 0"
Critical Adjacencies
Loading Dock/Kitchen
Additional Notes
Clerk needs data, power and a phone in storage room

ROOM DIAGRAM

SCALE: N.T.S.

ARCHITECTURAL MATERIALS/FINISHES

Flooring
“Stonehard” Epoxy or Protect-ALL
Ceiling
FRP T-bar drop - white
Walls
FRP - light color
Base
Concrete base w/ 6” coved epoxy “Stonehard”
Windows
Int. window to corridor
Doors/Frames
4’ Door with vent at base

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
Electrical (Power)
Duplexes on wall per code/Power for clerk’s computer
Lighting
50 Fc (4) floor drains
Plumbing
Sprinklered/Fire alarm/Smoke detector
Fire Protection
- Security
Card key access
Telecom/Data
1 phone/2 data for clerk
Audio/Visual
- EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Stand up desk, tall stool
Special Requirements
Desk - view to corridor
GENERAL INFORMATION

Name                Refrigeration
Function          Cold Food Storage
No. of Occupants  0
Area (Assignable)  1,000 ASF
Minimum Ceiling Height  8’ - 6”
Critical Adjacencies  Kitchen/Loading Dock
Additional Notes  1 blast chiller/4 coolers with outdoor slab mounted air-cooled compressor rack;
                  Air-Cooled Compressors can be placed on roof

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring          Stainless steel diamond plate flush w/ kitchen floor
Ceiling            Stainless steel
Walls/Base         Stainless steel
Windows            In doors, heated
Doors/Frames       Stainless steel
Additional Notes   -

SYSTEMS

Mechanical        Temp. between 35F and 40F
                  160AMP-208V phase,
                  Provide Emergency Power
                  Remote air cooled compressor;
                  Rack mounted outside on slab
                  40 Fc, Provide emergency power
                  Drains to floor sink outside the walk-in ref/freezer
                  N/A
                  N/A
                  Door locks master keyed, Card key access
                  Alarm system connected to central alarm
                  Alarm at door

Electrical (Power)  -

Lighting
Plumbing
Fire Protection
Acoustics
Security
Telecom/Data
Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features  Floor recessed 7” to 8”
Fixed

Moveable Equipment/ Furnishings  Poly-plastic adjustable shelving + racks
Special Requirements  -
GENERAL INFORMATION

Name: Supervisor's Office
Function: Supervisor's office - shared space
No. of Occupants: 4
Area (Assignable): 120 ASF
Minimum Ceiling Height: 9' - 0"
Critical Adjacencies: Kitchen/Other offices
Additional Notes:

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Seamless vinyl
Ceiling: Acoustical ceiling tile
Walls/Base: Low VOC painted GWB/Resilient GWB or vinyl base
Windows: Aluminum frame double-glazed to ext/interior window
Doors/ Frames: Solid core wood/Alum. frame
Additional Notes: Add windows into kitchen/production where possible

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
No humidity control
Electrical (Power): 4 Computers - 120V/Security camera
Lighting: Min. 50 Fc
Plumbing: N/A
Fire Protection: Sprinklered/Fire alarm/Smoke Detector
Acoustics: Card key access/Security camera
Security: 4 phone/4 data (4 computers)
Telecom/Data: -
Audio/Visual: -

EQUIPMENT/FURNISHINGS

Built-In Features: Work counter(s), Overhead storage and file drawers, Safe on a curb w/ a camera overhead of the cash counting area
Additional Notes: -
Fixed: 4 chairs
Moveable Equipment/ Furnishings: -
Special Requirements:

SCALE: 1/8"=1'-0"
RESIDENTIAL RESTAURANT - MANAGER’S OFFICE

WING 'B' WEST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Manager’s Office
Manager’s office and meeting space
6-10
256 ASF
9’ - 0”
Kitchen/Other offices
Can be meeting space for vendors

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Seamless vinyl
Ceiling
Acoustical ceiling tile
Walls
Low VOC painted GWB/Resilient GWB or vinyl base
Windows
Aluminum frame double-glazed to ext/Interior window
Doors/Frames
Solid core wood/Alum. frame
Additional Notes
Add windows into kitchen/ production where possible

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
No humidity control
Electrical (Power)
2 Computers - 120V
Lighting
Min. 50 Fc
Plumbing
N/A
Fire Protection
Sprinklered/Fire alarm/Smoke Detector
Acoustics
- Security
Card key access
Telecom/Data
2 phone/2 data (2 computers)
Audio/Visual
-

EQUIPMENT/FURNISHINGS

Built-In Features
2 Desks/Counter, Overhead storage and file drawers
Fixed
- Moveable Equipment/ Furnishings
Table, 6 to 10 chairs
Special Requirements
-
RESIDENTIAL RESTAURANT - CULINARY OFFICE

WING ‘B’ WEST

GENERAL INFORMATION

Name
Function
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Culinary Office

Culinary office for chef + 2 cooks
3
120 ASF
9'-0”
Kitchen/Other offices
-

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Additional Notes

Seamless vinyl
Acoustical ceiling tile
Low VOC painted GWB/Resilient
GWB or vinyl base
Aluminum frame double-glazed to ext/ Interior window
Solid core wood/Alum. frame
Add windows into kitchen/ production where possible

SYSTEMS

Mechanical
Electrical (Power)
Lighting
Plumbing
Fire Protection
Acoustics
Security
Telecom/Data
Audio/Visual

68 degrees F to 78 degrees F
3 Computers - 120v
Min. 50 Fc
N/A
Sprinklered/Fire alarm/Smoke detector
Card key access
3 phone/3 data (3 computers)
-

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Special Requirements

Work counter(s), Overhead storage and file drawers
3 chairs
-

SCALE: 1/8” = 1'-0”
RESIDENTIAL RESTAURANT - PROFESSIONAL EMPLOYEE LOCKERS

WING ‘B’ WEST

GENERAL INFORMATION

Name: Professional Employee Lockers
Function: Designated space for employee lockers
No. of Occupants: 60
Area (Assignable): 60 ASF
Minimum Ceiling Height: 9'-0"
Critical Adjacencies: Kitchen/Loading Dock
Additional Notes: Locate in service corridor

ROOM DIAGRAM

[Room diagram showing Professional Employees, 40 lockers @ 2 high, 12"W x 36"H x 18"D]

SCALE: 1/8" = 1'-0"

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Epoxy or Protect-ALL
Ceiling: FRP/T-Bar
Walls/Base: Low VOC painted GWB/Resilient
Windows: N/A
Doors/Frames: N/A
Additional Notes: -

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
Minimum of 10ACH
No humidity control. If enclosed, add exhaust
Electrical (Power): Duplexes on wall per code, Power for video camera
Lighting: 50 Fc
Plumbing: Floor drains
Fire Protection: Sprinklered/Fire alarm/Smoke detector
Acoustics: -
Security: Security camera
Telecom/Data: N/A
Audio/Visual: N/A

EQUIPMENT/FURNISHINGS

Built-In Features: -
Fixed: Lockers
Moveable Equipment/ Furnishings: -
Special Requirements: -
**GENERAL INFORMATION**

**Student Employee Lockers**

*Designated space for student employee lockers*

- No. of Occupants: 50
- Area (Assignable): 39 ASF
- Minimum Ceiling Height: 9'-0"
- Critical Adjacencies: Kitchen/Loading Dock
- Additional Notes: Locate in service corridor

**ROOM DIAGRAM**

50 lockers @ 4 high
12"W x 18"H x 18"D

**ARCHITECTURAL MATERIALS/FINISHES**

- Flooring: Epoxy or Protect-ALL
- Ceiling: FRP/T-Bar
- Walls/Base: Low VOC painted GWB/Resilient
- Windows: N/A
- Doors/Frames: N/A
- Additional Notes: -

**SYSTEMS**

- Mechanical: 68 degrees F to 78 degrees F
- Electrical (Power): Minimum of 10ACH. No humidity control. If enclosed, add exhaust
- Lighting: Duplexes on wall per code
- Plumbing: 50 Fc
- Fire Protection: Sprinklered/Fire alarm/Smoke detector
- Acoustics: -
- Security: Security camera
- Telecom/Data: N/A
- Audio/Visual: N/A

**EQUIPMENT/FURNISHINGS**

- Built-In Features: -
- Fixed: Lockers
- Moveable Equipment/ Furnishings: -
- Special Requirements: -
**GENERAL INFORMATION**

- **Name**: Employee Restrooms
- **Function**: Restrooms for A-I kitchen staff
- **No. of Occupants**: 250 ASF (x2 - 1 Men/1 Women)
- **Area (Assignable)**: 9'-0"
- **Minimum Ceiling Height**: Located adjacent to lockers
- **Critical Adjacencies**: Serves as a change room
- **Additional Notes**: Located adjacent to lockers

**ARCHITECTURAL MATERIALS/FINISHES**

- **Flooring**: Ceramic tile
- **Ceiling**: Moisture resistant GWB
- **Walls/Base**: Low VOC painted GWB/Ceramic tile wainscot
- **Windows**: N/A
- **Doors/Frames**: Solid core wood door/Alum. frame
- **Additional Notes**: -

**SYSTEMS**

- **Mechanical**: 68 degrees F to 78 degrees F
  - Minimum of 10ACH
  - Exhaust fan
- **Electrical (Power)**: Duplexes on wall per code-GFI
  - 30-40 Fc
- **Lighting**: Self flushing toilets/Urinals/
  - Automatic sensor sinks/Floor drain
- **Plumbing**: Sprinklered/Fire alarm/Smoke detector
- **Fire Protection**: -
- **Acoustics**: Privacy lock on changing only
- **Security**: N/A
- **Telecom/Data**: N/A
- **Audio/Visual**: N/A

**EQUIPMENT/FURNISHINGS**

- **Built-In Features**: Plumbing fixtures with sensors
- **Fixed**: Toilet accessories/Mirror/Grab bar/Trash/bench @ changing
- **Moveable Equipment/ Furnishings**: -
- **Special Requirements**: -

**ROOM DIAGRAM**

- **Scale**: 1/8"=1'-0"
- **Changing w/ bench**
## General Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Cleaning Storage (i.e. Janitor’s Closet)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Function</strong></td>
<td>Janitor’s cleaning area</td>
</tr>
<tr>
<td><strong>No. of Occupants</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Area (Assignable)</strong></td>
<td>90 ASF</td>
</tr>
<tr>
<td><strong>Minimum Ceiling Height</strong></td>
<td>8’-0”</td>
</tr>
<tr>
<td><strong>Critical Adjacencies</strong></td>
<td>Kitchen/Dining/Loading Dock</td>
</tr>
<tr>
<td><strong>Additional Notes</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

### Architectural Materials/Finishes

<table>
<thead>
<tr>
<th>Flooring</th>
<th>Epoxy “Stonehard”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceiling</td>
<td>Low VOC painted GWB</td>
</tr>
<tr>
<td>Walls/Base</td>
<td>FRP/Concrete base</td>
</tr>
<tr>
<td>Windows</td>
<td>N/A</td>
</tr>
<tr>
<td>Doors/Frames</td>
<td>Solid core wood/Alum. frame with vent at base</td>
</tr>
<tr>
<td><strong>Additional Notes</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

## Systems

<table>
<thead>
<tr>
<th>Mechanical</th>
<th>68 degrees F to 78 degrees F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>Minimum of 10ACH</td>
</tr>
<tr>
<td>Plumbing</td>
<td>Exhaust fan</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>Sprinklered/Fire alarm/Smoke detectors</td>
</tr>
<tr>
<td><strong>Acoustics</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Security</strong></td>
<td>Card key access</td>
</tr>
<tr>
<td><strong>Telecom/Data</strong></td>
<td>-</td>
</tr>
<tr>
<td><strong>Audio/Visual</strong></td>
<td>-</td>
</tr>
</tbody>
</table>

## Equipment/Furnishings

<table>
<thead>
<tr>
<th>Built-In Features</th>
<th>Mop sink</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed</td>
<td>Poly-plastic adjustable shelving, Hook strip</td>
</tr>
<tr>
<td>Moveable Equipment/Furnishings</td>
<td>-</td>
</tr>
<tr>
<td>Special Requirements</td>
<td>-</td>
</tr>
</tbody>
</table>
**GENERAL INFORMATION**

Name: Food Truck Storage

Function: Refrigerated storage area for food trucks

No. of Occupants: -

Area (Assignable): 64 ASF

Minimum Ceiling Height: 8'-6"

Critical Adjacencies: Loading Dock

Additional Notes: The Food Truck pad will be located in the back of A-I and will be completed 2011; the trucks will be serviced at the dock of the new restaurant, but the trucks will be held in the back of the building on pre-existing pads. Max truck is 32'.

**ARCHITECTURAL MATERIALS/FINISHES**

- **Flooring**: Stainless steel diamond plate
- **Ceiling**: Stainless steel
- **Walls/Base**: Stainless steel
- **Windows**: N/A
- **Doors/Frames**: Stainless steel
- **Additional Notes**: -

**ROOM DIAGRAM**

[Diagram of the Food Truck Storage area with dimensions and labels for exterior access and 4' x 4' pallet.

**SYSTEMS**

- **Mechanical**: 68 degrees F to 78 degrees F
  - Minimum of 10ACH
  - No humidity control
- **Electrical (Power)**: On emergency generator
  - 40 Fc
- **Plumbing**: Floor drain (1)
- **Fire Protection**: N/A
- **Acoustics**: N/A
- **Security**: Card key access
- **Telecom/Data**: -
- **Audio/Visual**: -

**EQUIPMENT/FURNISHINGS**

- **Built-In Features**: -
- **Fixed**: Poly plastic adjustable shelving
- **Moveable Equipment/Furnishings**: -
- **Special Requirements**: Floor recessed 7" to 8"
RESIDENTIAL RESTAURANT - MISC/SEASONAL STORAGE
WING ‘B’ WEST

GENERAL INFORMATION

Name
Function
Misc/Seasonal Storage
Cleaning equipment/storage for seasonal items
- 50 ASF
8’-0”
Dining
- 
No. of Occupants
Area (Assignable)
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Stonehard epoxy or Protect-ALL
Low VOC painted GWB
Low VOC painted GWB/Resilient
N/A
Solid core wood door/ Alum. frame with vent at base and window
- 
Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 10ACH
No humidity control

Electrical (Power)
Duplexes on wall per code
20-25 Fc
Floor drain
Sprinklered, Fire alarm, Smoke detector

Acoustics
Card key access

Security

Telecom/Data

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
Special Requirements
- 
Poly plastic adjustable shelving
- 

GENERAL INFORMATION

Name
Catering Storage
Function
Storage area for dining equipment
No. of Occupants
150 ASF
Minimum Ceiling Height
8' - 0"
Critical Adjacencies
Kitchen/Dining/Loading Dock
Additional Notes

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Stonehard epoxy or Protect-ALL
Ceiling
Low VOC painted GWB
Walls/Base
FRP/concrete base
Windows
N/A
Doors/Frames
Solid core wood door/ Alum. frame w/ window
Additional Notes

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 10ACH
No humidity control
Electrical (Power)
Duplexes on wall per code
Lighting
20-25 Fc
Plumbing
Floor drain
Fire Protection
Sprinklered, Fire alarm, Smoke detector
Acoustics
Card key access
Security
- Telecom/Data
- Audio/Visual
- EQUIPMENT/FURNISHINGS

Built-In Features
- Fixed
- Moveable Equipment/ Furnishings
Poly plastic adjustable shelving
Special Requirements
-
## Staff Residential

**Living space for 2 RD’s and 2 faculty**

- 1,115 ASF (x4)
- 9’-0” (lower ceiling height in kitchen and bathrooms)

- 2 Bedrooms (1 master), 2 Bath, Kitchen, Dining, Living, Laundry and Enclosed patio/deck

- 4 units - 1 needs to be HC accessible

### General Information

<table>
<thead>
<tr>
<th>Name</th>
<th>Staff Residential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Function</td>
<td>Living space for 2 RD’s and 2 faculty</td>
</tr>
<tr>
<td>No. of Occupants</td>
<td>1,115 ASF (x4)</td>
</tr>
<tr>
<td>Area (Assignable)</td>
<td>9’-0” (lower ceiling height in kitchen and bathrooms)</td>
</tr>
<tr>
<td>Minimum Ceiling Height</td>
<td>2 Bedrooms (1 master), 2 Bath, Kitchen, Dining, Living, Laundry and Enclosed patio/deck</td>
</tr>
<tr>
<td>Critical Adjacencies</td>
<td>4 units - 1 needs to be HC accessible</td>
</tr>
<tr>
<td>Additional Notes</td>
<td>Maximize natural light &amp; privacy</td>
</tr>
</tbody>
</table>

### Architectural Materials/Finishes

- **Flooring**: Low VOC carpet/Ceramic tile
- **Ceiling**: Low VOC painted GWB
- **Walls/Base**: Low VOC painted GWB/Resilient
- **Windows**: Operable aluminum - dual glazed
- **Doors/Frames**: Solid core wood

Additional Notes: Maximize natural light & privacy

### Systems

- **Mechanical**: Individual control in living room/ Bathroom exhaust 10 ACH.
- **Electrical (Power)**: Doorbell, Wall outlets per code, Power for appliances
- **Lighting**: Individual light switches each room, Appliances, Fixed lighting
- **Plumbing**: 2 low flush toilets, 3 sinks, 2 tub/showers, W/D, Ref., DW
- **Fire Protection**: Sprinkler, Smoke detector
- **Acoustics**: Wall/floor/ceiling/ STC 50
- **Security**: Sec. screens ground floor/Lockable windows & doors/Card key access
- **Telecom/Data**: 1 phone/1 data per bedroom/living rm
- **Audio/Visual**: 1 cable tv each bedroom/living rm

### Equipment/Furnishings

- **Built-In Features**: Closets/Kitchen/Bath cab and fixtures
- **Fixed**: Window blinds
- **Moveable Equipment/Furnishings**: Queen bed, 2 twin beds, 1 media table, 4 side tables, 3 dressers, 1 sofa, 1 coffee table, 2 lounge chairs, 1 dining table, 4 dining chairs, 1 flat screen tv, 2 end table and 1 floor lamp, 4 bedside lamps, 1 desk
- **Special Requirements**: Stackable W/D, Ref., Oven, DW, Microwave
## GENERAL INFORMATION

**Name**

**Function**

**No. of Occupants**

**Area**

**Minimum Ceiling Height**

**Critical Adjacencies**

**Additional Notes**

---

### Primary Restrooms

*Restrooms for A-I students/staff/visitors*

- 325 SF (x2 - 1 Men/1 Women)
- 9'-0"
- Off of main corridor
- Men and Women - one to be located near Emporium, one near meeting rooms, includes HC stall, ADA accessible

---

### ARCHITECTURAL MATERIALS/FINISHES

- **Flooring**: Ceramic tile
- **Ceiling**: Moisture resistant GWB
- **Walls/Base**: Low VOC painted GWB/Ceramic tile wainscot
- **Windows**: Transom fixed alum. frame - dual pane
- **Doors/Frames**: Solid core wood door/Alum. frame

---

### SYSTEMS

- **Mechanical**: 68 degrees F to 78 degrees F
- **Minimum of 10ACH Exhaust Air**
- **Electrical (Power)**: Duplexes on wall per code - GFI
- **Lighting**: 30-40 Fc
- **Plumbing**: Auto flush toilets/Urinals/Sinks/
Auto shut-off faucets/Floor drains
- **Fire Protection**: Sprinklered/Fire alarm/Smoke detector
- **Acoustics**: Provide sound attenuation
- **Security**: Individual stall locks
- **Telecom/Data**: N/A
- **Audio/Visual**: N/A

---

### EQUIPMENT/FURNISHINGS

- **Built-In Features**: Sink/Toilet/Urinal/Counter and Cabinet that is ADA accessible
- **Fixed**: Toilet accessories/Mirror/Grab bar/Trash
- **Moveable Equipment/Furnishings**: -
- **Special Requirements**: -
NON ASSIGNED INTERIOR - SINGLE OCCUPANCY RESTROOM

WING B - ‘EAST’

GENERAL INFORMATION

Name
Function

Single Occupancy Restroom
ADA Restroom for A-I students/staff/visitors

No. of Occupants
1
Area
64 SF
Minimum Ceiling Height
9'-0"
Critical Adjacencies
Off of main corridor
Additional Notes
Must be ADA accessible

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceramic tile
Ceiling
Moisture resistant GWB
Walls/Base
Low VOC painted GWB/
Ceramic tile wainscot
Windows
N/A
Doors/Frames
Solid core wood door/
Alum. frame

SYSTEMS

Mechanical
68 degrees F to 78 degrees F
Minimum of 10ACH
Exhaust Fan

Electrical (Power)
Duplexes on wall per code - GFI
30-40 Fc

Lighting
Auto flush toilet/Urinal/Sink/

Plumbing
Auto shut-off faucet/Floor drain
Sprinklered/Fire alarm/Smoke

detector

Acoustics
- Privacy Lock

Security
N/A

Telecom/Data
N/A

Audio/Visual

EQUIPMENT/FURNISHINGS

Built-In Features
Sink/Toilet/Urinal/Counter
and Cabinet that is ADA accessible

Fixed
Toilet accessories/Mirror/
Grab bar/Trash

Moveable Equipment/ Furnishings
Special Requirements
-
NON ASSIGNED INTERIOR - RSO RESTROOM

WING ‘C’ EAST

GENERAL INFORMATION

Name: RSO Restroom
Function: Restroom for the staff
No. of Occupants: 60 SF
Area: 9'-0"
Minimum Ceiling Height: Resident offices
Critical Adjacencies: ADA Accessible

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring: Ceramic tile
Ceiling: Moisture resistant GWB
Walls/Base: GWB/Ceramic tile wainscot
Windows: N/A
Doors/Frames: Solid core wood door/Aluminum frame

SYSTEMS

Mechanical: 68 degrees F to 78 degrees F
Minimum of 10ACH
Exhaust fan
Electrical (Power): Duplexes on wall per code - GFI
30-40 Fc
Auto flush toilet, Sink, Auto shut-off faucet, Floor drain
Fire Protection: Sprinklered/Fire alarm/Smoke detector
Acoustics: -
Security: Privacy lock
Telecom/Data: N/A
Audio/Visual: N/A

EQUIPMENT/FURNISHINGS

Built-In Features: Sink/Toilet//Counter and Cabinet that is ADA accessible
Fixed: Toilet accessories/Mirror/Grab bar/Trash
Moveable Equipment/ Furnishings: -
Special Requirements: -
**GENERAL INFORMATION**

**Name**

**Function**

**No. of Occupants**

**Area**

**Minimum Ceiling Height**

**Critical Adjacencies**

**Additional Notes**

**Janitor’s Closet**

(i.e. Cleaning Storage)

Janitor’s closet/Cleaning storage for A-I

- 120 SF
- 9'-0”

Along spine halfway between wings

Also a storage area

**ARCHITECTURAL MATERIALS/FINISHES**

- Flooring: Sealed concrete
- Ceiling: Low VOC painted GWB
- Walls/Base: Low VOC painted GWB
- Windows: N/A
- Doors/Frames: Solid core wood door/Alum. frame
- Additional Notes: Provide W.R. wainscoat at mop sink

**SYSTEMS**

- Mechanical: 68 degrees F to 78 degrees F
  - Minimum of 10ACH
  - Exhaust Fan (LEED)
- Electrical (Power): Wall duplexes per code - GFI
  - 20-30 Fc
  - Floor sink/drain
  - Sprinklered/Fire alarm/Smoke detector
- Acoustics: N/A
- Security: Card key access
- Telecom/Data: N/A
- Audio/Visual: N/A

**EQUIPMENT/FURNISHINGS**

- Built-In Features: Mop sink
- Fixed: Poly plastic adjustable shelving, Hook strip, Chemical station and water
- Moveable Equipment/ Furnishings: -
- Special Requirements: -
NON ASSIGNED INTERIOR - HOUSEKEEPING CLOSET

WING B - ‘EAST’

GENERAL INFORMATION

Name
Housekeeping Closet

Function
Housekeeping room for A-I

No. of Occupants
- 80 SF

Area
9'-0"

Minimum Ceiling Height
Janitor’s Closet

Critical Adjacencies
Storage area for cart/Supplies

Additional Notes

ROOM DIAGRAM

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Sealed concrete

Ceiling
Low VOC painted GWB

Walls/Base
Low VOC painted GWB /Resilient

Windows
N/A

Doors/Frames
Solid core wood door/

Additional Notes
Alum. frame

SYSTEMS

Mechanical
68 degrees F to 78 degrees F

Minimum of 10ACH

No humidity control

Electrical (Power)
N/A

Lighting
20-30 Fc

Plumbing
N/A

Fire Protection
Sprinklered/Fire alarm/Smoke

detector

Acoustics
N/A

Security
Card key access

Telecom/Data
N/A

Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features

- Poly plastic adjustable shelving

Fixed

Moveable Equipment/ Furnishings
Housekeeping cart

Special Requirements
-
**GENERAL INFORMATION**

**Name**

*Telecom closet*

**Function**

*Data closet for A-I*

**No. of Occupants**

90 SF (x3)

**Area**

9'-0"

**Minimum Ceiling Height**

Central location to area served

Provide one closet per wing (3)

Locate away from transformers, generators, motors & water piping

**Critical Adjacencies**

**Additional Notes**

**ROOM DIAGRAM**

**ARCHITECTURAL MATERIALS/FINISHES**

**Flooring**

Sealed concrete

**Ceiling**

Exposed (no ceiling)

**Walls/Base**

Low VOC painted GWB - 2 coats of fire retardant

**Windows**

N/A

**Doors/Frames**

Solid core wood door/Alum. frame

**SYSTEMS**

**Mechanical**

68 degrees F to 78 degrees F

Humidity control; 24/7 A/C

**Electrical (Power)**

4 ded 120V AC, 20 amp outlets - connect to bldg's emergency source

50 Fc

**Lighting**

**Plumbing**

N/A

**Fire Protection**

Pre-action sprinklers/Fire alarm/Smoke Detector

**Acoustics**

Card key access

**Security**

2-3 racks w/ 48 port panels w/ cable mgmt

**Telecom/Data**

N/A

**Audio/Visual**

**EQUIPMENT/FURNISHINGS**

**Built-In Features**

3/4” F.R. plywood backboard

**Fixed**

Equipment racks

**Moveable Equipment/Furnishings**

3’ clear in front of wall mounted equip.; 3’ clear front & rear rack mounted equip.; Wall backing rack mounted equip.

**Special Requirements**

Detailed Project Program

3.3.84

10.28.11
NON ASSIGNED INTERIOR - DINING AND EMPORIUM SERVICE ELEVATOR

WING ‘B’ & ‘D’ WEST

GENERAL INFORMATION

Name
Dining and Emporium

Function
Service Elevator

No. of Occupants

Area
150 SF

Minimum Ceiling Height
9'-0"

Critical Adjacencies
Emporium back of house & dining

Additional Notes
Service to basement/Clear path of travel for pallet jack

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Sealed concrete machine rm;

Steel diamond plate @ cab

Low VOC painted GWB

Walls/Base
Low VOC painted GWB

Doors/Frames
N/A

Additional Notes
Steel door/Metal frame

P. Lam walls @ cab; 4’-6” door to allow for pallet access

SYSTEMS

Mechanical
68 degrees F to 78 degrees F

Exhaust fan

Electrical (Power)
Provide for elevator

20-30 Fc

Plumbing
Floor drain

Sprinklered/Fire alarm/Smoke Detector

Fire Protection

Acoustics
High STC walls @ machine

Security
Card key access

Telecom/Data
N/A

Audio/Visual
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
-

Fixed
-

Moveable Equipment/ Furnishings
-

Special Requirements
-
GENERAL INFORMATION

Name
Function
No. of Occupants
Area
Minimum Ceiling Height
Critical Adjacencies
Additional Notes

Bicycle Storage
*Bicycle storage*
150 Bikes
1,540 GSF
8’ - 0”
None
Should have visual impact to encourage bike riding

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Ceiling
Walls/Base
Windows
Doors/Frames
Concrete
Exposed Underside
Full height metal mesh
N/A
H.M. exterior or gate
H.M. exterior or EQ

SYSTEMS

Mechanical
Electrical (Power)
Lighting
Plumbing
Fire Protection
Acoustics
Security
Telecom/Data
Audio/Visual
-
2 General duplex receptacles
Direct artificial lighting 10-20 Fc
Floor drain, Hose bib
N/A
-
N/A

EQUIPMENT/FURNISHINGS

Built-In Features
Fixed
Moveable Equipment/ Furnishings
None
Task lighting & Bicycle storage racks
For 150 bikes, Square footage assumes 9 Park-a-Bike (Model # 1683) traditional grid style racks 112” L x 38” W x 29” H. Capacity of 18 per rack
BASED ON:
PARK A BIKE MODEL # 1683 TRADITIONAL GRID STYLE

112"l X 38"w x 29"h

CAPACITY OF 27 BICYCLES PER RACK
TOTAL CAPACITY = 162
GENERAL INFORMATION

Name
Dock Enclosure

Function
Loading, Trash, Recycling, Compost

No. of Occupants
N/A

Area
3,600 ASF

Minimum Ceiling Height
13’ - 0”

Critical Adjacencies
Residential Dining Kitchen

Additional Notes
Direct access to service elevator to basement

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Concrete

Ceiling
Insulated Metal Cladding & roof

Doors/Frames
Overhead Coiling door

MECHANICAL

Exhaust fan 6,000 cfm

Electrical (Power)
Power for trucks; Security camera, Trash compactor, Food digester

Lighting
20 - 30 fc

Plumbing
Floor drains and grease trap; Hose bib

Fire Protection
Sprinklered, Smoke detector

Security
Security camera

Audio/Visual
Phone

SYSTEMS

Built-In Features
Caged storage; Dock bumpers and ramp

Fixed
Food Digester/Trash compactor

Moveable Equipment/ Furnishings
Recycling and compost bins
**GENERAL INFORMATION**

Name: Emporium Service Yard  
Function: Trash, Recycling and Compost for Emporium  
No. of Occupants: N/A  
Area: 360 SF  
Minimum Ceiling Height: N/A  
Critical Adjacencies: Service Elevator  
Additional Notes: Option to be located at south loading dock.

**ARCHITECTURAL MATERIALS/FINISHES**

- **Flooring**: Concrete  
- **Ceiling**: N/A  
- **Walls/Base**: Concrete  
- **Windows**: N/A  
- **Doors/Frames**: N/A  
- **Mechanical**: -  
- **Electrical (Power)**: -  
- **Lighting**: 20-30 Fc  
- **Plumbing**: Floor drains and grease trap; Hose bib  
- **Fire Protection**: -  
- **Acoustics**: -  
- **Security**: -  
- **Telecom/Data**: -  
- **Audio/Visual**: -

**SYSTEMS**

- Mechanical: -  
- Electrical (Power): -  
- Lighting: 20-30 Fc  
- Plumbing: Floor drains and grease trap; Hose bib  
- Fire Protection: -  
- Acoustics: -  
- Security: -  
- Telecom/Data: -  
- Audio/Visual: -

**EQUIPMENT/FURNISHINGS**

- Built-In Features: -  
- Fixed: -  
- Moveable Equipment/ Furnishings: Recycling and compost bins
**GENERAL INFORMATION**

Name: Patios  
Function: Exterior Dining & Meeting  
No. of Occupants: N/A  
Area: 6,500 SF TOTAL  
Minimum Ceiling Height: N/A  
Critical Adjacencies: None  
Additional Notes: Split into several locations

**ARCHITECTURAL MATERIALS/FINISHES**

- Flooring: Concrete or pavers  
- Ceiling: -  
- Walls/Base: -  
- Windows: -  
- Doors/ Frames: -

**SYSTEMS**

- Mechanical: -  
- Electrical (Power): Duplex receptacles, Built-in Fans  
- Lighting: Overhead throughout  
- Plumbing: Hose bib  
- Fire Protection: -  
- Acoustics: -  
- Security: -  
- Telecom/Data: -  
- Audio/Visual: -

**EQUIPMENT/FURNISHINGS**

- Built-In Features: Trellis with Built-in Fans and Gas heaters  
- Fixed: -  
- Moveable Equipment/ Furnishings: Tables and chairs
GENERAL INFORMATION

Name
Central Plant
Function
Enclosure for Mechanical & Electrical Equipment
No. of Occupants
Not normally occupied
Area
2,100 GSF (plus 2,100 sf on upper level)
Minimum Ceiling Height
14'-0" Clear of structure
Critical Adjacencies
None
Additional Notes
Provide interior space for chillers and pumps. Provide exterior space for cooling towers and generator. Boilers and pumps to be located in Wing ‘C’ basement

ARCHITECTURAL MATERIALS/FINISHES

Flooring
Sealed Concrete
Ceiling
N/A
Walls/Base
Concrete Masonry
Windows
N/A
Doors/Frames
H.M. steel
Louvers & access panels
see plans

SYSTEMS

Mechanical
85 degrees F Max. Provide exhaust; Ventilation in chiller room
Electrical (Power)
Provide power to all mechanical equip; Provide 4 duplex outlets (W.R.) on each wall - evenly spaced.
Lighting
30-40 Fc
Plumbing
Provide floor sinks at each set of major equipment; Provide make-up water hose bib
Fire Protection
Sprinklered/Fire alarm/Smoke detector
Acoustics
N/A
Security
Card key Access
Telecom/Data
1 phone/data for connection to controls
Audio/Visual
N/A
SYSTEMS NARRATIVES

The following section contains engineering recommendations for:

- **Seismic analysis** of the five A-I wings, including remediation required to achieve “Good” rating

- **Structural Recommendations** for Program areas requiring extensions beyond the A-I building shell or new freestanding components (Staff Residential / Wing C West)

- **Mechanical, Electrical and Plumbing** systems serving the new and renovated Program areas, including a proposed new freestanding central plant; a phasing scenario is provided to assist in prioritizing upgrades, including future infrastructure improvements for the residential floors

- **Roofing** Replacement Recommendations

See Appendix 6.3 for engineering Infrastructure Evaluations of the existing A-I MEP systems, building Structure and Roofing
SEISMIC ANALYSIS

Preliminary UC Seismic ratings of the A-I building wings, based entirely on review of the original structural drawings, are as follows:

- **Wing C East** (within DPP scope - one story) is “Fair”, because the concrete walkway canopies along the north and south walls create out of plane seismic loads.

- **Wings B & D** (within DPP scope – 3 story) are “Fair”, due to noncontinuous shear walls: concrete walls on ground level with concrete girder on top and masonry walls on upper two levels.

- **Wings A & E** (not within DPP scope – 2 story) are “Fair”, due to rebar lap lengths at foundation and between levels that cannot be entirely confirmed from the original drawings. These wings have a “better” level of “Fair” than B & D.

Seismic review of drawings only usually results in a more a conservative classification. An in-depth analysis of the “Fair” ratings can be provided by computer modeling, and it is possible that some of these wings may elevate to “Good” based on computer modeling. For any wings that remain “Fair” after computer modeling, this analysis may provide less conservative remedial upgrades.

Basic computer models of the A-I Residence Hall Wings A, B, C East, D, and E were created and analyzed. The purpose of the analysis was to determine if the wings which were previously categorized as “Fair” can be classified as “Good” per the UC Seismic Rating System. A summary of the results is below:

<table>
<thead>
<tr>
<th>Wing</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wing A East:</td>
<td>Good</td>
</tr>
<tr>
<td>Wing A West:</td>
<td>Good</td>
</tr>
<tr>
<td>Wing B East:</td>
<td>Good</td>
</tr>
<tr>
<td>Wing B West:</td>
<td>Fair</td>
</tr>
</tbody>
</table>
Wing C East: Fair
Wing C West: Good

Wing D East: Good
Wing D West: Fair

Wing E East: Good
Wing E West: Good

Where a “Good” rating cannot be justified, retrofit option sketches describing structural modifications required to improve the UC Seismic Rating from “Fair” to “Good” are provided. Proposed retrofits are conceptual in nature for preliminary pricing only. The retrofit magnitude needs to be engineered, detailed, and confirmed in subsequent phases with more extensive analysis. Alternative retrofit methods are feasible subject to architectural and program requirements.

The building structural drawings by Ropp and Ropp Structural Engineers dated December 7, 1959 were used in our analyses. The ratings below apply to the wings’ structure as shown in the drawings. Existing and future wall openings, wall reductions, or other structural changes not noted in the structural drawings may change the ratings noted below.

Wing A

Computer analysis justifies a UC Seismic Rating of “Good” for Wing A.

Wing B

Computer analysis justifies a UC Seismic Rating of “Good” for Wing B East.

Our analysis confirms a UC Seismic Rating of “Fair” for Wing B West due to existing structural irregularities. See sketches at the end of this section for a possible structural retrofit option to achieve a “Good” rating. The proposed retrofit option
to raise the Rating from “Fair” to “Good” requires the addition of a 12 inch concrete wall below the second floor on Lines A and E. These walls will rest on grade beams connecting existing footings at the ends of the walls. Above the added concrete walls on Line A and E, openings between brick walls will be in-filled with concrete from the second floor to the roof. Additional drag reinforcing on these lines at the second, third, and roof level may include fiberwrap or steel plates on top of the existing concrete slab. Along Line 9, the existing concrete wall will be strengthened by the addition of 12 inch concrete walls below the second floor to the existing foundation. Columns supporting existing concrete walls may require fiberwrapping or an alternate method of strengthening as noted in the attached sketches.

Wing C East

Our analysis confirms a UC Seismic Rating of “Fair” for Wing C East in its current configuration. If the existing covered walkways are removed, Wing C East can be rated “Good”.

Wing D

Computer analysis justifies a UC Seismic Rating of “Good” for Wing D East.

Our analysis confirms a UC Seismic Rating of “Fair” for Wing D West due to existing structural irregularities. See sketches at the end of this section for a possible structural retrofit option to achieve a “Good” rating. The proposed retrofit option to raise the Rating from “Fair” to “Good” requires the addition of a 12 inch concrete wall below the second floor on Lines F and K. These walls will rest on grade beams connecting existing footings at the ends of the walls. Above the added concrete walls on Line F and K, openings between brick walls will be in-filled with concrete from the second floor to the roof. Additional drag reinforcing on these lines at the second, third, and roof level may include fiberwrap or steel plates on top of the existing concrete slab. Along Line 9, the existing concrete wall will be strengthened by the addition of 12 inch concrete walls below the second floor to the existing foundation. Columns supporting existing concrete walls may require fiberwrapping or an alternate method of strengthening as noted in the attached sketches.
Wing E

Computer analysis justifies a UC Seismic Rating of “Good” for Wing E.

Notes:
1. Proposed retrofits as noted are conceptual in nature for preliminary pricing only. The exact extent and magnitude of retrofits needs to engineered, detailed, and confirmed in subsequent phases.
2. Alternative retrofit measures and methods are also feasible subject to architectural and program requirements.

Grade Beam connecting existing footings.
12" Concrete Wall below 2nd Floor.
Fiberwrap column supporting concrete wall above.
Wing B West (Wing D West similar)
SEE ATTACHED SKETCHES ON CLOUDED DETAILS.

WING B WEST AND WING D WEST (SIMILAR) RETROFIT OPTIONS
MT-JAMA
J13154.70
3/3/11
STRENGTHEN DRAG CONNECTION BETWEEN WALL AND SLAB.

INFILL AT BRICK WALL 2ND FLOOR TO ROOF.

CONCRETE WALL BELOW.

ADDITIONAL DRAG REINFORCING ON THESE LINES MAY INCLUDE FIBERWRAP OR STEEL PLATES ON TOP OF EXISTING CONCRETE BEAM.

Notes:
1. Proposed retrofits as noted are conceptual in nature for preliminary pricing only. The exact extent and magnitude of retrofits needs to be engineered, detailed, and confirmed in subsequent phases.
2. Alternative retrofit measures and methods are also feasible subject to architectural and program requirements.

WING B WEST AND WING D WEST (SIMILAR) RETROFIT OPTIONS
MT-JAMA
J13154.70
3/3/11
Detailed Project Program

10.28.11

12" CONCRETE WALL BELOW 2ND FLOOR.

INFILL AT BRICK WALL 2ND FLOOR TO ROOF.

Notes:
1. Proposed retrofits as noted are conceptual in nature for preliminary pricing only. The exact extent and magnitude of retrofits needs to engineered, detailed, and confirmed in subsequent phases.
2. Alternative retrofit measures and methods are also feasible subject to architectural and program requirements.

WING B WEST AND WING D WEST (SIMILAR) RETROFIT OPTIONS
MT-JAMA
J13154.70
3/3/11
SECTION MODIFIED AT NEW CONCRETE WALL AND BRICK WALL INFILL AS SHOWN ON S-3 AND S-5.

12" CONCRETE WALL BELOW 2ND FLOOR.

INFILL AT BRICK WALL 2ND FLOOR TO ROOF.

Notes:
1. Proposed retrofits as noted are conceptual in nature for preliminary pricing only. The exact extent and magnitude of retrofits needs to engineered, detailed, and confirmed in subsequent phases.
2. Alternative retrofit measures and methods are also feasible subject to architectural and program requirements.

WING B WEST AND WING D WEST (SIMILAR) RETROFIT OPTIONS
MT-JAMA
J13154.70
3/3/11
**Notes:**
1. Proposed retrofits as noted are conceptual in nature for preliminary pricing only. The exact extent and magnitude of retrofits needs to engineered, detailed, and confirmed in subsequent phases.
2. Alternative retrofit measures and methods are also feasible subject to architectural and program requirements.
General

The structural design for the UC Riverside Aberdeen-Inverness Residence Hall common area improvement will provide structural systems integrated with the program requirements for space layout as well as the architectural and building service needs. User needs in terms of possible future adaptability of the spaces and current flexibility of use have been considered, and the level of user comfort, as determined by the acoustic and vibration sensitivity of the structure, have been addressed.

The Aberdeen-Inverness Residence Hall is a 1959 building comprised of eight wings or halls connected to a common circulation spine. A large dining hall is located in the middle of the building. Reconfiguration of existing common spaces is being proposed to provide common areas and amenities that support residents and residence life programs.

The common area improvement of the residence hall will include the addition of multiple buildings. Staff Residence buildings will be added separate from the residence hall at the south end of the site. Additional one-story buildings will be added adjacent to existing wings of the residence hall and will house dining and kitchen areas, a kitchen service enclosure, student lounges, and bike storage.

The structural design for the new structures will be in accordance with the California Building Code 2010 Edition for resisting vertical, seismic, and wind loading. The 2010 CBC is based on the International Building Code 2009 Edition, which is subsequently based on the ASCE 7-05 reference standard. The minimum design live loads for roofs shall be a minimum of 20 psf except in areas where mechanical equipment occurs, which shall be designed accordingly. The minimum design floor load for Staff Residence buildings will be 40 psf.

Since the buildings are located in a medium to high seismic region, earthquake resistance will be an important objective of the structural design. The new buildings will be designed with a lateral force resisting system that provides ductility for dissipation of energy generated during an earthquake. Structural systems will be detailed to limit the effects of earthquake damage to both structural and nonstructural components of the building.
Alterations

The building code requires the structure to be seismically upgraded when reducing the seismic capacity of a seismic force resisting element by more than 10%. New added openings in existing walls or shortening of existing walls should not reduce the capacity of the walls by more than 10%. A full building seismic upgrade possibly can be avoided by strengthening the remaining portions of the walls receiving new openings such that the strengthened wall is at least the same capacity as the wall before the addition of openings. Shortening existing walls will require structural strengthening of the remaining wall or the addition of new wall along the same line of the modified wall. However, the decision on whether this is possible will require detailed analysis and review by the plan checker or peer reviewer. A detailed analysis will be required and can be performed when information concerning added wall openings is provided.

Structural Framing and Foundation

Staff Residences - Wood Buildings

Wood framing was chosen as the primary structural system for the new Staff Residence buildings for economy. The structural framing will relate to the architectural layout of the space. The buildings will be framed with wood beams supported by wood columns and walls. Wood floor joists will be nominally 12” deep at 16” on center and span +/- 20’. Wood roof joists will be nominally 10” deep at 16” on center and span +/- 20’.

Plywood shearwalls will be the lateral force resisting system of the Staff Residence buildings. Wood walls will be framed with 6” studs at 16” on center and sheathed with ½” plywood. Hold down anchors will be used to attach the boundaries of shearwalls to the concrete foundation.

The foundations of the Staff Residence buildings will consist of reinforced concrete spread and continuous footings. The at-grade occupied level will consist of a 5” thick concrete slab on grade reinforced with #4 reinforcing bars at 18”.
Building Additions - One-Story Steel Buildings

New multiple single-story buildings will be added adjacent to existing wings of the residence hall. These additions will be structurally separate from the existing residence hall wings and will require a seismic joint between new and existing construction.

The selection of structural steel as the primary structural system was based on the desire to maintain flexibility in order to be able to incorporate new technologies throughout the life of the building and to accommodate the floor-to-floor height requirements, the mechanical requirements for ductwork and plenums, the acoustic and vibration requirements, program flexibility, and the architectural aesthetics for the building.

The lateral force resisting system will balance the need for maximizing seismic safety, layout functionality, architectural considerations, and economy. The lateral force resisting system may include special concentric braced frames, ordinary concentric braced frames, special steel moment resisting frames, ordinary steel moment resisting frames, or a combination of systems. Both special concentrically braced frames (SCBF) and special steel moment resisting space frames (SMRF) provide excellent performance in the post-elastic range and have been proven effective for adequately resisting imposed earthquake forces. Ordinary braced frames (OCBF) and ordinary steel moment frames (OMRF) are designed to perform elastically during a seismic event, which results in higher design lateral forces. Although OCBFs and OMRFs are designed for higher forces, the degree of detailing is reduced for both systems and may result in cost savings for one-story buildings.

In general, braced frames are more economical when compared to moment frame systems, especially for floor heights greater than fourteen feet. However, the desire to have braces in specific bays throughout the building limits the flexibility of space planning. SCBFs, OCBFs, SMRFs, and OMRFs will be considered as potential lateral load resisting elements as the plan and building layout develop. SMRFs will utilize Reduced Beam Sections (RBS) in compliance with AISC 341 Provisions.
Elevated roofs of the structural steel systems will consist of structural steel beams, girders, and columns. The floors will utilize a 1 ½” deep metal deck without concrete. The depth of wide flange beams will vary from ten inches to sixteen inches depending on span length. The depth of wide flange girders will be fourteen to eighteen inches. Moment Frame beams will vary in depth and will range from W16 to W21 shapes. W10 wide flange structural steel shapes will be utilized at gravity columns. Moment frame columns will consist of W12 or W14 wide flange shapes.

The foundations of the one-story steel buildings will consist of reinforced concrete spread footings. The at-grade occupied level will consist of a 5” thick concrete slab on grade reinforced with #4 reinforcing bars at 18”.

**Approximate Structural Steel Material Quantities at Steel Buildings**

<table>
<thead>
<tr>
<th>Component</th>
<th>Steel estimate</th>
<th>Area applicable for steel quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steel Floor and Roof Gravity Framing</td>
<td>4.0 psf</td>
<td>Entire area of supported steel structure</td>
</tr>
<tr>
<td>Steel Gravity Columns</td>
<td>1.0 psf</td>
<td>Entire area of supported steel structure</td>
</tr>
<tr>
<td>Steel Frame Columns</td>
<td>2.5 psf</td>
<td>Entire area of supported steel structure</td>
</tr>
<tr>
<td>Steel Frame Beams/Braces</td>
<td>2.5 psf</td>
<td>Entire area of supported steel structure</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>0.5 psf</td>
<td>Entire area of supported steel structure</td>
</tr>
</tbody>
</table>

**Notes:**
1. Estimate does not include allowances for connections and plates.
2. Estimate may vary once framing plans are confirmed. Maintain an allowance.
3. Estimate is for steel buildings only as described above.
Approximate Structural Concrete Material Quantities

<table>
<thead>
<tr>
<th>Component</th>
<th>Reinforcing Steel estimate</th>
<th>Area applicable for steel quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations</td>
<td>100 lb/cu.yd</td>
<td>Volume of Foundations</td>
</tr>
<tr>
<td>Slab-on-Grade</td>
<td>1.0 psf</td>
<td>Area of slab-on-grade</td>
</tr>
</tbody>
</table>

**Notes:**
1. Estimate does not include allowances for splices and support bars.
2. Estimate may vary once framing plans are confirmed. Maintain an allowance.

Design Criteria - Governing Codes and Reference Standards

**Governing Codes**

- California Building Code 2010
- International Building Code 2009
- Occupancy Category II (CBC 1604.5)
- Building Wind Speed = 85mph (3 second gust)
- Wind Exposure Type B
- Wind Importance Factor \( I_w = 1.0 \)
- Wind Directionality Factor \( K_d = 0.85 \)
- Seismic Importance factor \( I = 1.0 \)
- Special Concentric Braced Frame \( R = 6 \)
- Ordinary Concentric Braced Frame \( R = 3.25 \)
- Special Steel Moment Frame \( R = 8 \)
- Ordinary Steel Moment Frame \( R = 3.5 \)

**Reference Standards**

- American Society for Testing and Materials (ASTM)
- American Concrete Institute - ACI 318
- American Institute of Steel Construction – AISC 360 and AISC 341
Material Standards

Concrete
a) Hardrock Concrete – 4,000 psi
b) Portland Cement – ASTM C150 (Low Alkali)
c) Hardrock Concrete Aggregate – ASTM C33
d) Mixing Operation – ASTM C94
e) Placing Concrete – ACI 304

Concrete Reinforcing
a) Reinforcing – ASTM A615, Grade 60 or ASTM A706, Grade 60
b) Welded Wire Reinforcing – ASTM A185

Structural Steel
a) Structural Steel – ASTM A36 and ASTM A992
b) Pipe Columns – ASTM A53, Grade B
c) Steel Tubes – ASTM A500, Grade B, Fy = 46,000 psi
d) Bolts – ASTM A325 Slip Critical
e) Anchor Studs – ASTM A108, Grades 1015 to 1020
f) Anchor Stud Welding – AWS D1.1
g) Anchor Bolts – ASTM F1554, Grade 36 or 55
h) Welding Electrodes – E70XX

Lumber
a) Beams and Joists – Doug-Fir Larch “No. 1 and Better”
b) Posts and Timbers – Doug-Fir Larch “No. 1”
c) Plywood Sheathing – Structural I Doug-Fir
MECHANICAL, ELECTRICAL, PLUMBING RECOMMENDATION

SCOPE OF WORK – MECHANICAL

General

The following work should be carried out over a series of phases to bring the building mechanical systems into the 21st Century.

- Phase 1 will coincide with proposed improvements of the areas west of the building spine, which includes the new Residential Restaurant, Kitchen, and Emporium. This phase will total approximately 31,000 gross square feet (GSF) with 20,000 GSF being new construction. The standalone Central Plant with underground piping running to the building, and the heating hot water building distribution piping (but not the central heating hot water boilers) will also be built in Phase 1.

- Phase 2 will coincide with the renovation of Wing C East and construction of the freestanding staff residences. The existing chillers located in the basement mechanical room will be removed. Two new chillers will be provided in the new Central Plant building. The new gas fired heating hot water boilers will also be installed within this phase of work.

- Future Phases include replacement of the heating hot water coils at each of the residential wing air handler units, as an interim measure. Once the heating hot water installation is complete and has been commissioned the existing basement steam generators and distribution piping will be removed. Ultimately, the entire air handler and mechanical penthouse on each wing must be replaced. This can either be done as an alternate in lieu of the interim coil replacement, or deferred until adequate funding is in place.

- Existing chilled water distribution piping will be investigated, and if necessary will be replaced as a future phase.
- Other future phase scope includes upgrading the MEP infrastructure within the building’s residential wings, which could be carried out as a single or multiple phases depending on funding or operational life of the existing systems.

In the scope of work indicated below, considerable discussion was held regarding the central chiller and boiler plant. The advantages and disadvantages of the following alternatives were discussed between the design team and the University.

- Replace the existing chiller and boiler plant over a summer in its current basement location, prior to Phase 1. This was generally rejected as an alternative due to budget and scheduling issues. It would be extremely difficult to install and commission an entirely new central plant in three months.

- Provide a new chiller and boiler plant in a separate building but sized for the entire A-I building, prior to Phase 1. This was generally rejected as an alternative due to budget issues.

- Provide standalone gas-fired heating hot water boilers located on the roof of each wing adjacent to the mechanical penthouse serving each air handling unit, rather than a centralized boiler system. This was discounted due to maintenance issues and redundancy concerns: the steam boilers will be replaced but it is not likely to happen until after Phase 2.

- Build a new Central Plant building to house the chillers and cooling towers but phasing the installation of the chillers and associated pumps. Thus, under Phase 1, a 150 ton chiller and associated equipment would be installed to serve only Phase 1. The new cooling towers would also be installed under Phase 1 to allow the existing chillers to remain operational. In Phase 2 new chillers would be installed in the new central plant replacing the existing chillers. The steam boilers would be replaced by multiple gas-fired heating hot water boilers (it should be noted that during the Design phase, boiler sizes and number will be considered taking into account space, cost of installation, maintenance and limiting emissions). This solution was selected as the scope of work inside the building could be carried out during the summer months and installing only what was needed for each phase met budget considerations.
Mechanical (HVAC) Phase 1

WEST OF BUILDING SPINE: EMPORIUM - WING D WEST

- Provide new fan coil units for the emporium. Assume 8 fan coil units will be required.

- Provide heating and chilled water piping to each fan coil unit. The chilled water will be provided from the existing chilled water pipes. Heating hot water will be provided from a new boiler mounted on the roof or within the building. Note that this boiler may be shared with the Residential Restaurant facility if piping costs can be minimized.

- Provide 6 exhaust fans and exhaust ducting for the emporium kitchen hoods. The ducting will run to the roof of this wing.

- Provide 2 additional new 1500 cfm fan coil units to serve the new lounge and game room.

- Provide a toilet exhaust system for the new toilets.

- DDC controls. Assume 40 points for the systems described above.

WEST OF BUILDING SPINE: NEW RESIDENTIAL RESTAURANT / KITCHEN BUILDING - WINGS B & C WEST

- Provide new air handling unit (AHU). Assume a total air flow rate of 18,000 cfm. Air handling unit will be Energy lab or equal. AHU will contain the following components: supply fans (minimum 2), return fans (2 off), heating coil, cooling coil, heat recover wheels, economizer, filtration (35% and 85%), VFDs.
• Provide zones for dining perimeter and interiors. Assume 10 zones.

• Provide a 20,000 cfm AHU for the servery areas. This air handling unit will serve the area around the servery stations and the kitchen.

• The AHU’s will contain supply fan, heating coil, cooling coil, economizer, filtration, VFDs. Each servery area will be provided with its own terminal control box (minimum of 4 per servery)

• Chilled water will be provided to the AHU’s from a new chilled water main located in the building spine basement, which will be served in Phase 1 by a combination of existing basement chillers and the new Central Plant chiller. In Phase 2, the existing basement chillers will be removed and replaced by two new chillers in the Central Plant.

• Heating hot water will be provided to the AHU’s by a new boiler mounted on the Wing C roof. This location is temporary and the boiler will be relocated to the basement alongside the other heating hot water boilers once they are installed in Phase 2, to facilitate maintenance.

• Provide 5 exhaust fans for the hoods in the servery areas. The exhaust fan airflow rate will be 1690 cfm, 1565 cfm, 2330 cfm, 1190 cfm and 1070 cfm. All hoods will be provided with a fire suppression system. The provision of the exhaust ducts to the roof will require coordination with the upper floor residential areas.

• Provide a 20,000 CFM Kitchen general exhaust fan with VFD. The provision of the exhaust ducts to the roof will require coordination with the upper floor residential areas.

• DDC controls. Assume 10 points per AHU, 4 points per exhaust fan and 2 points per terminal device)
NEW CENTRAL PLANT

- Provide a new two story standalone central plant enclosure to house the building chillers, cooling towers and associated equipment.

- Provide a new 150 ton chiller, a new 200 ton cooling tower and two new 350 ton cooling towers (two cell). These cooling towers will serve the existing chillers in the basement as well as the new chiller in the new central plant.

- Provide associated pumps with variable speed drives (chilled water and condenser water pumps)

- Provide associated equipment, ventilation air etc.

- Control points. Assume 100 points for the phase 1 installation

- Provide the chilled water and condenser water connections to the existing piping within the building and the two existing chillers. The piping will be sized for the full build out.

- Provide water treatment for the cooling towers and the chilled water system.

- Chiller room ventilation system

- Demolish the existing cooling tower after the new cooling towers are installed and commissioned.

HEATING HOT WATER SYSTEM

- New heating hot water piping distribution for the entire building, including the new Emporium and Residential Restaurant, and existing residential wings, will be installed in this phase. The main distribution will be through the basement service
corridor from the basement mechanical room, with risers located at each wing to transfer the piping up to the rooftop mechanical rooms.

**Mechanical (HVAC) Phase 2**

**EAST OF BUILDING SPINE: RSO & COMMUNITY SPACES - WING C EAST**

Replace the existing air handling units (AHUs). Wing C East will convert to meeting rooms, RSO offices and multi-function rooms. Provide AHUs to serve new meeting rooms (10,000 CFM) and AHUs to serve the RSO offices (8,000 CFM). Air handling unit will be Energy Lab or equal. AHU will contain the following components: supply fan(s), return fan(s), heating coil, cooling coil, heat recover wheels, economizer, filtration (35% and 85%) and VFDs.

- Heating hot water in this area will be provided from the new boilers installed in the basement directly below.
- Provide VAV terminal units to serve RSO offices and meeting rooms (15 VAV boxes). Each meeting room will have dedicated terminal units.
- Provide exhaust fan for the new restroom area (2,000 CFM).
- DDC controls. Assume 10 points per AHU, 4 points per exhaust fan and 2 points per terminal device.
- The existing Supply, Return and Exhaust ducting will be replaced.

**CENTRAL PLANT**

- Provide new chillers in the central plant building constructed in the Phase 1. The following equipment will be provided.
• Two new 300 ton chillers. One of these chillers is a redundant chiller.

• Note that the cooling towers for these chillers were installed in Phase 1.

• New primary chilled water pumps, secondary chilled water pumps with VFD’s and condenser water pumps. (2 each)

• DDC controls for the equipment specified for Phase 2. (assume 80 points)

• Electrical connections

• Demolish the existing chillers, piping etc

WING C EAST BASEMENT

After the existing chillers have been removed from the basement, the central heating plant will be installed in the elevated basement level of the existing chiller room (existing partitions to be demolished and rebuilt around perimeter of mezzanine). All new new heating hot water boilers shall comply with SCAQMD emission requirements. The heating hot water system will have the capability to separately heat the Residential Restaurant dining and kitchen areas, the Emporium, the RSO and meeting spaces in Wing C East, and all residential wings.

Note that the heating hot water boiler that was installed in Phase 1 for the new Residential Restaurant and Emporium spaces will be relocated to the basement at the same time as these boilers are installed.

The following equipment will be provided in the basement (existing chiller room mezzanine):

• For reference, assume eight gas-fired heating hot water boilers each at 1750 MBH. Actual count and size shall be determined during Design phase. Smaller boilers (under 2000 MBH) may be installed in a two-high stack to save basement
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floor space.

- Primary hot water pump for each boiler.
- Secondary hot water pumps with VFDs.
- Water treatment
- DDC Controls (assume 40 points)

STAFF RESIDENTIAL

- Provide dedicated DX split Heat Pump to each apartment.

Mechanical (HVAC) Future Phase(s)

RESIDENTIAL AHU COIL REPLACEMENT

Replacement of the heating hot water coils at each of the residential wing air handler units is recommended as an interim measure. Once the heating hot water installation is complete and has been commissioned the existing basement steam generators and distribution piping will be removed. Ultimately, the entire air handler and mechanical penthouse on each wing must be replaced. This can either be done as an alternate in lieu of the interim coil replacement, or deferred until adequate funding is in place.

WINGS A, B, D AND E: UPGRADES TO THE RESIDENCES

Each of the eight existing rooftop AHU’s shall be replaced in a single phase or multiple sequential phases. The work involved will include the following:
- Replace the AHU on each residential wing to match existing cfm (CFM range from 15,000CFM to 24,000 CFM). The air handling unit will have the following components: supply fans, return fan, heating coil, cooling coil, filters (30% and 65%), economizer, multi-zone dampers.

- Clean interior of existing ducts.

- Replace existing duct insulation in penthouse up to the duct shaft.

- DDC controls. Assume 20 points per air handling unit including multi-zone dampers.

- Mechanical penthouses on the residential wings should be rebuilt at the time that each AHU is replaced. This is also the recommended time to re-roof the entire wing roof.

Remove the existing solar panels and piping on Wing D roof when the penthouses are replaced.

**SCOPE OF WORK – ELECTRICAL**

**Electrical – Phase 1**

**NEW CENTRAL PLANT**

The following electrical work will be included in this phase:

- Install a new 150 KW generator in the new central plant building, complete with flue, diesel piping and fill point, load switch and electrical connections to the existing Automatic Transfer Switches. Fuel tank shall be sized for 24 hours of operation.

- Provide power as required for new Central Plant equipment described on page 4.1.19, from the new unit substation transformer described below.
• Provide panel boards, distribution boards, conduit and wiring, receptacles, lighting fixtures and switches in central plant.

ADJACENT TO NEW CENTRAL PLANT BUILDING

• Install a new 1,000 KVA unit substation on grade complete with primary and secondary switchboard with main and distribution panels. The unit substation is recommended to be positioned adjacent to the new Central Plant building because it will mainly feed the new Phase 1 and 2 mechanical equipment located therein. This proximity would reduce the cost of feeder conduits and wires.

• Electrical and mechanical loads from the new Residential Restaurant and Emporium kitchens will be fed from the existing 750 KVA unit substation in the Wing C East basement. A new 225 KVA step down transformer will be provided for the 120/208V loads in the kitchens. The recommended location is adjacent to the Wing B West dock enclosure, to reduce the cost of feeder conduits and wires.

WEST OF BUILDING SPINE: NEW RESIDENTIAL RESTAURANT, KITCHEN & EMPORIUM

The following electrical work will be included in this phase for the first floors of Wings B West, D West and C West:

• Provide a completely new electrical power and lighting system for the areas renovated and for the new building additions. This will include panel boards, conduit and wiring, receptacles, and lighting fixtures and switches. Include daylight sensors and occupancy sensors.

• Provide new data distribution and outlets

• Modify the fire alarm system as required to accommodate additions and remodeled areas.
Electrical – Phase 2

EAST OF BUILDING SPINE

The following electrical work will be included in this phase:

- Provide a completely new electrical power and lighting system for the areas renovated. This will include panel boards, conduit and wiring, receptacles and lighting fixtures and switches. Include daylight sensors and occupancy sensors.
- Provide new data distribution and outlets. Provide 4 wireless routers
- Modify the fire alarm system as required to accommodate remodeled areas.

NEW CENTRAL PLANT

- Power as required for additional Chiller Plant equipment described on page 4.1.20, provided from the Phase 1 unit substation transformer.

WING C EAST BASEMENT

- Provide power as required for boiler pumps and related equipment described on page 4.1.22

STAFF RESIDENTIAL

- Provide a completely new electrical power and lighting system for the standalone residential units. This includes panel boards, conduit and wiring, receptacles, lighting fixtures and switches.
Electrical – Future Phases

RESIDENTIAL WINGS A, B, D AND E: UPGRADES

When the Residential wings’ infrastructure is upgraded, the existing electrical system will be brought up to current code. This will include new panel boards, conduit and wiring. The electrical system will be updated to accommodate the power requirements for the new rooftop AHU’s described on pages 4.1.22-23.

SCOPE OF WORK – PLUMBING

Plumbing – Phase 1

WEST OF BUILDING SPINE:

The following plumbing work will be included in this phase:

- Provide new plumbing piping (domestic cold water, domestic hot water and sanitary waste and vent) to new toilets.

- Provide new plumbing piping (domestic cold water, domestic hot water and sanitary waste and vent) to the new Emporium, Residential Restaurant, Servery and Kitchen.

- Note: the addition of approximately 100 fixture units in Phases 1 and 2 can be accommodated by the building’s existing 6” water main and 8” sewer main, which currently serve approximately 2,500 fixture units.

- Replace three existing domestic hot water generators in the basement, including expansion tanks, circulating pumps, etc. The new domestic hot water generators will be gas-fired and located in the same general location as existing.
• Provide two-temperature hot water system for the kitchens: 120° F system will be provided from the new gas-fired domestic hot water generators located in the basement; 140° F system will be provided from a new hot water generator located on or adjacent to the roof of Wing C West.

• Roof drainage and overflow piping for the new Residential Restaurant, Kitchen and Emporium additions.

• Provide condensate drainage for air handling units and fan coil units.

• For domestic water, replace all galvanized steel piping with copper.

• Extend fire sprinkler system to new wing, and upgrade as required in existing spaces.

• Provide new grease waste piping system within the two kitchens and service enclosure. This includes extensive site grease waste piping work and new grease traps.

NEW CENTRAL PLANT

The following plumbing work will be included in this phase:

• Provide floor sinks for the new cooling central plant

• Provide industrial water connections to the new cooling equipment

Other plumbing scope in this phase:

• Replace all existing domestic water galvanized steel piping with copper

• Remove the existing solar hot water heating tanks and piping from the well at the south side of Wing C East.

• All of the galvanized plumbing water piping in the basement should be replaced.
Plumbing – Phase 2

EAST OF BUILDING SPINE:

The following plumbing work will be included in this phase:

• Provide new plumbing piping (domestic cold water, domestic hot water and sanitary waste and vent) to new toilets and break rooms in Wing C East.

• Provide condensate drainage for air handling units and fan coil units.

• Remove the existing solar panels and piping on Wing C East roof.

• Replace all existing domestic water galvanized steel piping with copper.

• Upgrade fire sprinkler system as required.

STAFF RESIDENTIAL:

• Provide new plumbing piping (domestic cold water, domestic hot water and sanitary waste and vent) to standalone residential units.

• Provide new roof drainage and overflow piping.

• Provide condensate drainage for heat pumps.

Plumbing – Future Phases

RESIDENTIAL WINGS A, B, D, AND E: UPGRADES

The existing plumbing piping appears to be in reasonable condition and is not in urgent need of replacement. However, as the residential wings’ mechanical and electrical infrastructure is renovated in the future phases, it is recommended that the plumbing piping undergo destructive testing and be replaced if required.
ROOFING REPLACEMENT

Recommendations

Without performing destructive probing of the roof membrane we cannot provide more definitive input regarding the roof membrane remaining serviceability. However, due to the advanced age of the roof membrane, UC-Riverside should plan to replace the roofing systems at the A-I Residence Hall in the next two to five years.

If it is not included in the near future, we recommend that the roofing system be replaced when the design team plans to remove the solar panels. The solar panels penetrate the roofing system in many locations. Reroofing over all of these penetrations could cause potential water leakage problems in the future.

We recommend that the existing built-up roofing system be replaced with a more energy efficient roofing system (i.e., PVC roofing over DensDeck over continuous insulation). Despite the fact that the code does not require the provision of insulation when the roof is replaced, we recommend the installation of continuous insulation below the roofing membrane to improve the overall energy efficiency of the building. We recommend a more thorough review of the energy code at the time of installation to provide the most efficient system. The installed roofing system should also meet the minimum energy code requirements for solar reflectance and thermal emittance or SRI.
4.2

CODE ANALYSIS

The assigned construction types and fire-rated elements presented in the following Code Analysis have been captured in the Concept Design Cost Estimate. Further research and analysis will be necessary during the Design Phase to completely validate the assumptions and code interpretations. Additionally, follow up meetings with the UC Riverside Fire Marshal and other campus review agencies will be necessary.
APPLICABLE STATE CODES:

2010 California Building Code
California Code of Regulations
Title 24, Part 2

Existing A-I Building Type & Occupancy:

A-I Residence Hall is comprised of three-, two- and one-story wings interconnected by a one-story circulation spine. Each multi-level wing has an elevator and three egress stairs leading directly to the exterior, all in protected vertical enclosures*. The building gross area is OGSF 50 - 195,185 square feet. The maximum building roof height (not counting mechanical penthouses) is 35’ above the first floor, and there is a basement level under portions of the building.

There is no known record of the existing building Construction Type. According to current codes (CBC Table 601) the existing building is defined as Type I-B Construction based on the following criteria:

- All suspended floors and roof slabs are minimum 5” thick concrete
- All concrete bearing walls and columns are minimum 5” thick
- All solid brick bearing walls are minimum 3.8” thick
- Dining roof steel beams have one-hour fire protection
- Nonbearing Interior Walls are non-rated

All new structural elements shall conform to the following fire-resistance ratings (CBC Table 601):

- Structural frame (excluding bracing)
- Structural frame supporting a roof only (footnote b)
- Roof construction

Type I-B allows Unlimited Area and maximum 11 Stories (Occ. A-2, R-2, B)

2 hour rating per Table 721.2.2.
2 hour rating per Table 721.2.1.
2 hour rating per Table 721.4.1(1)
1 hour rating allowed per Table 601
0 hour rating allowed per Table 601

2 hours
1 hour (may utilize sprinklers for one hour substitution - Table 601, footnote d)

CBC Section 503
**Occupancy Classifications** (existing and new) shall be as follows:

- Student Residential Floors
- Residential Restaurant / Emporium Dining
- Meeting Rooms, Lounge, Game Room, Fitness Center
- Resident Service Offices, Computer Lab
- Central Plant, Low Hazard Storage, Maintenance Shop

**Nonseparated Occupancies:** CBC Section 508.3.2 allows no fire separation between multiple occupancies within the same building provided the allowable area and height of the building or portion thereof is based on the most restrictive allowances for the occupancies under consideration for the type of construction of the building. As Type I-B Construction, all occupancies allow Unlimited Area and 11 Stories height, so no occupancy separations are required.

An exception in CBC Section 508.3.3 requires R occupancies to maintain a one-hour fire separation from all other occupancies. Since all R occupancies in the A-I building are on distinct floors and separated from the circulation spine by a single self-closing fire-rated opening, the R occupancies are considered “fire separated” from the rest of the building. The existing corridors on the Residential floors have non-rated bedroom doors without closers. This is considered an “approved - nonconforming” condition by UCR Campus Fire Marshal (see 1.21.11 meeting notes in Appendix). The existing interior glazed storefront partitions separating the circulation spine from the ground floor of Wings B and D is considered an “approved - nonconforming” condition by the Fire Marshal. However, the proposed new Wing C West must be separated from the spine with a one-hour rated assembly, per conf. call with UCR Fire Marshal on 5.11.11.

A few of the gaps between building wings exceed the maximum fire hose limit of 150’ from a fire apparatus staging location. As a nonconforming “legacy building”, A-I has fire sprinklers and a fire alarm system that exceed code minimums. UCR Fire Marshal stated that some flexibility can be exercised in the 150’ hose limit requirement.
All of the above assumptions and code interpretations were verbally summarized with the Campus Fire Marshal in Workshop #2, who was in general concurrence provided fire sprinklers and a fire alarm system were installed in the remaining unprotected areas of the building.

The **maximum travel distance** to an exit in a fire sprinklered building is 250’ for A and R occupancies, and 300’ in B occupancies (CBC Table 1016.1).

**Vertical exit enclosures** shall be one hour fire-rated when connecting less than four stories (CBC Section 1020.1)

* Two unprotected window openings in stair enclosures were observed; these must be protected with a one-hour rated fire assembly or permanently sealed off.

**New Staff Residences Type & Occupancy:**

The four proposed outlying staff residences will be Type V-B Construction, with NFPA 13R fire sprinklers and a fire alarm system. Each unit shall have a fire riser and tamper switch. All building elements may be of zero fire-rated construction.

The staff residences Occupancy Group will be R-3 if not defined as a townhouse or connected to more than one other dwelling unit. Otherwise it would be an R-2 occupancy.
SUSTAINABLE DESIGN

The University of California system is committed to reducing its dependence on non-renewable energy and minimizing its impact on the environment. The Regents established a Presidential Policy in 2003 to promote “…the principles of energy efficiency and sustainability in the planning, financing, design, construction, renewal, maintenance, operation, space management, facilities utilization, and the decommissioning of facilities and infrastructure to the fullest extent possible, consistent with budgetary constraints and programmatic requirements.” Since then, this Policy has been continually reviewed and new sections, including sustainable food systems, building renovations and transportation practices have been incorporated.

The A-I improvements project will comply with the most recently adopted UC Policy on Sustainable Practices.
SUSTAINABLE DESIGN & LEED CERTIFICATION

As required by the Policy and UCR sustainability benchmarks, all new buildings and major renovations must be designed to the latest U.S. Green Building Council (USGBC) Leadership in Energy and Environmental Design (LEED) Silver rating as a minimum. New and renovated buildings should also outperform California Energy Code (Title 24) energy efficiency standards by minimum 20%. The Policy encourages the use of resource-, energy-, and water-efficient products, and building materials, systems, components, furnishings and supplies with a high recycled and/or rapidly-renewable content. Some of the strategies offered by this DPP for realizing minimum LEED Silver rating include:

- Significant energy reductions in new mechanical and electrical equipment in the central plant (boilers, chillers, pumps, etc) and rooftop air handlers
- Significant water reductions from a new dishwasher, cooling tower and low-flow plumbing fixtures
- Energy-efficient lighting, occupancy sensors and daylight controls
- Energy-efficient exhaust hoods and (Energy Star) kitchen equipment
- High performance glazing and cladding at new and renovated areas
- High thermal-performing roof insulation and “Cool” roof membrane
- High levels of food composting, recycling and innovative waste stream strategies

As primarily a renovation project affecting less than 40% of the total building area, it is recommended that LEED 2009 CI (Commercial Interiors) be considered for the main A-I project. The four stand alone staff residential units would need to be submitted to USGBC separately as either LEED 2009 NC or LEED for homes.
### LEED 2009 for Commercial Interiors

#### Project Checklist

**UCR Aberdeen-Inverness Residence Hall**  
10.25.11

**Sustainable Sites**  
Possible Points: **21**

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**Water Efficiency**  
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**Energy and Atmosphere**  
Possible Points: **37**

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**Materials and Resources**  
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**Indoor Environmental Quality**  
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**Innovation and Design Process**  
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**Regional Priority Credits**  
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**Total**  
Possible Points: **110**

Certified 40 to 49 points  Silver 50 to 59 points  Gold 60 to 79 points  Platinum 80 to 110
### Sustainable Sites

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**Possible Points:** 26

### Materials and Resources, Continued

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**Possible Points:** 4

### Indoor Environmental Quality

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**Possible Points:** 15

### Energy and Atmosphere

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**Possible Points:** 35

### Innovation and Design Process

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**Possible Points:** 6

### Regional Priority Credits

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**Possible Points:** 4

### Total Possible Points

- Certified 40 to 49 points
- Silver 50 to 59 points
- Gold 60 to 79 points
- Platinum 80 to 110

**Total Possible Points:** 110
PHASING

Phasing strategies for the A-I construction project are a critical aspect of this study, due to the complexity of managing invasive renovations and infrastructure upgrades while the residential wings remain fully occupied and accessible, and the need to maintain continuous operation of at least one foodservice facility and a central plant during the academic year.
PHASING STRATEGIES

The intent of the University and Housing, Dining & Residential Services is to deliver the complete A-I project as described in this DPP and noted in the Project Goals. It is critical that during the academic year all residential floors remain occupied and the circulation spine remain functional and secure at all times during construction. The only exception is during the summer break (June – August). A new resident main entry must be established – probably at the south end of the spine, as well as temporary RSO facilities in portables. The existing dining facility in Wing C East must continue serving meals until the new Residential Restaurant facility is ready to open. The much smaller Emporium may become operational prior to the new Residential Restaurant, in which case public access would be provided.

The project scope described in Section 3.1 is envisioned as two sequential phases. Phase One encompasses all work to the west of the circulation spine, plus the stand-alone central plant. Phase Two completes all work to the east of the circulation spine, plus the standalone staff residences. Infrastructure upgrades to the residential floors described in Section 4.1 and captured in the Estimate would be a separate project, either concurrent with Phase Two or as a single or multiple future phases. The following table shows estimated construction durations, not including mobilization (refer to the following Phasing Plan diagram, and to Section 4.1 for MEP scope detail):
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<td>Wings B, C &amp; D West and Central Plant construction and/or renovation; kitchen dock enclosure; two elevators to basement spine; three cooling towers, one chiller, emergency generator, domestic hot water boilers, Wing C West AHU’s and heating hot water boiler, heating hot water distribution piping, associated plumbing &amp; electrical.</td>
<td>18 months + 3 months equipment</td>
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<tr>
<td>Phase Two</td>
<td>Staff Residential construction; Wing C East renovation (once the Residential Restaurant is completed); two chillers, heating hot water boilers, Wing C East AHU’s, associated plumbing and electrical.</td>
<td>10 months + 2 months equipment</td>
</tr>
</tbody>
</table>
| Future     | Residential Wings:  
• AHU coil replacement, or  
• AHU complete replacement and reroof  
3 months minimum (over summer break), if adequate mobilization time provided and long lead components procured beforehand; could also be accomplished in multiple summer phases                                                                                       | Could be accomplished in multiple summer phases         |
| Future     | Residential Wings:  
• Internal MEP Infrastructure Upgrades                                                                                                                                                                                                                                                                               |                                                        |
SCHEDULE

The following Schedule illustrates the phasing scenario described in Section 4.4. Future Phases are not included here since their timing is currently indeterminate.

Phase One scope is comprised of all DPP program west of the circulation spine plus the standalone central plant. Schedule assumptions for Phase One include: fourteen months for Design / Construction Documents (Phases One & Two combined), including University reviews, CEQA approval and necessary Campus approvals; four months Bid and Award period; eighteen months for Construction plus three additional months for equipment installation and burn-in, for a total of 39 months duration. The project should strive to take advantage of the unoccupied building during the summer months. The ideal construction start date would be in June following graduation.

Phase Two scope includes all DPP program east of the circulation spine and the standalone Staff Residences, plus equipment additions to the central plant. A four-month bid / award period is shown in the schedule should a separate general contractor be desired. Since delivery of Phase Two documentation is combined with Phase One, timing of the bidding period is flexible. Construction of the standalone Staff Residences is proposed to start as soon as Phase One is complete, but conceivably could commence sooner provided A-1 building access and occupancy are unaffected. In either case, demolition of Wing C East cannot start before actual occupancy of the new Phase One residential restaurant. The Wing C East construction period is projected to take seven months, plus a two-month allowance for equipment and furniture installation. The total project duration for both phases would be 48 months.

This schedule only considers the design and construction period. For budget purposes it is assumed the pre-design process will take about six months from the completion of the DPP. Additional time may affect cost escalations. It is recommended that the University bring a construction manager into the design process early to assist in delivery analysis.
## Schedule

### Phase One

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
<th>Months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design and Reviews</td>
<td>14 months</td>
<td></td>
</tr>
<tr>
<td>Phase One / Two Schematic Design</td>
<td>12 weeks</td>
<td></td>
</tr>
<tr>
<td>Develop Cost Estimate / University Review</td>
<td>4 weeks</td>
<td></td>
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<tr>
<td>CEQA Review</td>
<td>30 weeks</td>
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<tr>
<td>Phase One / Two Design Development</td>
<td>16 weeks</td>
<td></td>
</tr>
<tr>
<td>Develop Cost Estimate / University Review</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>CMAR Selection Process</td>
<td>12 weeks</td>
<td></td>
</tr>
<tr>
<td>Delegated Authority</td>
<td>8 weeks</td>
<td></td>
</tr>
<tr>
<td>Phase One / Two Construction Documents: 0-12 weeks</td>
<td>12 weeks</td>
<td></td>
</tr>
<tr>
<td>Develop Cost Estimate / University Review</td>
<td>4 weeks</td>
<td></td>
</tr>
<tr>
<td>Phase One / Two Construction Documents: 13-16 weeks</td>
<td>12 weeks</td>
<td></td>
</tr>
<tr>
<td>Develop Cost Estimate</td>
<td>2 weeks</td>
<td></td>
</tr>
<tr>
<td>University Review and Comments</td>
<td>2 weeks</td>
<td></td>
</tr>
<tr>
<td>Respond to Comments</td>
<td>2 weeks</td>
<td></td>
</tr>
<tr>
<td>University Backcheck</td>
<td>2 weeks</td>
<td></td>
</tr>
<tr>
<td>Final Permit Set and Signatures</td>
<td>1 week</td>
<td></td>
</tr>
<tr>
<td>University Contracts Dept. - Permission to Solicit</td>
<td>1 week</td>
<td></td>
</tr>
<tr>
<td>Bid &amp; Award</td>
<td>4 months</td>
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<tr>
<td>Public Advertisement for Bids</td>
<td>1 week</td>
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<tr>
<td>Bidding Period</td>
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<tr>
<td>Bid Opening</td>
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<tr>
<td>Bid Protest Period</td>
<td>4 weeks</td>
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<tr>
<td>Award of Bid</td>
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<tr>
<td>Mobilization and Construction</td>
<td>21 months</td>
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<tr>
<td>Mobilization</td>
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<tr>
<td>Demolition and Demolition</td>
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<tr>
<td>Deconstruction</td>
<td>1 month</td>
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<tr>
<td>Punch List &amp; Close Out</td>
<td>concurrent</td>
<td></td>
</tr>
<tr>
<td>Occupancy</td>
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<tr>
<td>Final Permit Set and Signatures</td>
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### Phase Two

<table>
<thead>
<tr>
<th>Activity</th>
<th>Duration</th>
<th>Months</th>
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<tr>
<td>Construction (Staff Residential &amp; Central Plant adds)</td>
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<td>Construction - Wing 'C' East</td>
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<td>Equipment / Furniture Installation</td>
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<td>Punch List &amp; Close Out</td>
<td>concurrent</td>
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<tr>
<td>Occupancy</td>
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</tbody>
</table>

---

**University of California, Riverside**

**2011 A-I Residence Hall Common Area Improvements DPP**

**10.28.11**
COST MODEL SUMMARY

The following Concept Design Estimate summary covers construction “hard costs” only, plus an escalation factor. Refer to the following page for itemized exclusions. Scope specifically related to the DPP Program described in Section 3.1 plus hazardous material abatement is “above the line”. Additional Work, including future infrastructure upgrades to the residential floors and roofs, and temporary facilities for the RSO during construction, is listed “below the line”.

See Appendix 6.1 for a detailed breakdown of the Cost Model.
CONCEPT DESIGN CONSTRUCTION ESTIMATE

Basis of Estimate
The estimate is based on preliminary concept drawings, program areas, room data sheets and engineering narratives. Estimated costs include average union labor billing rates with prevailing wages and competitive bid conditions. Competitive bid conditions generally occur when bids are received from a minimum of three general contractors and three subcontractors for each trade. Allowances and assumptions for materials, building systems, specifications and construction schedule, should be confirmed at the next design stage and prior to completion of bid documents. Estimated costs include general contractor markups for general conditions, bonds, insurances, profit, design contingency and cost escalation to mid-point of construction.

The estimated construction cost represents our best judgment as a professional consultant familiar with the construction industry. We have no control over the cost or supply of labor, materials and equipment, a contractor’s methods of determining bid prices and market conditions. We cannot and do not warranty or represent that bids or negotiated prices will not vary from the estimated construction cost.

Estimate Exclusions
Professional design, testing, inspection and management fees.
Fire and all risk insurance.
Legal and financing costs.
Building permits and fees.
Construction and project contingencies
Staging costs for temporary relocation of existing building programs except $600,000 RSO trailer allowance
Communications equipment.
Moving costs.
Cost escalation beyond the mid-point of construction.
Cost escalation for future residence hall upgrades.
Independent commissioning.
Offsite work.
Furnishings.
Destructive testing.
## Aberdeen-Inverness Residence Hall Common Area Improvement
### University of California Riverside
#### 30-Aug-11

**Summary**

<table>
<thead>
<tr>
<th>Concept Design Construction Estimate</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Future</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Wing C East - Community Space</td>
<td>3,522,726</td>
<td></td>
<td></td>
<td>3,522,726</td>
</tr>
<tr>
<td>2.0 Wing C East - Residential Service Offices</td>
<td>1,316,625</td>
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<td></td>
<td>1,316,625</td>
</tr>
<tr>
<td>3.0 Wing D West - Food Retail Emporium</td>
<td>3,993,229</td>
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<td>3,993,229</td>
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<tr>
<td>4.0 Wing B &amp; C West - Residential Restaurant, Servery, Kitchen &amp; Support</td>
<td>16,741,905</td>
<td>165,873</td>
<td>16,741,905</td>
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<td>5.0 First Floor Spine Infill</td>
<td></td>
<td>1,063,816</td>
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<tr>
<td>6.0 Staff Residential Units</td>
<td>259,099</td>
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<td>259,099</td>
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<td>7.0 New Bike Enclosure</td>
<td>3,868,250</td>
<td>1,337,332</td>
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<td>5,205,582</td>
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<tr>
<td>8.0 Central Plant</td>
<td>3,015,991</td>
<td>887,618</td>
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<td>3,903,609</td>
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<td>10.0 Basement Spine Improvements</td>
<td>782,221</td>
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<td>782,221</td>
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<tr>
<td>11.0 Hazardous Material Abatement - Ambient Estimate</td>
<td>36,648</td>
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<td>36,648</td>
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<td>12.0 Heating Hot Water Piping Distribution</td>
<td>666,666</td>
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<tr>
<td>13.0 Boiler Replacement</td>
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<td>833,933</td>
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<td>833,933</td>
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<tr>
<td><strong>TOTAL CONSTRUCTION 08/2011</strong></td>
<td>$29,364,009</td>
<td>$9,127,923</td>
<td></td>
<td>$38,491,931</td>
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<tr>
<td>Cost Escalation to Construction Mid-Point Phase 1; 33 Months @ 3.5% Per Year; 10%</td>
<td>2,936,401</td>
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<td></td>
<td>2,936,401</td>
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<tr>
<td>Cost Escalation to Construction Mid-Point Phase 2; 44 Months @ 3.5% Per Year; 14%</td>
<td>1,277,909</td>
<td>1,277,909</td>
<td></td>
<td>1,277,909</td>
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<tr>
<td><strong>TOTAL CONSTRUCTION ESCALATED</strong></td>
<td>$32,300,410</td>
<td>$10,405,832</td>
<td></td>
<td>$42,706,241</td>
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<tr>
<td>16.0 Existing Residential Wings - Future</td>
<td>600,000</td>
<td></td>
<td></td>
<td>600,000</td>
</tr>
<tr>
<td>16.1 Air Handling Unit Coil Replacement</td>
<td></td>
<td>182,857</td>
<td></td>
<td>182,857</td>
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<tr>
<td>16.2 Demolish Existing Steam Boilers and Piping</td>
<td>241,748</td>
<td></td>
<td></td>
<td>241,748</td>
</tr>
<tr>
<td>16.3 Replace Rooftop Mechanical and Re-Roof</td>
<td>4,261,583</td>
<td></td>
<td></td>
<td>4,261,583</td>
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<tr>
<td>16.4 Replace MEP Systems and Repair Finishes</td>
<td>13,321,528</td>
<td></td>
<td></td>
<td>13,321,528</td>
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<tr>
<td><strong>SUBTOTAL</strong></td>
<td>$600,000</td>
<td></td>
<td>$18,007,716</td>
<td>$18,607,717</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>$32,900,410</td>
<td>$10,405,832</td>
<td>$18,007,716</td>
<td>$61,313,958</td>
</tr>
</tbody>
</table>
DETAILED COST MODEL

The following Concept Design Estimate covers construction “hard costs” only, plus an escalation factor. Refer to 5.1.1 for itemized exclusions. The detailed breakdown sections follow in the same order as the summary page.
### Aberdeen-Irwinness Residence Hall Common Area Improvement
#### University of California Riverside

<table>
<thead>
<tr>
<th>Summaries</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Future</th>
<th>Total</th>
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</thead>
<tbody>
<tr>
<td>Concept Design Construction Estimate</td>
<td>$/SF</td>
<td>$/SF</td>
<td>$/SF</td>
<td>$/SF</td>
</tr>
</tbody>
</table>

#### Phase 1

1. **Wing C East - Community Space**
   - 1.1 Renovations - Meeting Rooms: 12,053 SF, 277.36, 3,343,012
   - 1.2 Seismic Strengthening: 1,316,625

#### Phase 2

2. **Wing C East - Residential Service Office**
   - 2.1 Renovations: 4,747 SF, 277.36, 1,316,625

#### Future

3. **Wing D West - Food Retail Emporium**
   - 3.1 Renovations: 5,707 SF, 298.34, 1,702,655
   - 3.2 Expansion: 779 SF, 782.72, 609,738
   - 3.3 Food Service / Retail Equipment: 508,671
   - 3.4 Elevator and Shaft: 440,000
   - 3.5 Service Yard: 95,074
   - 3.6 Seismic Strengthening: 637,091
   - 3.7 Elevator and Shaft: 440,000
   - 3.8 Exterior Cladding: 57.61, 694,388
   - 3.9 Shell (1 - 5): 30,809
   - 3.10 Seismic Strengthening: 637,091

#### Total

- $48,522,713

---

### Aberdeen-Irwinness Residence Hall Common Area Improvement
#### University of California Riverside

<table>
<thead>
<tr>
<th>Wing C East - Community Space and Residential Service Office</th>
<th>Concept Design Construction Estimate</th>
<th>Community Space</th>
<th>Residential Service Office</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$/GSA</td>
<td>$/GSA</td>
<td>$/GSA</td>
<td>$/GSA</td>
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<tr>
<td></td>
<td>12,053 GSA</td>
<td>4,747 GSA</td>
<td>16,800 GSA</td>
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</tr>
</tbody>
</table>

#### COMPONENT SUMMARY

- 1. Foundations: 0.00
- 2. Vertical Structure: 0.00
- 3. Floor and Roof Structure: 3.09, 14,665
- 4. Exterior Cladding: 32.56, 547,040
- 5. Roofing and Waterproofing: 32.56, 391,440
- 6. Interior Finishes - Floors, Walls, Ceilings: 23.30, 110,605
- 7. Fixed Equipment, Casework and Specialties: 12.30, 206,640
- 8. Equipment, Stairs and Elevators: 4.00, 151,000
- 9. Staff Residential Units: 4,956, 214.65, 1,063,816
- 11. Heating, Ventilation, Air Conditioning: 37.93, 457,225
- 12. Electrolysis: 35.35, 426,074
- 13. Fire Protection: 4.00, 151,000
- 14. Temporary Trailers for RSO: 600,000
- 15. Design Contingency: 10.0%, 252.14, 303,910

#### Total

- $61,313,958

---

### University of California, Riverside

#### 2011 A-I Residence Hall Common Area Improvements DPP

<table>
<thead>
<tr>
<th>Year</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>A-I</td>
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</tbody>
</table>

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### 6.1.1

- **University of California, Riversid:**
- **2011 A-I Residence Hall Common Area Improvements DPP:**
- **10.28.11**

---

### Aberdeen-Irwinness Residence Hall Common Area Improvement
#### University of California Riverside

<table>
<thead>
<tr>
<th>Wing C East - Grid 2 - State</th>
<th>Concept Design Construction Estimate</th>
<th>Community Space</th>
<th>Residential Service Office</th>
<th>Total</th>
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<tbody>
<tr>
<td></td>
<td>$/GSA</td>
<td>$/GSA</td>
<td>$/GSA</td>
<td>$/GSA</td>
</tr>
<tr>
<td></td>
<td>12,053 GSA</td>
<td>4,747 GSA</td>
<td>16,800 GSA</td>
<td></td>
</tr>
</tbody>
</table>

#### Summary

- **Total Construction (2011):** $29,364,009
- **Cost Escalation to Construction Mid-Point Phase 1:** $9,127,923
- **Total Construction Escalated:** $38,491,931
- **Total Construction Escalated:** $32,300,410
- **Overhead and Profit:** 4.0%, 9.70, 116,889
- **General Conditions:** 11.0%, 24.03, 289,589
- **Total:** $61,313,958
- **Seismic Strengthening:** $179,714
- **Cost Escalation to Construction Mid-Point Phase 2:** $1,277,900
- **Total:** $64,590,368
- **Electrical:** 9.70, 46,036
- **Total:** $64,590,368

---

### 10.28.11

- **Total Construction:** $29,364,009
- **Cost Escalation:** $1,277,900
- **Total:** $30,641,909
- **Total Construction Escalated:** $32,300,410
- **General Conditions:** 11.0%, 24.03, 289,589
- **Overhead and Profit:** 4.0%, 9.70, 116,889
- **Total:** $61,313,958
- **Seismic Strengthening:** $179,714
- **Cost Escalation to Construction Mid-Point Phase 2:** $1,277,900
- **Total:** $64,590,368
- **Electrical:** 9.70, 46,036
- **Total:** $64,590,368

---

### (4)

- **14.0 Temporary Trailers for RSO:** $600,000
- **15.0 Existing Residential Wings - Future**
- **15.1 Air Handling Unit Coil Replacement:** $182,887
- **15.2 Demolish Existing Steam Boilers and Piping:** $241,748
- **15.3 Replace Roofing Mechanical and Rooftop:** $2,461,983
- **15.4 Replace MEP Systems and Report Finishes:** $3,321,528

#### SUBTOTAL

- **$1,232,000,000**

#### TOTAL

- **$1,316,825,000**

---

### (C)

- **Design Contingency:** 10.0%, 252.14, 303,910
- **Total Construction, 06/2011:** $277,36, $3,343,012
- **Seismic Strengthening:** $179,714
- **Total:** $1,316,825
- **4,839,350**
### Areas and Control Quantities

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost $</th>
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<tr>
<td>Renovation</td>
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<tr>
<td>Expansion</td>
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<tr>
<td><strong>Total</strong></td>
<td>16,800 SF</td>
<td></td>
</tr>
</tbody>
</table>

| **CONTROL QUANTITIES**                | Ratio to Gross Area | | |
|---------------------------------------|---------------------|-------------|
| Gross Area                            | 16,800 SF           | 1.000       |
| Renovations                           | 16,800 SF           | 1.000       |
| Exterior Wall - Existing              | 11,760 SF           | 0.700       |
| Roof Area                             | 16,800 SF           | 1.000       |
| Partition Length                      | 1,428 LF            | 0.085       |
| Interior Doors x 100                  | 40 EA               | 0.238       |

### 1. Foundations
- Earthwork, cut, backfill and cart away
- Earthwork, over excavation and recompaclation
- Shoring
- Underpinning
- Dewatering
- Reinforced concrete foundations
- Foundation drainage

### 2. Vertical Structure
- Columns and bracing, steel framing
- Reinforced concrete structural walls, below grade
- Reinforced concrete structural walls, above grade
- Reinforced concrete curbs
- Fireproofing to steel framing

### 3. Floor and Roof Structure
- Floor at grade
  - Reinforced concrete slab on grade, 5"
- Dowels to existing slab
- Repairs to existing slab
- Upper floors
- Roof
- Roof framing and deck
- Fireproofing to steel framing
- Equipment pads
- Miscellaneous concrete, metals and carpentry

**Total Cost:** $ 51,900
<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost ($)</th>
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<tbody>
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<td>4. Exterior Cladding</td>
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<tr>
<td>Wall framing, furring and insulation</td>
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<tr>
<td>Exterior wall finish, new</td>
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<td>Exterior wall finish, existing upgraded</td>
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<td>Roof insulation, rigid</td>
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<td>Green roof</td>
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</tr>
<tr>
<td>Glazed skylights</td>
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<tr>
<td>Flashings, gutters and downspouts</td>
<td>16,800</td>
<td>SF</td>
<td>6.00</td>
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<tr>
<td>Caulking and sealants</td>
<td>16,800</td>
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<td>$368,928</td>
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<tr>
<td>6. Interior Partitions and Doors</td>
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<tr>
<td>Partition framing and finish</td>
<td>17,136</td>
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<td>Partition surfacing</td>
<td>34,272</td>
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<tr>
<td>Sound insulation</td>
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<td>Interior glazed windows and walls</td>
<td>600</td>
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<td>Interior doors, transom panels, frames and hardware</td>
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<td>$423,739</td>
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<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
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<tbody>
<tr>
<td>7. Interior Finishes - Floors, Walls, Ceilings</td>
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<tr>
<td>Floors</td>
<td>16,800</td>
<td>SF</td>
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<td>Walls</td>
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<td>Ceilings</td>
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<td></td>
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<td>$391,440</td>
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<tr>
<td>Corner guards, corridor rails and wall protection</td>
<td>16,800</td>
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<td>Casework and countertops</td>
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<td>Window blinds and shades</td>
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<td>2.00</td>
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<tr>
<td>Staircase flights, floor to floor</td>
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<td>Ladders</td>
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<td>Elevators</td>
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<td>Elevator cab finishes</td>
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<td>$</td>
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<td>10. Plumbing</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Sanitary fixtures and connection piping</td>
<td>16,800</td>
<td>SF</td>
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<tr>
<td>Sanitary waste, vent and service piping</td>
<td>16,800</td>
<td>SF</td>
<td>6.00</td>
</tr>
<tr>
<td>Kitchen systems</td>
<td></td>
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<tr>
<td>Domestic hot water equipment and pumps</td>
<td>16,800</td>
<td>SF</td>
<td>1.00</td>
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<tr>
<td>Natural gas service</td>
<td>1 LS</td>
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<td>12,000.00</td>
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<tr>
<td>Rainwater drainage</td>
<td>16,800</td>
<td>SF</td>
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C. P. O’Halloran Associates Inc.  
Construction Cost Management
**10. Plumbing**

<table>
<thead>
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<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Testing and sterilizing</td>
<td>16,800</td>
<td>SF</td>
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Total: $230,400

**11. Heating, Ventilating and Air Conditioning**

<table>
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<tr>
<th>Component Description</th>
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<tbody>
<tr>
<td>Heat generation and cooling equipment</td>
<td>16,800</td>
<td>SF</td>
<td>159,600</td>
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<tr>
<td>Piping and insulation</td>
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<tr>
<td>Air handling equipment</td>
<td>18,000</td>
<td>CFM</td>
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<tr>
<td>VAV terminal boxes</td>
<td>15</td>
<td>EA</td>
<td>22,500</td>
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<tr>
<td>Ventilation equipment</td>
<td>20,000</td>
<td>SF</td>
<td>22,000</td>
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<tr>
<td>Air distribution and return</td>
<td>16,800</td>
<td>SF</td>
<td>168,000</td>
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<tr>
<td>Diffusers and grilles</td>
<td>16,800</td>
<td>SF</td>
<td>29,400</td>
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<tr>
<td>Controls, DDC and energy management system, 54 PTS</td>
<td>16,800</td>
<td>SF</td>
<td>84,000</td>
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<tr>
<td>Testing, adjusting and balancing</td>
<td>16,800</td>
<td>SF</td>
<td>16,800</td>
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<tr>
<td>Trade demolition</td>
<td>1</td>
<td>LS</td>
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Total: $637,300

**12. Electrical**

<table>
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<th>Component Description</th>
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<th>Cost ($)</th>
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<tbody>
<tr>
<td>Main power service</td>
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<td>SF</td>
<td>71,400</td>
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<tr>
<td>Emergency power service</td>
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<td>12,600</td>
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<tr>
<td>Equipment connections and switches</td>
<td>16,800</td>
<td>SF</td>
<td>20,160</td>
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<tr>
<td>Power panelboards, feeders, outlets and grounding</td>
<td>16,800</td>
<td>SF</td>
<td>117,600</td>
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<tr>
<td>Lighting, fixtures, conduit and wire</td>
<td>16,800</td>
<td>SF</td>
<td>218,400</td>
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<tr>
<td>Telephone and data outlets, conduit and cabling</td>
<td>16,800</td>
<td>SF</td>
<td>84,000</td>
</tr>
<tr>
<td>Communications conduit</td>
<td>16,800</td>
<td>SF</td>
<td>10,080</td>
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<tr>
<td>TV outlets, conduit and wire</td>
<td>16,800</td>
<td>SF</td>
<td>4,200</td>
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<tr>
<td>Paging system, conduit, wiring and devices</td>
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<td>-</td>
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<tr>
<td>Fire alarm system, conduit, wiring and devices</td>
<td>16,800</td>
<td>SF</td>
<td>50,400</td>
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<tr>
<td>Rescue call system, conduit, wiring and devices</td>
<td>16,800</td>
<td>SF</td>
<td>5,040</td>
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Total: $593,880

**13. Fire Protection**

<table>
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<tbody>
<tr>
<td>Automatic wet pipe fire sprinkler system</td>
<td>16,800</td>
<td>SF</td>
<td>67,200</td>
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Total: $67,200

**14. Site Preparation and Demolition**

<table>
<thead>
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<th>Component Description</th>
<th>Quantity</th>
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<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site protective construction, noise and dust control</td>
<td>16,800</td>
<td>SF</td>
<td>8,400</td>
</tr>
<tr>
<td>Hazardous material abatement - see summary page 2</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Structural demolition - shear wall</td>
<td>-</td>
<td></td>
<td>-</td>
</tr>
<tr>
<td>Structural demolition - covered walkway</td>
<td>1</td>
<td>LS</td>
<td>25,000.00</td>
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<tr>
<td>Selective demolition incl. solar hot water system</td>
<td>16,800</td>
<td>SF</td>
<td>117,600</td>
</tr>
<tr>
<td>Site clearing and grading</td>
<td>-</td>
<td></td>
<td>-</td>
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Total: $151,000
Wing C East - Seismic Strengthening

Component Description | Quantity | Unit Cost | $ |
--- | --- | --- | --- |
Structural strengthening | | | |
New reinforced concrete wall | 30 LF | 1,377.50 | 41,325 |
New foundations | 1 LS | 25,000.00 | 25,000 |
Additional drag elements | 160 LF | 345.00 | 55,200 |
Slab repairs at locations of structural work | 1 LS | 20,000.00 | 20,000 |

**SUBTOTAL** | | | $141,525 |

General Conditions, Supervision, Bonds, Insurances | 11.0% | 15,568 |
Overhead and Profit | 4.0% | 6,284 |

**SUBTOTAL** | | | $163,376 |

Design Contingency | 10.0% | 16,338 |

**TOTAL CONSTRUCTION, 08/2011** | | | $179,714 |
### Components Description

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Foundations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earthwork, cut, backfill and cart away</td>
<td>779 SF</td>
<td>2.20</td>
<td>1,714</td>
</tr>
<tr>
<td>Earthwork, over excavation and recompaction</td>
<td>779 SF</td>
<td>2.20</td>
<td>1,714</td>
</tr>
<tr>
<td>Shoring</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Underpinning</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dewatering</td>
<td>-</td>
<td>-</td>
<td>-</td>
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<tr>
<td>Reinforced concrete foundations</td>
<td>65 CY</td>
<td>475.00</td>
<td>30,994</td>
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<tr>
<td>Foundation drainage</td>
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<td>-</td>
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<tr>
<td><strong>Total</strong></td>
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<td></td>
<td>32,708</td>
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<tr>
<td><strong>2. Vertical Structure</strong></td>
<td></td>
<td></td>
<td>43,940</td>
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<tr>
<td>Columns and bracing, steel framing</td>
<td>4 TNS</td>
<td>2,700.00</td>
<td>10,800</td>
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<tr>
<td>Reinforced concrete structural walls, below grade</td>
<td>20 LF</td>
<td>1,425.00</td>
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<tr>
<td>Reinforced concrete structural walls, above grade</td>
<td>150 LF</td>
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<tr>
<td>Reinforced concrete curbs</td>
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<td>Fireproofing to steel framing</td>
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<td>Equipment pads</td>
<td>150 SF</td>
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<tr>
<td>Miscellaneous concrete, metals and carpentry</td>
<td>6,486 SF</td>
<td>1.50</td>
<td>9,729</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<td>46,195</td>
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### Areas and Control Quantities

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<th>Areas</th>
<th>Ratio to Gross Area</th>
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<td><strong>Gross Area</strong></td>
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<tr>
<td><strong>Renovations</strong></td>
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<tr>
<td><strong>Expansion</strong></td>
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<tr>
<td><strong>Exterior Wall - New</strong></td>
<td>0.285</td>
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<tr>
<td><strong>Exterior Wall - Existing</strong></td>
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<tr>
<td><strong>Roof Area - New</strong></td>
<td>0.120</td>
</tr>
<tr>
<td><strong>Partition Length</strong></td>
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<tr>
<td><strong>Interior Doors x 100</strong></td>
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C. P. O’Halloran Associates Inc.  
Construction Cost Management

6.1.6
### 4. Exterior Cladding

<table>
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<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Wall framing, furring and insulation</td>
<td>1,849 SF</td>
<td>12.35</td>
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<tr>
<td>Exterior wall finish, new</td>
<td>1,849 SF</td>
<td>25.00</td>
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<tr>
<td>Exterior wall finish, existing upgraded</td>
<td>3,530 SF</td>
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<tr>
<td>Exterior windows</td>
<td>1,614 SF</td>
<td>75.00</td>
<td>121,031</td>
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<tr>
<td>Exterior doors, frames and hardware</td>
<td>6 EA</td>
<td>3,000.00</td>
<td>18,000</td>
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<tr>
<td>Interior of exterior wall</td>
<td>5,379 SF</td>
<td>4.00</td>
<td>21,517</td>
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<tr>
<td>Soffits</td>
<td>500 SF</td>
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<td>Exterior wall signage</td>
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$ 293,569

### 5. Roofing and Waterproofing

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<tr>
<td>Waterproofing</td>
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<tr>
<td>Walls below grade</td>
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<td></td>
</tr>
<tr>
<td>Floors</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Decks</td>
<td></td>
<td></td>
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<tr>
<td>Roof insulation, rigid</td>
<td>779 SF</td>
<td>4.76</td>
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<tr>
<td>Roofing membrane</td>
<td>779 SF</td>
<td>10.75</td>
<td>8,374</td>
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<tr>
<td>Green roof</td>
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<tr>
<td>Glazed skylights</td>
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<td></td>
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</tr>
<tr>
<td>Flashings, gutters and downspouts</td>
<td>779 SF</td>
<td>6.00</td>
<td>4,674</td>
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<tr>
<td>Caulking and sealants</td>
<td>6,486 SF</td>
<td>0.45</td>
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$ 19,575

### 6. Interior Partitions and Doors

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<td>Partition framing and finish</td>
<td>6,567 SF</td>
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<td>Partition surfacing</td>
<td>13,134 SF</td>
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<td>Sound insulation</td>
<td>6,567 SF</td>
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<td>Elevator smoke guard</td>
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$ 183,837

### 7. Interior Finishes - Floors, Walls, Ceilings

<table>
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<th>Quantity</th>
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<td>Floors</td>
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<tr>
<td>Walls</td>
<td>6,486 SF</td>
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<tr>
<td>Ceilings</td>
<td>6,486 SF</td>
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$ 222,470

### 8. Fixed Equipment, Casework and Specialties

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<th>Component Description</th>
<th>Quantity</th>
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<th>Cost</th>
</tr>
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<tbody>
<tr>
<td>Corner guards, corridor rails and wall protection</td>
<td>6,486 SF</td>
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<td>6,486</td>
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<tr>
<td>Toilet partitions and accessories</td>
<td>6,486 SF</td>
<td>1.25</td>
<td>8,108</td>
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<tr>
<td>Casework and countertops</td>
<td>6,486 SF</td>
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<td>51,888</td>
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<td>Code signage</td>
<td>6,486 SF</td>
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<td>Window blinds and shades</td>
<td>6,486 SF</td>
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<td>17,837</td>
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<tr>
<td>Fixed equipment and specialties</td>
<td>6,486 SF</td>
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$ 114,478

### 9. Stairs and Elevators

<table>
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<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
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</thead>
<tbody>
<tr>
<td>Staircase flights, floor to floor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ladders</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Elevators - see summary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevator cab finishes</td>
<td></td>
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</tbody>
</table>

$ -

### 10. Plumbing

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sanitary fixtures and connection piping</td>
<td>6,486 SF</td>
<td>7.00</td>
<td>45,402</td>
</tr>
<tr>
<td>Sanitary waste, vent and service piping</td>
<td>6,486 SF</td>
<td>15.00</td>
<td>97,290</td>
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<tr>
<td>Kitchen systems and grease waste</td>
<td>6,486 SF</td>
<td>6.50</td>
<td>42,159</td>
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<tr>
<td>Domestic hot water equipment</td>
<td>6,486 SF</td>
<td>4.50</td>
<td>29,187</td>
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<tr>
<td>Natural gas service</td>
<td>6,486 SF</td>
<td>1.00</td>
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$ -
<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Plumbing</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Rainwater drainage</td>
<td>6,486 SF</td>
<td>1.75</td>
<td>11,351</td>
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<tr>
<td>Testing and sterilizing</td>
<td>6,486 SF</td>
<td>0.50</td>
<td>3,243</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>235,118</td>
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<tr>
<td>11. Heating, Ventilating and Air Conditioning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heat generation and cooling equipment</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Heating hot water boiler</td>
<td>1 EA</td>
<td>9,600.00</td>
<td>9,600</td>
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<tr>
<td>Pumps and tanks</td>
<td>1 LS</td>
<td>3,800.00</td>
<td>3,800</td>
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<tr>
<td>Piping and insulation</td>
<td>6,486 SF</td>
<td>9.00</td>
<td>58,374</td>
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<tr>
<td>Air handling equipment</td>
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<tr>
<td>New fan coil units</td>
<td>8 EA</td>
<td>1,600.00</td>
<td>12,800</td>
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<tr>
<td>Fan coil 1500 cfm - game room and lounge</td>
<td>2 EA</td>
<td>6,000.00</td>
<td>12,000</td>
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<tr>
<td>Ventilation equipment</td>
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<tr>
<td>General exhaust</td>
<td>6,486 SF</td>
<td>0.90</td>
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<tr>
<td>Kitchen exhaust</td>
<td>6,486 SF</td>
<td>6.00</td>
<td>38,916</td>
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<tr>
<td>Air distribution and return</td>
<td>6,486 SF</td>
<td>12.50</td>
<td>81,075</td>
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<tr>
<td>Kitchen exhaust ducts and hoods</td>
<td>6,486 SF</td>
<td>3.00</td>
<td>19,458</td>
<td></td>
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<tr>
<td>Diffusers and grilles</td>
<td>6,486 SF</td>
<td>1.75</td>
<td>11,351</td>
<td></td>
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<tr>
<td>Controls, DOC and energy management system, 40 PTS</td>
<td>6,486 SF</td>
<td>7.50</td>
<td>48,645</td>
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<tr>
<td>Testing, adjusting and balancing</td>
<td>6,486 SF</td>
<td>1.00</td>
<td>6,486</td>
<td></td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>308,342</td>
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<tr>
<td>12. Electrical</td>
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<td></td>
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<tr>
<td>Main power service</td>
<td>6,486 SF</td>
<td>6.00</td>
<td>38,916</td>
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<tr>
<td>Emergency power service</td>
<td>6,486 SF</td>
<td>0.75</td>
<td>4,865</td>
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<td>Equipment connections and switches</td>
<td>6,486 SF</td>
<td>2.00</td>
<td>12,972</td>
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<tr>
<td>Power panel boards, feeders, outlets and grounding</td>
<td>6,486 SF</td>
<td>8.00</td>
<td>51,888</td>
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<tr>
<td>Lighting, fixtures, conduit and wire</td>
<td>6,486 SF</td>
<td>12.50</td>
<td>81,075</td>
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</tr>
<tr>
<td>Telephone and data outlets, conduit and cabling</td>
<td>6,486 SF</td>
<td>5.00</td>
<td>32,430</td>
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<tr>
<td>Communications conduit</td>
<td>6,486 SF</td>
<td>0.60</td>
<td>3,892</td>
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<tr>
<td>TV outlets, conduit and wire</td>
<td>6,486 SF</td>
<td>0.25</td>
<td>1,622</td>
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<tr>
<td>Paging system, conduit, wiring and devices</td>
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<td>-</td>
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</tr>
<tr>
<td>Fire alarms system, conduit, wiring and devices</td>
<td>6,486 SF</td>
<td>3.00</td>
<td>19,458</td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>249,062</td>
<td></td>
</tr>
<tr>
<td>13. Fire Protection</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Automatic wet pipe fire sprinkler system</td>
<td>6,486 SF</td>
<td>4.00</td>
<td>25,944</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>25,944</td>
<td></td>
</tr>
<tr>
<td>14. Site Preparation and Demolition</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Site protective construction, noise and dust control</td>
<td>5,707 SF</td>
<td>0.50</td>
<td>2,854</td>
<td></td>
</tr>
<tr>
<td>Hazardous material abatement - see summary page 2</td>
<td></td>
<td></td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Structural demolition- shear wall</td>
<td>20 LF</td>
<td>390.00</td>
<td>7,800</td>
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<tr>
<td>Selective demolition</td>
<td>5,707 SF</td>
<td>6.00</td>
<td>34,242</td>
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<tr>
<td>Site clearing and grading</td>
<td>779 SF</td>
<td>1.00</td>
<td>779</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>45,675</td>
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</tr>
</tbody>
</table>
### Wing D West - Food Service Retail Equipment

<table>
<thead>
<tr>
<th>Component Description</th>
<th>$</th>
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</thead>
<tbody>
<tr>
<td>General merchandising</td>
<td>95,000</td>
</tr>
<tr>
<td>Cashier / condiments</td>
<td>16,800</td>
</tr>
<tr>
<td>Cold storage / cold retail</td>
<td>76,400</td>
</tr>
<tr>
<td>Coffee counter</td>
<td>30,000</td>
</tr>
<tr>
<td>Prep / service area</td>
<td>99,000</td>
</tr>
<tr>
<td>Dry storage</td>
<td>6,500</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>323,700</strong></td>
</tr>
<tr>
<td>Sales tax</td>
<td>28,324</td>
</tr>
<tr>
<td>Delivery and installation</td>
<td>48,555</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td><strong>400,579</strong></td>
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</table>

**General Conditions, Supervision, Bonds, Insurances**

<table>
<thead>
<tr>
<th>Description</th>
<th>11.0%</th>
<th>44,064</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overhead and Profit</td>
<td>4.0%</td>
<td>17,786</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>462,328</strong></td>
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**Design Contingency**

<table>
<thead>
<tr>
<th>Description</th>
<th>10.0%</th>
<th>46,243</th>
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</thead>
<tbody>
<tr>
<td><strong>TOTAL CONSTRUCTION, 08/2011</strong></td>
<td></td>
<td><strong>508,671</strong></td>
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</table>

### Wing D West - Elevator and Shaft

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator structure and foundations</td>
<td>1 EA</td>
<td>145,000.00</td>
</tr>
<tr>
<td>Elevator exterior cladding, roofing and waterproofing</td>
<td>1 EA</td>
<td>45,000.00</td>
</tr>
<tr>
<td>Elevator equipment</td>
<td>1 EA</td>
<td>130,000.00</td>
</tr>
<tr>
<td>Elevator electrical</td>
<td>1 EA</td>
<td>17,000.00</td>
</tr>
<tr>
<td>Elevator mechanical</td>
<td>1 EA</td>
<td>9,500.00</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>346,500</strong></td>
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</tbody>
</table>

**General Conditions, Supervision, Bonds, Insurances**

<table>
<thead>
<tr>
<th>Description</th>
<th>11.0%</th>
<th>38,115</th>
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<tbody>
<tr>
<td>Overhead and Profit</td>
<td>4.0%</td>
<td>15,385</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
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<td><strong>400,000</strong></td>
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</table>

**Design Contingency**

<table>
<thead>
<tr>
<th>Description</th>
<th>10.0%</th>
<th>40,000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>TOTAL CONSTRUCTION, 08/2011</strong></td>
<td></td>
<td><strong>440,000</strong></td>
</tr>
</tbody>
</table>
### Detailed Project Program

#### Aberdeen-Inverness Residence Hall Common Area Improvement

**University of California Riverside**  
30-Aug-11

#### Wing D West - Service Yard

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service yard structure</td>
<td>360 SF</td>
<td>175.00</td>
<td>63,000</td>
</tr>
<tr>
<td>Service yard paving</td>
<td>360 SF</td>
<td>22.00</td>
<td>7,920</td>
</tr>
<tr>
<td>Service yard drainage</td>
<td>360 SF</td>
<td>6.00</td>
<td>2,160</td>
</tr>
<tr>
<td>Service yard lighting</td>
<td>360 SF</td>
<td>2.00</td>
<td>720</td>
</tr>
<tr>
<td>Service yard electrical utilities</td>
<td>360 SF</td>
<td>3.00</td>
<td>1,080</td>
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</table>

**SUBTOTAL** $74,880

<table>
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<tr>
<th>General Conditions, Supervision, Bonds, Insurances</th>
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<tbody>
<tr>
<td>Overhead and Profit</td>
<td>4.0%</td>
<td>3,325</td>
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</table>

**SUBTOTAL** $86,441

<table>
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<tr>
<th>Design Contingency</th>
<th>10.0%</th>
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**TOTAL CONSTRUCTION, 08/2011** $95,074

#### Wing D West - Seismic Strengthening

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Structural strengthening</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New reinforced concrete wall below second floor</td>
<td>60 LF</td>
<td>1,377.50</td>
<td>82,650</td>
</tr>
<tr>
<td>New foundations</td>
<td>1 LS</td>
<td>45,000.00</td>
<td>45,000</td>
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<tr>
<td>Infill openings above second floor</td>
<td>8 EA</td>
<td>8,000.00</td>
<td>64,000</td>
</tr>
<tr>
<td>Additional drag elements</td>
<td>320 LF</td>
<td>345.00</td>
<td>110,400</td>
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<tr>
<td>Shotcrete wall strengthening below second floor</td>
<td>20 LF</td>
<td>1,155.00</td>
<td>23,100</td>
</tr>
<tr>
<td>Column strengthening</td>
<td>12 EA</td>
<td>6,380.00</td>
<td>76,560</td>
</tr>
<tr>
<td>Slab repairs at locations of structural work</td>
<td>1 LS</td>
<td>40,000.00</td>
<td>40,000</td>
</tr>
</tbody>
</table>

**Architectural, MEP repairs**

| Typical Wing - below second floor (included in renovation) | 1 LS     | 60,000.00 | 60,000 |
| Typical Wing - above second floor                             |         |           |       |

**SUBTOTAL** $501,710

<table>
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<tr>
<th>General Conditions, Supervision, Bonds, Insurances</th>
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<th>55,188</th>
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</thead>
<tbody>
<tr>
<td>Overhead and Profit</td>
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<td>22,276</td>
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</table>

**SUBTOTAL** $579,174

<table>
<thead>
<tr>
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</table>

**TOTAL CONSTRUCTION, 08/2011** $637,091
### AREAS

<table>
<thead>
<tr>
<th>Component</th>
<th>Renovation</th>
<th>Expansion</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross Area</td>
<td>24,797</td>
<td>5,664</td>
<td>20,133</td>
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</table>

### CONTROL QUANTITIES

<table>
<thead>
<tr>
<th>Component</th>
<th>Ratio to Gross Area</th>
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</thead>
<tbody>
<tr>
<td>Exterior Wall - New</td>
<td>1.000</td>
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<tr>
<td>Exterior Wall - Existing</td>
<td>0.772</td>
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<tr>
<td>Roof Area - New</td>
<td>1.188</td>
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<tr>
<td>Partition Length</td>
<td>0.070</td>
</tr>
<tr>
<td>Interior Doors x 100</td>
<td>0.003</td>
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### COMPONENT SUMMARY

<table>
<thead>
<tr>
<th>Component Summary</th>
<th>Renovation $/Gsf</th>
<th>Expansion $/Gsf</th>
<th>Total $/Gsf</th>
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</thead>
<tbody>
<tr>
<td>1. Foundations</td>
<td>0.00</td>
<td>-</td>
<td>9.65</td>
</tr>
<tr>
<td>2. Vertical Structure</td>
<td>0.00</td>
<td>-</td>
<td>13.14</td>
</tr>
<tr>
<td>3. Floor and Roof Structure</td>
<td>0.00</td>
<td>-</td>
<td>34.29</td>
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<tr>
<td>4. Exterior Cladding</td>
<td>50.98</td>
<td>288,750</td>
<td>1,359,669</td>
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<tr>
<td>5. Roofing and Waterproofing</td>
<td>21.96</td>
<td>324,318</td>
<td>620,161</td>
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<tr>
<td>6. Interior Partitions and Doors</td>
<td>22.73</td>
<td>249,746</td>
<td>573,649</td>
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<tr>
<td>7. Interior Finishes - Floors, Walls, Ceilings</td>
<td>38.30</td>
<td>316,931</td>
<td>732,794</td>
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<tr>
<td>9. Stairs and Elevators</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
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<tr>
<td>10. Plumbing</td>
<td>38.95</td>
<td>220,613</td>
<td>745,230</td>
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<td>11. Heating, Ventilation, Air Conditioning</td>
<td>61.66</td>
<td>349,233</td>
<td>1,179,710</td>
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<td>12. Electrical</td>
<td>37.65</td>
<td>213,250</td>
<td>720,357</td>
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<tr>
<td>13. Fire Protection</td>
<td>4.50</td>
<td>25,488</td>
<td>86,099</td>
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<td>14. Site Preparation and Demolition</td>
<td>8.50</td>
<td>48,144</td>
<td>163,138</td>
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<tr>
<td>15. Site Development</td>
<td>0.00</td>
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<td>0.00</td>
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<tr>
<td>16. Site Utilities</td>
<td>0.00</td>
<td>-</td>
<td>0.00</td>
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<td>17. Subtotal (1-16)</td>
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<tr>
<td>19. Overhead and Profit</td>
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<tr>
<td>21. Design Contingency</td>
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<td>391.03</td>
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### Subtotal (22) 10.28.11

<table>
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<tbody>
<tr>
<td>Food Service Equipment</td>
<td>$3,098,225</td>
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<tr>
<td>Elevator and Shaft</td>
<td>$440,000</td>
</tr>
<tr>
<td>Loading Dock</td>
<td>$826,158</td>
</tr>
<tr>
<td>Seismic Strengthening</td>
<td>$637,091</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$16,741,904</td>
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</table>
### 1. Foundations

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earthwork, cut, backfill and cart away</td>
<td>19,133 SF</td>
<td>2.20</td>
<td>42,093</td>
</tr>
<tr>
<td>Shoring</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Underpinning</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reinforced concrete foundations</td>
<td>300 CY</td>
<td>475.00</td>
<td>142,500</td>
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<tr>
<td>Foundation drainage</td>
<td>-</td>
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</table>

**Total Cost:** $184,593

### 2. Vertical Structure

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Columns and bracing, steel framing</td>
<td>51 TNS</td>
<td>2,700.00</td>
<td>137,781</td>
</tr>
<tr>
<td>Reinforced concrete structural walls, below grade</td>
<td>60 LF</td>
<td>1,425.00</td>
<td>85,500</td>
</tr>
<tr>
<td>Reinforced concrete structural walls, above grade</td>
<td>500 LF</td>
<td>22.00</td>
<td>11,000</td>
</tr>
<tr>
<td>Fireproofing to steel framing</td>
<td>51 TNS</td>
<td>335.00</td>
<td>17,095</td>
</tr>
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</table>

**Total Cost:** $251,376

### 3. Floor and Roof Structure

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Floor at grade</td>
<td>19,133 SF</td>
<td>9.75</td>
<td>186,547</td>
</tr>
<tr>
<td>Dowels to existing slab</td>
<td>300 EA</td>
<td>36.00</td>
<td>10,800</td>
</tr>
<tr>
<td>Repairs to existing slab</td>
<td>5,664 SF</td>
<td>1.50</td>
<td>8,496</td>
</tr>
<tr>
<td>Upper floors</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Roof</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Roof framing and deck</td>
<td>19,133 SF</td>
<td>20.00</td>
<td>382,660</td>
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<tr>
<td>Fireproofing to steel framing</td>
<td>67 TN</td>
<td>325.00</td>
<td>21,764</td>
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<tr>
<td>Equipment pads</td>
<td>225 SF</td>
<td>15.00</td>
<td>3,375</td>
</tr>
<tr>
<td>Miscellaneous concrete, metals and carpentry</td>
<td>24,797 SF</td>
<td>1.50</td>
<td>37,196</td>
</tr>
</tbody>
</table>

**Total Cost:** $650,837

---

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Construction Cost Management

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6. Interior Partitions and Doors

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition framing and finish</td>
<td>21,559 SF</td>
<td>7.00</td>
<td>150,910</td>
</tr>
<tr>
<td>Partition surfacing</td>
<td>43,117 SF</td>
<td>4.50</td>
<td>194,027</td>
</tr>
<tr>
<td>Sound insulation</td>
<td>21,559 SF</td>
<td>1.20</td>
<td>25,870</td>
</tr>
<tr>
<td>Interior glazed windows and walls</td>
<td>539 SF</td>
<td>55.00</td>
<td>29,643</td>
</tr>
<tr>
<td>Interior doors, transom panels, frames and hardware</td>
<td>68 EA</td>
<td>2,400.00</td>
<td>163,200</td>
</tr>
<tr>
<td>Elevator smoke guard</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Total Cost:** $563,649
Aberdeen-Inverness Residence Hall Common Area Improvement
University of California Riverside
Wing B & C West - Residential Restaurant, Servery, Kitchen & Support

### Component Description

<table>
<thead>
<tr>
<th>Quantity Unit</th>
<th>Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbing</td>
<td></td>
</tr>
<tr>
<td>Testing and sterilizing 24,797 SF</td>
<td>0.50</td>
</tr>
</tbody>
</table>

**Total:** 965,843$

<table>
<thead>
<tr>
<th>Quantity Unit</th>
<th>Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating, Ventilating and Air Conditioning</td>
<td></td>
</tr>
<tr>
<td>Heat generation and cooling equipment</td>
<td></td>
</tr>
<tr>
<td>Heating hot water boiler 1 EA</td>
<td>22,600.00</td>
</tr>
<tr>
<td>Pumps and tanks 1 LS</td>
<td>7,800.00</td>
</tr>
<tr>
<td>Piping and insulation 24,797 SF</td>
<td>16.00</td>
</tr>
<tr>
<td>Air handling equipment</td>
<td></td>
</tr>
<tr>
<td>Air handling unit 38,000 CFM</td>
<td>8.50</td>
</tr>
<tr>
<td>VAV terminal units 24,797 EA</td>
<td>1,450.00</td>
</tr>
<tr>
<td>Ventilation equipment 24,797 CFM</td>
<td>1.10</td>
</tr>
<tr>
<td>Air distribution and return 24,797 SF</td>
<td>16.00</td>
</tr>
<tr>
<td>Kitchen exhaust ducts and hoods 24,797 SF</td>
<td>4.26</td>
</tr>
<tr>
<td>Diffusers and grilles 24,797 SF</td>
<td>1.75</td>
</tr>
<tr>
<td>Controls, DDC and energy management system, 112 PTS 24,797 SF</td>
<td>6.00</td>
</tr>
<tr>
<td>Testing, adjusting and balancing 24,797 SF</td>
<td>1.00</td>
</tr>
</tbody>
</table>

**Total:** 1,528,943$

<table>
<thead>
<tr>
<th>Quantity Unit</th>
<th>Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electrical</td>
<td></td>
</tr>
<tr>
<td>Main power service 24,797 SF</td>
<td>5.00</td>
</tr>
<tr>
<td>Emergency power service 24,797 SF</td>
<td>0.75</td>
</tr>
<tr>
<td>Equipment connections and switches 24,797 SF</td>
<td>2.00</td>
</tr>
<tr>
<td>Power panel boards, feeders, outlets and grounding 24,797 SF</td>
<td>8.00</td>
</tr>
<tr>
<td>Lighting, fixtures, conduit and wire 24,797 SF</td>
<td>14.00</td>
</tr>
<tr>
<td>Telephone and data outlets, conduit and cabling 24,797 SF</td>
<td>3.75</td>
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<tr>
<td>Communications conduit 24,797 SF</td>
<td>0.60</td>
</tr>
<tr>
<td>TV outlets, conduit and wire 24,797 SF</td>
<td>0.25</td>
</tr>
<tr>
<td>Paging system, conduit, wiring and devices</td>
<td></td>
</tr>
<tr>
<td>Fire alarm system, conduit, wiring and devices 24,797 SF</td>
<td>3.00</td>
</tr>
<tr>
<td>Rescue call system, conduit, wiring and devices</td>
<td></td>
</tr>
</tbody>
</table>

**Total:** 1,528,943$

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**Notes:**
- Aberdeen-Inverness Residence Hall Common Area Improvement # 10-2045
- University of California Riverside 30-Aug-11
- Wing B & C West - Residential Restaurant, Servery, Kitchen & Support
- Component Description
- Quantity Unit Cost $
- Plumbing
- Heating, Ventilating and Air Conditioning
- Electrical

---

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### Aberdeen-Inverness Residence Hall Common Area Improvement

#### Wing B & C West - Residential Restaurant, Servery, Kitchen & Support

**Component Description** | **Quantity** | **Unit Cost** | **$**
--- | --- | --- | ---
**12. Electrical**
Security system, conduit, wiring and devices | 24,797 SF | 0.30 | 7,439

$ 933,607

**13. Fire Protection**
Automatic wet pipe fire sprinkler system | 24,797 SF | 4.50 | 111,587

$ 111,587

**14. Site Preparation and Demolition**
Site protective construction, noise and dust control | 5,664 SF | 0.50 | 2,832
Hazardous material abatement - see summary page 2
Building demolition | 1,000 SF | 25.00 | 25,000
Structural demolition - shear wall
Selective demolition | 5,664 SF | 8.00 | 45,312
Site clearing and grading | 19,133 SF | 1.00 | 19,133

$ 92,277

---

### Aberdeen-Inverness Residence Hall Common Area Improvement

#### Wing B & C West - Food Service Equipment

**Component Description** | **$**
--- | ---
Primary servery | 475,300
Secondary servery | 305,200
Dishwashing | 146,000
Kitchen cooking | 415,000
Kitchen prep | 123,400
Bakery | 175,400
Dry storage | 28,600
Refrigeration | 282,700

Subtotal | 1,971,600
Sales tax | 172,515
Delivery and installation | 295,740

**SUBTOTAL** | $ 2,439,855

**General Conditions, Supervision, Bonds, Insurances** | 11.0% | 268,384
**Overhead and Profit** | 4.0% | 108,330

**SUBTOTAL** | $ 2,816,569

**Design Contingency** | 10.0% | 281,657

**TOTAL CONSTRUCTION, 08/2011** | $ 3,098,225

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Detailed Project Program  
10.28.11
### Wing B & C West - Elevator and Shaft

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elevator structure and foundations</td>
<td>1 EA</td>
<td>145,000.00</td>
<td>145,000</td>
</tr>
<tr>
<td>Elevator exterior cladding, roofing and waterproofing</td>
<td>1 EA</td>
<td>45,000.00</td>
<td>45,000</td>
</tr>
<tr>
<td>Elevator equipment</td>
<td>1 EA</td>
<td>130,000.00</td>
<td>130,000</td>
</tr>
<tr>
<td>Elevator electrical</td>
<td>1 EA</td>
<td>17,000.00</td>
<td>17,000</td>
</tr>
<tr>
<td>Elevator mechanical</td>
<td>1 EA</td>
<td>9,500.00</td>
<td>9,500</td>
</tr>
</tbody>
</table>

**SUBTOTAL**                                    |       |           | $346,500 |

| General Conditions, Supervision, Bonds, Insurances | 11.0% | 38,115 |
| Overhead and Profit                                 | 4.0%  | 15,385 |

**SUBTOTAL**                                    |       |           | $400,000 |

**Design Contingency**                          | 10.0% | 40,000 |

**TOTAL CONSTRUCTION, 08/2011**                 |       |           | $440,000 |

### Wing B & C West - Loading Dock

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading dock structure</td>
<td>3,600 SF</td>
<td>120.00</td>
<td>432,000</td>
</tr>
<tr>
<td>Loading dock levellers and truck bumpers</td>
<td>3,600 SF</td>
<td>15.00</td>
<td>54,000</td>
</tr>
<tr>
<td>Loading dock compactor</td>
<td>1 EA</td>
<td>35,000.00</td>
<td>35,000</td>
</tr>
<tr>
<td>Loading dock paving</td>
<td>3,600 SF</td>
<td>16.00</td>
<td>57,600</td>
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<tr>
<td>Loading dock drainage</td>
<td>3,600 SF</td>
<td>4.00</td>
<td>14,400</td>
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<tr>
<td>Loading dock lighting</td>
<td>3,600 SF</td>
<td>6.00</td>
<td>21,600</td>
</tr>
<tr>
<td>Loading dock electrical utilities</td>
<td>3,600 SF</td>
<td>6.00</td>
<td>21,600</td>
</tr>
</tbody>
</table>

**SUBTOTAL**                                    |       |           | $650,600 |

| General Conditions, Supervision, Bonds, Insurances | 11.0% | 71,566 |
| Overhead and Profit                                 | 4.0%  | 28,887 |

**SUBTOTAL**                                    |       |           | $751,053 |

**Design Contingency**                          | 10.0% | 75,105 |

**TOTAL CONSTRUCTION, 08/2011**                 |       |           | $826,158 |
Aberdeen-Inverness Residence Hall Common Area Improvement
University of California Riverside
30-Aug-11

Wing B West - Seismic Strengthening

Component Description                      Quantity  Unit Cost  $  
Structural strengthening
New reinforced concrete wall below second floor  60 LF 1,377.50 82,650
New foundations                               1 LS 45,000.00 45,000
Infill openings above second floor             8 EA 8,000.00 64,000
Additional drag elements                       320 LF 345.00 110,400
Shotcrete wall strengthening below second floor 20 LF 1,155.00 23,100
Column strengthening                           12 EA 6,380.00 76,560
Slab repairs at locations of structural work   1 LS 40,000.00 40,000

Architectural, MEP repairs
Typical Wing - below second floor (included in renovation) 1 LS 60,000.00 60,000

SUBTOTAL  $ 501,710

General Conditions, Supervision, Bonds, Insurances 11.0% 55,188
Overhead and Profit 4.0% 22,276

SUBTOTAL  $ 579,174

Design Contingency 10.0% 57,917

TOTAL CONSTRUCTION, 08/2011  $ 637,091

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Aberdeen-Inverness Residence Hall Common Area Improvement
University of California Riverside
30-Aug-11

First Floor Spine Infill

Component Description                      Quantity  Unit Cost  $  
Interior partitions and doors               625 SF 45.00 28,125
Interiors, wall and ceiling finishes        625 SF 25.00 15,625
Fixed equipment and casework               625 SF 12.00 7,500
Plumbing                                    625 SF 13.00 8,125
Heating, ventilation, air conditioning      625 SF 45.00 28,125
Electrical                                   625 SF 38.00 23,750
Fire protection                             625 SF 6.00 3,750
Interior demolition                          625 SF 25.00 15,625

SUBTOTAL  $ 130,625

General Conditions, Supervision, Bonds, Insurances 11.0% 14,369
Overhead and Profit 4.0% 5,800

SUBTOTAL  $ 150,794

Design Contingency 10.0% 15,079

TOTAL CONSTRUCTION, 08/2011  $ 165,873
### Aberdeen-Inverness Residence Hall Common Area Improvement # 10-2045

**University of California Riverside**

30-Aug-11

### Staff Residential Units

#### Concept Design Construction Estimate

- **AREAS**
  - New Construction: 4,956 SF

#### COMPONENT SUMMARY

<table>
<thead>
<tr>
<th>Component</th>
<th>$ / GSF</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Foundations</td>
<td>9.06</td>
<td>44,900</td>
</tr>
<tr>
<td>Vertical Structure</td>
<td>5.48</td>
<td>27,136</td>
</tr>
<tr>
<td>Floor and Roof Structure</td>
<td>21.19</td>
<td>105,000</td>
</tr>
<tr>
<td>Exterior Cladding</td>
<td>47.46</td>
<td>235,200</td>
</tr>
<tr>
<td>Roofing and Waterproofing</td>
<td>7.91</td>
<td>39,200</td>
</tr>
<tr>
<td>Shell (1 - 5)</td>
<td>91.09</td>
<td>451,436</td>
</tr>
<tr>
<td>Interior Partitions and Doors</td>
<td>20.08</td>
<td>99,520</td>
</tr>
<tr>
<td>Interior Finishes - Floors, Walls, Ceilings</td>
<td>15.05</td>
<td>74,600</td>
</tr>
<tr>
<td>Interiors (6 - 7)</td>
<td>35.13</td>
<td>174,120</td>
</tr>
<tr>
<td>Fixed Equipment, Casework and Specialties</td>
<td>8.15</td>
<td>40,400</td>
</tr>
<tr>
<td>Stairs and Elevators</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td>Equipment, Stairs and Elevators (8 - 9)</td>
<td>8.15</td>
<td>40,400</td>
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<tr>
<td>Plumbing</td>
<td>8.64</td>
<td>42,800</td>
</tr>
<tr>
<td>Heating, Ventilation, Air Conditioning</td>
<td>9.69</td>
<td>48,000</td>
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<tr>
<td>Electrical</td>
<td>12.91</td>
<td>64,000</td>
</tr>
<tr>
<td>Fire Protection</td>
<td>2.62</td>
<td>13,000</td>
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<tr>
<td>Mechanical and Electrical (10 - 13)</td>
<td>33.86</td>
<td>167,800</td>
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<td>Site Preparation and Demolition</td>
<td>0.81</td>
<td>4,000</td>
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<tr>
<td>Site Development</td>
<td>0.00</td>
<td>-</td>
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<tr>
<td>Site Utilities</td>
<td>0.00</td>
<td>-</td>
</tr>
<tr>
<td>Sitework (14-16)</td>
<td>0.81</td>
<td>4,000</td>
</tr>
</tbody>
</table>

#### SUBTOTAL (1-16) | 169.04 | 837,756 |

| General Conditions, Supervision, Bonds, Insurances | 11.0% | 18.59 | 92,153 |
| Overhead and Profit | 4.0% | 7.51 | 37,196 |

#### SUBTOTAL | 195.14 | 967,106 |

| Design Contingency | 10.0% | 19.51 | 96,711 |

#### TOTAL CONSTRUCTION, 08/2011 | 214.65 | $1,063,816 |

Cost per Residence | $265,954 |
### Aberdeen-Inverness Residence Hall Common Area Improvement

**University of California Riverside**

**30-Aug-11**

#### Staff Residential Units

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Foundations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earthwork, cut, backfill and cart away</td>
<td>5,000 SF</td>
<td>1.76</td>
<td>8,800</td>
</tr>
<tr>
<td>Earthwork, over excavation and recompaction</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shoring</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Underpinning</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Dewatering</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Reinforced concrete foundations</td>
<td>95 CY</td>
<td>380.00</td>
<td>36,100</td>
</tr>
<tr>
<td>Foundation drainage</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td>44,900</td>
</tr>
</tbody>
</table>

| **2. Vertical Structure** |          |           |     |
| Columns and bracing, steel framing | 2 TNS | 2,160.00 | 4,320 |
| Wood framing | 5,000 SF | 4.00 | 20,000 |
| Reinforced concrete structural walls, below grade | - | - | - |
| Reinforced concrete structural walls, above grade | - | - | - |
| Reinforced concrete curbs | 160 LF | 17.60 | 2,816 |
| Fireproofing to steel framing | - | - | - |
| **Total** |          |           | 27,136 |

| **3. Floor and Roof Structure** |          |           |     |
| Floor at grade |          |           |     |
| Reinforced concrete slab on grade, 5" | 5,000 SF | 7.80 | 39,000 |
| Dowels to existing slab | - | - | - |
| Repairs to existing slab | - | - | - |
| Upper floors | - | - | - |
| Roof |          |           |     |
| Roof framing and deck | 5,000 SF | 12.00 | 60,000 |
| Fireproofing to steel framing | - | - | - |
| Equipment pads | - | - | - |
| Miscellaneous concrete, metals and carpentry | 5,000 SF | 1.20 | 6,000 |
| **Total** |          |           | 105,000 |

| **4. Exterior Cladding** |          |           |     |
| Wall framing, furring and insulation | 5,500 SF | 8.80 | 48,400 |
| Exterior wall finish, new | 5,500 SF | 16.00 | 88,000 |
| Exterior wall finish, existing upgraded | - | - | - |
| Exterior windows | 1,100 SF | 52.00 | 57,200 |
| Exterior doors, frames and hardware | 8 EA | 2,400.00 | 19,200 |
| Interior of exterior wall | 5,500 SF | 3.20 | 17,600 |
| Soffits | 400 SF | 12.00 | 4,800 |
| Exterior wall signage | - | - | - |
| **Total** |          |           | 235,200 |

| **5. Roofing and Waterproofing** |          |           |     |
| Waterproofing |          |           |     |
| Walls below grade | - | - | - |
| Floors | - | - | - |
| Decks | - | - | - |
| Roof insulation, batt | 5,000 SF | 1.40 | 7,000 |
| Roofing, concrete tile | 5,000 SF | 4.80 | 24,000 |
| Green roof | - | - | - |
| Glazed skylights | - | - | - |
| Flashings, gutters and downspouts | 5,000 SF | 1.40 | 7,000 |
| Caulking and sealants | 5,000 SF | 0.24 | 1,200 |
| **Total** |          |           | 39,200 |

| **6. Interior Partitions and Doors** |          |           |     |
| Partition framing and finish | 5,000 SF | 5.60 | 28,000 |
| Partition surfacing | 10,000 SF | 3.60 | 36,000 |
| Sound insulation | 5,000 SF | 0.96 | 4,800 |
| Interior glazed windows and walls | - | - | - |
| Interior doors, transom panels, frames and hardware | 16 EA | 1,920.00 | 30,720 |
| Elevator smoke guard | - | - | - |
| **Total** |          |           | 99,520 |
### Aberdeen-Inverness Residence Hall Common Area Improvement

**University of California Riverside**

#### Staff Residential Units

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>7. Interior Finishes - Floors, Walls, Ceilings</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors</td>
<td>5,000 SF</td>
<td>6.00</td>
<td>30,000</td>
</tr>
<tr>
<td>Walls</td>
<td>5,000 SF</td>
<td>1.60</td>
<td>8,000</td>
</tr>
<tr>
<td>Ceilings</td>
<td>5,000 SF</td>
<td>6.40</td>
<td>32,000</td>
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<td><strong>Total</strong></td>
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<tr>
<td><strong>8. Fixed Equipment, Casework and Specialties</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corner guards, corridor rails and wall protection</td>
<td>5,000 SF</td>
<td>0.24</td>
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<tr>
<td>Toilet partitions and accessories</td>
<td>5,000 SF</td>
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<td>Casework and countertops</td>
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<td>Code signage</td>
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<td>Window blinds and shades</td>
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<td>Fixed equipment and specialties</td>
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<td>Staircase flights, floor to floor</td>
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<td>Ladders</td>
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<tr>
<td>Elevators</td>
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<tr>
<td>Elevator cab finishes</td>
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<td><strong>Total</strong></td>
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<td><strong>10. Plumbing</strong></td>
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<tr>
<td>Sanitary fixtures and connection piping</td>
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<td>Domestic hot water equipment and pumps</td>
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<td>Rainwater drainage</td>
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C. P. O’Halloran Associates Inc.
Construction Cost Management
### Bike Enclosure

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<th>Unit Cost</th>
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<tr>
<td>Bike enclosure structure</td>
<td>1,540 SF</td>
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<tr>
<td>Bike enclosure paving</td>
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<td>Bike racks</td>
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<td>Bike enclosure drainage</td>
<td>1,540 SF</td>
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<td>3,080</td>
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<td>Bike enclosure lighting</td>
<td>1,540 SF</td>
<td>1.50</td>
<td>2,310</td>
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<tr>
<td>Bike enclosure electrical utilities</td>
<td>1,540 SF</td>
<td>2.00</td>
<td>3,080</td>
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**SUBTOTAL** $204,050

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<tr>
<td>General Conditions, Supervision, Bonds, Insurances</td>
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<tr>
<td>Overhead and Profit</td>
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**SUBTOTAL** $235,555

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**TOTAL CONSTRUCTION, 08/2011** $259,099

### Sitework

#### Concept Design Construction Estimate

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<td>77,360</td>
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**COMPONENT SUMMARY**

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<td>2. Vertical Structure</td>
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<td>3. Floor and Roof Structure</td>
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<td>4. Exterior Cladding</td>
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<td>0.00</td>
<td>0.00</td>
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<tr>
<td>7. Interior Finishes - Floors, Walls, Ceilings</td>
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<td>0.00</td>
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<td>9. Stairs and Elevators</td>
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<tr>
<td>11. Heating, Ventilation, Air Conditioning</td>
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<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>12. Electrical</td>
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<td>0.00</td>
<td>0.00</td>
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<tr>
<td>13. Fire Protection</td>
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<td><strong>Total (10-13)</strong></td>
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<tr>
<td>Site Development</td>
<td>18.59</td>
<td>14.62</td>
<td>17.80</td>
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<tr>
<td>Site Utilities</td>
<td>26.71</td>
<td>24.62</td>
<td>17.80</td>
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<td><strong>Total (14-16)</strong></td>
<td><strong>31.21</strong></td>
<td><strong>38.61</strong></td>
<td><strong>17.80</strong></td>
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**SUBTOTAL** (14-16) $392,250

| General Conditions, Supervision, Bonds, Insurances | 11.0% | 4.31 | 33,000 |
| Overhead and Profit | 4.0% | 1.74 | 113,847 |
| **SUBTOTAL** | **45.42** | **43,221** | **113,847** |

| Design Contingency | 10.0% | 4.53 | 131,231 |
| **TOTAL CONSTRUCTION, 08/2011** | **49.95** | **45,752** | **131,231** |
### Site Preparation - Preparation, Development, Utilities - Phase 1

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<th>Component Description</th>
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<th>Unit</th>
<th>Cost</th>
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<td>Site clearing and grading</td>
<td>77,700 SF</td>
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<td>Remove hot water storage tanks</td>
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**Total:** $148,550

### Site Development

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<th>Quantity</th>
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<tbody>
<tr>
<td>Vehicular paving and curbs</td>
<td>5,600 SF</td>
<td>24.00</td>
<td>134,400</td>
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<tr>
<td>Pedestrian paving and curbs</td>
<td>19,600 SF</td>
<td>20.00</td>
<td>392,000</td>
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<td>Site walls and miscellaneous structures</td>
<td>1 LS</td>
<td>175,000.00</td>
<td>175,000</td>
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<tr>
<td>Site drainage</td>
<td>1 LS</td>
<td>84,000.00</td>
<td>84,000</td>
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<tr>
<td>Site lighting</td>
<td>1 LS</td>
<td>38,500.00</td>
<td>38,500</td>
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<tr>
<td>Landscaping and irrigation</td>
<td>23,100 SF</td>
<td>18.00</td>
<td>415,800</td>
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<tr>
<td>Site accessories</td>
<td>1 LS</td>
<td>14,000.00</td>
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<tr>
<td>Site signage</td>
<td>1 LS</td>
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**Total:** $1,288,700

### Site Utilities - Phase 1

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<tr>
<td>Mechanical</td>
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<tr>
<td>Sewer</td>
<td>700 LF</td>
<td>180.00</td>
<td>126,000</td>
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<tr>
<td>Grease waste</td>
<td>1 LS</td>
<td>100,000.00</td>
<td>100,000</td>
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<tr>
<td>Water, domestic</td>
<td>1 LS</td>
<td>150.00</td>
<td>150,000</td>
</tr>
<tr>
<td>Water, fire</td>
<td>700 LF</td>
<td>150.00</td>
<td>150,000</td>
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<tr>
<td>Gas</td>
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<td>140.00</td>
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<tr>
<td>Fuel</td>
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<tr>
<td>Chilled water supply and return</td>
<td>950 LF</td>
<td>350.00</td>
<td>332,500</td>
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<tr>
<td>Condenser water</td>
<td>900 LF</td>
<td>300.00</td>
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<td>Electrical</td>
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<tr>
<td>Power</td>
<td>900 LF</td>
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<td>252,000</td>
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<tr>
<td>Communications</td>
<td>900 LF</td>
<td>245.00</td>
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**Total:** $1,609,000

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### Site Preparation - Preparation, Development, Utilities - Phase 2

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<tr>
<td>Site clearing and grading</td>
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**Total:** $49,950

### Site Development

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<th>Quantity</th>
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<tbody>
<tr>
<td>Vehicular paving and curbs</td>
<td>8,000 SF</td>
<td>24.00</td>
<td>192,000</td>
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<tr>
<td>Pedestrian paving and curbs</td>
<td>8,400 SF</td>
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<td>168,000</td>
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<td>Site walls and miscellaneous structures</td>
<td>1 LS</td>
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<tr>
<td>Site drainage</td>
<td>1 LS</td>
<td>36,000.00</td>
<td>36,000</td>
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<tr>
<td>Site lighting</td>
<td>1 LS</td>
<td>16,500.00</td>
<td>16,500</td>
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<tr>
<td>Landscaping and irrigation</td>
<td>9,900 SF</td>
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<td>178,200</td>
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<tr>
<td>Site accessories</td>
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**Total:** $686,700

### Site Utilities - Phase 2

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<tr>
<td>Mechanical</td>
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<tr>
<td>Sewer</td>
<td>200 LF</td>
<td>180.00</td>
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<tr>
<td>Water, domestic</td>
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<tr>
<td>Water, fire</td>
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<tr>
<td>Gas</td>
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<td>140.00</td>
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**Total:** $316,500

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C. P. O’Halloran Associates Inc. Construction Cost Management
## Aberdeen-Inverness Residence Hall Common Area Improvement
### University of California Riverside
#### Central Utility Plant

**Concept Design Construction Estimate**

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<td>1. Foundations</td>
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<td>Earthwork, cut, backfill and cart away</td>
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<td>Shoring</td>
<td></td>
<td></td>
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<tr>
<td>Underpinning</td>
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<td>2,200 SF</td>
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<td>Columns and bracing, steel framing</td>
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<td>CMU structural walls, above grade</td>
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<td>Fireproofing to steel framing</td>
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<tr>
<td>Equipment pads</td>
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<tr>
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<td>5. Roofing and Waterproofing</td>
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<td>10. Plumbing</td>
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<td>13. Fire Protection</td>
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</tr>
<tr>
<td>General Conditions, Supervision, Bonds, Insurances</td>
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<td>112.50</td>
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<tr>
<td>Overhead and Profit</td>
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<td>4.0%</td>
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<tr>
<td>SUBTOTAL (14-16)</td>
<td>114.5%</td>
<td>114.5%</td>
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<td>Design Contingency</td>
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<td>10.0%</td>
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<td>TOTAL CONSTRUCTION, 08/2011</td>
<td>143.5%</td>
<td>143.5%</td>
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</table>

### Aberdeen-Inverness Residence Hall Common Area Improvement
#### University of California Riverside
#### Central Plant - Phase 1

**Component - Phase 1**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
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</thead>
<tbody>
<tr>
<td>1. Foundations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earthwork, cut, backfill and cart away</td>
<td>2,100 SF</td>
<td>2.20</td>
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<tr>
<td>Shoring</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Underpinning</td>
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<tr>
<td>Reinforced concrete foundations</td>
<td>70 CY</td>
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<td>Foundation drainage</td>
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<td></td>
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<tr>
<td>2. Vertical Structure</td>
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<td></td>
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<tr>
<td>Columns and bracing, steel framing</td>
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<tr>
<td>Reinforced concrete structural walls, below grade</td>
<td>8,000 SF</td>
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<tr>
<td>CMU structural walls, above grade</td>
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<tr>
<td>Reinforced concrete curbs</td>
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<td></td>
</tr>
<tr>
<td>Fireproofing to steel framing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Floor and Roof Structure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floor at grade</td>
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<tr>
<td>Wood framing</td>
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<td>Roof framing and deck</td>
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<td>Fireproofing to steel framing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment pads</td>
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<td></td>
</tr>
<tr>
<td>Miscellaneous concrete, metals and carpentry</td>
<td></td>
<td></td>
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<td>4. Exterior Cladding</td>
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<tr>
<td>5. Roofing and Waterproofing</td>
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<td>6. Interior Partitions and Doors</td>
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<td>7. Interior Finishes - Floors, Walls, Ceilings</td>
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<tr>
<td>8. Fixed Equipment, Casework and Specialties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Stairs and Elevators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Plumbing</td>
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</tr>
<tr>
<td>11. Heating, Ventilation, Air Conditioning</td>
<td></td>
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</tr>
<tr>
<td>12. Electrical</td>
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<td></td>
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<tr>
<td>13. Fire Protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14. Site Preparation and Demolition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Site Development</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Site Utilities</td>
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</tr>
<tr>
<td>17. Miscellaneous</td>
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<td>Overhead and Profit</td>
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<td>4.0%</td>
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<tr>
<td>SUBTOTAL (%)</td>
<td>114.5%</td>
<td>114.5%</td>
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<td>10.0%</td>
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**Design Contingency, 08/2011**

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**Design Contingency, 08/2011**

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**C. P. O’Halloran Associates Inc.**

**Construction Cost Management**

---

**Central Utility Plant**

**Concept Design Construction Estimate**

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<thead>
<tr>
<th>Component Summary</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Total</th>
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<tr>
<td>1. Foundations</td>
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<td>18.03</td>
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<td>2. Vertical Structure</td>
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<td>3. Floor and Roof Structure</td>
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<td>4. Exterior Cladding</td>
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<td>31.86</td>
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<td>5. Roofing and Waterproofing</td>
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<td>206.86</td>
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**C. P. O’Halloran Associates Inc.**

**Construction Cost Management**

---

**Detailed Project Program**

**6.1.22**
## Central Plant - Phase 1

### Component Description

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exterior Cladding</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wall framing, furring and insulation</td>
<td>6,000 SF</td>
<td>8.00</td>
</tr>
<tr>
<td>Exterior wall finish, new</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Exterior wall finish, existing upgraded</td>
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<tr>
<td>Exterior louvers</td>
<td>220 SF</td>
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<tr>
<td>Exterior doors, frames and hardware</td>
<td>3 EA</td>
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<tr>
<td>Interior of exterior wall</td>
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<td></td>
</tr>
<tr>
<td>Soffits</td>
<td></td>
<td></td>
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<tr>
<td>Exterior wall signage</td>
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<tr>
<td>Total</td>
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### Roofing and Waterproofing

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<tbody>
<tr>
<td>Waterproofing</td>
<td></td>
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</tr>
<tr>
<td>Walls below grade</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Floors</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Decks</td>
<td>2,100 SF</td>
<td>8.00</td>
</tr>
<tr>
<td>Roof insulation, batt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Roofing, concrete tile</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Green roof</td>
<td></td>
<td></td>
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<tr>
<td>Glazed skylights</td>
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<td></td>
</tr>
<tr>
<td>Flashings, gutters and downspouts</td>
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</tr>
<tr>
<td>Caulking and sealants</td>
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### Interior Finishes - Floors, Walls, Ceilings

<table>
<thead>
<tr>
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<th>Quantity</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Floors</td>
<td>2,100 SF</td>
<td>2.00</td>
</tr>
<tr>
<td>Bases</td>
<td>2,100 SF</td>
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<tr>
<td>Walls</td>
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<td></td>
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<tr>
<td>Ceilings</td>
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<td></td>
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<td>Total</td>
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<td>$ 5,250</td>
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### Fixed Equipment, Casework and Specialties

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corner guards, corridor rails and wall protection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Toilet partitions and accessories</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Casework and countertops</td>
<td>2,100 SF</td>
<td>2.00</td>
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<tr>
<td>Code signage</td>
<td>2,100 SF</td>
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<tr>
<td>Window blinds and shades</td>
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<td></td>
</tr>
<tr>
<td>Fixed equipment and specialties</td>
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<tr>
<td>Total</td>
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</table>

### Stairs and Elevators

<table>
<thead>
<tr>
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<th>Quantity</th>
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</tr>
</thead>
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<tr>
<td>Staircase flights, floor to floor</td>
<td>1 EA</td>
<td>22,000.00</td>
</tr>
<tr>
<td>Ladders</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevators</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elevator cab finishes</td>
<td></td>
<td></td>
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<tr>
<td>Total</td>
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### Plumbing

<table>
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<tr>
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</tr>
</thead>
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<tr>
<td>Sanitary fixtures and connection piping</td>
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</tr>
<tr>
<td>Sanitary waste, vent and service piping</td>
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</tr>
<tr>
<td>Floor sinks</td>
<td>2,100 SF</td>
<td>2.00</td>
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<tr>
<td>Domestic hot water equipment and pumps</td>
<td></td>
<td></td>
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<tr>
<td>Generator flue</td>
<td>2,100 SF</td>
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<tr>
<td>Total</td>
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<tr>
<td>Component Description</td>
<td>Quantity</td>
<td>Unit Cost</td>
</tr>
<tr>
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<td>----------</td>
<td>-----------</td>
</tr>
<tr>
<td><strong>10. Plumbing</strong></td>
<td></td>
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</tr>
<tr>
<td>Generator fuel piping and fill point</td>
<td>2,100 SF</td>
<td>4.00</td>
</tr>
<tr>
<td>Natural gas service</td>
<td>2,100 SF</td>
<td>3.50</td>
</tr>
<tr>
<td>Testing and sterilizing</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>11. Heating, Ventilating and Air Conditioning</strong></td>
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<td></td>
<td></td>
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<tr>
<td>Chillers</td>
<td>150 TN</td>
<td>680.00</td>
<td>102,000</td>
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<tr>
<td>Cooling towers</td>
<td>900 TN</td>
<td>235.00</td>
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<tr>
<td>Variable frequency drives</td>
<td>1 LS</td>
<td>45,000.00</td>
<td>45,000</td>
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<tr>
<td>Cooling tower clean system</td>
<td>1 LS</td>
<td>65,000.00</td>
<td>65,000</td>
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<tr>
<td>Chemical pot feeder</td>
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<td>4,400.00</td>
<td>4,400</td>
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<tr>
<td>Water treatment</td>
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<td>15,000</td>
</tr>
<tr>
<td>Primary chilled water pumps</td>
<td>3 EA</td>
<td>12,300.00</td>
<td>36,900</td>
</tr>
<tr>
<td>Condenser water pumps</td>
<td>3 EA</td>
<td>9,600.00</td>
<td>28,800</td>
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<tr>
<td>Air separators</td>
<td>1 LS</td>
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<td>2,300</td>
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<tr>
<td>Expansion tank</td>
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<td>6,000</td>
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<tr>
<td>Piping and insulation</td>
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<td>500,000.00</td>
<td>500,000</td>
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<tr>
<td>Ventilation equipment</td>
<td>1 LS</td>
<td>32,500.00</td>
<td>32,500</td>
</tr>
<tr>
<td>Controls, DDC and energy management system, 100 PTS</td>
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<td>120,000.00</td>
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<tr>
<td>Testing, adjusting and balancing</td>
<td>1 LS</td>
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<td>45,000</td>
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<tr>
<td>Demolition, chillers, cooling towers and piping</td>
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<td>50,000.00</td>
<td>50,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
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<table>
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<tbody>
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<td><strong>12. Electrical</strong></td>
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<tr>
<td>New transformer 225 KVA to existing unit substation</td>
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<tr>
<td>Emergency power 150 KW, boards, switches, feeders and day tank</td>
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<td>150,000.00</td>
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<td>Equipment connections and switches</td>
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<td>Power panel boards, feeders, outlets and grounding</td>
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<tr>
<td>Lighting, fixtures, conduit and wire</td>
<td>1 LS</td>
<td>7,500.00</td>
<td>7,500</td>
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<tr>
<td>Telephone and data outlets, conduit and cabling</td>
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<td>1,000.00</td>
<td>1,000</td>
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<tr>
<td>Communications conduit</td>
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<td>1,500</td>
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<tr>
<td>TV outlets, conduit and wire</td>
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</tr>
<tr>
<td>Paging system, conduit, wiring and devices</td>
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<td>-</td>
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<td>Fire alarm system, conduit, wiring and devices</td>
<td>1 LS</td>
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<tr>
<td>Rescue call system, conduit, wiring and devices</td>
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</tr>
<tr>
<td>Security system, conduit, wiring and devices</td>
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<td>-</td>
<td>-</td>
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<tr>
<td>Demolition, solar hot water heaters, tanks and piping</td>
<td>1 LS</td>
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<th>Component Description</th>
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<th>$</th>
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<tbody>
<tr>
<td><strong>13. Fire Protection</strong></td>
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<tr>
<td>Automatic wet pipe fire sprinkler system</td>
<td>2,100 SF</td>
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<th>$</th>
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</thead>
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<tr>
<td><strong>14. Site Preparation and Demolition</strong></td>
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<tr>
<td>Site protective construction, noise and dust control</td>
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<td>-</td>
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<tr>
<td>Hazardous material abatement - see summary page 2</td>
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<td>-</td>
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<tr>
<td>Selective demolition</td>
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<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Site clearing and grading</td>
<td>1 LS</td>
<td>7,500.00</td>
<td>7,500</td>
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<td>7,500</td>
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### Aberdeen-Inverness Residence Hall Common Area Improvement

#### University of California Riverside

**# 10-2045**

**30-Aug-11**

#### Central Plant - Phase 2

<table>
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<th>Component Description</th>
<th>Quantity</th>
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<tr>
<td><strong>11. Heating, Ventilating and Air Conditioning</strong></td>
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<td></td>
</tr>
<tr>
<td>Heat generation and cooling equipment - Phase 2</td>
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<td></td>
</tr>
<tr>
<td>Chillers</td>
<td>600 TN</td>
<td>680.00</td>
<td>408,000</td>
</tr>
<tr>
<td>Pumps and tanks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary chilled water pumps</td>
<td>2 EA</td>
<td>12,300.00</td>
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<tr>
<td>Secondary chilled water pumps with VFD’s</td>
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<tr>
<td>Condenser water pumps</td>
<td>2 EA</td>
<td>9,600.00</td>
<td>19,200</td>
</tr>
<tr>
<td>Piping allowance</td>
<td>1,200 LF</td>
<td>85.00</td>
<td>102,000</td>
</tr>
<tr>
<td>Controls, DDC and energy management system, 80 PTS</td>
<td>1 LS</td>
<td>96,000.00</td>
<td>96,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td><strong>674,000</strong></td>
</tr>
<tr>
<td><strong>12. Electrical</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment connections and switches</td>
<td>1 LS</td>
<td>25,000.00</td>
<td>25,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td><strong>25,000</strong></td>
</tr>
</tbody>
</table>

#### Basement Spine Improvements

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interior partitions and doors</td>
<td>4,000 SF</td>
<td>25.00</td>
<td>100,000</td>
</tr>
<tr>
<td>Interior floor, wall and ceiling finishes</td>
<td>4,000 SF</td>
<td>20.00</td>
<td>80,000</td>
</tr>
<tr>
<td>Fixed equipment and casework</td>
<td>4,000 SF</td>
<td>9.00</td>
<td>36,000</td>
</tr>
<tr>
<td>Plumbing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating, ventilation, air conditioning</td>
<td>4,000 SF</td>
<td>36.00</td>
<td>144,000</td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire protection</td>
<td>4,000 SF</td>
<td>6.00</td>
<td>24,000</td>
</tr>
<tr>
<td>Interior demolition</td>
<td>4,000 SF</td>
<td>20.00</td>
<td>80,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td><strong>616,000</strong></td>
</tr>
<tr>
<td>General Conditions, Supervision, Bonds, Insurances</td>
<td>11.0%</td>
<td></td>
<td><strong>67,760</strong></td>
</tr>
<tr>
<td>Overhead and Profit</td>
<td>4.0%</td>
<td></td>
<td><strong>27,350</strong></td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td></td>
<td><strong>711,110</strong></td>
</tr>
<tr>
<td>Design Contingency</td>
<td>10.0%</td>
<td></td>
<td><strong>71,111</strong></td>
</tr>
<tr>
<td><strong>TOTAL CONSTRUCTION, 08/2011</strong></td>
<td></td>
<td></td>
<td><strong>782,221</strong></td>
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</table>
### Aberdeen-Inverness Residence Hall Common Area Improvement # 10-2045
University of California Riverside 30-Aug-11

#### Component Description - Ambient Environmental Inc. Estimation

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fireproofing</td>
<td>2,500 SF</td>
<td>9.00</td>
<td>22,500</td>
</tr>
<tr>
<td>Pipe insulation</td>
<td>857 LF</td>
<td>7.00</td>
<td>6,000</td>
</tr>
<tr>
<td>Black mastic</td>
<td>60 LF</td>
<td>6.00</td>
<td>360</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td>28,860</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### General Conditions, Supervision, Bonds, Insurances 11.0% 3,175

#### Overhead and Profit 4.0% 1,281

#### **SUBTOTAL** 33,316

#### Design Contingency 10.0% 3,332

**TOTAL CONSTRUCTION, 08/2011** 36,648

---

### Heating Hot Water Piping Distribution - Phase 1

#### Component Description

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heating, Ventilating and Air Conditioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piping and insulation - boilers</td>
<td>8 EA</td>
<td>63,750.00</td>
<td>510,000</td>
</tr>
<tr>
<td>Trade demolition</td>
<td>120 HR</td>
<td>125.00</td>
<td>15,000</td>
</tr>
<tr>
<td><strong>SUBTOTAL</strong></td>
<td></td>
<td>525,000</td>
<td></td>
</tr>
</tbody>
</table>

#### General Conditions, Supervision, Bonds, Insurances 11.0% 57,750

#### Overhead and Profit 4.0% 23,310

#### **SUBTOTAL** 606,666

#### Design Contingency 10.0% 60,606

**TOTAL CONSTRUCTION, 08/2011** 666,666
### 10. Plumbing

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Industrial water connections for new HVAC equipment</td>
<td>8 EA</td>
<td>2,000.00</td>
<td>16,000</td>
</tr>
<tr>
<td>Natural gas service</td>
<td>8 EA</td>
<td>3,300.00</td>
<td>26,400</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$42,400</td>
</tr>
</tbody>
</table>

### 11. Heating, Ventilating and Air Conditioning

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating hot water boilers 1750 Mbtu/hr, gas fired</td>
<td>8 EA</td>
<td>46,500.00</td>
<td>372,000</td>
</tr>
<tr>
<td>Primary hot water pumps</td>
<td>8 EA</td>
<td>8,800.00</td>
<td>70,400</td>
</tr>
<tr>
<td>Secondary heating hot water pumps</td>
<td>3 EA</td>
<td>8,391.00</td>
<td>25,173</td>
</tr>
<tr>
<td>Water treatment</td>
<td>8 EA</td>
<td>2,000.00</td>
<td>16,000</td>
</tr>
<tr>
<td>Piping and insulation - see phase 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ventilation equipment</td>
<td>8 EA</td>
<td>3,000.00</td>
<td>24,000</td>
</tr>
<tr>
<td>Controls, DDC and energy management system, 40 PTS for boilers</td>
<td>40 EA</td>
<td>1,200.00</td>
<td>48,000</td>
</tr>
<tr>
<td>Testing, adjusting and balancing</td>
<td>8 EA</td>
<td>2,000.00</td>
<td>16,000</td>
</tr>
<tr>
<td>Trade demolition</td>
<td>150 HR</td>
<td>125.00</td>
<td>18,750</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$590,323</td>
</tr>
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</table>

### 12. Electrical

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equipment connections and switches for boilers</td>
<td>8 EA</td>
<td>3,000.00</td>
<td>24,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>$24,000</td>
</tr>
</tbody>
</table>

**SUBTOTAL $656,723**

**General Conditions, Supervision, Bonds, Insurances** 11.0% 72,240

**Overhead and Profit** 4.0% 29,159

**SUBTOTAL $758,121**

**Design Contingency** 10.0% 75,812

**TOTAL CONSTRUCTION, 08/2011 $833,933**
### Detailed Project Program

**Aberdeen-Inverness Residence Hall Common Area Improvement**

**University of California Riverside**

**30-Aug-11**

**Air Handling Unit Coil Replacement - Future**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>10. Plumbing</td>
<td></td>
<td></td>
<td>$</td>
</tr>
<tr>
<td>11. Heating, Ventilating and Air Conditioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New air handling unit coils</td>
<td>8</td>
<td>18,000.00</td>
<td>144,000</td>
</tr>
</tbody>
</table>

|                                  | $        |           |         |
|                                  | 144,000  |           |         |

**12. Electrical**

|                                  | $        |           |         |
|                                  | -        |           |         |

**SUBTOTAL**

|                                  | $        |           |         |
|                                  | 144,000  |           |         |

**Demolish Existing Steam Boilers and Piping - Future**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demolish existing steam boilers</td>
<td>2</td>
<td>25,000.00</td>
<td>50,000</td>
</tr>
<tr>
<td>Demolish and remove steam piping</td>
<td>165,149</td>
<td>0.85</td>
<td>140,377</td>
</tr>
</tbody>
</table>

|                                  | SUBTOTAL | $        |         |
|                                  |          | 190,377  |         |

**General Conditions, Supervision, Bonds, Insurances**

|                                  | 11.0%    | 15,840   |         |
|                                  | 4.0%     | 8,453    |         |

**SUBTOTAL**

|                                  | $        | 219,771  |         |

**Design Contingency**

|                                  | 10.0%    | 21,977   |         |

**TOTAL CONSTRUCTION, 08/2011**

|                                  | $        | 241,748  |         |
Aberdeen-Inverness Residence Hall Common Area Improvement
University of California Riverside

Residential Wings - Replace Rooftop Mechanical and Re-Roof - Future

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heating, Ventilating and Air Conditioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New air handling units 20,000 CPM each average</td>
<td>8 EA</td>
<td>170,000.00</td>
<td>1,360,000</td>
</tr>
<tr>
<td>Controls, DDC and energy management system</td>
<td>8 EA</td>
<td>25,000.00</td>
<td>200,000</td>
</tr>
<tr>
<td>Clean ductwork</td>
<td>8 EA</td>
<td>35,000.00</td>
<td>280,000</td>
</tr>
<tr>
<td>Replace duct insulation in penthouse</td>
<td>8 EA</td>
<td>10,000.00</td>
<td>80,000</td>
</tr>
<tr>
<td>Demolition, air handling units</td>
<td>8 EA</td>
<td>6,250.00</td>
<td>50,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,970,000</td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Equipment connections and switches</td>
<td>8 EA</td>
<td>3,500.00</td>
<td>28,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>28,000</td>
</tr>
<tr>
<td>Roofing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New roofing, insulation, equipment pads and flashings</td>
<td>56,000 SF</td>
<td>14.50</td>
<td>812,000</td>
</tr>
<tr>
<td>Rebuild / repair mechanical penthouse</td>
<td>8 EA</td>
<td>50,000.00</td>
<td>400,000</td>
</tr>
<tr>
<td>Demolition, roofing</td>
<td>56,000 SF</td>
<td>1.75</td>
<td>98,000</td>
</tr>
<tr>
<td>Demolition abandoned roof mounted solar hot water system D East and West (C East with estimate for C)</td>
<td>400 HR</td>
<td>120.00</td>
<td>48,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,358,000</td>
</tr>
<tr>
<td>SUBTOTAL</td>
<td></td>
<td></td>
<td>3,356,000</td>
</tr>
</tbody>
</table>

General Conditions, Supervision, Bonds, Insurances | 11.0% | 369,160 |
Overhead and Profit                               | 4.0%   | 149,006 |

SUBTOTAL                                          | 3,874,166 |
Design Contingency                                | 10.0%   | 387,417 |

TOTAL CONSTRUCTION, 08/2011                        | 4,261,583 |

Aberdeen-Inverness Residence Hall Common Area Improvement
University of California Riverside

Residential Wings - Replace MEP Systems and Repair Finishes - Future

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plumbing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New fixtures, water, waste and vent piping, natural gas piping and rain water drainage.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wing A</td>
<td>32,974 SF</td>
<td>15.00</td>
<td>494,610</td>
</tr>
<tr>
<td>Wing B</td>
<td>33,260 SF</td>
<td>15.00</td>
<td>498,900</td>
</tr>
<tr>
<td>Wing D</td>
<td>33,250 SF</td>
<td>15.00</td>
<td>498,750</td>
</tr>
<tr>
<td>Wing E</td>
<td>33,242 SF</td>
<td>15.00</td>
<td>498,630</td>
</tr>
<tr>
<td>First Floor Spine / Apts. / Laundries</td>
<td>13,082 SF</td>
<td>15.00</td>
<td>196,230</td>
</tr>
<tr>
<td>Basement and Penthouses</td>
<td>19,341 SF</td>
<td>5.00</td>
<td>96,705</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2,283,825</td>
</tr>
<tr>
<td>Heating Ventilation and Air Conditioning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New diffusers, new thermostat controls at each building wing floor, ductwork cleaning, testing and balancing.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wing A</td>
<td>32,974 SF</td>
<td>9.50</td>
<td>313,253</td>
</tr>
<tr>
<td>Wing B</td>
<td>33,260 SF</td>
<td>9.50</td>
<td>315,970</td>
</tr>
<tr>
<td>Wing D</td>
<td>33,250 SF</td>
<td>9.50</td>
<td>315,785</td>
</tr>
<tr>
<td>Wing E</td>
<td>33,242 SF</td>
<td>9.50</td>
<td>315,799</td>
</tr>
<tr>
<td>First Floor Spine / Apts. / Laundries</td>
<td>13,082 SF</td>
<td>9.50</td>
<td>124,279</td>
</tr>
<tr>
<td>Basement and Penthouses</td>
<td>19,341 SF</td>
<td>6.00</td>
<td>116,046</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1,501,222</td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New main service, power, lighting, tel / data conduit and outlets and security system.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wing A</td>
<td>32,974 SF</td>
<td>24.00</td>
<td>791,376</td>
</tr>
<tr>
<td>Wing B</td>
<td>33,260 SF</td>
<td>24.00</td>
<td>798,240</td>
</tr>
<tr>
<td>Wing D</td>
<td>33,250 SF</td>
<td>24.00</td>
<td>798,090</td>
</tr>
<tr>
<td>Wing E</td>
<td>33,242 SF</td>
<td>24.00</td>
<td>797,908</td>
</tr>
<tr>
<td>First Floor Spine / Apts. / Laundries</td>
<td>13,082 SF</td>
<td>24.00</td>
<td>313,968</td>
</tr>
<tr>
<td>Basement and Penthouses</td>
<td>19,341 SF</td>
<td>10.00</td>
<td>193,410</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3,692,802</td>
</tr>
</tbody>
</table>

( 59 ) C. P. O’Halloran Associates Inc.
Construction Cost Management

( 60 ) C. P. O’Halloran Associates Inc.
Construction Cost Management

6.1.29 University of California, Riverside
2011 A-I Residence Hall Common Area Improvements DPP
10.28.11
### Detailed Project Program

Aberdeen-Inverness Residence Hall Common Area Improvement  
University of California Riverside  
# 10-2045  
30-Aug-11

**Residential Wings - Replace MEP Systems and Repair Finishes - Future**

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Quantity</th>
<th>Unit Cost</th>
<th>$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repairs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Replace interior finishes and repair interior walls.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wing A</td>
<td>32,974 SF</td>
<td>20.00</td>
<td>659,480</td>
</tr>
<tr>
<td>Wing B</td>
<td>33,260 SF</td>
<td>20.00</td>
<td>665,200</td>
</tr>
<tr>
<td>Wing D</td>
<td>33,250 SF</td>
<td>20.00</td>
<td>665,000</td>
</tr>
<tr>
<td>Wing E</td>
<td>33,242 SF</td>
<td>20.00</td>
<td>664,840</td>
</tr>
<tr>
<td>First Floor Spine / Apartments / Laundries</td>
<td>13,082 SF</td>
<td>20.00</td>
<td>261,640</td>
</tr>
<tr>
<td>Basement and Penthouses</td>
<td>19,341 SF</td>
<td>5.00</td>
<td>96,705</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>3,012,865</strong></td>
</tr>
</tbody>
</table>

**SUBTOTAL** $10,490,714

General Conditions, Supervision, Bonds, Insurances  
Overhead and Profit

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Percentage</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Conditions, Supervision, Bonds, Insurances</td>
<td>11.0%</td>
<td>1,153,979</td>
</tr>
<tr>
<td>Overhead and Profit</td>
<td>4.0%</td>
<td>465,788</td>
</tr>
</tbody>
</table>

**SUBTOTAL** $12,110,480

Design Contingency

<table>
<thead>
<tr>
<th>Component Description</th>
<th>Percentage</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Design Contingency</td>
<td>10.0%</td>
<td>1,211,048</td>
</tr>
</tbody>
</table>

**TOTAL CONSTRUCTION, 08/2011** $13,321,528
6.2

ALTERNATIVE STUDIES

The following preliminary concept diagrams are included for reference. Alternate Concept 1 sought to renovate and reuse an expanded version of Wing C East for the Residential Restaurant facility. All subsequent Concepts proposed the construction of a new wing or freestanding building for the Residential Restaurant facility: Alternate Concept 2 envisioned its location at Wing C West; Alternative Concept 3 considered a new building in the parking lot east of Wing D East. Alternate Concepts 4, 5 and 6 considered by the Project Management Team (PMT) as described in Section 6.7 were never graphically illustrated.

The Preferred Concept (Alternate 7) described in Section 2.3 was developed from desirable aspects of Alternative Concept 2, as selected by the PMT.
INFRASTRUCTURE REPORTS

The following engineering reports document observations and evaluations of the existing A-I building conditions.

- Mechanical, Electrical, Plumbing
- Structural
- Roofing
# Study of Current Mechanical, Electrical, and Plumbing Systems

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### Mechanical Systems

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<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>6.3.3</td>
</tr>
<tr>
<td>Boilers</td>
<td>6.3.3</td>
</tr>
<tr>
<td>Cooling Tower</td>
<td>6.3.5</td>
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MECHANICAL SYSTEMS

INTRODUCTION

The objective of this study is to assess the current condition of the MEP system in the Aberdeen Inverness Residence Hall to provide basis of analysis for future renovation and improvement.

The Aberdeen Inverness Residence Hall consists of five wings as indicated in Figure 1. The facility was originally built in 1959. The HVAC system is independent of the campus chilled water and heating hot water system and serves this Aberdeen and Inverness Building only. The central heating plant comprises two steam boilers with associated pumps and was installed when the building was built in 1959. Two centrifugal chillers have been installed in 1974 to replace the original evaporative cooling system to provide comfort during summer. The air distribution system consists of constant flow multi-zone air handling units located in the penthouses of each building block wing on the roofs and serves the respective wing of that block. The mechanical ventilation system consists of roof mounted exhaust fans to serve restroom exhaust, kitchen, laundry, transformer rooms etc.

Based on ASHRAE data for HVAC equipment life expectancy, mechanical equipment life span range from 15 to 27 years, piping and ductwork has life expectancy of 30 years. The mechanical equipment and the piping and ductwork in the Aberdeen Inverness Residence Hall have been operated for almost 50 years and well beyond the life expectancy of the equipment, piping and ductwork. The observation of the system reveals that the system to be aged and in fair to poor condition.

BOILERS

The heating plant in the basement of Aberdeen Inverness Residence Hall was originally built in 1959. It consists of two 13,650 MBH gas fire steam boilers, two boiler feed pumps with 82.7 GPM at 70 feet capacity of each, one 42 inch diameter 96 inch long condensate receiver and associated auxiliary equipment. The boilers installed in 1959 are still under operation to produce steam to heat exchangers for
production of domestic hot water and to steams coils of air handling units at various locations. The boilers operate on a run and standby basis.

The life expectancy of a steam boiler is normally thirty-five (35) years depending on the maintenance and operation condition of the boiler. For the steam boilers over fifty (50) years in Aberdeen and Inverness Residence Hall the condition of the boilers is fair in that they are operational and well maintained. However, the existing steam boilers are way beyond their life expectancy and they could stop operation at any time. In fact when a boiler is in need of repair there are no maintenance manuals for the boilers. Thus the maintenance personnel have to rely on personal history of past failures to get the failed boiler up and running again. Considering that the boiler plant is the only heating source for this residence hall for both domestic hot water and thermal comfort system, failure of both the boilers operation will make the residence halls uninhabitable during the winter periods.

The condition of the pumps and associated piping for the steam boiler system is poor as the piping is rusted and has leaks in some of the fittings. The pumps should be overhauled and possibly even replaced if UCR decides to keep the existing steam boilers in operation for a longer period of time (more than 3 years). Piping insulation is broken in many locations and piping is rusty though is still in operation and will be for the foreseeable future.

As soon as funding becomes available, we recommend that the steam boilers to be replaced with heating hot water boilers in the near future. The steam boilers are very expensive to maintain and the next time they fail to operate they may not be repairable.

The issue with steam boilers is that they require experienced steam mechanics to run and maintain them. They also tend to be inefficient when compared to the modern hot water boiler.

Figure 3: Pumps of Steam Heating System in the Basement
However, replacement of steam boilers to hot water boilers implies that the steam heating piping system in the entire facility will be inappropriate to the new boiler system. Steam piping is generally smaller than heating hot water piping and therefore will be inappropriate for a heating hot water system.

It is suggested that hot water boilers for the domestic hot water system only should be installed at the first stage to separate the domestic hot water system with the thermal comfort heating system.

The emergency generator which is located in the same room as the boilers is not in compliance with current code. The emergency generator should be relocated outside the boiler room and the area could be used for the new domestic hot water boiler(s).

In selecting the boilers in the design phase a life cycle cost will be carried out to ensure the equipment selected is not only energy efficient but also minimizes maintenance.

**COOLING TOWER**

Two centrifugal chillers have been installed in 1974 with only one cooling tower. A cooling tower life expectancy is usually 20 years. The 35 year old cooling tower (BCA VLT490B) appears short of capacity with its age. Based on the operation and maintenance staff of the University, during a hot summer day, the return water temperature can reach more than 100 degrees F and therefore the normal operation of the chillers cannot be maintained.

Inspection of the cooling tower also reveals that the tower is in bad condition. The vibration support of the tower is severely rusted. The chemical water treatment plant is out of order and water is constantly discharged to the drain causing a huge waste of water.
There were two condenser water pumps located in the chiller room. One of the condenser pumps has been demolished at some stage and only one condenser water pump is available and the pump is rusty. This reduces the standby capability of the cooling water system.

It is recommended to replace the cooling tower with associated water pumps as soon as possible. We recommend the project provide a dedicated enclosure to the cooling tower.

**CHILLERS**

Two water cooled centrifugal chillers with 300 tons capacity each have been installed in 1974. It has been confirmed that the chillers are duty and stand-by. One chiller has sufficient capacity to provide thermal comfort for the whole building in summer.

The condition of the chillers is good for their age. However, the refrigerant used is chlorofluorocarbons (CRC) refrigerant R-11 which has been phase out fifteen years ago. The refrigerant R-11 production has been stopped since 1995. Today R11 refrigerant is obtained from reclaimed units that are no longer in operation. This guarantees that that the service and maintenance cost will increase significantly with time.

The possibility of replacing refrigerant only without changing the chiller has been studied and discussed with a number of chiller manufacturers (Carrier, York, McQuay). We have been told that the cost of replacing the refrigerant of the chiller is very high and comparable with installing a new chiller. In addition, the efficiency, performance, and life expectancy of a retrofit chiller cannot be guaranteed.

New chillers offer great improvements in operating efficiency over units installed in the past 10-15 years. Even if the existing chiller has been well maintained and is operating efficiently, upgrading to a new generation, high efficiency chiller typically will result in reduced annual energy requirements of at least 25 percent.
System reliability is another factor that needs to be considered when evaluating chiller replacements. As chillers age, the frequency of breakdowns and the cost of maintenance increases. The maintenance requirements will increase with chiller age. For older chillers, getting replacement parts might become very difficult, resulting in prolonged downtime.

Finally, refrigerant type used in the old chillers needs to be considered. While no shortage exists yet for chlorofluorocarbons (CFC), the price is increasing. Refrigerant that loses its charge in an older chiller using CFCs could be very expensive to replace, and the result could be lengthy downtime.

The existing chillers operate well and could well run for the next 5 years with little repair. Thus while the chillers are well maintained and could operate for many years to come the dependency of out of date refrigerants is a major concern and we would recommend that the chillers be replaced under this project.

**AIR DISTRIBUTION SYSTEM**

Air handling units are constant flow multi-zone with reheating coil. This is energy inefficient and cannot comply with the current energy efficiency code in California. The air handling units in the penthouses on the roofs of each residential wing are in poor to fair condition. The concerns are:

- The base plates of some air handling units are in bad condition.
- The air handling units are multi-zone units and do not meet current energy efficiency code requirements.
- The drain pans in the majority of the units are corroded and subject to leaking
- For the most part, the controls on the multizone dampers are not operable. The controls are antiquated (pneumatic)
- In a number of the penthouses chilled water piping was leaking at the coils.
In each of the penthouses the ductwork insulation needed to be replaced.

Flexible connections to the ducting were torn in a number of the AHU’s in multiple places.

Control System Issues

The automatic control of the air handling units is pneumatic and overall controls to the multi-zone dampers and to the outside air dampers are no longer operational. Also as the air handling units are not part of a smoke control system they should shut down in case of fire. The current situation is that the air handling units controls have not been linked to the fire alarm system. In addition, in half of the air handling units the supply fan and return fan are not interlocked. When the supply fan stopped the return fan was still running. This can cause increased pressure difference between indoors and outdoors resulting in difficulty opening or closing doors, or significant air infiltration. These issues will be addressed during the design phase of the project.

As can be seen from Figure 10 below, a number of the instrument and measuring devices on the HVAC system do not work correctly. All the air handling units are equipped with economizer control. Thus if the system’s temperatures cannot be measured then the economizer will not operate correctly. As can be seen from Figure 10, the control dials are not measuring the temperatures.

Zone Control Issues

The multi-zone units have reheating coils and thermostats on each zone. Each floor of the residential halls have two zones, each zone with its own thermostat. As a result all the rooms in that zone will be subjected to the temperature setting at the one thermostat. This may result in some rooms being uncomfortable for the occupants. It is recommended to introduce variable air volume system to the air handling units. The variable air volume system can be at room level offering room by room control or at the air handling level (energy savings when the one control thermostat is satisfied).
With the former control boxes are need at each room and this will prove to be very expensive. With the latter option the air handling unit could be variable air volume and the flow rates adjusted when the occupant opens or closes a manual damper at the supply grill in each room. This will allow occupants in individual rooms to have a certain level of control by adjusting the air volume to each room. In addition, multiple thermostats can be used in each zone and an average of the thermostats will be used to control each zone.

The systems will become more energy efficient and the occupants will obtain better control within their individual rooms.

- The cooling coil in most of the air handling units is in reasonably good condition. However when the building was built the outside air requirements for people was a lot less then than it is now. Thus to comply with current codes we will need to increase the outside airflow which in turn requires the cooling coils to increase in size. This should be taken into account when sizing the central plant.

- Insulation on the ductwork was broken in various locations. Some exposed ducts appear rusty, not labeled or some fire dampers are not accessible.

- Some areas have black dust and fiberglass particulate blowing out from the air diffusers, and duct cleaning needs to be performed to increase the air quality of the air provided by the HVAC system.

- Piping system is rusty, leaking in some places and insulation is deteriorated
BUILDING ENERGY MANAGEMENT CONTROL SYSTEM
Currently the building does not have an energy management control system. Thus if there is an issue in the building the maintenance staff have to visit the building to determine what the issue is. This is a waste of resources and thus the new design will include an energy management system.

RECOMMENDATIONS

Based on the above, the entire HVAC system in the Aberdeen Inverness Residence Hall is well beyond its life expectancy and causes problems in energy efficiency, air balance, and indoor air quality. Based on the available funds and assuming phasing will take place we have provided a recommended scope of work in section 4.1 of this DPP.

ELECTRICAL SYSTEMS

INTRODUCTION

The objective of this study is to assess the current condition of the Electrical system in the Aberdeen Inverness Residence Hall to provide basis of analysis for future electrical renovations and improvements.

The Aberdeen-Inverness Residence Hall consists of five wings as indicated Figure 14. The facility was originally built in 1959. The original electrical service was 4.16 KV then upgraded to 12 KV in the early 1990’s, the time when all substations in A-I hall were replaced. Since that time, no major upgrades have been made to the Electrical Systems except some minor additions in the main dining area.
In 2009 the Fire Alarm System was upgraded to Simplex 4900-U to accommodate the addition of Audio/Visual warning system in the Dormitory areas. Common Areas were not included in this upgrade; it is therefore our recommendation that the Common Areas fire alarm system be upgraded.

The basis of the Electrical systems assessment was derived from the available “As-Built Drawings” obtained from the University, the 2002 East Campus Infrastructure DPP done by Bechard Long & Associates, Inc. and also through site visits and visual inspections of existing service equipment.

INCOMING ELECTRICAL SERVICE AND MAIN EQUIPMENT ROOM

The main electrical service to the Residence Hall is at 12KV connected to one of the six 12KV circuits from the Campus Radial Distribution System. The Main Electrical Room is located in the Basement of Building C where the 12KV service is terminated and distributed to the other four wings of the Residence Hall. Wing C is situated at the center of the Residence Hall making it an ideal location not only for power distribution but also for all the utility services to the buildings. Two Unit Substations, 750KVA at 480V, 3-phase, 3-wire feeding the main Mechanical/Plumbing equipment and 300KVA at 208/120V, 3-phase, 4-wire serving the general power and lighting are located in Wing C.

NORMAL POWER SERVICE

The Electrical power service to the Residence Hall is connected to the 12KV Campus Distribution System. The building power system is served from two utilization voltages, 480V, 3-phase, 3-wire and 208/120V, 3-phase, 4-wire system. Mechanical and Plumbing equipment are fed from the 480V system and the Residence Hall’s general power and lighting are fed from the 208/120V system. The utilization voltages are transformed from the 12KV Campus Distribution System through Unit Substation Transformers installed in each of the five wings of the Aberdeen Inverness Residence Hall. The original Unit Substations in the building were replaced and upgraded to 12KV in the early 1990’s per the East Campus Infrastructure, DPP done in June 2002 by Bechard Long & Associates, Inc.
Switchgear and Distribution Boards are the original equipment installed when the building was built in 1959, and have deteriorated. Replacement of Switchgear, Panels and Distribution Boards could be done on a wing by wing or floor by floor basis.

After calculating the existing connected loads of the 750KVA Unit Substation which serves the Chillers and Pumps, we found out that it has no spare capacity and cannot take any new additional 480 V loads. The Electric Meter reading provided is the summation of the power consumptions of all the wings and therefore cannot be used as the basis of measurement for each wing power usage. Based on our analysis of the “As-Built” drawings and the information from the maintenance staff, there is no history of any buildings panel’s circuit breaker tripping except switchgear’s circuit breaker being not operational; based on this information we can conclude that each wing’s 300KVA Unit Substation should be adequate until the wing’s infrastructure is due for renovations. As the design progresses we will have enough information to determine whether an upgrade and substation is necessary.

Each of the wings have a separate 12 KV service coming from Wing C and therefore independent of other buildings’ power connection. Renovation of each wing will not affect the electric service of the other wings.

**EMERGENCY POWER SERVICE**

The emergency power service to the Residence Hall is fed from the existing 25KW, 208/120V, 3-phase, 4-wire Natural Gas fueled Generator. The generator is located in the lower Basement of Building C where the Chillers and Boilers are located. The Generator was installed when the building was built in 1959. Maintenance Log was not available during the site visit. The Generator serves the Hall’s Life Safety System (emergency lighting and exit signs) and is required to be exercised at least once a month for 30 minutes and with a minimum 30% load to make sure that it will start when needed. The existing Automatic Transfer Switch is located in the same room as the generator and Maintenance Log was not available during the site visit. Per our visual inspection, we found out that it has deteriorated and is beyond its life expectancy. The life expectancy of an Engine-Generator set is from 20 to 25 years. Emergency lighting panels were provided for the connection of emergency lighting of each building.
There was a discussion during the 1/19/2011 meeting that new freezers and refrigerators will be connected to the emergency generator when the Kitchen is renovated. The existing generator has no spare capacity for this future load. The generator when replaced shall be rated to include all the required and optional loads and will be Diesel fueled. It will be located in the proposed stand alone Central Plant.

ELECTRICAL UTILIZATION EQUIPMENT AND LOCATIONS

Wings A, B, C, D & E were provided with separate electrical service connected from the 12KV system. A typical 300KVA, 12KV-208/120V, 3-phase, 4-wire Unit Substation was provided to each wings (A, B, D, and E) located in the electrical room of each building. Wing C is an exception being the center of the Residence Hall where the main 12KV Campus Service is terminated and distributed. There are two Unit Substations located in the main electrical room in this building, the 750KVA, 12KV-480V, 3-phase, 3-wire serving the Chillers, Boilers and Pumps and the 300KVA, 12KV-208/120V, 3-phase, 4-wire serving the general power and lighting in Bldg C. Figure E5 below is the picture of a typical 300KVA Unit Substation serving each wing of the Residence Hall and in good operational condition.

As mentioned above, each wing is provided with a separate Unit Substation and therefore independent of other wings’ power service. This statement also means that replacing the existing Distribution Board and Panelboards can be done on a wing by wing or floor by floor basis and will not affect the other wings.

LIGHTING SYSTEMS

The existing lighting systems in all the buildings are primarily fluorescent fixtures. They are functional except consuming too much energy considering the existing fixtures are still with the old style magnetic ballast and T12 fluorescent lamp. These fixture components are not very efficient anymore. A few of the old fixtures, most of them incandescent downlights, have been replaced with fluorescent; there is energy saving with this replacement. The least that we can recommend to save energy is to replace the lamp and ballast of all existing fluorescent fixtures with high power factor electronic ballast and T8 lamps until new more efficient fixtures are specified. Existing lighting controls also have to be looked at for additional energy savings.
RECOMMENDATIONS

All the electrical equipment in the Aberdeen-Inverness Residence Hall from the Main Service to the panelboards (except the unit substations) is well beyond its service life and may cause problems when worked on. It was also found out that insulation of the majority of power wiring is falling apart when touched or repaired. It will be dangerous for the maintenance staff to touch or repair any of the existing wiring. It is our recommendation that whenever a renovation is done in any of the wings that a complete replacement of the electrical equipment and all wiring excluding the unit substation be considered. In prioritizing the replacement of electrical equipment, it is suggested, as mentioned above, that it can be done on a floor by floor or wing by wing basis.

The Emergency Generator serving the Life Safety System of the Hall is recommended to be given the top priority, taking into consideration that it is a very important piece of equipment for the safety of the occupants. It is also recommended to check all the designated emergency lighting fixtures and verify that all are in good working condition. As mentioned above, the new Emergency Generator will be diesel fueled and will be located in proposed Central Plant. Based on the proposed Kitchen loads (approximately 250KVA of future loads at 480V) from the Kitchen Consultant in addition to our calculations of the existing loads, the 480V Unit Substation will definitely have to be upgraded to a larger unit.

The typical 300 KVA Unit Substation serving the other wings will be further analyzed as the design progresses to determine if it needs upgrading. The existing Unit Substation serving each wing will not be replaced unless the capacity will require to be upgraded.

See section 4.1 of this DPP Report for additional recommendations.
PLUMBING SYSTEMS

INTRODUCTION

The objective of this study is to assess the current condition of the Plumbing system in the Aberdeen Inverness Residence Hall to provide basis of analysis for future plumbing renovations and improvements.

The Aberdeen Inverness Residence Hall main incoming lines and hot water equipment are located at the basement of the “C Wing”. The original domestic hot water equipment was replaced through the years but no major upgrades were done to the plumbing piping systems.

In 2008, a Fire Sprinkler System was installed in all the residential wings of the building.

The basis of the Plumbing systems assessment was derived from the available “As-Built Drawings” obtained from the University and also through site visit and visual inspections of existing service equipment.

SANITARY DRAINAGE AND VENT SYSTEMS

No major upgrades have been done to the sanitary drainage piping systems.

Although no major leaks were reported on the existing interior sanitary drainage system, it is recommended that destructive pipe test be done randomly along the entire system so as to ensure that pipes are not corroded or clogged, to determine if any needs to be replaced.

Any new plumbing fixtures are better served by providing new risers and branch piping for the sanitary waste & vent systems.
Plumbing fixtures below house sanitary drainage system level are currently drained by gravity to a sump and pumped into a gravity house drain. The pumps seem to be in good working condition.

Portions of the existing site sewer clay pipe system have been reported to have been broken.

**KITCHEN GREASE WASTE SYSTEMS**

There is no existing grease waste system. The project calls for two new kitchens plus a kitchen service enclosure.

To comply with Code, a new kitchen grease waste system and piping shall be provided to serve the kitchens. The new grease waste shall pass through a grease trap before connecting to the domestic waste system.

A grease waste system would help minimize maintenance and clogging of the sewer system.

**STORMWATER DRAINAGE SYSTEMS**

The existing building has roof drains that are drained at low points by gravity to discharge into the site storm drainage system. All storm drains need replacement whenever the roof they are located in is replaced.

**DOMESTIC WATER SUPPLY SYSTEMS**

No major upgrades have been done to the domestic water piping systems.

Domestic water service is brought to the building at the C Wing basement. The domestic water service is separate from the fire sprinkler service; however Class 2 standpipes are currently connected to the existing domestic system.
The existing domestic water is a combination of copper and galvanized iron piping. Although no major leaks were reported on the existing domestic water system, it is recommended that destructive pipe test shall be done randomly along the entire system so as to ensure that pipes are not clogged with carbonate build up or corroded. The existing hot water equipment has exceeded its life expectancy. It’s reported to have gone through several stages of complete overhaul. They need to be replaced with new more efficient models. The metered water service mains are galvanized steel and need to be replaced with copper piping.

The existing domestic hot water heat exchangers are in good working condition. However, 3 out of 4 have exceeded their life expectancy and should be replaced with new, more efficient water heaters.

**SOLAR DOMESTIC HOTWATER SYSTEMS**

Since it is already abandoned, the existing solar hot water equipment and piping system needs to be demolished.

**PLUMBING FIXTURES**

The existing plumbing fixture count is sufficient for the current occupancy levels of the building.

However, most of the existing plumbing fixtures have high water usage characteristics; it would make sense to replace them with water efficient fixtures.

**NATURAL GAS SYSTEMS**

An existing metered and regulated natural gas system serves the building gas fired boiler and emergency generator and should be updated. The new gas piping will be distributed through risers and branches to any required equipment. Natural gas shall be supplied at 7"w.g. pressure.
FIRE SUPPRESSION SYSTEM

The existing building has a functional fire protection system in most areas.

The residential portions are protected by a fire sprinkler system installed in 2008.

The Class 2 standpipes that are installed in the 1950’s are currently connected to the domestic water system. These need to be connected to a separate fire system.

RECOMMENDATIONS

Based on the above, the entire plumbing system in the Aberdeen-Inverness Residence Hall is well beyond the life expectancy of the system. Plumbing fixtures are mainly old and are not water efficient. Based on the budget and phase of the project, we recommend the following:

• Replace broken site sewer piping.

• It is recommended that all plumbing fixtures, including risers and branch piping for sanitary waste and vent systems be replaced with water efficient plumbing fixtures in the next few years.

• Separate the Class 2 standpipes from the domestic system.

• For the domestic water piping, it is recommended that all galvanized steel piping be replaced with copper.

• Demolish existing abandoned solar hot water system.

• Perform random destructive testing on all the piping system to verify the integrity of the piping system.

• See Section 4.1 of this DPP Report for additional recommendations.
STRUCTURAL

Work Observed: Condition of existing structure of Aberdeen-Inverness Wings A, B, C, D, E

The following conditions were either noted and/or discussed:

John A. Martin and Associates performed a limited observation of the exposed existing structure of Aberdeen-Inverness (A-I) Residence Hall. We observed the exposed exterior structure of Wings A, B, C, D, and E. In general, the condition of the existing structure we observed was good. Many of the exposed concrete walls had minor cracks that are not of structural concern. The brick masonry appeared to be in good condition.

We observed a crack in one of the Wing B west concrete walls. See Figures 1 and 2 below. This crack occurs at the attachment of the 2nd level concrete transfer girder to the perpendicular stairwell concrete wall. A similar crack was located in Wing D west. See Figures 3 and 4 below. This was expected because Wing D is the mirror image of Wing B. The cracks are likely the result of minimal force transfer between the concrete wall and the girder that transfers the masonry shear wall forces to the concrete shear walls.
After our initial observation, we met with Facilities Management and were informed of a crack in one of the Wing E east concrete walls. See Figure 5 below. The crack appears to be located at a construction joint where a small amount of loose concrete has spalled off over time. This crack is not of structural concern and appears to be possibly due to delaminating of previous grout repairs. No other conditions of concern were identified by Facilities Management.

We observed the roof of Wing C east. No notable structural issues were observed since most of the structure is covered by roofing.
EXECUTIVE SUMMARY

Studios Architects (Studios) engaged Simpson Gumpertz and Heger (SGH) to perform a condition assessment of the roofing systems at the A-I Residence Hall at University of California’s Riverside campus in Riverside, California. Prior to our assessment, we were informed by the building maintenance department that they have no reported leakage into the space below or adjacent to the roofing system except for two locations. The roofing systems are aged approximately twenty-five years on four of the five wings and a portion of the fifth wing (Wing C). The rest of Wing C has a roof with an age of approximately five years.

The A-I Residence Hall comprises five wings. The roofing membrane is either gravel or mineral-surfaced built-up roofing system. In conjunction with the age of these roofs, we also observed conditions throughout the roof that indicate it is near the end of its service life, including little to no slope to drain, “grapes” (i.e., asphalt deposits exuding through the gravel surfacing the size of a quarter or larger), and cracked filler in the pitch pockets at penetrations in the roofing systems. Despite the fact that the existing built-up roofing system is near the end of its service life, the limited extent of leakage and minimal need for ongoing repairs indicate that the roof is still functional.

UC-Riverside should plan to replace the roof in two to five years if not sooner. We recommend that UC-Riverside replace the existing built-up roofing system with a more energy efficient roofing system and install continuous insulation below the roofing membrane to improve the energy efficiency.

BACKGROUND

Aberdeen-Inverness (A-I) Residence Hall (Photo 1) is located on the northeast side of the University of California’s Riverside campus in Riverside, California. The A-I Residence Hall comprises five wings: Wings A, B, C, D, and E. Wing C is located at the...
center of the campus site. Wing A is located on the northernmost side of the campus site, and Wing E is located on the southernmost side of the campus site (Photo 2). The wings are roughly rectangular in shape and run lengthwise in the east-west direction. All the wings are connected via an enclosed corridor.

UC-Riverside retained Studios Architects (SA) to perform an overall condition assessment of the A-I Residence Hall including but not limited to mechanical, HVAC, electrical, plumbing and roofing systems, and to prepare a report with recommendations for repair and maintenance items. SA engaged Simpson Gumpertz & Heger (SGH) to perform a condition assessment of the roofing system. We understand that SA will use this information to prepare construction documents for the project, if necessary, and that as the Architect-of-Record, SA will have overall responsibility for the design and construction administration.

INFORMATION FROM OTHERS

Jerry Griffin of SA and the building maintenance department of UC-Riverside told us the following information relevant to the roofing system:

- The building maintenance department reports no leakage below the roofing membrane with the exception of two locations:
  - Below an expansion joint in the corridor between Wings C and B.
  - Below the penthouse on the east wing of Wing D in Room 320.

- The main roofing systems for Wings A, B, C, D, and E are approximately twenty-five years old. The roofing systems along the north and south sides of Wing C are approximately five years old.

- An infill structure and roofing membrane was added in 1967 over the courtyard on the west side of Wing C.

- The solar panels located on Wings C and D are no longer operable. Several of the bathroom exhaust fans and chimneys for the fireplaces are no longer operable.
• Water leakage from mechanical equipment and other sources in the penthouse causes leakage into the building below the exposed concrete slab.

• There is no ongoing roof maintenance program. The roof is repaired as required by maintenance staff.

DOCUMENT REVIEW

Jerry Griffin of SA provided us with the architectural drawings for the A-I Residence Hall. The Architect is Allison and Rible Architects, Los Angeles, California. The drawings include a portion of the architectural drawings (Drawings 2, 3, 6, 11, 12 and 13) dated 14 October 1957. The drawings show, in part, the following information:

• Drawing A6 – The roof plans show a composition roof over 1 in. or 2 in. of insulation throughout the roofing systems.

• Detail B/6 – The roof comprises (from bottom to top): concrete slab, 1 in. or 2 in. insulation, and composite roofing. At roof curbs, the composite roofing extends onto the wall over a 4 in. fiber cant. The roofing is counterflashed by the flashing provided by the heating or ventilation contractor.

• Detail L1/12 – The roof extends up and over a 16 oz. copper gravel stop at the coping detail at concrete or brick wall. The joints in the gravel stop are to be butted over 6 ft. wide copper plate and set in mastic. The copper gravel stop counterflashes a 20 oz. piece of lead-coated copper, set in mastic.

• Detail L2/12 – The roof extends up and over a 16 oz. copper gravel stop at the coping detail at concrete or brick wall. The joints in the gravel stop are to be butted over 6 ft. wide copper plate and set in mastic. The copper gravel stop counterflashes the plaster below.

• Detail N5/12 – The roofing membrane extends over a 1 in. expansion joint in the structural deck. The expansion joint comprises a piece of 20 oz. copper with flanges mechanically attached to wood blocking. The copper expansion joint piece is filled in with plastic cement. The flanges and expansion joint are covered with composite roofing.
We performed a cursory review of the 2010 California Energy Code to determine the minimum energy requirements associated with reroofing the A-I Residence Hall. The following summarizes our review:

- The A-I Residence Hall is a Residential Group R-2 structure: Residential occupan-
  cies containing sleeping units or more than two dwelling units where the occupants
  are primarily permanent in nature including (among others): dormitories.

- Riverside, California is located in California Climate Zone 10.

- Subchapter 6: Nonresidential, High-Rise Residential and Hotel / Motel Occupan-
  cies – Additions, Alterations and Repairs: The code stipulates that nonresidential
  buildings with low-sloped roofs in Climate Zones 2 through 15 shall have minimum
  aged solar reflectance of 0.55 and a minimum thermal emmitance of 0.75, or a
  minimum solar reflectance index (SRI) of 64. Table 149-A provides an insulation
  requirements of R-14 for nonresidential buildings in Climate Zone 10.

- Chapter 7: Low-Rise Residential Buildings – Performance and Prescriptive Com-
  pliance Approaches requires that ceilings in buildings in Climate Zone 10 provide
  R-30 (insulation between wood-framing).

- Chapter 8: Low Rise Residential Buildings – Additions and Alterations in Existing
  Low-Rise Residential Buildings: The code does not provide requirements for the
  R-value during replacement of the existing roof. The code stipulates that roofing
  products with a density less than 5 lbs/sq ft in Climate Zones 10 through 15 shall
  have a minimum aged solar reflectance of 0.20 and a minimum thermal reflect-
  ance of 0.75 or a minimum SRI of 16.
FIELD OBSERVATIONS

Christina T. Parker and Kenneth Klein visited the site on 19 January 2011 to perform visual observations of the roofing membrane. Our field investigation of the A-I Residence Hall included an overall roof survey of Wings A, B, C, D and E, as well as the structures between the wings. We also reviewed the interior finishes below the locations of reported leakage. We did not make any exploratory openings in the roofing system. We used a Tramex Leak Seeker Moisture Meter to take qualitative readings of moisture in the roofing membrane. In general, we observed similar conditions throughout our survey of all five wings. Observations not typical to all five wings are noted below. The following summarizes our observations:

- This is a built-up roofing system. The built-up roofing system is covered with gravel surfacing or a mineral cap sheet (Photo 3). Light-brown gravel ballast covers the roofing membranes on Wings A, B, C, D, E, and F (Photo 3). Green-colored gravel ballast covers the roofing membranes on corridors between Wings B and C and between Wings C and D (Photo 4). A mineral-surfaced cap sheet covers the edge of all roofs and the roofs on the north and south sides of Wing C (Photo 3).

- We observed limited to no blistering in the portions of the roofing membrane that we walked during our survey.

- A portion of the roof surface of Wing C is covered with an extensive amount of mechanical equipment and solar panels. Solar panels are located on the roof surface of Wing D.

- The access to the penthouse and some mechanical equipment is provided by wood-planked walkways supported on wood blocking bearing on the roof membrane. The walkways are bounded by a metal handrail supported on wood blocking (Photo 5).
The roofing surface has limited slope to drain. It appears that the slope is less than 1/8 in. per ft. We observed areas of dark staining throughout our survey that may be subject to ponding.

We observed leaves, pine cones, pine needles, and other debris in the field of the roofs on Wings A and B and at the perimeter of several drains on all roofs (Photo 6). We observed areas of dark staining throughout the roofing membrane (Photo 7).

We observed “grapes” (i.e., asphalt deposits exuding through the gravel surfacing the size of a quarter or larger) at several locations on each of the roofs we surveyed (Photo 8). In some locations, we observed a white chalk-like residue on the surface of the asphalt “grape” and / or a crack through the top surface (Photo 9).

The majority of the penetrations on the roofing membrane are flashed with pitch pockets (Photo 10). The pitch pocket filler is cracked, recessed, and debonded in many locations (Photo 11).

Some of the mechanical equipment on the roof is supported by wood blocking on a piece of mineral-surfaced cap sheet. In some locations, we noted that the fasteners for the wood blocking penetrate the roofing membrane (Photo 12).

The roofing membrane is counterflashed with metal flashing at the perimeter of the building. The flashing is either surface-sealed, reglet-set, or through-wall flashing. We noted that the flashing was not attached to the building in several locations (Photo 13). In some locations, the base flashing does not continuously cover corner details / changes in elevations between roofs. The flashing terminates along the edge and is covered with sealant. In many locations, we noted that the sealant was cracked and split at this location (Photo 14).
• The gravel stop at the perimeter of the roofing membrane is fastened to the sub-
strate with mechanical fasteners with square or circular plates (Photo 15). The 
mechanical fasteners are exposed or covered with a thin layer of roofing mem-
brane (Photo 16). Fasteners and plates exposed to the exterior have significant 
corrosion (Photo 16).

• The roofing membrane and a mineral-surfaced cap sheet extend to the edge 
of the roof / top surface of the precast concrete coping. The joint between the 
mineral cap sheet and the edge of the gravel ballast is covered with roofing mem-
brane. At several locations, we observed that the membrane is cracked and 
pulling away from the edge (Photo 16).

• The roofing system covers the expansion joints in the corridors between Wings 
B and C and between Wings C and D. The roofing membrane is cracked at this 
location (Photo 17).

• Vegetation is growing up the walls and onto the gutter of Wing B (Photo 18).

• We observed two buckets of roofing cement patch on Wing B. Adjacent to the 
buckets, we observed two areas of black patches on the horizontal roofing mem-
brane. The patches are adjacent to the penthouse (Photo 19).

• We observed grease dripping onto the roofing membrane from a duct over the 
kitchen area in Wing C (Photo 20).

• The Tramex Leak Seeker Moisture Meter recorded readings between 0 and 20 
throughout our survey (Photo 21). The reading on the “Leak Seeker” is a rela-
tive scale indicating weaker or greater signal. The readings are not an indicator 
of moisture in the roofing membrane. Tests cuts are required to determine the 
moisture content in the roofing membrane.

• We observed efflorescence (i.e., white, powdery, mineral deposits consisting of 
concrete constitue carried out of masonry by water leakage) on the underside of 
the concrete soffit at the perimeter the wings (Photos 22 and 23).
The roofing system at the A-I Residence Hall consists of gravel-surfaced asphaltic built-up roofing system. The built-up roofing system consists of multiple layers of roofing felt adhered together with hot asphalt to create a waterproof roof membrane. For protection from ultraviolet light (UV) and weathering effects, the roof membrane is covered with gravel surfacing or a mineral-surfaced cap sheet. The roofing felts are reinforced with either glass-fiber mats or organic mats. Built-up roofing systems provide a durable, low maintenance option because the multiple-ply system provides redundancy, and the gravel or mineral cap sheet offer impact and traffic protection. As evident at the A-I Residence Hall, well-detailed and constructed built-up roofing systems can last well beyond the twenty year nominal service life typically quoted as their service life expectancy. This roof appears to still be relatively solid with limited to no blistering, limited ongoing maintenance, and few leaks after the recent heavy rainstorms.

Although the UC-Riverside building maintenance department reports limited signs of leakage below the roofing membrane, the built-up roofing membrane shows several visual signs that it is nearing if not at the end of its service life. This conclusion is based on the following conditions that we observed:

- **Cracked Membrane:** As described above, we observed asphalt “grapes” exuding through the gravel surfacing in several locations throughout the roof. These “grapes” form when the top layer of asphalt begins to degrade causing settlement of the gravel in some areas. “Grapes” or quarter-size areas of asphalt are then exposed to UV light. Overtime, the UV rays oxidize the surface of the asphalt, producing the chalk-like residue. In some locations, exposure to UV rays has caused cracking of the asphalt.

- **Signs of Ponding Water:** The areas of dark staining that we observed throughout the roofing membrane show signs that water is standing and may be ponding on the roofing system. Industry standards state that drainage is adequate if there is no standing water after 48 hrs. Ponding water on the roofing membrane will continue to reduce the durability of the roofing membrane due to accelerated oxidation of the roofing membrane.
• **Exposed and Corroded Fasteners:** The fasteners at the gravel stop at the edge of the roof are exposed and have significant corrosion. Exposed fasteners are vulnerable to water infiltration. The corrosion on the fasteners is a sign that the fasteners have been exposed to water for long periods of time. Eventually, the metal will deteriorate and lose the ability to secure the membrane and flashings at the perimeter of the roof, and will provide an outlet for water to enter below the roofing membrane.

• **Cracked Sealant at Pitch Pockets:** As described above, many of the roofing penetrations are flashed with pitch pockets (flanged bottom and topless metal boxes that surround roof penetrations). Although we did not open the pitch pockets to review the construction, these details are usually partially filled with mortar and topped with either low melt asphalt or pourable sealant. The fundamental problem with pitch pockets is the inability of the topping to keep the detail watertight. As noted at the A-I Residence Hall, the pitch pocket filler at the perimeter of the penetration is cracked and pulling away from the penetration in many locations and has receded, thereby allowing water to collect and possibly leak into the roof system.

• **Efflorescence:** We observed efflorescence at the underside of the concrete soffits at the perimeter of the wings. Efflorescence, a white powdery substance, is caused by the leaching and crystallization of soluble salts from within the material. Although we did not perform openings or water testing of the membrane at these locations, we find it likely that water is penetrating beneath the membrane and through the concrete soffit forming efflorescence at the underside of the soffit.

**CONCLUSIONS**

The existing built-up roofing system is near the end of its service life; however, the limited extent of leakage and ongoing repairs indicate that the roof is still functional.
PHOTOGRAPH APPENDIX

1. Overall photo of the exterior of the Aberdeen-Inverness Residence Hall in Riverside, California.
2. Aerial photo of Aberdeen-Inverness Residence Hall, Riverside, California. Note: Buildings identified on photo.
3. Overall photo of the light-brown colored gravel surface on the roofing system over Building C at the Aberdeen-Inverness Residence Hall. Note the mineral-surfaced cap sheet at the edge of the roofing membrane.
4. Light-green colored gravel over the corridor between Building B and Building C. Note the debris and palms on the roofing membrane.
5. Walkway to the penthouse on the roofing membrane over Building C.
6. Debris and leaves at the perimeter of a drain on Building C.
7. Debris and leaves on top of the roofing membrane over Building A.
8. “Grapes” or quarter-size mounds of asphalt in the roofing membrane in the field of the roof.
9. “Grapes” or quarter-size mounds of asphalt in the roofing membrane in the field of the roof. Note the white chalk-like residue on the roofing membrane and the crack at the center of a mound (arrow).
10. Pitch pocket at the perimeter of a penetration on Building C. Note that the membrane is cracked at the perimeter of the penetration.
11. Pitch pocket at the perimeter of a support for a solar panel penetration on Building C. Note that the membrane is cracked at the perimeter of the penetration.
12. Support on wood blocking for abandoned hot water pipe for solar panel on the roofing membrane.
13. Reglet-set counterflashing (brick side) and surfaced-mounted counterflashing (plaster side) at the perimeter of the roofing membrane.
14. Flashing at the transition between an upper roof and lower roof. Note the opening between the flashing at the wall (arrow).
15. Thin layer of roofing membrane over fasteners (arrow) at the perimeter of the roofing.
16. Thin layer of roofing membrane over fasteners (arrow) at the perimeter of the roofing. Note that the membrane is cracked adjacent to the fastener and that the fastener is corroded.
17. Crack (arrow) in the roofing membrane over the expansion joint in the corridor between Building B and Building C.
18. Vegetation growing in the gutter at the perimeter of Building B.
19. Patch in the roofing membrane on Building B. Note the roofing cement bucket in the background.
20. Grease dripping on the surface of the roofing membrane below a duct on Building C.
21. Tramex Leak Seeker moisture meter with a reading of 20 in the field of the roof.
22. Concrete soffit below the roofing membrane.
23. Efflorescence staining on the concrete soffit below the roofing membrane (arrow).
Photo 1
Overall photo of the exterior of the Aberdeen-Inverness Residence Hall in Riverside, California.

Photo 2
Aerial photo of Aberdeen-Inverness Residence Hall, Riverside, California.
Note: Buildings identified on photo.

Photo 3
Overall photo of the light-brown colored gravel surface on the roofing system over Building C at the Aberdeen-Inverness Residence Hall. Note the mineral-surfaced cap sheet at the edge of the roofing membrane.

Photo 4
Light-green colored gravel over the corridor between Building B and Building C. Note the debris and palms on the roofing membrane.

Photo 5
Walkway to the penthouse on the roofing membrane over Building C.

Photo 6
Debris and leaves at the perimeter of a drain on Building C.
Photo 7
Debris and leaves on top of the roofing membrane over Building A.

Photo 8
“Grapes” or quarter-size mounds of asphalt in the roofing membrane in the field of the roof.

Photo 9
“Grapes” or quarter-size mounds of asphalt in the roofing membrane in the field of the roof. Note the white chalk-like residue on the roofing membrane and the crack at the center of a mound (arrow).

Photo 10
Pitch pocket at the perimeter of a penetration on Building C. Note that the membrane is cracked at the perimeter of the penetration.

Photo 11
Pitch pocket at the perimeter of a support for a solar panel penetration on Building C. Note that the membrane is cracked at the perimeter of the penetration.

Photo 12
Support on wood blocking for abandoned hot water pipe for solar panel on the roofing membrane.
Photo 13
Reglet-set counterflashing (brick side) and surfaced-mounted counterflashing (plaster side) at the perimeter of the roofing membrane.

Photo 14
Flashing at the transition between an upper roof and lower roof. Note the opening between the flashing at the wall (arrow).

Photo 15
Thin layer of roofing membrane over fasteners (arrow) at the perimeter of the roofing.

Photo 16
Thin layer of roofing membrane over fasteners (arrow) at the perimeter of the roofing. Note that the membrane is cracked adjacent to the fastener and that the fastener is corroded.

Photo 17
Crack (arrow) in the roofing membrane over the expansion joint in the corridor between Building B and Building C.

Photo 18
Vegetation growing in the gutter at the perimeter of Building B.
Photo 19
Patch in the roofing membrane on Building B. Note the roofing cement bucket in the background.

Photo 20
Grease dripping on the surface of the roofing membrane below a duct on Building C.

Photo 21
Tramex Leak Seeker moisture meter with a reading of 20 in the field of the roof.

Photo 22
Concrete soffit below the roofing membrane.

Photo 23
Efflorescence staining on the concrete soffit below the roofing membrane (arrow).
HAZARDOUS MATERIAL SURVEY

The following report documenting asbestos containing materials and lead based paint in A-I Wings B, C, and D was provided by UC Riverside, and is included here for information only.
CONFIDENTIAL AND PRIVILEGED
ASBESTOS AND LEAD BASED PAINT SURVEY

FOR
THE PROPERTY LOCATED AT:
Aberdeen and Inverness
Residence Hall
Project Number
University of California, Riverside
Riverside, California

Prepared for:
University of California, Riverside
Capital Planning
3637 Canyon Crest Drive
Riverside, California 92507
Attn: Mr. Jon Harvey
Project Manager

Prepared by:
Ambient Environment, Inc.
1464 Sixth Street
Nesco, California 92860

February 25, 2011
Ambient Environmental Inc. Project #11-1118

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APPENDIX A ASBESTOS CHAIN OF CUSTODY AND BULK SAMPLE LOG
APPENDIX B ASBESTOS LABORATORY CERTIFICATES OF ANALYSIS
1.0 EXECUTIVE SUMMARY

The University of California, Riverside Office of Capital Planning, retained Ambient Environmental Inc. to conduct an Asbestos Containing Material (ACM) and Lead Based Paint (LBP) survey for Aberdeen and Inverness residence halls.

Mr. John Lumpkin, a Certified Asbestos Consultant and a United States Environmental Protection Agency (USEPA) certified building inspector for Asbestos Containing Materials (ACM) and a DHS Certified Lead Inspector/Assessor conducted the survey on February 16, 2011.

The purpose of the asbestos and lead survey was to locate and identify accessible friable and non-friable suspect ACM and the presence of LBP within the areas to be impacted by the renovation project. Once a visual inspection was performed, representative asbestos bulk samples were obtained from each homogenous building material. Lead samples were obtained from each homogenous paint color utilizing an X-Ray Fluorescence (XRF) lead-containing paint analyzer. The sample location, material type, friability, condition of material, and quantity were also documented.

Asbestos bulk sampling was obtained in accordance with the USEPA established guidelines document, "Guidance for Controlling Asbestos Containing Materials in Buildings" (USEPA 560A-88-024, 1988) and USEPA 40 CFR Part 763 "Asbestos Containing Materials in Schools, Final Rule" (AHERA). Each bulk sample was analyzed for asbestos content by Polarized Light Microscopy (PLM). Forensic Analytical is the accredited laboratory that performed the analysis for Asbestos. A total of 65 Asbestos bulk samples were obtained during the survey.

Lead based paint readings were collected in accordance with Chapter 7 of the HUD Guidelines for Evaluation and Control of Lead-Based Paint Hazards in Housing and U.S. Environmental Protection Agency (EPA) 40 CFR part 745 and Title X of the 1992 Housing and Community Development Act. A total of 106 XRF readings were obtained during the survey.

All areas of the areas to be impacted by the renovation project were visually inspected. Asbestos containing building materials and lead based paint not identified in this report may be present within hidden and/or concealed areas of the building.

Locations, amounts, and conditions of each building material and lead-containing paint assessed and sampled can be found in the inventory (Tables).

2.0 SURVEY PROCEDURES

Ambient Environmental Inc. conducted an asbestos containing building material and lead based paint survey for the renovation project. All areas of the proposed work areas were surveyed for asbestos containing building materials and lead based paint. Asbestos containing materials or lead based paint not identified in this report may be present within hidden or concealed areas of the building.

Asbestos containing material identification was performed by entering each functional space, assessing all structural/mechanical components and architectural finishes. The physical conditions, friability, accessibility, activity and damage of suspect asbestos containing building materials was also assessed and documented.

Lead based paint was identified by entering each functional space and assessing all structural/mechanical components and architectural finishes. The physical conditions, accessibility, activity and damage of suspect lead containing paint was also assessed and documented.

For reporting purposes, space designations were assigned each functional space within the facilities using the pre-existing designation on doors or as indicated on the floor plans. Where neither was available, the space was labeled by the inspector as indicated in the report. The following procedures were performed:

1. A visual assessment to identify the location, type and quantity of lead containing paint and friable and non-friable asbestos building materials.
2. Obtain representative bulk samples of from suspect asbestos containing building materials.
3. Obtain representative XRF reading from suspect paints.
4. Asbestos samples were analyzed by an independent accredited laboratory for the presence of asbestos by PLM.
5. Present all survey results in a written report including recommendation, locations, quantities, and laboratory results.

All findings, recommendations, and analytical data presented in this report are based on the information (assessment and sampling data) obtained by our inspectors during the survey.
3.0 BULK SAMPLING PROCEDURES FOR ASBESTOS

Each suspect ACM identified was sampled in accordance with sampling guidelines established by the USEPA. The following summarizes the sampling procedures utilized:

1. Building materials were categorized into homogeneous materials. A homogeneous material is defined as being uniform in texture, color, and date of application.

2. A sampling scheme was developed based upon the location and quantities of the various homogeneous materials.

3. Bulk samples were collected by extracting a representative section of the selected material, placing it in a sampling container and assigning a unique sample number. The samples were placed into a sealed shipping container for delivery to an accredited laboratory for analysis by PLM.

4. The personnel performed proper decontamination procedures to prevent the spread of secondary contamination.

5. Each bulk sample was recorded on a bulk sample log and possession of the samples was tracked by a chain of custody record.

The reported laboratory results in this report are a visual estimate by area of Asbestos concentration. Results for heterogeneous samples examined by component are reported as a composite. The lower limit of reliable detection for this method is 1%. Samples that contain more than 1% of Asbestos are reported in % ranges. Samples that contain Asbestos in a concentration lower than the limit of reliable detection (<1%) are considered "trace."

All bulk samples were analyzed by PLM in accordance with the "In situ Method for the Determination of Asbestos in Bulk Insulation Samples EPA - 600/M4-020" dated December 1982 and adopted by the National Voluntary Laboratory Accreditation Programs (NVLAP) Title 15, part 7 of the Code of Federal Register as affiliated with the National Institute for Standards and Testing (NIST).

Sixty-five bulk samples were obtained at the subject building and analyzed for Asbestos content by Forensis Analytical of Rancho Dominguez, California. Forensis Analytical is accredited by the American Industrial Hygiene Association (AIHA), National Voluntary Laboratory Accreditation Program (NVLAP), National Institute of Standards and Testing (NIST), and is a successful participant in the Proficiency Analytical Testing Program (PAT).

4.0 X-RAY FLUORESCENCE SAMPLING PROCEDURES FOR LEAD-BASED PAINT

Sampling was accomplished by entering each room equivalent. A room equivalent is an identifiable part of a building such as a room, office, hallway, staircase, foyer and exterior. X-Ray Fluorescence (XRF) lead-containing paint analyzer readings were collected of each testing combination in each room equivalent. A testing combination is a unique combination of room equivalent building component type, and substrate. Visible color may not be an accurate predictor of painting history and is not included in the definition of a testing combination. The sample locations and condition of the paint were documented.

Lead-containing paint readings were collected in accordance with Chapter 7 of the HUD Guidelines for Evaluation and Control of Lead-Based Paint Hazards in Housing and U.S. Environmental Protection Agency (EPA) 40 CFR part 745 and Title X of the 1992 Housing and Community Development Act. A total of 106 XRF readings were obtained during the survey.

California HUD standards definition of LBP is .7 mg/cm² or 600 parts per million (ppm), however OSHA requires that all workers be properly protected when working with materials containing any level of lead in accordance with Title 8 CCR Section 1532.1.
### 5.0 POSITIVE ASBESTOS SAMPLE RESULTS AND LOCATIONS

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### 6.0 NEGATIVE ASBESTOS SAMPLE RESULTS AND LOCATIONS

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### 7.0 HAZARD ASSESSMENTS OF (ACM) MATERIALS

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<tr>
<td>Thermal Pipe Insulation</td>
<td>Inside Wall Closet, Above Ceiling B, C, D 4FHA</td>
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<td>Block Foam Mats</td>
<td>B Wing Northwest Closet</td>
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<tr>
<td>Insulating</td>
<td>C Wing Above Ceiling</td>
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**Good** - Material shows little or no damage and requires no remedial action.<br>
**Moderate** - Material is somewhat damaged and is in need of minor repairs.<br>
**Significantly Damaged** - Material is in need of immediate remedial action.<br>

### 8.0 POSITIVE LEAD-BASED PAINT SAMPLE RESULTS AND LOCATIONS

**No Lead Based Paint Was Detected**

Detection Limit Guidelines for the Housing and Urban Development (HUD) is 1.0 mg/cm². As per the OSHA Guidelines the concentration is .7mg/cm².
LIST OF ABBREVIATIONS
<table>
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<tr>
<th>Abbreviation</th>
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<tr>
<td>ACI</td>
<td>American Concrete Institute</td>
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<tr>
<td>ACH</td>
<td>Airchange per hour</td>
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<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
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<td>A-I</td>
<td>Aberdeen-Inverness</td>
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<td>AIA</td>
<td>American Institute of Architects</td>
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<td>AISC</td>
<td>American Institute of Steel Construction</td>
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<td>ALUM</td>
<td>Aluminum</td>
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<td>App</td>
<td>Appetizers</td>
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<tr>
<td>ASHREA</td>
<td>American Society of Heating, Refrigeration, and Air conditioning Engineers</td>
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<td>ASF</td>
<td>Assignable Square Footage</td>
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<tr>
<td>ASTM</td>
<td>American Society of Testing of Materials</td>
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<td>AWS</td>
<td>American Welding Society</td>
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<td>AWWA</td>
<td>American Waterworks Association</td>
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<td>BDF</td>
<td>Building Distribution Frame</td>
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<tr>
<td>BTU</td>
<td>British Thermal Unit</td>
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<td>Cable Television</td>
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<td>California Code of Regulations</td>
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<td>Cubic Feet per Minute</td>
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<td>Cold Water</td>
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<td>Detailed Project Program</td>
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<td>F</td>
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<tr>
<td>°FDB</td>
<td>Degree Fahrenheit Dry Bulb Temperature</td>
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<td>FRP</td>
<td>Fiber reinforced plastic</td>
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<tr>
<td>°FWB</td>
<td>Degree Fahrenheit Wet Bulb Temperature</td>
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<td>f’c</td>
<td>Specified concrete strength</td>
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</table>
Specified masonry strength

Acceleration Gravity
Gross square footage
Gypsum wallboard

Heating, Ventilation, and Air-conditioning
Hot water

Innovation in Design (LEED category)
Intermediate Distribution Frame
Illuminating Engineering Society of North America
Individual
Interior
Infrared Coated

Local Area Network
Lighting Control Panel
Light Emitting Diode
Leadership in Energy and Environmental Design
Long Range Development Plan
Large

Manufacturer

Thousand BTU Per Hour
Main Distribution Frame
Mechanical, Electrical, Plumbing
Main Fire Alarm Control Panel
Miscellaneous
Noise Criteria
National Design Specification
National Fire Protection Agency
Notice of Intent
Occupational Safety and Health Association
Primary Rate Interface
Pounds per square foot
Pounds per square inch
Package Terminal Heat Pumps
PV Photovoltaic
Polyvinyl Chloride
Resident Assistant
Refrigerator
Resident Director
Room
Resident Services Office
S
Sec  Security
Sep  Separate
sf   square feet
SLRS Seismic Lateral Resisting System
SMACNA Sheet Metal and Air Conditioning Contractor’s National Association
SS  Sustainable Sites (LEED category)
STC  Sound Transmission Class
SUSMP  Standard Urban Stormwater Mitigation Plan
SWPPP Stormwater Pollution Prevention Plan
SWRCB State Water Resources Control Board

T
T1  Telecommunications Data circuit
THD  Total Harmonic Distortion
TV  Television

U
UDACT  Universal Digital Alarm Communicator Transmitter
UDS  Utility Distribution System
UL  Underwriters Laboratory

V
V  Volt
VCT  Vinyl Composition Tile
VOC  Volatile Organic Compounds
VRFZ Variable Refrigeration Flow Zoning System

W
w/  With
W/D  Washer and dryer
WE  Water Efficiency
WQTR Water Quality Technical Report
MEETING NOTES

DPP Schedule

12.15.10 Workshop #1 (Visioning Session)
01.19.11 A-I Infrastructure Evaluation
01.20,21.11 Workshop #2
02.02.11 Sustainability Conference Call
02.07.11 Workshop #3
02.07.11 Student Workshop
03.04.11 Workshop #4
03.08.11 MEP Systems Conference Call
03.28.11 Workshop #5
5.11.11 Fire Marshal Conference Call
6.24.11 Kitchen Service Access Conference Call
6.30.11 Workshop #6
# UC Riverside Aberdeen-Inverness Dining / Common Area DPP

### Task Description

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<tr>
<th>Task</th>
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<td>WS #1: Vision Session - Dec. 15</td>
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<td>(E) Info Review / Site &amp; Code Analysis</td>
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<td>WS #2: First Program'g Wkshp - Jan 20,21</td>
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<td>Space Program / Room Data Rqmts.</td>
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### Timeline

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### Legend

- Design Team
- UC Riverside Review
- Steering Committee Meeting
### UC Riverside Aberdeen-Inverness Dining / Common Area DPP

**Rev 10/27/2011**

**Page 2 of 2**

#### Weeks 22-25
- **Task #19**: Develop Alternate Preferred Scheme
- **Task #20**: WS #6: Review Alt. Scheme - Jun 30
- **Task #21**: Complete Rev. Draft DPP Report
- **Task #22**: Design Review Board Present
- **Task #23**: Issue Revised Draft DPP Report
- **Task #24**: UCR Review Rev. Draft DPP
- **Task #25**: Issue Rev. Draft DPP Review Comments
- **Task #26**: Incorporate UCR Comments
- **Task #27**: Issue Final DPP to UCR - Aug 30
- **Task #28**: UCR Final Review DPP Report
- **Task #29**: Incorporate UCR Comments
- **Task #30**: Publish Final DPP Report - Oct. 28
- **Task #31**: CPAC Present (TBD)
- **Task #32**: 
- **Task #33**: 
- **Task #34**: 
- **Task #35**: 
- **Task #36**: 

#### Weeks 26-43

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**Legend**
- Design Team
- UC Riverside review
- Steering Committee Meeting
### 1. Introduction

ES reviewed the agenda and goals for the workshop.

#### 1.1 Introduction

- **Kitchen**
  - Trayless/kitchen floor/glazed central manager's office (visual control)/open kitchen/soft return near exit/retractable stage/allow for private meetings
  - Staff is union pay scale
  - Dining/office system in place for allowing students to eat at other locations

- **Centralized bakery**
  - Serves other foodservice venues

- **Staff/student staff projections needed**
  - Shift counts (number lockers/gender, etc)
  - Office staff

- **Current student demographics may influence cuisine**
  - +/- 45% Asian/45% Hispanic

- **Dining capacity**
  - 500 to 800 students in A-I
  - More information to be provided for future dining capacity

- **Use of west yards/interior spaces between residential wings**
  - Generally underutilized/minimum usage
  - Most adjacent interior spaces are locked off for security
  - Potential for outdoor patios to be activated through increased foot traffic

### 1.2 A-I Tour

ES discussed the Lessons Learned from the earlier A-I tour, including:

- **Kitchen**
  - Trayless/kitchen floor/glazed central manager's office (visual control)/open kitchen/soft return near exit/retractable stage/allow for private meetings

- **Staff**
  - Union pay scale

- **Dining system**
  - System in place for allowing students to eat at other locations

- **Centralized bakery**
  - Serves other foodservice venues

- **Staff projections needed**
  - Shift counts (number lockers/gender, etc)

- **Office staff**

- **Current student demographics may influence cuisine**
  - +/- 45% Asian/45% Hispanic

#### 1.3 More of a grand entrance for the building is desired – should be welcoming

ES offered the following post-tour MEP comments:

- **Electrical upgrades for Common spaces are included in the DPP scope**
- **Sprinkler systems, cooling towers, HVAC system and energy savings potential (boiler, chiller, etc.) need to be addressed in the DPP Infrastructure evaluation**
- **Back-up generators**
  - Currently have generator for emergency lighting
  - Need generator system to support emergency lighting and kitchen refrigeration

- **Abandoned solar hot water system (including tank) needs to be removed**

- **Employee restrooms: fixture calc/s to be based on HDRS data**

- **Security report should address this situation**
  - Some areas are for residents only (fitness/computer room, etc. – like in a hotel)
  - Student kitchen to be provided; location TBD
  - A late-night diner in Emporium space:
    - Could be brand-driven, such as Denny's
    - HDRS to provide kitchen requirements
  - **Bike Storage**
    - Existing bike "cages" might be captured for new Program
    - If relocated, bikes should be strategically placed including security measures and cameras
  - **Game room: billiards and foosball well-used; ping pong higher maintenance**
  - **Fitness center:**
    - Ideally located adjacent to game room
    - Should have a symbiotic relationship with game room
  - **Carrier (HVAC) assessment**
    - Completed a month ago – HDRS to provide report
    - Design team infrastructure evaluation (MEP, roofing, seismic) to be scheduled in January
  - **Seismic analysis**
    - A-I received a rating of "UC Good" in 1978 seismic assessment
    - Building will be re-evaluated – codes have changed significantly
    - Important that building retain "UC Good" rating
  - **More of a grand entrance for the building is desired – should be welcoming**

- **Topic**
  - Security report should address this situation

- **Status**
  - Completed a month ago – HDRS to provide report
<table>
<thead>
<tr>
<th>ITEM #</th>
<th>TOPIC</th>
<th>DISCUSSION</th>
</tr>
</thead>
</table>
| 2     | Project Schedule | 2.1 DPP Schedule & Work Plan: JG reviewed the work plan and milestones for the DPP effort:  
|       |       | - Four more Steering Committee meetings scheduled through the winter; staff DPP for UCR review to be issued March 14; first DPP issue April 11.  
|       |       | - Meeting 40 scheduled for January 20-21 – first Programming Workshop:  
|       |       |   - Some users will need to attend based on which space is being addressed  
|       |       |   - STUDIOS will issue agenda and programming questionnaire in early January  
|       |       |   - Breakout sessions may be needed, particularly for kitchen areas  
|       |       |   - AP: previous building improvements include:  
|       |       |     - Lounges have been updated  
|       |       |     - Historically, only carpet and paint in rooms were refreshed  
|       |       | - ES: we need to investigate the budget and determine scope priorities  
|       |       | - DPP infrastructure evaluation will include high level recommendations for future A-I building improvements (without cost estimates)  
|       |       | - Schedule  
|       |       |   - Four more Steering Committee meetings scheduled through the winter; staff DPP for UCR review to be issued March 14; first DPP issue April 11.  
|       |       |   - Meeting 40 scheduled for January 20-21 – first Programming Workshop:  
|       |       |   - Some users will need to attend based on which space is being addressed  
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|       |       |     - Historically, only carpet and paint in rooms were refreshed  
|       |       | - ES: we need to investigate the budget and determine scope priorities  
|       |       | - DPP infrastructure evaluation will include high level recommendations for future A-I building improvements (without cost estimates)  

| 3     | Project Vision | 3.1 Project Vision: General discussion of Vision for the Project, with the following selected wall cards (see attached list under Vision for additional cards):  
|       |       | - Give Back to the Students  
|       |       | - Sense of Place  
|       |       | - Building is Iconic  
|       |       | - Celebrate the Building’s History  
|       |       | - Feel Youngful  
|       |       | - Embrace the Campus  
|       |       |   - AP: A-I Building has aged significantly and the goal is to bring it up to today’s standard:  
|       |       |     - Original campus residential building is iconic for housing program  
|       |       |     - Building is paid for  
|       |       |     - Building is old but shouldn’t feel old  
|       |       |     - Environment should feel youthful and inviting to campus life  
|       |       |     - The building should reflect the community and its traditions  
|       |       |     - Should have a sense of place and vibrancy in community; currently lacks “grandeur”  
|       |       |     - Dining program has not achieved potential  
|       |       |     - Building cannot be shut down entirely to update  
|       |       |   - SLM: The lobby should recognize the history of the building and keep that history alive  
|       |       |     - Technological updates are needed (flat-screen TVs, better acoustics in lounge areas, etc.)  
|       |       |   - H2: Building needs to live another 50 years  
|       |       |     - Existing aluminum frame windows are obsolete: single-glazed, non-operable, no insect screens  

| 4     | Project Goals | 4.1 Project Goals: Goals were discussed and captured on wall cards (see attached Wall Cards list under Goals):  
|       |       | - LEED Certification  
|       |       |   - ES: Building can be separated - new components will be built to LEED Silver standard at a minimum; presume the entire building does not need to be certified.  
|       |       |   - HG|SLM: Confirmed - the remodeled components should be LEED Silver Certified, but the costs of the actual LEED submission will be below the line  
|       |       |   - JH: We should explore maximizing the usable area without significantly changing the exterior appearance:  
|       |       |     - Main entry / security desk should become grander  
|       |       |     - The open space between west wings should be better utilized; improve parking  
|       |       | - ES: questioned whether the footprint of the building could expand: consensus response - Yes  
|       |       |   - JN: The building is historic so the challenge if we expand is to respect what is there  
|       |       |   - HS: raised the topic of signage:  
|       |       |     - SLM: More signage than just way-finding is needed  
|       |       |     - AP: Signage must follow campus standards, but there is some creative license when it comes to environmental graphics within HDRS facilities.  
|       |       | - ES: questioned whether A-I would remain a first year student facility: consensus response – Yes  
|       |       |   - ES: questioned if there was a broader role for this facility:  
|       |       |     - CG: The Emporium will have a small retail component.  
|       |       |     - Integration of Technology is a goal  
|       |       |   - HG: Building needs to live another 50 years  
|       |       |   - CG: Aggressive sustainability is important for the kitchen, primarily, but also the loading dock, dishwashing, etc.  
|       |       |     - SLM: Maintaining security is a goal; currently working with security consultant – will have a report ready in late January  
|       |       |   - AP: Revenue generation from meetings in the common spaces during the day is a goal:  
|       |       |     - Student program usage is most important  
|       |       |     - External non-UCR customers are not targeted (there is no parking)
### Program / Issues

<table>
<thead>
<tr>
<th>ITEM</th>
<th>TOPIC</th>
<th>DISCUSSION</th>
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<tbody>
<tr>
<td>5.1</td>
<td>Confirm Stakeholders</td>
<td>Project stakeholders were verified and listed on wall cards (see attached list under Stakeholders).</td>
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<td>• Some are directly related to dining facility planning, some are campus regulatory agencies.</td>
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<td>• SLM: Student representatives should be included in the process; one evening session should be sufficient for them to share their opinions regarding the dining and common areas.</td>
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<tr>
<td>5.1</td>
<td>High-Level Overview of Program &amp; Issues</td>
<td>ES facilitated discussion of the preliminary program at a high level, and it generally has not changed (see attached Wall Cards list under Needs and Issues).</td>
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<td>• There are soccer fields up Linden Street</td>
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<td>• There is a recreation &quot;mall&quot; that extends on a North and South axis, west of A-I</td>
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<td>• There is residential housing proposed directly to the north</td>
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<td>• There is more transit/pedestrian traffic west of the site</td>
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<td>• AP: The Emporium will likely need access for deliveries/trash separate from the Dining dock (i.e., from the west).</td>
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<td>• The programming and appearance of increased residential loading dock is an issue: could be a good spot for the generator; need to obtain additional information on how waste removal at this loading dock works</td>
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<td>• Residential dock is also potentially a primary fire truck access.</td>
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<td>• UC Rathburn &amp; Harman involved early: good for them to attend the Fire Marshal program workshop session.</td>
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<td>• The '81/91 Envision Dining plan is an axial layout with either 1 fixed area/2 concepts around kitchen is efficient with culinary staff.</td>
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<td>• The '81/91 Envision Dining plan is desirable: at least one section of the Dining space should be able to support larger events.</td>
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<td>• UCR open to new solar power options</td>
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<td>• New hazmat assessment for Common Spaces is needed and should be started; will impact cost (STUDIOS is in possession of 5.11.03 A-I Asbestos Addendum for basement pipe wrap).</td>
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### Foodservice

- The project will be considered "infill" if we extend outside the building envelope. |
- Involvement needs to be scheduled for Director of Physical Planning/Campus Landscape Architect (Nita Bullock) and Principal Environmental Planner (Trisha Thrasher) for CEQA issue. |
- SLM: we should organize our programming meetings by typology of space. |
- A high level overview of program is needed, starting with the program screen. |
- More meeting spaces are needed |
- Residential townhouses programming should be included with "Campus Life" workshop session. |

---

6.6.5 University of California, Riverside

2011 A-I Residence Hall Common Area Improvements DPP

10.28.11
### Aberdeen-Inverness Common Area Improvements DPP

#### Meeting Minutes
12.15.2010

**STUDIOS Project No: 10566.01**

<table>
<thead>
<tr>
<th>ITEM #</th>
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</table>
| 9.1    | High Level Budget Goals | General high level budget goals discussion (refer to attached Wall Cards list under Budget):  
- $25 million total project budget is placeholder for Business Plan  
  - Includes A-I student common areas, main Dining, Emporium infrastructure improvements, hszrem remediation  
  - The highest priority is addressing the dining needs: what needs to be in operation and makes sense system-wise  
  - Don't want "million dollar" investment in temporary kitchen  
  - Current condition is bad; some exhaust hoods stay on all the time ("throw away" exp/
  - Current HVAC system is forced air  
    - EHS: Forced air is not the standard HVAC system for new student housing  
    - Need to consider what HVAC alternatives are realistic in renovation  
  - The potential transfer of food and trash across the building circulation spine to serve the Emporium needs to be addressed  
    - Residential areas have no "off" hours  
    - Emporium may need to be served from the west  
    - Emporium must open before existing Dining can close; ideally circulation spine remains open during all construction phases  
    - Potential for a different dining program for the year of construction: may have to do all "dining dollars" for the year during construction  
    - Temporary facilities discussion: Assumed students stay living in the residential units  |

| 7.2    | Emporium | General discussion about best location for the entry and back of house  
- General high level schedule goals discussion (refer to attached Wall Cards list under Schedule):  
  - Specific site location is not set  
  - Interiors and outdoor space should have privacy; this is their home  
  - Close proximity to A-I is good; doesn't need to be connected  
  - Trash pick-up and deliveries for Emporium should be screened from the townhouses  
  - Units have completely independent M/E systems from A-I (they never shut down)  |
| 8.1    | Townhouses | General discussion of the Resident Directors / Faculty-in-Residence Townhouses (refer to attached Wall Cards list under Process):  
- Conceived as residential suites; size is important - they must be 2 bedroom units as they may have children  
- Specific site location is not set  
- Interiors and outdoor space should have privacy; this is their home.  
- Close proximity to A-I is good; doesn't need to be connected  
- Trash pick-up and deliveries for Emporium should be screened from the townhouses  
- Units have completely independent M/E systems from A-I (they never shut down)  |

#### Owner

**Schedule**

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<th>ITEM #</th>
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<th>DISCUSSION</th>
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</table>
| 10.1   | High Level Schedule Goals | General high level schedule goals discussion (refer to attached Wall Cards list under Schedule):  
- Dining commons needs to be open by the time the Dundie Residence Phase I expansion is completed  
- Emporium must open before existing Dining can close; ideally circulation spine remains open during all construction phases  
- Potential for a different dining program for the year of construction: may have to do all "dining dollars" for the year during construction  
- Temporary facilities discussion: Assumed students stay living in the residential units  |

**STUDIOS**

*STUDIOS* page 7 of 10
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<th>ITEM</th>
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<tr>
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<td></td>
<td>o Consider sectioning off portion of the lobby and enter from the side</td>
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<td>o Consider temporarily housing UCR Resident Services offices in a trailer</td>
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<td>o Temporary meal preparation and seating critical</td>
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<td>o Temporary tents for dining were discussed but not supported at this time</td>
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<td>o Critical that Emporium open for fall semester</td>
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<td>- Approximately 6 months construction time</td>
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<td>- Close and demo D Wing in April - start Emporium construction earlier if necessary for Sept opening</td>
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<td>o Demo and rebuild of main kitchen &amp; dining is estimated to take approximately one year construction duration</td>
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<td>o Dining shut down first day of summer for renovation to commence and continue through the following summer</td>
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<td>o Construction for the Dining Commons should begin by June in order to be completed by fall quarter of the following year</td>
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<td>o Consider construction in 2 phases instead of 3, as suggested in Master Plan. Fewer phases usually results in better construction pricing</td>
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### 11 PMT Meeting

#### 11.1 Next Steps
- A building infrastructure survey needs to be scheduled for early January 2011
  - Studios to provide information regarding which spaces will need to be accessed and how much time is needed by engineering subconsultants
  - MEP subconsultants should be very familiar with existing systems prior to site survey
- A common area maintenance schedule was provided to STUDIOS, showing dates for completed and future work
- A utility bills will be provided for MEP review prior to survey

#### 11.2 UCR Action Items
- Carrier HVAC Assessment report
- Air Utility bills history
- Housing Security report (in progress - end of January)
- Dining Demand Analysis
- Dining Projections for Staff and Students
- Denny’s franchise research
- Air Office staff projections
- Sustainability Plan
- Draft Master Plan (latest proposed campus development)
- Hazmat Report (new)

The above minutes are true and complete to the best of STUDIOS' knowledge. Please notify STUDIOS within five days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
### VISION

<table>
<thead>
<tr>
<th>GOALS</th>
<th>STAKE-HOLDERS</th>
<th>STAKE - HOLDERS (CAMPUS REG.)</th>
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<tbody>
<tr>
<td>GIVE BACK TO THE STUDENTS</td>
<td>CENTRAL BAKERY</td>
<td>UCR POLICE</td>
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<tr>
<td>SENSE OF PLACE</td>
<td>FOOD TRUCK</td>
<td>STUDENT FOCUS GROUP</td>
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<tr>
<td>NEEDS TO LIVE FOR ANOTHER 50</td>
<td>ENHANCE USE OF YARDS (ACTIVATE)</td>
<td>ENVIRONMENTAL HEALTH + SAFETY</td>
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<tr>
<td>FEEL YOUTHFUL</td>
<td>STUDENT KITCHEN</td>
<td>HOUSING, DINING + RESIDENTIAL SERVICES</td>
</tr>
<tr>
<td>CELEBRATE BLDG'S HISTORY</td>
<td>KITCHEN FLOW/PROCESS - OPEN KITCHEN</td>
<td>DINING SERVICES</td>
</tr>
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<td>EMBRACE THE CAMPUS</td>
<td>SPACES &quot;OPEN&quot; TO CIRCULATION</td>
<td>CONFERENCE, CATERING EVENT SERVICES</td>
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<tr>
<td>BLDG IS ICONIC</td>
<td>BRANDED RETAIL/DINING - DENNY'S</td>
<td>HOUSING IT</td>
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<td>INTEGRATION OF TECHNOLOGY</td>
<td>ACCESSIBLE BIKE STORAGE</td>
<td>COMMUNICATIONS (CAMPUS)</td>
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<tr>
<td>MAIN USE OF DINING IS DINING</td>
<td>SEISMIC ASSESSMENT</td>
<td>RESIDENTIAL LIFE - INCLUDES RECREATION</td>
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<td>1970 REPORT</td>
<td>SERVICES FOR STUDENTS W/ DISABILITIES</td>
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<td>WANT &quot;UC-GOOD&quot;</td>
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<td>&quot;GRAND&quot; ENTRANCE</td>
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<td>WIRELESS BUILDING</td>
<td>HOUSING OPERATIONS (+ GROUNDS)</td>
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<td>DISHWASHER LOCATION</td>
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<td>EMPORIUM AS FRANCHISE</td>
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<td>EXHIBITION COOKING</td>
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<td>MEETING IN THE DINING</td>
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<td>MODERNIZE THE SYSTEMS</td>
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<td>REVENUE GENERATING (COMMON SPACES)</td>
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<td>LEED SILVER</td>
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<td>CERTIFY IT</td>
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<td>EXPAND - BUT - RESPECT BUILDING</td>
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<td>SIGNAGE BEYOND WAYFINDING</td>
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<td>MAINTAIN SECURITY AND SAFETY</td>
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<td>UCP/UCR SUSTAINABILITY GOALS/MANDATE</td>
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<td>MAXIMIZE OPPORTUNITIES</td>
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<td>PROVIDE A MULTITUDE OF DINING ENVIRONMENTS</td>
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<td>CORE INTEGRATION WITH A DIFFERENT FEEL</td>
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<td>SEGMENTATION OF DINING HALL</td>
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<td>HALL MEALS</td>
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<td>SMALL MEETINGS</td>
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### Wall of Cards

#### Needs

<table>
<thead>
<tr>
<th>Needs</th>
<th>Issues</th>
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<tbody>
<tr>
<td>Projections - Staff + Students</td>
<td>Demographics - Peak Load</td>
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<tr>
<td>Dining Capacity (500 currently)</td>
<td>45% Asian, 40% Hispanic</td>
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<tr>
<td>Demand Analysis:</td>
<td>Rec, Center Close by</td>
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<tr>
<td>Stage Multi-Use</td>
<td>Abandoned Solar H.W. System</td>
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<tr>
<td>Game Room</td>
<td>Recreation Mall Extends North + South</td>
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<tr>
<td>MEP Assessment</td>
<td>Linden St. as Connector</td>
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<tr>
<td>Carrier Report</td>
<td>A-I is &quot;closer&quot;</td>
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<tr>
<td>Back-Up Generator</td>
<td>Communications Capacity</td>
</tr>
<tr>
<td>Sprinklers on Level 1 (Res, Has)</td>
<td>Service Access to Emporium</td>
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<tr>
<td>Hazmat Assessment</td>
<td>Renvoation in Occupied Building (Closed Summer)</td>
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<td>Loading Docks</td>
<td>Mitigation of Construction Issues</td>
</tr>
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<td>Appearance</td>
<td>Diner Closes First</td>
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<td>Approaches</td>
<td>C-Store and Coffee Last</td>
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<td>Servicing</td>
<td>Arroyo is Watershed</td>
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<td>New Generator, Cooling Tower Locations</td>
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<td>Public Restrooms</td>
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<td>Replacing Windows</td>
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<td>Common Cashier Station</td>
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<td>Lunch - 1,000</td>
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<td>100 Truck</td>
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<td>500 &quot;The Hub&quot;</td>
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#### Process

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<th>Budget</th>
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<tr>
<td>Break Out Sessions?</td>
<td>Priorities</td>
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<tr>
<td>UCR Budget Process</td>
<td>Dining $ - Dining Options</td>
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<tr>
<td>Early Buy In From Fire Marshal</td>
<td>Business Plan: $ 25 Million</td>
</tr>
<tr>
<td>Meetings: By Typology of Spaces</td>
<td>Budget = Everything Except Rooms</td>
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<td>Deliveries to Emporium</td>
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<tr>
<td>Outdoor Dining</td>
<td>Don't Count in Seating Capacity</td>
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<td>Back-Up Generator</td>
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<td>Housing</td>
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<td>Housing on Separate Systems (Always On)</td>
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<td>Meal Plan Options During Construction - All Dining $</td>
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**SCHEDULE**

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<th>SEQUENCING</th>
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<tr>
<td>PHASING OPTIONS</td>
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<td>- COND</td>
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<td>- DINING NEEDS</td>
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<td>AGE/CONDITION OF EQUIPMENT</td>
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<td>PH.1 DUNDEE OPENING</td>
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<td>EMPORIUM OPEN BEFORE A-I CLOSED</td>
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<td>SUPPLEMENTAL FOOD TRUCKS (SERVING ONLY)</td>
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<td>- PURCHASED BY UCR</td>
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<td>1ST TRUCK BEHIND A-I KITCHEN?</td>
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<td>NO TEMPORARY KITCHEN</td>
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<td>FOOD COURT AT HIGHLANDER FOR DINNER &quot;THE HUB&quot;</td>
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<td>PHASING TIED TO ACADEMIC YEAR - EARLY SUMMER START</td>
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<td>NEED EXTERIOR PATIOS FOR SEATING DURING CONSTRUCTION</td>
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<td>TEMPORARY MODULARS FOR MTC./STUDY</td>
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<td>DELIVERY METHODS - DESIGN ASSIST - DESIGN/BUILD</td>
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<td>MEP SYSTEM UPGRADES/ PHASING</td>
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<tr>
<td>CONTRACTORS READY TO GO DAY AFTER STUDENTS LEAVE</td>
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## 1.1 Introduction

**Meeting:**

**JG:** the goal of the day is to establish a working knowledge of the building systems as built, including maintenance history, recent performance and concerns / suggestions from Housing Maintenance staff.

### 1.1.1 Introduction

**Discussion:**

- Residential restroom exhaust fans need increased cfm
- Existing HVAC system is constant volume – if changed to variable volume in renovation it will affect the Central Plant equipment
- There are two zones on the HVAC system, north side and south side, with one thermostat per wing; existing heating at the ends of the system or wings is not good
- The plumbing system is in generally good shape; domestic water piping is copper; interior sanitary sewer piping is cast iron. There are site sewer leaks due to cracked piping
- The roofing system is about 25 years old; it was tested in December 2010 by one of the heaviest sustained rainstorms in many years and only leaked in two known locations – at the expansion joint in the circulation spine roof and in student room #320 in “D”-Wing east (note this is directly under a mechanical penthouse) There is some minor water intrusion through the basement walls, from both rainfall and irrigation
- There was a fire in Wing B West third floor in 2008; entire floor was gutted and replaced; some spalled concrete slab had to be repaired

### 1.1.2 Building Issues

**Discussion:**

- The A-I maintenance staff was invited to offer their observations and suggestions about the existing building systems:
- The original steam boilers are outdated and should be replaced
- The chillers appear to be in decent condition for their age
- The natural gas-fueled emergency generator is original and should be replaced, potentially with diesel-fueled.
- Existing electrical infrastructure (panels, etc) is not clearly labeled, and many renovations have not been properly documented
- The rooftop air handlers are experiencing problems; the penthouse piping needs replacement
- There is no existing grease interceptor at the Kitchen
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- There is no existing grease interceptor at the Kitchen
- The natural gas-fueled generator serves emergency lighting and life safety only; it should be replaced with a diesel-fueled belly tank generator and relocated to the exterior
- There is not enough power to run both chillers at the same time

### 1.3 Engineering Questions

**Discussion:**

- Existing HVAC system is single duct / single temperature; controls are pneumatic, with multiple modifications over the years. If zoning is changed to individual bedroom controls, it will require trimming coils – there may not be space
- There is no existing grease interceptor at the Kitchen
- Existing electrical infrastructure (panels, etc) is not clearly labeled, and many renovations have not been properly documented
- The existing cooling tower is 300 tons; it experiences problems in the summer heat, running all day at full capacity; it has never been tested with the two chillers running simultaneously
- Main mechanical and plumbing equipment are connected from 120V – 480 V. 3/phase power; services to residential wings is 120V – 208/208V, 3-phase, 4 wire.
- Fireämpfer fans appear to leak and/or mechanical condensation is leaking through concrete penthouse floor
- Design & Construction (OD&C) was not able to provide all the electrical connection points for the renovation scope
- The original steam boilers are outdated and should be replaced
- Existing HVAC in residential wings is single duct / single temperature; controls are pneumatic, with multiple modifications over the years. If zoning is changed to individual bedroom controls, it will require trimming coils – there may not be space
- Existing electrical infrastructure (panels, etc) is not clearly labeled, and many renovations have not been properly documented
- Fire sprinkler system currently only covers the residential (bedroom) areas and the basement.
- Fire sprinkler main service should be verified for adequate capacity to sprinkle renovation scope
- There is no existing grease interceptor at the Kitchen
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- The natural gas-fueled generator serves emergency lighting and life safety only; it should be replaced with a diesel-fueled belly tank generator and relocated to the exterior
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### Building Tour / Recap Meeting

2.1 The engineering team split into groups by discipline and were escort by A-I maintenance staff to investigate various building systems on the roof, residential floors, ground floor, basement and loading dock. The investigation lasted over three hours in duration.

3.0 Wall of Cards

3.1 Mechanical

- Nine rooftop air handlers were investigated; all are operational but in need of overhaul – new piping, controls, baffles, MDC insulation; the two on "A"-Wing and the one on "C"-Wing were in the worst condition.
- It may prove to be more economical to replace the air handlers as a rule of thumb, the installed cost is generally $800/m.
- The penthouse enclosures need significant repair to the walls, roofs and waterproofing the concrete floor slabs.
- The "C"-Wing penthouse enclosures leak more than others, and the kitchen exhaust fans should relocate to the exterior.
- The RS Office air handler located in the ground floor closest appears functional, but will likely be replaced with the proposed building expansion in that area.
- Two chillers appear operationally OK, but the coil sizes should be checked; there is no ventilation or refrigerant monitoring in the chiller room, and the refrigerant type does not meet Code.
- The cooling tower is understood and well past its expected functional life; it is the weakest link in the chilled water system.
- The condenser pumps and the chilled water pumps need overhaul or replacement.
- The existing steam-generating boilers do not comply with AHSJD – recommend replacement.

3.2 Electrical

- Electrical loads have significantly increased in the student bedrooms since the building was originally built; there is no apparent overloading of the existing transformers.
- Recommend replacing distribution panels, panel boards and transformers at the individual wings over time; this can be achieved incrementally – wing by wing and floor by floor.
- Existing lighting is generally functional but energy inefficient; recommend replacing with energy efficient fixtures as new areas are renovated.
- Fire sprinklers should be upgraded to all areas not included in areas are renovated.
- Requested copy of minimum 12 month history of A-I utility bills to determine maximum power demand and usage.

3.3 Plumbing

- Three of four existing heat exchangers should be replaced.
- A grease trap will be required per Code when the Kitchen is remodeled; best location relative to sanitary sewer elevations appears to be on the west side of the building, but best location to avoid odors around occupants is adjacent to the dock; avoid pumping to sanitary sewer if at all possible.
- Recommend replacing site sanitary sewer piping where leaking.
- Recommend installing adjustable diffusers in the student bedrooms, with air volume sensors in the supply air duct.
- Elevator upgrades are in process; this scope cannot be considered if they can be financially justified.
- If changing to hot water boilers, it will have the added expense of all new piping throughout the building.
- The domestic water supply is extremely hard – need softener system for Kitchen.
- The existing steam-generating hot water system is problematic.
- Water pressure at the street fluctuates, but average is 102 psi.
- The abandoned solar hot water system should be removed, but future solar hot water or photovoltaic systems can be considered if they can be financially justified.
- The existing abandoned solar hot water panels and piping considered for re-use as thermal energy storage, though they may be too small to be effective.
- The existing steam-generated hot water system is problematic.
- The domestic water supply is extremely hard – need softener system for Kitchen.
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- The existing steam-generated hot water system is problematic.
- The student bedrooms have experienced significant load increases since original; higher occupancy, computers, portable heaters, and other heat-producing devices.
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<th>ITEM #</th>
<th>TOPIC</th>
<th>DISCUSSION</th>
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<tr>
<td>3.4</td>
<td>Roofing</td>
<td>The gravel surfaced asphaltic built-up roof is well beyond its expected life, but A-I maintenance staff have discovered virtually no leaks:&lt;br&gt;&lt;br&gt;- Exposed fasteners along copings show corrosion; bubbles were observed throughout all areas of roof membrane; the roof was generally firm but a few soft spots were noted.&lt;br&gt;- Detector readings vary from 0 – 25% moisture content, though this should not be considered conclusive as the accuracy levels of the device are limited.&lt;br&gt;- The preliminary recommendation is that the building should be re-roofed, though there is less urgency because it appears to be performing better than it should for its age; the roof could last months or years – it is difficult to determine precisely.&lt;br&gt;- Removing the solar panel/piping system will require re-roofing in those areas – for this reason it might make sense to re-roof the entire building; perhaps the metal panel supports could be cut off above the mounting pads to avoid penetrating the roof membrane, but removing the pipe supports may still damage the membrane, requiring re-roofing.&lt;br&gt;- When the building is eventually re-roofed, R-30 rigid insulation board should be installed on the concrete roof slab (approx 4&quot; thick) to improve energy efficiency and meet current Code; current insulation appears to be 2&quot; thick – the condition at the roof slab edge will need to be considered for the additional thickness.&lt;br&gt;- Recommend traffic coating on the mechanical penthouse floor slabs.</td>
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**1.20, 21.11 - WORKSHOP #2**

**University of California Riverside**
Aberdeen-Inverness Common Area Improvements DPP
Programming Workshop #2A / Dining, Emporium
01.20.2011 Meeting Minutes 9:30 – 12:00

**ACADEMIC STUDIOS**
Project No: 10566.01
 rev. 02.04.11

**ATTENDING:**

- UC Riverside:
  - Housing, Dining & Residential Services (HDRS)
    - Susan Mertzbach (SM)
    - Lesley Staudt (LS)
  - Dining, Emporium
    - Cheryl Garner (CG)
    - Kelly Chapp (KC)
  - Design & Construction (D&C)
    - Don Caskey (DC)
    - Steve Marshall (SM)

- Marshall Associates
  - Hassan Ghamlouch (HG)

- Housing, Dining & Residential Services (HDRS)
  - Erik Sueberkrop (ES)
  - Jerry Griffin (JG)
  - Cheryl Garner (CG)
  - Kelly Chapp (KC)
  - David Henry (DH)
  - Kelly Capp (KC)

- Capital & Physical Planning (CPP)
  - Don Caskey (DC)
  - Steve Marshall (SM)

- Green Design (DC)
  - Jackie Norman (JN)
  - George MacMullin (GM)

- Engineering & Construction (E&C)
  - David Gahm (DG)

**CELEBRATION**

- Susan Mertzbach (SM)
- Lesley Staudt (LS)

**ITMTS:**

- Agenda:
  - CG Questionnaire / Dining Area Calculations / Dining Peak Office Needs

---

**ITEM #** | **TOPIC** | **DISCUSSION** | **OWNER** | **DUE DATE** | **STATUS**
--- | --- | --- | --- | --- | ---
1 | **Dining Programming** | | | |
1.1 | Student Restaurant – General | CG confirmed the desired Dining Room capacity is for 500-575 seats. The facility has to absorb all elements of Glen Mor 2 and proposed Dundies projects. | CG | | |
1.2 | Loading Dock | CG stated two existing small rooms opening onto Dock are currently utilized as storage for cleaning equipment and seasonal decorations – not for trash and recycling, which are in bins outside on dock apron. Space is needed for the cleaning equipment / seasonal storage (possibly relocated), as well as for catering truck general storage. An 8x10’ refrigerated room with access from the exterior is needed for food truck beverage storage on stacked pallets. The adjacent janitor’s closet can remain. | CG | | |
1.3 | Dry & Cold Storage | CG stated the current Kitchen Prep & Storage areas are generally adequate in size but need some reconfiguration:
  - Dry Storage should include storekeeper desk at an interior window viewing the service corridor just inside the loading doors | CG | | |
1.4 | Kitchen Prep Area / Dishwash | CG prefers to locate dishwasher near the Dining entry to facilitate busing in tray-less environment:
  - dishwasher shall have pulping grinder and hydro extractors, and a power sink in the pot-washing area.
  - Prefer water wash hoods, UDS system and epoxy floors;
  - All interior partitions shall be installed on concrete curbs;
  - Provide well-maintained computer for cooks | CG | 24.11 |
1.5 | Employee Restrooms / Lockers | CG provided a written list of kitchen staff count at peak scheduling, employee restrooms should be sized to peak occupancy loads:
  - CG to confirm “career” kitchen staff and student employee locker counts and sizes (full or half-size / backpack size for students?) – note possible overlap at shift changes.
  - Changing rooms and locker areas must be segregated by gender.
  - Student lockers could be located along one side of the service corridor | CG | | |
1.6 | Kitchen Offices | CG provided a written list of kitchen office space needs; rooms should have access to daylight and interior windows to the adjacent kitchen areas:
  - Manager’s Office shall have 2 desks plus meeting space for 6-10 clients around a table.
  - Culinary Office shall have a desk for the chef plus shared computer work surface for 2 principle cooks.
  - Supervisors Office shall have shared perimeter work surface for 4 staff | CG | | |
1.7 | Service | CG: Ideally the Service is usually open to the Kitchen, and the Kitchen has a minimum of high walls to maximize openness and visibility:
  - A key consideration is how to utilize staff efficiently.
  - Prefer dispersed food platforms to a central food court.
  - An open bakery area is preferred – it doesn’t have to be a dedicated space, baking is done at night.
  - Essential service stations include grills, salad bar, deli/sandwich and at least one multi-purpose function. “Action Stations” – flexible counters with multiple power outlets – are desirable.
  - More service points result in shorter queues; self-service can | CG | | |
### 01 20 2011 / 9:30  12:00

**STUDIOS**

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<th>TOPIC</th>
<th>DISCUSSION</th>
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<tr>
<td>1.8</td>
<td>Dining Room</td>
<td>As previously noted the Dining area will have 550 - 575 seats. The space will have the ability to support programs, a main space requires flexibility for up to 300 seats in a temporary stage setting configuration:</td>
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<tr>
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<td>* There may be summer conference usage</td>
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<td>* Minimize chair / table moving to accommodate alternative seating configurations</td>
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<tr>
<td>CG</td>
<td></td>
<td>* Primary function of the space is for dining; other functions are secondary</td>
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<td>* The goal is a beautiful Dining Room with an assortment of environments that allows for smooth transitions from one meal to the next</td>
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<td>CG: Prefer single Dining entry for check-in and check-out, with backpack cubbies adjacent (outside Dining security). There should be variety in seating configurations, sizes and character; students generally prefer smaller dining areas over wide open spaces</td>
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<td>There is a need for private dining spaces of varying sizes, including smaller groups:</td>
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<td>* Ideally there is flexibility in configuration</td>
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<td>CG</td>
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<td>* 60 Hall Dinners per quarter with 40 - 50 participants could be held in the Dining Room wings</td>
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<tr>
<td>CG</td>
<td></td>
<td>* Dining mezzanines generally don’t work (especially with proposed tray-less service)</td>
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<td>It was noted that the Dining space will need to expand beyond the existing exterior walls in order to accommodate the required number of seats; this is consistent with the Envision concept plan dated 8.18.10</td>
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<td>2.1</td>
<td>Emporium – General</td>
<td>CG: The 12-West location for the Emporium has been chosen because:</td>
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<td>* It is directly along the path of the maximum flow of students from the A-I main entry to the rest of campus</td>
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<td>* It also speeds service and may result in less consumption</td>
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<td>* All beverages are bulk – no bottled beverages are served in Dining Room; soda dispenser service shall be in a separate room close to the beverage counters</td>
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<td>General discussion of grains (cereal / bagels / yogurt) service station and desserts (spread around rather than consolidate in one station); do not locate soft serve ice cream near the exit point; provide conveyor pizza ovens as part of an “international-theme” action station</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>It has good visibility from pedestrians passing by along Aberdeen Street;</td>
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<tr>
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<td>It has the potential to link in with other student social spaces proposed in the Common Area Improvements</td>
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<td>A new freestanding venue for the Emporium is not economically feasible</td>
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<td>Note that the 2008 Strategic Plan for Student Housing suggested Emporium diagram extends beyond the existing “12-West” building envelope</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CG: Interested in the Denny’s “All Nighter” concept, nice franchise kitchen layout and equipment. There is a new installation at Cal Poly Pomona, which also incorporates a convenience store:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* Denny’s “All Nighter” concept is 3,500 square feet including dining areas, requires back of house with office, safe and lockers</td>
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<td></td>
<td></td>
<td>* 24-hour operation likely for the coffee service and C-store zones; diner portion could be shut down earlier</td>
</tr>
<tr>
<td></td>
<td></td>
<td>* The Denny’s “All Nighter” concept is 3,500 square feet including dining areas, requires back of house with office, safe and lockers</td>
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<td></td>
<td></td>
<td>There could be 10-12 daily deliveries to C-store and diner;</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>Preference is to have deliveries and trash removal use different entrances / exits; Denny’s is all disposables; daily trash removal would need a truck pull out created south of “12-West”</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>For the Glen Mor 2 food emporium for program components</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>Exterior signage and “Denny’s” brand are essential</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>24-hour P.O.S. must be near single exit; there would also be two additional P.O.S. at the diner counter and “to-go” location</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>There could be 10-12 daily deliveries to C-store and diner; various Emporium loading scenarios were discussed, including servicing through the Emporium entrance from the “horseshoe” entry drive; there are other program elements in this zone that also need to be considered including fire truck access and possible stationing of food truck(s) on the island</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>Preference is to have deliveries and trash removal use different entrances / exits; Denny’s is all disposables; daily trash removal would need a truck pull out created south of “12-West”</td>
</tr>
<tr>
<td>CG</td>
<td></td>
<td>Location creates a possible conflict with campus pedestrian circulation route</td>
</tr>
</tbody>
</table>

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6.6.15

University of California, Riverside

2011 A-I Residence Hall Common Area Improvements DPP

10.28.11
### Detailed Project Program

#### University of California Riverside
Aberdeen-Inverness Common Area Improvements DPP

#### Programming Workshop #2 Meeting Minutes
01 20 2011 / 9:30 12:00

<table>
<thead>
<tr>
<th>ITEM #</th>
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<th>DISCUSSION</th>
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<td></td>
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<td>An alternative concept discussed was to service the Emporium from the recessed loading area at the south end of A4 (currently 7 dumpsters with daily trash pick up); possible access route is through the lower level tunnel to “C” Wing and up to Emporium level by means of an elevator</td>
</tr>
</tbody>
</table>
| 3      | Dining Breakout Session | **3.1 Survey Component Ideas**  
CGL, CG, and SHM continued detailed programming in a separate afternoon breakout session:  
- Develop center island station with a round exhibition grill including salad bar – open action station with hood  
- International island to be an action station with grill, fryers, open burners and Impinger 2-deck conveyor pizza oven  
- Deli bar should be a self-service island  
- Consider a Mongolian style grill action station with self-serve bowls for cold ingredients for tacos, Asian and steak specials  
- Develop a grains / cereal and yogurt counter against the wall with milk dispenser and multiple clear plastic dispensers for cereals, toppings, trail mix, etc  
- Provide self-serve dessert counter in prime location open to Kitchen with pastry, cookies, pudding, bars, fruit bars |
|        |       | **3.2 Beverage Counter Program**  
DH provided a beverage counter program:  
- (2) Eight head Pepsi with ice dispenser on separate beverage counters  
- (2) Horchata dispensers  
- (2) Rejuvenation water (Nestle dispenser)  
- (1) Iced Tea  
- (1) Coffee (Coffee Bean-Tea Leaf) shuttle brewer with 2 shuttles  
- (1) Hot chocolate machine  
- (1) Emergen-C machine  
- (1) Zumex orange juice machine (full-sized stand up) |
|        |       | **3.3 Kitchen Equipment**  
DH is developing new cooking equipment list:  
- Energy Star equipment and low / adjustable volume exhaust hoods will be specified |

The above minutes are true and complete to the best of STUDIOS’ knowledge.  
Please notify STUDIOS within three days of any modifications, additions or deletions.  
Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
##注意事项

### 1.0 共同区域

#### 1.1 入口大堂

- 应具有欢迎感：访客等待区/居民休息区
- 大堂入口目前在晚间关闭，居民使用钥匙卡；可能迁移到24小时全天候开放
- 不应鼓励非居民在接待柜台使用大堂进入
- 大堂入口大小应保持不变，在用餐时间或特殊活动时会变得拥挤
- 存放在大堂的储物柜用于背包存储，应考虑重新放置或增加储物柜；储物柜数量将由HG提供
- 提供ATM机、复印机、展示柜、信息视频监控机、自动售货机（或至少提供饮用水）、电话（供访客联系居民/RA/保安）、火警报警器

#### 1.2 会议室

- 会议室需要用于会议/课堂/研究小组/辅导，甚至夏季会议

### 1.3 公共洗手间

- 男、女洗手间总数应符合Emporium和会议所需
- 假设a) 150平方英尺每层楼；b) 250平方英尺每层楼
- 小便器的数量基于UPC标准
- 一个“酒店”模型，A-I居民使用住宅区洗手间
- 考虑低频次的高使用频率
- 洗手间数量可能在2-3楼

### 1.4 计算机实验室

- 提供12台计算机站和高速打印机
- 无线网络正在为整个建筑的居民区准备

### 1.5 健身房

- 提供2台跑步机和2台椭圆机
- 不需要设置在游戏室

### 1.6 游戏室

- 提供2台台球桌、1台桌上足球桌和一个替代乒乓球（高维护成本的）
- 可能放在Emporium或休息室

### 1.7 休息室

- 提供一个位于Emporium和游戏室之间的休息室

### 1.8 学生厨房

- 考虑设置一个小型厨房，用于学生使用

### 1.9 洗衣房

- 作为社交空间应改进洗涤房的可见性

### 1.10 电信室

- 考虑从B翼到D翼的295英尺最大电缆长度

### 1.11 房务及清洁房

- 设计与建设

### 1.12 教育用品存储

- 提供6x6英尺用于存储教育用品/装饰品的储物间
1.3 Exterior Areas

Provide exterior bicycle storage to replace existing, with roof and open sides; consider location along student pathway to campus, should be highly visible for security purposes; RSO to provide bike rack count.

Existing outdoor patios are underutilized due primarily to poor accessibility; consider providing easy access, visibility, built-in seating, lighting and shade facilities to encourage use.

RSO 2.4.11

2 RSO Offices

2.1 Reception Counter

Provide counter with good visibility for security of Lobby:

- Highly active / 24 hour visitor and resident information, pick-up packages (see Item 2.1.2 below), respond to alarms, etc.
- Staffed by 2 "career" employees and 2 students
- 42" high transaction surface for three simultaneous staff positions side by side, with lowered portion per ADA
- Provide pull-down security grill; consider providing a glazed transom window at end of grill for late hours security.
- Employee time clock location within reach from lobby side
- Locate main fire alarm annunciator panel adjacent (in addition to fireman's annunciator panel in lobby)

RSO 2.4.11

2.2 Offices / Workstations

Provide 3-4 workstations (50 ASF each) directly adjacent and facing reception counter:

- Provide visibility to security camera monitors located above the reception counter window
- Provide lockable 200 ASF General Storage room.

2.3 Conference

Provide 325 ASF conference room with flexible furniture:

- Provide 5' long serving counter / credenza

2.4 Mailroom

Mailboxes are preferably located on the first floor of the main lobby, with easy access and visibility to the front desk.

- Number and size of mailboxes to be provided by RSO
- Provide mail receiving slot from Lobby
- Provide locking door and work counter inside
- Provide mail receiving boxes with interior ("back door") access by Postal Service / doorbell / work counter

RSO 2.4.11

2.5 Breakroom

Provide sink, refrigerator, microwave, cabinets, table and chairs; natural light is desirable

2.6 Workroom

Provide lockable room with perimeter upper and lower cabinets and large central copier, computer, paper cutter, etc; provide 60 staff mail boxes with individual keys (RSO to provide mail box sizes)

RSO 2.4.11

2.7 Poster Room

Usually 2-3 occupants when in use; provide 4'x8' central worktable with poster printer; storage cabinets for paper and combustible ink; exhaust fan is essential to remove noxious fumes; helium tank storage.

2.8 Support Spaces

Provide lockable 100 ASF Package Holding Room with shelving (lots of storage) and plastic boxes (adjacent to reception counter; provide 3 wall-mounted key cabinets.

Provide separate lockable 200 ASF General Storage room.

Provide one single-occupancy restroom.

3 To View

3.1 Programming

Provide 4 townhouses for Resident Directors and Faculty in Residence:

- 2 bedrooms (one master) / 2 bath / living / dining / kitchen
- Should feel both welcoming and secure
- Privacy from exterior is essential; screen outdoor space

RSO 2.4.11

3.2 Conference

Location facing south to arroyo was reviewed and preferred over Aberdeen Street-facing site suggested in master plan because it potentially provides better privacy for occupants; has a lower pedestrian traffic count.

4 Seismic

4.1 Structural Engineer

- Conference Call

Participating: Chuck Whitaker (CW) & Matt Timmers (MT), JAMA.

- KB, DC, RR, GM, JN, JH, ES, KL, JC

- Seismic force levels used 50 years ago are 50-75% of current Code factors; the individual wings are seismically independent from one another.

- Preliminary JAMA seismic ratings:
  - Wing C is "UC Good".
  - Wings A & D are "UC Fair" due to discontinuous shear walls – there is a 50% chance that computer modeling may change to "UC Good".

- DC: what is seismic replacement cost for building relative to

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions.

Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
### Fire / Life Safety

#### 1.1 Introduction

**ES** provided a brief overview of the project scope and preliminary Code analysis. The A-I building will be considered a single structure of Type I-B Construction based on existing building shell assemblies. The major Occupancies include A-2 for the Residential areas, A-4 for the Dining and Emporium spaces, B for the Office areas and A-3 for conference rooms and lounges. CBC Section 508.3 allows for Non-Separated Occupancies, except R-2 must maintain a one-hour separation from other Occupancies if building is designed for most stringent (A2) Occupancy.

#### 1.2 Fire Sprinklers / Fire Alarm

**SC** stated that installing fire sprinklers and a fire alarm system in the remaining unprotected areas of the building will satisfy most of his interior safety issues.

- **SC** sprinklers and fire alarm were added to the A-1 residential wings after a fire a few years ago; the basement was already equipped with sprinklers.
- **SC**: the occupancy is considered a Light Hazard, so the existing fire main serving the building should be adequate. He anticipates no need to upsize site infrastructure to sprinkle the remaining unprotected portions of the first floor.

**SC**: a Detector Check located in a vault at the east end of Wing East serves the entire building, so a backflow preventer upgrade is not warranted – unless there is code justification for water purity (the domestic and fire water mains are a combined loop).

**SC** recommended the proposed fire sprinkling Townhouses be protected with NFPA 13R residential sprinklers served by extending the existing fire main from Aberdeen Street. Each Townhouse shall have a fire riser and tamper switch.

**SC**: The existing emergency generator is fueled by natural gas; most have changed to diesel belly tanks due to seismic issues; requires AQMD-approved equipment.

**SC**: don’t need to retroactively add areas of refuge or elevator auto-return to the ground floor.

**SC**: the occupancy is considered a Light Hazard, so the existing horseshoe drive turning radius is tight but technically per Code – request to widen curve if possible. If short term Emporium loading is added along the horseshoe, widening of the drive will definitely be required.

**SC**: the existing condition of deep yards between the wings is acceptable as long as current access is not compromised. The existing emergency generator is fueled by natural gas; most have changed to diesel belly tanks due to seismic issues; requires AQMD-approved equipment.

**SC**: an acceptable alternate fire truck staging area would be a single one south of the horseshoe.

---

**ATTEND:**

- UC Riverside: (sequentially)
  - Scott Corrin, Campus Fire Marshal (SC)
  - Brian Hambleton, Physical Plant – Electrical (BH)
  - Tim Gabler, Physical Plant – Telecom (TG)
  - Michael Lane, Campus Police Chief (ML)
  - Michael Brandeis, IT
  - Nita Bullock, Director of Physical Planning (NB)
  - Housing, Dining & Residential Services (HDRS)
  - Design & Construction (D&C)
  - Capital & Physical Planning (CPP)
  - Michael T. O’Donnell, CHIEF (MT)
  - Diane Smith, CHIEF (DS)
  - Esther G. Smith, CHIEF (ESG)
  - Jerry Griffin (JG)
  - Steve Marshall (SWM)
  - Jacqueline Norman (JN)
  - George MacMullin (GM)

**STUDIOS Project No:** 10566.01

*rev. 02.04.11*

**DUE DATE:**

- 01.21.2011 Meeting Minutes 8:30 – 11:30

**ITEM #**

<table>
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<td>1</td>
<td>Fire / Life Safety</td>
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<tr>
<td>1.1</td>
<td>Introduction</td>
</tr>
<tr>
<td>1.2</td>
<td>Fire Sprinklers / Fire Alarm</td>
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</tbody>
</table>

**ODM**:

- **OCR** provided a brief overview of the project scope and preliminary Code analysis. The A-I building will be considered a single structure of Type I-B Construction based on existing building shell assemblies. The major Occupancies include R-2 for the Residential areas, A-2 for the Dining and Emporium spaces, B for the Office areas and A-3 for conference rooms and lounges. CBC Section 508.3 allows for Non-Separated Occupancies, except R-2 must maintain a one-hour separation from other Occupancies if building is designed for most stringent (A2) Occupancy.

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- **OCR**: don’t need to retroactively add areas of refuge or elevator auto-return to the ground floor.

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- **OCR**: the existing condition of deep yards between the wings is acceptable as long as current access is not compromised. The existing emergency generator is fueled by natural gas; most have changed to diesel belly tanks due to seismic issues; requires AQMD-approved equipment.

- **OCR**: an acceptable alternate fire truck staging area would be a single one south of the horseshoe.
2.1 Electrical

BR: Be aware of existing underground high voltage utilities if expanding the building footprint, especially around the loading dock/service yard

- Old 41 KV is running underground adjacent to the dock; this has been abandoned, but it should be checked to confirm there is no longer any live power fixed
- A recent 12 KV vault is located just south of the dock; this feeds the existing transformers adjacent to the Central Plant; this power is ultimately branches out in the basement to each wing; each wing is metered separately
- A 480 V feeder is located on the south wall of the service yard enclosures, serving the Kitchen; this will be cheaper to relocate if necessary than the 12 KV line
- New loads need to be verified to confirm if existing transformers may need to be re-sized; ideally (but not essential) these transformers should relocate to the exterior
- The existing emergency generator is inadequately to support the emergency lighting and the recently renovated Kitchen refrigerated norms, an exterior location is desirable for its replacement
- The existing transformer in the "E"-Wing basement (adjacent to the existing south loading area) may be able to be tied with the proposed Townhouses if sited along the arroyo
- Use caution if any new floor penetrations are proposed in the Kitchen directly over the main electrical room below
- Steam generation on A4 is likely to be discontinued

2.2 Plumbing

MT: There are 6" sanitary sewer laterals on the west side of A-4, running out toward Aberdeen Street

- The existing Kitchen waste lines run to the west side sewer lines without a grease interceptor; the elevation of a new grease interceptor located on the east side may be too low
- Check invert elevations and fall of existing waste sewer piping. Highly discourage introducing pumps for sewer
- If day sewage piping is replaced due to leaks, recommend installing 6" cast iron
- It may be more economical to run sanitary sewer from Townhouses over to existing A1 system, rather than laterals out to Aberdeen Street
- The domestic water service to the Kitchen is 4" with a newly-upgraded softening system that can remain as-is
- The existing A1 Student Electric dishwasher is about to be replaced with Hobart 480V/3 phase equipment, including an accumulator, scraping conveyor and pulper; this system will be re-used in the renovated design

2.3 Telecom

TG: Current telecom service to A1 building is at maximum capacity

- Data service is not a big issue; just add a "switch" and Telecom Closets per UCR standards, 260F maximum cable run

2.4 Security

3.1 Interior Functions

ML: All ATMs and P.O.S. / cashier in Emporium or outside Lobby security must be readily visible from passing patrol car along the horseshoe drive; presume security cameras will be installed per UCR standards

AP: discourage random intruders from directly entering A1 Lobby or "E"-Wing/Mt

Comment: customer parking will not be provided for the Emporium

ML's recommendation that CPTED design principles should be employed to naturally enhance safe and secure outdoor areas

4.1 Site Utilities

NB: any new structures must be setback from the top of the Arroyo by minimum 50'; pedestrian walkways or fire access area can be within the 50' setback

NB: it is campus policy to add good usable outdoor spaces where possible; one smoking area on east and west side of A1 must be provided -- locate at least 25' from entrance, windows, or mechanical air intake

NB: mature trees should be retained; low irrigation landscaping is encouraged; reiterated ML's recommendation that CPTED design principles should be employed to naturally enhance safe and secure outdoor areas

ES: raised the possibility of secured outdoor dining off of the Student Restaurant; circulation to and from proposed future parking deck(s) should be considered when investigating major/minor access routes from the east

4.2 Service Yard

There was general discussion about the program of the Kitchen loading dock and service yard area

- GS semi-trailer trucks unload almost every day -- a second dock for several smaller trucks to come and go is desired
- Existing raised dock may actually be a hindrance for most deliveries. Raised dock is frequently used by large delivery vehicles. Smaller do not reach that dock height require another method to offload and deliver product
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<td>Truck maneuvering and visual screening must be integrated</td>
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<td>Other kitchen dock area program: catering truck loading, trash/recycling/compost bins, cart wash area, grease trap</td>
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<td>Cooling tower should be replaced, and if relocated should move closer to, rather than further from, the chillers situated in the north side of the Main Mechanical Room</td>
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<td>Generator and transformers ideally should move from basement to exterior – consider creating a walled utility yard, or incorporate within an expanded service yard enclosure</td>
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<td>CG will provide additional clarification of Loading Dock program</td>
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</table>

CG 2.4.11

The above minutes are true and complete to the best of STUDIOS knowledge.
Please notify STUDIOS within three days of any modifications, additions or deletions.
Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
## Programming Workshop #2 / PMT Meeting

01. 21.2011  Meeting Minutes 11:30-12:00

(Rev. 02.04.11)

### ATTEnding:

**UC Riverside:**
- Housing, Dining & Residential Services (HDRS)
  - Susan McMillin (SMM)
  - Andy Murphy (AP)
  - Cheryl Game (CG)
- Design & Construction (D&C)
  - Richard Reisic (RR)
- Capital & Physical Planning (CPP)
  - George MacMillan (GM)

**STUDIOS:**
- Architecture
  - Erik Susskind (ES)
  - Kelly Cape (KC)
- Engineering
  - Jerry Griffin (JG)

**Marshall Associates:**
- Jacqueline Norman (JN)
- Steve Marshall (SWM)

**Emporium:**
- Demo Dec 2012 / Open Sept 2013
- Residential Restaurant: Demo June 2013 / Open Sept 2014

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<tr>
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<th>OWNER</th>
<th>DUE DATE</th>
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</thead>
</table>
| 1.1 | PMT Meeting | UCR will obtain structural proposal for computer modeling of A-I to determine UCR Rating of building wings:  
- UCR to determine whether JAMA or third party engineer  
- JAMA will remain on DPP team, regardless | JH | 1.31.11 |
| 1.2 | Plan for Phasing | Discussion of Project phasing:  
- CG: Emporium demo Dec 2012 / open Sept 2013  
- Residential Restaurant: demo June 2013 / open Sept 2014  
- RR: allow up to 5 months for advertise / pre-qual / bid / contract / GC mobilization (shop drawings, long lead)  
- Emporium CDDs issue for bid July 2012 | CG | 2.4.11 |
| 1.3 | Sustainability | Conference Call  
JH will arrange a conference call with SA, John Cook (UCR Sustainability director) and a representative of HDRS' Dining Services and Housing Services sustainability committee to discuss Campus strategies | JH | 1.27.11 |
| 1.4 | Additional Programming Info | SA provided a list of unanswered programming information required of various Workshop participants | CG/REO | 1.25.11 |
| 1.5 | Destructive Testing | SA will provide JH with a list of recommended destructive testing of plumbing components | SA | 1.25.11 |
| 1.6 | Student Workshop | An evening programming workshop with selected A-I student representatives will be scheduled for next SA visit on Monday 2.7.11 – ideally from 6:00 – 7:30 PM (latest) | JH | 2.7.11 |

The above minutes are true and complete to the best of STUDIOS knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com

---

**STUDIOS:**

page 1 of 1
### Detailed Project Program

**University of California Riverside**  
**Aberdeen-Inverness Common Area Improvements DPP**  
**Sustainability Conference Call**  
02.02.2011 Meeting minutes 1:00-2:00

**ATTENDING:**
- UC Riverside: STUDIOS Architecture  
  - John Cook  
  - Gustavo Plessencas  
  - Humphrey Gerrant  
  - Hassan Ghomeshi (HG)  
- Design & Construction:  
  - Beck Price  
- Capital & Physical Planning:  
  - Jon Harvey

**ITEM # | TOPIC | DISCUSSION | OWNER | DUE DATE | STATUS**
--- | --- | --- | --- | --- | ---
1 | LEED-1.1 LEED for DPP | The project must ultimately achieve minimum LEED Silver in the Design/Construction phase; at the DPP level the LEED Scorecard must be populated for likely credits. HG reminded that the cost of LEED improvements must fit the project budget. | HG |  |  
2 | LEED NC vs. CI | STUDIOS has checked the project for both LEED NC (New Construction and Major Renovations) and CI (Commercial Interiors). Since the project renovation scope is less than 40% of the entire A-I building, it could be considered CI. Silver is readily attainable for LEED NC, but any higher rating will be difficult because the majority of the low-performing shell will not be upgraded in this project. For a similar amount of improvements LEED CI appears to achieve a Gold rating. The proposed freestanding staff residences however, would require a separate NC submission. UCR charged the design team to pursue the LEED strategy that achieves the highest rating for the least additional cost. |  |  |  
3 | LEED Credits | Various LEED 2009 credits were discussed:  
- UCR does not purchase renewable energy contracts (EA-Cr 4, or 6)  
- A high level of water efficiency (30-40% goal) should be attainable with the replacement of the dishwasher and cooling tower (WE-Cr 1, or 3)  
- The new Kitchens should have Energy Star appliances (EA-Cr 1.4)  
- Innovation credits may be possible for high level of campus kitchen compost/waste stream strategies  
- HG: Enhanced commissioning should be pursued for future UCR projects (EA-Cr 2, or 3)  
- Several other credits were suggested by UCR participants, all of which were already under consideration by the design team. |  |  |  
4 | Next Steps | STUDIOS will provide a high level summary at the 2.7.11 PMT meeting for further direction on LEED NC vs CI | SA | 2.7.11 |  

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions.  
Jerry Griffin can be reached at (415) 752-547 or griffin@studiosarch.com
### 2.7.11 - WORKSHOP #3

**Aberdeen-Inverness Common Area Improvements DPP**  
**Programming Workshop #3 / PMT Meeting**  
**02.07.2011 Meeting Minutes 9:00 – 9:30**  
**(rev 03.03.11)**  
**STUDIOS Project No: 10566.01**

#### ATTENDING:
- **UC Riverside:**  
  - Housing, Dining & Residential Services (HDRS)  
  - STUDIOS Architecture  
  - Design & Construction (D&C)  
  - Capital & Physical Planning (CPP)
- **Marshall Associates:**  
  - Steve Marshall (SWM)
- **ATTMTS:**  
  - Agenda
  - LEED Scorescard

#### ATTENDS:
- **JH:**
  - Reported that UCR concluded an independent engineer is not needed at the pre-design stage to complete computer modeling to determine UC Seismic Rating of the A-I wings. SA was asked to submit a proposal for JAMA to complete the computer modeling as an additional service to be billed on an hourly basis. Total cost with reimbursable expenses is not to exceed $15,000.
- **SM:**
  - The Security Report is currently a work in progress; UCR comments are due to the Consultant by Feb 14.

#### ATTENDS:
- **JG:**
  - gave a summary of the 2.211 sustainability conference call, and provided a brief overview of the LEED NC vs CI issue; the project can readily achieve LEED Silver under NC, but for the same level of improvements it appears to achieve LEED Gold under CI; this is partly due to the significant foodservice renovation scope, which will result in LEED credits for Energy Star appliances and water reduction; if CI is pursued, the freestanding staff residences would need to be split off or submitted separately as NC; UCR reiterated their sustainability goal is for the best value of cost vs LEED rating above Silver.

#### PMT Meeting

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<tr>
<th>ITEM #</th>
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<th>DUE DATE</th>
<th>STATUS</th>
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</table>
| 1.1    | Workshop #3 Goals | 1. Finalize Program Areas  
            2. Complete Detailed Criteria Collection for Room Data Sheets  
            3. Review Concept Alternatives | | | |
| 1.2    | Implementation/Phasing | ES reviewed the project pre-construction schedule at a high level; assuming 8 months UCR review/processing after 100% CD’s, and 10 months Emporium mobilization/construction—a May 2011 start of Schematic Design would be required.  
            B: a May 2011 SD start is too quick; UCR requires adequate time for funding submissions and approval; an agreement with Danny is also needed to 2-3 months negotiation prior to starting design  
            The impact of the future parking structures proposed east of A-I on the DPP scope was discussed. ES: the parking structures in the master plan appears undersized to have an internal ramp, which could impact the kitchen dock. JH: the future structure should be considered so the A-I solution does not compromise the parking structures. AP: the structure is important but long term. B: the structure shown in the master plan is a placeholder; the Maintenance Shop program could be relocated; the structure is needed in the area to support Dundee. | | | |
| 1.3    | Infrastructure/Sustainability Updates | JG: gave a brief overview of the draft Infrastructure Evaluation report which was issued to UCR for review on 2.2.11; the scope will be included in the 3.4.11 ROM cost estimate; further discussion with IBE in the afternoon  
            ES reported that, except for Room Data Sheets, STUDIOS is generally on schedule with the DPP process; draft Room Data Sheets will be issued to UCR for review by 2.18.11 (one week late); next steps are to develop a single Concept Plan based on UCR input later in the day, and to commence the draft DPP Cost Estimate and Infrastructure improvement. | | | |

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions.  
Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com.
### 1. Program Areas Validation

#### 1.1 Program Summary Overview

- **ES** gave an overview of the Program Summary sheets, to which STUDIOS assigned a Net to Gross of 0.70 for the Community & RSO spaces, and a 0.90 for the Dining and Emporium.

- **B**: use the CPEC standards for Net to Gross.

#### 1.2 Community Spaces

The following Community rooms were discussed with consensus as follows:

- **Lobby function is too small at 100 ASF (per Strategic Plan for Housing)** – it currently contains some lounge seating and the lockers / vending outside the Dining entrance, recommended increasing to 190 ASF and re-naming Student Support.

- **Computer Lab** appears too small at 360 ASF (per Strategic Plan for Housing). Instead of a perimeter station layout, a central bar layout would consolidate the wiring, set-up similar to a classroom, and would require about 450 ASF. **AP** may be able to rent the room out in off hours. Confirm attributes with students at evening workshop.

- **Fitness Center** appears too large at 800 ASF; only four pieces of cardio equipment were requested in WS #2 since the main Recreation Center is across the street; a 450 ASF size would be adequate. **AP**: confirm at Student Workshop if four pieces of exercise equipment are adequate.

- **Student Kitchen**: consider co-locating with Pre-Function to support.

#### 1.3 Resident Services Offices

The following RSO rooms were discussed with consensus as follows:

- **Reception**: includes counter and waiting area.

- **Private Office** ground floor – 150 ASF; workstations – 60 ASF.

- **Conference Room** should be located away from the RSO block.

- **Student Mailbox**: reduce to 350 ASF and consider an articulated layout.

- **Package Room**: 24" deep shelves each side; no work table required; size is fine.

- **Storage and Poster Room** sized OK as shown; Poster Room has a work table and poster printer.

### 1.4 Emporium

The following Emporium-related rooms were discussed with consensus as follows:

- **CG**: assume 200-240 peak meals per hour at lunch (dinner similar); it's OK to walk through cooler to access freezer, but not to also walk through dry storage; consider Kitchen grease collection / recycling; cardboard / recycling / compost / garbage holding and removal.

- **Dining at tables** will be 720 ASF (48 seats x 15 sf each); this is in addition to 6-8 counter seating (50 ASF) and outdoor patio seating.

- **Coffee service**: will be 80% non-drip, so may be separate from Denny's standard; assume 100 ASF, to be located between the Dining area and the Lounge.

- **Prepared Food Platform (deli case)**: 340 ASF.

- **General Merchandise**: 525 ASF.
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<tr>
<td>1.5</td>
<td>Student Dining</td>
<td>The following Student Dining / Kitchen – related rooms were discussed with consensus as follows:</td>
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<tr>
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<td>• Dining seating area to be 11,500 ASF (575 seats x 20 sf), seat area factor is larger than used at Emporium in order to provide for a greater variety in dining environments</td>
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<td>• Kitchen staff lockers located in service corridor is good; combination Changing area and Restroom Vestibule could work, but needs a privacy device</td>
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<td>• Kitchen Restrooms: recommended fixture counts are based on Plumbing Code minimums; in order to increase operational efficiency, direction was given to increase lavatory count to two for each gender and add a second urinal</td>
</tr>
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<td>1.6</td>
<td>Staff Residential</td>
<td>AP prefers the &quot;C&quot; (single story) plan option; provide built-in cabinets and storage to minimize loose furniture</td>
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<td>B: increase unit area to 1,125 ASF; figure is based upon Glen Mor 2.</td>
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<td>1.7</td>
<td>Non-Assignable Spaces</td>
<td>The following rooms were discussed with consensus as follows:</td>
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<td>• Two separate restrooms for each gender located where Wings B and D connect to circulation spine are approved; recommended fixture counts are based on Plumbing Code minimums; to address the occasional demand of large events direction was given to add a third toilet to each Women’s and remove one toilet from each Men’s (net one toilet and one urinal); total one lavatory in each</td>
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<td>• Provide an additional single occupancy (gender neutral) restroom.</td>
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<td>• Four Telecom Rooms at 100 sf each proposed by UCR IT; 2-3 of the rooms may be reduced in size – a Housing IT person will review with Communications</td>
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<td>• Food Trucks requires a serving location along west horseshoe drive while the Main Dining is being constructed and during special events – an 8x28’ concrete pad including utilities (water and power); once the Emporium is open the food trucks may no longer need to be positioned in that location; a service location adjacent to the east loading dock is required for parking, stocking, cleaning (provide electrical service for refrigeration)</td>
</tr>
<tr>
<td>2.1</td>
<td>Concepts</td>
<td>ES presented 2 alternative concept plan diagrams, both with the future parking structure dropped in for reference.</td>
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<td>Alternative 1 proposes the main West entry north of rebuilt Wing C; computer lab positioned at the west end of Wing B, fitness center in/haling one of the existing staff units; one large interior extension to the south of student Dining with a secured patio to the north (asymmetrical plan); closing off through circulation south of Wing C east – to be used as outdoor dining area, the Kitchen dock access is rotated to the south, two-story staff housing north of the existing pedestrian walk.</td>
</tr>
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<td>Alternative 2 proposes the main West entry south of rotated Wing C, a secondary circulation loop along the existing spine to improve security and avoid level changes, fitness center and computer lab positioned at the west end of Wing B, equal sized interior extensions to the north and south of student Dining and maintaining existing through circulation north and south; single story staff residential with pedestrian walk shifted north.</td>
</tr>
<tr>
<td>2.2</td>
<td>Concepts</td>
<td>SLM: closing off one yard outside of Wing C east for secure outdoor dining is a good idea; pedestrian circulation from Portland residential is significant, while flow to future parking structure will be light; recommend flipping the closed off yard to the north side of Wing C east, with resident card reader access</td>
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<td>CG: Student residential has a large patio that seems rarely used – if the reason can be discovered we should not repeat; consider providing a second entrance into Dining off of the proposed south patio to relieve the main Dining entry queue.</td>
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<td>SLM / CG: prefer west entry as shown in Alternate 2 (south of Wing C), as it addresses resident pedestrian flow to campus better.</td>
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<td>AP: refrain from pinching the pedestrian circulation south of Wing C west with too large of a Dining expansion; likes proposed lower gesture at main West entry; prefers the Alt 2 West entry plaza idea of unit pavers to blur line between pedestrian and vehicular circulation; prefers staff housing as shown in Alternate 2 (one story – shift existing pedestrian walk to the north); combines bike storage into one enclosure south of Wing D – closer to pedestrian flow and Aberdeen Street; consider smoking area on east side of A-I (may not need to provide one on west side); proposed Emporium service access through basement spine to south dock is OK, but confirm there is no conflict with existing infrastructure</td>
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### Infrastructure

#### 3.1 Existing Equipment Overview
- Two existing boilers create steam for space heating system and for miscellaneous kitchen equipment; steam system is obsolete (fewer maintenance options), and should be converted to hot water system eventually – but changing out all the building piping will be a significant cost and disruption; both boilers need to be replaced but can be phased – one boiler can continue to provide domestic hot water for residential wings; an alternative scenario is to convert the building to independent penthouse-mounted boilers wing by wing – this will spread out the pain, but will require more maintenance; recommend an independent boiler for the critical path first phase Emporium; new hot water boilers should be provided for all renovated program areas; electrical wiring requires updating when spaces are renovated; main electrical switchgear room requires cooling; renovated Kitchens will each require a grease trap; rooftop storm drains will require replacement when re-roofing; domestic water lines appear fine, but should be tested for internal condition
- **Hot water piping in main mechanical room should be replaced**
- **Cooling Tower should be replaced as soon as possible; due to its age and poor condition, it is wasting water and energy**
- **Existing chillers are in decent shape and could last 5 more years, but they are inefficient and use outdated refrigerant that is increasingly difficult to source and will not meet LEED requirements; it is recommended that replacing chillers rather than refrigerant will be more economical and maintainable in the long run; removing chillers from basement will be a challenge – they could potentially be left in place and decommissioned.**
- **Future Kitchen grease traps were considered at a high level, and it appears that there is enough fall to the sewer lines on the west side to avoid pumping**
- **Rooftop air handlers on residential wings are in varying degrees of deterioration, but most could last another 3-4 years – Wing A east is in the worst condition; the Dining AHU should be replaced with the Wing C east renovation**
- **There is not enough building electrical service to serve two kitchens – need to upgrade 480V service before main Dining Kitchen comes on line**
- **The emergency generator must be replaced and relocated to the exterior; the existing model could work; once the heater hot water tanks are removed**
- **The transformer in A-wing must be replaced**
- **IBE gave an overview of the MEP infrastructure evaluation:**
  - Two existing boilers create steam for space heating system and for miscellaneous kitchen equipment; steam system is obsolete (fewer maintenance options), and should be converted to hot water system eventually – but changing out all the building piping will be a significant cost and disruption; both boilers need to be replaced but can be phased – one boiler can continue to provide domestic hot water for residential wings; an alternative scenario is to convert the building to independent penthouse-mounted boilers wing by wing – this will spread out the pain, but will require more maintenance; recommend an independent boiler for the critical path first phase Emporium; new hot water boilers should be provided for all renovated program areas; electrical wiring requires updating when spaces are renovated; main electrical switchgear room requires cooling; renovated Kitchens will each require a grease trap; rooftop storm drains will require replacement when re-roofing; domestic water lines appear fine, but should be tested for internal condition

#### 3.2 New Kitchen MEP Requirements
- IBE needs the following information confirmed for both Kitchens:
  - Number of exhaust hoods and approximate cfm

### Schedule / Phasing

#### 4.1 ES:
- **Phase One is proposed as all construction west of the circulation spine and Phase Two is all work east of the spine, with east basement infrastructure upgrades occurring in both phases.**
- The Emporium in Wing D is on the critical path and must open by August 2013 to help support Glen Mor 2 residents because the A-I Main Dining will be demolished.
- Assuming 12 months mobilization and construction (2 months +10 months) for Phase One plus 3 months bidding/contract period results in a May 1, 2012 bid issue date; if a 12 month period is required for design, documentation and UCR reviews, Schematic design would need to commence May 2011.
- **B: The DPP approval process including analysis of the business case can’t be done in pieces – it must be completed prior to Design phase start; obtaining required approvals in the short window presented is a challenge; consideration should be given to reducing Phase 1 to only the 6,000 square foot Emporium project since it is on the critical path; Emporium kitchen will require dedicated infrastructure including underground grease trap, kitchen exhaust to 3rd floor roof and MEP service**
- **B: Construction Manager at Risk (CMAR) may be considered as a delivery method, which could support the proposed construction schedule;**
- **DC: CEQA review will take six months (assuming negative declaration); CEQA submission can commence after the entire project Schematic Design for all phases is completed; Emporium/DD/CD phases can proceed concurrently with CEQA review**
- **JN: Three month CMAR selection period starts at Preliminary Design (Design Development); this can happen concurrently with the six month CEQA review**
- **B: UCR must have cost estimate before internal review can commence; STUDIOS to forward digital version of conceptual pre-construction schedule for UCR internal review**
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| 5.1   | Room Data Sheet Follow Up discussion from morning session | CG to provide additional Emporium information relative to trash and recycling volume and other service area storage requirements (Denny's program).  
  
  CG: Kitchen lighting levels should be 70 footcandles at the worksurface.  
  
  Kitchen industry-recommended maximum space temperature is 78 degrees; CG requested that 75 degrees maximum be used.  
  
  Lounge: assume wireless internet will be installed; provide two flat screen TVs.  
  
  Positioning the Fitness Center in the existing northernmost Staff apartment is approved, since that location is closer to more active student resident areas.  
  
  Positioning the Student Support function (lockers outside Dining / vending) in the Staff apartment just south of Wing C is approved since that location is adjacent to the proposed Dining entr and the proposed main building entries |
|       |       | CG         |
|       |       | 2.25.11    |

The above minutes are true and complete to the best of STUDIOS’ knowledge.  
Please notify STUDIOS within three days of any modifications, additions or deletions.  
Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
ATTENDING:

UC Riverside:
- Housing, Dining & Residential Services (HDRS)
  - Susan Marshburn (SLM)
  - Andy Plumley (AP)
- Capital & Physical Planning (CPP)
  - Kieron Brunelle (KB)
  - Jon Harvey (JR)

STUDIOS Architecture
- Erik Scovell (ES)
  - Kelly Ceppi (KC)
  - Jerry Griffin (LG)

Design & Construction (D&C)
- Don Caskey (DC)
  - Jacqueline Neman (JN)
- Marshall Associates
  - Steve Marshall (SMW)

ITEM # | TOPIC | DISCUSSION | OWNER | DUE DATE | STATUS
--- | --- | --- | --- | --- | ---
1 | PMT Meeting | | | | |
1.1 | Room Data Sheets | SA will update Room Data Sheets for Committee review and comment | SA | 2.18.11 | |
1.2 | LEED CI vs NC | DC may be able to refrain from submitting the freestanding staff housing for LEED certification, so that the main A-I project can be submitted under LEED 2009 CI (to achieve possible Gold rating) – see item #1.3 in AM PMT meeting; need to “run up the flagpole” | DC | 2.18.11 | |
1.3 | MEP Infrastructure | IBE to investigate the previously-discussed possibility of a freestanding mechanical enclosure and abandoning much of the basement equipment in place | IBE | 2.14.11 | |
1.4 | Schedule | STUDIOS to send digital version of conceptual construction schedule to UCR for internal manipulation | SA | 2.18.11 | |
1.5 | Next Meeting | Workshop #4 is scheduled for Friday 4 March; primary topics include review of draft cost estimate, review of phasing schedule and review of single updated Concept Plan | | | |

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
1.6 Exterior Spaces

- Bicycle storage should be a single enclosure located south of Wing D near the pedestrian walk for convenience; theft is an issue, so visibility from the street is important and security cameras should be installed.
- The existing patios north of Wings B and D could have higher usage if they felt more inviting: better access, lighting and seating.

1.7 Building Architecture

- The consensus was that residents like the brick and “traditional” feeling of A-I; it should feel like “home.”

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732-547 or griffin@studiosarch.com.
Detailed Project Program

University of California Riverside
Aberdeen-Inverness Common Area Improvements DPP
Programming Workshop #4 / PMT Meeting

03.04.2011 Meeting Minutes 9:00 – 9:30

STUDIOS Project No: 10566.01

ATTTNG:

UC Riverside:
Housing, Dining & Residential Services (HDRS) STUDIOS Architecture
Susan Marshburn (SLM)   Erik Sueberkrop (ES) Andy Plumley (AP)   Kelly Capp (KC)
Cheryl Garner (CG)   Jerry Griffin (JG)

Design & Construction (D&C)
Don Caskey (DC))
George Mackenzie (GM)   Steve Marshall (SWM)

Capital & Physical Planning (CPP)
Kieron Brunelle (KB)
Jon Harvey (JH)

ATTMTS:   Agenda

ITEM # TOPIC DISCUSSION | OWNER DUE DATE STATUS
--- | --- | ---
1 | PMT Meeting | 

1.1 | Workshop #4 Goals | 
1.1.1 | Preferred Concept Diagram – Final Review | 
1.1.2 | Schedule / Phasing – Final Review | 
1.1.3 | MEP Infrastructure – Scope Confirmation | 
1.1.4 | Room Data Sheets – Final Review | 
1.1.5 | Draft Cost Estimate – Scope / Methodology Confirmation | 

1.2 | Comments From Committee | 
1.2.1 | Infrastructure Report (issued 2.2.11) review comments coming Tuesday | UCR 3.8.11

1.3 | DPP Schedule | 
1.3.1 | STUDIOS is on schedule to deliver Draft DPP on 3.14.11; UCR review period is 1.5 weeks; next Workshop to discuss UCR review comments is 3.28.11; final DPP issue is 4.11.11 | 

1.4 | STUDIOS General Progress Status | 
1.4.1 | Sustainability: LEED-2009 CI is the proposed strategy for the DPP since it appears to deliver a higher LEED rating (Gold) than LEED 2006 NC (Silver) for an equivalent budget and effort; UCR to determine if the outlying staff residences can be waived from LEED certification (they don't conform to LEED CI); since they are about 11% of the total project area and about 3.5% of the project cost | 

1.5 | UCR Action Items | 
1.5.1 | Housing Security Report: delivery will be deferred until after the DPP issue | 
1.5.2 | Hazmat Report was received on 3.1.11 | 
1.5.3 | Loading Dock Program sufficient information for the Draft DPP was transmitted to STUDIOS in the Workshop #3 | 

The above minutes are true and complete to the best of STUDIOS' knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com
3.4.11 - PROGRAMMING WORKSHOP #4

University of California Riverside
Aberdeen-Inverness Common Area Improvements DPP

Programming Workshop #4
03.04.2011 Meeting Minutes 10:30-5:00

1. Room Data Sheets Review Comments Rev. 3.3.11
   - Attendees: Susan Marshburn (SLM) Erik Sueberkrop (ES) Andy Plumley (AP) Kelly Capp (KC) Cheryl Garner (CG) Jerry Griffin (JG) David Henry (DH) Hassan Ghamlouch (HG)
   -UC Riverside: Susan Marshburn (SLM) Erik Sueberkrop (ES) Andy Plumley (AP) Kelly Capp (KC) Cheryl Garner (CG) Jerry Griffin (JG) David Henry (DH) Hassan Ghamlouch (HG)
   -STUDIOS Architecture: Erik Sueberkrop (ES) Kelly Capp (KC) Jerry Griffin (JG)
   -Don Caskey (DC)
   -Steve Marshall (SWM)
   -CP O'Halloran Associates: Ciaran O'Halloran (CPO) Tricia Thrasher (TT)
   -Richard Racicot (RR)
   -Tricia Thrasher (TT)
   -George MacMullin

2. Concept & Phasing Plan

2.1 Concepts Revie

1.1 Review Preferred Concept

ES gave an overview of the developments of the Concept Diagram since Workshop #3, with the following Steering Committee comments to be incorporated into the Draft DPP:

1.2 Wing B

Wing B: move fitness center to Wing B and reclaim Resident Advisor apartment for Staff Break room – could be repurposed almost as is; relocate Music Practice Room to Wing B; orient Meeting Rooms toward west and Computer/Fitness toward east and (for easier resident access), provide one of the two multifunctional public Restrooms in Wing B West.

1.3 Wing C

Wing C West: reception service counter overhead security grille should be motorized operation; provide overhead storage bins and task light (in lieu of desk lamp) at all RSO offices; relocate key storage from Package Room to RSO staff Workrooms; add computer data outlet in Poster Room; locate the single occupancy Public Restroom in Wing C (accessibility from spine).

Wing C East: a larger Lobby off the spine immediately outside of the Dining entrance for queuing/waiting was approved; the adjacent proposed Student Support for (locker/vending) was approved within the existing Resident Advisor apartment just south of Wing C; the +/-400 sf of apartment may be larger than necessary for this function – only take and

2.2 Non-Assignable Spaces

SA suggested or recommended that 5.90 net gross factor be used for the Non-Assignable Spaces.

2.3 Wing B

Maximum seating in Meeting Rooms (as check of existing A-I seating capacity indicates 44 chairs at tables – which the Preferred Scheme exceeds); provide at least 12 seats in the Small Meeting Rooms, provide new Storage Room (for extra chairs) off of Prefunction space; provide additional power and data outlets within the Prefunction space (perhaps in floor slab), Committee revised the Meeting Room program to one 750 ASF, two 500 ASF and two 250 ASF. This is based upon overall use of meeting rooms within Housing.

2.4 Wing D

OC: the Emporium (140) meal count capacity includes take out orders – 48 Dining seats + 8 Counter seats + 40 Lounge seating capacity + outdoor patio seating is approved; show a clear separation between the Emporium 3rd floor section and the Coffee Counter section. Beverages will not be self-service in the Emporium – convert this counter to “Coffee Confections”.

3.6.33 University of California, Riverside
2011 A-I Residence Hall Common Area Improvements DPP
10.28.11
### Detailed Project Program

**1.28.11 page 3 of 4**

#### 1.5 Wing C East

<table>
<thead>
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<th>Point</th>
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<tr>
<td>2.5</td>
<td>575 seats to be accommodated in Main Dining space; confirm 17 gsf / seat is adequate when secondary servery elements are included; add Private Dining Rooms within main Dining space (CG to confirm count); indicate how Hall Dinners seating up to 55 will be accommodated; add 8 TV monitors; provide projection system and speakers in conjunction with temporary stage (cloned outside dining area); Food Truck Storage must be refrigerated; Kitchen offices shall have internal windows (not sidelights).</td>
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#### 2.6 Dining General

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<tr>
<td>2.6</td>
<td>Remove all reference to &quot;manual key locks&quot; – all doors in Foodservice areas shall have &quot;Card Key Access&quot;; provide 68-72 degrees design temperature at all food prep areas (note – this is cooler than called for by IBE recommendations); the preferred food prep flooring is a semi-cushioned product called &quot;Protect All&quot;.</td>
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#### 2.7 Staff Residential

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<td>2.7</td>
<td>Modified Option B preferred; provide a tub/shower unit in all bathrooms; provide a stacked washer/dryer in all units; vinyl wood flooring may be considered in lieu of carpet.</td>
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#### 3 Infrastructure

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<td>3.1</td>
<td>MEP Draft Report GM questioned whether the proposed 300 ton chiller included any redundancy; he was also not comfortable with the recommendation for no standby chiller; the proposed strategy for converting from existing steam heating hot water to hot water boilers incrementally in the Residential Floors was discussed; a Conference Call with GM, HCL, JH and Alan Locke of IBE will be scheduled for the week of March 7 to discuss and resolve direction for Draft DPP.</td>
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#### 4 Conceptual Cost Estimate Revie

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<td>4.1</td>
<td>CPO presented the methodology and general scope of the conceptual cost estimate. Committee requested that all Residential Floor MEP upgrades (including rooftop air handlers and enclosures) plus the proposed seismic remediation in the upper floors of Wings B and D West be itemized and moved to &quot;below the line&quot;.</td>
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#### 5 Schedule / Phasing

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<td>5.1</td>
<td><strong>SB:</strong> Reports (and other) approvals of the DPP will take more time than shown on previous schedule – assume an October 2011 Design start at the earliest and factor into the Draft DPP Schedule. <strong>CG:</strong> Emporium opening in January 2014 (vs Sept 2013) may be acceptable.</td>
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*SLM: the Staff Residential units must be ready for occupancy at the time the two Resident Director apartments along the spine are repurposed.

*Two Phasing Options were discussed:
  - Option A: Phase One 1A + 2A (incl. Central Plant) = 1B = 15 months; Phase Two 2B = 15 months
  - Option B: Phase One 1A + 1B (incl. Central Plant) = 12 months; Phase Two 2A + 2B = 18 months

5.2 JH requested that the Draft DPP Schedule show only monthly increments of duration without specific years or month names.

5.3 There was discussion about the ballpark cost to build a stand-alone Dining facility. Option One was 20,000 gsf and Option Two was 30,000 gsf. The cost of Option Two was generally thought to be $21.5 million ($16.5 million building + $3 million kitchen equipment + $2 million site improvements). This is in comparison to the cost of renovating of Wing C of $13.5 million.

JH asked SW/CPO to investigate at a high level how a Wing C West Dining replacement building might lay out, what it would cost and approximate schedule impact.

5.4 SA was requested to provide an electronic copy of the Final DPP to UCR on April 11, prior to publishing the hard copy version.

Note: the Phasing/Schedule discussion carried over into PMT meeting, so there are no additional closing PMT minutes.

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The above minutes are true and complete to the best of STUDIOS' knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732-547 or griffin@studiosarch.com.
### 1.1 Chillers / Cooling Tower

**Discussion about existing A-I chiller capacity:**
- AL stated that the existing chillers should be able to support the proposed Phase One (West side) additional program area space; however, the cooling tower must be replaced to support any expansion.
- An alternative, if continued use of the chillers is neither desirable nor practical, is to provide a new smaller chiller along with the new cooling tower in the proposed new plant building. This central plant could expand incrementally as needed per Workshop #4 discussion.
- Note that it is more efficient to run smaller chillers at their capacity than a larger chiller at partial capacity.

### 1.2 Boilers

The A-I building is proposed to eventually convert from steam to a hot water heating system. This will require the coil and related piping infrastructure in each residential wing to be converted when its rooftop AHUs are replaced. Two options were discussed:
- Remove the existing central steam boilers and provide new central hot water boiler and piping throughout the building.
- Leave the central steam boiler in place temporarily and provide distributed boilers at each residential wing roof; this scheme has higher maintenance, less redundancy and structural unknowns, and is therefore not preferred.

### 1.3 Central Plant Phasing Strategy Summary

Build a new plant building outside the basement to house new central plant equipment, but phase the installation of the chillers, cooling towers and boilers. Under Phase One, a chiller, cooling tower, boiler and associated equipment would be installed first to serve only Phase One, while the existing basement central plant remains in operation for the balance of the A-I building. Piping from the new plant building to A-I would be sized to serve the entire building. In Phase Two, the existing central plant chillers and boilers would be removed and additional (smaller) chillers and boilers would be installed in the freestanding plant building.

This option allows the MEP scope of work inside the building (e.g. piping in the spine ceiling to stub outs at each wing for future improvements of residential floors) to be implemented during the summer months, and incrementally installing new central plant equipment only as required for each phase, reducing the initial cost burden on Phase One.

### 3.8.8 - HVAC CONFERENCE CALL

**ITEM # | TOPIC | DISCUSSION | OWNERS | DEL DATE | STATUS**
---|---|---|---|---|---
**1** | **1.1 Chillers / Cooling Tower** | **GM questioned the lack of a standby chiller in the draft A-I report recommendations. AL stated chiller redundancy is no longer common in new residential cooling systems, but would add to MEP report if requested by UCR. HG mentioned that Glen Mor does not have a standby chiller.** | **GM** | **03.24.11** | **STUDIOS**

**GM questioned the lack of a standby chiller in the draft A-I report recommendations. AL stated chiller redundancy is no longer common in new residential cooling systems, but would add to MEP report if requested by UCR. HG mentioned that Glen Mor does not have a standby chiller.**

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**1.4 Residential MEP Improvements Costs**

**PR requested that the Residential wings be itemized each with a total cost — i.e. Wing A total cost for MEP upgrades and Repairs plus Roofing and Rooftop MEP plus General Conditions; same for Wing E and Wings B & D (Residential floors only). The goal is to estimate what these improvements in each individual wing would cost, since they may not be upgraded all at the same time.**

**STUDIOS 4.11.11**

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**STUDIOS 4.11.11**

The above minutes are true and complete to the best of STUDIOS' knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com.
3.28.11 - PROGRAMMING WORKSHOP #5

ATTENDING:

UC Riverside:
- Housing, Dining & Residential Services (HDRS)
- Design & Construction (D&C)
- Capital & Physical Planning (CPP)

STUDIOS Architecture
- Erik Stuikenbroek (ES)
- Kelly Capp (KC)
- Jerry Griffin (JG)

Marshall Associates
- Steve Marshall (SM)
- Jacqueline Norman (JN)

UC Riverside
- Susan Marshburn (SLM)
- Andy Plumley (AP)
- Cheryl Garner (CG)
- Don Caskey (DC)
- George MacMullin (GM)
- Jon Harvey (JH)
- Tim Ralston (TR)
- Nita Bullock (NB)

ATTMTS: Agenda

Revised Program Summary 3.28.11 (handout)

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>TOPIC</th>
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<tr>
<td></td>
<td>PMT Meeting</td>
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<tr>
<td>1.1</td>
<td>Workshop #5</td>
<td>1. Review Preferred Concept Plan Alternatives</td>
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<td></td>
<td>Costs</td>
<td>2. Review UCR Draft DPP Comments: MEP, Cost, Schedule, Phasing, Room Data Sheets and General Content</td>
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<tr>
<td>1.2</td>
<td>Comments From Committee</td>
<td>1. Program changes between Workshop-4 and the Draft DPP were discussed. ES explained that the spaces that are reduced (such as Dining down from 11,500 asf to 9,600 asf) meet functional requirements and reduces construction costs. The dining/kitchen program elements will be reviewed later in Workshop-5.</td>
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<td>2. ES presented the Program review handouts that showed potential area revisions and explained the need to make a few changes, including:</td>
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<td>a. Wing B West change Prefunction from 500 asf to 1,000 asf;</td>
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<td>b. Wing D West change grossing factor from 0.90 to 0.70;</td>
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<td>c. Wing C East round up the following Draft DPP component areas as follows:</td>
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<td>• Main Dining from 8,500 to 9,000 asf;</td>
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<td>• Servery – Secondary from 1,594 to 1,700 asf;</td>
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<td></td>
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<td>• Kitchen from 1,780 to 2,000 asf;</td>
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<td></td>
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<td>• Bakery from 630 to 1,000 asf;</td>
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<td>• Refrigeration from 876 to 1,000 asf;</td>
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1.3 DPP Schedule
- STUDIOS will issue Final DPP in pdf format for UCR review by EOB 4.8.11. UCR comments will be returned to STUDIOS by 4.15.11, with 15 hard copies delivered to UCR by 4.22.11.
**Attenning:**

| UC Riverside: Housing, Dining & Residential Services (HDRS) | STUDIOS Architecture |
| Andy Hurley (AP) | Erik Sartlbry (ES) |
| Kelly Carey (KC) | Steve Marshall (SMH) |
| Jack Henry (JH) |袒能宣 (NG) |
| Hassen Ghelouch (HG) | Steven Marshall (SMH) |
| Michael Neemer (MN) | IBE Engineers |
| Design & Construction (OAC) | Ciaran O'Halloran (CPO) |
| Don Ceaseley (DC) | Alan Locke |
| George MacMurtry (GM) | CP O'Halloran Associates |
| Jacqueline Norman (JN) | Ciaran O'Halloran (CPO) |
| Capital & Physical Planning (CPP) | Capital & Physical Planning (CPP) |
| Jon Harvey (JH) | Tim Rallion (TR) |
| Tim Rallion (TR) | Nita Bullock (NB) |

**Alternative Concepts Review**

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<th>SUB</th>
<th>DISCUSSION</th>
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<th>DATE</th>
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<tbody>
<tr>
<td>1.1 Alternative Concepts</td>
<td>This presented three Alternative Concept diagrams 1, 2, 3, including three variations on Concept 1, as follows:</td>
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<tr>
<td>1.2 Original Preferred Concept</td>
<td>This is the Concept developed during the DPP process and approved in Workshop 4. Pros and cons:</td>
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<td>1.3 Alternative Concept 1</td>
<td>Alt. Concept 1. Proposes to leave Wing C East intact (except to demolish the Kitchen portions) for use as a currently unprogrammed Events space. A new Residential Dining building would be constructed between Wings B and D West. Kitchen and back of house would be primarily in Wing B West first floor, with service from the north. The dining room would extend south from Wing B, with the RSO extending south of the dining room. Meeting rooms would be located on basement.</td>
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<td>1.4 Alternative Concept 1B</td>
<td>This new Kitchen and back of house would be primarily in Wing B West first floor, with service from the south. The dining room would extend north from Wing D, wrapping around the Emporium located in the west end of Wing D. The RSO would extend north of the dining room. Meeting rooms would be located in the first floor of Wing B West. The main building entry would be down a long narrow passage between the RSO and Dining.</td>
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<td>1.5 Alternative Concept 1C</td>
<td>This new Kitchen and back of house would be immediately north of Wing D West first floor, which houses the Emporium. The two dining facilities would share service from the south dock via the basement spine and elevator. The dining room would extend north from Wing D. The RSO would extend north of the dining room. Meeting rooms would be located in the first floor of Wing B West. The main building entry would be down a long narrow passage between the RSO and Dining.</td>
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<td>1.6 Alternative Concept 1D</td>
<td>This new Kitchen and back of house would be primarily in Wing B West first floor, with service from the north. The dining room would extend south from Wing B, wrapping around the Emporium located in the west end of Wing B West. Meeting rooms would be located on a second floor above the south edge of the Dining. RSO would be located in Wing D West. The main building entry would be between the RSO and Dining.</td>
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<td>1.7 Alternative Concept 2</td>
<td>Alt. Concept 2 proposes to reuse Wing C East for the RSO and Meeting Room functions. A new Residential Dining building would be constructed between Wings B and D West. Kitchen and back of house would be primarily in Wing B West first floor, with service from the north. The dining room would extend south from Wing B. The main building entry would be between new Dining and Wing D, which would still house the Emporium and related functions. Pros and cons:</td>
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<td>1.8 Alternative Concept 3</td>
<td>Alt. Concept 3 proposes to reuse Wing C East for the RSO and Meeting Room functions. A new Residential Dining building would be constructed to the east of Wing C East, in the existing parking lot. Wing D West would still house the Emporium and related functions, and Wing B West first floor could be used for additional student housing or the proposed Staff Residences. A new Main Entry lobby would be built in place of the demolished Wing C West. Pros and cons:</td>
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### Alternative Concepts Discussion

| DC | noted that all three Alternatives have roughly the same cost per square foot; the primary differences in overall cost is due to variations in construction scope. The Original Preferred Concept probably has the higher cost and schedule risk due to renovating Wing C East for Dining use, phasing uncertainties due to foodservice sequencing requirements, and unknown construction stages when renovating the existing shell. Reducing these possible risks, CPO noted that a fourth alternative of demolishing Wing C East and building a new Residential Dining wing in its place (per the Original Preferred Concept) would cost an additional $2-3 million over its base cost. |
| SM | wondered if extensive new construction on the west side in Alternates 1 and 2 would compromise existing A-I architecture; ES is confident that the new additions could be designed sensitively. |
| CG | felt Alternate 2 placed the Residential Dining in the best location to positively activate A-I student life; ES had not seen a community space proposal by Alternate 2 that seemed like good value. Building a dining facility in future shell addition (A-I 2 and 3) for minimal extra cost is compelling, especially if phasing can alleviate the need for a 1-dining facility downtown since modifying existing parking can be costly. |
| HG | noted that building improvements still need to be considered in any of the Alternative Concepts. |
| JH | stated the decision is whether to building a new kitchen dining area or renovate the existing facility. There are two key issues to consider with the proposed Alternatives: 1. Kitchen service/loading from the West side of A-I in Alternate 2; 2. Loss of Parking in Alternate 3. |
| DC | reiterated that defining and reducing risk at the DPP level was of highest importance. Phasing risks can add soft and hard costs. Wing C East appears to present lease cost / phasing risks as a simple Meeting Room use rather than as Residential Dining. |
| AP | felt one compelling aspect of Alternate 2 was the Meeting Rooms’ location on the east side, since they would have better proximity and entry access from the parking lot (for non-student users). |
| CG | stated that there are currently 16 daily foodservice deliveries on a busy day, in addition to trash and recycling storage and daily pickups; kitchen service from the west appears to be the biggest issue to solve in 1.9 Alternative Concepts Discussion |

| 1.9 | Alternative Concepts Discussion (continued at end of meeting, but included here for continuity) |
| DC | After further consideration and discussion, there was consensus for the Residential Dining facility to be located in a new structure rather than in renovated A-I space. This is due to reduced cost and phasing risks (construction can start at any time and is not dependent on the academic schedule) noted above, meaning one of the proposed Alternative Concepts should displace the Original Preferred Concept. Provided kitchen service from the west can be successfully resolved in all ways, Alternate 2 was preferred for the following reasons: 1. Its location creates a “town center” – an energetic gathering place for residents, with the most potential for enhancing A-I student life; 2. It is integrated with the main A-I building entry and has high visibility from pedestrian flow on Aberdeen Drive; 3. Meeting Rooms located east of the spine offer better access from the parking lot for non-student users; 4. It has the lowest probable cost of the Alternatives considered; 5. The Emporium remains in its ideal location in Wing D West. Kitchen service access from Lindon Avenue was discussed as an option to the Aberdeen Drive access shown in Alternative Concept 2, but there may be insurmountable topography challenges from the north. AP noted that the Meeting Rooms in Wing E East should be considered similar to a “hotel banquet hall” as far as servicing. Additional restroom plumbing fixtures may need to be necessary in Wing C East. |

| 2 | MEP Review |

2.1 Draft DPP Review Comments

SM presented a new list of MEP-related review comments. The following items were discussed: 1. Locate the Emergency Generator in the proposed stand alone central plant. 2. Provide a water treatment system in Phase 1. 3. State mandate is for SPF-28 in residential uses – revise Room Data Sheets. 4. Increase Office lighting levels to 50 footcandles in Room Data Sheets. 5. New fire alarm system will require the addition of cards only. 6. Integrate the Infrastructure implementation plan phasing with the Program phasing; provide a Table in the DPP for clarity. 7. In the Executive Summary, clarify the MEP improvements included with the Program scope vs the future residential upgrades. 8. Eight rooftop air handlers could be installed over a single summer if the scope is bid on January 1 and the construction is carefully planned. 9. An MEP Equipment Remaining Useful Life Table will be provided; it was noted that determining remaining useful life is difficult.
2.2 Central Plant
JR requested a Room Data Sheet be included in the final DPP for the upsized stand-alone Central Plant building.
DC suggested consideration of the Central Plant building as a single story structure, for cost and visual reasons. This needs to be weighed against additional loss of parking spaces if it remains in its current proposed location. Consideration should be given to moving the stand-alone Central Plant building closer to the existing Kitchen dock.

2.3 Switchgear
HG will identify the location of the residential wing switchgear that needs to be replaced.

3 Cost
3.1 Draft DPP Review Comments
JR requested additional detail be provided for Lump Sum Costs. Also, Staging Contingency (e.g. temporary trailers for RSO, temporary dining facilities, etc) should be defined. Housing stated that the temporary facilities will be addressed separately. The item will be listed as "By Owner".
Re-roofing of the residential wings may be completed as a separate project from the rooftop air handler replacement; cost estimate summary will separate roofing costs from mechanical equipment costs.
SM will provide assumptions used to develop the Foodservice Equipment lump sum budget shown in the Draft DPP estimate summary.
An Implementation Table will be included in the final DPP that integrates Program Improvements, Infrastructure Improvements and Costs side by side, by Phase.

4 Phasing
4.1 General Discussion
Direction was given to consider Phase 1 to include all improvements west of the spine plus the stand-alone Central Plant; Phase 2 will include all improvements east of the spine; Phase 3 (may be multiple phases) will include MEP improvements for the Residential floors.
Consideration should be given for the ideal location of temporary trailers for the RSO during construction (main A-I building entry may relocate to the south end of the spine).
It was noted in closing that Alternate Concept 2 (compared to the previous Preferred Concept) will take pressure off of Lothien dining, The Hub and other temporary dining facilities. This factor is another reason for proceeding with a new residential dining and kitchen facility as presented in Alternate Concept 2.

5 Draft DPP General Comments
5.1 Vending Machines
Room Data Sheet (RDS) 3.3.44: Direction was given to keep vending machines in the Lobby locker alcove, as they are used by visitors and others.
### 5.11.11 - FIRE MARSHAL CONFERENCE CALL

**University of California Riverside**  
**Aberdeen-Inverness Common Area Improvements DPP**  
**Fire Marshal Conference Call**  
05.11.2011 Meeting minutes 1:00-2:00

#### ATTENDING:
- UC Riverside: STUDIOS Architecture
  - Scott Corrin (SC)
  - Jerry Griffin (JG)
- Capital & Physical Planning
  - Kieron Brunelle (KB)
  - Jon Harvey (JH)
- Attachments: Proposed Site Plan sketch

#### ITEM # | TOPIC | DISCUSSION | OWNER | DUE DATE | STATUS
--- | --- | --- | --- | --- | ---
1 | Fire / Life Safety | | | | |
1.0 | Introduction | STUDIOS asked for Fire Marshal Scott Corrin’s preliminary opinions about the proposed location of the ~ 20,000 gsf Residential Dining facility proposed to be located in an expanded Wing C West. | | | |
1.1 | Site Issues – West Side | SC stated that the modified loop entry drive off Aberdeen Drive did not appear to have adequate clearance and turning radii for fire trucks. This issue is not the reduction of depth into the site from Aberdeen, but rather that the entry drive needs to provide adequate fire apparatus maneuvering and through-circulation when other uses such as vehicular drop off and/or parking present. | | | |
1.2 | Site Issues – East Side | SC did not have any issues with the proposed vehicular service ramp down to the basement between Wings A and B East, as it did not interfere with access to the fire sprinkler detector check and hydrant located south of the east end of Wing B East. | | | |
1.3 | Building Issues – Ground Floor | SC stated that the existing A1 building firewater service should have adequate capacity to cover the proposed west side building expansion. | | | |

**STUDIOS**

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**SC reiterated (from the Jan 21 meeting) that the existing fire alarm in the main electrical room in the basement of Wing C East is too warm. Either add cooling or, preferably if space allows, relocate to a new closet on the ground floor of Wing C East.**

SC noted that a couple other UCR kitchen facilities (Lothian and The H4) load from an elevator – one from a basement dock. The biggest issue is that the service elevators are too slow, and that staging can sometimes become backed up. SC recommended that adequate basement staging area be provided off the dock / elevator to keep the corridor access clear. SC also noted that the existing basement spine ramps may not be ADA compliant.

SC offered that perhaps the trash chutes serving the residential wings north of the proposed basement kitchen dock might be serviced by that dock rather than bypassing to the existing service yard at the south end of the basement spine.

The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732-5347 or griffin@studiosarch.com
**STUDIOS Project No: 10566.01**

**ATTENDING:**
- UC Riverside: STUDIOS Architecture
  - Andy Plumley (AP)
  - Erik Sueberkrop (ES)
  - Susan Marshburn (SLM)
  - Jerry Griffin (JG)
  - Cheryl Garner (CG)
  - Don Caskey (DC)
  - Steve Marshall (SM)
  - Rich Racicot (RR)
  - Jacqueline Norman (JN)
- Capital & Physical Planning
  - Kieron Brunelle (KB)
  - Jon Harvey (JH)
  - Nita Bullock (NB)
  - Andy Stewart (AS)
  - Mike Delo (MD)

**Attachments:** Site Diagrams, Truck Turning Diagrams, Pro’s & Con’s, Schedule

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>TOPIC</th>
<th>DISCUSSION</th>
<th>OWNER</th>
<th>DUE DATE</th>
<th>STATUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0</td>
<td>Kitchen Service Access Options</td>
<td>STUDIOS presented 4 options for service access to the Residential Dining Kitchen to be located in Wings B and C West:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
<td>A. Access off of a modified Aberdeen entry drive.</td>
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<td>B1. Direct N-S access off of Linden, exiting onto Aberdeen.</td>
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<td>B2. Similar to B1, but with an angled drive off of Linden.</td>
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<td></td>
<td></td>
<td>C. Ramp down to the basement spine from the east between Wings A and B, transferring to an elevator up to grade.</td>
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<tr>
<td>1.1</td>
<td>UCR Comments on Kitchen Service Access</td>
<td>Option A appears to create the worst pedestrian safety issues by mixing service traffic with non-service drop off.</td>
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<td>One of the biggest concerns is truck noise to the residential wings, caused by excessive backing and maneuvering, which (along with other issues) seems to negate Option C.</td>
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<td></td>
<td></td>
<td>Options B1 and B2 are both preferable to A and C. The Linden Street access appears more manoeuvrable for drivers. Signage or a gateway will need to be employed to discourage non-service traffic. It is preferable that the paving material of the service road have a more architectural appearance.</td>
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<td></td>
<td></td>
<td>It is also critical that the row of palm trees along the south side of Linden be unaffected.</td>
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<tr>
<td>1.2</td>
<td>Wing C East Interior Layouts</td>
<td>Two plan options were presented for the RSO and Community Spaces within the cleared out Residential Dining Wing C East.</td>
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<td></td>
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<td>Locating the largest meeting rooms in the high ceiling space (Option B) was preferred. The common corridor to the south should also take advantage of the high overhead. This creates a long narrow RSO, but the plentiful windows facing south will help mitigate that. The second (internal) corridor serving the RSO must be maintained for security reasons. The linear single load corridor RSO office configuration was also viewed as problematic and the layout will require further attention.</td>
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<td></td>
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<td>The larger Prefunction shown in Option A is preferred, and the restrooms should be more centrally located (not at the far end of the service corridor). The larger patio space of Option A was also preferred.</td>
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<td>The RSO Reception as configured in Option A was preferred, with a manager’s private office overlooking the 4 workstations serving the counter.</td>
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<td>It was suggested by UCR that a second level above the RSO be considered due to the building volume. The 17.5’ overhead roof structural clearance is not enough to create two comfortable spaces. Also, a second floor could trigger a seismic upgrade for the entire wing, plus an elevator and probably two egress stairs would be required.</td>
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</tbody>
</table>

**ITEM # | TOPIC | DISCUSSION | OWNER | DUE DATE | STATUS**

The above minutes are true and complete to the best of STUDIOS knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.5347 or griffin@studiosarch.com
### Detailed Project Program

### University of California Riverside

#### Aberdeen-Inverness Common Area Improvements DPP

Programming Workshop #6

**Meeting Minutes 1:00-5:00**

**06.30.2011**

**STUDIOS Architecture**

**10566.01**

**page 1 of 3**

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#### ATTENDING:

**UC Riverside: Housing, Dining & Residential Services (HDRS)**

- Susan Marshburn (SLM)
- Erik Sueberkrop (ES)
- Andy Plumley (AP)
- Kelly Capp (KC)
- Cheryl Garner (CG)
- Jerry Griffin (JG)
- David Henry (DH)
- Hassan Ghamlouch (HG)

**Design & Construction (D&C)**

- Don Caskey (DC)
- George MacMullin (GM)
- Richard Racicot (RC)
- Jacqueline Norman (JN)

**Capital & Physical Planning (CPP)**

- Tim Ralston (TR)
- Jon Harvey (JH)
- Nita Bullock (NB)

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**STUDIOS**

**page 2 of 3**

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### ATTMTS

**AGENDA**

- Alternate Scheme 7
- Conceptual Section
- Program Summary
- Cost Estimate

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#### ITEM # | TOPIC | DISCUSSION | OWNER | DUE DATE | STATUS
---|---|---|---|---|---

**1**

| Alternative Concept 7 | ES presented an overview of the current preferred scheme (see attached). The proposed Wing C West addition housing the residential restaurant will feature deep overhangs on the south and west for sunshading in order to keep the glazing as open and transparent as possible. The Wing C West section illustrated multiple opportunities for allowing north light into the dining area. Loading dock will have three bays. Two for deliveries and one for trash. Recycling and compost can be handled in smaller bays between columns of Wing B (within the existing service enclosure). |
| | | | | | |

**1.1**

| Alternative Concept 7 | Presentation | HG questioned whether the two public restrooms located in the Entry Lobby and the Wing C East meeting area had the optimum split of facilities — presuming the Residential Restaurant / Emporium might create a larger load. AP responded that the future allotment appeared adequate, since the majority of foodservice users were residents that would tend to use the restrooms in the wings. There could be periodic occupancy surges in the meeting rooms, which might be non-residents. Restroom sizes will be reviewed for code purposes. |
| | | | | | |

**1.5**

| Central Plant | Reconside the two-story standalone Central Plant (currently shown on the edge of the north parking lot) location to a place more adjacent to the existing Wing C East dock enclosure. |
| | | JH requested confirmation that phasing of the new boilers proposed to serve the Residential Wings is coordinated with the removal of the existing steam boilers, and that they are accounted for in the cost estimate. JG confirmed that the 8 boilers and pumps have been tested for fit in the basement space currently housing the Chillers (to be removed). |
| | | | | | |

**2**

| Concept Design Cost Estimate | A request was made for the cost estimator to review the escalation proposed figure. Bid prices are coming in higher than anticipated. The 12.5% Design Contingency needs to be limited to 10%. The 8% General Conditions and 1.5% Bonds/Insurance be rolled up into a single factor of 11% total. Overhead & Profit should be around 4%. The cost for two temporary double-wide trailers to support RSO and other functions needs to be carried in the project estimate below the line. Costs to include temporary utility connections. Hazmat abatement costs shall be carried above the line. The revised Concept Design cost estimate will be updated and released as part of the final draft report submission scheduled for July 18. |
| | | | | | |
The above minutes are true and complete to the best of STUDIOS’ knowledge. Please notify STUDIOS within three days of any modifications, additions or deletions. Jerry Griffin can be reached at (415) 732.547 or griffin@studiosarch.com.
Late in the DPP process, the Project Management Team (PMT) elected to consider building an entirely new Residential Dining facility as an alternative to the renovation and reuse of an expanded Wing C East. Preliminary cost estimates were not significantly different, and this would allow the existing foodservice to continue operation until new dining facilities were ready, as described in section 1.2 Executive Summary. The four alternative locations include: Wing C West; South of Wing E West (along the arroyo); east of Wing C East (in the parking lot); east of Wing D East (in the parking lot). The PMT went through a comprehensive analysis including numeric scoring to select the Preferred Scheme. Documentation of this sub-process to the DPP follows.
A-I RESIDENTIAL DINING AND KITCHEN SITE EVALUATION ANALYSIS

Background/Methodology

- At the end of the DPP process, a request was made to examine the possibility of constructing a new Residential Dining and Kitchen facility on the west side of A-I Residence Hall. Multiple concepts were presented at Workshop 5 that illustrated how the facility could be incorporated on the west side and the east side. At that time, the preference was to incorporate the Residential Dining and Kitchen program on the A-I Residence Hall West side.

- A subsequent meeting was held to confirm the direction provided at the workshop, where additional site opportunities were discussed. The outcome from the meeting was to evaluate these sites to determine the preferred location.

- The site evaluation matrix was completed by representatives from Housing, Dining & Residential Services, Office of Design and Construction, and Capital & Physical Planning. A numeric score was also assigned to each evaluation criteria based upon how it supports the project vision and goals as presented in the March 2011 draft DPP. Evaluation the site criteria in terms of the vision and goals provides as basis for the assigned number.

- Goal is to place the building in a location that will support residential programs while enhancing the campus visual quality.

Program Summary

- Residential Dining and Kitchen overall space requirements for this analysis assumed a 24,000 sf footprint. The space includes kitchen and resi-
dential dining area.

- Additional space could be needed for exterior loading dock, outdoor dining or patio areas, and other site features.

Observations

- Each alternative converts the existing Residential Dining and Kitchen space (Wing C East) to RSO and meeting room functions, and furnishes additional meeting space.

- Creating central A-I gathering space that encourages and foster community building is critical to Residential Programs.

- Preferred location for the Resident Director / Faculty Housing is along the arroyo.

Conclusions

- The committee recommends further consideration for alternatives 2 and 4.

- Key area of consideration are:

- Loading Dock issues for both locations
  - Access entry for alternative 4
  - Site location for Alternative 4
  - Program elasticity for alternative 2 (overloading area without space flexibility to make adjustments)
### Potential Sites: Residential Dining and Kitchen

<table>
<thead>
<tr>
<th>Site</th>
<th>Location</th>
<th>Current Use</th>
<th>Description / Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>Wing C West</td>
<td>A-I Entrance, RSO</td>
<td>- Combination of new construction in the A-I entrance area and renovation of Wing B West.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Office</td>
<td>- Relocates RSO office, fitness area, and computer laboratory to Wing C East (current Residential Dining area).</td>
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<td></td>
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<td></td>
<td>- Places meeting room program into Wing C East.</td>
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<td></td>
<td>- Kitchen release space provides potential for additional meeting rooms.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- May require additional storage space at the south loading dock.</td>
</tr>
<tr>
<td>4</td>
<td>South of Wing E West</td>
<td>Open space</td>
<td>- New Construction south of Wing E, east of the south loading dock area.</td>
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<td></td>
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<td>- Site requires review to determine fit given Campus development guidelines.</td>
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<td></td>
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<td></td>
<td>- Relocates RSO office, fitness area, and computer laboratory to Wing C East (current Residential Dining area).</td>
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<td></td>
<td></td>
<td></td>
<td>- Places meeting room program into Wing C East.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Kitchen release space provides potential for additional meeting rooms.</td>
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<td></td>
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<td>- Moves RD apartments</td>
</tr>
<tr>
<td>5</td>
<td>East of Wing C East</td>
<td>Parking Lot</td>
<td>- New Construction would connect to the east side of Wing C East in the area of the current kitchen loading dock. The facility would have a north/south orientation.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Relocates RSO office, fitness area, and computer laboratory to Wing C East (current Residential Dining area).</td>
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<td></td>
<td></td>
<td></td>
<td>- Places meeting room program into Wing C East.</td>
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<td></td>
<td></td>
<td></td>
<td>- Kitchen release space provides potential for additional meeting rooms.</td>
</tr>
<tr>
<td>6.</td>
<td>East of Wing D East</td>
<td>Parking Lot</td>
<td>- New Construction south of Wing C East pedestrian corridor. The facility would generally have a north/south orientation.</td>
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<tr>
<td></td>
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<td></td>
<td>- Relocates RSO office, fitness area, and computer laboratory to Wing C East (current Residential Dining area).</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>- Places meeting room program into Wing C East.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- Kitchen release space provides potential for additional meeting rooms.</td>
</tr>
</tbody>
</table>
Proposed Alternative Site Locations – Residential Dining and Kitchen
## Site Evaluation Matrix

<table>
<thead>
<tr>
<th>Site ID</th>
<th>2 New Wing C West</th>
<th>4 South of Wing E West</th>
<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Programs</strong></td>
<td></td>
<td></td>
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<tr>
<td><strong>Address Functional Requirements</strong></td>
<td></td>
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</tr>
</tbody>
</table>
| **P** | ● Furnishes necessary dining and kitchen space  
   ● Dining Queuing may increase space needs | ● Furnishes necessary dining and kitchen space  
   ● Dining Queuing will increase space needs | ● Furnishes necessary dining and kitchen space  
   ● Dining Queuing may increase space needs | ● Furnishes necessary dining and kitchen space |
| **C** | ● Accessible from parking lot  
   ● Provides ability to contain meetings in a small area.  
   ● Allows meetings to be run without heating and cooling entire building.  
   ● Secure residential bedroom section.  
   ● Provides large meeting rooms. | ● Accessible from parking lot  
   ● Provides ability to contain meetings in a small area.  
   ● Allows meetings to be run without heating and cooling entire building.  
   ● Secure residential bedroom section.  
   ● Provides large meeting rooms. | ● Allows meetings to be run without heating and cooling entire building.  
   ● Secure residential bedroom section.  
   ● Provides large meeting rooms. | ● Dining Queuing may increase space needs could be outside.  
   ● May require walking outside to access dining |
| **Meeting Rooms, RSO, Etc** | | | | |
| **P** | ● Conference is not directly accessible to dining | ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East. | | |
| **C** | ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East.  
   ● Provides opportunity for additional meeting spaces in Wing C East. | | | |
<table>
<thead>
<tr>
<th>Site ID Evaluation Criteria</th>
<th>2 New Wing C West</th>
<th>4 South of Wing E West</th>
<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synergy with other A-I spaces</td>
<td>• Central to the building</td>
<td>• The potential for synergy/connections should be further evaluated in design</td>
<td>• Good adjacency to meeting spaces.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Separation with good adjacent to meeting space</td>
<td>• A different type of synergy is possible. It’s location may draw users for different reasons, and thus create an alternative experiential dynamic</td>
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<tr>
<td></td>
<td>• Great adjacent to Food Emporium (food plan option)</td>
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<td></td>
<td>• A-I Lobby becomes a gathering space</td>
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</tr>
<tr>
<td>C</td>
<td>• Not synergistic.</td>
<td>• Further from main north/south spine</td>
<td>• Further from main north/south spine</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Remote location</td>
<td>• Dining queuing mixes with circulation space—may be addressed in design development</td>
<td>• Poor adjacencies to Food Emporium (food plan option)</td>
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<tr>
<td></td>
<td>• Destination</td>
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</table>

**Residential Dining**

<table>
<thead>
<tr>
<th>Proximity for Residents</th>
<th>2 New Wing C West</th>
<th>4 South of Wing E West</th>
<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>• Generally a great location for residents (Student housing)</td>
<td>• Good location for Pentland and Glen Mor residents.</td>
<td>• Good location for Pentland and Glen Mor residents.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Good for A-I,</td>
<td>• Ok for A-I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>• Not a good location for Pentland and Glen Mor</td>
<td>• Not the best location for A-I or other housing locations.</td>
<td>• Requires A-I students to walk pass meeting rooms down long corridor.</td>
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<td></td>
<td>• Front of house location is questionable (i.e., uncertain)</td>
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<td>• Poor for A-I students; depends on entrance location.</td>
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<td></td>
<td></td>
<td></td>
<td>• Viewed as a destination.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Proximity for Non-Resident Customers</th>
<th>2 New Wing C West</th>
<th>4 South of Wing E West</th>
<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>• Great location for non-residents</td>
<td>•</td>
<td>•</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>• Potential access issues</td>
<td>• No visibility from Aberdeen Drive.</td>
<td>• No visibility from Aberdeen Drive.</td>
<td></td>
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<tr>
<td>Site ID Evaluation Criteria</td>
<td>2 New Wing C West</td>
<td>4 South of Wing E West</td>
<td>5 East Wing C East</td>
<td>6 East of Wing D East</td>
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<td>-----------------------------</td>
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<tr>
<td><strong>Construction Impact</strong></td>
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<tr>
<td>P</td>
<td>- Contained to one side of A-I.</td>
<td>- Contained to one side of A-I; impacts a larger area (greater student population)</td>
<td>- Appears multiple phases needed to complete food emporium and dining/kitchen.</td>
<td>- Appears multiple phases to complete food emporium and dining/kitchen.</td>
</tr>
<tr>
<td></td>
<td>- Opportunity to complete as one phase</td>
<td>- Assume west side of building is used for laydown area</td>
<td>- Assumes west side of building is used for laydown area</td>
<td>- Allows existing loading dock to remain operational.</td>
</tr>
<tr>
<td></td>
<td>- Assume west side of building is used for laydown area</td>
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<tr>
<td>C</td>
<td>- Displaces RSO for all phases</td>
<td>- If one phase, multiple work zones</td>
<td>- Requires separate, possibly a temporary loading dock to maintain existing dining operation.</td>
<td>- Potential conflict with 12kV distribution line.</td>
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<td>- Potential conflict with 12kV distribution line.</td>
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<td>Operational Considerations</td>
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<tr>
<td>P</td>
<td>- Single dining management staff.</td>
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</tr>
<tr>
<td>C</td>
<td>- May require additional management staff to run two locations.</td>
<td>- May require additional management staff to run two locations.</td>
<td>- May require additional management staff to run two locations.</td>
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</tr>
<tr>
<td>Kitchen</td>
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</tr>
<tr>
<td>Loading Dock</td>
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<tr>
<td>P</td>
<td>- Presence of existing loading dock offers possibility of access</td>
<td>- Provides multiple opportunities for loading dock locations.</td>
<td>- Assume loading dock is on south side, this appears to be the only viable location.</td>
<td>- All trucks making deliveries to A-I follow the same route.</td>
</tr>
<tr>
<td></td>
<td>- While different levels is listed as a “con”, different floor levels can be seen as a programmatic/organization al tool</td>
<td>- Provides good truck circulation to both kitchen and housekeeping loading dock.</td>
<td>- Consider consolidating loading docks.</td>
<td></td>
</tr>
<tr>
<td>Site ID Evaluation Criteria</td>
<td>2 New Wing C West</td>
<td>4 South of Wing E West</td>
<td>5 East Wing C East</td>
<td>6 East of Wing D East</td>
</tr>
<tr>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Loading dock entry from west side is close to residential bedroom spaces.</td>
<td>Potential conflict with Dining entry sequence Dock Location will define kitchen location. Increases possibility of pushing dining entrance towards Aberdeen Drive. May require screening dock area due to location along circulation path. Or move primary pedestrian circulation to the south like Alternative 3. Note that the public orientation for Alternative 3 is to the south, i.e. meeting space, pedestrian circulation, dining orientation. They all work together with synergy. Service, i.e. docking, kitchen, back of house, and the garage to the north. Alternative 5 mixes this up unnecessarily. Service with pedestrians...where is the kitchen? Where is the entry with respect to pedestrian circulation? How do I get to the entry from A-I as Well as Pentland? COMBINE THE PROS OF 3 AND 5.</td>
<td>May require screening dock area due to location along circulation path.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Poor truck access. May require an additional storage room if A-I south housekeeping dock utilized. Potential trucks conflicts with pedestrian traffic on Aberdeen Drive. Delivery times could interfere with residential programs. Stack trucks at peak delivery times.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kitchen Services (e.g. Food Truck)</td>
<td></td>
<td>Consolidates supply and storage in one location for food truck. If food truck remains at dock, install dumping station.</td>
<td>Consolidates supply and storage in one location for food truck. If food truck remains at dock, install dumping station.</td>
<td>Consolidates supply and storage in one location for food truck. If food truck remains at dock, install dumping station.</td>
</tr>
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<tr>
<td>-----------------------------</td>
<td>-------------------</td>
<td>-----------------------</td>
<td>-------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>C</td>
<td>• Consider relocating food truck to Lothian. Could overload Lothian. • Requires additional operation review for truck servicing. • Truck supply location is separate from storage location.</td>
<td>• Allows current kitchen to remain operational during construction.</td>
<td>• Allows current kitchen to remain operational during construction.</td>
<td>• Allows current kitchen to remain operational during construction.</td>
</tr>
</tbody>
</table>

**Construction Impacts**

| P | • Allows current kitchen to remain operational during construction. | • Allows current kitchen to remain operational during construction | • Allows current kitchen to remain operational during construction | • Allows current kitchen to remain operational during construction. |
| C | • Requires a temporary loading dock to keep current kitchen operational during construction. | • Requires a temporary loading dock to keep current kitchen operational during construction. | • Requires a temporary loading dock to keep current kitchen operational during construction. | • Requires a temporary loading dock to keep current kitchen operational during construction. |

**Housing & Dining Services Program/Operation Considerations**

<table>
<thead>
<tr>
<th>Associated Operational Costs</th>
<th>P</th>
<th>C</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking</td>
<td>• Requires reconfiguration of main entry, and the possible elimination of current service and temporary parking.</td>
<td>• Changes to parking availability in the A-I area are not anticipated.</td>
<td>• Displaces a minimum of 61 spaces. • Expands scope to replace parking.</td>
<td>• Displaces a minimum of 103 spaces. • Further expands scope to replace parking.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Views</th>
<th>P</th>
<th>C</th>
<th>P</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Potential Views to the west. • Provides stronger connection to Student Recreation Center.</td>
<td>• Strong views to arroyo • Provides stronger connection to Student Recreation Center.</td>
<td>• Half of the building faces the parking lot</td>
<td>• Half of the building faces the parking lot</td>
<td></td>
</tr>
<tr>
<td>Site ID Evaluation Criteria</td>
<td>2 New Wing C West</td>
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<td>5 East Wing C East</td>
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</tr>
<tr>
<td>-----------------------------</td>
<td>------------------</td>
<td>------------------------</td>
<td>------------------</td>
<td>----------------------</td>
</tr>
<tr>
<td>Urban Feel (Active space, dynamic, public spaces)</td>
<td>• Increase density to attract additional diners and further encourage students’ interactions.</td>
<td>• Expands A-I street frontage along Aberdeen. • Potential to provide unique character.</td>
<td>• Creates a stronger connection to adjacent residence halls. • Need to develop nature of connections from an ‘urban’ point of view.</td>
<td>• Creates a stronger connection to adjacent residence halls. • Need to develop nature of connections from an ‘urban’ point of view.</td>
</tr>
<tr>
<td>RD Apartment Program</td>
<td>• Remains south of A-I Wing E West as identified in the draft DPP. • Places RD in best location.</td>
<td>• Could be placed in Wing B West release space or requires additional build out program for Wing B West, i.e. more budget.</td>
<td>• Remains south of A-I Wing E West as identified in the draft DPP. • Places RD in best location. • Requires additional build out program for Wing B West</td>
<td>• Remains south of A-I Wing E West as identified in the draft DPP. • Places RD in best location. • Requires additional build out program for Wing B West.</td>
</tr>
<tr>
<td>Construction Impacts</td>
<td>• Preference is to locate the new facility so construction activities have minimal impact on Residential programs. Students do sleep. • Maintaining dining program during construction is a significant benefit.</td>
<td>• Preference is to locate the new facility so construction activities have minimal impact on Residential programs. Students do sleep. • Maintaining dining program during construction is a significant benefit. • Keeps RSO and building entrance in same location during construction. • Retains A-I amenities (e.g., lounge, game room, meeting space) during construction for residential dining phase.</td>
<td>• Preference is to locate the new facility so construction activities have minimal impact on Residential programs. Students do sleep. • Maintaining dining program during construction is a significant benefit. • Keeps RSO and building entrance in same location during construction. • Retains A-I amenities (e.g., lounge, game room, meeting space) during construction for residential dining phase.</td>
<td>• Preference is to locate the new facility so construction activities have minimal impact on Residential programs. Students do sleep. • Maintaining dining program during construction is a significant benefit. • Keeps RSO and building entrance in same location during construction. • Retains A-I amenities (e.g., lounge, game room, meeting space) during construction for residential dining phase.</td>
</tr>
</tbody>
</table>
# Site Evaluation Analysis

### Site ID Evaluation Criteria

| Site ID | Evaluation Criteria | 2  
New Wing C West | 4  
South of Wing E West | 5  
East Wing C East | 6  
East of Wing D East |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td></td>
<td>Requires relocation RSO and building entrance during construction.</td>
<td>Anticipate additional construction costs to incorporate building into the site.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td></td>
<td>Displaces A-I amenities (e.g., lounge, game room, meeting space) during construction (if single phase).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Site Development Considerations

| Site ID | Site Availability | 2  
New Wing C West | 4  
South of Wing E West | 5  
East Wing C East | 6  
East of Wing D East |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Existing open space.</td>
<td>Existing parking lot.</td>
<td>Existing parking lot.</td>
<td>Existing parking lot.</td>
<td>Existing parking lot.</td>
</tr>
<tr>
<td>C</td>
<td>Existing entrance green space is displaced</td>
<td>May require additional environmental reviews.</td>
<td>May not be best/highest use of such premium locations</td>
<td>Displacement of planned parking will require add’l site coverage to provide targeted space count</td>
<td>Displacement of planned parking will require add’l site coverage to provide targeted space count</td>
</tr>
</tbody>
</table>

### Displacement of Existing Land Uses (e.g., parking, open space)

| Site ID | 2  
New Wing C West | 4  
South of Wing E West | 5  
East Wing C East | 6  
East of Wing D East |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Converts open space between A-I and the arroyo into a building site.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>Displaces temporary driveway parking and service vehicle parking.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Replacement Facility

| Site ID | 2  
New Wing C West | 4  
South of Wing E West | 5  
East Wing C East | 6  
East of Wing D East |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>None</td>
<td>None</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

### Program Size / Fit to Site

| Site ID | 2  
New Wing C West | 4  
South of Wing E West | 5  
East Wing C East | 6  
East of Wing D East |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>P</td>
<td>Site will accommodate program</td>
<td>.</td>
<td>Site will accommodate program</td>
<td>Site will accommodate program</td>
</tr>
<tr>
<td>C</td>
<td>Further review of the site is necessary to determine if site can accommodate program</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Site ID Evaluation Criteria

<table>
<thead>
<tr>
<th>Site ID</th>
<th>New Wing C West</th>
<th>South of Wing E West</th>
<th>East Wing C East</th>
<th>East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Scale (building height, massing and context)</strong></td>
<td>P</td>
<td>Single level is compatible with adjacent building scale</td>
<td>Single level is compatible with adjacent building scale</td>
<td>Single level is compatible with adjacent building scale</td>
</tr>
<tr>
<td>          C</td>
<td>Places majority of entire DPP program all in one location, which may overwhelm the site and have adverse impact on site, architecture, and atmosphere of adjacent wings.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Expansion Potential</strong></td>
<td>P</td>
<td></td>
<td>Site supports minimal expansion opportunities.</td>
<td>Site supports minimal expansion opportunities</td>
</tr>
<tr>
<td>          C</td>
<td>None</td>
<td>Limited Potential</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Site Access During Construction</strong></td>
<td>P</td>
<td>Construction site access from Aberdeen Drive.</td>
<td>Construction site access from Aberdeen Drive.</td>
<td>Construction site access from Linden.</td>
</tr>
<tr>
<td>          C</td>
<td>Requires relocating A-I entrance and RSO office</td>
<td>May require relocating A-I Housekeeping loading dock.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Compatibility with Existing and Adjacent Land Uses</strong></td>
<td>P</td>
<td>Compatible with land use</td>
<td>Compatible with land use</td>
<td>Compatible with land use</td>
</tr>
<tr>
<td>          C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Potential Collocations Efficiencies (loading zone, internal and external circulation, open space)</strong></td>
<td>P</td>
<td></td>
<td>Location provides opportunity to utilize Housekeeping loading dock</td>
<td></td>
</tr>
<tr>
<td>          C</td>
<td>Requires a separate loading dock using Aberdeen Drive</td>
<td>May require reconfiguring dock area to support deliveries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>          C</td>
<td></td>
<td>Location may result in higher utility connections costs.</td>
<td></td>
<td>Location may result in higher utility connections costs.</td>
</tr>
<tr>
<td>          </td>
<td></td>
<td>As previously noted, potential conflict with 12kV line and manhole.</td>
<td></td>
<td>As previously noted, potential conflict with 12kV line and manhole.</td>
</tr>
</tbody>
</table>
### Site ID Evaluation Criteria

<table>
<thead>
<tr>
<th></th>
<th>2 New Wing C West</th>
<th>4 South of Wing E West</th>
<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Campus Circulation</strong>&lt;br&gt;(pedestrian, bicycle, vehicular, shuttle)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>• Adjacent to Aberdeen Drive and campus pedestrian, bicycle, vehicle and shuttle routes.</td>
<td>• Adjacent to Aberdeen Drive and campus pedestrian, bicycle, vehicle and shuttle routes.</td>
<td>• Parking lot site is on pedestrian circulation paths and bicycle.</td>
<td>• Adjacent to A-I parking.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td></td>
<td></td>
<td></td>
<td>• Parking lot site is on pedestrian circulation paths and bicycle.</td>
</tr>
<tr>
<td><strong>General Comments</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>• Connection to Glen Mor could be less important given apartments have kitchens.</td>
<td>• Connection to Glen Mor could be less important given apartments have kitchens.</td>
<td>• Connection to Glen Mor could be less important given apartments have kitchens.</td>
<td>• Connection to Glen Mor could be less important given apartments have kitchens.</td>
</tr>
<tr>
<td></td>
<td>• Glen Mor students are on a limited meal plan.</td>
<td>• Glen Mor students are on a limited meal plan.</td>
<td>• Glen Mor students are on a limited meal plan.</td>
<td>• Glen Mor students are on a limited meal plan.</td>
</tr>
<tr>
<td></td>
<td>• Opportunity to provide grand entrance.</td>
<td>• South expansion could reflect building configuration.</td>
<td>• South expansion could reflect building configuration.</td>
<td>• South expansion could reflect building configuration.</td>
</tr>
<tr>
<td><strong>C</strong></td>
<td>• West side expansion has the potential to have a major impact to A-I iconic architecture.</td>
<td>• Further examination of the site is required to determine potential impact to the arroyo.</td>
<td>• Further examination of the site is required to determine potential impact to the arroyo.</td>
<td>• May require additional space to integrate facility into the campus landscape.</td>
</tr>
<tr>
<td></td>
<td>• Residential Dining location competes with Food Emporium</td>
<td></td>
<td></td>
<td>• May require additional space to integrate facility into the campus landscape.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>• May require additional space to integrate facility into the campus landscape.</td>
</tr>
</tbody>
</table>

- **P**: Positive criteria
- **C**: Consideration criteria
- **X**: Neutral criteria
### Additional Information

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Studio Architecture Considerations</strong></td>
<td><strong>Based upon available information</strong></td>
<td><strong>Potential Impact to Residential Programs</strong></td>
<td><strong>Project Phasing</strong></td>
<td><strong>Schedule</strong></td>
</tr>
<tr>
<td>Potential Impact to Residential Programs</td>
<td></td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Docking/loading area and access problematic</td>
<td>● Best Synergy for A-I</td>
<td>● Best views of a natural feature</td>
<td>● Potential for not being integrated in planning fabric…more remote from A-I Hub than Baseline and Alt 2</td>
<td>● Disengaged from Student life of A-I…dining is very remote</td>
</tr>
<tr>
<td>More expensive than Original Baseline Scheme</td>
<td>● Good Phasing, West than East.</td>
<td>● New shell for dining</td>
<td>● More expensive</td>
<td>Challenging from the standpoint of how to integrate building into the planning fabric of A-I.</td>
</tr>
<tr>
<td></td>
<td>● More gracious Main Entry from the West</td>
<td></td>
<td></td>
<td>More expensive</td>
</tr>
<tr>
<td></td>
<td>● New shell for dining</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project Phasing</td>
<td></td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● 2 Phases…Phase I: All West side; Phase II: Wing C East</td>
<td>● 2-3 Phases</td>
<td>● 2-3 Phases</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>● B and C West could be separate phases</td>
<td>● B and C West could be separate phases</td>
<td>● 2-3 Phases</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>● B and C West could be separate phases</td>
<td></td>
</tr>
<tr>
<td>Schedule</td>
<td></td>
<td>P</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>● See write up below for Original/Baseline Alt. As a 2 phase project we see Phase I taking 18-20 months. Phase II 10 to 12 months. So say 28 months total allowing for some overlap of schedule.</td>
<td>● Say 28 months if two phases. If B and C West are separate phase then add 10 months to total schedule +/- overlaps.</td>
<td>● Say 28 months if two phases. If B and C West is a separate phase then add 10 months to total schedule +/- overlaps.</td>
<td>● Say 28 months if two phases. If B and C West is a separate phase then add 10 months to total schedule +/- overlaps.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>● Not as intensively schedule driven as Original Baseline Scheme</td>
<td>● Not as schedule driven as Baseline</td>
<td>● Not as schedule driven as Baseline</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Construction Budget</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P</td>
<td>• $34,215,000</td>
<td>• Alt. 4 similar to 3. Alt. 3 was projected at $36,000,000 to $37,000,000 including adding RD housing as a stand-alone complex and developing Wing B West into student housing, NOT including additional costs for adding parking, site work related to the Arroyo and the southern loading dock redevelopment.</td>
<td>• One assumes similar to Alt 3… $36,000,000 to $37,000,000 plus additional parking costs and temporary loading dock costs, if required.</td>
<td>• One assumes similar to Alt 3… $36,000,000 to $37,000,000 plus additional new loading dock costs and additional parking costs</td>
</tr>
<tr>
<td>C</td>
<td>• Additional cost over Original Baseline Scheme</td>
<td>• Additional cost over Baseline and Alt. 2, perhaps more expensive than Alt 5 and 6</td>
<td></td>
<td>• Additional Cost over Baseline and Alt. 2</td>
</tr>
</tbody>
</table>

### Other Considerations

<table>
<thead>
<tr>
<th>Site ID</th>
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<th>5 East Wing C East</th>
<th>6 East of Wing D East</th>
</tr>
</thead>
</table>
| P | • NOTE: Original Baseline Scheme.  
• Pro: lowest cost ($33,229,000), probably fastest although ‘tense’ schedule, good adjacencies, maximum reuse of existing building.  
• Schedule: Phase I and II = 28 months. Assumes allowing for 13 months for Phase I before Phase II starts for a duration of 15 months and a total of 28 months. | | | |
| C | • Con: Existing shell space less flexible than new space for the budget above. | | | |

### NOTE: Original Baseline Scheme.

- **Pro:** lowest cost ($33,229,000), probably fastest although ‘tense’ schedule, good adjacencies, maximum reuse of existing building.
- **Schedule:** Phase I and II = 28 months. Assumes allowing for 13 months for Phase I before Phase II starts for a duration of 15 months and a total of 28 months.

- **Con:** Existing shell space less flexible than new space for the budget above.
Aberdeen-Inverness Residence Hall Common Area Improvements
April 21, 2011

Site Evaluation Analysis Support Documents

   a. Site Plan Preferred Concept
   b. Site Plan – Alternative Concept 2
   c. Site Plan – Alternative Concept 3

2. Parking Analysis (pages 5-8)
   a. Alternative 4 Site
   b. Alternative 5 Site
   c. Alternative 6 Site
   d. A-I Site Evaluation – Parking

3. Walking Distances (pages 9-12)
   a. Alternative 2
   b. Alternative 4
   c. Alternatives 5 & 6
   d. Lothian Dining

4. Site Evaluation Scoring Table Source Materials (pages 13-19)
   a. Project Vision and Goals
   b. Summary Table, Total Scores
   c. Summary Table, Average Scores
   d. Individual Scores
Proposed Parking Structure

- 47,280 sq. ft. Footprint

Alternatives 6

- F1: 33,295 sq. ft.
- F2: 28,002 sq. ft.
- F3: 24,845 sq. ft.

Legend
- Alternative 6
- Alternative 6 Planting Buffer
- Future Parking Structure
- Existing Campus Building
- Planned Removal
- Remaining Space
- Driveway
- North Parking
- Parking Expansion Areas (F1)

A-I Residence Hall

Common Area Improvement

Alternative 6 Site
## A-I Site Evaluation - Parking

April 19, 2011

### Existing Conditions - Parking Lot 22

<table>
<thead>
<tr>
<th>Location</th>
<th>Area (SF)</th>
<th>Spaces</th>
<th>SF/Space</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>North Lot</td>
<td>33,295</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Standard</td>
<td></td>
<td>108</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disabled</td>
<td></td>
<td>2</td>
<td></td>
<td></td>
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### Potential Parking Expansion

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| Total Displaced Parking | 61 | 103 |
| Remaining Parking Area (SF) | 40,422 | 28,002 |
| Driveway Area (SF) | 24,974 | 24,845 |
| Remaining Spaces (Count) | 153 | 111 |
| Potential Spaces | 149 | 112 |
| Total Net New Spaces | 61 | 103 |
Aberdeen-Inverness Residence Hall
Common Area Improvements
Detailed Project Program DRAFT, March 2011

PROJECT VISION (Page 1.2.1)

A-I Residence Hall is an important component to UC Riverside’s east campus student experience. Some of the goals expressed during the DPP process include:

• Give back to the students
• The building is iconic - celebrate the building’s history
• Embrace the campus – create a sense of place
• Bring vitality to the common spaces - create a youthful feeling
• Main use of Dining is for Dining

GOALS (Page 1.4.1)

The renovated A-I Residence Hall Dining Facilities and Common Areas will:

• Provide a 575-seat Student Dining facility which will employ an open Kitchen, exhibition cooking, dispersed Servery and multiple Dining environments
• Provide an Emporium which will offer retail, coffee and a branded late night Diner
• Provide upgraded student Common Spaces, RSO offices and Support Functions
• Upgrade the building’s seismic performance and MEP infrastructure to lower energy use and improve maintenance
• Embrace environmentally sustainable strategies, with LEED Silver Certification as a minimum target
• Celebrate the building’s mid-century origins and its iconic character in the architecture of any exterior additions
• Embrace the campus character and pedestrian flow – creating a local “sense of place”
• Create inviting and useful exterior spaces for dining, studying and socializing
• Create interior spaces with a youthful feeling – bringing vitality to Student Common spaces
• Strive for zero impact on residents during the construction phases
• Give back to the Students by creating a physical environment that promotes scholarship and a memorable residence life experience

Draft DPP March 2011
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Individual scores were assigned by considering the evaluation criteria in terms of the project vision and goals as presented in the draft DPP.
Aberdeen-Inverness Residence Hall Common Area Improvements
April 21, 2011

Site Evaluation Scoring Table Summary: Average Scores

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Individual scores were assigned by considering the evaluation criteria in terms of the project vision and goals as presented in the draft DPP.

Site Evaluation Scoring Values:

3 - Exceeds Project Vision and Goals
2 - Meets Project Vision and Goals
1 - May Meet Project Vision and Goals; Requires Further Examination
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