STUDENT ACADEMIC SUPPORT SERVICES BUILDING

UNIVERSITY OF CALIFORNIA RIVERSIDE

SASS BUILDING

DETAILED PROJECT PROGRAM

AUGUST 2004

PROJECT NUMBER 950457

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1.1

Acknowledgements

DPP EXECUTIVE COMMITTEE

James Sandoval (Chair)
Vice Chancellor
Student Affairs

Danny Kim (Co-Chair)
Assistant Vice Chancellor
Student Affairs

LaRae Lundgren
Acting Assistant Vice Chancellor Enrollment Management
Director of Undergraduate Admissions

Cathy Eckman
Manager
VCSA Finance

Elizabeth Bennett
Registrar
Office of the Registrar

Sheryl Hayes
Director
Financial Aid

Betty Benzor
Director of Early Academic Outreach Programs
Relations with Schools

Susan Allen Ortega
Dean of Students
Student Affairs

Lenita Kellstrand
Director
Student Special Services

Javier Hernandez
Director
Relations with Schools

Rick Normholm
Manager
Information and Technology Resources

Carol Mahlum
Director
Student Business Services (VCA)

Francesca Rochberg
Academic Senate
ASPRPC

Jan Remetir
ASUCR
Graduate Student Association

Christie Byun
GSA
Graduate Student Association

CAPITAL AND PHYSICAL PLANNING

Tim Ralston
Assistant Vice Chancellor

Nita Bullock
Campus Physical Planner

Luis A. Carrazana
Assistant Director

Bill Johnson
Senior Educational Facilities Planner

OFFICE OF DESIGN AND CONSTRUCTION

Dan Johnson
Assistant Vice Chancellor

Darius Maroufkhani
Senior Architect

CONSULTING TEAM MEMBERS

Sasaki Associates
900 North Point Street, Suite B-300
San Francisco, CA 94109
(415) 776 7272, fax (415) 202 8970

John A. Coons, AIA, Principal

Tim M. Stevens, Architect, Principal

Vitas Viskanta, AIA, Senior Associate

Diana Kissil, AIA, Senior Associate

Lauren Midgley, staff

Juthatham Bo Chirathivat, staff

Cody Andresen, staff

KPFF Consulting Engineers
1160 Battery Street, Suite 300
San Francisco, CA94111
(415) 989 1004, fax (415) 989 1552

Blake Dilsworth, PE, Principal

TMAD Engineers
320 N. Halstead Street, Suite 200
Pasadena, CA 91107
(626) 351 8881, fax (626) 351 3203

John G. Holland, PE, Senior Asssociate

Davis Langdon Adamson
301 Arizona Avenue, Suite 400
Santa Monica, CA 90401
(310) 393 9411, fax (310) 393 7493

Philip Mathur

Workshop #4 - a series of interactive on-campus workshops fostered an exchange of ideas.

1.2

Executive Summary

The Student Academic Support Services (SASS) Building embodies a recent trend in student services – consolidating services to maximize efficiency, improve customer (student) services, and to foster staff development and interaction. Campuses such as UC Santa Barbara, San Francisco State, San Jose State and UC San Diego have all successfully completed or are in the process of developing their own student service buildings.

The student Academic Support Services functions face many challenges as a result of significant enrollment growth during the last six years. Enrollment at the University of California, Riverside increased over 88% from 8,200 students in 1997-1998 to 15,408 students FTE in 2003-2004. With continued growth projected through 2010-11, space constraints are not expected to improve. Additionally the age, condition, and structural restrictions of existing student academic support services space is limiting the enrollment function's ability to meet student expectations on how services should be provided in the twenty first century.

The proposed SASS Building will bring together the student academic support services currently scattered throughout the campus in four different buildings. Consolidation of the student support services functions will increase efficiency and improve the manner in which the services are delivered to the students. In addition the new SASS Building will foster operational changes, through the creation of a one-stop front

counter area, and enhanced interdepartmental interaction and collaboration (open work areas, and common shared support facilities). Incorporating technology into every aspect of the student support services is also a key objective of the new SASS plan of operations and of the new building. The SASS Building will be centrally located on the campus Carillon Mall, next to the Student Commons Building.

PROJECT VISION

Deliver an attractive, high technology student academic support services building that allows the University of California, Riverside to plan for and implement long range growth goals with greater control over the management of administrative functions and the quality of service delivered to students.

METHODOLOGY

The program for, and accommodation of, the SASS Building was realized through a series of on-campus workshops, facility tours, and meetings. A rapid consensus was reached on the project direction using an interactive, iterative approach.

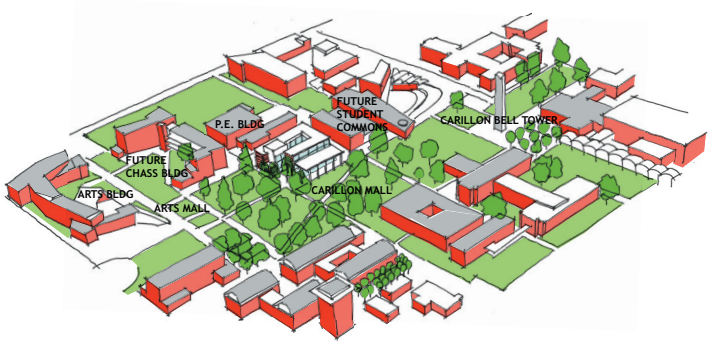
The programming was directed by the offices of Capital and Physical Planning and Design & Construction, and was steered by an Executive Committee represented by the user groups and individual departments.

DEFINING STUDENT ACADEMIC SUPPORT SERVICES

The primary intent of this project is to foster and create an environment in which service to students is the highest priority. The SASS Building will be staffed and operated by a diverse group of departments. These departments provide services related to student admission, student enrollment, student records, registration, fees and tuition, financial aid, recruitment, administrative technology, and on-campus student support.

The project stakeholders include:

- Undergraduate Admissions (2,350 ASF)
- Admissions and Outreach Communications (660 ASF)

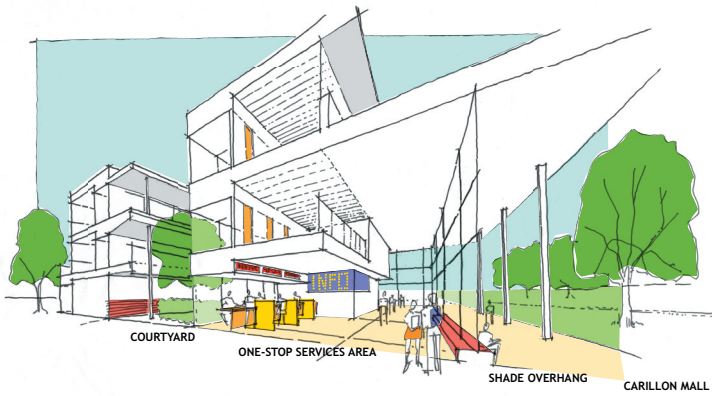


Conceptual massing of the SASS Building - aerial view from the southwest

- AVC Enrollment Management (650 ASF)
- Financial Aid (2,655 ASF)
- International Services Center (3,215 ASF)
- Office of the Registrar & Registrar Publications (2,340 ASF)
- Immediate Outreach (2,150 ASF)
- Student Special Services (4,825 ASF)
- Student Business Services (1,310 ASF)
- Student Business Services Cashier (1,005 ASF)
- Technology and Information Resources (1,720 ASF)

SITE

The location of the SASS Building was identified in the holistic East Campus Entrance Area Study, prepared in 2003. The project site is north of the Carillon Mall, to the west of Costo Hall and south of the Physical Education (P.E.) Building. This location was selected for its visibility and accessibility, a place where students naturally circulate and congregate. The site is synergistic with the redevelopment of the adjacent Student Commons, and will foster a nexus of student-dedicated functions at the heart of the Riverside campus.



SASS Building - conceptual section

PROJECT SCOPE AND ACCOMMODATION

The SASS Building will provide approximately 37,380 Assignable Square Feet (ASF) and 58,140 Gross Square Feet (GSF) on three floors.

Key component of the plan include:

- The "One-Stop", a ground floor service counter, which offers a majority of student service needs, including stations for services such as Office of the Registrar, Financial Aid, and Student Business Services Cashier.
- The One-Stop is supported by administrative office, support, and managerial functions on floors 2-3. Stakeholders are grouped by preferred adjacencies.
- To the greatest extent possible, units agree to share common elements, such as conference space, copy rooms and storage.
- An orientation room, used primarily as the starting point for prospective student tours, anchors one corner of the ground floor.
- A central exterior courtyard serves to organize the project, serving as a visual and physical connection between offices on the upper floors and the One-Stop.

In addition, the courtyard provides an exterior, semi-private programmed space for students, faculty, staff and orientation events.

- The project has set a target of achieving a Leadership in Energy and Environmental Design (LEED) Silver Certified rating, exceeding the energy requirements of Title 24 (California Energy Use Thresholds, etc.), and is seeking to create an environmentally conscious, healthy and productive work environment. See section 4.3 for detailed information regarding sustainable design.

SCHEDULE OUTLINE

The SASS Building is scheduled to begin design and construction documents phases in 2005. The project will be publicly bid in Fall 2006, with the project complete and ready for occupancy in April 2008.

1.3

Detailed Project Program (DPP) Process

THE PROCESS

The Programming Process was envisioned as creating a "Road Map" for change. The following identifies a list of key questions that formed the program understanding.

Developing a Common Basis of Understanding

- Understand student needs
- Understand the role of existing academic support services on the UC Riverside campus
- Define the project stakeholders
    - Overall, student needs define the services to be provided
    - Who provides academic support services and to whom are they provided?
    - Who are the decision makers?
- Understand the current physical accommodation of academic support services
- What currently works and what doesn't?

Envisioning Opportunities for Change

- Possibilities offered by proposed location(s) of new facility in relation to the evolving campus environment i.e.. relationship to the Long Range Development Plan (LRDP) and/or East Campus Entrance Area Study.
- Relationship of new facility to the UC Riverside academic goals
- Possible growth of facility and/or program offerings
- Possibilities offered by technology
- Evaluation of comparable facilities at other campuses

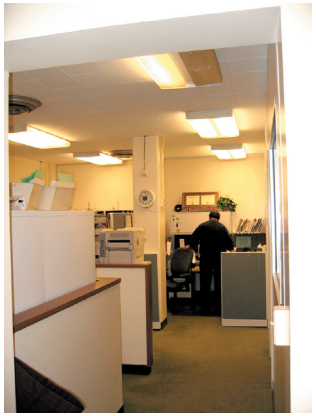
Defining the Goals for The New Facility

- Quantitative (Scope)
  - How big, how many, how often, how much?
  - Functional requirements
  - Schedule/ timing
- Qualitative (Vision)
  - Image
  - Character
  - Environmental responsiveness

Reconciling Scope, Vision, and Budget

- Balancing program needs and facility character with available budget before design begins

Office of the Registrar in Hinderaker Hall



Existing facilities in Hinderaker Hall

Tour of comparable facilities - UCSB SAASB

Tour of comparable facilities - UCSB SAASB

THE APPROACH

To initiate the work, a common understanding of project goals was developed. These goals served as the yardstick by which project progress and resolution was measured. As part of the project kick-off, UCR's existing student services facilities were toured. The tour provided a basis for understanding existing locations, space allocations, work patterns, relationships to other service providers, equipment usage, and current type and qualities of work environments.

Key to the solutions arrived at in this process was the site visit by key UCR administrators, staff and consultants to comparable projects.

The site visits included trips to:

- The UC Santa Barbara Student Affairs and Academic Services Building (SAASB)
- The San Francisco State University Student Services Building
- The San Jose State University Student Service Center (SSC)

Following the tours, a four-step, interactive series of workshops was held on the UC Riverside campus. Workshops were separated by intervals to permit consultant reaction, response, and synthesis: These workshops were held during the period of February to May, 2004.

Workshop 1 - Data Gathering

- Define project goals
- Define population to be served
    - Students, Faculty, Staff
- Understand the project context
- Understand the relationship to the academic program
- Define physical opportunities and constraints

Workshop 2 - Program Definition and Concepts

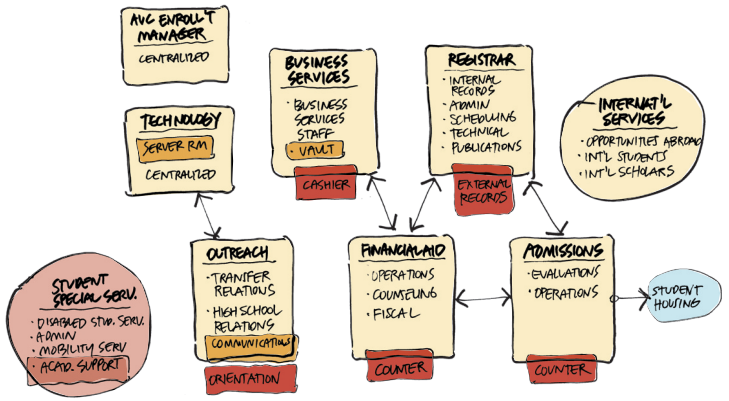
- Space descriptions and functional relationships
- Campus planning considerations
- Building organization alternatives
- Building system alternatives
- Code analysis
- Preliminary cost model

Workshop 3 - Program Synthesis and Concept Alternatives

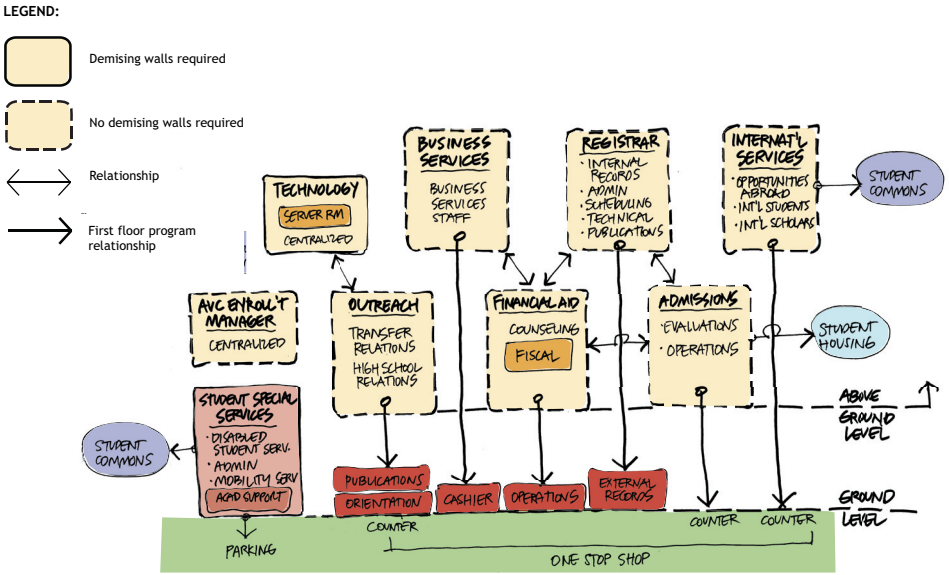
- Reconciliation of space needs and room requirements
- Conceptual plan types, functional relationships, vertical organization, density, massing
- Site planning alternatives – utilities, access, open space, campus relationships, phasing
- Identification of cost premiums between alternatives
- Evaluation of alternatives against project goals
- Selection of preferred alternative

Workshop 4 - Preferred Alternative Development

- Incorporate final comments
- Define program, scope, site, proposed budget and schedule
- Identify consensus- based framework for Schematic Design: open space concept, building organization, pedestrian and vehicular circulation, relationship to campus, relationship to Long Range Development Plan and East Campus Entrance Area Study



PRELIMINARY CONCEPTUAL APPROACH: ADJACENCIES USING A TRADITIONAL PROGRAM (NO ONE-STOP)



PRELIMINARY CONCEPTUAL APPROACH: ADJACENCIES USING A ONE-STOP

1.4

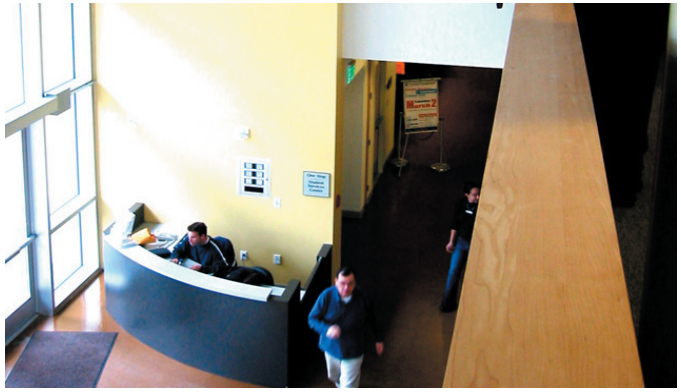
Project Goals

- Establish a welcoming sense of transparency, accessibility and IDENTITY for student "customers"
- Foster staff recruitment and retention with an inviting, non-institutional facility
- Balance the project schedule, program and construction budget
- Encourage department interaction and efficiency by leveraging adjacencies and sharing staff and technologies
- Maximize utilization by sharing common amenities such as conference rooms and break rooms
- Promote openness by limiting enclosed offices and inter-departmental demising walls; in exchange, create shared, team-centered spaces
- Be flexible and adaptable to current and future technologies and workflow
- Use the Internet to provide 24/7 access to many student services; face-to-face consulting, advising and support are envisioned during business hours only
- Many student services can be provided in a shared "One-Stop" format, with each department reflected in a unique station

- Embody campus sustainability goals by achieving United States Green Building Council (USGBC) LEED Silver Certification
- Rely on an effective relationship to the Student Commons; in particular, leverage support facilities such as:
    - Large meeting rooms or conference facilities
    - Serving kitchens/ food service
    - Exhibit space
    - Bulk storage

SFSU - departmental spaces overlooking a courtyard

SFSU One-Stop - a model for a more efficient system



SFSU - daylight creates a welcoming atmosphere

2.1

Campus Planning Principles

Several recent planning guidelines have informed the planning, site selection, programming and massing studies of the SASS Building. Two of these documents are the Long Range Development Plan and East Campus Entrance Area Study.

LONG RANGE DEVELOPMENT PLAN (LRDP)

The UC Riverside 2004 Draft Long Range Development Plan (2004 Draft LRDP) is instrumental in identifying the projected growth and expansion of the Riverside campus.

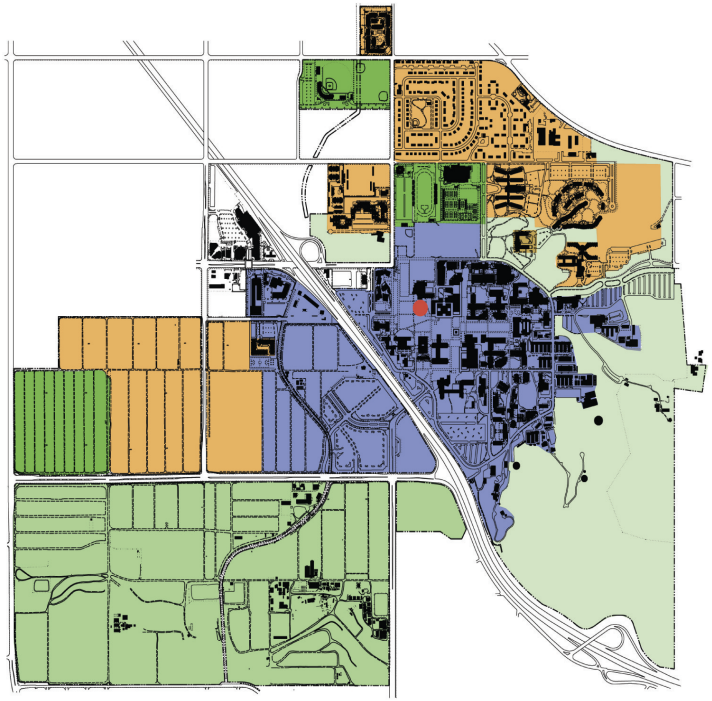
The projected growth of the student population (based on the UCOP 2003 Report Submittal) is as follows:

	Undergraduates	Graduates	Total
2003-2004	13,645	1,763	15,408
2008-2009	16,700	2,720	19,420
2003-2008 (projected growth)	22%	54%	26%

Enrollment growth at UCR has been significant since 1997-1998. Past increases budgeted 8,200 to 15,408 FTE, an increase of 88%. These in conjunction with anticipated growth will impact the capacity, efficiency and operation of all student supported facilities. The campus recognizes that student academic support services are currently scattered across campus. Support functions are currently located in Hinderaker Hall, Costo Hall, Rivera Library and Watkins House. From a planning perspective, bringing these functions together under one roof would provide for consolidation and greater access and ease of use for students, and would foster interdepartmental interaction and efficiency.

The chosen site for the SASS Building, west of Costo Hall, south of the P.E. Building, and fronting the Carillon Mall to the south, was identified in the 1990 LRDP for student services. This LRDP is in force until the draft 2004 LRDP is approved. However, the draft LRDP also recognizes that Student Services, such as the SASS Building, should be " . . . located to assure proximity to students, often in housing areas but also in academic zones". As a student centered function, the site is centrally located, and is within a 5-10 minute walking distance of most of the East Campus. The site is not directly accessible by vehicles, but it is well served by pedestrian circulation and is highly visible. Service vehicles can access the site from the service area behind the adjacent Costo Hall.

In order to maximize land use, the LRDP targets a density of development for the core of campus with a FAR (Floor Area Ratio) of 1.0 or greater. The identified the SASS Building



DRAFT 2004 LRDP LAND USE MAP

- ACADEMIC
- RESIDENTIAL HALL, HOUSING, RELATED SUPPORT
- ATHLETICS AND RECREATION
- AGRICULTURAL, TEACHING, RESEARCH FIELDS
- OPEN SPACE
- SASS BUILDING SITE

program achieves that target.

EAST CAMPUS ENTRANCE AREA STUDY (ECEAS)

Building on the LRDP, the East Campus Entrance Plan (Walker Macy/ Thomas Hacker, 2003) further defined the planning principles and requirements of the SASS Building site.

The SASS Building was identified as a potential project in the 2003 East Campus Entrance Area Study. Key considerations noted in the ECEAS include that the SASS Building site was:

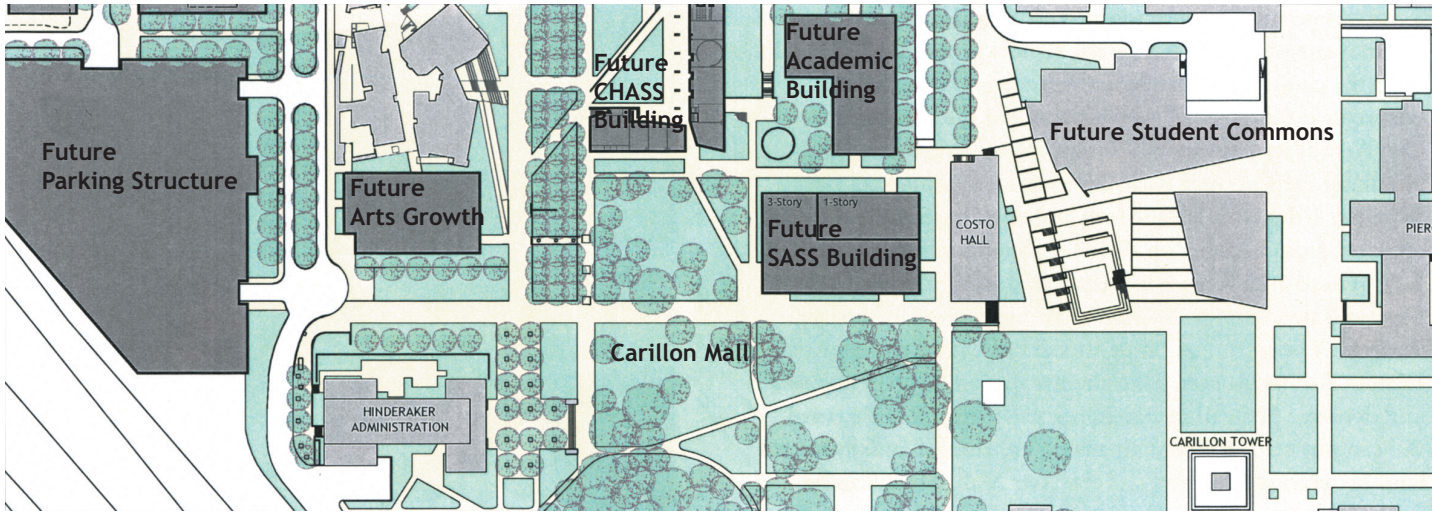
- Near the Student Commons and the campus "front door"
- Identified a project footprint of roughly 27,000 SF, a net area of 39,800 ASF, and a gross area of 61,200 GSF

Advantages of the selected site include (as listed in the ECEAS):

- On the Carillon Mall, providing excellent orientation for prospective students
- Adjacent to student activities and organizations in both Costo Hall and the Student Commons
- Visible from the campus entrance from parking at Lot 1
- Sufficient room for expansion
- Takes advantage of adjacent green space shared with College of Humanities, Arts and Social Sciences (CHASS)

The SASS Building site includes frontage on the Carillon Mall (a campus landmark open space). The Carillon Mall is defined as a width of open space which creates the southern edge of the project site. The ECEAS plan dictates that the SASS Building strengthen the Carillon Mall and address Costo Hall by defining pedestrian paths and open spaces.

The ECEAS notes that the SASS Building must rely on a shared service access point with Costo Hall and the Student Commons. Care must be taken in the concurrent planning of the Student Commons to maintain an accessible service path to the SASS Building.



EXCERPT FROM THE EAST CAMPUS ENTRANCE AREA STUDY

2.2

Site Analysis

SITE DESIGN
Four distinct site edges (exposures) suggest:

To the South:
the Carillon Mall – most public facade, oriented to the south provides an opportunity to utilize shading devices to resolve issues of scale as related to open space and the Student Commons.

To the East:
Costo Hall and Pedestrian Mall - calls for a transparency similar to Costo along a pedestrian-scale street.

To the North:
the P.E. Building - a shaded area with adjacency to a shared loading dock on the northeast ; not a "back door".

To the West:
a park-like landscape with mature trees and a western exposure which represents future expansion potential for either the SASS Building or the CHASS Instructional and Research (I&R) building to the north west. Suggests incorporation of the "dedicated" stand of oak trees at the south west corner of the site into an entry plaza.

The East Campus Entrance Area Study is an important complement to this more site specific description.

SITE PANORAMA

(continued on following page)

SITE VIEWED FROM THE SOUTH WEST

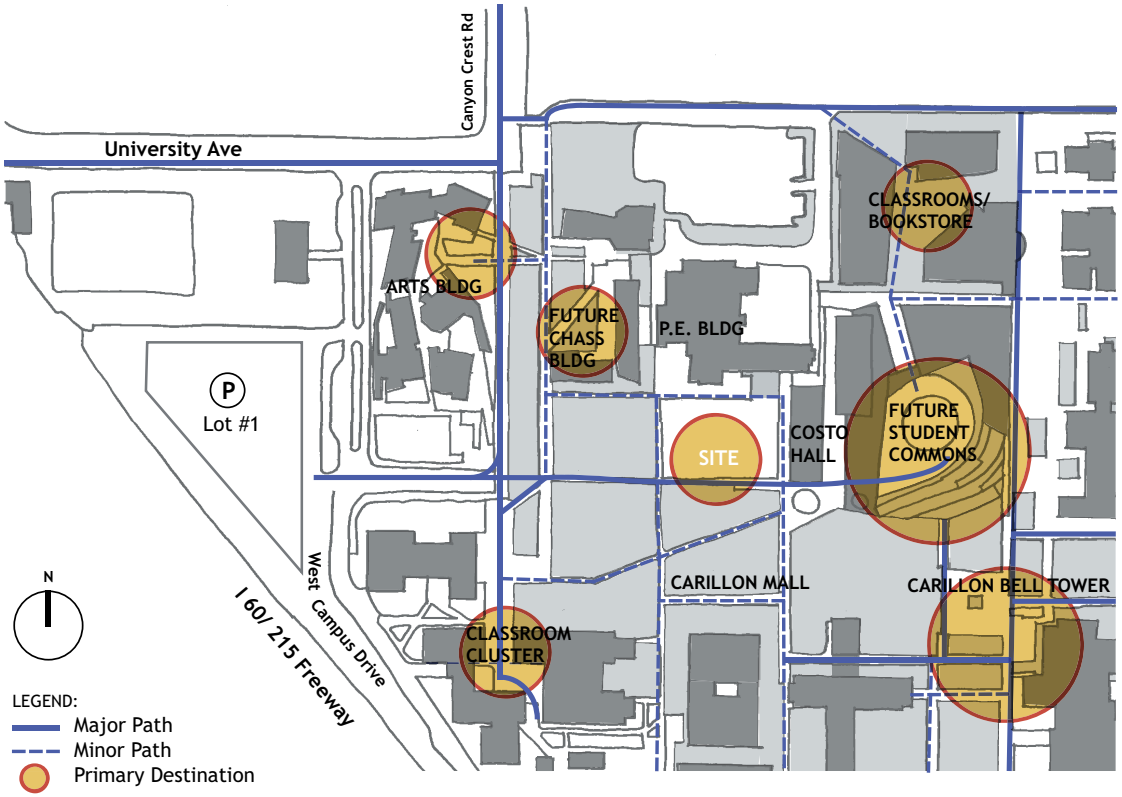
SITE VIEWED FROM THE NORTH WEST

SITE PANORAMA

(continued from previous page)

SITE VIEWED FROM THE MID-SECTION

SITE VIEWED FROM THE SOUTH EAST

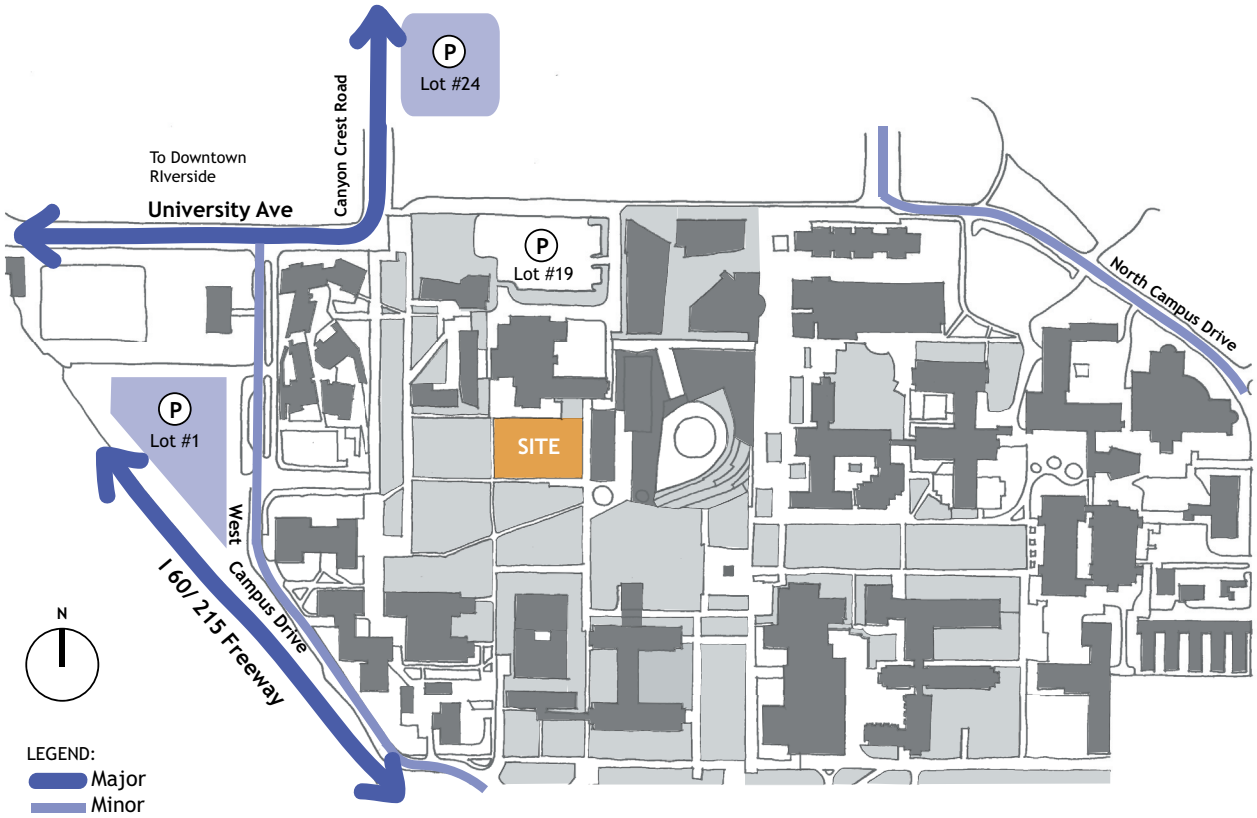


PEDESTRIAN CIRCULATION

With several new buildings currently in design, the East Campus precinct is undergoing an evolution. The CHASS I&R building, across the Arts Mall from the Arts Building, will contribute to an increase in presence or activity. Similarly, the expanded Student Commons will influence traffic flow and pedestrian connections, even though programmatically it is being redeveloped. These projects, along with the SASS, will result in a renewed focus on the campus's primary open space, the Carillon Mall.

The north edge of the Carillon Mall is bounded by a pedestrian way that serves as a major east-to-west connection across campus. Originating from Parking Lot1 and passing the new Student Commons expansion, the path borders the north side of the mall all the way to Webber Hall, the eastern end of the Carillon Mall. This path is envisioned as the likely arrival walk for visitors to the campus. The SASS Building is strategically engaged to this path, as it will host all orientation functions for those prospective students. Current students utilizing the path will have a clear line of sight into the One-Stop services area and all student services represented there.

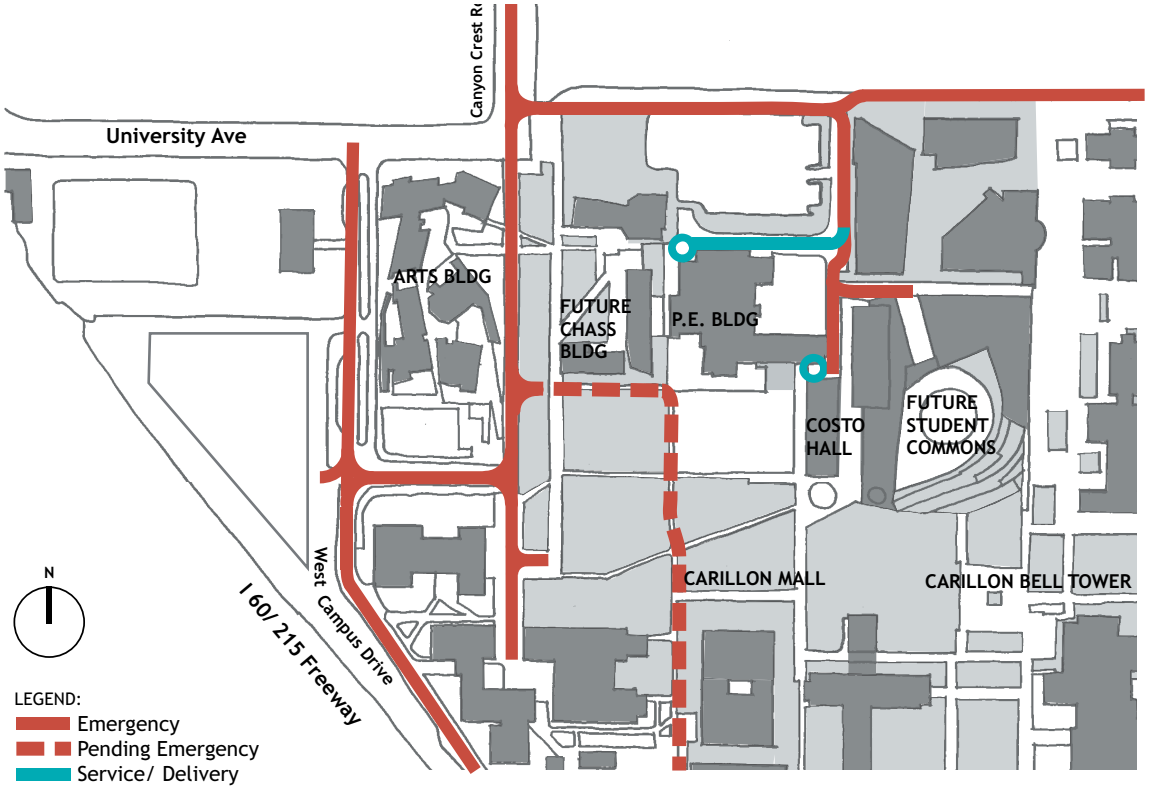
The space between Costo Hall and the SASS Building is also seen as an opportunity to engage pedestrian traffic. Costo Hall acts as an active facade along the 'promenade', the intention is to mirror that character in the SASS, so both sides are activated. Suitable planting, lighting, and other site



amenities should be considered to support these intentions.

VEHICULAR CIRCULATION

Due to the site's prominent location along the Carillon Mall, it is viewed as an interior location in what is primarily a pedestrian environment. UCR Transportation and Parking Services (TAPS) serves a shuttle stop at University Avenue and Canyon Crest Road, a short walk from the site. Parking is also provided nearby, in Lot 1 and Lot 24. Lot 19, currently the closest parking, is slated for the construction staging for CHASS I&R and Student Commons expansion. It will be closed to parking after construction is completed and only service delivery and emergency vehicles will be permitted west of Aberdeen on North Campus Drive. There will be no on site parking provided for the SASS Building, with the exception of a stall for Student Special Services electric carts.

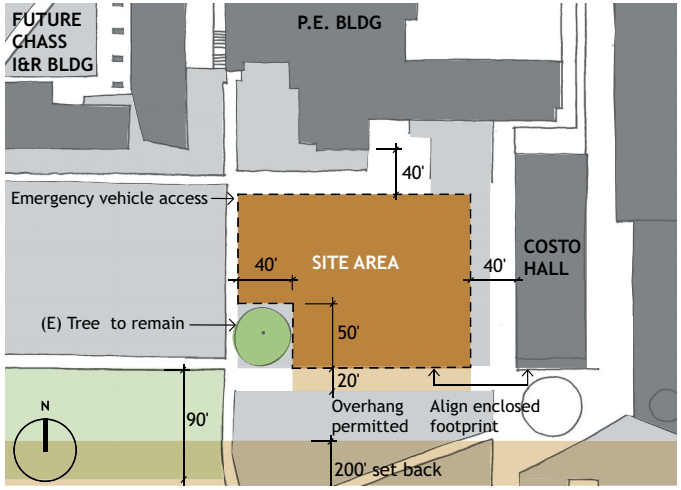


SITE ACCESS

Emergency vehicle access to facilities located within the core campus is typically provided by the pedestrian pathways. Upgrades to these paths are considered on a project-by-project basis, with input from the campus Fire Marshal and representatives from Capital and Physical Planning and Design and Construction. The direction for the SASS Building included widening the path west of the new building to 20 feet and incorporating the necessary turning radius for emergency vehicles. A need is foreseen to continue that path (and width) across the Carillon Mall to connect an existing route. Costs associated with that extension have been excluded from the recommended construction budget.

Accessibility is fundamental to the project. The SASS Building, like all buildings on-campus, must meet the accessibility requirements called for in California Title 24 and in the ADA (Americans with Disabilities Act). One of the primary project tenants will be the office of Student Special Services; Student Special Services is planned to occupy a portion of the first floor, and their accessibility needs are a very important component of the site design. The project site, which is relatively flat and centrally located, lends itself to accommodating these needs.

The SASS Building will be serviced from the Student Commons loading dock, which will be relocated and substantially upgraded during its reconstruction. While adjacent, the dock



A shaded entry court at the north edge of the site provides an opportunity for creating an intimate outdoor space

will not be physically connected to the SASS Building, which represents a concern that must be addressed during the design phase of the project. It will be important to locate the Shipping & Receiving rooms as close to the loading dock as possible, and to create as direct, level, and well lighted a path as possible between the two.

SITE CONSTRAINTS

The site area for the SASS Building is located to the south of the Physical Education Building, west of Costo Hall, and north of the Carillon Mall. Building setbacks and envelope limitations, established by Capital and Physical Planning with further refinements made during the workshop process, are as follows:

North Edge
A minimum setback of 40 feet from the P.E. Building.

West Edge
Generally, the existing pedestrian pathway. Respect the remaining open space parcel to the west as: a future building site; future expansion for the CHASS I&R Building; or future expansion for the SASS Building.

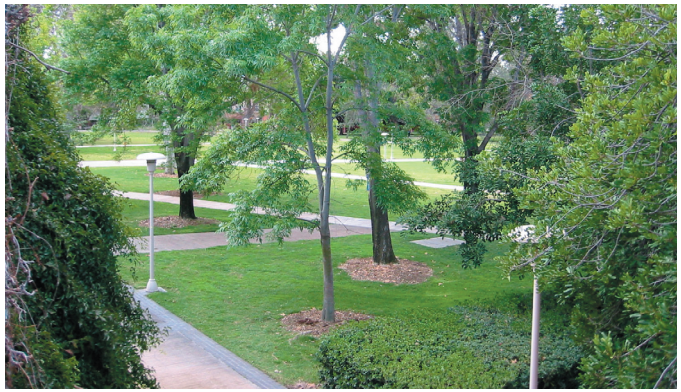
South Edge
A minimum setback from the Carillon Mall to maintain the mall at 200 feet; In addition, the Carillon Mall open space is further reinforced by a 90 foot wide "view corridor," running west towards Parking Lot #1. This sight-line setback provides an important visual connection to the Mall open space. Further refinements in coordination with the design of the Student Commons suggested a "build-to" line (for enclosed space) not to exceed the existing South Wall of Costo Hall.

East Edge
A minimum setback of 40 feet from Costo Hall.
Height restrictions for buildings adjacent to the Carillon Mall are limited to three or four stories, or a maximum of 50 feet, above grade (the height of the mature trees in the area per the 1990 LRDP).

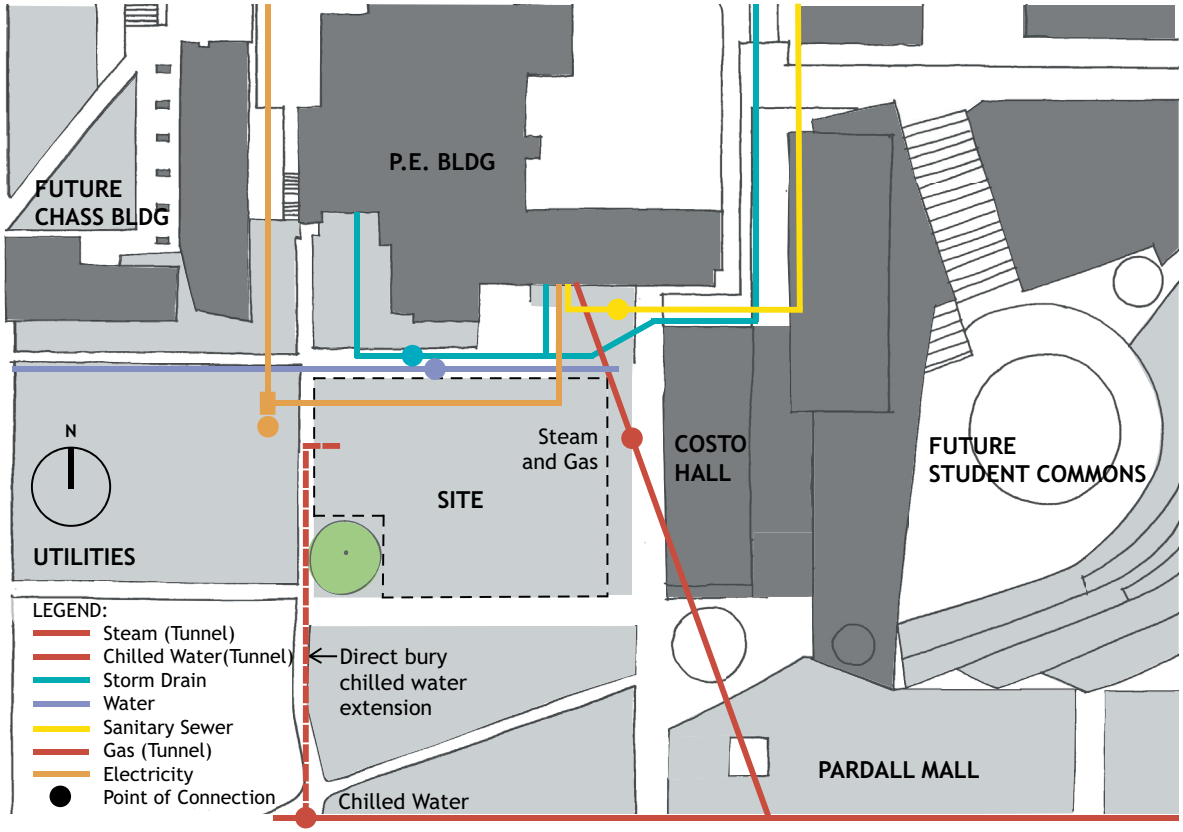
SASS Building site - Dedicated Oak tree to remain

SASS Building site - view from Carillon Mall

There are several mature trees on site. The paired oak trees at the southwest corner of the site are dedicated, identified with a donor plaque. All the proposed site and building organization alternatives incorporate these trees into the design approach, in the form of an arrival court or plaza. Significant protections and set backs during construction, along with aware landscape design solutions, that will not significantly alter the amount and type of water application that trees have matured with will be needed. All the remaining trees are candidates for removal or relocation. Mature trees in footprint should be slated for retention and protection in place during construction.



SASS Building site - example of campus landscape



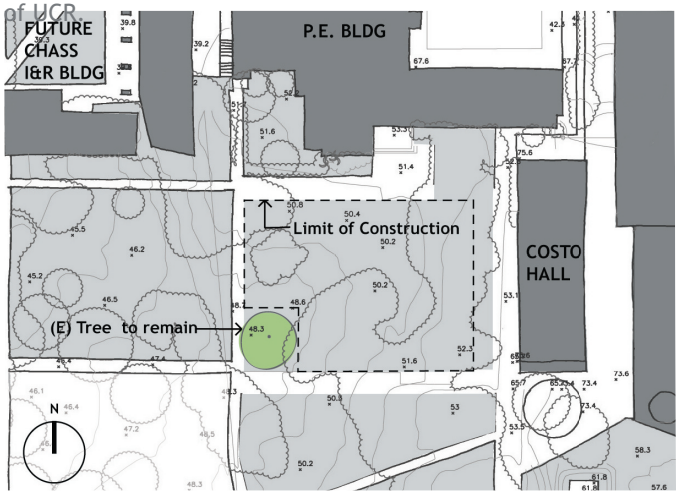
UTILITIES

Site utilities and infrastructure are described further in Section 4.1 of this document, however it's notable that a 12KV electrical main runs within the site's building footprint. The feasibility for construction over and around this main remains a consideration for later design stages, however, for budgeting purposes, relocation costs are included in the construction estimate.

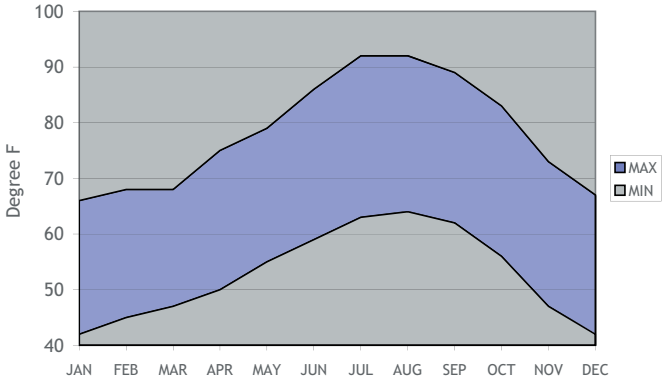
ENVIRONMENTAL FACTORS

Topography: While generally level, the site slopes at about 2% from east to west, resulting in nearly 4 feet of grade differential across the length of the site. Due to the fact that the program requires multiple points of entry, accessibility will be a major consideration during the project's design. This is especially a factor given the adjacent building entries (Costo Hall) in combination with the existing oak trees to be maintained.

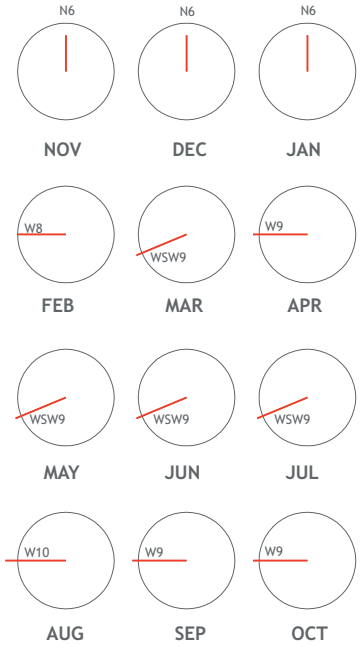
Much of what contributes to UC Riverside's "sense of place" can be derived from its physical setting and climate. Against the rugged backdrop of the Box Spring Mountains, the campus offers a diverse series of open spaces. The formal spaces, the Carillon Mall and Arts Mall offer lush landscapes dominated by mature trees. The University Arroyos and Box Springs Mountain Regional Park offer a more indigenous response. With less than 10 inches of rain annually, along with a yearly average temperature of nearly 79F, shade and solar orientation are important considerations for any sustainable design approach. Prevailing winds are from the northwest; hot dry Santa Ana winds, occurring primarily during winter months, occasionally blow in from the desert areas northeast of UCR.



EXISTING TOPOGRAPHY



UC RIVERSIDE AVERAGE ANNUAL TEMPERATURE MEANS



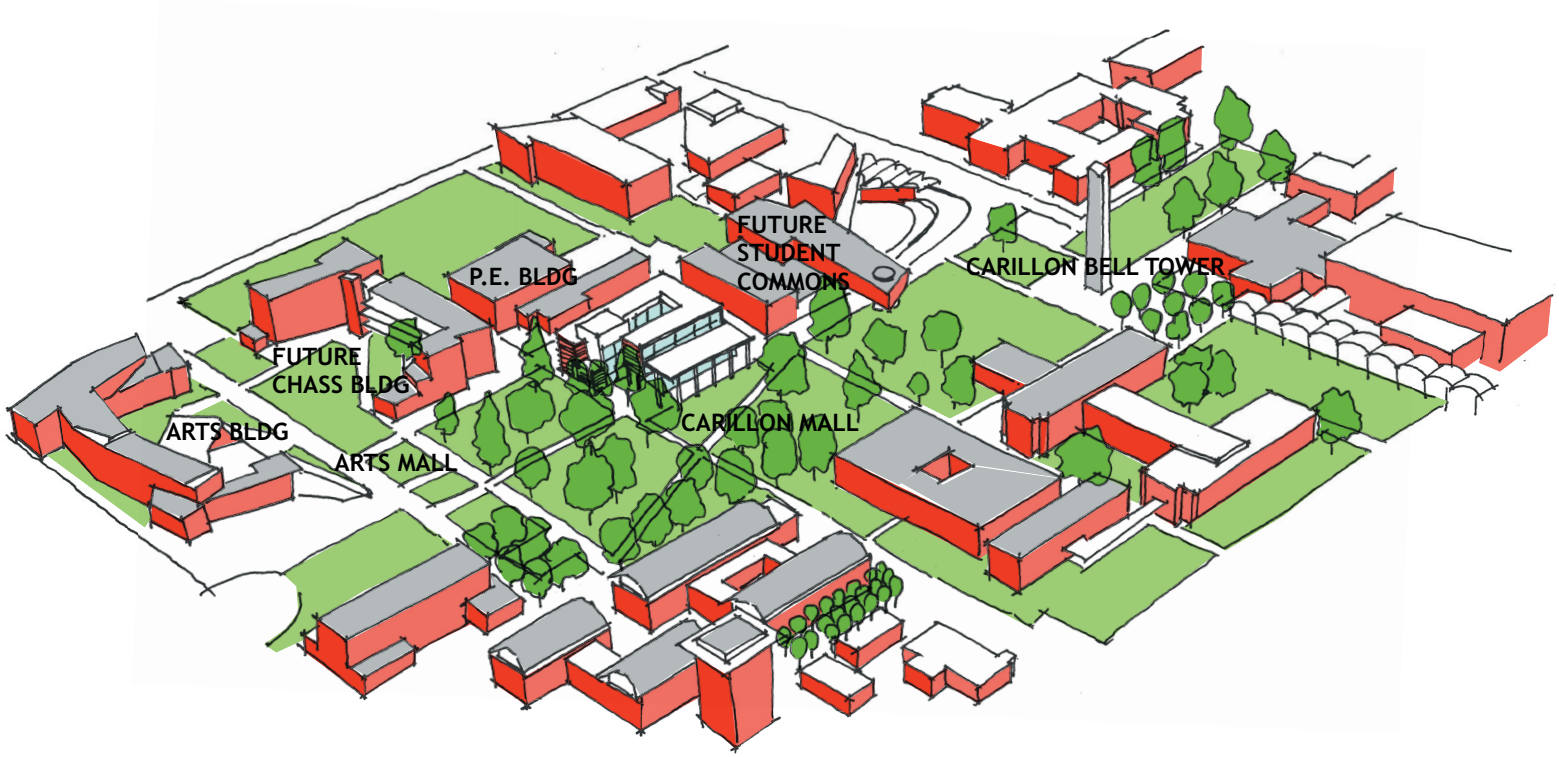
UC RIVERSIDE AVERAGE ANNUAL PREVAILING WIND DIRECTION AND AVERAGE SPEED

2.3

Accommodation Concept

During the programming process several conceptual floor plans and building configurations were explored. The selected scheme most effectively met the programmatic requirements defined by the Student Academic Support Services Committee at UCR by providing:

- Efficient and effective One-Stop
- Sustainable Goals were best addressed:
  - Floor plates provided maximizes the opportunities for external circulation
  - Best solution for long term operating cost for UCR
  - The DPP massing study provides the opportunity for light and fresh air thus minimizes the need for glazing on the interior walls and reduces HVAC loads
- Courtyard provided programmatic solutions for activities:
  - Undergraduate Admissions - Orientation
  - International Services Center - Workshops, Exhibits, Fairs
  - Outreach - Student / Parent - Campus Tours



SUGGESTED MASSING FOR THE SASS BUILDING - AERIAL VIEW FROM THE SOUTHWEST

CONCEPTUAL MASSING STUDY, UCR SASS BUILDING - VIEW FROM THE SOUTHWEST

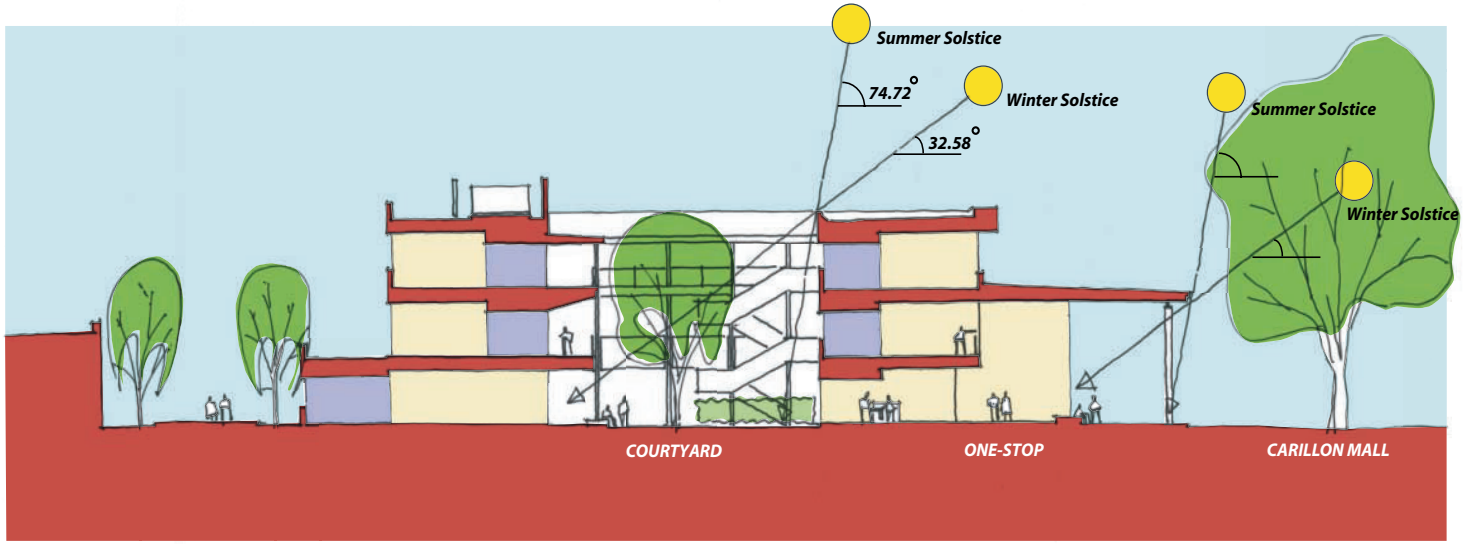
BUILDING ORGANIZATION - PREFERRED CONCEPT

Site amenities and open space concerns contribute significantly to the building organization. Public (student) functions of the building (Lobby/One-Stop/Student Business Services Cashier) are oriented toward the Carillon Mall. The project goals of visibility, transparency, accessibility and identity are addressed by judicious amounts of glazing in this area, emphasizing a connection between indoors and out. Potential mitigation for the southern exposure would be a shading device.

While an institutional scale is created along the Carillon Mall, a more punctuated sense of arrival occurs at the southwest corner of the building. A new public space could be created around the existing oak tree. Appropriately, the main building entrances are accessed from this space, and it serves as the focus of the orientation room as well as the shared conference rooms.

The preferred concept respects a beneficial incorporation of outdoor space that contributes to a clear, comprehensible separation between public and private areas of the building. Departmental offices are logically organized, with humanistic interior environments that reconcile the need for future flexibility with current state-of-the-art design. The configuration contributes to a meaningful, value-added delivery of student services that will also foster staff recruitment and retention.

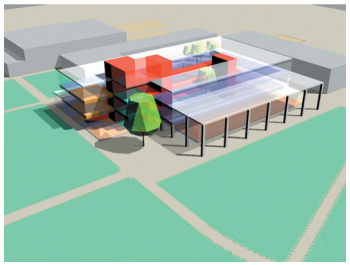
SASS BUILDING - CONCEPTUAL SECTION



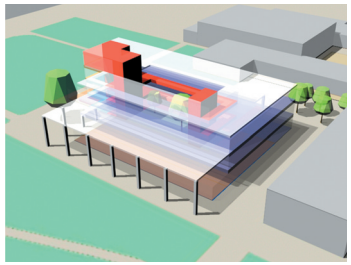
BUILDING SECTION

A CENTRAL COURTYARD

Reflecting the region's climate, and campus building typology, the center of the building is also an outdoor space, an internal courtyard. The court creates a central building identity, while functionally providing programmatic and sustainability benefits. At the ground level, the courtyard serves as a backdrop to the One-Stop counter, while providing natural daylight and visibility. Its central orientation results in narrow floor plates and the opportunity for natural cross ventilation. As a manifestation of a campus defined by its landscape, the court should be designed to appropriately reinforce that connection. Physically, the courtyard also contributes to a separation between the publicly oriented student services, student activities, and the more privately oriented departmental offices.



PRELIMINARY MASSING:
VIEW FROM THE SOUTHWEST



PRELIMINARY MASSING:
VIEW FROM THE SOUTHEAST

PROGRAM DISTRIBUTION

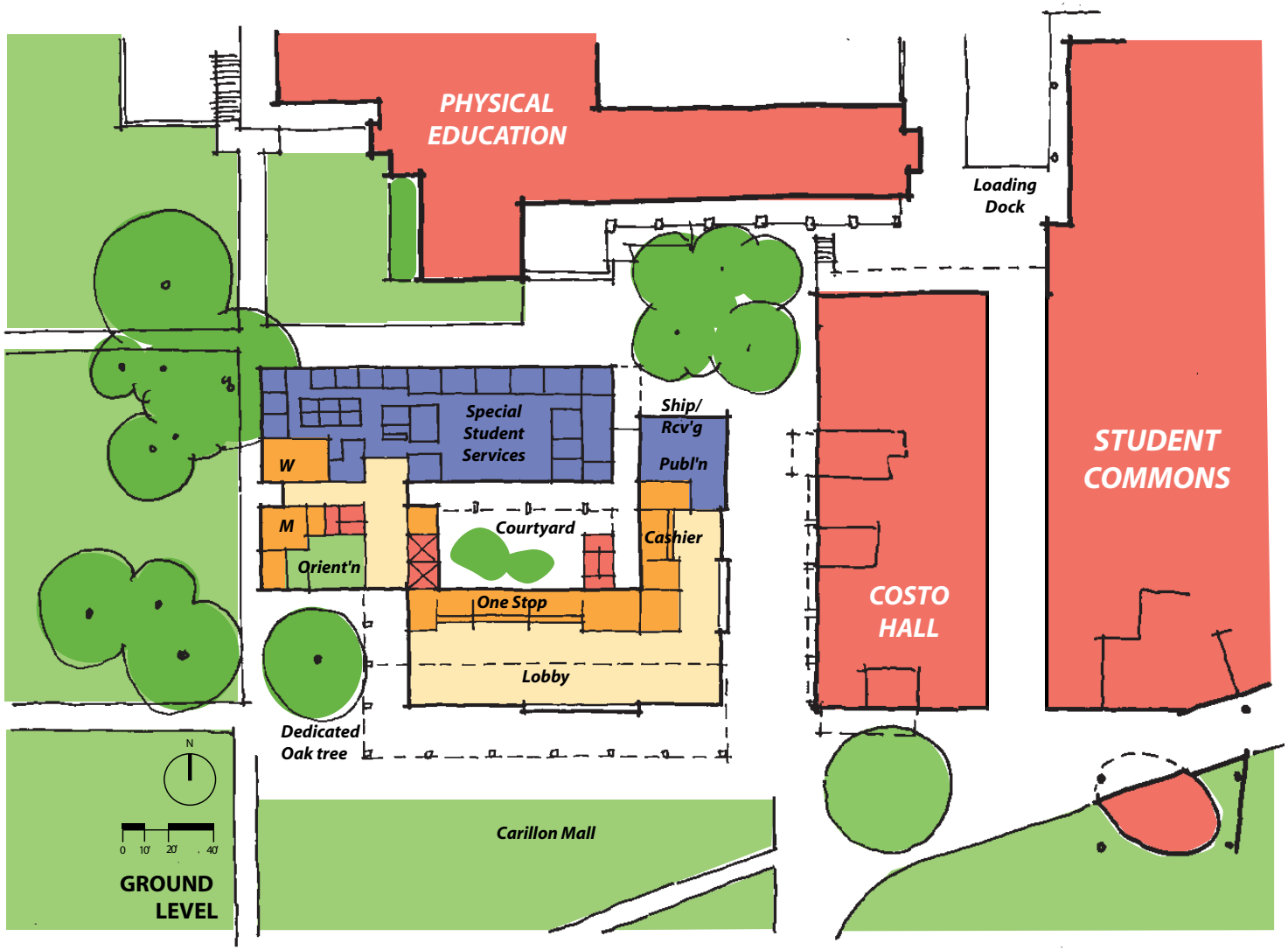
Rounding out the ground level are Student Special Services and the Shipping/ Receiving department. Student Special Services commands a marquee identity off the main circulation lobby, and an informal relationship to the courtyard. Shipping/ Receiving is located as adjacent as possible to the Student Commons' loading dock, east of the northeast corner of the SASS Building.

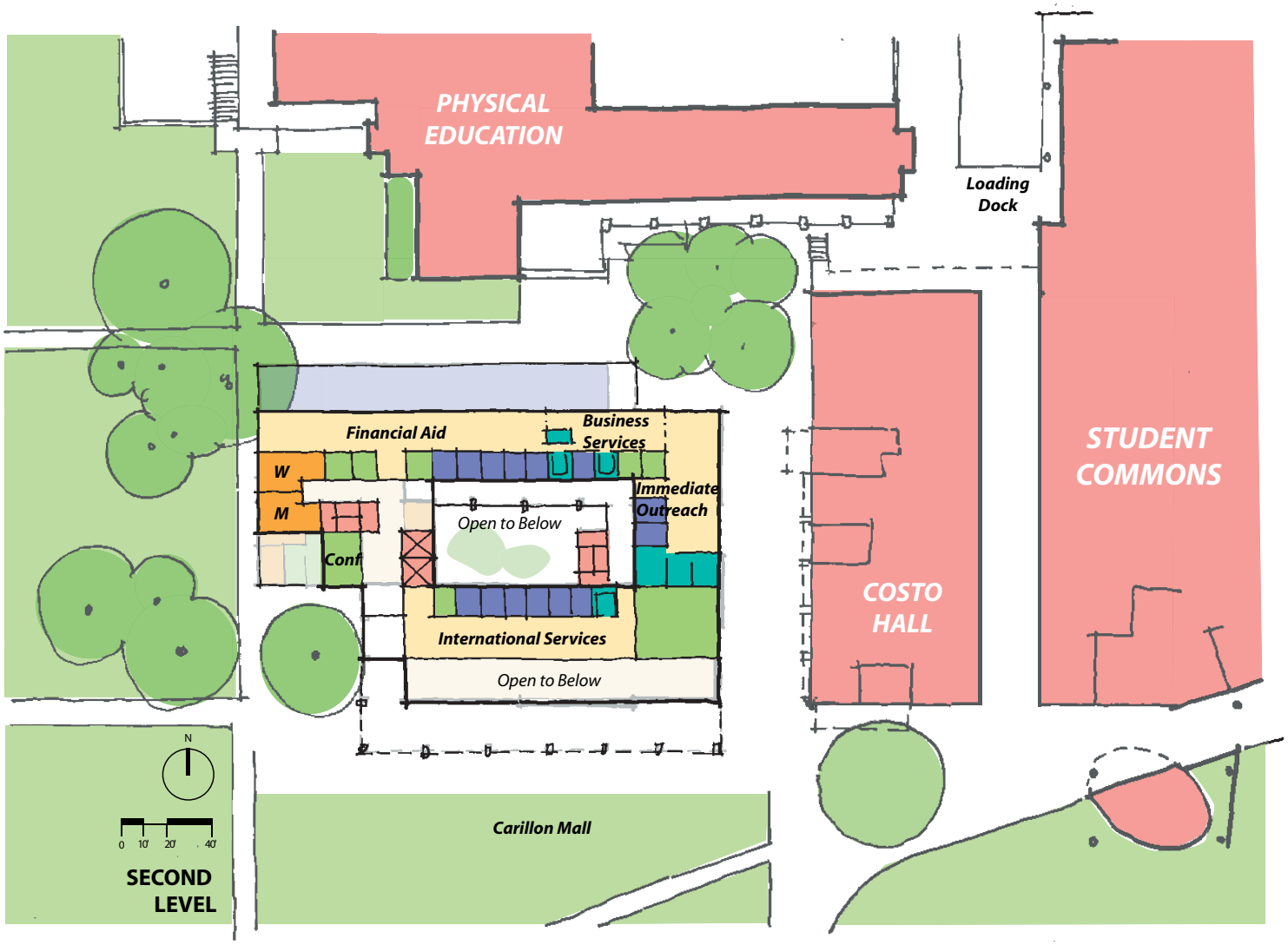
The upper floors are dedicated to departmental uses, arranged in a U-shape around the central court. Capitalizing on the site's long axis, offices are oriented primarily to the south and north, offering significant sustainability gains. The west exposures are imagined as simply articulated masses, housing service elements like restrooms and vertical circulation. Shared conference rooms are located on each floor, placed to overlook the plaza created at the southwest corner around the oak tree.

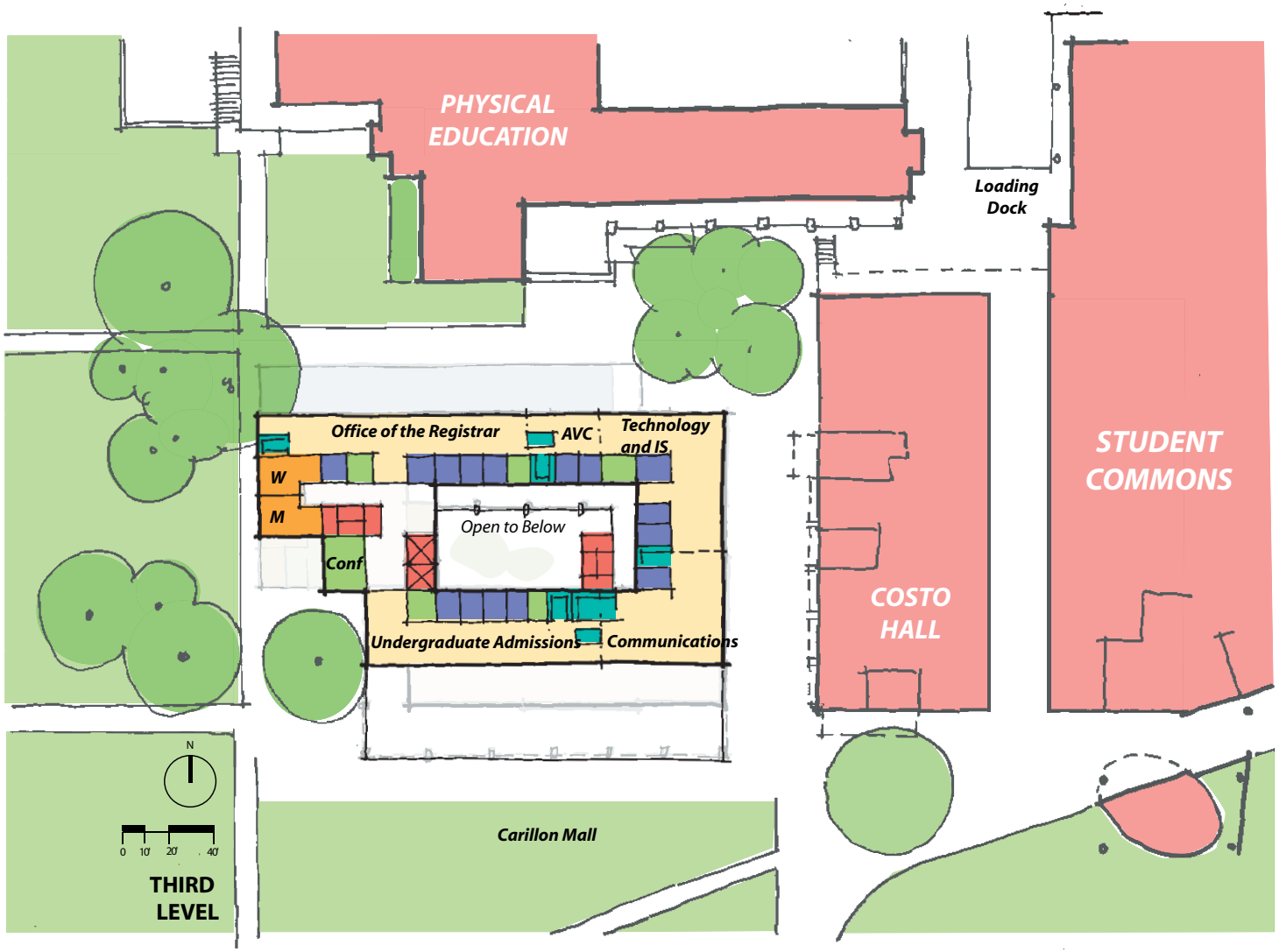
Circulation is also organized around the courtyard, expressed in both interior and exterior manners. An elevator serves an arrival landing on each level, from which conference rooms, restrooms, and departmental entries are distributed. Additionally, departments are accessed from the exterior balcony, punctuated by the courtyard via the interior stairs.

Internally, departments are typically organized in parallel bays composed of the open office components and the enclosed spaces. Offices, conference rooms, and workrooms are philosophically "internalized", leaving the open office workstations distributed around the building's external exposures – thus preserving a spacious, light filled environment for the greatest number of staff. Key in accomplishing this goal was the provision of shared conferencing and counseling rooms, which are distributed within the space. As the primary student interface above the ground level, the conference rooms are located such that visitors can be received without entering the departmental office space proper – creating a much desired buffer for privacy and security between the private and semi-public zones of the building.

Also contributing to the sense of openness, efficiency, and future flexibility of the office space, is the lack of physical "demising" walls between different departments. Instead, groupings of shared departmental program elements, like Coffee & Copy Rooms, or less restrictive staff, such as student employees, act as separators between departments.


PHYSICAL EDUCATION
Loading Dock
STUDENT COMMONS
COSTO HALL
Special Student Services
W
M
Orient'n
Courtyard
Ship/ Rcv'g
Publ'n
Cashier
One Stop
Lobby
Dedicated Oak tree
Carillon Mall
N
0 10' 20' 40'
GROUND LEVEL


PHYSICAL EDUCATION
Loading Dock
STUDENT COMMONS
COSTO HALL
Financial Aid
Business Services
W
M
Conf
Immediate Outreach
Open to Below
International Services
Open to Below
Carillon Mall
N
0 10' 20' 40'
SECOND LEVEL


PHYSICAL EDUCATION
Loading Dock
STUDENT COMMONS
COSTO HALL
Office of the Registrar
AVC
Technology and IS
W
M
Conf
Open to Below
Undergraduate Admissions
Communications
Carillon Mall
N
0 10' 20' 40'
THIRD LEVEL

3.1

Project Area Summary and Adjacencies Diagram

The following summary represents the project total square footage required for the SASS Building. This summary utilizes the following methodology:

- In all cases, sharing of facilities was emphasized over unique "ownership" of space. See the graphic program and adjacencies diagram on the following page.
- Common Areas are spaces shared by departments and users. See sections 3.3 and 3.4 for additional information.
- Department Areas are spaces assigned to unique departments. See sections 3.2 and 3.3 for additional information.

PROJECT TOTAL: AREA SUMMARY

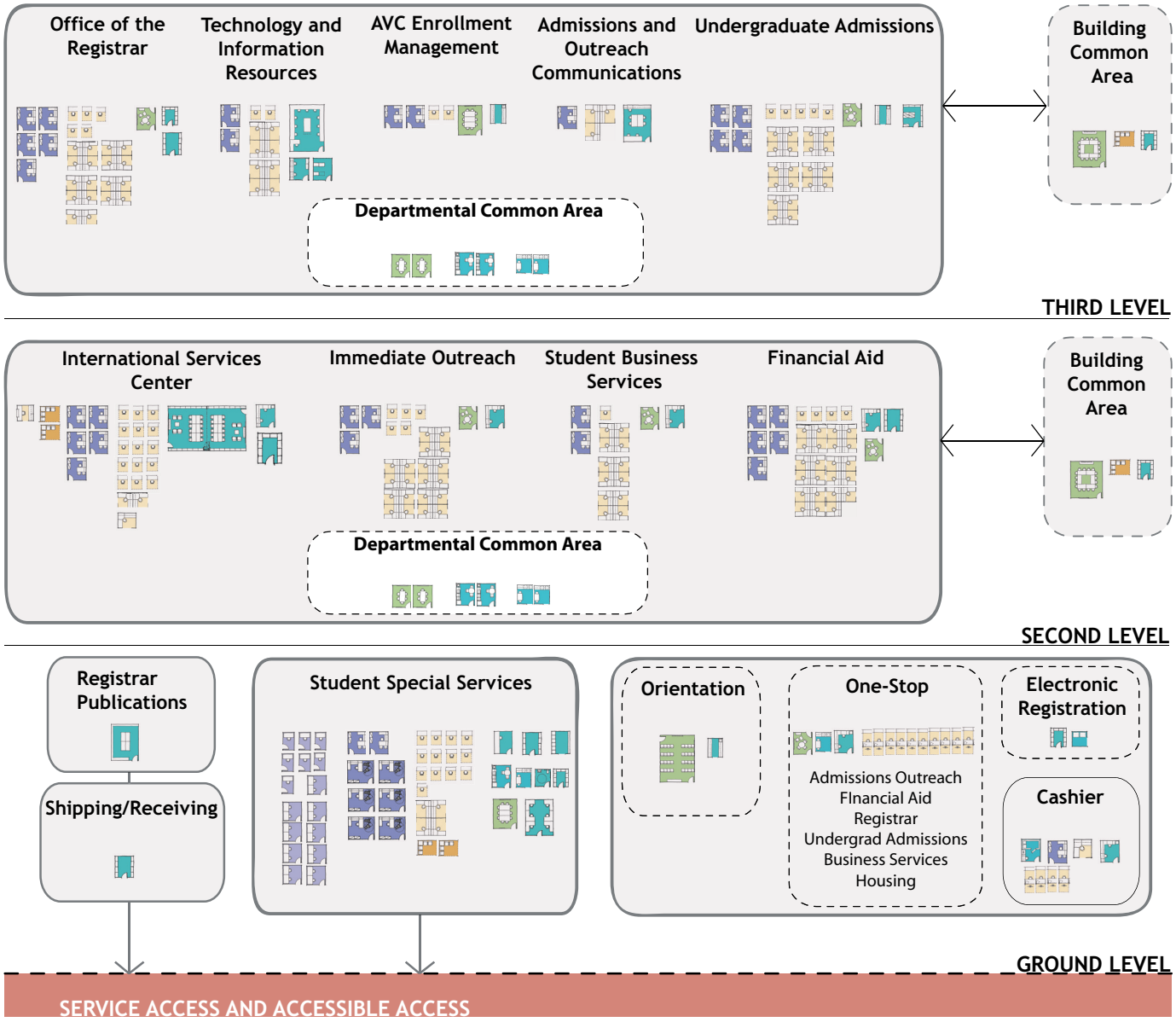
Departments	(ASF)
Admissions and Outreach Communications	1,010
AVC Enrollment Management	900
Financial Aid	3,230
Immediate Outreach	3,160
International Services Center	3,780
Registrar & Registrar Publications	2,910
Student Business Services	1,670
Student Special Services	5,640
Technology and Information Resources	2,200
Undergraduate Admissions	3,060
Subtotal, Departmental ASF	**27,560**

Common Areas	(ASF)
Departmental Common Areas	1,340
Building Common Areas	3,600
Student Business Services Cashier	1,450
One-Stop	3,430
Subtotal, Common ASF	**9,820**
Building Gross Factor (64.29%)	20,760
TOTAL BUILDING GSF	**58,140**

Graphic Program & Adjacencies Diagram

A methodology for sharing and distributing spaces was created through the workshop process. The central tenets of this philosophy, agreed upon by all departments, includes:

- Departmental Common Spaces, particularly Conference Rooms, Counseling Rooms, Coffee Areas, and Copy Areas, were needed by all users and could be shared.
- Certain programmatic elements, identified as common, first floor "retail" style space, is aggregated into the "One-Stop." The One-Stop eliminates the need for multiple, independent transaction counters scattered throughout the building, and fosters inter-departmental contact and facilitates student transactions.
- A commonality of space is identified such that demising walls between departments are no longer required. This facilitates circulation and the potential for future expansion and contraction by individual departments.
- Enclosed offices were exchanged, wherever possible, for open workstations to increase building and departmental efficiency as well as flexibility as business changes.
- These measures for sharing space and eliminating redundant spaces (such as multiple transaction counters) provided an aggregate of 10,000 gsf in reduced program. This programmatic reduction was identified in the programming studies comparing the "Traditional" program to the preferred program using a "One-Stop" approach.



GRAPHIC PROGRAM AND ADJACENCIES DIAGRAM

3.2

Departmental Descriptions & Diagrams

The following Departmental Descriptions and Diagrams are based on the following assumptions:

- As primarily an aggregation of office/ administrative uses, many types of spaces are functionally identical. For example, an office for Undergraduate Admissions is functionally identical to one required by Financial Aid, and therefore, can be documented as the same space.
- To eliminate redundancy, and to plan for maximum future flexibility, these common uses have been assembled into "Program Building Blocks" found in Section 3.6.

In order to limit repetition, this program utilizes a "building blocks" approach to elements that recur throughout the project. This shorthand follows the following rationale:

Program Elements (individual space needs, recurring as noted, in ASF)

\+ Department Common Areas (spaces shared by departments, recurring as noted, in ASF)

\+ Building Common Areas (spaces that are shared by the building as a whole, in ASF)

\+ Building Gross Area (assignable space, increased for gross circulation, wall area, etc.)

= Total Building (GSF)

Admissions and Outreach Communications

MISSION

To design and develop targeted communications across a wide range of media in support of Undergraduate Admissions and Outreach services.

To assist the campus in meeting its enrollment goals by assisting students with information needed to prepare for and meet admission requirements for UCR enrollment. Relations with Schools will continue to work with schools, students, parents, and communities to provide appropriate and timely information regarding admission and enrollment to UC Riverside. Relations With Schools will also continue to communicate the benefits of attending UCR.

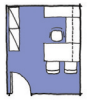
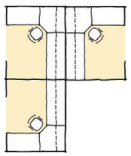
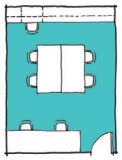
ADJACENCIES

- Primary: Technology and Information Resources, Mail Room
- Secondary: Undergraduate Admissions, Immediate Outreach

FUNCTIONAL REQUIREMENTS

- Space for teleconferencing
- Demising wall to secure department's equipment

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	1	120	120	
Work Station	WS-3	3	80	240	includes student ws
Work Room	WR-3A	1	300	300	graphic layout /web computers/filing
			Subtotal, Departmental ASF	660	
			Circulation Factor	350	
			TOTAL DEPARTMENTAL GSF	**1,010**	

Private Office	Work Station	Work Room
PO-1	WS-3	WR-3A
		

AVC Enrollment Management

MISSION

Within the context of the mission statements of the Division of Student Affairs and the University, achieve and maintain the optimum recruitment, admission, and enrollment of students with high academic capability who are representative of the diversity within our state.

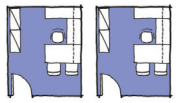
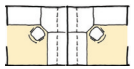
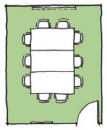
ADJACENCIES

- Primary: Technology and Information Resources, Mail Room
- Secondary: Undergraduate Admissions, Immediate Outreach

FUNCTIONAL REQUIREMENTS

- Space for teleconferencing
- Demising wall to secure department's equipment

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	2	120	240	
Work Station	WS-2	2	65	130	
Counseling Room	CR-2	1	200	200	
Work Room	WR-1	1	80	80	
	Subtotal, Departmental ASF			650	
	Circulation Factor			250	
	TOTAL DEPARTMENTAL GSF			**900**	

Private Office	Work Station	Counseling Room	Work Room
PO-1	WS-2	CR-2	WR-1
			

Financial Aid

MISSION

Provide financial assistance to students, in accordance with Enrollment Management objectives and varying student needs. Support the University's enrollment and retention goals by providing financial aid from federal, state, University, and private sources and by providing related student support services. Ensure that financial aid is delivered in a timely manner and in full compliance with all federal, state, University, and outside agency requirements.

ADJACENCIES

- Primary: Office of the Registrar, Undergraduate Admissions, Student Business Services
- Secondary: Student Business Services Cashier

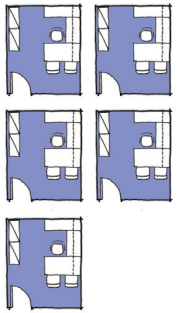
FUNCTIONAL REQUIREMENTS

- Private areas to conduct financial discussions
- Privacy at counter is of paramount importance
- Demising wall not required around department

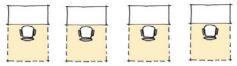
Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	5	120	600	
Work Station	WS-1	4	50	200	student volunteers
	WS-2	23	65	1,495	
Counseling Room	CR-1B	1	120	120	requires adjacency to a CR-2
Work Room	WR-2A	1	120	120	work room
Storage Room	SR-2A	1	120	120	filing
	Subtotal, Departmental ASF			2,655	
	Circulation Factor			575	
	TOTAL DEPARTMENTAL GSF			**3,230**	

Private Office	Work Station	Counseling Room	Work Room	Storage Room

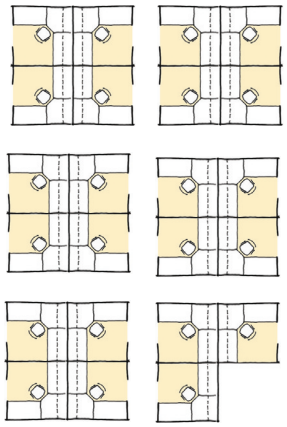
PO-1



WS-1



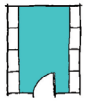
WS-2



CR-1B

WR-2A

SR-2A



Immediate Outreach

MISSION

Relations with Schools develops and implements comprehensive recruitment plans focusing on academically strong students who might apply and attend UCR. Services include counseling, testing, application workshops, parents' nights, and campus tours.

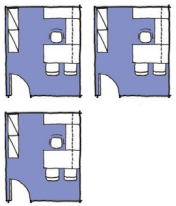
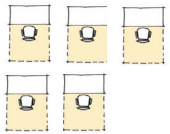
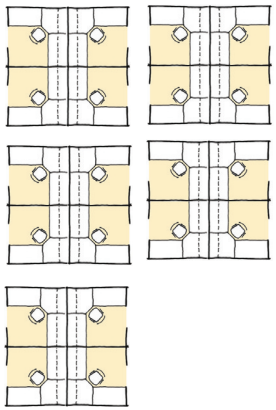
ADJACENCIES

- Primary: Technology and Information Resources, Undergraduate Admissions
- Secondary: Financial Aid

FUNCTIONAL REQUIREMENTS

- A staging area for tours
- A large room for conduct phone campaigns 12 – 16 times a year
- Demising wall not required around department

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	3	120	360	
Work Station	WS-1	5	50	250	
	WS-2	20	65	1,300	includes receptionist
Counseling Room	CR-1B	1	120	120	
Work Room	WR-2A	1	120	120	construct mailers
		Subtotal, Departmental ASF		2,150	
			Circulation Factor	1,010	
			TOTAL DEPARTMENTAL GSF	**3,160**	

Private Office	Work Station	Counseling Room	Work Room
PO-1	WS-1	CR-1B	WR-2A
			
	WS-2		
			

International Services Center

MISSION

To help internationalize the educational experience offered at UC Riverside. Within the broad context of a land-grant university, our center is committed to the enhancement of the international/cross cultural education and research and to extension of its expertise and networks to the region at-large.

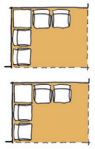
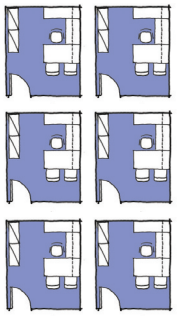
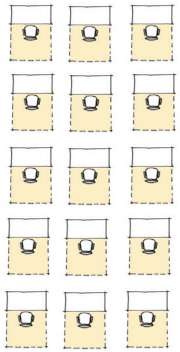
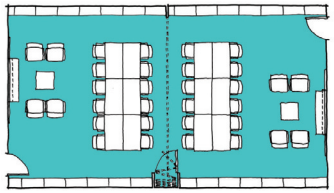
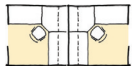
ADJACENCIES

- Primary: Financial Aid
- Secondary: Undergraduate Admissions, Office of the Registrar

FUNCTIONAL REQUIREMENTS

- Wall space for display
- Space suitable for large catered events and dignitary receptions
- Space for students to congregate – a home away from home
- The International Services Center serves students throughout the day and for extended hours. This schedule dictates that the Center be separated from adjacent users with demising walls

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Receptionist	WS-4	1	75	75	
Waiting Area	WT-1	2	80	160	area for two PC's, one space: double sized
Private Office	PO-1	6	120	720	counselors
Work Station	WS-1	15	50	750	students, receptionist
	WS-2	2	65	130	staff
	WS-3	1	80	80	faculty WS
Training Room/ Catalogs Reserves	TL-1	1	1,100	1,100	Operable wall desirable
Work Room	WR-2A	1	120	120	art supplies, cultural artifacts, publications
Storage Room	SR-1	1	80	80	archive storage
	Subtotal, Departmental ASF			3,215	
	Circulation Factor			565	
	TOTAL DEPARTMENTAL GSF			3,780	

Receptionist	Waiting Area	Private Office	Work Station	Training Room	Work Room	Storage
WS-4	WT-1	PO-1	WS-1	TL-1	WR-2A	SR-1
						
WS-2						
						
WS-3						
						

Office of the Registrar & Registrar Publications

MISSION

To deliver accurate, prompt, courteous, and fair service to all students and to all constituents of the University, consistent with its educational mission.

To take a leadership role in the accurate and efficient management of the data in the primary functional areas of the Office: registration, student academic records, course and classroom scheduling, classroom utilization, publications production, and data distribution.

To promote and use to the fullest all available resources and technology in the performance of our duties and responsibilities.

ADJACENCIES

- Primary: Undergraduate Admissions, Financial Aid
- Secondary: Student Business Services

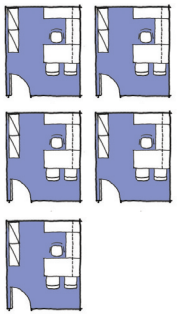
FUNCTIONAL REQUIREMENTS

- Space plan that permits easy interaction between groups
- Conference room adjacent to office area
- Demising wall not required around department

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	5	120	600	Mangement
Work Station	WS-1	5	50	250	students
	WS-2	18	65	1,170	
Counseling Room	CR-1B	1	120	120	
Storage Room	SR-2A	1	120	120	supplies
	SR-1	1	80	80	transcript storage/ printing (secure)
	Subtotal, Departmental ASF			2,340	
	Circulation Factor			570	
	TOTAL DEPARTMENTAL GSF			**2,910**	

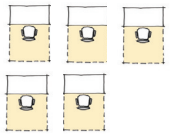
Private Office

PO-1



Work Station

WS-1



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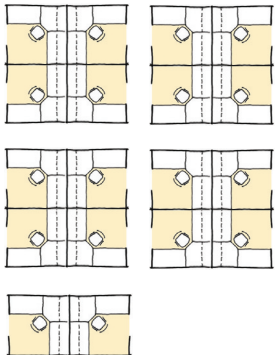
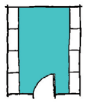


Counseling Room

CR-1B

Storage Room

SR-2A



SR-1

Student Business Services

MISSION

Our vision encompasses excellent customer service, innovative and technological support for the business and financial needs of our customers.

ADJACENCIES

- Primary: Financial Aid
- Secondary: Office of the Registrar

FUNCTIONAL REQUIREMENTS

- Locate Cashier away from exterior doors and stairs
- Electronic security system
- Demising wall around Cashier
- Demising wall not required around department

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	2	120	240	
Work Station	WS-2	12	65	780	4 staff additional, located at One-Stop & Cashier
	WS-1	1	50	50	
Counseling Room	CR-1B	1	120	120	
Work Room	WR-2A	1	120	120	equipment room
	Subtotal, Departmental ASF			1,310	
	Circulation Factor			360	
	TOTAL DEPARTMENTAL GSF			**1,670**	

Note: the following Student Business Services related areas are located, and their associated ASF's included in the One Stop & Cashier operation. For additional program information, see space CA-1 in the Building Common Areas.

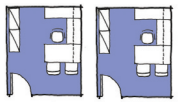
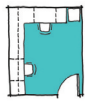
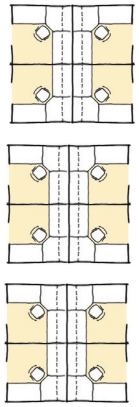
(1) PO-1

(1) WS-2

(4) TW-1

(1) SR-2B

(1) WR-2A

Private Office	Work Station	Counseling Room	Work Room
PO-1	WS-1	CR-1B	WR-2A
			
	WS-2		
			

Student Special Services

MISSION

Student Special Services strives to provide effective services that allow equal access for non-traditional students to UCR's programs, in a manner that encourages meaningful connections with the campus, promotes student development, and contributes to student retention and success.

A diverse group of student services, which might comprise several separate departments at another campus, is offered at UCR under the umbrella of Student Special Services. The overall goal of the Student Special Services Office is to provide our designated support services to UCR students in a personal, individualized manner. Some of our services are targeted for special populations, such as students with disabilities, veterans, servicepersons, and veterans' dependents. Other services are aimed at the general student population.

The common element among our major service area is that they are not optional--students must have access to these services in order to attend the University. Federal law, State law, and University policy govern much of what we do. In most areas, we act as liaison between students and other departments or outside agencies, assisting students in dealing with Administrative processes and helping them secure the benefits and services they need to remain in school. Grouping these varied services in a single office provides flexibility and cost savings to the University.

ADJACENCIES

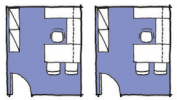
- Primary: Building entry
- Secondary: Area for recharging electric carts

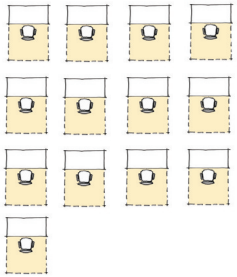
FUNCTIONAL REQUIREMENTS

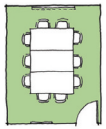
- Extra large offices and aisles to accommodate multiple wheel chairs
- Partially glass enclosed conference room
- Demising wall around department

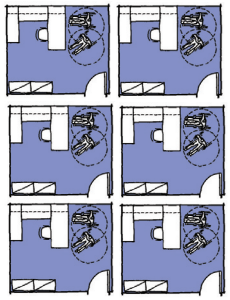
Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Waiting Area	WT-1	2	80	160	One Room, double size, for counselors and testing
Private Office	PO-1	2	120	240	With furniture aranged so that staff position is closest to the door
	PO-2	6	160	960	
Work Station	WS-1	13	50	650	students, receptionist
	WS-3	4	80	320	assistant
Counseling Room	CR-2	1	200	200	glass walls
Work Room	WR-2C	1	120	120	alternative media room
	WR-3C	1	300	300	furniture storage (combined w/wheelchair repair)
	WR-2B	1	120	120	lockers, mail
Storage Room	SR-1	1	80	80	test storage
	SR-2A	1	120	120	general office, admin. files
Coffee Room	CF-1	1	120	120	
Copy Room	CP-1	1	80	80	
Testing Room	TR-1	7	55	385	
	TR-2	9	100	900	visually impaired or two person
Toilet Room	TO-1	1	70	70	in testing area
			Subtotal, Departmental ASF	4,825	
			Circulation Factor	815	
			TOTAL DEPARTMENTAL GSF	**5,640**	

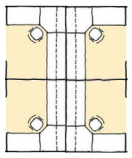
Waiting Area	Private Office	Work Station	Counseling Room	Work Room
WT-1	PO-1	WS-1	CR-2	WR-2C
	PO-2	WS-3		WR-3C
				WR-2B

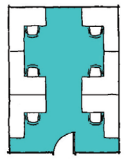


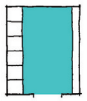




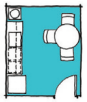
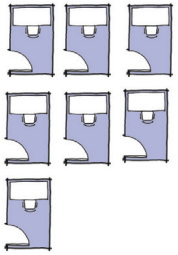
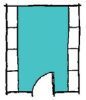
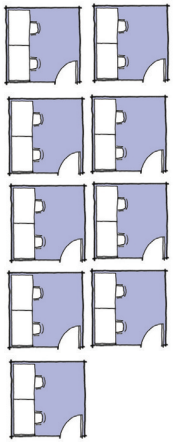








Student Special Services, continued

Storage Room	Coffee Room	Copy Room	Testing Room	Toilet Room
SR-1	CF-1	CP-1	TR-1	TO-1
				
SR-2A			TR-2	
				

Technology and Information Resources

MISSION

To create a satisfying experience for students, faculty, and staff by improving VCSA business process efficiencies and capabilities through the use of information technologies

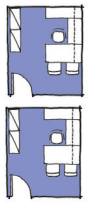
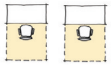
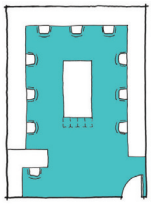
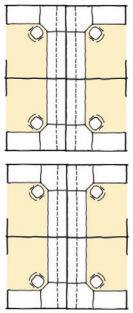
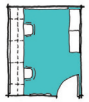
ADJACENCIES

- Primary: Immediate Outreach
- Secondary: None

FUNCTIONAL REQUIREMENTS

- Demising wall around department to secure equipment

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	2	120	240	
Work Station	WS-3	8	80	640	
	WS-1	2	50	100	
Work Room	WR-4	1	500	500	optical imaging room - adjacent, but closed off from department
	WR-2D	1	120	120	repair area
Storage Room	SR-2C	1	120	120	server racks
	Subtotal, Departmental ASF			1,720	
	Circulation Factor			480	
	TOTAL DEPARTMENTAL GSF			**2,200**	

Private Office	Work Station	Work Room	Storage Room
PO-1 	WS-1 	WR-4 	SR-2C 
	WS-3 	WR-2D 	

Undergraduate Admissions

MISSION

The mission of the Office of Undergraduate Admissions is to assist and compliment the educational needs of the general public and the specific goals and objectives of the Riverside campus. These services include the following.

- To admit students who meet UC eligibility and admission requirements and/or who are supported by special admissions programs;
- To provide accurate, timely information to the campus community and the general public relevant to the University's admission process and procedures; and
- To deliver selected services that support the ancillary needs of the University, the general educational community, and constituent groups.

ADJACENCIES

- Primary: Office of the Registrar
- Secondary: Financial Aid

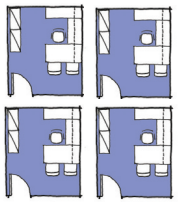
FUNCTIONAL REQUIREMENTS

- Access to multiple small conference rooms with computers
- Peak periods are summer – Fall, and May – August
- A demising wall around department is not required

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	4	120	480	
Work Station	WS-1	5	50	250	students
	WS-2	20	65	1,300	
Counseling Room	CR-1B	1	120	120	for evaluation counseling
Work Room	WR-1	1	80	80	filing
Library	LB-1	1	120	120	Catalogs and publications used by Articulation & Evaluation
	Subtotal, Departmental ASF			2,350	
	Circulation Factor			710	
	TOTAL DEPARTMENTAL GSF			**3,060**	

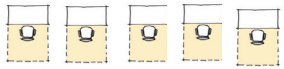
Private Office

PO-1

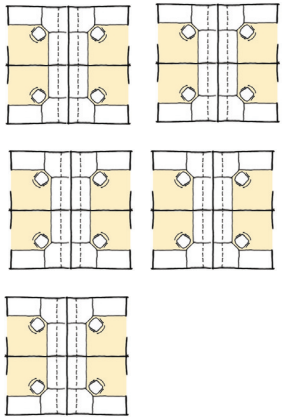


Work Station

WS-1



WS-2



Counseling Room

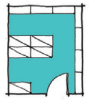
CR-1B

Work Room

WR-1

Library

LB-1



3.3

Departmental Common Areas

The following represents the shared interdepartmental spaces identified by all Departments. For further information, see sections 3.5, Program Building Blocks.

Departmental Common Areas

In order to limit repetition, this program utilizes a "building blocks" approach to elements that recur throughout the project. This shorthand follows the following rationale:

Program Elements (individual space needs, recurring as noted, in ASF)

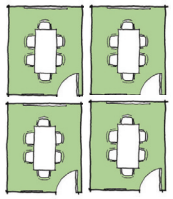
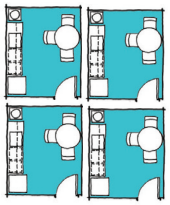
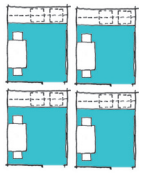
\+ Department Common Areas (spaces shared by departments, recurring as noted, in ASF)

\+ Building Common Areas (spaces that are shared by the building as a whole, in ASF)

\+ Building Gross Area (assignable space, increased for gross circulation, wall area, etc.)

= Total Building (GSF)

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Counseling Room	CR-1A	4	120	480	two each: on floors 2 and 3
Coffee Area	CF-1	4	120	480	two each: on floors 2 and 3
Copy area	CP-1	4	80	320	two each: on floors 2 and 3
	Subtotal, Departmental ASF			1,280	
	Circulation Factor			60	
	TOTAL DEPARTMENTAL GSF			**1,340**	

Conference Room	Coffee Area	Copy Area
CR-1A	CF-1	CP-1
		

3.4

Building Common Areas

The following represents common elements of the building. These areas are required for the operation of the building, but are not allocated to a specific department. For further information, see section 3.5, Program Building Blocks.

Building Common Areas

In order to limit repetition, this program utilizes a "building blocks" approach to elements that recur throughout the project. This shorthand follows the following rationale:

Program Elements (individual space needs, recurring as noted, in ASF)

\+ Department Common Areas (spaces shared by departments, recurring as noted, in ASF)

\+ Building Common Areas (spaces that are shared by the building as a whole, in ASF)

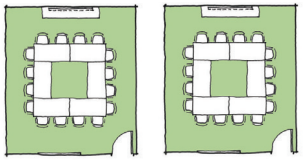
\+ Building Gross Area (assignable space, increased for gross circulation, wall area, etc.)

= Total Building (GSF)

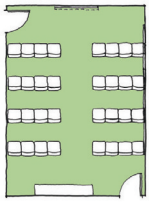
Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Conference Room	CR-4	1	500	500	Orientation room
	CR-3	2	350	700	One per floor (not on first level)
Electronic Registration	ER-1	1	800	800	Direct access from exterior. Requires short term seating for a minimum of 6.
Work Room	WR-1	1	80	80	Adjacent to orientation room
Storage Room	SR-2A	1	120	120	Shipping/Receiving
	SR-1	4	80	320	Recycling
Publications Room	WR-3B	1	300	300	Construct Mailers (Shared between departments), near Ship/Recv'g
Vending Alcove	V-1	1	60	60	
Waiting Area	WT-2	2	120	240	one each, floors 2,3, similar to space WT-1
			Subtotal, Departmental ASF	3,120	
			Circulation Factor	480	
			TOTAL DEPARTMENTAL GSF	**3,600**	

Conference Room

CR-3



CR-4

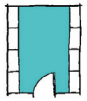


Work Room

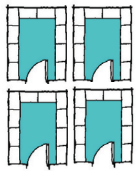
WR-1

Storage Room

SR-2A

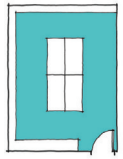


SR-1



Publications Room

WR-3B



Vending Alcove

V-1

Waiting Area

WT-2

Electronic Registration

ER-1

Student Business Services Cashier

MISSION

The Student Business Services Cashier accommodates students conducting University related financial transactions. It is complementary to the One-Stop, in the sense that it represents the most public extension of the Student Business Services Department. The transaction counter is divided into four (4) individual stations, or windows - each divided for visual privacy. Secure vision partitions (bullet-proof glass or plastic) separate staff from students along this counter. Each station has a cash drawer with a removable tray, and computer and telephone access. Transactions will take place between staff seated on high chairs, and students standing across the counter.

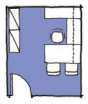
Staff support areas, accessed from behind the counter area, will include a Private Office (PO-1), Work Room (WR-2A), a Work Station (WS-2), and a Storage Room (SR-2B), which includes the Vault.

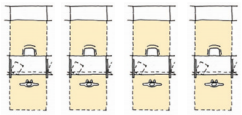
On the student side of the Student Business Services Cashier counter, moveable stanchions should be considered to manage queuing. A night deposit drop box should be located on an exterior wall of the building for after-hours use.

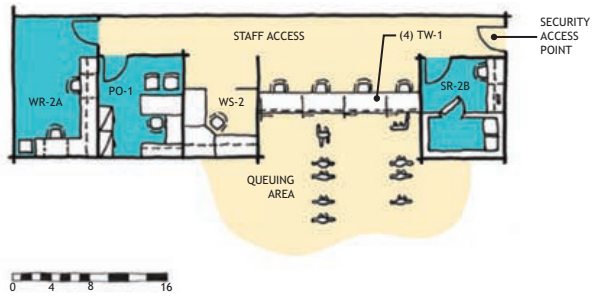
Wherever cash transactions take place, security must be addressed. CCTV will monitor the counter and panic buttons should be located at each station.

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Private Office	PO-1	1	120	120	
Storage Room	SR-2B	1	120	120	Vault Room
Work Station	WS-2	1	65	65	
Work Room	WR-2A	1	120	120	
Transaction Window	TW-1	4	70	280	With security glass
Queuing Space				300	
	Subtotal, Departmental ASF			1,005	
	Circulation Factor			440	
	TOTAL DEPARTMENTAL GSF			1,450	

Private Office	Storage Room	Work Station	Work Room	Transaction Window	Queuing Space
PO-1	SR-2B	WS-2	WR-2A	TW-1	







One-Stop

MISSION

The One-Stop consolidates all the various student service departments in a highly visible and readily accessible space on the ground floor of the SASS Building. A long counter is divided into ten (10) individual service stations, where semi-private transactions take place. Care is to be taken to ensure visual privacy between stations, and while audio privacy cannot be controlled, finishes should be sound absorbent where possible. Transactions will take place between staff seated on high chairs, and students standing across the counter. Each station will be wired for computer and telephone access, with built-in lockable drawers. While stations will be flexible enough for shared "surging" capability during peak times, generally the breakdown will be as follows:

Admissions Outreach	2 stations
Financial Aid	3 stations
Office of the Registrar:	3 stations
Undergraduate Admissions:	2 stations

Staff support areas, accessed from behind the counter area, will include a Copy Room (CP-1), Work Room (WR-2A), and a vestibule containing day lockers for personal items.

A Counseling Room (CR-1B) should be provided with access from both staff and student use areas. This room will accommodate "intermediate" discussions too private for the transaction counter, but not necessarily calling for Departmental counseling.

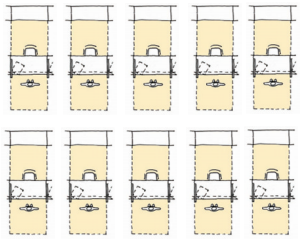
On the student side of the One-Stop counter, moveable stanchions should be considered to manage queuing. Additionally, an electronic message board, or other highly visible and readily editable method of announcement, should be considered.

Due to the personal nature of student services, security must be addressed. CCTV will monitor the counter and panic buttons should be located at each station, including the Conference Room. If designed such that the One-Stop is adjacent to a public, after-hours entry to the building, some type of retractable partition or screen should be considered.

Space Name	Code	Qty	ASF (Sq Ft)	Total ASF (Sq Ft)	Comments
Transaction Window	TW-1	10	70	700	Admissions Outreach (2), Financial Aid (3), Registrar (3), Undergrad Admissions (2)
Counseling Room	CR-1B	1	120	120	Common use
Copy Room	CP-1	1	80	80	Common use
Work Room	WR-2A	1	120	120	Common use
Queuing Space				2,030	
			Subtotal, One-Stop ASF	3,050	
			Circulation Factor	380	
			TOTAL DEPARTMENTAL GSF	3,430	

Transaction Window	Conference Room	Copy Area	Work Room	Queuing Space

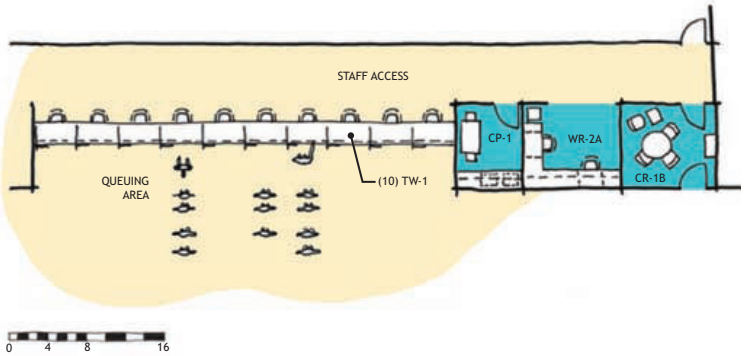
TW-1



CR-1B

CP-1

WR-2A



3.5

Program Building Blocks

The following represents the elemental office and administrative components of the project.

In order to limit repetition, this program utilizes a "building blocks" approach to elements that recur throughout the project. This shorthand follows the following rationale:

Program Elements (individual space needs, recurring as noted, in ASF)

\+ Department Common Areas (spaces shared by departments, recurring as noted, in ASF)

\+ Building Common Areas (spaces that are shared by the building as a whole, in ASF)

\+ Building Gross Area (assignable space, increased for gross circulation, wall area, etc.)

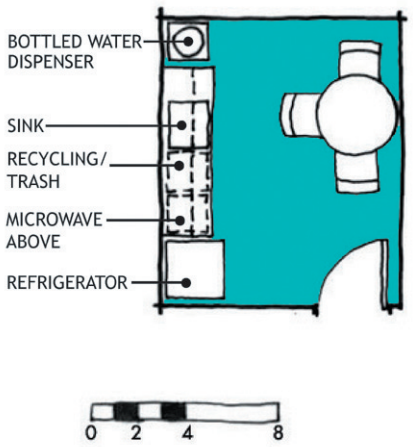
= Total Building (GSF)

MASTER LIST: ROOM TYPES

Space Name	Code	ASF (Sq Ft)	Comments
Coffee Room	CF-1	120	
Copy Room	CP-1	80	
Conference Room/ Counseling Room	CR-1A	120	Counseling Room For 4-6 people
	CR-1B	120	Counseling Room
	CR-2	200	Counseling Room For 6-12 people
	CR-3	350	Conference Room For 13 - 20 people
	CR-4	500	Conference Room For 21-30 people
Electronic Registration	ER-1	800	
Catalogs/Archives	LB-1	120	
Private Office	PO-1	120	
	PO-2	160	Fully accessible
Storage Room	SR-1	80	Typical
	SR-2A	120	Typical
	SR-2B	120	Business Services: vault room
	SR-2C	120	Tech: server room
Training & Catalog Resources	TL-1	1,100	Int'l services
Student Special ServicesToilet Room	TO-1	70	unisex
Testing Room	TR-1	55	For 1 person
	TR-2	100	Adapted computer, or for two people
Transaction Window	TW-1	70	One Stop & Cashier, includes back counter
Vending Alcove	V-1	60	Part of building common area

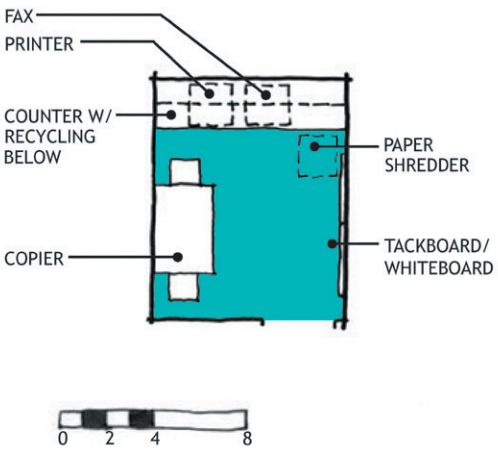
Space Name	Code	ASF (Sq Ft)	Comments
Work Room	WR-1	80	Typical
	WR-2A	120	Typical
	WR-2B	120	Student Special Services: lockers. Mail
	WR-2C	120	Student Special Services: alternate media room
	WR-2D	120	Technology and Information Research: repair room
	WR-3A	300	Admissions and Outreach Communications: graphics layout
	WR-3B	300	Admissions and Outreach Communications: mailer room
	WR-3C	300	Student Special Services: wheelchair repair
	WR-4	500	Technology and Information Research: optical imaging
Work Station	WS-1	50	Student work station
	WS-2	65	Staff standard work station
	WS-3	80	Staff station requiring additional layout space
	WS-4	75	Reception station
Waiting Area	WT-1	80	For 4 people
	WT-2	120	Accessible waiting area

CODE	CF-1
SPACE NAME	Coffee Room
ASSIGNABLE AREA (ASF)	120
FUNCTION	Shared departmental coffee/lunch room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



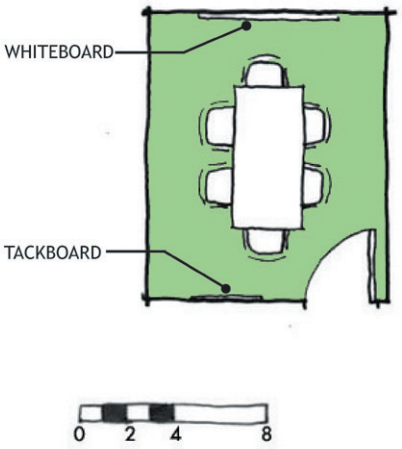
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door/hollow metal frame w/ sidelight adjacent to door
FIXED EQUIP	• Sink w/disposal • Dishwasher (NIC) • Refrigerator (NIC)
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Recycling / Trash receptacle • Bottled water dispenser • Table and chairs
BUILT-IN FEAT	• Counter w/ sink • Upper and lower casework
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	CP-1
SPACE NAME	Copy Room
ASSIGNABLE AREA (ASF)	80
FUNCTION	Shared departmental copy room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



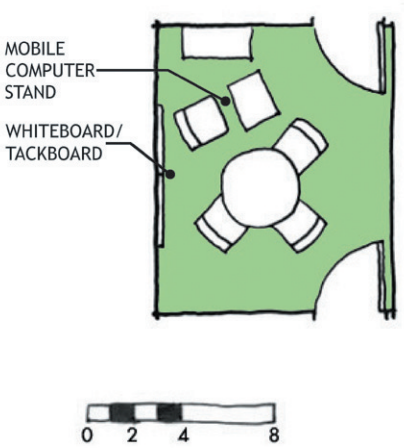
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Not necessary
FIXED EQUIP	Whiteboard, tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Copier (1) • Fax machine (1) • Recycling containers • Paper shredder
BUILT-IN FEAT	• Counter, 34" high with one knee space • Open shelving and staff mailboxes above counter • File pedestal below counter
SPECIAL REQ	None
ACOUSTICS	Acoustical Treatment
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	CR-1A
SPACE NAME	Counseling Room
ASSIGNABLE AREA (ASF)	120
FUNCTION	Capacity 4-6 people, space for informal meetings, and other general use
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



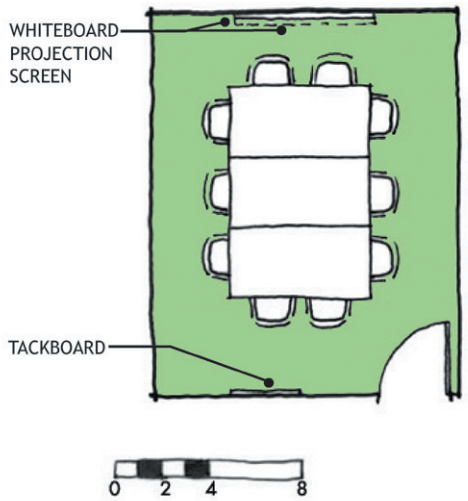
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door / hollow metal frame w/ sidelight adjacent to door
FIXED EQUIP	• Window covering for room darkening/privacy • Whiteboard, tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Conference table • Seating for 4-6
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Wall mounted telephone • Wireless computer access • Floor mounted power/data monument under table

CODE	**CR-1B**
SPACE NAME	**Counseling Room**
ASSIGNABLE AREA (ASF)	120
FUNCTION	Capacity 4 - 6 people, space for informal meetings and student counseling
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



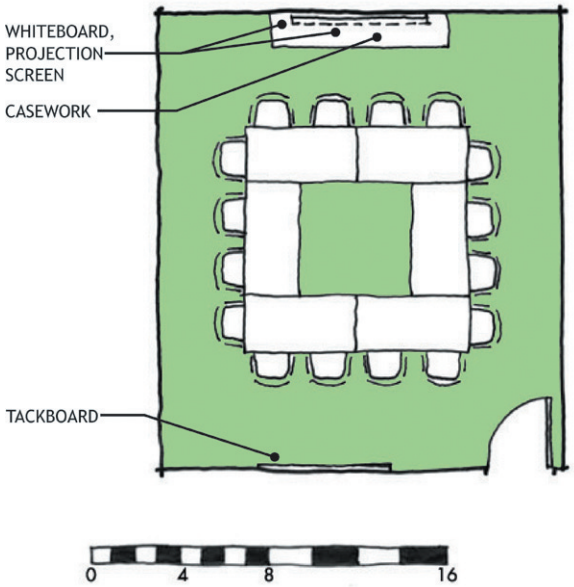
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	See Doors/ Frames
DOORS/FRAMES	Wood doors / hollow metal frame w/ sidelight adjacent to doors desirable
FIXED EQUIP	• Whiteboard, tackboard • Wall mounted brochure racks
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Conference table • Seating for 4-6 • Secure mobile computer stand
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Wall mounted telephone • Wireless computer access • Floor mounted power/data monument under table

CODE	CR-2
SPACE NAME	Counseling Room
ASSIGNABLE AREA (ASF)	200
FUNCTION	Capacity 6-12 people, space for informal meetings, A/V presentations, and other general use
CRITICAL DIM / CLG HT	None / 9'-0" Min
DIAGRAM	



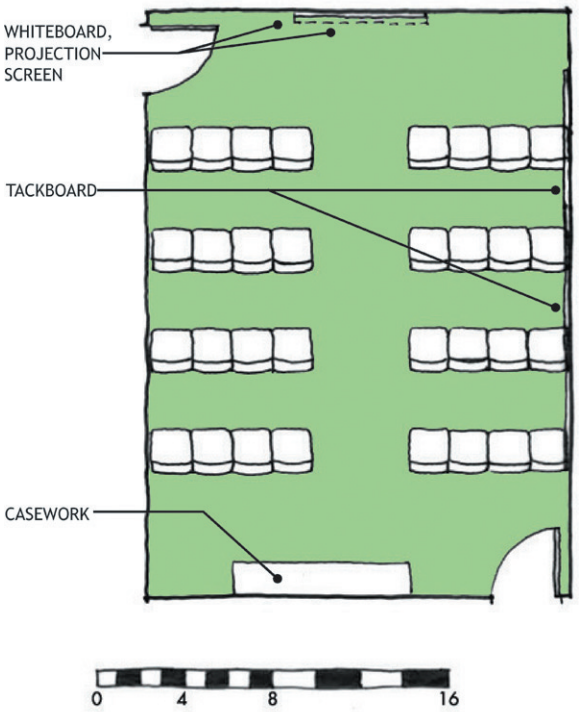
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door w/ sidelight adjacent to door desirable
FIXED EQUIP	• Window covering for room darkening/privacy • Motorized projection screen • Whiteboard, tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Conference table(s) • Seating for 6-12
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	NIC: RGB projector, TV/VCR/DVD
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Wall mounted telephone • Variable light levels • Wireless computer access • Floor mounted power/data monument under tables

CODE	CR-3
SPACE NAME	Conference Room
ASSIGNABLE AREA (ASF)	350
FUNCTION	Capacity 13-20 people, space for informal meetings, A/V presentations, and other general use
CRITICAL DIM / CLG HT	None / 9'-0" Min
DIAGRAM	



FLOOR	Carpet
CEILING	GWB with 2' x 2' acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door / hollow metal w/ sidelight adjacent to door desirable
FIXED EQUIP	• Window covering for room darkening/privacy • Motorized projection screen • Whiteboard, tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Conference table(s) • Seating for 13-20
BUILT-IN FEAT	• Lockable casework/cabinet storage
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	NIC: RGB projector, TV/VCR/DVD
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Wall mounted telephone • Variable light levels • Wireless computer access • (2) Floor mounted power/data monuments under tables

CODE	CR-4
SPACE NAME	Conference Room
ASSIGNABLE AREA (ASF)	500
FUNCTION	Capacity 32 people, space for student tour orientation, informal meetings, A/V presentations, and other general use
CRITICAL DIM / CLG HT	None / 10'-0"
DIAGRAM	

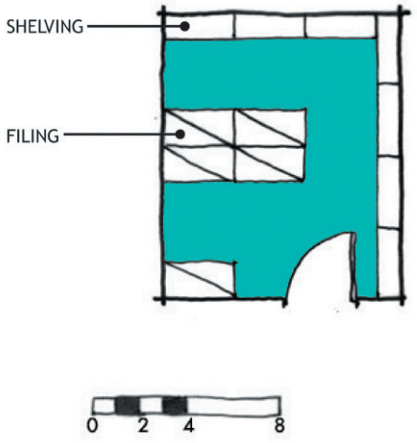


FLOOR	Carpet
CEILING	GWB with 2' x 2' acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door / hollow metal w/ sidelight adjacent to door desirable
FIXED EQUIP	• Window covering for room darkening/privacy • Motorized projection screen (NIC) • Whiteboards, tackboards
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	Seating for 32
BUILT-IN FEAT	Lockable casework/cabinet storage
SPECIAL REQ	Space should be highly visible and have views
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	NIC: Full complement of AV
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Wall mounted telephone • Power/data • Variable light levels • Wireless computer access

CODE	ER-1
SPACE NAME	Electronic Registration
ASSIGNABLE AREA (ASF)	800
FUNCTION	Electronic Registration/ Computer Access, Building entrance
CRITICAL DIM / CLG HT	None / None

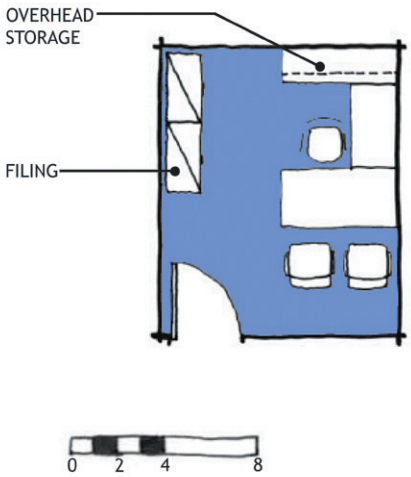
FLOOR	Decorative hard surface
CEILING	Match adjacent
WALLS / BASE	Match adjacent / Match adjacent
WINDOWS	Desirable
DOORS/FRAMES	Exterior: glazed / frameless
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	Seating for 8-12
BUILT-IN FEAT	None
SPECIAL REQ	Counter space and hardwiring for access terminals
ACOUSTICS	No special requirements
A/V EQUIP	Electronic message board and directory (NIC)
SECURITY	CCTV
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	LB-1
SPACE NAME	Catalogs and Archive
ASSIGNABLE AREA (ASF)	120
FUNCTION	Catalog and publication storage
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



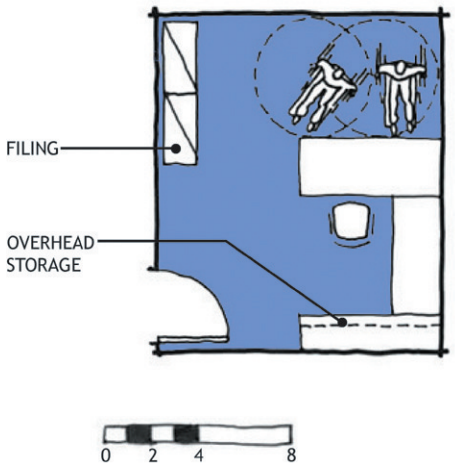
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame w/ sidelight
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	Bookcases and/or file cabinets
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	PO-1
SPACE NAME	Private Office
ASSIGNABLE AREA (ASF)	120
FUNCTION	Private Office
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



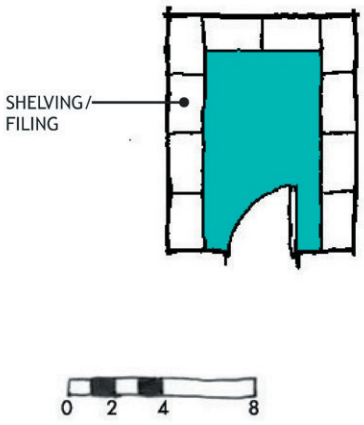
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame w/ sidelight adjacent to door desirable
FIXED EQUIP	• Window covering for privacy • Tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Printer • "U" shaped desk with overhead storage • Desk chair (1) • Four drawer file cabinets (2) • Guest chairs (2)
BUILT-IN FEAT	Coat hook on door
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment to provide sound privacy
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	PO-2
SPACE NAME	Private Office
ASSIGNABLE AREA (ASF)	160
FUNCTION	Accessible Private Office
CRITICAL DIM / CLG HT	Flexible / 9'-0"
DIAGRAM	



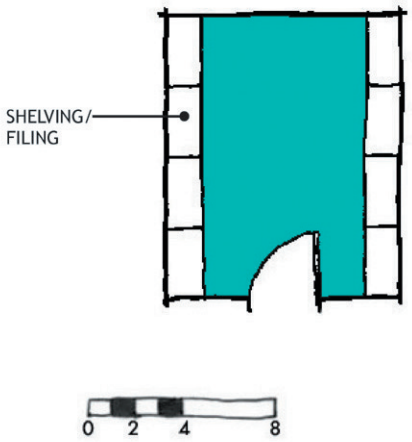
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door/hollow metal frame w/ sidelight adjacent to doors desirable
FIXED EQUIP	• Window covering for privacy • Tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Printer • "U" shaped desk with overhead storage • Desk chair (1) • Four drawer file cabinets (2) • Guest chairs (2)
BUILT-IN FEAT	Coat hook on door
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment to provide sound privacy
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	SR-1
SPACE NAME	Storage Room
ASSIGNABLE AREA (ASF)	80
FUNCTION	Typical Storage Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



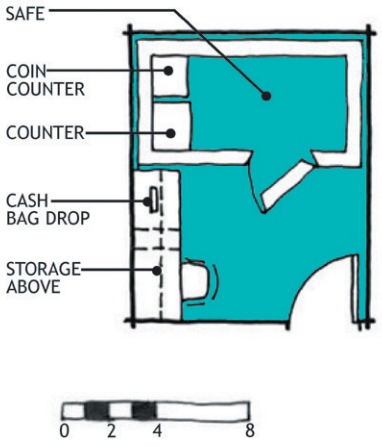
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	Shelving, filing
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	SR-2A
SPACE NAME	Storage Room
ASSIGNABLE AREA (ASF)	120
FUNCTION	Typical Storage Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



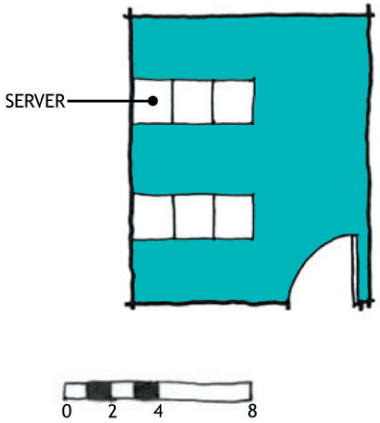
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Shelving, filing • Recycling / Trash receptacles
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	SR-2B
SPACE NAME	Storage Room: Business Services
ASSIGNABLE AREA (ASF)	120
FUNCTION	Vault Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



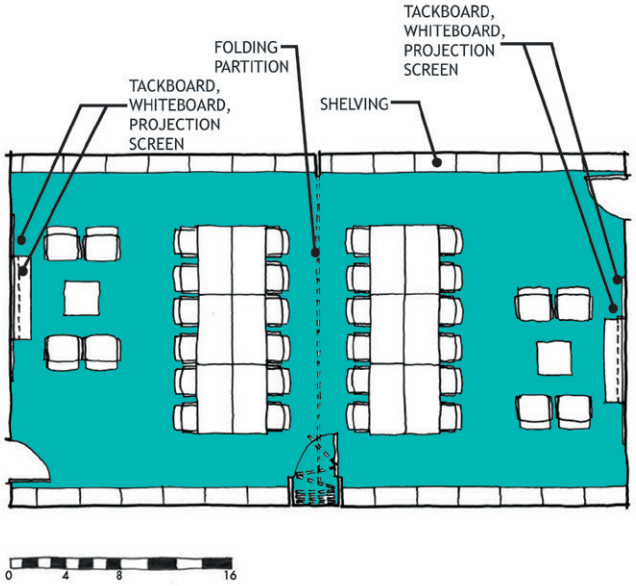
FLOOR	Resilient
CEILING	GWB painted
WALLS / BASE	GWB Painted / Resilient
WINDOWS	None
DOORS/FRAMES	Rated wood door/hollow metal frame
FIXED EQUIP	Safe, Class TL-30 steel or better, with minimum 8 compartments for cash drawers and change funds. Key each drawer separately.
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Coin counter: floor standing, 18"W x 20" D, 40" H w/ adjacent counter, locate inside safe • Recycling/trash receptacles • Task stool
BUILT-IN FEAT	• Counter, 34" high with one knee space • Below-counter cabinet for temporary storage of cash bags, 3"x12" opening in counter above for bag
SPECIAL REQ	One hour fire rating - floors,walls, and ceiling NIC: Closed Circuit Television
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	Alarmed
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Data receptacle above counter • Wall mounted telephone

CODE	SR-2C
SPACE NAME	Storage Room: Technology
ASSIGNABLE AREA (ASF)	120
FUNCTION	Server Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



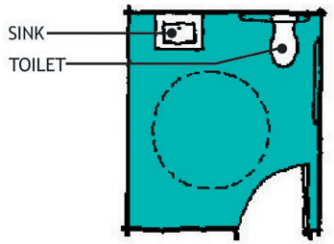
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	None
DOORS/FRAMES	Rated wood door/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	6 Server racks @ 21"w, 23"d, 6'h
BUILT-IN FEAT	None
SPECIAL REQ	One hour fire rating - floors, walls, and ceiling
ACOUSTICS	Equipment sound control
A/V EQUIP	None
SECURITY	Card key access
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	

CODE	TL-1
SPACE NAME	Training/Library: International Students
ASSIGNABLE AREA (ASF)	1100
FUNCTION	Research library/lounge/training room for International Students, locate adjacent to shared coffee area
CRITICAL DIM / CLG HT	None / 10'-0"
DIAGRAM	



FLOOR	Carpet
CEILING	Gypsum board, 2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB Painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood doors/hollow metal frame w/ sidelight adjacent to doors desirable
FIXED EQUIP	• Window covering for light control • NIC: Motorized projection screens (2) • Whiteboards, tackboards
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Shelving • Tables and stacking chairs • Lounge seating (8) • Credenzas (2) • Coffee tables (2)
BUILT-IN FEAT	None
SPECIAL REQ	Optional folding partition
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	Full complement of AV
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Independent controls for A/C • Adjustable lighting levels • Wireless computer access

CODE	TO-1
SPACE NAME	Unisex Toilet Room
ASSIGNABLE AREA (ASF)	70
FUNCTION	Private unisex, handicap accessible
CRITICAL DIM / CLG HT	None / 8'-0"
DIAGRAM	

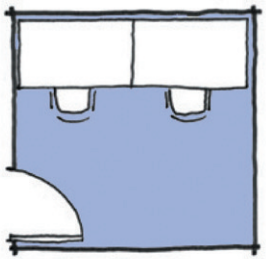


FLOOR	Ceramic tile
CEILING	GWB
WALLS / BASE	Ceramic tile & GWB / Ceramic tile
WINDOWS	None
DOORS/FRAMES	Wood door/hollow metal frame
FIXED EQUIP	Accessible fixtures and accessories
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	None
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	Acoustical privacy
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	TR-1
SPACE NAME	Testing Room
ASSIGNABLE AREA (ASF)	55
FUNCTION	Testing room, capacity 1 person
CRITICAL DIM / CLG HT	None / 9"-0"
DIAGRAM	

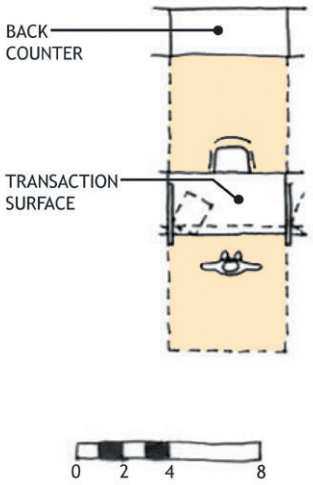
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB, painted / Resilient
WINDOWS	None
DOORS/FRAMES	Wood door with window/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Adjustable height table • Task chair • Desk lamp
BUILT-IN FEAT	None
SPECIAL REQ	NIC: Closed circuit Television
ACOUSTICS	Sound isolation
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Adjustable lighting levels

CODE	**TR-2**
SPACE NAME	**Testing Room**
ASSIGNABLE AREA (ASF)	100
FUNCTION	Testing room, capacity 2 people
CRITICAL DIM / CLG HT	None / 9"-0"
DIAGRAM	



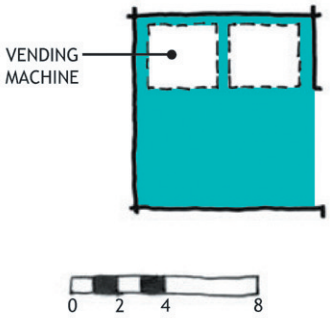
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB, painted / Resilient
WINDOWS	None
DOORS/FRAMES	Wood door with window/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Adjustable height table • Task chairs (2) • Desk lamps (2)
BUILT-IN FEAT	None
SPECIAL REQ	NIC: Closed circuit Television
ACOUSTICS	Sound isolation
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Adjustable lighting levels

CODE	TW-1
SPACE NAME	Transaction Window
ASSIGNABLE AREA (ASF)	70
FUNCTION	Transaction window
CRITICAL DIM / CLG HT	60" wide / 9-0"
DIAGRAM	



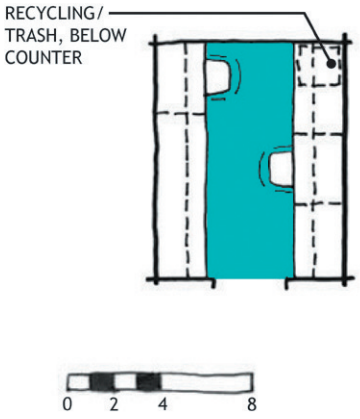
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	None / None
WINDOWS	Desirable
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • File pedestal below transaction counter
BUILT-IN FEAT	• 34" h transaction counter with side panels • 34" h back counter with storage below
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for sound privacy
A/V EQUIP	None
SECURITY	Lockable after hours
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Data and electrical receptacles at each window

CODE	V-1
SPACE NAME	Vending Machine Area
ASSIGNABLE AREA (ASF)	60
FUNCTION	Vending area, integrated or adjacent to building circulation
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



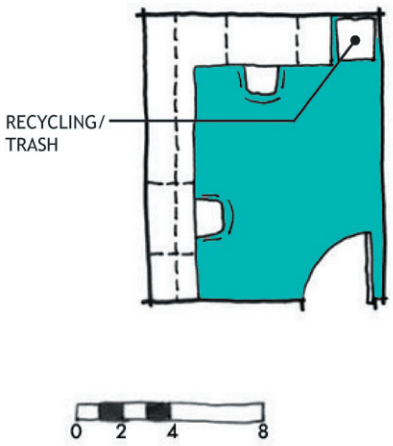
FLOOR	Match adjacent
CEILING	Match adjacent
WALLS / BASE	Match adjacent / Match adjacent
WINDOWS	None
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	Vending machines (2)
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Electrical outlets: coordinate power requirements with equipment needs

CODE	WR-1
SPACE NAME	Work Room
ASSIGNABLE AREA (ASF)	80
FUNCTION	Typical Work Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



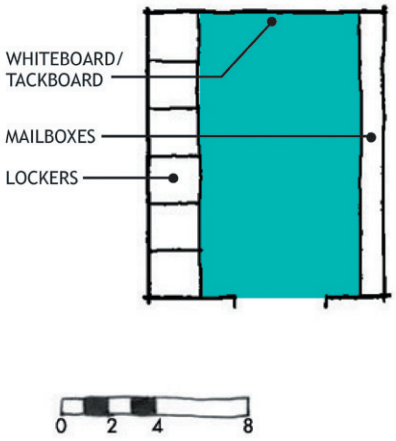
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Recycling / Trash receptacles • Task stools (2)
BUILT-IN FEAT	• 34" high counters with 2 knee spaces • Closed shelving above counter • Storage cabinets below counter
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Power and data receptacles above counters • Wall mounted telephone

CODE	WR-2A
SPACE NAME	Work Room
ASSIGNABLE AREA (ASF)	120
FUNCTION	Typical enclosed work room for support of administrative staff
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



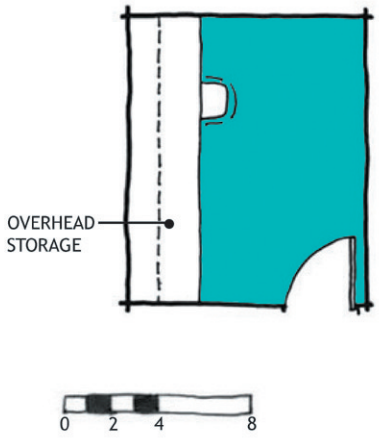
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Desirable
DOORS/FRAMES	Wood door/hollow metal frame with sidelight adjacent to door
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Task stools (2) • Recycling / Trash receptacles
BUILT-IN FEAT	• 34" high counters with knee spaces • Closed shelving above counter • Storage cabinets below counter
SPECIAL REQ	None
ACOUSTICS	Acoustical treatment for noise control
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Power and data receptacles above counters • Wall mounted telephone

CODE	WR-2B
SPACE NAME	Work Room Student Special Services
ASSIGNABLE AREA (ASF)	120
FUNCTION	Lockers and mail
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



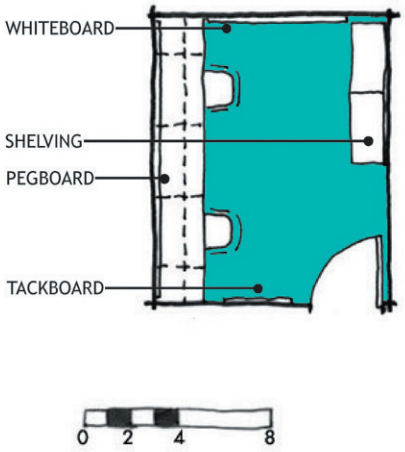
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Not necessary
FIXED EQUIP	• 24 Lockers (24"w x 24"d x 24"h) • Tackboard • Whiteboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	None
BUILT-IN FEAT	50 open mailboxes, accessible
SPECIAL REQ	Lockers, accessible
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	WR-2C
SPACE NAME	Work Room Student Special Services
ASSIGNABLE AREA (ASF)	120
FUNCTION	Alternate Media Room: room for production of Braille media
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



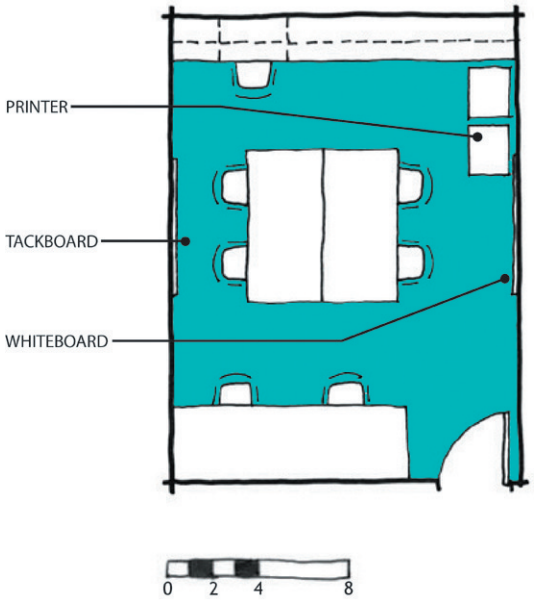
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door with window/hollow metal frame
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Braille printer • 2 computers • Scanner • Laser printer • Task chair
BUILT-IN FEAT	• 30" high counter (36" deep) with knee space • Closed shelving above counter • Storage cabinets below counter
SPECIAL REQ	None
ACOUSTICS	Equipment sound control
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Power and data receptacles above counter

CODE	WR-2D
SPACE NAME	Work Room: Technology
ASSIGNABLE AREA (ASF)	120
FUNCTION	Repair Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



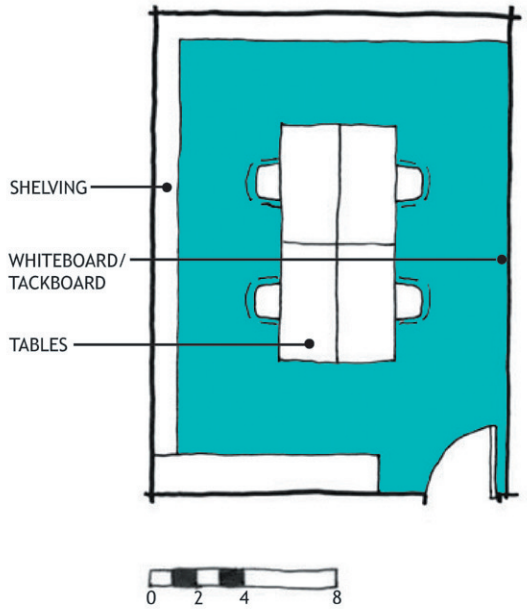
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/Hollow metal frame
FIXED EQUIP	• Pegboard above counter • Tackboard • Whiteboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Task stools (2) • Cabinets (2), @ 48"w x 24"D • Recycling / Trash receptacles
BUILT-IN FEAT	• 34" high counters with knee spaces • Open shelving above counter • Storage cabinets below counter
SPECIAL REQ	None
ACOUSTICS	Sound control
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• 4 Power and data receptacles above counters • Wall mounted telephone

CODE	WR-3A
SPACE NAME	Work Room: Outreach
ASSIGNABLE AREA (ASF)	300
FUNCTION	Graphics Layout
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



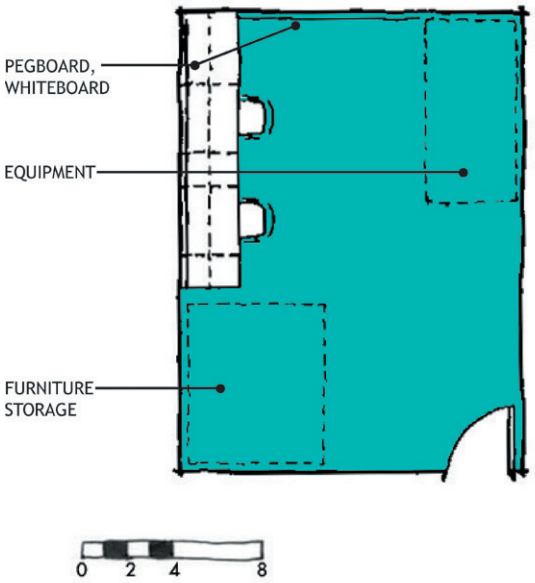
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/hollow metal frame
FIXED EQUIP	Whiteboard, tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• 4 Computers on counter • 2 floor standing printers, @ 27"W x 22"D • 34" H tables • Task chairs (3) • Task stools (4)
BUILT-IN FEAT	• 2 - 29" H counters with knee spaces • Closed shelving above counters • Storage cabinets below counters
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Power and data receptacles above counters • Wall mounted telephone • Floor mounted power/data monument under central tables

CODE	WR-3B
SPACE NAME	Work Room: Outreach
ASSIGNABLE AREA (ASF)	300
FUNCTION	Mailer Room
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



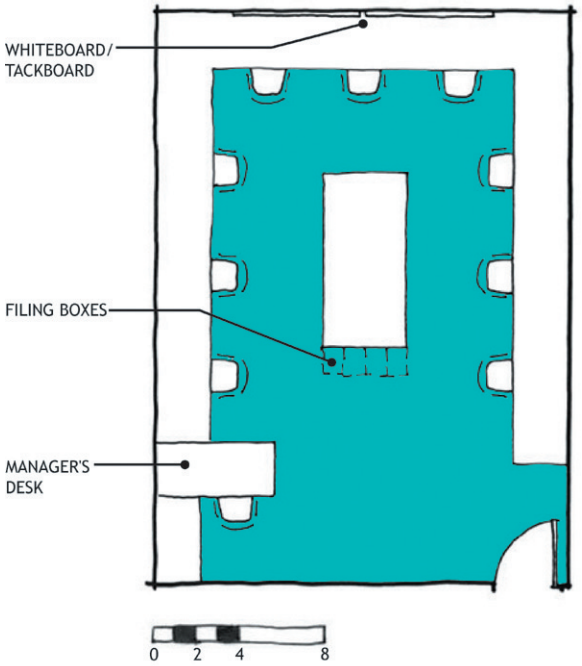
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/Hollow metal frame
FIXED EQUIP	• Whiteboard • Tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Tables - 34" h • Task stools (4) • Recycling / Trash receptacles
BUILT-IN FEAT	• 12" deep shelving • 18" deep shelving
SPECIAL REQ	None
ACOUSTICS	Sound control
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Wall mounted telephone • Floor mounted power/data monument under central tables

CODE	WR-3C
SPACE NAME	Work Room Student Special Services
ASSIGNABLE AREA (ASF)	300
FUNCTION	Wheelchair Repair
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



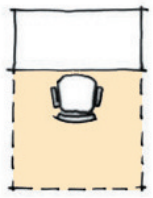
FLOOR	Resilient
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/Hollow metal frame
FIXED EQUIP	• Workbench • Pegboard, white board
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Storage • Task stools (2) • Drill press, bench grinder
BUILT-IN FEAT	• 34" high workbench with knee spaces • Closed shelving above workbench • Storage cabinets below workbench
SPECIAL REQ	Floor space for furniture storage
ACOUSTICS	Equipment sound control
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	• Power and data receptacles above counter • Wall mounted telephone • Utility sink • NIC: Battery chargers - special ventilation requirements

CODE	WR-4
SPACE NAME	Work Room: Technology
ASSIGNABLE AREA (ASF)	500
FUNCTION	Optical Imaging
CRITICAL DIM / CLG HT	None / 9'-0"
DIAGRAM	



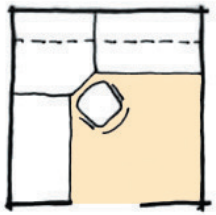
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	Wood door/Hollow metal frame
FIXED EQUIP	• Whiteboard • Tackboard
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Task chairs (10) • Manager's desk w/ return • 4'-0" x 8'-0" table for staging documents
BUILT-IN FEAT	29" H counter with 9 scanning stations
SPECIAL REQ	• Floor space for 4 stacks of banker boxes • Coat hooks on wall
ACOUSTICS	Equipment sound control
A/V EQUIP	None
SECURITY	Lockable
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Data and electrical receptacles at each station and desk

CODE	WS-1
SPACE NAME	Work Station
ASSIGNABLE AREA (ASF)	50
FUNCTION	Modular furniture, student work station
CRITICAL DIM / CLG HT	None / 9'-0" Min
DIAGRAM	



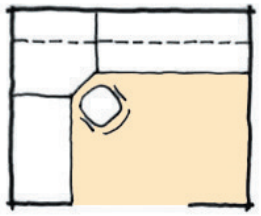
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	None / None
WINDOWS	Desirable
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• 30" deep work surface • Task chair • Workstation: with potential for work surfaces, power and data, storage above and below, task light and keyboard drawer. See diagram. Panels may be glass or fabric covered, varying heights.
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	None
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	WS-2
SPACE NAME	Work Station
ASSIGNABLE AREA (ASF)	65
FUNCTION	Modular furniture, standard work station
CRITICAL DIM / CLG HT	Flexible / 9'-0" Min
DIAGRAM	



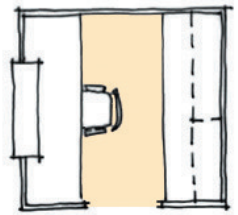
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	None / None
WINDOWS	Desirable
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Work surfaces and storage per diagram • Task chair • Workstation: with potential for work surfaces, power and data, storage above and below, task light and keyboard drawer. See diagram. Panels may be glass or fabric covered, varying heights.
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	None
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	WS-3
SPACE NAME	Work Station
ASSIGNABLE AREA (ASF)	80
FUNCTION	Modular furniture, standard work station for users requiring additional equipment, such as printer, etc.
CRITICAL DIM / CLG HT	Flexible / 9'-0" Min
DIAGRAM	



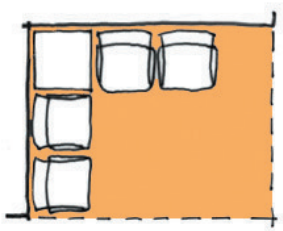
FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	None / None
WINDOWS	Desirable
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Task chair • Workstation: with potential for work surfaces, power and data, storage above and below, task light and keyboard drawer. See diagram. Panels may be glass or fabric covered, varying heights.
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	None
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	WS-4
SPACE NAME	Work Station
ASSIGNABLE AREA (ASF)	75
FUNCTION	Modular furniture, departmental reception station
CRITICAL DIM / CLG HT	Flexible / 9'-0" Min
DIAGRAM	



FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	None / None
WINDOWS	Desirable
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Computer • Task chair • Workstation: with potential for work surfaces, power and data, storage above and below, task light and keyboard drawer. See diagram. Panels may be glass or fabric covered, varying heights.
BUILT-IN FEAT	None
SPECIAL REQ	Locate adjacent to department entry
ACOUSTICS	None
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	None

CODE	WT-1
SPACE NAME	Waiting Area
ASSIGNABLE AREA (ASF)	80
FUNCTION	Capacity 4 people
CRITICAL DIM / CLG HT	None / 9-0"
DIAGRAM	



FLOOR	Carpet
CEILING	2' x 2' Acoustical panels in suspended grid
WALLS / BASE	GWB painted / Resilient
WINDOWS	Not necessary
DOORS/FRAMES	None
FIXED EQUIP	None
MOVABLE EQUIP AND FURNITURE, (N.I.C.)	• Lounge chairs • Side table
BUILT-IN FEAT	None
SPECIAL REQ	None
ACOUSTICS	No special requirements
A/V EQUIP	None
SECURITY	None
Systems	*See narratives for typical features for HVAC, Electrical, Plumbing, Lighting, and Communication*
ADDITIONAL REQ	Electrical receptacle

4.1

System Narratives

BUILDING MATERIALS

The buildings forming the Carillon Mall are constructed of a unified palette of materials, colors and massing dating to the founding of the campus in the 1960s. The buildings largely consist of flat-roofed, rectilinear, multi-story masonry buildings, with combinations of punched windows and curtainwall glazing. Shaded covered entrances and walkways frequently form the public approach to each building, and sunshades buffer heat load while allowing for daylight. The exterior building vocabulary includes a UCR blend masonry veneer, stucco and exposed concrete framing.

The SASS Building will draw its exterior material inspiration from its context. A preliminary list of exterior building materials includes masonry veneer, stucco, metal sunshades, storefront, windows and curtainwall. The materials palette will be evaluated for design, performance and cost, as well as consistency with the needs of the sustainability requirements of the project. Cost control plays a significant role in the materials selected, and the scope of individual materials will be refined and adjusted to meet ongoing cost concerns.

Covered walkway

Metal sunshade

Material palette from the Chemical Science Building

STRUCTURAL

General

This structural narrative is prepared for the new Student Academic Support Services (SASS) Building at the UC Riverside campus located in Riverside, California. The project consists of a three story, 58,140 -GSF Type III - 1 HR construction building. The SASS Building will be founded at grade on shallow spread footings.

The lateral system for the SASS Building is proposed as special concentric steel braced frames in both of the building's principal directions. Special concentric braced frames will utilize HSS tubular sections for the bracing elements and structural steel wide flange shapes for the columns and beams.

The gravity framing system for the roof and floors will consist of 2-1/2" concrete fill over 3" metal deck supported by steel W18x35 beams at 10'-0" on center spanning to steel girders. The interior structural steel girders will be W24x62 spanning 30' and the exterior structural steel girders will be W24x55 around the perimeter at each level. Typical columns which are not part of the lateral system will be structural steel W12x65.

The project will be governed by the 2001 California Building Code. This project will have a structural peer review and plan check as required by the campus. Based on limited information obtained from other projects on campus, we have assumed foundations to be constructed with spread footings.

Design Criteria

Design conforms to the California Building Code, 2001 Edition.

Live loads:

Roof (flat)	20 psf
Roof (sloped)	16 psf
Office	80 psf LL + 20 psf partition load
Corridors	100 psf

Wind Analysis:

Basic wind speed	70 mph
Exposure	B

Seismic Analysis:

Dynamic lateral force procedure

Ground motion:

Elastic Design Response Spectra (see CBC Chapter 16)

Analysis/design:

Utilizes the "ETABS" computer software

Shallow Spread Footings

Footings shall extend to such depth as to bear upon firm, undisturbed native soil or engineered fill. All abandoned footings, utilities, etc. shall be removed. All footings shall be founded at a depth at least 18 inches below the lowest adjacent grade.

Slabs On Grade

The sub capillary break materials under the concrete slabs on grade shall be confirmed with the Geotechnical Report. Provide 2" of moist sand over a 10 mil vapor barrier over 4" rock course under slabs on grade. Rock course shall be rolled to a smooth surface.

Reinforcing Steel

Reinforcing Steel detailing, fabrication, and placement shall conform to the "Uniform Building Code", Chapter 19; the "Manual of Standard Practice of the Western Concrete Reinforcing Steel Institute", latest edition; and the "Building Code Requirements for Structural Concrete and Commentary", ACI 318-95; unless otherwise noted.

Standards:
Reinforcing steel shall conform to the following standards:

Deformed Bars, #3	ASTM A615, Grade 40
Deformed Bars, #4 and larger	ASTM A615, Grade 60
Welded reinforcement (when specified by Engineer)	ASTM A706
Welded Wire Fabric, WWF (smooth wire)	ASTM A185
Epoxy Coated Reinforcing (when specified by Engineer)	ASTM A775 and A615

Concrete Work

Forms For Edge of Foundations shall be properly constructed conforming to concrete surfaces as shown on the drawings, sufficiently tight to prevent leakage, sufficiently strong, and braced to maintain their shape and alignment until no longer needed to support the concrete. Forms for exposed concrete shall be plywood, using sheets as large as possible, with all joints tightly fitted and blocked, and shall produce a finished concrete surface which is smooth, true, and free from blemishes according to accepted standards for architectural concrete.

Concrete shall be ready mixed conforming to ASTM C94. Cement shall be Portland Cement Type II, conforming to ASTM C150. All hardrock (H.R.) Concrete used in slabs on grade and fill on metal deck shall be designed for low shrinkage (L.S.). Acceptable coarse aggregates for low shrinkage concrete include Kaiser Clayton, Granite Rock, or Limestone. Fine aggregates acceptable for low shrinkage concrete include Angel Island sands. Alternative aggregates may be submitted provided they provide a concrete mix with a shrinkage limitation of 0.040% after 28 days of drying. Submit test data to Architect for review.

Concrete shall have the following characteristics:

Concrete Location	Aggregate	Minimum Strength @28 days	Maximum Slump*	Maximum Cement Content	Water / Cement Ratio
Footings	1-1/2" H.R	3000 psi	3-1/2"	5 sacks	0.60
Slab on Grade	3/4" H.R.-L.S.	3000 psi	3-1/2"	5 sacks	0.45
Fill on Metal Deck	3/4" H.R.-L.S.	4000 psi	3-1/2"	6 sacks	0.45

* Slump shall be the minimum consistent with proper placing.

Structural Steel and Miscellaneous Metal

All steel wide flange shapes shall conform to ASTM A992. Unless otherwise noted, all other steel plates and shapes shall conform to ASTM A36. Steel Pipe shall conform to ASTM A53 Grade B (Fy = 35 ksi) or ASTM A501 (Fy = 36 ksi). Structural Tubing shall conform to ASTM A500 Grade B.

All steel to steel bolted connections shall be bolted with high strength bolts according to ASTM A325 and ASTM A490, as approved by the Research Council of Riveted and Bolted Structural Joints. Other bolted connections, including anchor bolts, shall be bolted with unfinished bolts according to ASTM A307.

All welded connections shall be welded according to the "Structural Welding Code - Steel", AWS-D1.1, latest edition. Welding shall be performed by welders certified for the welds to be made. All welding should be done with E70XX electrodes, unless noted otherwise. Refer to the specifications for the welding process to be used.

Metal Decking

Metal decking shall be cold formed of sheet steel conforming to ASTM A446 Grade E and having a galvanized coating conforming to ASTM A525 G60. The required minimum structural properties are 18 gage W3 Vercor floor deck for both floor and roof application, as determined in accordance

with the AISI "Specifications for Light Gage Steel Members". Equivalent decking with equal or greater properties may be used only if written permission is obtained from the Engineer.

Flashing and closure plates shall be 16 gage minimum and shall be provided at the ends of all units, around columns, and at all perimeter locations requiring concrete.

Exterior Light Metal Wall Structural Framing (Bidder Designed)

Light metal structural framing shall be fabricated and erected according to manufacturer's recommendations. All structural properties shall be computed in accordance with the AISI "Specifications for the Design of Cold Formed Steel Structural Members," latest edition.

Unless otherwise noted, steel shall conform to the following specifications:

a. Studs, runners, and joists, painted, 16 gage and heavier: ASTM A1011 Grade 50, modified to a minimum yield point of 50 ksi.

b. Studs, runners, and joists, galvanized, 16 gage and heavier: ASTM A653 Grade 50, minimum 50 ksi yield.

c. Studs, runners, and joists, painted, 18 gage and lighter: ASTM A1008 Grade 33, modified to a minimum yield point of 33 ksi.

d. Studs, runners, and joists, galvanized, 18 gage and lighter: ASTM A653 Grade 33, minimum 33 ksi yield.

MECHANICAL SYSTEMS

Outdoor Design Temperature

Function	Dry Bulb		Wet Bulb	
	˚C	˚F	˚C	˚F
Summer Design (2.5% DB/ 1% WB)	36.7	110	22	71
Evaporative cooling equipment, summer	---	---	22	71
Condensers, summer	38.3	115	---	---
Winter Design (99% DB)	2.2	36	---	---

Miscellaneous Outdoor Design Data:

Latitude: 33.88

Longitude: 117.27

Elevation: 1539 feet, 469 meters

Summer Mean Daily Range: 29.0 F, 16.1 C

Indoor Design Conditions

Space	Summer			Winter		
	Temp		Relative Humidity	Temp		Relative Humidity
	˚C	˚F		˚C	˚F	
General Spaces (Private Offices, Open Office Areas, Conference Rooms, Training Rooms, Copy Room/ Workrooms, Corridors, and Other Support Spaces)	25.6	78	50% (1)	21.1	70	NA
Electronic Equipment Rooms	26	78	60%max (1)	20	68	40% min. (1)
Storage Areas within Air-conditioned Spaces (3)	UC		UC	10	50	UC
Electrical Rooms	MV		UC	10	50	UC
Toilets / Janitor Closets	MV		UC	20	68	UC
Elevator Equipment Rooms	29	84	UC	10	50	UC
Switchgear Room	MV		UC	10	50	UC

MV - Mechanical Ventilation at 10 degrees F delta T.

UC - Uncontrolled

(1) Relative humidity will not be controlled, but air-conditioning equipment will be selected at approximately 50-percent relative humidity room condition. If minimum humidity is a concern, humidifiers will be added locally.

(2) No controls will be provided to ensure maximum humidity control beyond that obtained by normal air conditioning, except a humidifier will be provided at the for minimum humidity control if required by UCR.

(3) Storage rooms will typically be exhausted with make-up air coming from air-conditioned spaces. Larger storage rooms may be air-conditioned.

Internal Heat Loads
Heat loads are based on the engineering practices of ASHRAE Fundamentals and input from the University. Specific details of the load calculations will be confirmed during the design phase.

Natural Ventilation
Natural ventilation will be sued when outside air temperatures allow economizer operation. Other natural ventilation, such as operable windows, may be considered for perimeter areas of the building.

Ventilation Rates
The following is a summary of the Occupancy rates per Title 24 and of the minimum ventilation rates of required outdoor air per ASHRAE Standard 62-89 that will be met by the design:

Location	Occupancy	Calculation Method
Conference Rooms	15 SF/Person	15 CFM/Person
Lobby/One-Stop	7 SF/Person	15 CFM/Person
Training	20 SF/Person	15 CFM/Person
Testing	15 SF/Person	15 CFM/Person
Library	50 SF/Person	15 CFM/Person
Office Areas	100 SF/Person	15 CFM/Person

CO2 measuring/monitoring stations will be used to control the amount of ventilation air introduced to the HVAC systems. This will assure good air quality without paying an energy premium to heat or cool outside air.

Filtration
Air filter efficiencies will be based on ASHRAE Test Standard 52.1-1992. Typically air-handling units will have 30% efficient prefilters and 65% final filters in manufacturer's standard frames. Fan coil units, heat pumps and split-system air-conditioning and heat pump units will be provided with throwaway filters.

Heating & Cooling Systems
General
The campus utilizes a Central Plant that distributes high-pressure steam, condensate, and chilled water to the all of the buildings on the campus. The steam and chilled water are delivered to each building's HVAC unit's heating and cooling coils. Each utility will be electronically metered and reported to the EMS (Energy Management System) in accordance with campus Building Standards. These units vary from hot water terminal units, single zone units, multi zone units and VAV systems. For the new SASS Building, steam will serve two heat exchangers. One will provide hot water for space heating and the second will be a double wall heat exchanger for providing domestic hot water.
Heating and cooling systems will be designed based on specific requirements related to the area's function, life cycle cost considerations, general design standards, (ASHRAE, SMACNA), building codes, LEED requirements/ recommendations, and sound engineering judgment. UCR Physical Plant Building Standards will also be included.

Hydronic Piping
Above ground Steam, Condensate, Hot and Chilled Water supply and return piping:
2" and smaller will be Type B (Type L), drawn-temper copper tubing with solder joints or steel pipe with threaded joints. At contractors option 4" and smaller will be Type B (Type L), drawn-temper copper tubing with solder joints. (Water piping only – steam and condensate shall be steel pipe.)
2 ½" and larger will be Schedule 40 steel piping with welded or flanged joints (Mechanical couplings may be used in exposed locations where accessible).

Condensate drain lines:
Type B (Type L) drawn-temper copper tubing with braised joints or schedule 40 PVC pipe.

Below ground Steam, Condensate, and Chilled Water supply and return piping:
Piping will be a pre-insulated system (Perma-pipe or equal) with steel carrier pipe for Steam and Condensate), and PVC Class 160 bell and spigot for Chilled Water supply and return.

Air Handling Systems

General

It is anticipated three Air Handling Units (AHUs) will be used, although the final design could use fewer or slightly more. This will be determined based on functional areas, physical constraints, and in accordance with the final architectural layout.

All air handling units will have a mixing section, filter sections, chilled water cooling coil (minimum of ten rows), and one or two fan (supply and return) sections. All will be Variable Air Volume (VAV) air handling units distributing air through medium velocity ductwork to terminal units and then through low velocity ductwork to the spaces. Typically VAV terminal units will be provided with hot water heating coils (minimum four rows), where a heat load exists, and will be allowed to turn down to 30-percent airflow before the heating is allowed to operate. Static pressure sensors in the ductwork will allow the air handling unit to vary airflow through the use of variable frequency drives, and still maintain required supply ductwork static pressure. VAV return fans will be equipped to measure airflow in the supply and return air streams to track supply, return and outside air requirements.

Fan powered VAV terminal units may also be considered to assure minimum air flows. Perimeter zones will have hot water heating coils with consideration for recooling coils at interior. However, the first cost for recooling coils is not currently budgeted.

Where required due to acoustical considerations, double wall ductwork with perforated liner will be provided. Maximum flex duct length will be seven feet, and three feet maximum length at VAV terminal flex duct connections. Internally lined return air boots will be used to transfer air from sound sensitive rooms to the return air plenum.
Typical zoning will be such as to group the largest number of common exposure and function spaces to a single terminal unit or zone.

Air-side enthalpy economizers will be used to bring in up to 100-percent outdoor air for free cooling when outdoor ambient temperature permits. Air blenders will be utilized as required to prevent stratification of return and outside air. Electronic equipment and elevator equipment rooms will be provided with packaged, or split, air-cooled direct expansion air conditioning units as a backup to the building air conditioning system. Where applicable, the equipment itself may be cooled with chilled water.

Building Block Descriptions

Building Common Elements
Common elements will be served from the most convenient AHU. Rooms with high ceilings will be considered for fan powered VAV terminal units to assure adequate air movement at low load conditions.
Public toilets will be exhausted by a central toilet exhaust system.

A back-up direct expansion (DX), either split or small packaged system will be provided to serve Electronic Equipment rooms that house servers or other electronic equipment requiring 24-hour air conditioning.

Department Common Elements
Departments will share certain rooms. These may include conference rooms, coffee rooms, copy rooms etc. In situations like this, a decision needs to be made regarding the correct AHU to serve a room. In more critical rooms, or where departments may have significantly different operating hours, it would be possible to serve rooms from two AHU systems.

These types of rooms, although shared, will have their own thermostatic controlled zone. Therefore, even though shared, the actual users of the room will control the room environment. This will prevent potential problems of control.

Copy rooms will have dedicated exhaust systems to satisfy LEED criteria for the environment. This meets the criteria of LEED Credit 5, the Indoor Chemical and Pollutant Source Control.

Department Building Blocks
Private offices will be grouped based on exposure for temperature control. Typically, a zone will have approximately three to four offices included, although fewer may be desired for some offices. The number of offices per zone is a function of budget. Acoustics are a consideration, especially as a return plenum above the ceiling is planned throughout the building. Return air sound boots can be used to minimize sound transmission.

Every conference room will be a dedicated zone with its own thermostat. Return air sound boots will typically be used for acoustic control. The Library/Training Room will have two zones to allow for the folding partition.

Testing Rooms can be grouped for temperature control. Acoustics are very important here so return air sound boots will be used and sound attenuators may also be considered on supply air ductwork.

Testing and Balancing
A testing and balancing (TAB) strategies and procedures plan will be developed. A meeting will be held with all relevant parties including representatives of the University, Architect/ Engineer, Contractor, TAB Subcontractor, HVAC Controls Subcontractor, Equipment Manufacturer, and other support personnel to reach consensus on the requirements and procedures for the TAB work.

After completion of the TAB work, the Commissioning Phase of the project will start as directed by the Commissioning Supervisor. The Commissioning Phase will include three test phases that are separate and distinct from the TAB phase, System startup Verification, Functional Performance Testing, and System Demonstration. The different stages of the TAB and Commissioning work will involve all of the HVAC systems serving the facility.

HVAC System Controls
The University currently has a centralized Direct Digital Control (DDC) System from Johnson Controls. This building will use an extension of that system. The HVAC systems will be controlled by this DDC system utilizing stand-alone controllers in an open, distributed network. This state-of-the-art system will provide great flexibility since it can be modified or expanded as required. This will allow the system to be implemented with individual pieces of equipment provided with a baseline number of control "points". Additional points can then be added later for greater energy efficiency or additional control functions as desired.

The DDC system will monitor and control all major equipment including pumps, air handling units, VAV boxes, and exhaust fans. The DDC system will consist of a central operator's terminal communicating with the local control modules, unit controllers, and interface panels through a local area network. All local control modules will be provided with at least 40% spare points. Training will be provided for UCR personnel as outlined in Building Standards.

The existing central operator's terminal (workstation) is located in the central plant. Through this workstation the operator will be able to monitor HVAC system and equipment status and performance, and will be able to program and modify set points, operating modes, operating times, and other systems parameters. The HVAC control system will include detailed graphic displays, alarm monitoring and annunciation, communications control between all elements of the DDC system, and application packages for energy management, facility management, power failure/automatic restart, and system diagnostics.

Applicable Codes, Regulations and Standards
Parts of the following criteria are applicable to the HVAC design:

American Society of Heating, Refrigeration, and Air Conditioning Engineers (ASHRAE) Standards:

- 2001, Fundamentals
- 2000, HVAC Systems and Equipment
- 2003, HVAC Applications
- 2002, Refrigeration
- Test Standard 52.1-1992, Method of Testing Air-Cleaning Devices Used in General Ventilation for Removing

Particulate Matter.

- Standard 62-2001, Ventilation for Acceptable Indoor Air Quality
- ASHRAE Standards 15, 90.1, 90A, and 96.

National Fire Protection Association (NFPA) Standards, including but not limited to:

- NFPA 5000
- NFPA 90A, Air Conditioning and Ventilating Systems, 1999.
- NFPA 101, Life Safety Code, 2000

The Uniform Mechanical Code, 2003 Edition, and Uniform Plumbing Code, 2003 Edition.

SMACNA HVAC Duct construction Standards – Metal and Flexible and HVAC Air Duct Leakage Manual.

LEED

Systems Design Modeling

Incorporated with the building systems design process, the campus will utilize "Savings by Design" as a means of providing systems modeling as a design tool.

The mechanical systems offer good opportunities for LEED credits. Any miscellaneous refrigeration systems shall use only HCFCs or HFC refrigerants. Variable speed drives will be used for fans and pumps. The goal will be to use 20% less energy than prescribed by Title 24.

Natural Ventilation

Although the design temperature for Riverside is quite high, there are occasioins when natural ventilation can be used. The courtyard and narrow building shapes are conducive to good cross ventilation which should be considered. Cool evenings also provide opportunity to purge the building at night with cool outside air.

PLUMBING SYSTEMS

Fixtures

Commercial grade vitreous china plumbing fixtures will be provided for public and staff facilities. Water closets will be low flow, wall hung type with open front seats without covers. Flush valves will be exposed, lever actuated type. Lavatories will be wall hung with single lever mixing faucets, grid drains, and exposed angle stops with loose key handles.

Note that LEED considerations may affect the following suggested fixtures.

The following fixtures will be used:

Water Closets

Water closets will be vitreous china, elongated bowl with open front seat, wall-mounted, flushometer type and supported by concealed chair carriers. Flush valves will be cast brass with a polished chrome finish. Water closets will be low-flow type designed for a maximum water consumption of 1.6 gallons per flush. Handicapped water closets will be installed in compliance with ADA standards. Dual flush water closets should also be considered.

Lavatories

Lavatories will be white vitreous china, wall hung shelf-back type. Faucets will have aerators. Lavatories will be supported by concealed chair carriers.

Urinals

Urinals will be wall hung white vitreous china, siphon jet low-flow type designed for a maximum water consumption of 1.0 gallon per flush. Waterless urinals should also be considered to be consistent with sustainability/resource conservation as part of the project objectives.

Service Sinks

Service sinks will be floor mounted and constructed of precast terrazzo with stainless steel rim guard. Faucet with vacuum breaker will be wall mounted above the sink.

Electric Water Coolers
Electric water coolers will be surface wall-mounted type and will be fabricated from 16 gage, type 304 stainless steel. Bubblers for water fountains will be operated by a front push-button type control.

Wall Hydrants
Wall hydrants will be key-operated recessed type with integral vacuum breaker. Wall hydrant will be provided on exterior walls at convenient locations. Hose bibs will be provided at convenient locations on the roof.

Miscellaneous
Engineered shock absorbers will be provided for groups of flush valves and other fast acting valves. One shock absorber will be provided per general and special housing utility chase (maximum eight flush valves per shock absorber).

Piping

Piping Schedule

Piping System	Weight	Material	Insulated
Domestic Water, Aboveground ½" to 4"	Type L	Copper	Yes
Larger than 4"	Schedule 40	Galvanized Steel	Yes
Domestic Water, Below ground ½" to 3"	Type K	Copper	No
Larger than 3"	---	Cement-lined ductile-iron	No
Sanitary Sewer and Vent Aboveground	Service weight	Hubless Cast-iron	No
Sanitary Sewer and Vent Below ground	Service weight	Hub-and-Spigot Cast-iron	No
Storm Drainage Aboveground	Service weight	Hubless Cast-iron	Horizontal
Storm Drainage Below ground	Service weight	Hub-and-Spigot Cast-iron	No
Natural Gas Distribution Piping within Building	Schedule 40	Black Steel	No
Natural Gas Distribution Piping outside of building	Rated 60 and/or 100 psi	Polyethelyne	No

Other Plumbing Considerations

Domestic Hot Water
Steam to water heat exchanger storage type water heaters will be provided to deliver 115 degree F water to the sinks and lavatories. Hot-water-return circulation systems will be provided on each water heating system as necessary. Pumps and water temperatures shall be controlled by the Energy Management System. City water consumption shall be metered by the EMS per campus Building Standards.

Domestic Water
Domestic/fire protection water will be run below ground and enter the facility at a mechanical room. Shut-off valves to each toilet room will be provided for isolation to facilitate repair and maintenance.

Sanitary Sewer and Vent
A sanitary sewer and vent system will be provided to serve all plumbing fixtures in this project.
Square type floor drains will be provided in all toilet rooms.
Trap primers will be provided for all floor drains.
Cleanouts will be provided at the base of each stack and in horizontal piping at all changes in direction and at intervals not exceeding 50 feet.

Storm Drainage System
Rainwater will be collected off of flat roofs using conventional roof drains and interior storm drain piping will be piped to an on-site storm water collection system.

Shipping/ Receiving
A hot water hose bibb and area drain will be provided at the loading dock.

Codes
All applicable codes in enforcement at the beginning of design, including UCR standards shall be strictly adhered to.

LEED
As noted under Fixtures, dual flush water closets and waterless urinals are recommended for consideration to help achieve LEED certification. All fixtures shall, as a minimum, be considered low flow.

FIRE PROTECTION

General
Fire protection systems will be designed in accordance with the following codes and standards:

California

- NFPA 13, Installation of Sprinkler Systems
- Building Codes
- NFPA 14, Standpipe and Hose Systems
- NFPA 101, Life Safety code

The Campus Fire Marshall will be instrumental in establishing final requirements and systems.

Fire Protection Systems
Automatic Sprinkler Systems
Hydraulically calculated new automatic sprinkler system per NFPA will provide protection throughout all areas of the facility. The system will be connected to the site water system.

The sprinkler systems will include electric valve supervision, i.e. valve tamper switches on sprinkler control valves, connected to either the building fire alarm systems, and to the central/main campus fire alarm system. In addition, the sprinkler system will be provided with waterflow devices that will annunciate a fire alarm signal on the fire alarm system(s).

Densities are based on the most remote area in each sprinkler zone, unless a more demanding area is present closer to the riser. The riser includes an alarm check valve, control valve, water-flow switch and backflow preventer.

ELECTRICAL

Power Distribution
A 1000 KVA Unit Substation, 12 kV to 480Y/277V 3-phase 4-wire main service switchboard shall be provided. The service equipment shall be sized with a 30% spare capacity for future expansion. Electrical service shall be provided from the campus distribution loop. Two 12 kV feeds will be provided, each with its own isolation switch. Both electrical demand and consumption will be monitored by the EMS per campus Building Standards.
An emergency power generator is not anticipated to be provided specifically for this building. Battery powered lighting will provide for safe illumination for egress during a power outage.

Panelboards
Distribution panelboards will be located in the electrical room. Each distribution power panelboard shall have spaces for a minimum 42 circuits. This capacity will serve both current anticipated needs and allow for future expansion. Panels will be connected to the main distribution switchboard with appropriate circuit breakers.
Electronic grade panelboard with transient voltage surge suppressors shall be installed to power sensitive electronic communication equipments and computer workstations.

Convenience Power
Code required number of power receptacles shall be provided in all areas as a minimum. Campus Standards shall also be followed.
It is anticipated that a substantial quantity of outlets will be required to support laptop computers that will use wireless access. These will be provided throughout student areas.

Building Common Elements
The core elements of the building receive power in a manner similar to a high quality office building. GFI receptacles with weatherproof covers shall be installed outdoors in each exterior building wall and on roof where required by code.

Department Common Elements
Conference and training rooms, in addition to code requirements, shall be equipped to power multimedia education equipments (computer workstations, projectors, wall mounted overhead TVs). A minimum of eight duplex receptacles shall be available in training room, two in each wall.
GFI receptacles shall be installed in Coffee Room work counters, island counter and restrooms where required by code. Power circuits and receptacles shall be provided for refrigeration and other kitchen type equipment as may be located in break areas.

Department Building Blocks
Receptacles in offices and workrooms shall be installed no more than 12'-0" on center. If furniture placement is permanent, receptacles shall be located adjacent to each workstation and/or electrically operated appliance.

Power receptacles and data outlets shall be installed no more than 4'-0" on center above work counters and tables.

Lighting
Lighting design shall conform to California Energy Commission Energy Efficiency Standards for nonresidential buildings and to the requirements of LEED Green Building Rating System.

High efficiency light fixtures that provide uniform light distribution without discomfort caused by glare shall be installed in training rooms, offices, conference room, workrooms, and kitchens. High color rendering light sources shall be utilized to enhance appearance of people and objects in the illuminated spaces.

Bi-level and daylighting controls shall be installed in training rooms, administrative offices, conference rooms, workrooms, and in spaces as required by Title 24 for energy efficiency. When sufficient day lighting is available to provide for adequate lighting in the absence of electric lighting system, light fixtures within 15'-0" of windows shall be controlled by ceiling mounted daylight on-off sensors. A wall-mounted switch shall permit lights to be turned off while room is occupied.

Large conference rooms and the Library/Training room shall have variable lighting (dimmers) levels. The workstations shall have task lighting as will workrooms where appropriate.

Wall mounted occupancy motion sensors shall be provided to control lighting in private offices, break areas, toilet rooms, storage rooms and in spaces without adequate daylighting and automatic photo sensing controls.

Emergency and illuminated exit lighting shall be provided in egress corridors and in rooms with an occupant load of 50 or more persons to meet life safety requirements.

Shielded exterior light fixtures shall be utilized to reduce light spill into adjacent properties and provide illumination that do not exceed IES recommended light levels for campus type areas. This allows for a potential LEED point. Exterior luminaries shall be installed in a manner that provides properly distributed illumination, reveals such hazards as curbs and steps, and illuminates dark and potentially dangerous areas.

Photo sensor controls and time switches with hand-off-auto selector switches shall be installed for night security and curfew lighting.

Fire Alarm
The addressable fire alarm system shall be UL and CSFM listed and shall comply with ADA requirements for audible and visual notification of fire alarm condition in the facility. The fire alarm system shall consist of a control panel, remote annunciator panel and addressable fire alarm detection and notification devices.

Addressable smoke detectors shall be located below the ceiling and heat detectors shall be located above finished ceiling at all code required areas.

Addressable manual pull stations shall be installed adjacent to building exit doors in normal paths of exiting, and where required by code.

Horns and strobes of sufficient sound and visual coverage shall be installed throughout the facility, including yard areas and where required by code and ADA.

The Fire Alarm System shall be based on Simplex for campus compatibility.

COMMUNICATIONS

Voice and Data

A main telecommunication room shall be provided for incoming telephone and data service. Underground service conduits from the closest telecommunication point of service shall be terminated in this room. ¾-inch thick, 8'-0" high plywood backboard with fire retardant will be used on all walls. Dedicated (120V) electrical receptacles and an isolated ground busbar will serve the room. Ventilation and cooling requirements will be determined in design.
Telecom closets, distributed on each floor, will include 4'-0" wide by 8'-0" high plywood termination boards (similar to the main telecom room). Closets should stack in plan and be coordinated in plan with the main telecom room. Ventilation and cooling requirements will be determined in design.

Active data drops shall be provided for each workstation in training rooms, administrative offices and other spaces to be identified. Power for wireless machines will be provided.

Outlets for technology equipment such as overhead projector/projector screen, wall mounted TV/VCR, etc. shall be provided in training room, conference rooms, and other spaces to be identified.

TV Distribution

Television distribution system is limited for this facility.

TV outlets and cable signal will be provided in the Orientation Room and shared Conference Rooms. The One-Stop will include wall mounted flat panel display capabilities, including the potential to provide live cable, pre-recorded video, and tailored information display. Information displays must include options for wayfinding, announcements, current and pending schedules, seasonal information, etc.

Owner provided equipment shall be provided at the head-end to distribute any pre-recorded programs.

SECURITY

Security alarm systems shall be Ademco Vista 50P. The system is compatible with the campus police receiver, and has the ability to upload and download information to the systems using Ademco Compass software.

The building is primarily intended for use during standard business hours, with International Student Services being the only user that identified extended hours of operation. As such, traditional lock and key security is considered to be a reasonable solution for the facility. Other security concerns, such as sensitive materials and data, will be secured in rooms with card key access control (see section 3.5, Program Building Blocks for specific space security requirements). Personal security is assured through emergency call buttons located in each suite of offices, and behind the counters of the One-Stop.

Closed circuit TV will be provided in the Student Business Services Cashier Area and testing rooms.

LEED

Opportunities for LEED points will be pursued consistent with sustainability/resource conservation as part of the project objectives. The best opportunities are in lighting design where occupancy sensors, daylighting controls, and high efficiency fixtures will be used. The courtyard and narrow building shape is excellent for achieving daylighting. In addition, the campus will pursue Savings By Design in the energy modeling phase of the project.

ACOUSTICS

Noise control and acoustical treatment are defined as means taken in the construction to reduce the impact of noise on occupants. These measures can include:

- Acoustical design of partitions, ceilings and floors
- Material selection, such as carpet or acoustical tile, that reduce sound and noise
- Vibration isolation of equipment
- Mechanical designs that are conscious of sound transmission and isolation of noise
- Other treatments, such as acoustical panels, for sensitive or large, acoustically lively spaces (such as the One-Stop)

From an acoustics standpoint, the SASS Building design should accommodate noise control, and provide for transmission criteria, in order to meet the following programmatic requirements.

The first floor One-Stop and Student Business Services Cashier: Sound design should include the requirements for acoustical privacy for transactions and conversations at the business counters. In addition, the room should accommodate possible public address systems and the potential for ambient music. Noise control considerations should include acoustic ceilings, acoustic wall panels, and other measures suitable to the final design. Incorporate specific acoustical design recommendations as the design is developed.

In a majority of the building, confidentiality and conversational privacy considerations are key acoustical concern. For Conference Rooms, provide a minimum STC of 55 with full-height partitions. For typical enclosed offices, provide a minimum STC of 50 between offices, and an STC of 45 between offices and corridors.

Where equipment rooms or other nose generating spaces, such as Elevator Machine Rooms, Mechanical Equipment Rooms, transformers, or Workrooms (such as WR-2D, WR-3C, WR-4, and Storage Room SR-2C) abut office space, provide a minimum STC of 60. Incorporate specific acoustical design recommendations as the design is developed.

4.2

Code Analysis

APPLICABLE STATE BUILDING CODES

California Building Standards Code – Title 24
2001 California Building Code

Description

The UC Riverside SASS Building is three-story office building housing the campus enrollment management departments. The ground level houses a One-Stop services area & Student Business Services Cashier for the purposes of delivering student services.

Occupancy

B - Primary use (Professional offices, Service-type transactions, Educational purposes above the 12th grade)
A.3 – Accessory use (Orientation & Training Rooms)

Construction Type

Allowable Area for B Occupancy	Type V-1HR	Type III- 1HR
3 stories minimum	14,000	18,000
X2 for Multistory	28,000	36,000
X2 for Sprinkler (or Sep. all sides)	56,000	72,000

Total SASS Building GSF: 57,700 – suggests Type III-1HR as a minimum construction type.

Given the side yard and public way setbacks greater than 20 feet around the SASS Building, it may be beneficial to consider taking the allowable area increase for Separation on all sides (CBC Section 505.1.3). Doing so would make the automatic sprinkler system available for use as a Fire Resistive Substitution (CBC Section 508) for the one-hour fire-resistive construction. This may result in substantial cost savings. However, the business interruption potential of a fire in this building life, merits only the use of non-combustible and minimum 1 hour fire rated construction.

Accessibility

This building shall be accessible to persons with disabilities. Particularly of note is the Student Special Services department, which counsels, provides services, and administers course-of-study examinations to the University's disabled population. From a programming point of view, care has been to incorporate additional corridor, office, and workstation width to better accommodate maneuverability in this department due to an especially high proportion of disabled users.

4.3

Sustainable Design

UC Riverside is entering a new era in building design and planning. The UC Office of the President is in the process of defining new policies and creating new guidelines for environmental sensitivity and energy efficiency (www.ucop.edu/facil/greenbldgs/). The Regents are in support of this policy 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."

This project will comply with the University of California Policy on Green Building Design and Clean Energy Standards approved by The Regents at their meeting of July 2003, as well as with the Presidential Policy for Green Building Design and Clean Energy Standards dated June 16, 2004. As required by these policies, the project will adopt the principles of energy efficiency and sustainability to the fullest extent possible, consistent with budgetary constraints and regulatory and programmatic requirements.

The most common benchmark for defining sustainable and energy efficient design and construction is LEED 2.1(Leadership in Energy and Environmental Design). The LEED rating system is maintained and administered by the non-profit U.S. Green Building Council (USGBC). The USGBC defines "Green Design" as: "Design and Construction practices that significantly reduce or eliminate the negative impact of buildings on the environment and occupants". Green Design addresses:

- Sustainable Site Planning
- Safeguarding water and water efficiency
- Energy efficiency
- Conservation of materials and resources
- Indoor environmental quality

Environmentally responsive design benefits all parties by:

- Reducing the impact of construction on the environment
- Reducing pollution
- Reducing depletion of limited resources
- Creating healthier indoor and outdoor environments

In addition, real economic benefits are accrued by pursuing Green Design. Sustainable design has proven to:

- Reduce operating costs
- Create local benefits by reducing the burden on utilities, roads, landfills, etc.
- Increase productivity and reduce absenteeism
- Reduce liability by improving workplace environments

This DPP offers several strategies for realizing a "Green" Student Academic Support Services Building. From a fundamental planning perspective, and in conjunction with USGBC LEED criteria, sustainability is manifested by:

- Orienting the building in a true North-South direction, in order to maximize the potential for daylighting and to minimize solar gain
- Sensitive building placement that reinforces and maintains campus vistas and open space along Carillon Mall
- A building orientation and massing that provides comfortable, usable, shaded exterior spaces appropriate to the Riverside climate, particularly in the One-Stop and courtyard spaces
- A pedestrian focused site, relying on existing parking and public transportation
- Creating narrow floors in conjunction with operable windows to promote natural ventilation and thermal comfort
- A compact, efficient project that makes use of existing capacity in the campus Central Plant

Please see the LEED checklist for a preliminary project approach to achieving LEED Silver certification.

PRELIMINARY LEED CHECKLIST

Item	Item	Prerequisite	UCR Baseline	Additional
SS Prereq 1	Erosion & Sedimentation Control	Y		
SS 1	Site Selection		1	
SS 2	Development Density		0	
SS 3	Brownfield Redevelopment		0	
SS 4.1	Alternative Transportation- Public Transportation Access		1	
SS 4.2	Alternative Transportation - Bicycle Storage & Changing Rooms		0	1
SS 4.3	Alternative Transportation - Alternative Fuel Vehicles		0	
SS 4.4	Alternative Transportation- Parking Capacity		1	
SS 5.1	Reduced Site Disturbance- Protect or Restore Open Space		0	
SS 5.2	Reduced Site Disturbance- Development Footprint		0	
SS 6.1	Stormwater Management- Rate and Quantity		0	
SS 6.2	Stormwater Management- Treatment		0	
SS 7.1	Heat Island Effect - Non-Roof		1	
SS 7.2	Heat Islands Effect - Roof		1	
SS 8.1	Light Pollution Reduction - Exterior Lighting		1	
	SUSTAINABLE SITES SUBTOTAL:		**6**	**1**
WE 1.1	Water Efficient Landscaping- Reduce by 50%		1	
WE 1.2	Water Efficient Landscaping- No Potable Use or No Irrigation		0	1
WE 2	Innovative Wastewater Technologies		0	
WE 3.1	Water Use Reduction - 20% Reduction		0	1
WE 3.2	Water Use Reduction- 30% Reduction		0	
	WATER EFFICIENCY SUBTOTAL:		**1**	**2**

PRELIMINARY LEED CHECKLIST

Item	Item	Prerequisite	UCR Baseline	Additional
EA Prereq 1	Fundamental Building Systems Commissioning	Y		
EA Prereq 2	Minimum Energy Performance	Y		
EA Prereq 3	CFC Reduction in HVAC&R Equipment	Y		
EA 1	Optimize Energy Performance		2	6
EA 2.1	Renewable Energy- 5%		0	
EA 2.2	Renewable Energy - 10%		0	
EA 2.3	Renewable Energy- 20%		0	
EA 3	Additional Commissioning		0	
EA 4	Ozone Protection		1	
EA 5.1	Measurement and Verification - Building Systems		1	
EA 6	Green Power		0	
	ENERGY & ATMOSPHERE SUBTOTAL:		**4**	**6**
MR Prereq 1	Storage & Collection of Recyclables	Y		
MR 1.1	Building Reuse- Maintain 75% of Existing Walls, Floors and Roof		0	
MR 1.2	Building Reuse-Maintain 100% of Existing Walls, Floors and Roof		0	
MR 1.3	Building Reuse- Maintain 100% of Shell/Structure and 50% of Non-Shell/Non-Structure		0	
MR 2.1	Construction Waste Management- Divert 50% From Landfill		1	
MR 2.2	Construction Waste Management- Divert 75% From Landfill		0	1
MR 3.1	Resource Reuse: 5%		0	
MR 3.2	Resource Reuse- 10%		0	
MR 4.1	Recycled Content: Use 5% post-consumer or 10% postconsumer + post-industrial		0	
MR 4.2	Recycled Content: Use 10% post-consumer or 20% post-consumer + post-industrial		0	
MR 5.1	Regional Materials- 20% manufactured regionally		1	
MR 5.2	Regional Materials- 50% extracted regionally		0	1
MR 6	Rapidly Renewable Materials		0	
MR 7	Certified Wood		0	
	MATERIALS & RESOURCES SUBTOTAL:		**2**	**2**

PRELIMINARY LEED CHECKLIST

Item	Item	Prerequisite	UCR Baseline	Additional
IEQ Prereq 1	Minimum IAQ Performance	Y		
IEQ Prereq 2	Environmental Tobacco Smoke (ETS) Control	Y		
IEQ 1	Carbon Dioxide (CO2) Monitoring		0	
IEQ 2	Ventilation Effectiveness		0	
IEQ 3.1	Construction IAQ Management Plan- During Construction		1	
IEQ 3.2	Construction IAQ Management Plan- After Construction		1	
IEQ 4.1	Low-Emitting Materials- Adhesives & Sealants		1	
IEQ 4.2	Low-Emitting Materials- Paints and Coatings		1	
IEQ 4.3	Low-Emitting Materials- Carpet		1	
IEQ 4.4	Low-Emitting Materials- Composite Wood		0	
IEQ 5	Indoor Chemical & Pollutant Source Control		1	
IEQ 6.1	Controllability of Systems- Perimeter Spaces		0	
IEQ 6.2	Controllability of Systems- Non-Perimeter Spaces		0	
IEQ 7.1	Thermal Comfort- Compliance with ASHRAE 55-1992		1	
IEQ 7.2	Thermal Comfort- Permanent Monitoring System		1	
IEQ 8.1	Daylight and Views- Daylight 75% of Spaces		0	1
IEQ 8.2	Daylight and Views- Views for 90% of Spaces		0	1
	INDOOR ENVIRONMENTAL QUALITY SUBTOTAL:		**8**	**2**
ID 1	Innovation in Design		0	2
ID 2	LEED Accredited Professional		1	
	INNOVATION IN DESIGN SUBTOTAL:		**1**	**2**

Subtotal Baseline:	22	
Subtotal Possible Additional:		15
TOTAL Baseline + Possible Additional:		**37**

4.4

Schedule

The project schedule for the Student Academic Support Services project is multi-phased and dependent upon contingent funding.

DPP and PPG

The Detailed Project Program (DPP) and Project Planning Guide (PPG) are both derived from the preparation of the DPP. The DPP defines a project program, confirms the site fit, identifies potential building systems, and prepares a potential cost model. The DPP is scheduled to be complete in June 2004. The PPG provides space and cost data to the Office of the President (UCOP) and becomes the written contract with the State of California for building funds appropriation. The PPG will be submitted to UCOP in August 2004.

Design and Documentation

Pending approval of the project PPG, the project is scheduled to receive authorization to proceed with design in July 2005. Schematic design will require the review and approval by the campus Design Review Board (DRB). Pending approval by the DRB, the project can than be submitted, reviewed and approved by the UC Board of Regents.

Schematic design and design development are schedule to begin in January 2005.

Construction Documents

Pending further capital improvement budget approval, the project can proceed with construction documents. The construction document process includes agency approvals as follows:

- General campus (UC Riverside) review and approval
- Division of the State Architect (DSA), for accessibility compliance
- Peer review, for general constructability and structural peer review

Construction documents begin in February 2006; this schedule will be coordinated with the authorization funding the physical construction of the project (bidding and construction).

Bidding and Construction

Pending further capital improvement budget approval, the project can proceed with bidding, project award, and construction. Bidding is scheduled to begin in October 2006, with an award date (start of construction) of January 2007. The Construction duration is assumed to be 18 months, with projected delivery in August 2008.

5.0

Cost Model

BUDGET VERIFICATION COST MODEL

for

Student Academic Support Services
University of California, Riverside
Riverside, California

Sasaki Associates, Inc
900 North Point Street
Suite 8300
San Francisco, California 94109-

Tel: (415) 776-7272
Fax: (415) 202-8970

June 22, 2004 (Updated August 2004)

DAVIS LANGDON ADAMSON
CONSTRUCTION COST PLANNING AND MANAGEMENT

301 Arizona Avenue
Suite 301
Santa Monica
California 90401
Tel: 310.393.9411
Fax: 310.393.7493
www.dladamson.com

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BASIS OF COST MODEL

Cost Model Prepared From	Dated	Received
Drawings issued for		
Alternative A floor plans and elevation renderings	Undated	04/19/04
Site utility plans	01/28/01	04/19/04

Discussions with the Project Architect and Engineers

Conditions of Construction

The pricing is based on the following general conditions of construction

A start date of January 2007

A construction period of 18 months

The general contract will be competitively bid with qualified general and main subcontractors

There will not be small business set aside requirements

The contractor will be required to pay prevailing wages

There are no phasing requirements

The general contractor will have full access to the site during normal business hours

Student Academic Support Services
University of California, Riverside
Riverside, California

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INCLUSIONS

The project consists of a three story Student Academic Support Services building and associated sitework. the main building totals 58,140 gross square feet which includes 55,700 square feet of enclosed area. The building also incorporates a central courtyard over looked by covered walkways on all levels. The floor to ceiling height is 13'.

The following design criteria was followed in the preparation of this cost model:

Foundations are assumed to be standard shallow spread and pad footings with over excavation and recompaction of the buildings footprint to a depth of 3' also included.

Vertical structure includes a total of 4lbs/gfa for steel columns and tube steel brace framing, all steel is fireproofed.

Floor and roof structure comprises a 5" reinforced concrete slab on grade, suspended floors, roof and walkways include structural steel framing with metal decking and a reinforced lightweight concrete infill. The canopy structure comprises structural steel framing and metal decking only, columns are included in the vertical structure component.

For this building the total steel tonnage is assumed to be in the region of 14lbs/gsf.

Exterior cladding includes metal stud framing, gypsum board lining and batt insulation. The exterior finish is a mixture of cement plaster, glazing and brick veneer. Exterior doors are assumed to include glazed aluminum, wood and hollow metal. The canopy soffit is assumed to be perforated metal with the remaining soffits comprising cement plaster on a gypsum board substrate. Walkway guardrails are steel with perforated metal, parapets are as the exterior wall construction with cement plaster on the inside face. At roof level there is a mechanical screen assumed to be perforated metal supported by tubular steel framing.

Roofing includes tapered rigid insulation, membrane roofing system to the main roof and canopy, walkway surfacing, pedestrian roof decking, flashings, a roof access hatch and caulking and sealing.

Interior partitions include metal stud framing, gypsum board lining, batt insulation and a paint finish. Allowances are included for handrails, interior glazed walls and sidelights and doors.

Finishes to floors are assumed to include carpet, ceramic tile, sealed concrete, vinyl composition tile and a premium finish to the lobby and one stop areas. An allowance for ceramic wall tiles is included. Ceiling finishes include acoustic tile and suspended gypsum board. Also included is column lining and bulkhead formation.

INCLUSIONS

Function and equipment includes allowances for toilet partitions and accessories, shelving, cabinets and countertops (including premium counter at one stop), markerboards, tackboards, window coverings, code signage, motorized projection screens, lockers, mailboxes and fire extinguisher cabinets.

Vertical transportation includes two staircases and one hydraulic elevator, 3 stop.

Plumbing includes sanitary fixtures, floor drains and hose bibbs, waste, vent and domestic service pipework, water heating equipment, gas and roof drainage.

HVAC includes campus fed steam and chilled water, (1) steam-water heat exchanger, circulatory pumps, chilled and HHW pipework, air handling units, VAV boxes, fan-coil units, air distribution and return, controls and exhaust ventilation.

Electrical includes main, machine, equipment and user convenience power, lighting, telephone/data, audio/visual (conduit only), fire alarm and security systems (conduit only).

Fire protection includes automatic wet sprinkler system - complete

Utilities include domestic and fire water, gas, sewer, chilled water and steam, electrical 12 KV feeders, telecommunications/signals (conduit only) and relocate existing 12 V feeders - 250'.

INCLUSIONS

BIDDING PROCESS - MARKET CONDITIONS

This document is based on the measurement and pricing of quantities wherever information is provided and/or reasonable assumptions for other work not covered in the drawings or specifications, as stated within this document. Unit rates have been obtained from historical records and/or discussion with contractors. The unit rates reflect current bid costs in the area. All unit rates relevant to subcontractor work include the subcontractors overhead and profit unless otherwise stated. The mark-ups cover the costs of field overhead, home office overhead and profit and range from 15% to 25% of the cost for a particular item of work.

Pricing reflects probable construction costs obtainable in the project locality on the date of this statement of probable costs. This estimate is a determination of fair market value for the construction of this project. It is not a prediction of low bid. Pricing assumes competitive bidding for every portion of the construction work for all subcontractors and general contractors, with a minimum of 4 bidders for all items of subcontracted work and 6-7 general contractor bids. Experience indicates that a fewer number of bidders may result in higher bids, conversely an increased number of bidders may result in more competitive bids.

Since Davis Langdon Adamson has no control over the cost of labor, material, equipment, or over the contractor's method of determining prices, or over the competitive bidding or market conditions at the time of bid, the statement of probable construction cost is based on industry practice, professional experience and qualifications, and represents Davis Langdon Adamson's best judgement as professional construction consultant familiar with the construction industry. However, Davis Langdon Adamson cannot and does not guarantee that the proposals, bids, or the construction cost will not vary from opinions of probable cost prepared by them.

EXCLUSIONS

Owner supplied and installed furniture, fixtures and equipment

Loose furniture and equipment except as specifically identified

Hazardous material handling, disposal and abatement

Compression of schedule, premium or shift work, and restrictions on the contractor's working hours

Design, testing, inspection or construction management fees

Architectural and design fees

Scope change and post contract contingencies

Assessments, taxes, finance, legal and development charges

Environmental impact mitigation

Builder's risk, project wrap-up and other owner provided insurance program

Land and easement acquisition

Cost escalation beyond a start date of January 2007

Audio visual equipment and cabling

Site telecommunications/signals cabling (UCR)

Telephone/data equipment

Security equipment and cabling

MEP 3rd Party Commissioning

Kitchen grease waste and hood exhaust systems

Sewage ejector and sump pumps

Public address

UPS System

Centralized clocks

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EXCLUSIONS

Utility connection charges and fees

Emergency power generator, distribution equipment and feeders

OVERALL SUMMARY

	Gross Floor Area	$ / SF	$x1,000
Main Building	58,140 SF	255.14	14,834
Sitework			1,538
TOTAL Building & Sitework Construction	***January 2007***		***16,372***
Telephone/data active systems (Including hubs and routers)	1 LS		131
TOTAL Building & Sitework Construction with Equipment Options	***January 2007***		***16,503***

Please refer to the Inclusions and Exclusions sections of this report

MAIN BUILDING AREAS & CONTROL QUANTITIES

Areas

	SF	SF	SF
Enclosed Areas			
First floor	20,700		
Second floor	17,500		
Third floor	17,500		
SUBTOTAL, Enclosed Area		55,700	
First floor	2,878		
Second floor	1,001		
Third floor	1,001		
SUBTOTAL, Covered Area @ ½ Value		2,440	
TOTAL GROSS FLOOR AREA			58,140

Control Quantities

				Ratio to Gross Area
Number of stories (x1,000)		3	EA	0.052
Gross Area		58,140	SF	1.000
Enclosed Area		55,700	SF	0.958
Covered Area		4,880	SF	0.084
Footprint Area		20,700	SF	0.356
Volume		786,500	CF	13.528
Gross Wall Area		46,803	SF	0.805
Finished Wall Area		46,803	SF	0.805
Windows or Glazing Area	30.00%	14,041	SF	0.242
Roof Area - Flat		23,000	SF	0.396
Roof Area - Total		23,000	SF	0.396
Interior Partition Length		3,128	LF	0.054
Finished Area		55,700	SF	0.958
Elevators (x10,000)		1	EA	0.172

MAIN BUILDING COMPONENT SUMMARY

Gross Area: 58,140 SF

		$/SF	$x1,000
1. Foundations		4.47	260
2. Vertical Structure		7.48	435
3. Floor & Roof Structures		26.02	1,513
4. Exterior Cladding		41.65	2,422
5. Roofing, Waterproofing & Skylights		4.93	286
Shell (1-5)		84.55	4,916
6. Interior Partitions, Doors & Glazing		10.61	617
7. Floor, Wall & Ceiling Finishes		12.42	722
Interiors (6-7)		23.03	1,339
8. Function Equipment & Specialties		10.00	581
9. Stairs & Vertical Transportation		2.51	146
Equipment & Vertical Transportation (8-9)		12.51	727
10. Plumbing Systems		4.79	279
11. Heating, Ventilating & Air Conditioning		29.45	1,712
12. Electric Lighting, Power & Communications		26.13	1,519
13. Fire Protection Systems		3.50	203
Mechanical & Electrical (10-13)		63.88	3,714
Total Building Construction (1-13)		**183.97**	**10,696**
14. Site Preparation & Demolition		0.00	0
15. Site Paving, Structures & Landscaping		0.00	0
16. Utilities on Site		0.00	0
Total Site Construction (14-16)		**0.00**	**0**
TOTAL BUILDING & SITE (1-16)		**183.97**	**10,696**
General Conditions	8.00%	14.72	856
Contractor's Overhead & Profit or Fee	4.00%	7.95	462
PLANNED CONSTRUCTION COST	***June 2004***	**206.64**	**12,014**
Contingency for Development of Design	10.00%	20.66	1,201
Escalation to Start Date (January 2007)	12.25%	27.85	1,619
RECOMMENDED BUDGET	***January 2007***	**255.14**	**14,834**

Student Academic Support Services
Main Building
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Item Description	*Quantity*	*Unit*	*Rate*	*Total*
1. Foundations				
Excavation				
Over-excavation, backfill and recompaction to a depth of 3'	3,003	CY	15.00	45,045
Reinforced concrete including excavations				
Standard strip and pad footings to a maximum of 2' below grade	20,700	SF	10.00	207,000
Elevator pits	1	EA	8,000.00	8,000
				260,045
2. Vertical Structure				
Columns and pilasters				
Structural steel columns	87	T	2,500.00	217,500
Shear bracing				
Structural steel pipe or tube bracing	58	T	3,000.00	174,000
Fireproofing steelwork				
Sprayed fireproofing on steelwork	145	T	300.00	43,500
				435,000
3. Floor and Roof Structure				
Floor at lowest level				
Reinforced concrete slab on grade, 5"	20,700	SF	6.00	124,200
Suspended floors				
Structural steel framing	175	T	2,500.00	437,500
Metal decking including lightweight reinforced concrete infill	35,000	SF	7.50	262,500
Flat roofs				
Structural steel framing	115	T	2,500.00	287,500
Metal decking including lightweight reinforced concrete infill	23,000	SF	7.50	172,500

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Suspended walkways				
Structural steel framing	10	T	2,500.00	25,000
Metal decking including lightweight reinforced concrete infill	2,004	SF	7.50	15,030
Canopy				
Structural steel framing	3	T	2,500.00	7,500
Metal decking	725	SF	4.00	2,900
Miscellaneous				
Allowance for miscellaneous metals	58,140	SF	1.50	87,210
Fireproofing steelwork				
Sprayed fireproofing on steelwork	303	T	300.00	90,900
				1,512,740

4. Exterior Cladding

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Wall framing, furring and insulation				
Metal stud framing including one layer 5/8" dens glas board and insulation	32,762	SF	8.90	291,582
Applied exterior finish				
Face brick veneer including waterproofing membrane and sealer	16,381	SF	30.00	491,430
Cement plaster	16,381	SF	12.00	196,572
Prefabricated cladding panels				
Metal column cladding including support framing	1,800	SF	40.00	72,000
Interior finish to exterior walls				
Gypsum board, painted	30,062	SF	3.00	90,186
Windows, glazing and louvers				
Aluminum framed insulated glazed system	14,041	SF	55.00	772,255
Exterior doors, frames and hardware				
Allowance for exterior doors	1	LS	125,000.00	125,000

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Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Fascias, bands, screens and trim				
Allowances for miscellaneous sunshades	1	LS	70,000.00	70,000
Soffits				
Perforated metal panel to canopy soffit	725	SF	35.00	25,375
Cement plaster at walkways including gypsum board lining	4,155	SF	15.00	62,325
Balustrades, parapets and roof screens				
Walkway guardrails, second and third	200	LF	350.00	70,000
Cement plaster finish to back of parapets	2,700	SF	10.00	27,000
Perforated metal panel roof screen including steel tube framing support	3,200	SF	40.00	128,000
				2,421,725

5. Roofing, Waterproofing & Skylights

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Insulation				
Tapered rigid insulation	23,000	SF	4.00	92,000
Roofing				
Membrane roofing system	23,000	SF	5.00	115,000
Membrane roofing system to canopy	725	SF	5.00	3,625
Roof or deck traffic surfaces				
Walkway covering - allowance	2,004	SF	6.00	12,024
Pedestrian roof decking	800	SF	10.00	8,000
Roofing upstands and sheetmetal				
Allowance for flashings, etc	58,140	SF	0.50	29,070
Roofing access and ventilation				
Roof access hatches	1	EA	500.00	500
Caulking and sealants				
Allowance for caulking and sealing	58,140	SF	0.45	26,163
				286,382

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
6. Interior Partitions, Doors & Glazing				
Partition framing and cores				
Metal stud framing including gypsum board lining, batt insulation and a paint	31,280	SF	10.40	325,312
Window walls and borrowed lights				
Allowance for interior glazed wall systems	1,500	SF	45.00	67,500
Aluminum framed side lights, full height	1,225	SF	25.00	30,625
Interior doors, frames and hardware				
Allowance for interior doors, primarily wood in hollow metal frames	1	LS	150,000.00	150,000
Miscellaneous				
Rough carpentry allowance	58,140	SF	0.75	43,605
				617,042
7. Floor, Wall & Ceiling Finishes				
Floors				
Allowance for carpet, ceramic tile, sealed concrete and vinyl composition tile	55,700	SF	3.00	167,100
Premium finish at lobby and one stop	5,600	SF	20.00	112,000
Bases				
Allowance for rubber, ceramic and premium areas	9,649	LF	3.50	33,772
Walls				
Allowance for ceramic tile at restrooms	1	LS	30,000.00	30,000
Column furring and finish				
Metal stud framing including gypsum	7,200	SF	12.00	86,400
Ceilings				
Suspended acoustic tile	45,100	SF	3.50	157,850
Suspended gypsum board	10,600	SF	8.00	84,800
Formation of bulkheads	1	LS	50,000.00	50,000
				721,922

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Item Description	*Quantity*	*Unit*	*Rate*	*Total*
8. Function Equipment & Specialties				
General equipment				
Allowance for restroom partitions and accessories, shelving, cabinets and countertops, markerboards, tackboards, window coverings, code signage, motorized projection screens, lockers,	58,140	SF	10.00	581,400
AV equipment				Excluded
				581,400
9. Stairs & Vertical Transportation				
Staircase flights - floor to floor				
Metal pan with concrete infill including guardrails				
Interior	2	Flts	16,000.00	32,000
Exterior	2	Flts	14,000.00	28,000
Ladders and fire escapes				
Elevator pit ladder	1	EA	800.00	800
Elevators				
Three stop hydraulic elevator	1	EA	85,000.00	85,000
				145,800
10. Plumbing Systems				
Including sanitary fixtures, floor drains and sinks, hose bibbs, waste, vent and domestic water service pipework, water heating equipment, natural gas and roof drainage	55,700	SF	5.00	278,500
				278,500

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
11. Heating, Ventilation & Air Conditioning				
Heating and chilling generation equipment				
(Seam-water) heat exchanger, 1,250 mbth, shell & tube	1	EA	7,750.00	7,750
Thermal expansion compensation and circulation				
Expansion tanks	1	EA	3,250.00	3,250
Air seperators	1	EA	2,850.00	2,850
Pumps, premium efficiency motors				
Heated hot water, 80 gpm	1	EA	5,750.00	5,750
Chilled water, 15 hp				N/a
Duplex condensate pump	1	LS	15,000.00	15,000
Variable speed drives	1	EA	5,500.00	5,500
Vibration isolation	1	LS	4,000.00	4,000
Piping, fittings, valves and insulation				
Chilled, steam/condensate, hot water and condensate drainage	55,700	SF	5.50	306,350
Air handling equipment				
Air handling units, supply and return fans, cooling and heating coils, economizer, variable speed drives, filtered	65,000	Cfm	4.50	292,500
Terminal boxes, with reheat (1/1,750 SF)	40	EA	850.00	34,000
24 hr. fan-coil units to elevator machine and telephone/data rooms	6	EA	3,500.00	21,000
Air distribution and return				
Galvanized sheetmetal ductwork	75,000	LB	6.50	487,500
Flexible ductwork	2,500	LF	9.00	22,500
Dampers				
Volume	500	EA	55.00	27,500
Fire/smoke	50	EA	1,100.00	55,000
Insulation	50,000	SF	2.25	112,500
Diffuser, registers and grilles	55,700	SF	1.00	55,700
Building management controls				
DDC building management control systems, including CO2 detection and	55,700	SF	3.50	194,950

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Item Description	*Quantity*	*Unit*	*Rate*	*Total*
LEED Commissioning				N/A
Testing and balancing	500	HR	87.50	43,750
Unit ventilation	1	LS	15,000.00	15,000
				1,712,350
12. Electrical Lighting, Power & Communication				
Main power and distribution				
Including mains switchgear, distribution equiopment, transformers, motor control centers, feeder conduit and cable	1,000	KW	230.00	230,000
Emergency power				N/A
Machine and equipment power				
Connections and switches, including				
Elevator	1	LS	8,000.00	8,000
Mechanical equipment				
50 - 20 hp	2	EA	2,450.00	4,900
20 - 10 hp	10	EA	1,250.00	12,500
< 5 hp	20	EA	750.00	15,000
Miscellaneous connections, < 2 hp	1	LS	45,000.00	45,000
User convenience power				
Including 120 V panelboards, feeders, receptacles, conduit and cable	55,700	SF	4.00	222,800
Lighting				
Panelboard breakers, 277 V	252	EA	95.00	23,940
Feeder conduit and cable	500	LF	25.00	12,500
Fixtures/switching, including conduit and	55,700	SF	7.00	389,900
Lighting and power specialties				
Grounding	1	LS	10,000.00	10,000
Lighting controls, including dimming	1	LS	25,000.00	25,000
Cable tray	2,000	LF	37.50	75,000

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Telephone and communications				
Telephone/data, conduit and cable	55,700	SF	3.50	194,950
MATV, conduit only	1	LS	5,000.00	5,000
Audio/visual, conduit	1	LS	25,000.00	25,000
Fire alarm and security				
Fire alarm systems	55,700	SF	3.50	194,950
Security, conduit only	1	LS	25,000.00	25,000
				1,519,440
13. Fire Protection Systems				
Automatic wet sprinkler system - complete	58,140	SF	3.50	203,490
				203,490

SITEWORK COMPONENT SUMMARY

Gross Area: 27,750 SF

		$/SF	$x1,000
14. Site Preparation & Demolition		4.32	120
15. Site Paving, Structures & Landscaping		20.80	577
16. Utilities on Site		14.81	411
TOTAL BUILDING & SITE (1-16)		**39.94**	**1,108**
General Conditions	8.00%	3.21	89
Contractor's Overhead & Profit or Fee	4.00%	1.73	48
PLANNED CONSTRUCTION COST	***June 2004***	**44.87**	**1,245**
Contingency for Development of Design	10.00%	4.50	125
Escalation to Start Date (January 2007)	12.25%	6.05	168
RECOMMENDED BUDGET	***January 2007***	**55.43**	**1,538**

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
14. Site Preparation & Building Demolition				
Site clearing and grading				
Allowance for general clearing and	48,450	SF	0.75	36,338
Allowance for miscellaneous demolition and clearing including electrical and water	1	LS	83,500.00	83,500
				119,838
15. Site Paving, Structures & Landscaping				
Pedestrian paving				
Allowance for concrete paving, curbs, etc - 70% of site area	17,675	SF	10.00	176,750
Landscape planting, irrigation, etc				
Allowance for soft landscaping, trees, shrubs, irrigation, etc.	7,575	SF	8.00	60,600
Courtyard hard and soft landscaping				
Allowance for hard and soft landscaping including seating and miscellaneous items	27,750	SF	8.25	228,938
Lighting				
Hardscape and softscape security and accent lighting	27,750	SF	2.50	69,375
Drainage				
Site drainage systems	27,750	SF	1.50	41,625
				577,288
16. Utilities on Site				
Mechanical				
Water mains, domestic and fire				
Domestic water, 4"	100	LF	45.00	4,500
Fire water, 6"	100	LF	55.00	5,500
Domestic water "submeter"	1	LS	4,250.00	4,250
Valves and specialties	1	LS	15,000.00	15,000
Connections to existing	1	LS	4,750.00	4,750

Item Description	*Quantity*	*Unit*	*Rate*	*Total*
Gas				
Natural gas piping, 3"	100	LF	48.50	4,850
Valves and specialties	1	LS	5,500.00	5,500
Connections to existing	1	LS	3,750.00	3,750
Chilled and steam/condensate pipework systems				
Chilled water, preinsulated, 6"	500	LF	130.00	65,000
Steam/condensate, preinsulated, < 2-	500	LF	55.00	27,500
Valves and specialties	1	LS	17,500.00	17,500
Connections to existing	1	LS	15,000.00	15,000
Sewer				
Underground pipework, < = 8"	100	LF	45.00	4,500
Connections to existing	1	LS	5,500.00	5,500
Electrical				
Relocate existing 12 KV line from (e) vault to P.E. Building	250	LF	350.00	87,500
HV concrete encased conduit (4) 5" and cables	100	LF	250.00	25,000
Connections to (E) system	1	LS	10,000.00	10,000
Telecommunications/signals connection concrete encased conduit only (cabling by UCR)				
(4) 4"	100	LF	115.00	11,500
Manholes/pullboxes	1	LS	9,000	9,000
Miscellaneous				
Allowance for miscellaneous connections, traps and manholes, etc.	1	LS	85,000.00	85,000
				411,100

6.1

Meeting Notes

memorandum

date May 7, 2004

to Bill Johnson

from Tim M. Stevens

cc JAC, VV, DMK, file

project name University of California, Riverside

project no. 34113.00

subject **STUDENT ACADEMIC SUPPORT SERVICES (SASS) WORKSHOP #1**
March 1-3, 2004

SASAKI

Sasaki Associates Inc.
900 North Point St.
Suite B300
Ghirardelli Square
San Francisco, CA
94109 USA

t 415 776 7272
f 415 202 8970

RECAP MEETING:
March 1, 2004 – 10:00 AM

Goals:
- Increase efficiency of operations by way of new space.
- Inviting building, lose institutional feel.
- Consolidate Disparate Departments. Create "Service Level" identity "Image"
- Maximize site campus has selected
  - Welcoming entry point (leverage)
  - Key location (leverage)
- Outdoor spaces are regarded often as "Kodak Moment" space. (Science Library)
- Building has no "Backside" (eventually even more so).

RELATIONS WITH SCHOOLS OUTREACH/RELATIONS WITH SCHOOLS & REENTRY:
March 1, 2004 – 12:30 PM

Relations with school:
- Get students interested
- Close to admissions office (on same floor), Financial Aid, Registrar
- Oversee tour component: need place for gathering 50-100 group + indoor tours in fall many staff are off site
- Golf carts for summer tours
- Counseling function (advising)

Coordination with publication:
- Concerns
  - Close to public parking
  - Adequate delivery space
- High School Outreach (best together with Transfer outreach)
- Transfer outreach

Offices:
- Admin/Outreach need review transcripts with students in private office
- Budget analyst - deals with confidential files, private office
- Student Assistant- w.s. ok

Conference Room:
- For 10-12
- Would be used by overall campus
- 1-2 hours/day, 3-4 days/week can share

One Stop :
- Needs one window only usually 2 windows in the Fall
- Only public upstairs in offices are appointments

Need:
- Presentation Room
- Video Conference Room

Offices - three types:
- Private (counsels students)
- Staff (Cubicles)
- Student Assistant
  - Workroom (Media)
  - Could be outsourced to somewhere else in the building.
- Private offices could be forsaken for conference rooms (shared)
- Conference room not used 8 hours a day
- Workroom is used 8 hours a day
- Construct mailers, etc. supervised in remote location
- Waiting room:
  - Guidance/counseling (10-12 peoples) & Tours (50-100 peoples)
- "Teller Window" 2 slots during tour season representation.
- Only people they want upstairs are individual appointments (counseling) not general public.

ADMISSIONS OUTREACH COMMUNICATIONS
March 1, 2004 - 2:15 PM

- Part of High School & Transfer outreach – includes services for Admissions
- Produce communications to HS parents, JR. High School and High School students (new students)
  - Printed pieces
  - Website
  - Online Communication
  - Signage & Art
  - Design outsource some, do some in-house
- Share some admin support with Admissions & Outreach
- Office doesn't require a public face.
- Vicki needs a PO space for conforming, shared conference room would work.
- Enjoy being close to web designers
- 2nd floor outpost – close to Outreach & Admissions
  - Existing 10" x 10" storage room is filled when a large order comes in
  - needs access evenings and weekends
- Office of the President publications takes a lot of the (e) space.
- Future – more computers, printers, web connections, less printed matter, demo systems set up.
- Staff can be in W.S.
- Vice Chairman needs an office.
- "Media Room" for layout, etc. could be a future conference room – need an area with 15'-20' high ceilings for checking banners.
- STO- 2 lateral files – most stuff is on CDs
- Binder storage – 4 drawers/cubicles
- Shared space - media area- need space to project video
- Teleconferencing becoming more frequent
- Currently face backs to door – not desired
- Show lots of images
- In basement of Hinderaker

FINANCIAL AID OFFICE
March 1, 2004 - 3:30 PM

- Staff interacts with each other a lot
- Three groups:
  - Operation -
    - Front Counter
    - Telephone/receptionist (student assistants 7-10)
    - Document processing
    - Mail
  - Counseling
    - Individual Counseling: mostly by appointment 1 day/week= walk-in
    - Presentation to a smaller extent
    - Processing of Financial Aid packages
  - Fiscal
    - Most standalone
    - Smallest, 4 people + 1 student assistant
    - Manage the funds
    - Payroll processing/work study hiring
    - Also support other departments with work/study program
- Privacy – Front counter input
- Adjacency Preferences:
  1. Business office
  2. Cashier
  3. Registrar
  4. Admissions
- Filing 120 square feet for Administration
  - Publications – most would be in public room
- Conference Room
  - 5 people 1 week (can share with others)
  - All Staff (23) 1 week (can share with others)
  - 1 small dedicated conference room desirable
- Counselors need room for 2 guests in office

Interact as a staff quite a bit:'

EAST CAMPUS ENTRY
March 2, 2004 – 8:30 AM Nita Bullock

- Overall:
  - Undergraduate – East Campus
  - Graduate – West Campus (better public access)
  - Academic core links Undergraduate and Graduate
  - Public outreach facilities located near east entry with parking
- SASS Building
  - Once considered a part of parking lot, then part of visitor center
  - Current site result of being close to parking structure commons, Costo
- Looking at "perforations" Costo to provide passage there if from SASS to new Commons Building
- Test capacity of East Campus (LRDP)
- Graduate is seen as West Campus Expansion
- Public Outreach uses at 'Entry' to campus (Art, Visitor, Alumni, etc.)
- SASS: State funded (not really possible to co-join with alumni center or garage)
- SASS: Good visual & physical connection to parking garage (lot 1)
- Parcel on corner: Diplomatic issue

- Note site south of arts: co-joined park with site on corner
- CHAS Building: Native American dance ritual – circle at northwest corner of SASS Building
- Duct bank at same area as northwest corner of SASS Building: see survey
- Costo: There is some money for renovation…

SUSAN ALLEN ORTEGA
March 2, 2004 – 10:00 AM

- Supervises (Possibilities for SASS – but not likely mostly registration fee funded)
  - Commons
  - Student Special Services
  - Career Center
  - Counseling Center
  - Learning Center

Tour Comment:

- One stop
  - May need several "helpers" in the area
  - More students may need behind the scene handholding
  - SA - think of ways reminding students about deadlines
- Relationship with commons…collaboration
- Career center & counseling center & learning center: on radar for this building…may be funding issues
- More computer systems (like SJSU)
- Students may need one on one held with computers, process, etc.
- Communication: how does UCR highlight issues of importance

UNDERGRADUATE ADMISSIONS
March 2, 2004 – 10:15 AM

- Paper process going to an electronic process.
- 2 main units
  - Evaluation – 7 staff evaluate applications. 30-35k into door, includes Admit Counselors
  - Operations – 7 staff, each staff is specialized (AA1-AA3). Front desk, mail, back processing applications
- Subunits
  - Articulation – 1/8 FTE work off site. Plan for bodies in office, very detail oriented
  - Analyst – Senior Admin. 2 people number crunching
  - Analyst – budget + 4-8 students – support function
- Note busy as Financial Aid in terms of lines. Much of counselors still over phone & web. 1st week of quarter busy may have 3 people at counter.
- Ideally close to Housing, Admitting–small enrollment (fill in all the blanks between these)
- Other adjacencies: Registration, Financial Aid
- Waiting area – small – could be shared
- Shared workroom for mail/copy
- Ideally 1 break room/floor. 1 refrigerator/unit
- Conceptually likes One Stop
  - Serves students well
  - Likes central area for forms
  - Likes 3-tier approach – give students varying degrees of self help
  - Didn't care for business-like atmosphere
    - Prefers softer "look"
    - Signage very important
    - Avoid dry boards, easels
    - Avoid stantions & ropes
- Prefers support office above one stop rather than behind

- Currently use a student at front desk, not a professional 30% of front desk contacts require calling a counselor
- Wants to further explore level of staff needed at window
- Conference
  - Full staff meeting 2-4/month + 3/year (25 people)
  - Small For counselors (2 rooms required)
- Counselors could be in workstations if had enough small conference room s to meet students in. Most be "separated" from other workstations
- Filing & Storage – minimal – no longer archiving paper, only need to store I-20 forms.
  - Do file HR, papers for 5 years
  - Store supplies
  - Filing within office W/S is very important, bookcase for catalogs.
  - Articulation space has library of catalog – centralized
  - Likes concept of internal offices
  - Paper is going away

OFFICE OF THE REGISTRAR/REGISTRAR PUBLICATIONS
March 2, 2004 – 12:45 PM

- External Records:
  - Front counter
  - 5 person staff
  - Phone transactions residency
  - Registration assistance – mostly online
- Internal Records: (3 person staff) (Monica)
  - See students
  - Processing changes: transcripts, degree checks, order diplomas
- Admin Unit: (1 person, 1.5 staff .5 is with Financial Aid)
  - Registrar's Assistant
  - 1.5 staff, .5 is with Financial Aid
  - Interval receptionist

Scheduling Unit:
  - (See staff & faculty mostly phone)
  - Schedule classroom
  - Office of Director & Assistant Director
  - Programmer
- Technical Unit:
  - Data Running analysis
  - 3 Staff
  - Serve campus wide
  - Minimal people coming to see them
- Publications Unit:
  - Catalog of courses
  - Mostly electronic communication
  - Area for proofing
  - Catalog & Comm
  - See department staff occasionally
  - Lots of interaction between groups
- Management & Administration:
  - 4 per staff
  - Needs small conference space
  - Pub & Sched Unit could most easily be separate
  - Prefer all one together
  - Most processes not paper based, useless seeing a person
  - Need student work stations

  - Adjacency – student business services and/or Financial Aid
- One Stop:
  - Thinks it would work well – as long as there is an expediter
  - Rare to have a line of more than 6
- Using some small offices for face to face "counseling" is a good idea. Rooms will need computer access
- Some staff could work in work stations
  - Publications, Technical, Management need offices for concentration
- Could exist in contiguous space with Admissions
- Do not want to be adjacent to Financial Aid
- Need to be close to cashier and Student Business Services
- Conference:
  - 8 person – everyday
  - 30 seat – 2 times a month
- Storage – 10x 20 room, secured, door wide enough for a palette, palette jack, catalogs, supplies
- Can share a copy machine
- Kitchenette prefer not to share refer
- Security Systems - to be discussed
- Interacts with Vicki from Publication – exchange information, but do not work on projects together
- Need quite area (i.e. office)
- Review of proof by others needs a table – could be a conference room but must be close to Publications group
- Need space for several boxes of catalogs
- One staff person has a lot of old catalogs storage (courses officer) & past publications. 12 copies of each year going back 40 years
- Some staff need privacy; therefore offices
  - Technical: quiet
  - Publication same
  - Management
- Demising wall: needs study not a complete reject
- Don't want to be near outreach
  - Admissions Okay
  - Financial Aid… need space/bad idea
  - Noise is issue
- Catalogue storage need 10x14
- Could be in Publication Room, but need dedicated space in that room; hard walls…lockable? Best on first floor (not necessary in suite)
- Shipping & Receiving needs to be part of Publications – adjacent to these storage areas
- Publications: need for reference storage for past years' catalogues –1954
- Many copies of these required
- Quiet "proofing" room required for faculty to review course description

INTERNATIONAL SERVICES
March 2, 2004 – 2:15 PM

- Need: Place to do and celebrate
  - Display learning
  - Impromptu & display kitchen
  - Children's arts & crafts
  - Loading – furniture, food
- A place, a community, not a business
- Need walls per display & closed offices
  - 1334 ex
  - +3778 add
  - 5112= total requested

- Events – 50% catered, 50% cooked
- Media room – for training – to accommodate 30
- Conference room with screen, VCR, white board.
- Kitchen – needs sink, dishwasher, etc.
- Office need to accommodate 3 people
- 6 counselors offices
- 1 faculty office
- 1 Reception desk
- 13 computer stations for public & staff (8 for staff, 5 for public & students)
- Conference Room
  - 30-50 people
  - Diplomatic room for events
- Work Room with
  - STS
  - Computer station
  - Cashier station
- Sense of "Diplomacy": Display learning opportunities
- Demonstration cooking
- Arts & crafts
- Loading is significant issue
- Town & Gown
- "Consider unthinkable, do the unable, celebrate achievement"
- Adjacency: Financial Aid/Business/Admissions
- Paper is not going away: pamphlets, etc.
- International lounge at student commons will be removed…mural relocated? Worth verification (by Bill)
- International Services really desired/deserves unique treatment in terms of the SASS: perhaps more customized approach; figural response?
- Uses outdoor space regularly/adjacency
- ? study commons for any possible connections
- Stained glass windows in Watkins HS…Incorporate?
- Maybe a mezzanine presence in a double height lobby
- Over 1,000 international students
- Any sharing with orientation room for Outreach? Outdoor space in leiu?
- Light commercial kitchen needed…for demonstration cooking
- Seeking an identity

STUDENT BUSINESS SERVICES/DEFERRED PAYMENT CENTER/CASHIER
March 2, 2004 – 3:45 PM

- 1.Cashier:
  - Largest volume of students
  - Payment deadlines every month
  - + deadline dates (quarters/drop/add)
  - All payments for campus/departments
  - Petty cash reimbursements
  - Housing payments
  - 4 cashiers + a manager
  - 5 windows or more
  - Online bill paying for fall '04. Not sure of impact to demand…estimate 20% would pay online
  - Two minutes per transaction (+/-)

- Student Business Services: (10 FTE) + Carol=11
  - Do all billing for students/entities (departments)
  - Mail & Electronic billing
  - Disbursements for Financial Aid & refunds to students
  - Manage electronic bank deposits, etc.
  - Student loan administration/processing
  - Entry & exit interviews
  - Maintain/collect out on school loans
- Could function in a "one stop" shop scenario
- Still have lots of parents accompany students in conferences
- Liked UCSB's sit down cubicles/counters
- Adjacencies: 2 - Financial Aid, 1 - Registrar
- Demising wall:
  - Different Vice Chancellors – so may be an administrative issue
  - Not against loosing hard wall: needs to stay open to the idea
- Shared conference rooms with other departments –okay
- Need vault at cashier area & safe with in vault. Vault needs cash & coin counting area night depository necessary
- Armored carrier needs close access from shipping & receiving daily
- More volume in departmental cashier than tuition
- High priority for natural light: keep open space by window (SFSU model)
- Maintain services in suite (departmental website & document management)
- SBS needs "One Stop" representation…
- Never plan a cashier's office too close to a front door or stairway (security)
- Conference Room: for staff meetings very necessary: 16 people. One/month or more often. Could share
- Need for smaller conference room (4-6 people) in suite
- Remittance machine? Helps with mail volume/checks
- May need copy machine in suite/could share if adjacent (SBC not cashier)
- Private incoming fax machine
- Work area
- Central handout wall (liked it)
- Lobby was tight at SFSU
- Queuing space is an issue for UCR…120 people in line

TECHNOLOGY INFORMATION RESEARCH
March 3, 2004 – 8:30 AM

- Work for Student Affairs Division only
- Centralized – support for division
- Decentralized - departments
- 4 areas:
  1. Division online systems develops creation of systems for student life
  2. Optional imaging system – primarily for Administration & Financial Aid
  3. Regent office – archiving system
     Student recruitment
  4. Supporting desktop & hardware
     Will have to increase staff
- Space Needs:
- Currently Distributed in Hinderacker
- Currently consolidates the servers & personnel
- 2 PO's Assistant Director 9 W.S (some are students)
- area for repair work – could be enclosed or part of a larger W.S.
- Plan to brink (ex) modular furniture
- Server rack – separate room with cooling
- Optical Scanning Room
- Scanners – Quantity to be determined

    - For now, servers are adjacent to scanners
    - Need may diminish in the future
    - Need for adjacency to programmers TBD
- Adjacent – Publications (Vicki)
- Not much delivery
- Conference – not a big issue, meet with department typ. In their areas. IS training sessions can be in a shared conference room.
- In the future may eliminate the individual computer
- Will hook PC to server directly
- More emphasis on the server room
- One Stop:
    - Computers
    - Also wireless compatibility
- Department should be "tucked away"
- Technology information:

STUDENT SPECIAL SERVICES
March 3, 2004 – 10:00 AM

- Multi-program/function offices
- Costo:
    - 8 staff – all see students
    - Currently at Costo = Admin staff, transport services, (2 staff) = Mobility Services – place furniture in classrooms
    - 2 staff - place from in classrooms
- Rivera Library (Academic support area)
    - 2 staff
    - Manage student volunteers
    - Handle academic support services
    - Testing service – growing!!
    - Reading services
    - Interpreter services
    - Produce alternate media teaching services
- Testing Area:
    - Quiet Rooms
    - Large windows
    - CC TV monitoring
    - 7 single 50# (students, testing, assist, computer)
    - 7 double rooms – 80 +/-
    - 2 rooms for visually impaired students each at 100 sq. ft.
    - File room to store tests
    - Meeting room for 8, with tables & receptionist
    - Storage lockers for testing students
    - Mailboxes
- Alternate Media Room: – 120 sq. ft.
  -Produce Braille
    - Unisex toilet in the suite
    - Refrigerator with sink – for staff & students
    - Open after hours & weekends
    - Needs security from admin area
    - Lots of outlets & data lines in each space
    - Carpeting
    - 2nd exit in suite
- Administration:

    - Offices – full height – see students all day
    - Conference Room for 6 –120 sq. ft
    - Reception – also work with students
    - Workroom (copy, fax, etc.)
    - Repair room – students go back there – no glass required
    - Don't provide services to staff
- Storage – adaptive equipment, Filing, library – 120 sq. ft. room
- Adj.:
    - No one in particular
    - Carts (3-4 expedited)
    - Need recharging area
    - Covered, secure – can be outdoors
    - 2 lift – equipment vans – nearby if possible
    - Corridor wide enough for 2 wheelchairs
    - Mobility Services needs a sink
    - Staff work at night; want blinds on windows

STEERING COMMITTEE MEMBERS – SPECIAL MEETING
March 3, 2004 – 12:30 PM

- Should international services stake hold/identify be challenged?
    - Can any of their functions go to student commons?
    - "You can't be fully self-contained anymore" (Jim)
    - Kitchen may not be appropriate in SASS
    - Break rooms: must be adequate for them to be utilized.
    - Administrative functions are very well suited to SASS: Will look for commons to opportunities for Outreach/dining/artwork
- Student special services:
    - More inclined to adhere to Lenita's program requests.
    - Can testing rooms have a "shared" use? Not good utilization to use just as exam.
    - Commons?
    - Workshop/storage a corp yard issue?
    - Some testing will always need to be in suite…special circumstances
    - Special student services, how much testing/how often?
- Goals: Development of common use facilities to maximize utilization.
- Technology: Same goal as above.
- Goal: Welcoming. Each department had distinct feel/presence.
- Housing: May need presence at one stop.

END OF MEMORANDUM

memorandum

date 7 May, 2004

to Bill Johnson

from Tim M. Stevens

cc JAC, VV, DMK, file

project name University of California, Riverside

project no. 34113.00

subject **STUDENT ACADEMIC SUPPORT SERVICES (SASS) WORKSHOP #2**
March 17-18, 2004

SASAKI

Sasaki Associates Inc.
900 North Point St.
Suite B300
Ghirardelli Square
San Francisco, CA
94109 USA

t 415 776 7272
f 415 202 8970

KICK OFF MEETTING
March 17, 2004 – 10:00 AM

- Reviewed Sasaki's version of Project Goals
- Get Bill Johnson copy of PPT
- Question after Sasaki Presentation:
  - Elizabeth "Will conference room be jail-like?"
  - How will conference room be reserved (Suzanne)
  - (La Rae) How have other schools Sasaki designed worked?
  - (Bill Johnson) with more open environment comes security issue, re: equipment
- Bill Johnson
  - Furn is part of overall the const. cost
  - Est. $1.7 million required
    - Group subtotal – const, no site imp, no utilities, no landscape
  - $250/sq. ft. = const. Cost
  - of which $200/sq. ft = hard construction (sub 1) (target, per Luis)
  - Call SFSU – what % of contents are one stop, Internet, personal, & departmental

IMMEDIATE OUTREACH & PUBLICATIONS
March 17, 2004 – 12:30 PM

- Storage/work room could be partial height walls
- 120 sf conference room use
  - Max. – Fall – Sept – Dec recruitment
  - 1 full time
  - 1 intermittent
  - Year room
  - Transfer
- 1 Admissions & 2 Financial Aid – most desirable adjacency
- 12-16 times/year – phone campaigns 4 students usually operate 4-7 PM, staff person always on duty with students 12 phones *Earmark a nearby 350 sf conf. room for this function
- Admin & Outreach Communications
  - Immediate Outreach does mailer admissions (Vicki constructs and stores)
  - Web testing with 4 computers
  - Storage room
  - Mock-up constructions
  - Spare for 2 large printers (could be 80 sf work room)
  - Could all be in 1 room 200 sf
- Needs demising wall to secure equipment
- Could share secure offices space with Tech Services

FINANCIAL AID
March 17, 2004 – 2:30 PM

- At any given time students:
  - 1- fiscal
  - 1- demolishing
  - 2-3 mailings
  - 1- mailing
  - total 6
- Front counter – need to access lots of info
- Counselors have students in their offices
  - 2 counselors = all day walk ins = 2 conference rooms required
  - 8 counselors x 2 appointments a day = 16 hours = 2 conference rooms + 50/inc = 1 conference room / 3 total
- Offices:
  - Both Counseling and Operations are on the phone all the time
  - Cubicles should not be back to back cluster
  - One stop counter
    - Wants greater window separation than SFSU
    - 3 assigned, one flexible
    - *biggest load = mid august – mid October, next biggest load = 15th of each mother (same as Student Business Services)

SUSAN ORTEGA
March 18, 2004 – 8:30 AM

- Concerned about Steelcase workstations – hasn't seen systems with glass
  - Unless you can do light, air stations we will have a failed experiment
  - Matt Millard – Steelcase rep for UCR
- International Studies – needs a "living room" for students
  - Should have display space at One Stop
  - Maybe make library larger & add lounge seating
  - Function really belongs in commons, but there is no space there
- LEEDs Discussion
  - Sasaki – list items we thing we can put into building, and others we think are options – with associated costs – premiums. Baseliine – assumes can be achieved in any building – review for applicability to site.

UNDERGRADUATE ADMISSIONS
March 18, 2004 – 10:15 AM

- Six counselor rooms:
- Many of staff meetings are in La Rae's office
- Offices:
  - Adding one
- Locate articulation – WS – close to Eval. workstation (both need much quiet)
- All counseling conference rooms will need a computer, printer will be in department space, peak time summer into fall, May - August
- Adjacencies – functionality – Financial Aid, but contradicts need for quiet space, cycles are the same
- Do not need a demising wall

- *Note re: toilets – most staff are female
- *1st floor needs more toilets re: tours
- U of Cincinnati new building with living room clusters
    - (insert drawing)
    - (insert drawing) notes: Steelcase, Avenir, 9000, Ellipse, commonly used on campus
    - (insert Chart) Notes: Quarters begin January/April 1/ / September

REGISTRAR
March 18, 2004 – 12:45 PM

- 2 occasionally, 3 windows, inc never more than 6 people
- Waiting for 4-6
- Offices:
    - 3 Catalogs (publications)
    - 3 Technical
    - 5 Management
    - 1 Internal Records
    - Total of 12
- Needs conference room (120 Sf) adjacent to work area
- Adj. SBS, then Admissions, NOT by Financial Aid. (negative energy) or Outreach (load, young)
- (Regis) – (SBS) – (Fin. Aid)
- Transcript storage room: Card key access
- Shredding bins (go to a vendor) picked up 2-3 times a week
- One Stop – most students there to pick up records, diplomas. They must be secured = 2 file cabinet.
- Would like 10-12 Computers there (by today's standards) locate adjacent to cashier

INTERNATIONAL
March 18th, 2004 – 2:00 PM

- Mostly graduate students
- 6 admin, 2 support staff = 8 staff + 1 faculty office
- Large room, Resource Center, Conference Room – for the heart of the area
- (Ex)chapel holds 35 – room for 50 is ideal
- International students always working with Financial Aid & Registrar's Office
- Commons building is too chaotic for their functions
- Models: UCLA, UCSD
- Copy machine used all the time – one small counter top copier
- Diane to confirm amount of storage space required
- (insert Drawing) shelving Library

STUDENT SPECIAL SERVICES
March 18, 2004 – 3:45 PM

- 4 WS
    - 1 reception
    - 2 mobility
    - 1 financial manager
    - 8 offices – 2 at 120, 6 at 160

END OF MEMORANDUM

memorandum

date May 7, 2004

to Bill Johnson

from Tim M. Stevens

cc JAC, VV, DMK, file

project name University of California, Riverside

project no. 34113.00

subject **STUDENT ACADEMIC SUPPORT SERVICES (SASS) WORKSHOP #3**
April 7-8, 2004

SASAKI

Sasaki Associates Inc.
900 North Point St.
Suite B300
Ghirardelli Square
San Francisco, CA
94109 USA

t 415 776 7272
f 415 202 8970

CAPITAL PLANNING & DESIGN CONSTRUCTION
April 7th, 2004 – 10:00 AM

- DLA Cost model introduction, Philip Mathur introductions
  - See table of April 5, 2004
- Relatively recent projects – escalated to today's price
- Trend since August 2003 to 15% over budget
- Show estimate at 100% then escalate
- Reflects: 2004 – 5% 5-4% 6-3.5%
  - Luis – O.P. does not have a handle on current market conditions
  - Draft PPG will not have a C.I.B.
  - Final (PPG) in August will have C.I.B.
  - Draft PPG will be issued in late April

    - $250/sf x 60000 = $15M x 1.2 (20%) = $18M
    - $265 x 60000 = $15.9M x 1.5 (20%) = 19.08M
    - $265 x 55000 = $14.575M x 1.2 (20%) = $17.99M

EXECUTIVE COMMITTEE
April 7, 2004 – 11:00 AM

- Increase interaction between Costo & SASS sites
- Minimizing costs of renovating Costo
  - Create more of a 'front door' to commons thru Costo
  - Want to avoid is isolating Costo and Functions inside Costo
- Student commons is in last major opportunity to adapt/reflect SASS
- A. Where could food service be located?
  - If so, do as shell space now
  - Equivalent of Hinderaker Hall
- D. Orientation to Visitor Parking important
- 3 departments one floor/ 4-5 on other may be problematic
  - Had assumed 2-3/floor
- Freestanding on-stop 'information donut' kiosk
- Energy and Utilities (Pat Simone):
  - Standards (distribution to Sasaki – send to TMAD)
  - CFC Free system by project time
  - Utility diagrams - see sketch overlay
  - Metering requirements for project
  - Direct bury lines
  - Chilled water most likely comes from Pardall Wall

BRIEFING OF OVERALL GROUP ON ALTERNATIVES
April 7, 2004 – 2:00 PM

- Departments:
  - Double loaded corridor – not very friendly
  - Concern re: break space – single space omitted from early program
  - Scheme D: Pull International Services out on top of SSS
  - Cashier and one stop (Registrar) need to be adjacent
  - Double sided one stop requires circulation thru waiting station
  - One stop counters with unique identities
  - 'A' best for: Orientation Room, break room
  - Student rep: Favorite is Scheme 'A'
    - Space allotted for SSS, International students
    - GSA meeting tonight
  - 'C' least favorite

CAMPUS WORKING GROUPS
April 8th, 2004 – 8:00 AM

- Fire Marshal:
  - FDC at PE Building
  - Chas will upgrade frontage at south 15'-0" width
  - $2-50 sprinklers & fire alarm
  - Darius: Chas chilled H20/steam, close to our building
  - Fiber optic for FA loop
  - Area of refuse recommended at stairways: with comm. System
  - Codes: not sure if NFPA 5000 or CBC by then
  - FD Connection in front of P.E.
  - Min 20' – reduced to min 15' for CHASS
  - 150' depth requires turn-around or thru passage
  - Imaginary property line halfway off existing IL halfway off exist buildings
  - Loading deck can be start of another measuring PT
  - For 10', radius = 25' radius, 45' outside
  - Fully sprinklered/pully alarmed inc. smoke detectors
    - $2.50/sf for sprinkler + alarms
  - Student union has not fully coordinated with fire marshal in a while
  - No capacity issues at the site
  - No standpipe for 3 floors – 4 would require
  - *CHASS is bringing steam/CHW to the corner of our site, coordinate location/capacity with Darius
  - Fiber optic connection required for alarm system, this is not tel/data line
  - Parking lots have code blue; also escort phones
  - Create areas of refuge at stairways
    - Widen stairways landing + comm. Lines
    - Consider using elevator ring down line
    - Only one stair requires refuge
  - No emergency generator – battery packs only, unless computing requires for backup
  - Ability to connect to a portable generator
  - Don't locate/use only UCB – code still up in the air
- Physical Plant:
  - Ability to back feed from a generator is necessary

- Likes oil filled transformers
- Appendix to DPP } campus utility standards
- Can we build over 12 KV line in place? (ask engineer)
- Look at zig/zag transformer to eradicate harmonics
- Dimmable fluorescents are an issue
- Steve Burleson – plumbing
- Brian – electrical
- Internal transponders – prefer oil filled than dry, cost +/- 20% more
- Standards have been issued to Sasaki Associates
- Can we build right over the 12 KV lines and not move?
  - Possibility to build right over – assume: price to relocate
- Zig zag transformer to deal with computer harmonics
- Complete package of info to send to TMAD
  - Meeting notes
  - Utility sketches
  - 'Campus Standards'
  - Campus plans/information packages already sent to Sasaki
- CHASS is the most direct/closest source for CHW/steam
- Building metering spelled-out in 'standards'
- Technology:
- No generator in this building! Visit ability to plug one in
- 2 data/1 voice per 70 sf in module
- Doug: 2 data/1 voice per 100 sf standard
  - Conference Rooms = 1 data per wall
  - Common areas: Wireless capability
  - 12,000 sf of space served = DF 120 sf (essentially each floor)
  - BDF also: 120 SF
  - 290' is max length for data drop
  - Telephone cables run don mall…but are capacity?
  - Fiber optic
- **Cost Estimate note:** UC Riverside does all wiring for data & telecom In Construction Budget
  - Fiber, hubs & hardware are FF&E
- Departmental issue: use of card keys?, besides server
- Security system is a different animal: issued through police department (key pad entry)
- Servers have battery back up
- Back ups are available thru 3rd party service
- No application is so mission critical that it can't go offline for a few days (disaster recover)

INDIVIDUAL DEPARTMENTS/GROUPS OF DEPARTMENTS
April 8th, 2004 – 11:00 AM

One Stop:

- Plan 5'-0" per station
  a. Outreach THP 1, Peak 2
  b. Financial Aid –3-
  c. Registrar –3-
  d. Undergraduate Admissions –2-
  e. Housing –1-
  - 11 minimum
- General help desk or electronic sign board
  - Self-help computers with manned station behind it
  - Greeter could be used to direct traffic

- Individual lines for groups of counters
  - 3 queuing lines plus additional at peaks
- Promote seating and casual conversation; indoor/outdoor
- Electronic versions of queue management
- Standing counter height – eye to eye preferred by all, single station for handicap transactions
- Area for drop offs – maybe at counters
- Work space – counter for students to fill forms
- Central commercial shredder/campus uses a shredding service
- Conference Room is needed on first floor for counseling
- Two-way video communication as an alternative to face to face
- Camera supervision of counters
- Acoustic separation/confidentiality
- Emergency call buttons at each station
- Need copier and fax support station
- L-shaped stations to improve productivity during off hours

Cashier:

- 200 people in line at peak periods, adjacency to outdoor space a necessity
- Computer terminals can serve for bill paying as well
- Glass at counter is recommended by police. Has hinged portion that opens up…better than a "hole" thru the glass. "Friendly yet secure"
- Roll down shutter for security
- Panic buttons/motion detector/cameras
- Vault Riverside safe
- (insert drawing) Note: Coin counter, Highest security rating, Fireproof construction
  - Security is wired back to police at vault
  - Door to office is wired as well
- Workroom: network printer/copier/mail opener
- Access to Night drop & payment drop box at cashier door
  - At exterior of the building or lobby etc.
- Lockable drawers at each window with removable cash boxes (with lids)
- Cashier – 4 spaces
- SBS 1-2 spaces
- Cashier needs a queuing line
  - At peak times – may need 200 in line
  - Adjacency to an outside space for queuing is required
- Counter: Roll down security, some security screening exist is hinged doors
- Avoid claustrophobic feeling for tellers

Conference Rooms:

- Orientation: Robust Technology is likely necessary
  - Electrical screen, built in projector (ceiling), speakers, controls, lighting, P/A (lecture hall – like spaces)
- Conference Rooms – flexibility is key – don't limit use by way of hardware, *wireless access features
- "Time Square" info board, info kiosks – Lobby
- CALVIP: Video conferencing network for State of California Educational Facilities: High speed, TV Quality image & Sound. In place NOW
- Pressure sensitive whiteboards? In conference room; FF&E issue
- Orientation Room: 'robust", built-in, web access, powerpoint, sound, video
- Mostly tailor A/V for classrooms
- Standards for lecture halls – will forward to Sasaki Associates
- Ultimate flexibility will be to rent to other campus users
- Room 'profiles' – can share standards; i.e. surround sound
- Tours can be 15-100; sound reinforcement may be required

- Wireless needs in conference rooms
- Have existing self-service kiosks "top 10 questions"
- Video conferencing – CALVIP initiative, video conf. network for educational, k-12, CC, CSU, UC systems
    - Capabilities to display people/share files

BRIEF OUT – REVIEW
April 8th, 2004 – 3:00 PM

- Schedule
- Program 4 story 5 K sf-
- Alternatives
- Sustainability: LEED™ Certified level build silver into budget? , game of accounting
- Likes/dislikes: Larae
    - Outreach has high level of activity may be an issue for adjacency to "quiet" issues.
    - Likes "o" one stop: orientation is good – visibility is good
    - Special Student services Good Adjacency to Costo
    - "Absolutely Fabulous" courtyard make it "captured" by building occupants
    - Symbolic issue of 4 stores vs. student Commons

END OF MEMORANDUM

memorandum

date May 12, 2004

to Bill Johnson

from Tim M. Stevens

cc JAC, VV, DMK, file

project name University of California, Riverside

project no. 34113.00

subject **STUDENT ACADEMIC SUPPORT SERVICES (SASS) WORKSHOP #4**
May 5, 2004

SASAKI

Sasaki Associates Inc.
900 North Point St.
Suite B300
Ghirardelli Square
San Francisco, CA
94109 USA

t 415 776 7272
f 415 202 8970

UCR SASS WORKSHOP #4:
May 5, 2004

Planning/Design & Construction:
- Darius/Luis/Bill
- First meeting:
  - Discuss area take-offs, ASF/GSF and %
  - UCR wants further study of area

Executive Committee:
- DRB wrap-up (of 4 May)
  - Colonnade doesn't/shouldn't block Student Center
  - Scheme 'A' would appear to be more expensive

Programmatic uses for the Courtyard space:
- Visitor function - tours
- Formal/informal uses - receptions
- If it wasn't designed as a semi-private space, it would otherwise, be total "mass circulation"
- Staff retreat, rest & relief during breaks
- Bring dept. together – visibility for all
- 'Yield event' – admin to acceptance – "the courting phase of student enrollment"
- More exposure to users at counters & to One-Stop
- Sustainability – daylight & ventilation

Other goals:
- Maintain coordination with the Student Center
- Responses posted online:
  - 70% of respondents prefer 'A'
  - 25% prefer 'D'
  - 0% 'B' & 'C'
  - 100% for courtyards
- Courtyard needs to feel semi-public

DPP format issues:
- Draft issued in electronic & hard copy
- Soils reports:
  - For Costo, CHASS, Student Center
  - Bill to forward
- Bill to assemble comments for draft of T of C
- LEED – register now? Certified, not an equivalent
- Bind in GBC for UCR

RUN-THRU OF POWER POINT PRESENTATION:
- Tim Stevens presented
- Height requirement 3-4 stories
- Use land base efficiency – density feels 'correct'

WRAP-UP WITH COMMITTEE OF USERS:
May 5, 2004 – 1:00 PM
- See sign-in sheet circulated (photo session)
- Tim Stevens presentation of power point
- SASS and Student Services are complimentary
- Write courtyard into Program

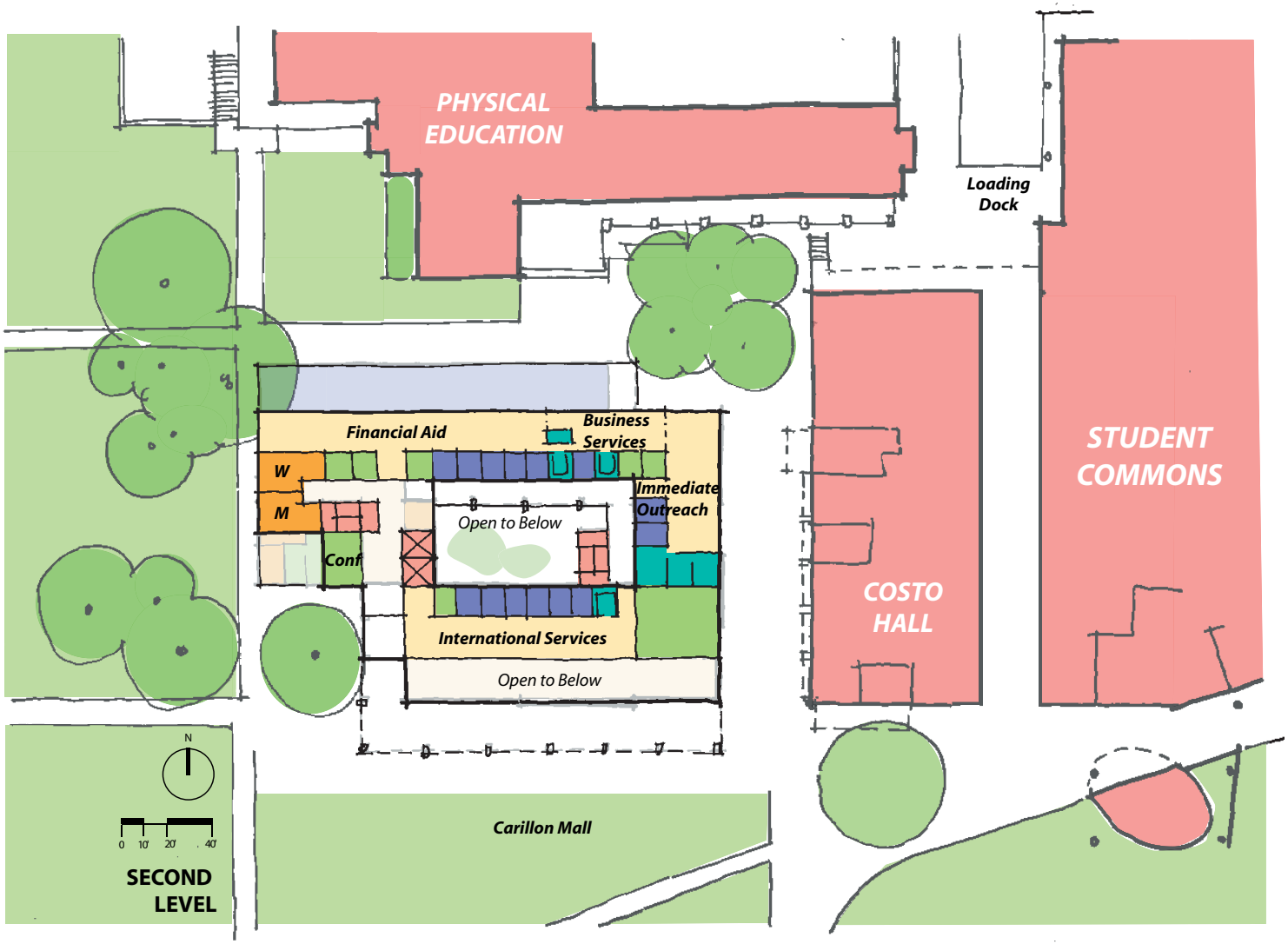
PHILIP MATHUR (DLA):
May 5, 2004 – 3:00 PM
- Send % values for exterior
  - Stucco
  - Brick
  - Glazing
- Take off area of glazed sidelights
- Square footage
- Area study/per floor with real layouts

End of Memorandum

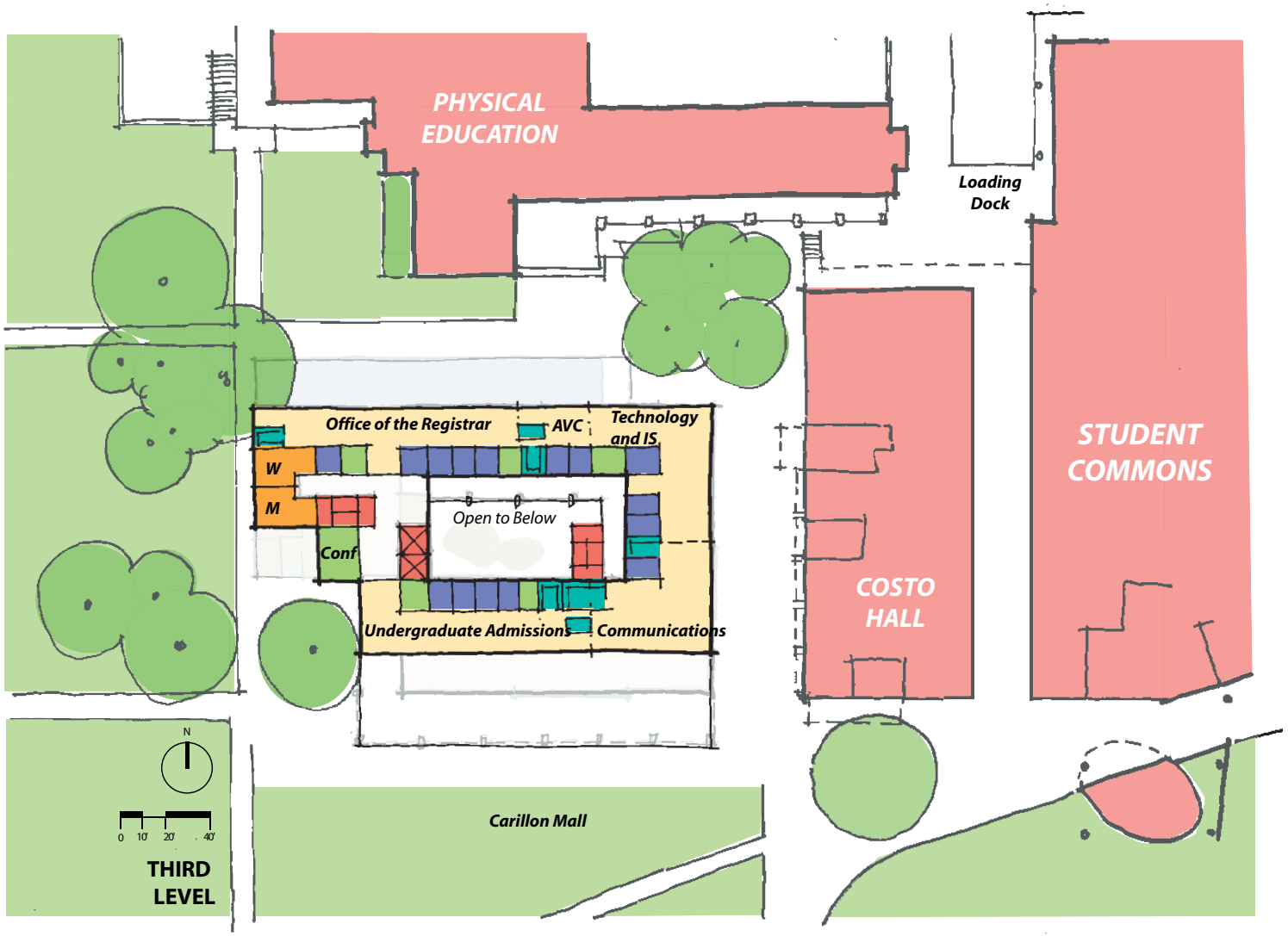
6.2

Alternative Schemes

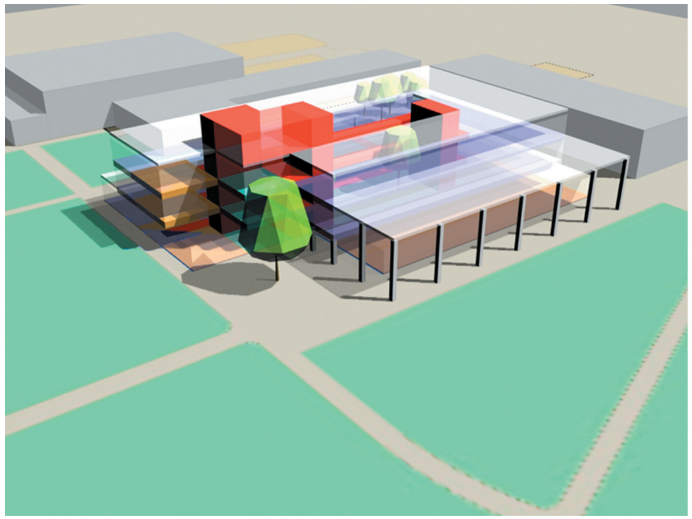
SCHEME A - PREFERRED CONCEPT



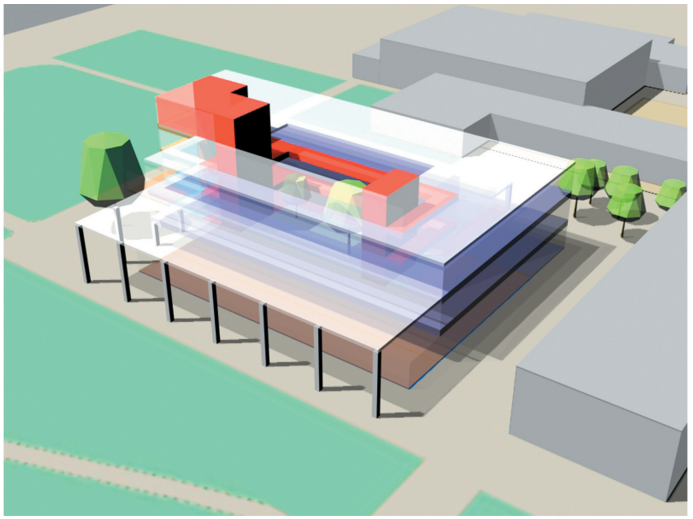
SCHEME A - PREFERRED CONCEPT



SCHEME A - PREFERRED CONCEPT

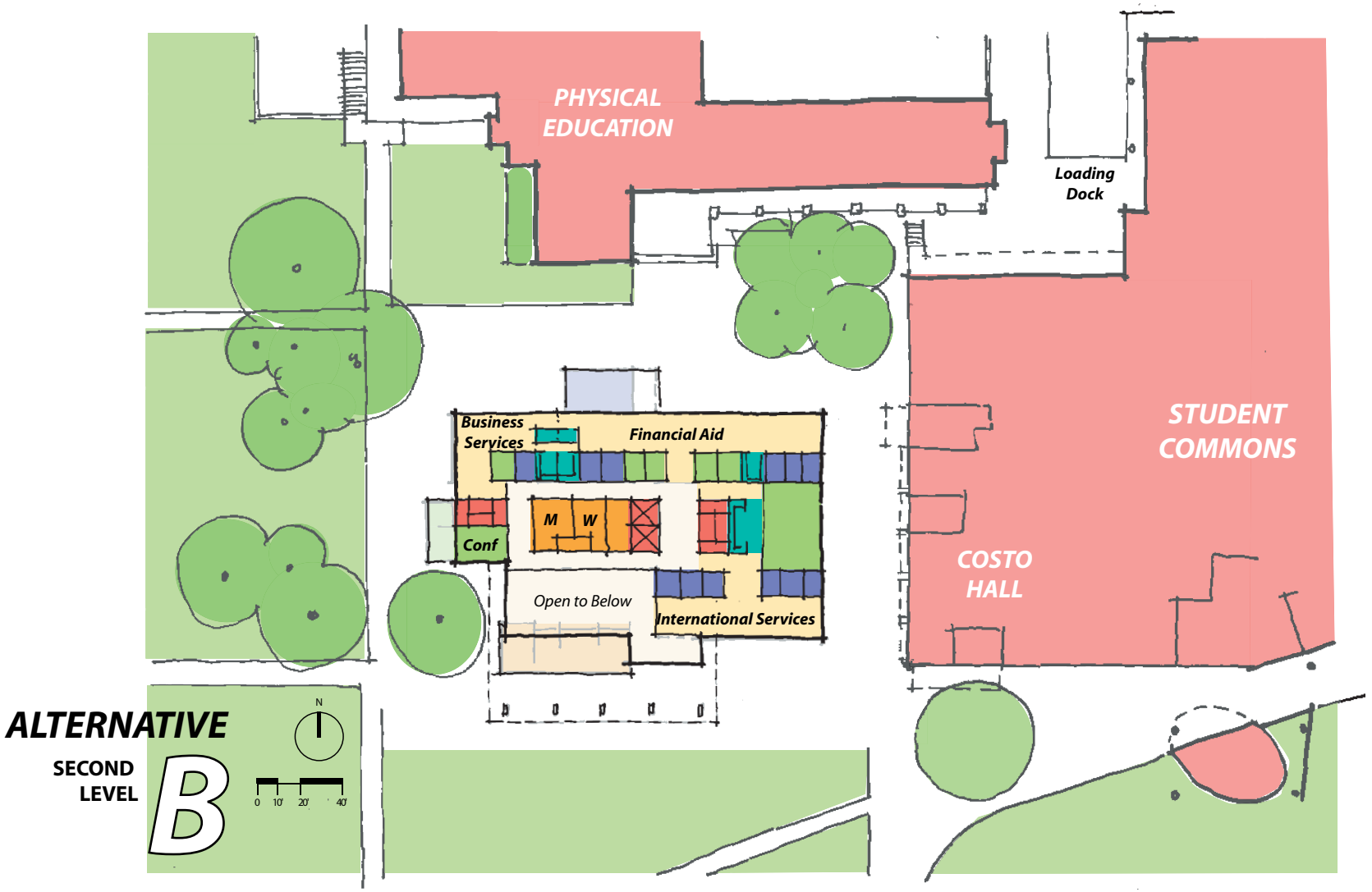


SCHEME A PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHWEST



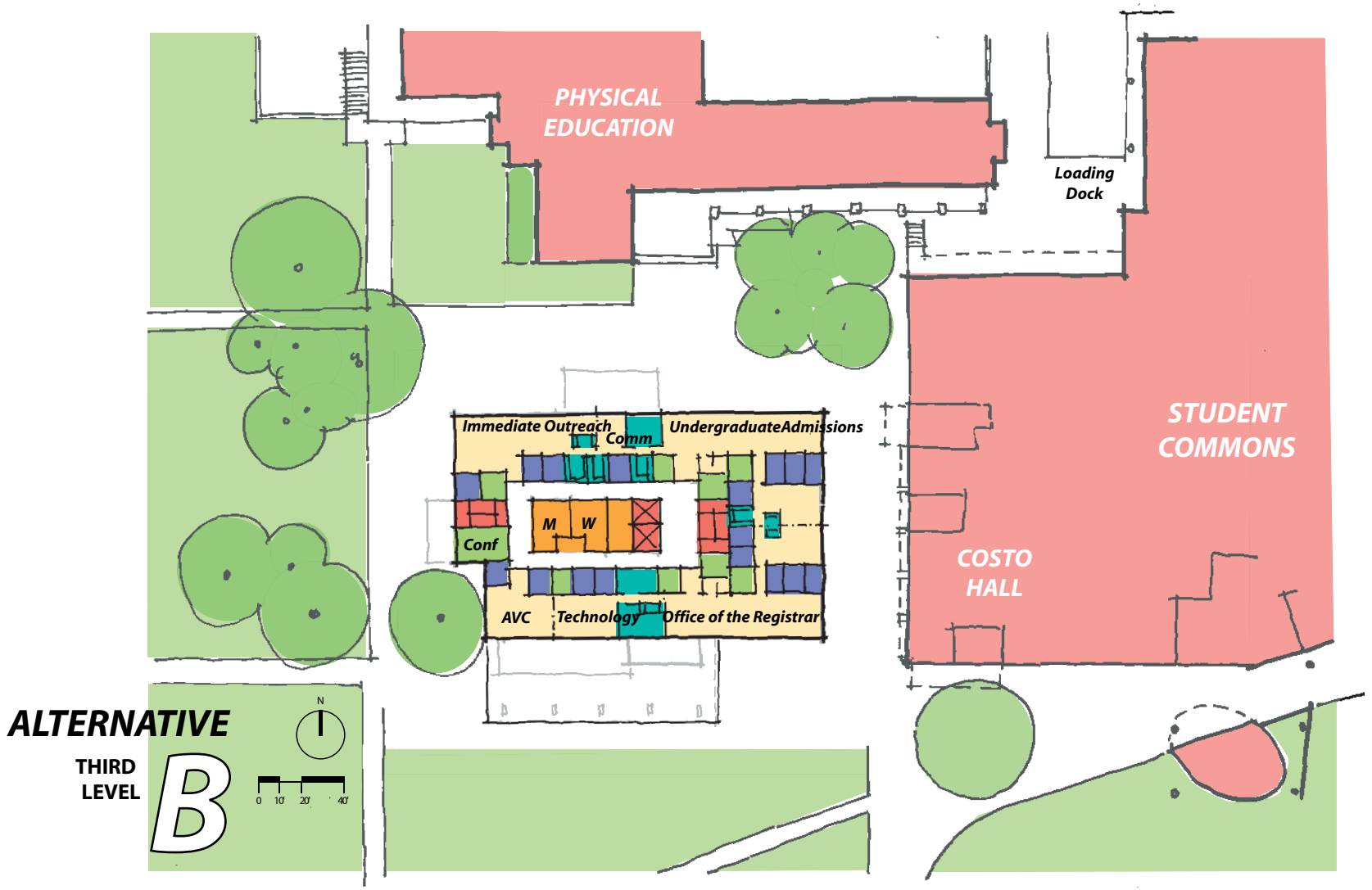
SCHEME A PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHEAST

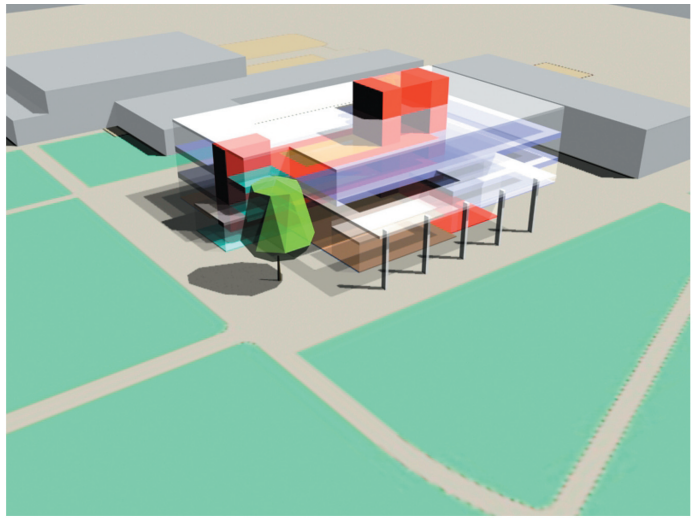

PHYSICAL EDUCATION
Loading Dock
STUDENT COMMONS
COSTO HALL
Ship/ Rcv'g
M
W
Publ'n
Special Student Services
Cashier
Orient'n
Lobby
One Stop
Dedicated Oak tree
ALTERNATIVE
GROUND LEVEL
B
N
0 10' 20' 40'



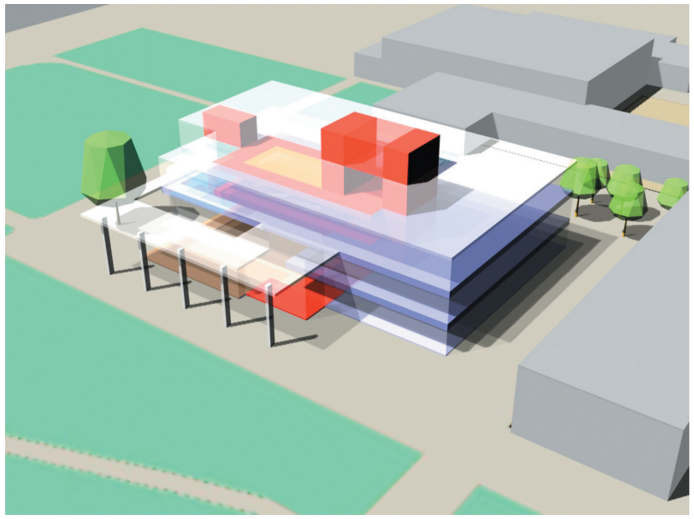
ALTERNATIVE B

SECOND LEVEL


PHYSICAL EDUCATION
Loading Dock
STUDENT COMMONS
COSTO HALL
Immediate Outreach
Comm
UndergraduateAdmissions
M
W
Conf
AVC
Technology
Office of the Registrar
ALTERNATIVE
THIRD LEVEL
B
N
0 10' 20' 40'



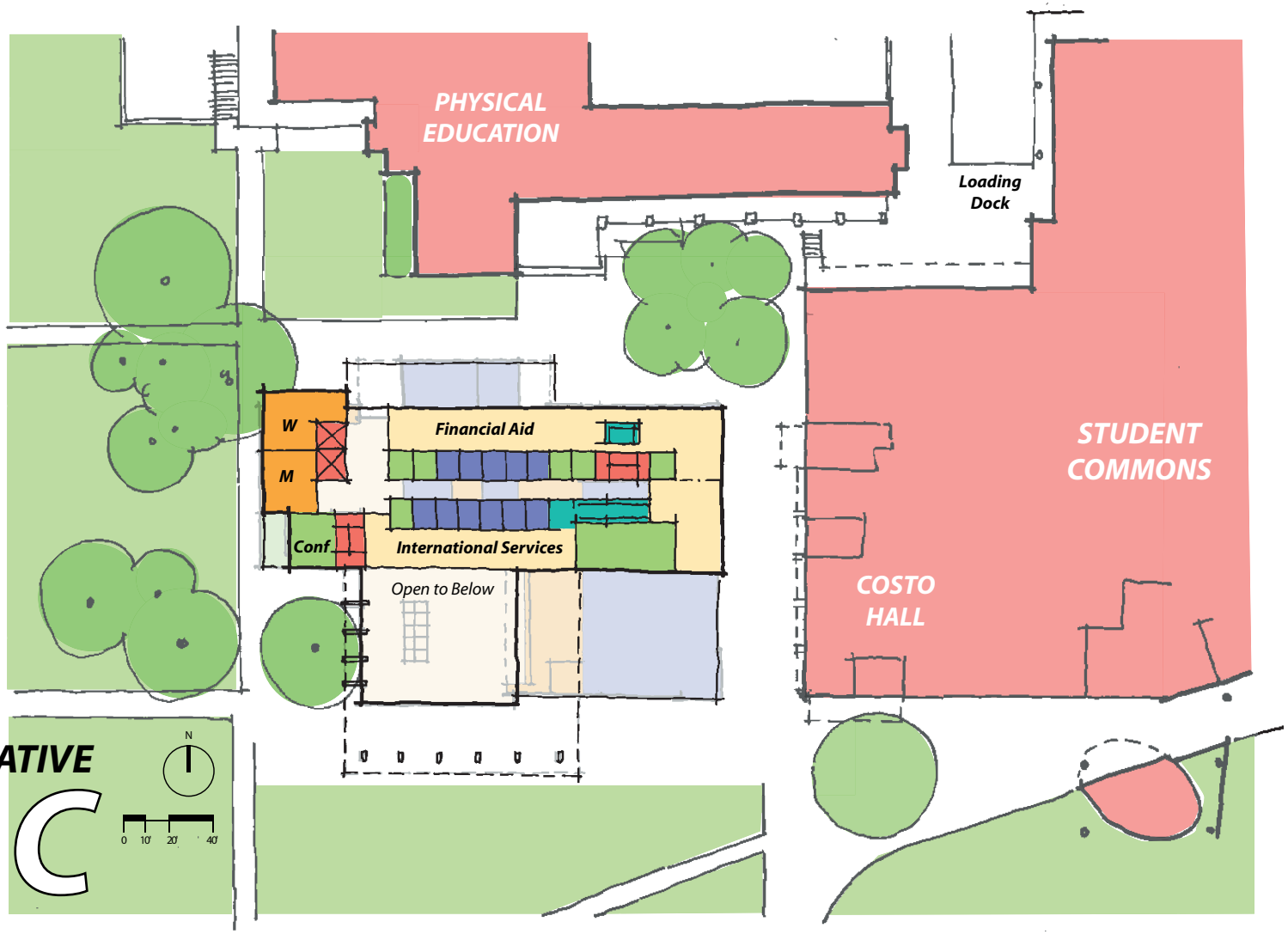
ALTERNATIVE B PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHWEST



ALTERNATIVE B PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHEAST

ALTERNATIVE C

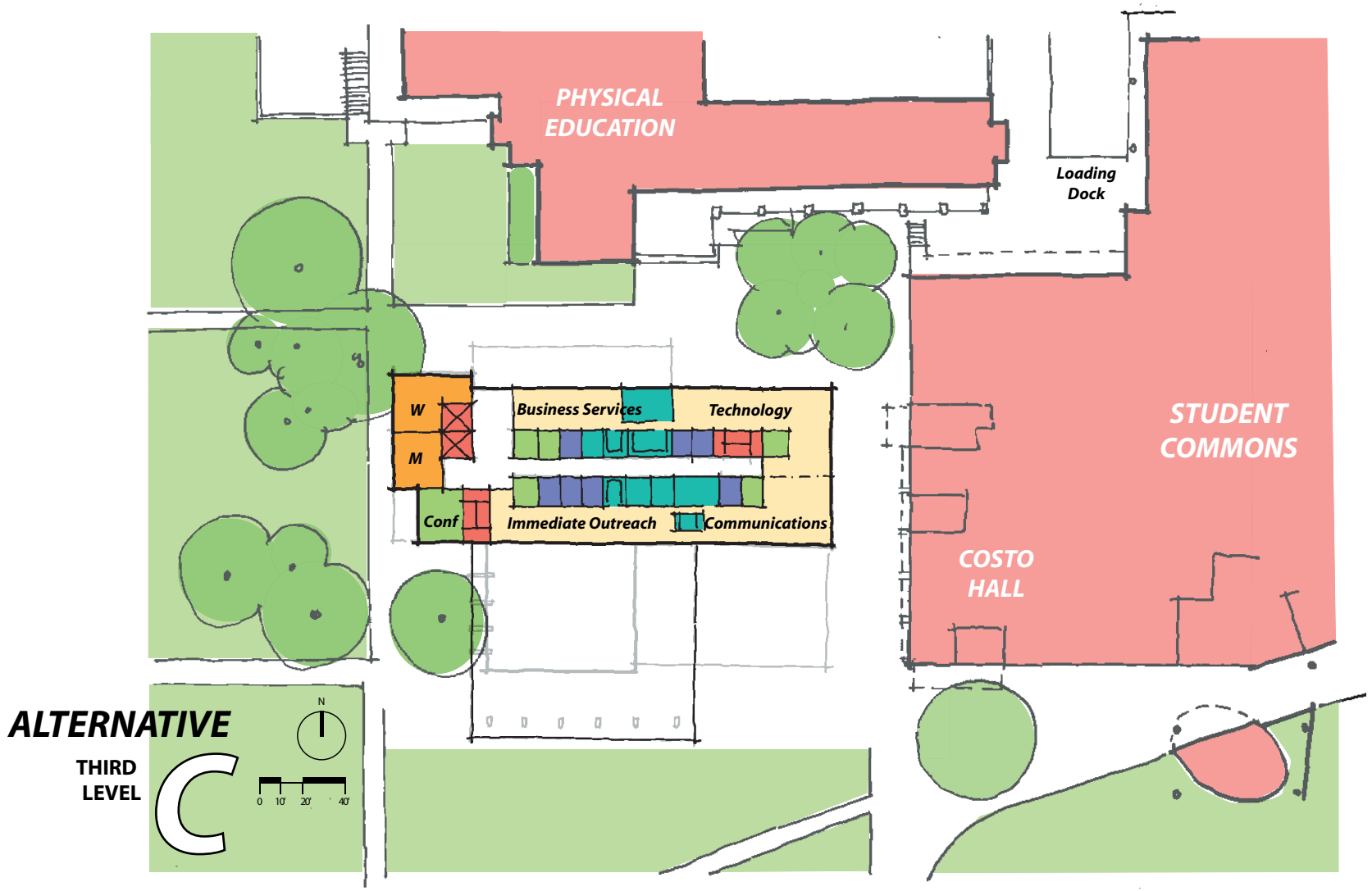
GROUND LEVEL



ALTERNATIVE

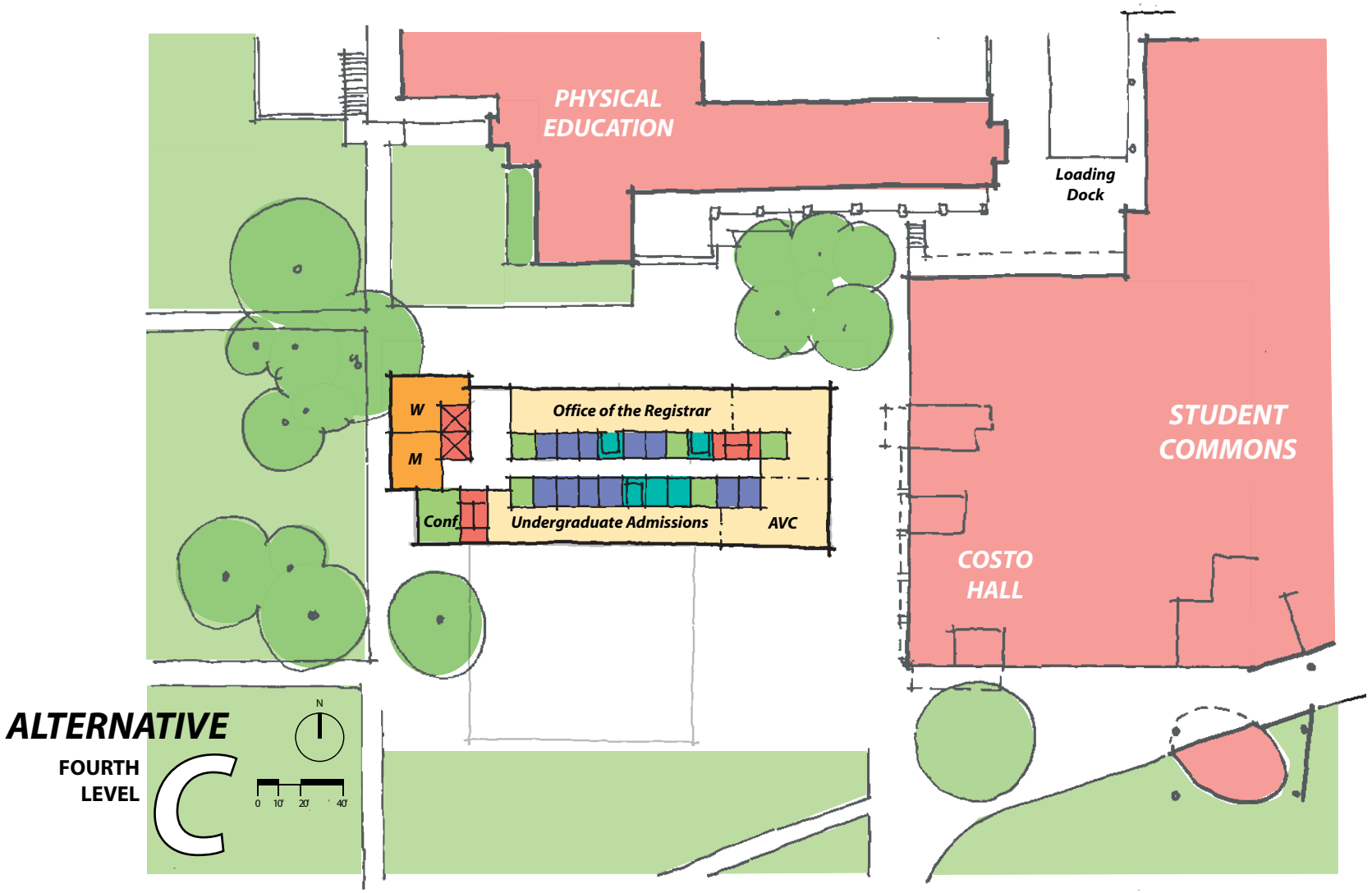
SECOND LEVEL

C



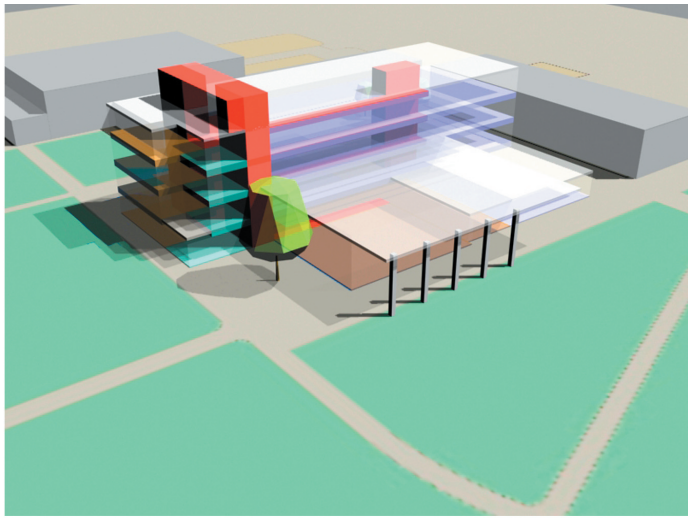
ALTERNATIVE C

THIRD LEVEL

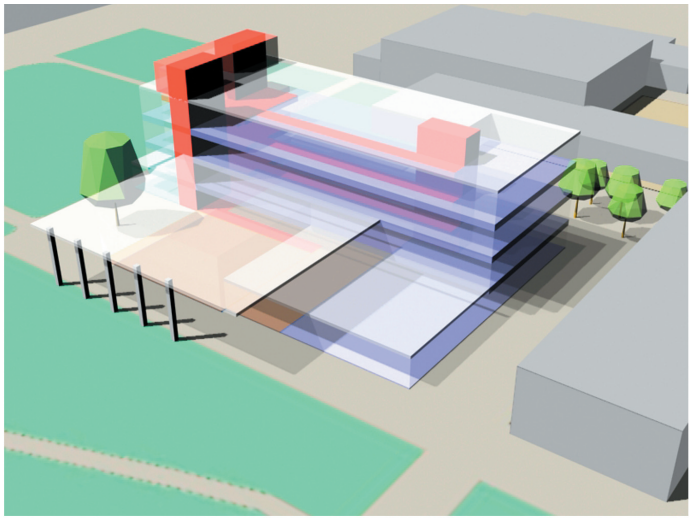


ALTERNATIVE C

FOURTH LEVEL



ALTERNATIVE C PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHWEST



ALTERNATIVE C PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHEAST

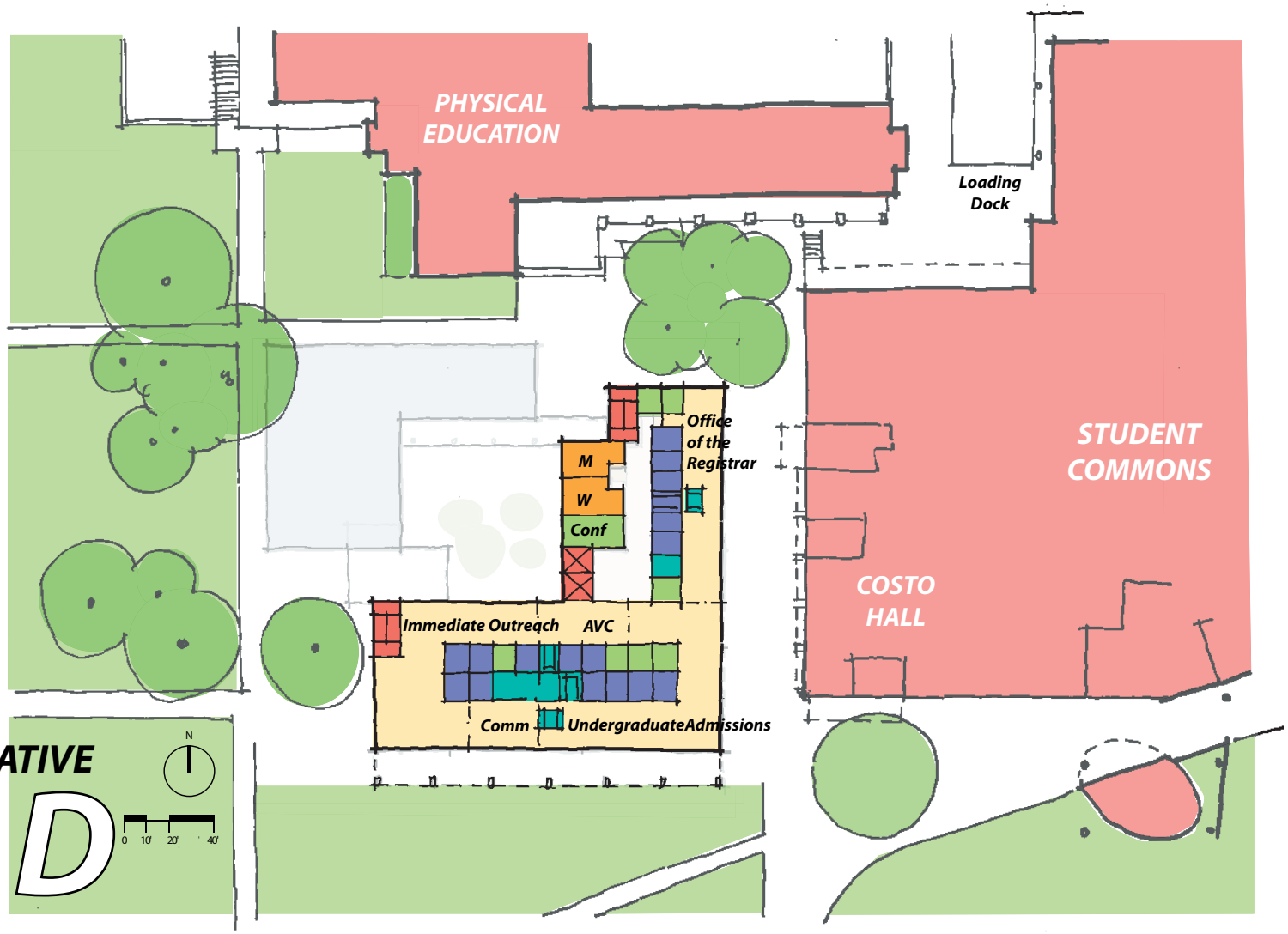
ALTERNATIVE D

GROUND LEVEL

ALTERNATIVE

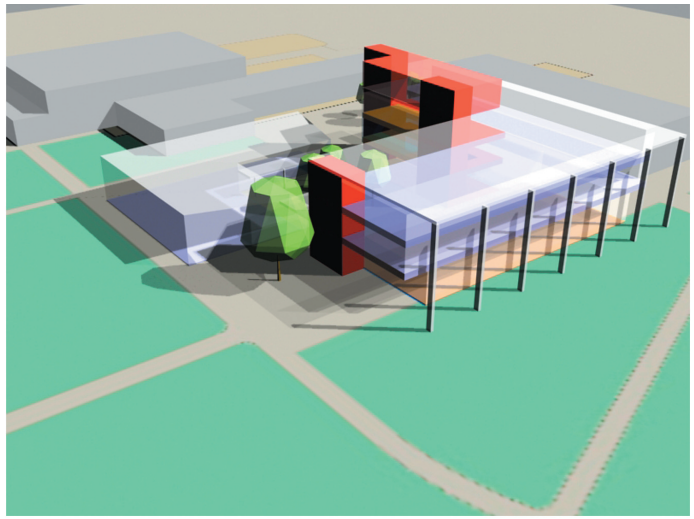
SECOND LEVEL

D

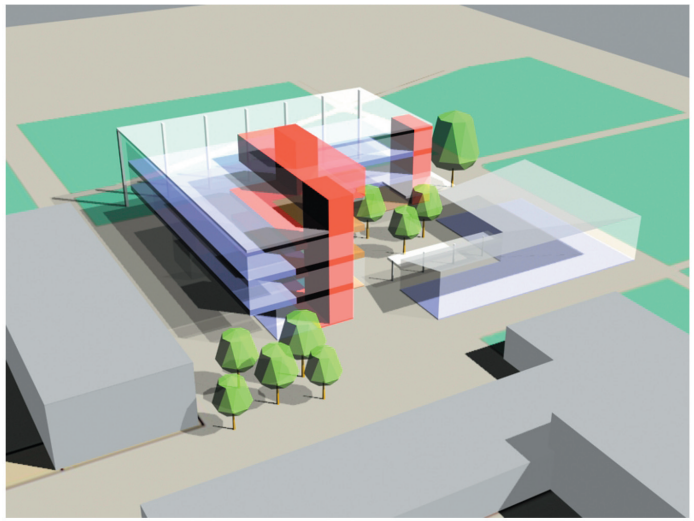


ALTERNATIVE D

THIRD LEVEL



ALTERNATIVE D PRELIMINARY MASSING:
AERIAL VIEW FROM THE SOUTHWEST



ALTERNATIVE D PRELIMINARY MASSING:
AERIAL VIEW FROM THE NORTH

6.3

Campus Building Standards

HIGHEST PRIORITY NECESSARY ADVANTAGEOUS

BUILDING STANDARDS

ENERGY MANAGEMENT SYSTEM (EMS)

- Every new building should have its entire HVAC system controlled by the EMS
  - This allows for temperature alarms throughout the building, it lessens the cost to connect lab equipment alarms to the system for notification (a service that we could sell to researchers).

- The EMS shall communicate with the main Operator Work Station located at the Central heating plant via the existing fiber optic network.
  - This allows the operators to monitor several buildings before leaving the plant every morning, it is faster than dialup, which is limited to one building at a time. All alarms are reported and can be responded to quickly.

- Training shall be part of all new buildings and major renovations
  - Every designer and therefore every building have their own unique situations.

- The EMS vendor and Physical Plant will jointly select the system and point names for the building
  - This will provide a consistent point naming protocol throughout the campus.

- Project graphics shall be generated and provided and shall include graphs of each AHU, CHW distribution, HHW distribution, floor plans showing actual conditions (temperature, %RH,…etc.) and their respective setpoints.
  - This will provide for rapid diagnostic review of equipment operation.

- The EMS Vendor shall work with Physical Plant to automatically generate reports to the Central Heating Plant Operator Workstation. Reports will include trend, alarm and status histories of multiple points. The reports will be stored on the Central Heating Plant Operator's Workstation. These reports shall be downloadable into Xcel spreadsheet files.
  - This will provide for rapid diagnostic review of equipment operation

- The EMS Vendor shall work with Physical Plant to create displays that will show on one screen the values and status of: each AHU system points, chill water distribution system points, heating hot water system points, all reheat valve commands (% open) all VAV damper commands (% open), fume hood sash position (height), fume hood proximity status (on/off), fume hood exhaust flow rate (cfm).
  - This will provide for rapid system (chw, vav, reheat,…etc.) diagnostic review of equipment operation

- The EMS shall contain all equipment and programs so that time of day (TOD) scheduling can be implemented for all equipment controlled by the EMS.
  - This will eliminate the need for vendor call back to install equipment and/or software

- There should be a single EMS vendor for the Campus
  - To take full advantage of a EMS and to justify its higher cost the operators need to have in depth knowledge of the workings of the system, how to extract information, diagnose problems and modify operations. Multiple systems make that significantly harder.

- Training shall include but not be limited to: scheduled periodic inspections during construction showing Physical Plant Personnel the location of EMS equipment and routing of control wiring and tubing, explanation of all control sequences that will include written sequence, control program flow diagrams, control language listing, procedure to create and edit system points, procedure to create graphics, description of the workings of individual controllers, actuators and sensors including trouble shooting.
  - This gives the operators the knowledge necessary to operate the building efficiently.

- Copies of training materials shall be provided to Physical Plant at least 2 weeks prior to training.
  - This allows the operators to come to training prepared to ask intelligent questions.

- Training materials shall include all O&M manuals.
  - Basic information necessary.

- Every field component shall have a permanent label attached. The label's information shall include EMS point name, point description, point address, spring range, .. etc.
  - Reduces service time and quest work. Very little cost to vendor.

- All field panels will have 40% spare capacity for future installation of components.
  - Reduces the cost of future expansion of system.

- The EMS vendor shall purchase the latest versions of controllers and software available at the time that the EMS contract is awarded. Software shall be installed on the two workstations located in the Central Heating Plant and onto the 4 laptop computers.
  - This will maintain compatibility throughout the campus.

- Provide outside air temperature and outside air dew point sensors reporting to the EMS.
  - This will allow for automatically increasing discharge air temperature from the air handlers on the many low humidity days thus reducing both cooling and reheat energy consumption

- Proofs of HVAC pump and fan operation will be by analog amperage probes.
  - This will allow the EMS to trend motor amperage and calculate HVAC electrical consumption. Amperage is also a very good tool in diagnosing equipment problems.

FUME HOOD CONTROL

- All fume hoods will be controlled by Phoenix Controls.
  - Staff has been trained on Phoenix Controls.
- All controls shall be accessible for service and inspection.
  - Basic
- Supply and exhaust air flow in every room with a fume hood will be controlled by Phoenix Controls.
  - This is consistent with present policy.
- All fume hoods will communicate with the building's EMS. Minimum information that will be shared shall include:
  sash height percent opening,
  hood exhaust air flow rate (cfm),
  supply air flow rate,
  general exhaust air flow rate,
  proximity sensor reading, and
  hood alarm status.
  - This gives the HVAC crew notice of problems, the ability to document energy consumption at the hoods, and the ability to work with researchers to keep hoods at minimum position when no one is standing at hood.
- All Phoenix Controls shall be electronic and not pneumatic, digital and not analog.
  - Electronic will eliminate need for compressed air to operate air flow control valves, this complies with long term plan to eliminate compressed air for HVAC controls. Digital control offers increased information sharing with EMS.
- All fume hoods will be equipped with Proximity sensors
  - Significant energy savings, and allows for reduced size of air handlers and ductwork.

HVAC DESIGN CRITERIA

- Space cooling shall be provided by the campus CHW system. Local DX equipment may be installed as backup for critical areas.
  - Consistent with long range plan, less variation in equipment to maintain, less space taken up in building,
- Provide adequate and safe access to the all mechanical areas, including rooftops, to provide for the changing of large equipment such as an air handler fan motor and also for the delivery and removal of motors.
  - Safety issue and preventative maintenance issue.

- Provide conveyance to all rooftops, where mechanical equipment exists, for the removal and replacement of heavy equipment such as air handler unit fan motors. The ideal access is a elevator. A minimum access is a hatchway wit a davit and hoist capable of removing and replacing the heavy equipment located on the roof.
  - Safety issue and preventative maintenance issue
- On heating hot water and CHW systems provide manual valves so that the following can be isolated and the remaining system can be operated during maintenance work;
  every coil,
  each riser at each floor level, and
  branch lines serving 3 or more coils.
  - This will allow for maintenance on specific equipment without shutting down large segments of a building.
- Balancing valves shall be in addition to isolation valves and not used for both purposes.
  - This will allow maintenance on equipment without altering the fluid flow balancing.
- Provide computerized modeling for energy consumption use and rates to use in selecting the final HVAC systems and items.
  - Data from modeling will be used in Life Cycle Analysis at "Value Engineering" sessions. Without data there can be NO value "engineering.'
- Provide color coded labeling on all HVAC piping that will show; fluid in pipe, direction of flow, system(s) served.
  - Aides in rapid diagnosis of building problems, provides higher level of safety, shortens operators learning curve at a building.
- Provide air flow monitoring for VAV boxes controlled by the EMS.
  - It is a small add to the VAV box and the DDC vendor's (Johnson and Siemens) provide the software and hardware to perform this on their application specific controllers. The extra cost comes with the EMS vendor and the balancing contractor having to work together.
- Provide electronic actuators for all control valves and control dampers.
  - This will eliminate the need for HVAC compressed air in the building, thus reducing the buildings maintenance cost, and improving control.
- Ventilation on demand shall be the basic building design criteria. Other criteria shall not be used unless a 20 year life cycle cost analysis shows that other criteria are more cost effective or if safety can not be maintained.
  - Very large energy savings, provides better indoor air quality, will be the method in the near future.

AHU DESIGN CRITERIA

- Provide adequate isolation dampers on all AHUs that have multiple fans.
  - This will allow individual fans to be safely shutdown and worked on while the remaining fan(s) are in operation..
- Backdraft dampers shall be provided for all exhaust fans connected to a common plenum.
  - Necessary to prevent short circuiting of air when one or more fans are off.
- In all buildings that require humidification locate all humidifiers at the exit of airhandler.
  - Necessary to protect air handler fans, coils, motors, dampers, filters, … etc.
- Provide temperature sensors in the return air duct and mixing box of AHUs.
  - Necessary to ensure proper operation of return and mixing air dampers.
- Provide air flow measuring stations, monitored by the EMS, at each air handling unit and provide analog current transmitters for the proof of each of the air handler fan motor's operation.
  - With air flow and amperage monitoring in place this data can be trended and used to diagnose proper operation of the air handlers and provide accurate AHU electrical energy consumption rates under various conditions.
- Provide variable frequency drives (VFD) to control the AHU fan speed of all VAV systems. All VFDs will connect to the EMS via gateways.
  - VFDs are the most energy efficient way to maintain static pressure in the ductwork. The gateway allows one connection to perform many functions and reduces installation cost and providing more information than is possible with multiple connections.

COIL DESIGN CRITERIA

CHW COILS

- All coils shall provide a minimum 20°F differential temperature between entering and leaving water temperatures at design conditions.
  - The large temperature difference reduces the pumping requirements thus reducing energy consumption and provides necessary pressure differential at buildings at far end of flow loops.
- All AHU CHW coils shall have a minimum of 10 rows.
  - The greater the number of rows the greater the temperature difference.

HEATING HOT WATER COILS

- All reheat coils shall be a minimum of 4 rows.
  - This will allow lower reheat temperatures, lower pumping rates, and greater temperature difference at the heat exchanger. All three items reduce energy consumption

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CHW DISTRIBUTION DESIGN CRITERIA

- All isolation valves, control valves, strainers, and coils shall be accessable..
  - Necessary for maintenance and safety.
- The building CHW return temperature control system shall be installed and controlled by the EMS to return water at 55°F (adjustable) or greater.
  - Necessary to reduce the chw pumping requirements so that all buildings can maintain temperatures. The EMS allows for monitoring and better control.
- Redundant chilled water pumps are each to be capable of 100% of maximum load.
  - Necessary to maintain building temperatures in hot weather.
- The speed of the CHW pumps shall be controlled by a variable frequency drive (VFD) to maintain system differential pressure.
  - VFDs are the most energy efficient way to maintain static pressure differential in the piping. The gateway allows one connection to perform many functions and reduces installation cost and providing more information than is possible with multiple connections

HEATING HOT WATER DESIGN CRITERIA

- All isolation valves, control valves, strainers, and coils shall be accessible.
  - Necessary for maintenance and safety.
- The speed of the HHW pumps shall be controlled by a variable frequency drive (VFD) to maintain system differential pressure.
  - VFDs are the most energy efficient way to maintain static pressure differential in the piping. The gateway allows one connection to perform many functions and reduces installation cost and providing more information than is possible with multiple connections
- Heating hot water (HHW) pumps shall be capable of 100% of maximum load to provide redundancy.
  - Necessary to maintain building temperatures in cold weather

METERING DESIGN CRITERIA

- Meters will be provided to monitor and record consumption of the following utilities:
  Steam,
  Electricity,
  Chilled Water (CHW) energy,
  City Water, and
  Natural Gas
  - Metering at each building is a basic necessity in managing utilities.

- Steam, electricity and CHW meters will communicate with the EMS for both instantaneous demand (analog) and total consumption (pulse).
  - Pulse data recorded at the EMS will be trended and downloaded into data bases to show graphically and in table form consumption vs. time. The instantaneous values are available for these meters and allow for high usage alarms and shows results of control changes quickly.

- City Water and Natural Gas meters will communicate with the EMS for total consumption (pulse).
  - Pulse data recorded at the EMS will be trended and downloaded into data bases to show graphically and in table form consumption vs. time.

- CHW supply and return water temperature sensors shall be capable of being field calibrated over the operating range of the sensor. Calibration shall be for at least 4 points within the range.
  - Normal temperature sensors are accurate to +- 1^{o}F. This can result in a 10% error. The intent is to annually calibrate the sensors and their "smart" transmitters with the same temperature bath. This will reduce that error to less than 1%.

STEAM SYSTEM DESIGN CRITERIA

- Provide a redundant condensate pump.
  - Necessary for backup and maintence.

- Provide a adjustable steam pressure reducing regulator to regulate the steam pressure to the condensate pumps.
  - Provides better control of pumping and is safer.

- Provide isolation valves, strainers and blow down valves upstream of all steam traps.
  - Basic piping practice, allows safe service and diagnosis, protects traps.

- Provide test valve and cap downstream of all steam valves.
  - Very useful diagnostic tool to show proper operation of valve.

- Provide a temperature sensor in the steam safety vent that communicates with the EMS.
  - This will give an alarm whenever the safety lifts.

- Condensate return pumping shall be via a steam motive pump and not electric.
  - These pumps have proved to be more reliable than electric powered pumps.

- The sizing of the steam pressure reducing station(s) is critical.
  - Over sized pressure regulating valves are subject to erratic pressure control causing safeties to lift frequently. This wastes energy and shortens the live of the safety.

- Spirax/Sarco steam traps are the campus standard. Any variation shall be subject to Physical Plant approval. In no case will traps be allowed that are not readily available in Southern California.
  - This will allow stocking of steam traps by reducing the number of models. If traps are not readily available energy is wasted and equipment can be damaged.

SPECIAL EQUIPMENT DESIGN CRITERIA

- Exhaust ductwork serving high humidity equipment such as washers shall be constructed of stainless steel to prevent rusting.
  - Galvanized ductwork can fail in as little as 5 years.

- Reverse osmosis equipment will continue to be equipped with meters to monitor and record total product and reject water.
  - Metering will show when it is necessary to increase percent of reject water. This data should be used as part of determination of when to replace membranes.

- Autoclaves will be provided conservation packages that will shut off all steam and city water after a preset (adjustable) time of no activity.
  - Significant savings of steam, city water and chilled water.

- Glass washing and cage washing equipment shall be equipped with timers that will stop heating the water in the hot water reservoirs when the equipment is off and preheat the water 30 minutes (adjustable) before scheduled startup.
  - Saving of steam and chilled water consumption.

- Autoclaves will be provided with sensors to measure the temperature of the reject water to the sewer and to modulate the sewer cooling water to meet setpoint (adjustable).temperature.
  - Increased savings of city water.

EQUIPMENT ACCESS DESIGN CRITERIA

- All HVAC equipment installation will meet the manufacture's minimum clearance. Architects, Engineers, Contractors, and Project Managers shall not design and/or install equipment that does not meet these clearances unless approved by the Physical Plant Department.
  - Basic for safe and possible maintenance.

COMMISSIONING CRITERIA

- Engage a commissioning team that does not include individuals directly responsible for project design or construction management.
  - No conflict of interest.
- Review the design intent and the basis of design documentation.
  - Eliminate problems early on.
- Incorporate commissioning requirements into the construction documents.
  - Provide authority to do the job right.
- Develop and utilize a commissioning plan.
  - Clearly define goals and responsibilities.
- Verify installation, functional performance, training and operation and maintenance documentation.
  - Prepare the building for turnover.
- Complete a commissioning report.
  - Necessary for continuous operation of the building.

ELECTRICAL CRITERIA

REDUNDANT POWER

- No MC cable shall be used within the building.
  - MC cable is flexible conduit. This conduit can not be reused when circuits are changed or added.
- Automatic Transfer switches shall be installed to start the generator and to transfer the load in the event of a power outage.
- Two parallel electric 12 kV feeds shall be provided for each new building.
  - Allows work on one feed while other is active eliminating shutdowns.
- Two 12 kV isolation switches shall be provided to safetly isolate the building from either or both feeds without shutting down that feed.
  - Allows electricians to safely and quickly switch from one feed to the other.
- Buildings that will have critical loads that have a potential for damage during short shutdowns shall have double ended switchgear separated by a tie breaker circuit breaker. The breaker will close when either feed looses power.
- Emergency/normal electrical generators will be installed to provide power to all life safety equipment and critical building loads. The generator and the emergency/normal electrical distribution system will be sized to handle a minimum 50% greater load than the initial design.

- Loss of electrical power in a building shall trigger a alarm that will annunciate at the Campus Police Station, the Central Steam Plant Control Room, and the Electrical Shop.
- Specify premium efficiency motors.
- All building power (outlets and equipment not lighting) that is not on the emergency/normal distribution shall be on one building riser. Taps shall be installed on this riser for safe and rapid connection to a portable electric generator.
  - This will power to all critical loads that are not backed up by emergency generator.
- Include power factor correction on all electric motors rated at 10 hp or greater. Correct to a minimum of 90%
  - This reduces total amperage in building and thus on campus feeds. This is a code requirement in many states. If the structure of our existing electric contract changes to be more like a conventional large user rate the power factor penalty can be several hundred thousand dollars per year.
- Provide filtered air to slightly pressurize the main electric room.
  - This will help keep the switchgear clean and reduce maintenance costs

CONSTRUCTION PROCESS

- All changes to the contracted design will be discussed with Physical Plant, for their approval, before implementation.

FIRE ALARM SYSTEM

- The fire alarm system shall be Simplex where their price is equal. Price determination should include the initial installed cost plus, warranty cost and the maintenance cost for the first 5 years of operation.
- Physical Plant will receive Submittals for review prior to acceptance.

ELECTRICAL CONSERVATION

A primary goal of the electrical design will be to minimize electrical energy consumption while maintaining a quality environment for academic and research pursuits. With electrical energy conservation in mind the following items will be evaluated in the design phase. Decisions regarding acceptance or rejection will be based on life cycle analysis, safety, and maintenance requirements.

- All lighting fixtures shall be made in the United States and stocked in Southern California.
- Occupancy sensor control of lighting in all conference rooms, bathrooms, assembly rooms.
- Exit signs will be low wattage fixtures.
- Rooms with multiple rows of lighting fixtures will have multiple switching. Each row parallel to the outdoor windows will have it's own switch.

- **Automatic daylighting controls,**
- **Background lighting levels will be selected based on the use of task lighting at work spaces.**

PLUMBING

- **All isolation valves, control valves, and strainers shall be accessible.**
- **Fire hydrants shall be installed at least 5' from the in ground isolation valve.**
- **Fire hydrants and backflow protection located on roadways and parking areas shall be protected by bullards.**
- **Water connections for fire and domestic use shall maintain the campus dual flow system and three isolation valves shall be at the point of connection. Valves shall be located upstream and downstream of the point of connection and on the feed to the building.**
- **The building water supply shall have a pressure gage installed.**
- **The building water supply shall have a pressure regulator installed in all projects where the pressure may exceed 80 psig in accordance to UPC Code.**
- **All restrooms shall be equipped with floor drains.**
- **All restroom floors shall be sloped to drain to the floor drain.**
- **Backflow prevention equipment shall be installed and tested in accordance to UPC Code requirements.**
- **Roof bibs shall be provided for surfacing of roof top equipment.**
- **Mechanical areas shall have containment and floor drains.**
- **Sloan flush valves are the campus standard and shall be provided. Any substitution must be approved by the Physical Plant.**
- **The connection of condensation indirect waste lines to direct waste lines will be in mechanical rooms and be accessable.**
- **Pretreatment of reverse osmosis water shall NOT incorporate the use of acids to adjust for ph.**
- **Water tanks, heat exchangers and other plumbing, mechanical equipment shall be protected by containment and a floor drain.**
- **Mechanical areas shall be located at the lowest level of a project whenever possible.**
- **All hot water distribution systems shall recirculate the water to provide hot water quickly.**

- **Separate acid waste drainage systems shall be installed at all research facilities.**
- **Provide color coded labeling on all piping that will show; fluid in pipe, direction of flow, system(s) served.**
  - **Aides in rapid diagnosis of building problems, provides higher level of safety, shortens operator's learning curve at a building.**

DOORS – HARDWARE

- **All locks to be used on interior offices shall be Schlage D53JD X Rhoades X 626 finish cylindrical locks, except for remodeling in a building that already has Best locks.**
- **All locks to be used on labs shall be Schlage D60JD X Rhoades X 626 finish Cylendrerical locks, except for remodeling in a building that already has Best locks.**
- **All locks have to be campus (UCR Lockshop) designated Primus Keyway. They shall be "O" bitted with two keys per cylinder, except for remodeling in a building that already has Best locks..**
  - **This is a restricted keyway, UCR is the only one that can purchase this keyway. This restriction has totaly stopped the duplication of campus keys by local lockshops or hardware stores. Our security has gotton much tighter since the installation of this keyway.**
- **All cylinders and keys shall be delivered to UCR lockshop only.**
- **Contractor to supply construction cores for doors needing to be locked during construction.**
- **All keying on any system shall be done by UCR Lockshop only.**
- **All Entries to bldgs. shall have VonDuprin 99 Rim device panic bars with key removable Von Duprin Mullions on any double doors.**
- **Single exterior doors shall have Von Duprin 99 series panic hardware with 992L lever handle outside trim and cylinder dogging.**
  - **This is panic exit hardware door must be able to be opened with a single motion push anywhere on push bar. Lever handle is to comply with ADA, cylinder dogging allows push bar to be locked down in an open position but only by use of a key. This stops anyone except those authorized to leave a door in the unlatched position. Von Duprin has been our campus standard for several years because of warranty and it's service time far exceeds any other brand.**

- **Double exterior doors require same hardware as single doors with the addition of a key removeable mullion.**
  - **The mullion is a removeable post between the two doors. The mullion allows for far more security than the old way of using two devices with vertical rods that latch top and bottom. Useing the mullion both panic devices can be latched at the center of the door for more strength, The mullion also covers the gap between the two doors not allowing a coat hanger to be pushed through and the panic bar pulled to gain entry. Studies have also shown that in an emergency more people can be moved through a devided doorway than a open one**

- **There shall be no deadlocking operators on any exterior doors.**
  - **Deadlocking operators refers to deadbolts or key locking swing up bolts etc. These cannot be used on exterior doors, code requires the it only take one motion with no special knowledge to open any exit door from the inside no matter if the door is locked or unlocked.**

- **All exterior doors must have self latching and locking capability.**
  - **If a person exits a door the door must close and latch and remain in the same condition it was in before the exit. If locked when it closes it must still be locked and secure.**

- **Where used, all entries to bldg. shall be fitted with Door-O-Matic Pivot's and Door-O-Matic floor checks-sized for maximum strength for doors being installed.**

- **All interior doors requiring surface mounted door closers shall have LCN 4111 models.**
  - **.LCN has been a benchmark in the closer industry for years and again its service life far exceeds other brands of closers. The warrenty is long and we are never questioned if a return is needed.**

- **All lab doors shall have Schlage D60JD X Rhodes cylindrical lockset.**
  - **This is a lever handle lockset to comply with ADA,it also is double cylinder. This lock requires a key to leave it in a locked or unlocked state. This is used on labs to keep unauthorized people from locking or unlocking doors. It is our standard because service life, warrenty and the JD stands for removeable core which fits our Schlage Primus I/C core**

- **All offices Shall have Schlage D92JD X Rhodes cylindrical locksets.**
  - **Function of this lock is single cylinder on outside button on inside. This is standard for offices gives the ability to leave locked or unlocked with no special action. Again service life, warrenty, compatibility and factory support are reasons we require these.**

- **All storerooms, custodial and mechanical rooms shall have Schlage D80JD X Rhodes locksets.**
  - **These locksets remain locked at all times. When a key is used and removed the door will be secure when it closes. All other same as above locksets.**

- **Any Bldgs. requiring Card Access shall have Hirsch Access Controls and approved readers.**
  - **This system is our campus standard and is in use in several of our buildings. This system is the most reliable, expandable and servicable system available. The control panel a command and control module in it that holds all it's functions. This module can be upgraded any time Hirsch does an upgrade, it is on the web you just download it and flash it to the controller and you have upgraded the panel at no cost. The reader end of the system let's you just unplug a reader and replace it with any technology (card,finger print, retina scan,etc) plug it in and it works. This means the panels never go obsolete and by being able to change reader types they never go obsolete. Factory support on this product is second to none and this is why it has become our standard.**

- **Any exterior doors having card access shall have a key override on exterior with cylinders compatible with door locks.**

- **All interior doors with card access shall have "Storeroom function locks" with electric strikes, Electric Strikes shall be VonDuprin or equivalent.**

- **Any Handicapped doors on entries shall have Door-O-Matic Senior swing operators with electric eyes and wall mounted push pads. (no floor mats)**

- **Security alarm systems shall be Ademco Vista 50P.**
  - **This is a campus standard we have more than 260 current accounts on campus. This system is very reliable, expandable and serviceable. This system is compatable with the campus police receiver and we have the ability to up and download information to the systems via our shop computer with the use of Ademco Compass software. This cuts the service time down.**

- **Any doors in Bldg. requiring flush bolts shall have manual flushbolts. (NO AUTOMATIC flush bolts.)**
- **We have found the manual to be far more reliable, lower in cost and safer, we have had complaints that when the automatic ones get dry the activation tab that sticks out from the edge of door has cut several peoples legs in the library. The manual type do not have anything that projects beyond the door edge.**

- **Any exterior doors having card access shall have Electro Magnetic locks and touchbars for exit.**

ELEVATORS

- **Controllers shall be MCE, no substitution.**
  - **Motion Control (MCE) manufactures "universal" controllers that any elevator service company can troubleshoot and maintain. These do not require specialized training, proprietary diagnostic tools, etc. As such, use of MCE controllers has been accepted as a campus standard ever since the CH&SS elevator controllers (Montgomery – KONE) were replaced at UCR's expense with MCE controllers.**

- **Emergency phones in elevators shall be selected primarily for their ability for use on campus, i.e., they must be fully compatible with the ring-down system currently employed at UCR.**
  - **Elevators that are located with exterior doors have a much higher failure rate than elevators of the same age and type that are installed within a building envelope. 90% of all elevator failures are attributable to door hardware problems. When an elevator has a door that opens to an exterior location, it is subject to inclement weather, debris, and a certain level of abuse that doesn't take place inside buildings. At minimum, all elevator entrances should be protected by a storefront-type vestibule**

- **Underground piping of hydraulic fluid systems shall be not allowed under any circumstances. All hydraulic fluid system piping shall be fully accessible for maintenance and inspection of the pipeline.**

- **All elevators shall have a two year warranty and maintenance period to commence upon final acceptance of the facility, not beneficial occupancy. The contractor shall provide full service maintenance that matches the terms and conditions of the existing contract with Oliver & Williams, including but not limited to response time criteria, fire service inspection, permit posting, maintenance of emergency lighting and other battery back-up systems.**

- **Elevators and elevator machine rooms shall be located such that no departmental security systems have to be accessed, such as card readers, security pads, etc. Elevators and elevator machine rooms shall be located outside of restricted containment and quarantine spaces.**
  - **From a security standpoint it may not be desirable to allow non-UCR personnel access to areas secured by card access systems, key pads, etc. Further, some areas would not allow entry of any person other than departmental personnel such as providing maintenance of the dumbwaiter in the Insectary & Quarantine facility (which has since been taken out of service).**

- **Emergency phones in elevators shall be selected primarily for their ability for use on campus, i.e., they must be fully compatible with the ring-down system currently employed at UCR.**
-

- **Elevators shall not be placed such that they open to any exterior space. All elevators shall be enclosed within the building envelope. In those cases where an exterior entrance is desirable to meet ADA or other constraints such as the Pierce Hall addition, the elevator entrance shall be contained within an enclosed foyer.**

- **Data shall be collected prior to construction to determine usage patterns. In those cases where use of a hydraulic elevator would require an oil cooling system in order to provide safe and continuous operation, a traction elevator shall be used in place of a hydraulic elevator.**

- **"Hole-less" hydraulic elevator systems shall not be used.**
  - **"Hole-less" elevator systems have telescoping cylinders on either side of the elevator car as opposed to the standard cylinder/ram configuration used on most hydraulic elevators. These are more expensive to maintain, and the footprint of the hoistway takes up more space to accommodate the dual telescoping cylinders.**

SECURITY EQUIPMENT

- **Security alarm panels shall be capable of supporting 86 individual zones incorporating basic hardware, polling loop (multiplex) and wireless capabilities**

- **Panels must be partition able with a minimum of eight individual partitions available**

- **Panels must have the ability to accommodate 75 indivual user codes per partition.**

- **Panels shall be capable remote contact, for programming purposes, via Ademco Compas software.**

- **Panel must allow "log on" to all partitions via keypads which offer alpha descriptive displays.**

- **Ademco Vista 50-P control panels with Ademco 6139 keypads meet all listed requirements with no known equal.**

Building Services Desired Specifications for New/Retrofit Buildings:

- **No carpet should be used in corridors or other "high traffic" areas, i.e. classrooms.**

- **VCT should be used in corridors and other "high traffic" areas.**

- **Baseboards/coving should be of standard, conventional type and not be decorative, wood or other material which impedes cleaning operations.**

- **Before completed buildings are turned over to Building Services for maintenance, the building needs to be thoroughly clean and in "turn key" condition.**
  See ATTACHMENT 1 at end of this document for procedure.

- **When all hard surface floors are sealed and/or have floor finish applied, the "Preparing New VCT Floors for Use" (attached) needs to be followed.**

- **When all hard surface floors are sealed and/or have floor finish applied, the product(s) used should be the same as what Building Services uses for like tasks.**

- **In rest rooms, Building Services will furnish - AT NO CHARGE – to the contractor, the required amount of toilet paper dispensers, paper towel dispensers and hand soap dispensers for the contractor to install. The contractor is responsible for the purchase and installation of seat cover dispensers, sanitary napkin disposal units and any/all other material to be installed.**

- **In the custodial closets, the sinks should be "true" floor sinks and be neither wall-mounted sinks nor the floor sinks with greatly elevated containment.**

- **Wall mounted and locking cabinets should be installed in the custodial closets, to comply with federal and Health and Safety regulations concerning chemicals labeled "Danger".**

- **At least one custodial closet/custodial storage area, should be keyed off the master to eliminate free access, and no custodial closet keys should be accessible to building occupants.**

- **Prior to the building being turned over for occupancy or for beneficial occupancy, a representative from Building Services should be included in the walk-through to indicate discrepancies.**

- **There should be at least one elevator in all new construction of multi-story buildings, large enough to accommodate equipment transport, the moving of furnishings, etc.**

- **No sanitary napkin dispensers or condom dispensers shall be installed in any building.**

- **The custodial closets should be increased in size to accommodate the mechanical equipment assigned to the building – or a centralized area within the building should be provided for the storage and battery charging functions necessary with this equipment.**

- **Windows in multi-story buildings should be "swivel-type" type for ease and thoroughness in cleaning.**

- **It is important to remember that these buildings are serviced at night and, therefore, lighting needs to be sufficient in all areas in order for the custodial service to be up to standard.**

Classroom furnishings should be standardized, so as the desks/chairs move from room-to-room/building-to-building, they could easily be replaced with those of like nature/color.

ATTACHMENT 1

Preparing New VCT Floors for Use

The standard utilized by this campus in the preparation of VCT floor area include the following chemicals:

"Emulsifier Plus" from Spartan Chemical Corp.
"Shineline Floor Prep" from Spartan Chemical Corp.
"Shineline Seal" from Spartan Chemical Corp.
"Upper Limits" from Spartan Chemical Corp.
"Damp Mop" from Spartan Chemical Corp.
"Bounce Back" from Spartan Chemical Corp.

Depending upon the size and location of the floor to be completed the following equipment would be utilized:

Automatic scrubber, equipped with black strip pads
Standard speed (175 RPM) floor machine, equipped with black strip pad
Wet vacuum, with wand and floor tool
High Speed floor machine, equipped with "Gorilla" pad
Mop handles, mop buckets & wringers, mop heads
Dust mops with handles and braces
Brooms, dust pans and waste containers
Polyliners (for the mop buckets)
Clean, dry rags (preferably towel ends)
Small hand bucket
Vinyl or rubber gloves

Procedure:

Once the size and scope of the project is determined and the appropriate equipment and chemicals are determined and attained, the following procedure will be utilized to accomplish the task at hand:

1. Dry clean the floor area, using the dust mop(s) until the entire floor surface is clean and free of debris, soil, dust and lint. Running a hand across the floor surface needs to result with the hand being clean. This inspection needs to be accomplished in several locations on the floor.
2. Mix the "Emulsifier Plus" with hot water, according to manufacturer's directions.
3. Using the wet mop and mop bucket, without the wringer, liberally apply the mixed "Emulsifier Plus" onto the surface of the floor – covering just enough area that can be accomplished before the solution dries.
4. Using either the automatic floor scrubber or the floor machine, with the black pad(s), strip the floor surface free from any/all manufacturer coating, as well as any stains or scuffs.
5. Using the wet vacuum, remove the moisture and sediment from the floor.
6. Repeat steps 1 through 5, until the entire area to be accomplished is completed.
7. Empty the mop bucket and clean it thoroughly. Remove the mop head from the handle and set aside so that it cannot be used again during the remainder of this process. Replace the mop head with a clean and dry one.
8. Following the manufacturer's directions, mix the "Shineline Floor Prep" in the clean bucket and attach the wringer.
9. Dip the mop head in the solution and wring to damp.

10. Starting at one end of the floor and working a “figure 8” procedure, damp mop the entire floor surface, changing the solution often to keep it fresh. (It may be necessary to repeat this step to ensure that the surface is adequately “sweetened”).
11. Empty the bucket and clean thoroughly. Remove and set aside the mop head(s) used, so that they cannot be used again during this procedure.
12. Insert a polyliner in the bucket, so that the entire interior of the bucket is covered. Install the wringer onto the side.
13. Pour sufficient amount of “Shineline Seal” into the polyliner, in gallon increments, to either accomplish the task or the section of the floor to be completed.
14. Using the “figure 8” motion, start at one end of the floor and apply one thin coat of seal to the entire floor surface, wringing the mop head to damp with each insertion. Replenish the seal as necessary.
15. Once dry, repeat step 14 to apply a second thin coat of the seal to the surface.
16. Remove the wringer from the bucket and set aside. Remove the polyliner and discard with any remaining “used” seal inside. Remove the mop head(s) and set aside so that they may not be used again in this procedure. Rinse the bucket and the wringer.
17. Insert an clean polyliner into the bucket, so that the entire interior of the bucket is covered. Install the wringer on to the side.
18. Pour sufficient amount of “Upper Limits” into the polyliner, in gallon increments, to either accomplish the task or the section of the floor to be completed.
19. Using the “figure 8” motion, start at one end of the floor and apply one thin coat of finish to the entire floor surface, wringing the mop head to damp with each insertion. Replenish the finish as necessary.
20. Once dry, repeat step 19 to apply a second thin coat of finish to the surface.
21. Once dry, again repeat step 19 to apply a third thin coat of finish to the surface.
22. When completed, insert a polyliner into the small bucket and add sufficient finish to coat vinyl baseboards.
23. Don gloves and get down on hands and knees.
24. Dip the clean rag into the finish and hand wring to damp.
25. Apply a thin coat of finish to the baseboards.
26. Remove all materials and equipment from the area and clean them thoroughly before returning to storage. Place all mop heads, dust mops and rags in washer and clean in hot water with detergent. Rinse all hand and floor pads with hot water.
27. After 24 hours of “cure” time, return to the area. Bring the high speed floor machine, “Gorilla” pad(s), mop bucket/wringer, mop handle/heads, dust mop handle, frame and head(s), “Damp mop” and “Bounce Back”.
28. Again, thoroughly dust mop the floor until as clean as original process.
29. Mix “Damp Mop” and hot water, according to manufacturer’s directions in the mop bucket. Install wringer.
30. Using the “figure 8” motion, start at one end of the floor and damp mop the entire floor surface.
31. Empty the solution and rinse the bucket and wringer. Remove the mop head and set aside to prevent from being used again in this process. Replace with clean and dry mop head.
32. Add the “Bounce Back” to the bucket in full strength.
33. Using the “figure 8” motion, apply the “Bounce Back” to the entire floor surface. Let dry to haze.
34. Using the high speed floor machine and the “Gorilla” pad, buff the floor surface to a high gloss.
35. Using a clean, dry dust mop, sweep the floor surface, removing any/all dust.
36. Inspect area for satisfaction.
37. Clean all equipment and materials prior to returning to storage. Place all mop heads and rags in laundry to be washed in hot water and detergent.

END ATTACHMENT 1

6.4

Communications Standards

INTERIM COMMUNICATIONS INFRASTRUCTURE PLANNING STANDARDS

University of California, Riverside
Computing and Communications
March 27, 2001

Appendix
200

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Introduction and Background

The University of California, Riverside is currently developing communications standards for new building construction and major renovations. These campus standards will be based on the proposed Construction Specifications Institute (CSI) Division 17 addition to the Division 1 – 16 MasterFormat (Division 17 is a model that will allow organizations to effectively design, plan, and estimate inside and outside copper and fiber cable plants, as well as data and voice systems).

Development of this standards document is underway, but final completion of the project will take at least 9 to 12 months. Therefore, in order to meet current campus needs relating to communications planning, an *Interim Communications Infrastructure Planning Standards* document has been created. The following notes pertain to this interim effort:

1. Document Inputs. The document is the result of collaborative efforts involving Capital Planning, Design and Construction, Computing and Communications, and selected campus faculty (including the Chair of Computer Science).

2. Document Oversight and Review. The standards document will be reviewed and updated AT LEAST annually. Technology changes MAY require that the document be updated more frequently than every 12 months.

3. Interim Communications Standards Document as an Executive Summary. As progress is achieved relating to the comprehensive UCR Division 17 based standards document, the interim standards document will be modified and "links" will be created between the comprehensive and interim documents. In this fashion, the interim document will eventually become an "executive overview" of UCR's communications infrastructure standards.

4. Role of the Interim Communications Standards Document as a Budgeting Tool. Importantly, the Interim Communications Infrastructure Planning Standards document will serve as a campus budgeting tool. Any and all items that academic departments, colleges, schools, or administrative units request that EXCEED campus standards will be funded by the departments, colleges, schools, and units that have requested them.

5. Items not Contained in this Document. Published industry standards should be followed when issues arise relating to communications infrastructures not specifically mentioned in this document.

6. Importance of Communications Infrastructure. Building designs should not be submitted for bid without provisions made for the fundamental communication infrastructures contained in this document. The costs to the University will be exorbitant when omitted infrastructures are added at a later date.

Outside Plant

Conduit

Pathways and four (4) each four (4) inch communications conduit will be supplied to each new building (at a minimum). The conduit system must be designed to meet current building needs and planned future construction as well. There shall be no more than two 90 degree bends between pulling junctions and there shall be less than 500 feet between these junctions.

Important Note: Computing and Communications, Design and Construction, and Capital Planning should interact on all decisions relating to communications conduit and pathways. Depending on UCR's building locations and construction scheduling, pathways and conduit may be deployed to meet the needs of several buildings and cut overall construction costs.

Fiber

Air Blown Fiber Tubing

Seven (7) tube Air Blown Fiber infrastructure will be supplied from the nearest and most appropriate Tube Distribution Unit (TDU) to a new TDU located in the building's Main Distribution Facility (MDF). C&C will collaborate with Design and Construction and Capital Planning to identify appropriate TDU locations (existing and new). All Air Blown Fiber products shall be Sumitomo FutureFlex System or equal and Air Blown Fiber tube installers shall be Sumitomo certified installers.

Air Blown Fiber

Six strands (3 pair) of Multi-mode fiber and six strands (3 pair) of Single-mode fiber will be run from the Fiber Termination Unit (FTU) in the building's MDF to the nearest and most appropriate FTU associated with campus network and voice electronics (e.g. campus router, voice peripheral device). C&C will collaborate with Design and Construction and Capital Planning to identify appropriate FTU locations for each project. Air Blown Fiber installers shall be Sumitomo certified installers.

Copper

An appropriate quantity of distribution feeder cable, filled core or equal will be supplied from the building's MDF to the nearest and most appropriate campus point of copper presence. The cable shall have no less than 100 pairs of unshielded twisted pair 24 AWG solid copper conductor and shall be suitable for installation in manholes, conduits or direct burial. The pair count actually recommended may be substantially higher depending upon the ASF and number of estimated occupants of the building.

Especially during the next 36 months, Computing and Communications, Design and Construction, and Capital Planning should interact on all decisions relating to twisted-pair cable outside plant infrastructure. Although it is envisioned that voice services will shortly be provided via the campus fiber infrastructure and data network, substantial savings may be realized in the short term by various buildings sharing conventional voice electronics (with dial tone delivered to the "remote building" via copper cable connecting the buildings).

If a particular building will receive voice services via shared electronics (electronics located in an adjacent building), the estimated quantity of copper pairs should be the number of planned occupants (requiring voice services, see section on Port Counts) multiplied by 2 plus 25% for growth or other services. If the number of planned occupants is not known, cables should be sized to provide 2 copper pairs for every 125 assignable square feet.

In any and all circumstances, twisted-pair cable will continue to be required for the foreseeable future to provide buildings with Measured Business Service lines, ATM lines, ISDN lines, Pay Phones etc.

Cable shall be terminated following proper bonding and grounding EIA/TIA standards.

Inside Plant

Horizontal Pathways

Horizontal copper and fiber will be supplied to work areas via pathways that are dedicated to voice and data cabling and shall not contain electrical wiring. Horizontal pathways will be designed to be out of the way of other services, easily accessible, and allow cabling to be loose yet contained, thus facilitating changes to cable plant.

C&C promotes the use of plenum-rated cable supported by a cable tray serving-station-conduit stubbed into an accessible ceiling space as the general distribution method.

Ceiling pathways will be utilized as a standard and cable supports shall be attached to the building structure and not to other fixtures (cable supports include cable trays, hooks, or conduit).

Pathways will be designed for a 25 year life cycle. Conduit and cable supports will be designed to an initial 40% fill. Conduit system shall be designed with no more than two (2) ninety (90) degree bends.

Under floor ducts or conduits will be used when the building construction requires it (standards are pending).

Horizontal Copper

Enhanced Category 5 unshielded twisted pair cable will be utilized for all voice and data horizontal station installations.

Copper and fiber will be supplied from Intermediate Distribution Facilities (IDFs or Communications Rooms) to various work areas (offices, classrooms, etc.) per port density specifications contained in this document (see Port Counts).

Horizontal Fiber

Horizontal fiber will be supplied via two (2) tube Air Blown Fiber infrastructure from the classroom or lab to the IDF. Six strands (3 pair) of Multi-mode fiber will connect each classroom or lab to the IDF.

Riser Pathways

An appropriate quantity of riser (vertical) copper and fiber will be supplied from the MDF to each IDF to meet voice and data services via pathways dedicated for communications services. A minimum of three four (4) inch diameter conduits must be provided between the MDF to all IDFs.

One 1 1/2 inch conduit shall be installed from the top floor Communications Room (IDF) to the roof. This conduit shall be sealed until used for wireless services. Another one 1 1/2 inch conduit shall be installed from the roof to the nearest electrical sub panel. This conduit shall be sealed until used.

Two three (3) inch conduits shall be installed for the purposes of video technologies from control rooms of areas designated to have these applications such as auditoriums, projection rooms, classrooms etc. to the IDF or MDF.

Riser Copper

The copper count from the MDF to IDF will equal the anticipated voice ports provided by the IDF (see section in this document on Port Count) plus 25% for growth.

Riser Fiber

Two (2) tube Air Blown Fiber infrastructure will be supplied from each IDF to the MDF (or ABF infrastructure may be installed to connect IDF to IDF and then to the MDF). Under either configuration, there must be an ABF "home run" from each IDF to the MDF.

Six strands (3 pair) of Multi-mode fiber will connect each IDF to the MDF.

Workstations (Port Counts)

The station outlet shall be designed to serve a variety of current communications needs and provide sufficient flexibility and adaptability for future technologies. Voice and data connections will be deployed per the following schedule (all copper is Enhanced Category 5):

Offices	1 Voice 2 Data per 100 Sq Feet
Open/Modular	1 Voice 2 Data per 60 Sq Feet
Computer Teaching Facility	4 Data per 100 Sq Feet; 1 Voice, 1 Wireless, & 1 Fiber Port per Facility
Research Lab	3 Data per 100 Sq Feet; 1 Voice, 1 Wireless, & 1 Fiber Port per Facility
Classrooms	6 per Facility (3 Data & 1 Voice at Lectern, 1 Voice at Door, 1 Wireless)
Library, Public Access Areas	3 Data per 100 Sq Feet, 1 Voice & 1 Wireless per 1,000 Sq Feet
Conference/Seminar	2 Data per 100 Sq Feet
Photocopy/Mail/Service/Storage Areas	3 per Room (1 Voice 2 Data)
Elevators	1 Voice

Port counts for room types not found on this list will be calculated on a case by case basis.

Pending: Notes on wireless connections in open, public spaces (associated with new building construction).

Station Conduits

A standard wall outlet should be served by a 1 1/2 inch conduit that either home-runs to an IDF or to a cable tray. Adherence to industry standard for conduit fill ratio shall be followed specifying the size of conduit, the number of cables installed, and room for future growth.

Station Outlets (Jacks)

Pending: Termination standards.

Pending: sample faceplate and standards for faceplate locations by room type.

Labeling

Labeling of the cabling system, jack and blocks shall be in accordance with TIA/EIA 606 standards.

Communication Rooms and Spaces

Quantity and Location

Communications Rooms (also referred to as Intermediate Distribution Facilities -IDFs- in this document) are spaces allocated for communication backbone and horizontal pathways and cables. These rooms should be stacked one above the other in multi-floor buildings. Communications closets house voice and data electronics, uninterruptible power supplies (UPS), equipment racks, termination blocks, patch panels, fiber termination units (FTUs), grounding bars, and copper and fiber patch cords. A connection point for each wire in a horizontal cable run is terminated here. There should be at least one IDF per floor located within 90 meters of all work areas served by this room. The size of the IDF and the recommended count of equipment racks is determined by the size of the work area per the following schedule:

Work Area Size	Min. Closet Size	Rack Count
10,000 square feet	10 X 11 feet	Three racks with 48 port panels with cable management.
8,000 square feet	10 x 9 feet	Two racks with 48 port panels with cable management.
5,000 square feet	10 x 7 feet	One rack with 48 port panels with cable management.

Additional rooms may be required to meet the needs of high density data use areas, such as computer labs.

Specifications (Lighting, Power, Grounding, HVAC)

Please see Attachment A for a complete list of closet specifications relating to the functional requirements of Communications Spaces.

Network Electronics

Design Overview

UCR's standard (and minimum) desktop network connection is switched, Fast Ethernet (100 Mbs).

These Fast Ethernet connections will be provided by stacking an appropriate quantity of 12, 24, and 48 port network switches in one or more building closets.

The switches will be connected to a closet aggregation device via Gigabit links (utilizing fiber patch cables between each switch and the aggregation device). Note: the switches will not be "daisy chained" to each other nor should a single switch act as both an aggregation device and a desktop connectivity device.

The switches will be connected to the patch panel via Category 5 copper patch cables.

At least one switch per closet will feature in-line power functionality to support UCR's wireless network deployment.

The closet aggregation devices will be connected to a building aggregation device via Gigabit links. The building aggregation device will be connected to the campus backbone at Gigabit.

Note 1: Standards do not as yet support in-line power for VoIP deployment.

Note 2: Buildings with 300+ ports will have a router (layer 3 switch, budget $10,000). Buildings with 600+ ports will have a chassis based router (budget $30,000).

Please see Attachment B network design overview.

Pending: Notes on conduit and wiring for Card Readers and Other Access Devices and conduit, power, and wiring for Ceiling Mounted Multimedia Devices.

Port Costs

Converged networks and the pending requirement that converged networks carry voice traffic as well as other highly sensitive data (grades, document imaging, financial data, video conferencing, etc.) require that network building electronics become increasing "intelligent". This increased "intelligence" is required to adequately secure UCR's network against internal and external attacks, fraudulent use of university resources, and to ensure the privacy and confidentiality of network communications.

Intelligent switches include many, if not all, of the following capabilities:

Support of 802.11x port authentication.
Port based management and monitoring.
Port based Access Control Lists (ACLs).
Port based Network Address Translation (NAT).

The budget for these "intelligent" network electronics will be calculated at $155 per Fast Ethernet port.

The $155 per port budget includes the following:

All 12, 24, and 48 port switches.
Closet aggregation switches.
Building aggregation switch.
Inter-switch fiber patch cables.
Copper patch panel cables.

Voice Electronics Services

Pending.

Central Power Distribution to Campus Communications Closets

Pending.

Plenum Cable Standards

The use of plenum-rated cable is required in situations in which the cable is placed within a ceiling space used as an air return unless it is contained within a fire-rated metal conduit or raceway. In addition, some local codes require the use of plenum cables in any ceiling space that interconnects two or more rooms. Computer floors, such as those used in computer labs are considered air plenums.

Testing

Pending.

Elevator and Emergency Phones

Emergency and Elevator Phones on campus are non-dialed numbers and cannot receive calls. They automatically dial the campus Police Department when the receiver goes off hook and cannot dial any other parties. Standards for these phones are as follows:

One elevator phone per elevator per code requirements.
One emergency phone per floor, per wing (also depends on square footage).
One escort phone per building, usually located near main entrance.

Elevator and emergency circuits are installed via a work order system. Communication Services must be supplied with a work order to install these circuits. This process is critical to the maintenance of the emergency and E911 databases.

Elevator phones shall be Viking, Model #K1500EHF, or equal (no known equal). Communication Services will provide and a dedicated telephone line per work order request to be terminated at the closest IDF or MDF to the elevators control box. This circuit shall be terminated on a block designated for emergency services and clearly labeled as an elevator telephone with the circuit id.

Alarm Circuits

Fire and intrusion alarm circuits are installed per customer request via a work order. These circuits shall be installed to a termination block allocated specifically for fire and intrusion alarms in the nearest MDF or IDF. It shall be the responsibility of the departments maintaining these unique alarm services to complete the circuits from this location to their control panels. The circuit numbers assigned to these vital services cannot be shared with other user lines.

Codes and Standards

Pending

Notes

Pending.

Sources

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Infrastructure Master Plan
Report No. 01-0533-1950
Revision I, April, 1993

University of California, Riverside
Office of Design and Construction
Campus Design Guidelines (Draft)
January, 1999

University of California, Berkeley
Construction Design Standards
April, 1994

University of California, Davis
Communication Resources Cabling Standards
December, 2000

University of California, Santa Cruz
Communications Cabling In-Building Upgrade Project Design Standards
June, 2000

University of California, Irvine
Project Planning Guidelines

California State University
Telecommunications Infrastructure Planning Guidelines
May 1999

Fullerton California State College
Building Survey Results and Recommendations

ATTACHMENT A

SPECIFICATIONS FOR COMMUNICATION CLOSET ENVIRONMENTALS, POWER, ETC.

The following defines the common requirements for all spaces allocated for voice and data infrastructure and electronics (all MDFs and IDFs).

- Separate temperature and humidity controls 7 days a week 24 hours a day. The temperature shall range from 65 degrees to 75 (80) degrees with 30% to 55% relative humidity.
- Spaces shall be free of dust and other contaminates.
- Floors shall be kept clean (asphalt tile, linoleum, or sealed concrete). No carpeting.
- A code-approved fire extinguishing system that does not discharge water directly on electronic equipment should be installed.
- Spaces shall be free of water and drain pipes to avoid condensation and dripping on voice and data electronics.
- A minimum of four dedicated 120V AC, 20 amp duplex electrical outlets. The electrical panels serving these rooms shall be connected to the buildings emergency power source.
- Proper grounding and bonding of voice and data cable, hardware, racks, raceway and equipment as specified by ANSI/TIA/EIA-607 standards for communication closets.
- Walls shall be covered with ¾ inch flame retardant treated plywood or painted with two coats of fire-retardant paint.
- Spaces shall be located away from transformers, motors, power generators and radio transmitters.
- Lighting shall be a minimum of 50 foot candles (illumination measured 3 feet above the finished floor) and shall not be powered from the same electrical distribution panels as the voice and data equipment to prevent noise and hum.
- A locking fire door 3 ft x 6.6 ft with no doorsill or center post.
- Communication spaces shall not be shared with other utilities or services.
- Spaces shall not have suspended or false ceilings.
- There shall be an unobstructed clearance of nine feet above the finished floor.
- The floors shall have a load-carrying capacity of at least 100lbs/sq. ft.
- Terminal fields and frames should have a minimum of three feet clear working space in front of wall-mounted equipment and front and rear of rack-mounted equipment.
- Communication Space should not have windows.
- All riser and horizontal sleeves and conduits shall be fire stopped and sealed following code requirements.

SASAKI