EXECUTIVE SUMMARY
11/16/99

PURPOSE

The purpose of the 1999 Warren College Neighborhood Planning Study Update is to reevaluate the planning concepts of the 1990 document as they apply to future development within the Study Area (see Figure 1A). UCSD's academic program for the college has changed substantively since 1990. Most significantly, the Physics Department will not move to Warren College, as was assumed in the 1990 study, while the Jacobs School of Engineering anticipates growth beyond what was projected in 1990. Also, the increasingly interdisciplinary nature of study has changed the functional relationships of buildings and facilities within the Jacobs School of Engineering. The 1999 update accommodates these changes in the academic program. In addition, although it retains many of the major concepts from the 1990 study, it also proposes many new planning concepts for the Study Area.

CONTEXT

Study Area:

The Study Area includes approximately 6.5 acres of open land north of Warren Mall, between EBU 1 and EBU 2. The Study Area's northern boundary is defined by Voigt Drive, and the western boundary by the rustic canyons and eucalyptus groves of the UCSD Park. The southern and eastern boundaries are defined by Warren Mall and EBU 2. The area is currently occupied by surface parking and Pryatel Field, a multi-purpose recreational field that is to be replaced by new fields in the area currently occupied by the Warren Track. The 1999 Update focuses on coordinating the build-out of the Study Area and defining a development strategy that will be sensitive to the natural and the built environment of the site.

CONCEPT

The original 1990 planning concept by WRT was reevaluated for the Study Area in terms of its site allocation, massing, orientation, and boundary treatment. The two distinct grid systems of Warren College were further explored for opportunities to create new types of spaces and connections. Instead of maintaining a strict separation of the forces implied by the two grid systems, the orthogonal and diagonal grid systems were combined to create a new Academic Courtyard shared by the new engineering buildings planned for the area. This shared open space will become the center of the Jacobs School of Engineering facilities in the Warren College Neighborhood and an important connection node between the Warren College residential buildings and Warren Mall.

ELEMENTS

Land Use:

Four new engineering buildings are planned for the 1999 Study Area: 1) EBU 3A with 63,000 ASF for bioengineering research laboratories and classrooms; 2) EBU 3B with 77,000 ASF for computer engineering laboratories and classrooms and 10,000 ASF for the Warren College Provost office; 3) EBU 4A with 35,000 ASF for San Diego Supercomputer Center.
annex space, computer engineering space and, potentially, space for certain Natural Sciences Division programs with programmatic connections to the Supercomputer Center; and 4) EBU 4B with 86,000 ASF. Therefore, the total planned program for the Study Area is 271,000 ASF (452,000 GSF, assuming 60% efficiency).

DESIGN GUIDELINES

The original 1990 guidelines provide the framework for the 1999 Update design guidelines. Recommendations for building materials are preserved from the original study. The concept of building fracture zones is also retained, with particular emphasis that buildings on Voigt Drive respond appropriately to the adjacent Warren housing facilities. New recommendations are included that are specific to the Study Area and the proposed Academic Courtyard. This courtyard should provide a delineated space for gathering while allowing free movement between Warren Mall and the Warren housing district. New architectural guidelines focus on the design intent of the new engineering buildings. Particularly from within the courtyard, coherence and visual harmony need to be achieved through use of materials and architectural articulation.

IMPLEMENTATION

Implementation of the 1999 Update is expected to occur over approximately the next ten years. The first proposed building for the site (EBU 3A: Bioengineering) is in its early design phase, and the second building (EBU 3B: Computer Science and Engineering) is currently in its programming phase. The success of the development of the site will depend greatly on the design and installation of the Academic Courtyard. It is strongly recommended that the courtyard be designed and constructed in the earliest phase of site development.
I. PURPOSE

THE INTENT OF THE 1999 STUDY UPDATE

Although much of the 1990 Warren College Neighborhood Planning Study remains valid, recent changes in the Warren College academic program generated the need for this 1999 Update. The update concentrates specifically on the Study Area, that area north of the Warren Mall that remains to be developed. The purpose of the update is to ensure coordinated build-out of the Jacobs School of Engineering, which is located primarily within the Warren College Neighborhood. Four new Engineering buildings are planned for the Study Area, two of which are scheduled to begin construction in the near future: the Powell-Focht Bioengineering Building (EBU 3A) and the state-funded Computer Science and Engineering Building (EBU 3B). The 1999 Update defines the site boundaries for the four new buildings, and identifies urban planning strategies and architectural design concepts for the Study Area.

PLANNING PROGRAM

In the next 10 years the Jacobs School of Engineering envisions four new engineering buildings with a total of approximately 271,000 ASF (452,000 GSF). These facilities will complement the approximately 260,000 ASF (450,000 GSF) of existing Engineering space at Warren College. EBU 3A, currently in schematic design, will house 63,000 ASF for bioengineering instruction and research (see Table 1A: Study Area Space Program, p. 28). EBU 3B is currently being programmed to include 77,000 ASF of Computer Science and Engineering instructional and research laboratories. It also includes 10,000 ASF for the Warren College Provost's office which includes space for academic and business administration, student advising, student affairs, and the Warren Writing Program. The third engineering facility, EBU 4A, is projected to provide 35,000 ASF to house San Diego Supercomputer Center annex space, computer engineering, and potentially Natural Sciences Division space with programmatic ties to the Supercomputer. EBU 4A will include bridge access to EBU 3B. EBU 4B has yet to go through a detailed programming phase, but is projected to provide 86,000 ASF of academic space. EBU 4B will be constructed on top of a below grade parking structure that is to provide 500 spaces for the area.

Note that an EBU 2 expansion site (defined in the original study as Site F, located outside the current Study Area) has the capacity to provide an additional 15,000 ASF. The capacity of this site has been reduced from the 20,000 ASF indicated in the 1990 Study because the realignment of Voigt Drive reduced the available site area.

PLANNING AND DESIGN APPROACH

The 1999 Update results from a design and planning process that involved the planning consultants, design architects, the UCSD Physical Planning Office, the Warren College Neighborhood Planning Advisory Committee (PAC), the Campus/Community Planning Committee (C/CPC), and the Design Review Board (DRB). The process consisted of the following steps:

1. Assess existing physical conditions to identify opportunities and constraints for the development of the Study Area. Evaluate the recent developments that
have occurred adjacent to the Study Area since the 1990 Warren College Neighborhood Planning Study was approved.

2. Confirm the development capacity of the Study Area, taking into consideration: the appropriate massing at the interface with the Warren housing district across Voigt Drive; existing academic buildings along Warren Mall; and the natural landscape of the UCSD Park to the north of the Study Area. Consider whether retention of the Geisel Library viewshed remains compelling in the context of recent development.

3. Define site boundaries for the new buildings as well as their massing limits. Determine pedestrian circulation and emergency and service access for the Study Area. Maintain capacity for a 500 space parking structure to serve the area.

4. Assume that the design guidelines outlined in the 1990 plan are generally valid for the 1999 Study Update, including building materials, landscape/hardscape materials, the color palette adopted for Warren College, and the improvement plans for Warren Mall. Other guideline items are open for revision in the context of the new development program.

5. Develop design concepts to reinforce the identity of the Jacobs School of Engineering.
II. CONTEXT

THE CAMPUS CONTEXT

The context of the 1999 Study Area is set within the larger Warren College Neighborhood addressed in the 1990 Study. The natural landscape of the campus is rich with eucalyptus groves and rustic canyons to the northwest and northeast of Warren College. Parallel to the Powers Fault, a geologic earthquake fault that runs through the Warren campus, land forms reveal a distinct diagonal pattern. This diagonal pattern (the “Land Grid”) is picked up by the orientation of Warren College residential buildings, EBU 2 and major pedestrian corridors. Otherwise, the built environment of the University, including the rest of Warren College, follows an orthogonal grid system of organization (the “Academic Grid”).

THE COLLEGE CONTEXT

Since the 1990 Warren College Neighborhood Planning Study was prepared, EBU 2 has been completed at the eastern terminus of the Warren Mall. Warren Mall improvements were begun in conjunction with EBU 2, consistent with the 1990 Planning Study. The mall is the most prominent feature of Warren College; its edges are defined by the surrounding academic buildings. The 1999 Study Area development will complete the northeast edge of the mall, which is currently open and being used as a recreational field.

Urban Form: The most important urban elements in the context of the 1999 Study Area are the residential buildings to the north of the Study Area and EBU 2 that follow the diagonal “Land Grid,” and the academic buildings that follow the orthogonal orientation of the “Academic Grid.” The site is located where these two grid systems interface. The site itself is a diagonally oriented rectangular lot with one corner anchored on Warren Mall. The amount of frontage the site has on the Mall is small in relation to its overall area.

Environment: As noted in the 1990 Study, the wind factor is an important environmental element to consider in the planning of the Study Area.

The Landscape: If possible, the view corridor that extends from Geisel Library and runs diagonally through the northwest portion of the Study Area should be maintained by adhering to the 10 foot maximum height requirement outlined in the 1990 Study. In the future, in connection with the design of EBU 4B, it may be desirable to reconsider the importance of the viewshed, particularly if retention of the viewshed would result in an unacceptably large building mass.

Architectural Form: Buildings in the Warren College Neighborhood should adhere to the architectural guidelines described in the 1990 Warren College Neighborhood Planning Study. The Warren campus has adopted the use of concrete, stone, metal and glass to architecturally express the disciplines housed inside its buildings. Scale of academic buildings is controlled by fracture zones that break up building mass into smaller elements that are more appropriate on the Warren Mall and along Voigt Drive.
CONTEXT ANALYSIS

The Warren College Neighborhood is developing in accordance with the 1990 concept, described as an “organized, fitted arrangement of parts, surfaces, solids, and monuments and the space that binds them.” These parts and spaces follow two distinct grid systems: the orthogonal grid that organizes the academic buildings and spaces, and the diagonal grid that claims the housing district of the campus as well as EBU 2. Voigt Drive intersects the Warren College Neighborhood where the two grids generally interface, and the physical connection between the two districts is unclear.

The two grids are not only organizational systems for orientation and building shape but are also systems to direct patterns of movement within the districts. Where the two distinct grids interface, the two systems should merge into a combined system.
III. CONCEPT ALTERNATIVES

SITE DEVELOPMENT

The original study recommended the “combination site” development alternative for the Study Area. The combination alternative was described in the 1990 Study as “offering the most flexibility in terms of development areas as well as direct circulation between the academic and residential areas.”

The 1999 Update also proposes a combination approach as the basis for its development concept. During planning development, the combination approach was tested in several variations with massing, circulation, and edge condition options. The selected scheme was chosen for its ability to accommodate the program and circulation requirements, while offering a massing strategy and composition of elements that results in a unique public space to serve as the heart of the Jacobs School of Engineering.
IV. NEIGHBORHOOD PLANNING STUDY ELEMENTS

PROGRAM REFINEMENT

LAND USE

Academic: Site allocations for each building are determined by practical program floor widths and the effects of context on each portion of the site. The shapes of these building sites are meant to represent ideal approximations for each building program and the elements within. The footprints illustrated in the drawings are only meant to indicate the general boundaries of each building area. Articulated building elements will cause the lines of the building to shift somewhat from these boundaries. The overall visual reading of each building mass should be such that it reinforces the edge of the new courtyard and the remainder of Warren Mall. The following allocations are recommended:

Site A: (EBU 3A) can accommodate approximately 26,500 square feet of buildable ground floor area. The recommendation for the site, given its frontage on Warren Mall and its proximity to EBU I, is that the height of the building be limited as much as possible. Along Warren Mall, the height of the building in the fracture zone should not exceed the height of the 4-story EBU 1 office “pods”. Additional floors or mechanical areas should be set back from the building perimeter. Building heights fronting the courtyard should be minimized to allow the maximum amount of light into the courtyard space. Above the fourth floor, the building should step back from the courtyard perimeter, with further setbacks for exposed mechanical areas. Maximum use of below-grade space is recommended.

Site B: (EBU 3B) can accommodate approximately 34,000 square feet of buildable ground floor area. The recommendation for the site, given its frontage on Warren Mall and its proximity to the Warren College housing, is that the majority of the building mass be limited to four floors. Any floors above the fourth should be set back from the building perimeter, with further setbacks for any exposed mechanical areas. Building mass along Voigt Drive should step down in response to the scale of the Warren College housing. Building heights at the perimeter of the courtyard should remain as low as possible to allow maximum amount of light into the courtyard space. Grade change at the existing site can be explored to maximize programmable space at the level below the courtyard level (the “ground level”) while reducing the apparent mass of the building. Light wells or accessible below-grade plazas should be provided along the southeastern and northeastern edges to increase use of interior and exterior spaces at the ground level.

Site C: (EBU 4A) can accommodate approximately 16,000 square feet of buildable ground floor area. Given its frontage on the courtyard and its proximity to Warren housing, EBU 4A should not exceed three floors above the courtyard level. The top level should be set back as far as possible on the side facing Voigt Drive. Additional setbacks along the building perimeter are recommended for exposed mechanical areas. A programmable floor below the courtyard level is recommended. This “ground level” should have
an accessible lightwell or sunken plaza to maximize use and natural light penetration to interior spaces.

Site D: (EBU 4B) can accommodate approximately 19,700 square feet of buildable ground floor area. The building height should be limited to seven floors above the courtyard elevation. Setbacks are required for any rooftop mechanical areas. The building orientation is intended to allow views from the courtyard to the canyon environment beyond. Light wells and grade changes should be utilized whenever possible. Two levels of underground parking are proposed below the building footprint of EBU 4B, requiring the coordination of structure, entrance locations, internal access, service and vertical circulation with the proposed parking layout.

Projection Zones: The illustrated building footprints are diagrammatic only. It is expected that site or programmatic conditions will require variations or projections along these building perimeters. Projection Zones are defined along courtyard and outer perimeters for elements such as staircases, entrances and multi-floor atrium spaces. In plan, the Projection Zone within the courtyard should be limited to 10' from the face of all buildings. The outer projection zone is limited to 15' from the face of the buildings. In elevation, the vertical elements of the projection zones should not exceed building height. The surface treatment of projection elements should be distinct from the overall massing of the building. Generally, these special elements should be limited in number. They should be compositionally balanced within a given building, as well as coordinated with adjacent structures and the overall planning of the site.

Courtyard: A rectangular site of approximately 49,000 square feet is designated for the Academic Courtyard. The courtyard grade elevation is 352 feet, two feet higher than the northeastern edge of Warren Mall and approximately 10 feet above Voigt Drive. A ramped walkway leads from Warren Mall to the southern corner of the courtyard. The courtyard’s northern corner is also open, linking to the Voigt Drive crosswalk leading to Warren housing and dining facilities.

The design of the courtyard should reinforce free movement through the space with landscape and architectural elements that make reference to the Academic Grid. Seating and gathering areas should be designed throughout. The courtyard would be an ideal home for a Stuart Collection environmental art installation.

Parking: A 500-space parking structure is proposed for the northwest portion of the site that borders the rustic landscape of the canyons. The structure will have one level of surface parking with two levels below grade. Within the Geisel Library view corridor, the height of any structure in the parking area is limited to 10 feet above grade. The below grade parking will extend beneath EBU 4B; its design should coordinate with the structure and function of EBU 4B.

Note that an additional siting opportunity for School of Engineering facilities exists within Warren College on the east side of EBU 2. This site has a capacity of approximately 15,000 ASF in three stories plus a full basement.
Circulation:

Pedestrian circulation: The pedestrian circulation for the Study Area should have the direct and formal urban character described in the 1990 Study. It should be composed of a sequence of connective paths and nodes "that contain gathering areas with seating, overhead tree canopies, enhanced paving, and ground level activities." A north-south walk between EBU 3A and EBU 3B connects Warren Mall to the new Academic Courtyard. With a strong axial relationship to the Warren Mall, this walk will become the formal pedestrian gateway into the new courtyard.

In the courtyard, the concept for pedestrian circulation is to promote free movement between the different engineering buildings and the Warren Provost Office, while accommodating a large volume of north-south pedestrian traffic between Warren Mall and the Warren housing and dining facilities. The northern corner of the site may also become a shuttle stop and an entry point to the proposed parking structure, increasing north-south pedestrian traffic. The size and proportion of the courtyard are designed to accommodate a large volume of traffic without feeling like a pedestrian highway; its essential collective and gathering character can be maintained with coordinated design of landscape and architectural elements.

The approach to the pedestrian crosswalk leading to the Warren dining facilities will require careful study during the design of the new courtyard and the future EBU 4A and EBU 4B. To discourage midblock crossings, this pedestrian link should be as direct as possible, and designed in such a way that pedestrians are guided to the intersection before crossing Voigt Drive.

Vehicular circulation: Vehicular access to the site is limited to the parking area at the northwestern edge of the site. Vehicular access to the future parking structure from Voigt Drive should be well regulated for the safety of pedestrians crossing Voigt Drive.

Shuttle service: If possible, both crosswalk areas between the housing and the new Academic Courtyard should serve as stopping points for the campus shuttle.

Service vehicles: Service access for the new buildings should be relegated to the perimeter of the site, away from the pedestrian courtyard area. Service yards should be screened with trees or architectural elements, or placed below grade whenever feasible.

Emergency circulation: Emergency and fire circulation will be provided for each building as required by the UCSD fire marshal.
## Urban Form

<table>
<thead>
<tr>
<th>Form</th>
<th>Type/Location</th>
<th>Treatment/Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Edges:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Warren Mall edge</td>
<td>Entrances to the buildings from the Mall framed by discrete landscaping elements.</td>
<td></td>
</tr>
<tr>
<td>residential edge</td>
<td>Buildings stepped and fractured to reduce apparent mass and scale. Use of eucalyptus species as buffer from the street.</td>
<td></td>
</tr>
<tr>
<td>rustic edge</td>
<td>Continue to infill and extend rustic landscape as much as possible, while keeping the heights of built structures low to keep the natural landscape visually accessible.</td>
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<tr>
<td>Paths:</td>
<td></td>
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<tr>
<td>To west end of Warren Mall</td>
<td>Oriented perpendicular to the Mall. Frame the path with trees as a formal corridor. Use enhanced paving to distinguish the path and to create an entrance pad in front of the Provost's Office. The path should be well lit with courtyard lights as well as accent lights.</td>
<td></td>
</tr>
<tr>
<td>To east end of Warren Mall</td>
<td>Provides access on the northwest side of EBU 4B for pedestrians destined for Geisel Library, Price Center and beyond.</td>
<td></td>
</tr>
<tr>
<td>northern steps</td>
<td>Generously wide to accommodate pedestrian traffic moving to and from the courtyard. Should be designed at urban scale to act as the northern gateway into the Warren Campus. A accessible ramp should be provided to the courtyard.</td>
<td></td>
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<tr>
<td>Nodes:</td>
<td></td>
<td></td>
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<tr>
<td>Courtyard</td>
<td>Important gathering space and connective space between the buildings on the courtyard. People should be able to traverse through the courtyard freely, particularly in the north-south direction between the Warren housing and the Warren Mall. Discrete landscaping should be provided along with ornamental plantings and protection from wind and the sun. Courtyard should be well lit at night with courtyard lamps and accent lights to highlight courtyard elements and the buildings on the courtyard.</td>
<td></td>
</tr>
<tr>
<td>northern corner</td>
<td>The northern corner of the site should become an important connective node for pedestrians between the Warren housing district and the courtyard. Large paved area should be provided leading to the crosswalk on Voigt Drive and the potential university shuttle stop.</td>
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<tr>
<td>Landmarks:</td>
<td></td>
<td></td>
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<tr>
<td>EBU 4B</td>
<td>By virtue of its height, the narrow end of this high-rise building will become an important focus of the courtyard.</td>
<td></td>
</tr>
<tr>
<td>Courtyard</td>
<td>The courtyard itself becomes a landmark representing the School of Engineering. The design should establish a special character for the courtyard.</td>
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</tbody>
</table>
LANDSCAPE AND OPEN SPACE

Intent:

The Academic Courtyard will be designed as a discrete landscape. **The intent is that unique types of canopy and flowering accent trees be used to create a distinct image for the Jacobs School of Engineering (see Appendix 2, Warren Recommended Plant List).** Eucalyptus plantings adjacent to the Warren Mall should be filled out to improve definition of the mall's edge. These interventions are intended to improve and strengthen the connection between the Warren Mall and the Warren housing district, as well as to further connect Warren College back to the rest of the West Campus.

The Rustic/Parkland Zone:

A. The walking path at the northern perimeter of the Study Area and the proposed parking structure should be connected to the western terminus of Warren Mall.

B. Consistent planting of trees can provide a continuous and distinct appearance for the northern and eastern perimeter of the site from Voigt Drive.

C. The parking structure and the surface parking area at the northern portion of the site should be softened and shaded as much as possible. Consistent planters of trees and shrubs between parking aisles can also help the parking area to blend into the adjacent park landscape. Paths should be provided parallel to tree lines to allow commuters safe means to reach the north edge of the Academic Courtyard.

Transitional Zone:

A. The perimeter of the new buildings should be lined with transitional type planting.

B. Light wells and other building edges exterior to the courtyard should use transitional type foliage at the building edge.

Discrete Zone:

A. The new courtyard is intended to provide a casual gathering place for students, faculty and other users of the new facilities. Discrete landscape should be provided in the plaza including unique canopy trees, flowering trees and shrubs. Trees should be visually decorative and also provide sufficient shading and wind protection. The landscaping should mediate between the intimate seating spaces and the larger scale of the hardscape areas for pedestrian movement and for gathering areas.
V. WARREN COLLEGE NEIGHBORHOOD DESIGN GUIDELINES

PURPOSE

The purpose of the 1999 Update design guidelines is to expand on the image of the Study Area as defined in the 1990 guidelines and to offer new urban events to create a unique character for the Jacobs School of Engineering. The proposed development is a response to the changes in the academic and programmatic needs of the College.

USING THE 1999 UPDATE GUIDELINES

The 1999 Update proposal adheres to most of the site design guidelines recommended in the 1990 Study. Particularly, the items concerning building materials, height recommendations and fracture zone designations remain generally applicable to the Study Area site to enhance the environmental quality of the campus.

Additional recommendations are made in the following pages to further elaborate on the character of scientific research within the framework of collegiate planning. These recommendations are specific to the new development program and are geared toward establishing the new courtyard as a special center for the Jacobs School of Engineering.

WARREN COLLEGE IDENTITY

Warren College’s identity is founded on the spirit of scientific research, the expression of technology, and innovation. The current proposal will establish a new center for the Jacobs School of Engineering in the heart of the Warren College Neighborhood. The functions of the buildings and activities that are to be housed in the new facilities should provide the inspiration for the building designs. However, such aesthetic expressions should be formed and organized within a broader framework of collegiate planning. Thus individual buildings should be thought of as the building blocks that shape the campus’ urban spaces, such as the Warren Mall and the Academic Courtyard, not as isolated objects. A clear progression of spaces and hierarchical organization of volumes along defined axes are critical to creation of a successful collegiate environment.

SITE PLANNING GUIDELINES

Intent:

The proposed plan of the Study Area has changed considerably from the 1990 Study. Building site allocations have evolved, as have the area’s program and organization as urban form. The intent of the 1999 Update site planning guidelines is to reinforce concepts that are still relevant and to introduce new ideas that are central to the proposed development.

District Definition:

Creation of a major courtyard at the center of the School of Engineering is the most significant element of the site development proposal. The courtyard’s orientation on the diagonal Land Grid continues this grid system across Voigt Drive. The Land Grid’s diagonal vectors are pulled across the Voigt Drive threshold to merge with the orthogonal Academic Grid, making the connection between the two districts clear.
The interplay of the two grid systems, as seen in the planning strategy of EBU 2, is a condition unique to Warren College. The College's close proximity to the canyons allows its buildings and spaces to respond directly to the rustic northern landscape. Views to this landscape from the courtyard should be preserved as much as possible.

Building Lines and Setbacks:

Many of the following guidelines are repeated directly from the 1990 Study for emphasis. Some additions and changes have been made, however, and the two lists should be reviewed in conjunction to note where these changes occur.

A. The footprints illustrated in the drawings are only meant to indicate the general boundaries of each building area. Articulated building elements will cause the lines of the building to shift somewhat from these boundaries. Projection Zones are defined along courtyard and outer perimeters for elements such as staircases, entrances and multi-floor atrium spaces. In plan, the Projection Zone within the courtyard should be limited to 10’ from the face of all buildings. The outer projection zone is limited to 15’ from the face of the buildings.

B. New buildings should reinforce the spatial enclosure of Warren Mall as much as possible. All new buildings on the Warren Mall should maintain an orthogonal axial relationship to the Warren Mall and should have entrances from the Mall.

C. To lessen the bulk and mass of the academic buildings on the Mall and along the district perimeter, building volumes shall be broken down within the “Fracture” zone. Within this zone it is encouraged that surfaces be fractured, or stepped, recessed, punched and jointed, so that the main body of the building appears to gently “fade” out of its mass. See Figure 40A, p 134.

Other means of surface articulation and material treatment should be tested to break up the apparent mass of the buildings at the fracture zones.

D. The minimum setback from the academic buildings to Voigt Drive is 25’ feet. This setback is necessary to maintain adequate solar access to the residential units.

E. The Geisel Library viewshed should be maintained by avoiding structures higher than 10 feet above existing grade within the library view corridor. In the future, in connection with the design of EBU 4B, it may be desirable to reconsider the importance of the viewshed, particularly if retention of the viewshed would result in an unacceptably large building mass.

F. The minimum separation between buildings shall be 45 feet required for adequate fire emergency service. The separation can be less if there is no need for fire emergency service access, but should not be less than 25 feet. Individual building designs must be in conformance with the University’s fire emergency access requirements and approved by the University fire marshal.
G. Academic buildings should be offset along the corridors to avoid long narrow chambers and wind tunnels.

Building Heights:

The new courtyard will be approximately two feet lower than the existing playing field, two feet higher that the elevation of Warren Mall at the Mall’s northeastern edge, and 10 feet above Voigt Drive. Building heights are defined by the number of floors above the courtyard level. The floor below the courtyard is considered the “ground level” when daylight is provided through lightwells and sunken plazas. Without natural light, the level below the courtyard level is referred to as the “basement”.

Average laboratory space assumes a 16 foot floor-to-floor dimension, and office space assumes a 12 foot floor-to-floor dimension. For the purpose of understanding the general massing of the development, 14 foot average floor-to-floor dimensions are used for this study. Parapets, rooftop equipment, screening and vertical circulation cores are not included in the overall building height.

The following building height guidelines apply to all buildings and structures proposed within the 1999 Study Area.

A. Within the building “fracture” zone along Voigt Drive, buildings shall not exceed two floors above the courtyard level. Additional floors are permitted if recessed from the setback line at 1:1.75 ratio (see figure 40A, p 134).

B. Within the “fracture” zone on Warren Mall, buildings shall not exceed the height of the EBU 1 office “pods.” Additional floors are permitted if recessed from the setback line at a 1:1.75 ratio.

C. Other than EBU 4B, which may be up to seven floors from the courtyard level, academic buildings should not exceed 5 floors from the courtyard level. The 1990 guidelines suggest that 5 levels may be the practical limit depending on the vibration sensitivity of research equipment that may be housed inside the buildings, and three floors where hazardous materials may be in use.

E. Variation in floor heights should be integrated into a logical massing of the building, stepping down from the highest masses in the core to the lower masses at the perimeter. Other than EBU 4B, building masses facing the perimeter of the courtyard should not exceed four floors.

E. Rooftop equipment and unsightly mechanical units should be avoided at building fracture zones and along the interior perimeters of the buildings facing the courtyard.

F. Vertical elements within the Projection Zone should not exceed building height.

G. Light wells are strongly recommended for EBU 3B and EBU 4A, along the diagonal pedestrian walk and along Voigt Drive, to allow natural light into lower levels of the buildings. Sunken plazas with direct access from walkways
to the lower levels are also suggested. However, the sunken plazas should not be considered primary access to these buildings.

Secondary Elements:

Secondary elements are architectural elements and landscape architecture elements that generally occur around the edges of the primary building volumes or where two or more primary elements meet. Although the secondary elements do not necessarily provide programmatic function for the facilities, they have a significant role in reinforcing the overall coherence of the site design. Secondary elements should also be used to acknowledge, express and accentuate the urban pieces of the development as they relate to the surrounding existing campus planning. **The orientation of the secondary elements should acknowledge the academic grid whenever possible.**

A. Light wells and sunken plazas must be designed as fully integrated elements in elevations and plans of the primary volume of the building and the perimeter landscaping. As secondary elements, their orientation should acknowledge the academic grid.

B. Vertical architectural projections such as multi-story atriums, stair towers, and double height collective spaces are allowed within the designated projection zones. The number of these projection pieces should be limited and coordinated with the overall planning of the site.

C. The design of the courtyard should incorporate secondary architectural elements to strengthen its relationship with the buildings on the site as well as its relationship to the rest of the campus. The courtyard should express the academic grid in its secondary elements such as paving patterns or landscaping. The academic grid should also be utilized in the process of subdividing the courtyard into zones and in the allocation of collective spaces.

D. Bridge connections should be provided between EBU 3B and EBU 4A. These access bridges should be compatibly designed with the buildings they connect. The bridges should appear light and transparent.
ARCHITECTURAL GUIDELINES

Intent:

The 1990 Study’s architectural guidelines state that “the parts that comprise the buildings -- the exterior facades, circulation corridors and cores, mechanical equipment, ground plane interface, entrances, etc. -- should be expressed as discrete and distinctive elements within a composition that promotes openness, friendliness, and accessibility.” The 1999 Update concurs with this intent. Although the ingenuity of architectural expression and individuality of each new building is fully supported, a regulating element is necessary for the courtyard edges of the proposed buildings to establish a level of consistency and visual harmony in the courtyard.

The new buildings should also be sensitive to the materials and scale of existing buildings and whenever possible make reference to their architectural details and materials.

Volumes:

A. Volumes of all new buildings in the 1999 Study Area must clearly delineate the edges of the courtyard.

B. The building volumes of EBU 3A and EBU 3B mediate between the two grid systems; the southern portions of the two buildings’ volumes are oriented on the orthogonal grid to complete the northern edge of the Warren Mall while the northern portions are oriented on the Land Grid to delineate the edges of the Academic Courtyard.

C. Building volumes should be organized to define the spatial enclosure of the new Academic Courtyard while avoiding a “cloistered” expression as much as possible. Visual access to the canyons from the courtyard should be retained as much as possible between and through buildings. Overall mass of the buildings should be reduced and stepped as much as possible to minimize shadow in the courtyard.

D. Substantial distance should be provided between the volumes of EBU 3A and EBU 3B on Warren Mall to allow access for emergency vehicles if necessary as well as to create a formal entrance path for pedestrians into the Academic Courtyard.

E. Substantial distance should be provided between the volumes of the EBU 4A and EBU 4B to accommodate the large north-south pedestrian traffic crossing the courtyard.

F. Building volumes should reflect their function. It is highly recommended that each functional area of each building be expressed as a distinct part through the use of materials and architectural expression.

G. Building entrances should be expressed as transparent volumes and positioned within the projection zone. Entrances should be located on the courtyard, with strong formal relationships to the courtyard and adjacent buildings.
H. Building mass and depth should be designed to allow natural light to penetrate into all interior spaces.

I. Building volumes should be composed with a balance of horizontal and vertical expressions.

J. Building roofs should be flat and should not add additional visual weight to the building volumes.

Surfaces:

A. Monolithic elevations in the courtyard should be avoided. Different program elements should be clearly articulated in form and material and should be used to give these elevations a more pedestrian scale. Building facades should be balanced between horizontal and vertical, with entry elements and vertical circulation articulated as vertical elements.

B. Surfaces at the ground level of the courtyard elevations should encourage maximum visual access into and through the buildings whenever possible. Transparency of these surfaces will reduce the effect of the building mass and create sight lines connecting the courtyard to the adjacent Warren Mall, housing district and the park landscape.

C. Roof surfaces should be designed as architectural elevations if they can be viewed from a higher level. Colored precast paver units should be used in lieu of standard roofing whenever appropriate. Stone paver accents should be used in occupiable roof areas.

D. Courtyard facing surfaces, collective program elements, entries and stair towers can be articulated in glass to reveal the function of the building and allow visual access to the courtyard and the campus beyond. Expanses of curtain wall type systems should be modulated through the use of spandrel and ceramic frit type glass. Mullion profiles can be differentiated between horizontal and vertical framing to give a more vertical reading to these glass expanses.

E. Surfaces should be modified to address siting of each particular structure. Brise-soleils, wind screens, low-E coated glass, reflective glass and smaller window openings can be used to reduce climactic effect on building faces with significant sun or wind exposure.

F. Variation in the opacity of each building face (window to wall mass ratio) should also be used to articulate different zones of the building program.

G. Additional articulation may be needed to differentiate special program areas. Ornament should be used only at the most public areas of the buildings.
Materials and Color:

Refer to “Materials and Colors” sections of the original 1990 design guidelines for color palette and material selections. With the exceptions indicated below, all of the information and recommendations for materials and colors outlined in the original document are retained in the 1999 Update.

A. Extruded metals and metal accents should utilize deep warm terra cotta/red hues, not be “brightly colored” or include “limited primary colors,” as indicated in the 1990 Study. Incidental metal such as flashing should not be accented.

B. Deep warm tertiary hues, saturated in chroma (such as burgundy, red-violet, plum and ocher) are appropriate accent colors for the Warren housing district, but not on academic or research buildings.

C. Glass should be clear or solex green in color.

Ground Plane Interface:

A. Ground floor walls facing the courtyard shall be treated as discrete functional elements with similar form and finish. Ground plane walls should be recessed, shifted or made transparent to engage the courtyard at a pedestrian scale and to reveal the function of each particular building wherever possible. Sight lines through the floor are encouraged wherever possible.

B. Entrance articulation should enhance formal axial positioning on the courtyard.

Mechanical and Service Systems:

A. Mechanical systems should be stepped back from roof edges and screened with architectural enclosures and grills whenever possible. The color and finish of mechanical housing and screens should be coordinated with the overall elevation of the building. If larger mechanical systems are required on the roof (such as stainless exhaust stacks for lab buildings) these should be composed and finished as architectural features, but their visibility should be minimized to the extent possible.

B. Mechanical systems should be housed in the basement level to reduce massing and height of the overall building.

Environmental Response:

A. All new non-laboratory spaces should have means to direct natural ventilation.

B. Building setbacks are encouraged to be used as outdoor seating or terraced gathering areas. These areas should be screened from the sun, wind and other natural elements by installation of trellises or protective screens.
C. Use passive solar measures such as ceramic frit and UV filter films on exterior glass and incorporate building shading devices.

D. Building faces adjacent to Voigt Drive should be staggered in plan and reduced in height whenever possible to reduce the creating of echo chambers. Buildings adjacent to these areas should be partially submerged whenever possible, with berms or foliage provided as acoustic breaks.
LANDSCAPE ARCHITECTURAL GUIDELINES

THE ACADEMIC COURTYARD

Campus planning should achieve a balanced whole by giving equal consideration to both buildings and the spaces between them. Courtyards, fields and walkways become as important as buildings to the overall design. The creation of a courtyard at the center of the new School of Engineering facilities is intended to maintain that desired balance between built and open space.

Environmental Conditions:

The site at present is used as a recreational playing field. The lack of buildings and trees in the area creates an uninviting windswept environment.

Intent:

The Academic Courtyard will be designed as a discrete landscape. The intent is that unique canopy and flowering accent trees be used to create a distinct image for the Jacobs School of Engineering. Outside the courtyard, eucalyptus groves should be filled out to improve and strengthen the connection between Warren Mall and the Warren housing district, as well as to further connect Warren College to the rest of the campus.

THE RUSTIC/PARKLAND ZONE (see figure x)

As mentioned in the 1990 planning study, this distinctive landscape should be reinforced wherever possible in perimeter areas. Eucalyptus species should be infilled in this zone to reinforce this unique aspect of Warren College.

A.  The walking path at the northwestern perimeter of the proposed parking structure should be connected to the western terminus of Warren Mall. The path will allow its users a direct access to the rustic lands of the UCSD campus.

B. Consistent streetscape planting can provide a continuous and distinct appearance along the northeastern perimeter of the site along Voigt Drive. Planting in this zone should include informal plantings of flowering Eucalyptus infilled with Tristania Conferta.

C. The parking areas at the northern portion of the site should be softened and shaded as much as possible. Continuous bands of trees and shrubs between parking aisles can also help the parking area blend into the adjacent park landscape. Paths should be provided within the planted islands to allow commuters safe means to reach the north edge of the academic courtyard.
THE TRANSITIONAL ZONE (see figure 48A)

The transitional zone as defined in the 1990 Study bridges the rustic and the discrete zones. The study identifies Warren Mall as a discrete landscape bordered by transitional landscape on its north and south edges. The Mall frontage for both EBU 3A and EBU 3B should therefore be treated in this manner.

A. The planting proposed should assume an informal or naturalistic character. Trees should be planted in clusters, emphasizing building entrances and architectural features.

B. Grass as a ground cover is discouraged except in sunny locations for gathering purposes.

C. Monoculture plantings should be avoided. Trees should be planted in clusters according to species compatibility. Planting areas should be covered by a variety of xeric-tolerant, indigenous, and ornamental shrubbery and ground cover as much as possible.

D. A low curb rather than higher raised planters should define planting areas whenever possible in the transitional zone.

E. The perimeter of the new buildings outside the academic courtyard, including the light wells, should be lined with the transitional type of planting. These plantings should be related to the architectural character and rhythm of these adjacent structures.

F. Plantings of native or naturalized materials including sycamore, oak and eucalyptus species should be utilized.

THE DISCRETE ZONE (see figure 47A)

This zone includes central gathering areas and adjacent corridors associated with the Academic Courtyard. The development of the program elements for the courtyard should reflect the provision of spaces for both intimate gathering as well as larger scale events and festivals.

A. The landscape of the courtyard should allow for a balance between seating areas, gathering areas and pedestrian access routes. The courtyard should encourage the free and direct flow of pedestrians between Warren Mall and the Warren housing district.

B. To the greatest extent possible the planting should occur within a low curb, not a raised planter, to allow more casual individual seating arrangements to occur in benches. The plant materials selected should be varied, but compatibility and maintenance issues should be taken into consideration.
C. Trees in paved areas should be planted as part of a continuous planting bed to visually integrate them into their surroundings. In areas where pedestrian traffic is necessary near the root zones of these trees, the use of pervious paving systems is recommended.

D. Fountains or water features set within gathering areas are encouraged to enrich the courtyard design.

E. The ground plane should be paved with modular units. The use of stone or ceramic tile is recommended for accent, to create unique and distinctive gathering areas.

F. The treatment of the ground plane and/or the placement of the trees and urban furniture should reflect the expression of the academic grid. The introduction of site-specific public art elements should be integrated within the overall design intent of the courtyard and coordinated with the Stuart Collection.

G. Lighting should be provided from the architecture that defines the space. Special features in the design should have special accent lighting for emphasis.

H. The Discrete Landscape may be more ornamental in character than in the Rustic Zone. The plant palette should be rich enough to accentuate color, fragrance, and texture to provide interest throughout the seasons.
ACADEMIC COURTYARD

1. Design Concepts

The Academic Courtyard is the result of the merging of the land grid with the academic grid. It becomes a clear and direct link between the Warren housing district and the Warren Mall. Given the importance of this connection, the entrances at the north and south corners of the courtyard should be treated with vocabularies of plantings and paving compatible with those used in the courtyard, to reinforce continuity. The connection with Warren Mall should not be treated as a separate entity or corridor but rather as a forecourt to the courtyard, mediating between the courtyard and the adjacent mall.

The Court should have a softer, more planted quality than the courtyard at EBU 2.

The central importance of Warren Mall as the main ceremonial promenade of the college should not be diminished by the design of the courtyard.

The formal relationship between the entrances of the buildings should be articulated in the design of the courtyard.

The courtyard design should be responsive to the sun, shade and the influence of wind patterns.

Pedestrian circulation through the center of the courtyard should be accommodated but it is not necessary to provide a straight path.

2. Landscape elements

Paving: Well-designed paving can both unify the space and serve as a signature for the School of Engineering, becoming a recognizable feature. The paving palette should complement the materials used in the buildings and harmonize with the overall courtyard design. Stones, brick or tiles can add color accents to emphasize a particular building, entrance or other space and express the geometry of the academic grid.

Urban Furniture: Seating which allows for intimate gathering should be provided in the courtyard. Other pieces of urban furniture including trash containers, informational kiosks, signage and bicycle racks should be selected and located to reinforce the overall concept of the courtyard.

Lighting: Within the courtyard, lighting should be provided from the architecture that defines the space. In addition, special features in the design should have accent lighting to emphasize their character.

Special Features: The incorporation of special features including fountains and public art should be encouraged within the courtyard. All such special
features should be site-specific and implemented in collaboration with the designers of the courtyard and the Stuart Collection.

Plants: The selected plant palette should be in the spirit of those recommended for “Plazas” in Appendix 2, Warren College Recommended Plant List.

3. Preliminary Program

The School of Engineering has provided the following initial program criteria to be used in the design of the Academic Court.

Interaction/Gathering Space: It is the intention of the School to provide a number of small scale gathering spaces for faculty and students to use for interaction and sharing ideas. These spaces need to be somewhat removed from the active circulation in the Court. It is yet to be determined if these spaces should be close to each building or dispersed more centrally within the Court.

Special Events: The College holds a number of events, such as inaugurations, fundraisers, and awards ceremonies, that are attended by 200 – 300 people. These events would require table seating and preparation/serving areas.

Large Scale Events: The School may wish to hold a reception for the entire college student/faculty group or a post-graduation reception for students/family/friends. These events would require space for 1,500 – 2,000 people. Seating may be provided in theatre style rows with refreshment islands throughout the Court.

4. Phasing

During the interim phases of the implementation, the courtyard enclosure should be completed with plant materials in the locations where buildings will eventually be constructed. The future building areas should be planted with groves of trees or smaller scale rustic type groundcover that will help to provide shelter from wind, reinforce the edges of the courtyard, and be easily relocated as phasing continues. Planting types and locations should be selected so that only a minimal amount of landscape will need to be removed as phasing continues. Planting types and installations that allow for easy relocation are desired.

In addition, landscape elements such as seating walls, trellises or other devices could be constructed along the northern end of the courtyard to add more definition during the interim phases and to allow adequate protection from wind for pedestrians in the courtyard.

The outer perimeter streetscape that will remain after full build-out of the complex should be planted with the transitional zone plant materials.
VII. IMPLEMENTATION UPDATE

PHASING AND PRIORITIES

The expansion of the Jacobs School of Engineering is planned to occur over the next ten years. In order for the development to function optimally in terms of environmental quality and circulation, it is crucial that the Academic Courtyard be built with the first of the future buildings. Permanent planting should be installed whenever possible, with temporary planting of trees that can be easily relocated in areas where future buildings are to occur.

The northwest edge of the Study Area should be planted with a tree that can provide adequate wind protection until the construction of EBU 4B. In addition, the northwest edge of the site might also be protected by walls, trellises or other landscape devises.

Future building sites should be terraced to provide a visually appealing transition in grade where required. These areas should be covered with transitional type planting at the outside perimeter of the buildings.

Below grade parking decks at the north end of the site can be developed in conjunction with EBU 4B.