Design Guidelines

The purpose of the Design Guideline section of this document is to communicate the design guidelines for future physical development of the Chabot College campus. These guidelines are broken down into the key issues that create campus character: campus plan, architectural vocabulary and landscape treatment.

Woven through these guidelines as a common thread, is a consistent approach to the challenge of creating new design within an existing campus. This approach is based on identifying the essential elements and visual themes of the Chabot tradition. The Design Guidelines are focused on these key traits and developed to assure that they become integral to all future development. New design at Chabot College will be developed to reinforce and enhance the existing character of the campus.

CAMPUS PLANNING CONCEPTS

"Seen from the air, the beautiful Chabot College campus in Hayward, California presents a geometric appearance with classroom buildings radiating outward from a three-acre Grand Court which serves as the center of activity. The elliptical design provides convenient access to all buildings and encourages students to avail themselves of educational opportunities outside their major field of study. Small courts and walkways offer opportunities for after school discussions by student and faculty."

1967 quote from original Campus Designer

The following points include observations and recommendations for developing the campus plan.

- Unique courts create an open space hierarchy and help with Campus way-finding.
- Strengthen curved secondary paths with landscaping, lighting and visual termini.
- Soften the building edge at residentially scaled Depot Road.
- Create a clear public gateway entrance to the Arts Court/Performing Arts Center.
- Provide a 'Gateway' to the Grand Court.
- Shift inwardly focused campus out towards the Community.
- Monumental building provides a new campus image at Hesperian.
- Maintain rhythm and scale of buildings along Hesperian Boulevard.
- Emphasize campus entries.
- Connect parking lots with internal perimeter road.
- Open visual links/transparency between buildings and courts.
- Develop Athletic Fields 'Gateway'.
- Develop pathway from central campus to athletic fields.
- Buildings terminate axial relationships.
- Respect architectural character of original inner Campus defined by the arcade.
- Develop distinct activity areas at Grand Court.
- Build upon the strong Campus geometric relationships.
- Develop pedestrian nodes/pathways from parking lots into the Campus.
- Create strong visual links between buildings, gateways and courts.
- Eliminate "Fresh and Natural" truck and determine a permanent location in a building.
- Integrate vending machines into the architecture of the campus.
- Eliminate or screen mechanical equipment from major pathways and views.
- Locate new equipment to the least used sides of buildings, away from view and traffic.
- Provide discrete locations for smoking shelters away from building entries, windows, or HVAC air intakes.

ARCHITECTURAL GUIDELINES

The architectural guidelines describe recommended characteristics of architectural features. Together, the guidelines suggest a unified image for the Chabot College campus. They are to be used by the campus to guide the design of all projects on the campus. Guidelines are general and are broken down into the following categories: architectural framework, design elements, gateways and paths, transparency and sustainability.

Architectural Framework

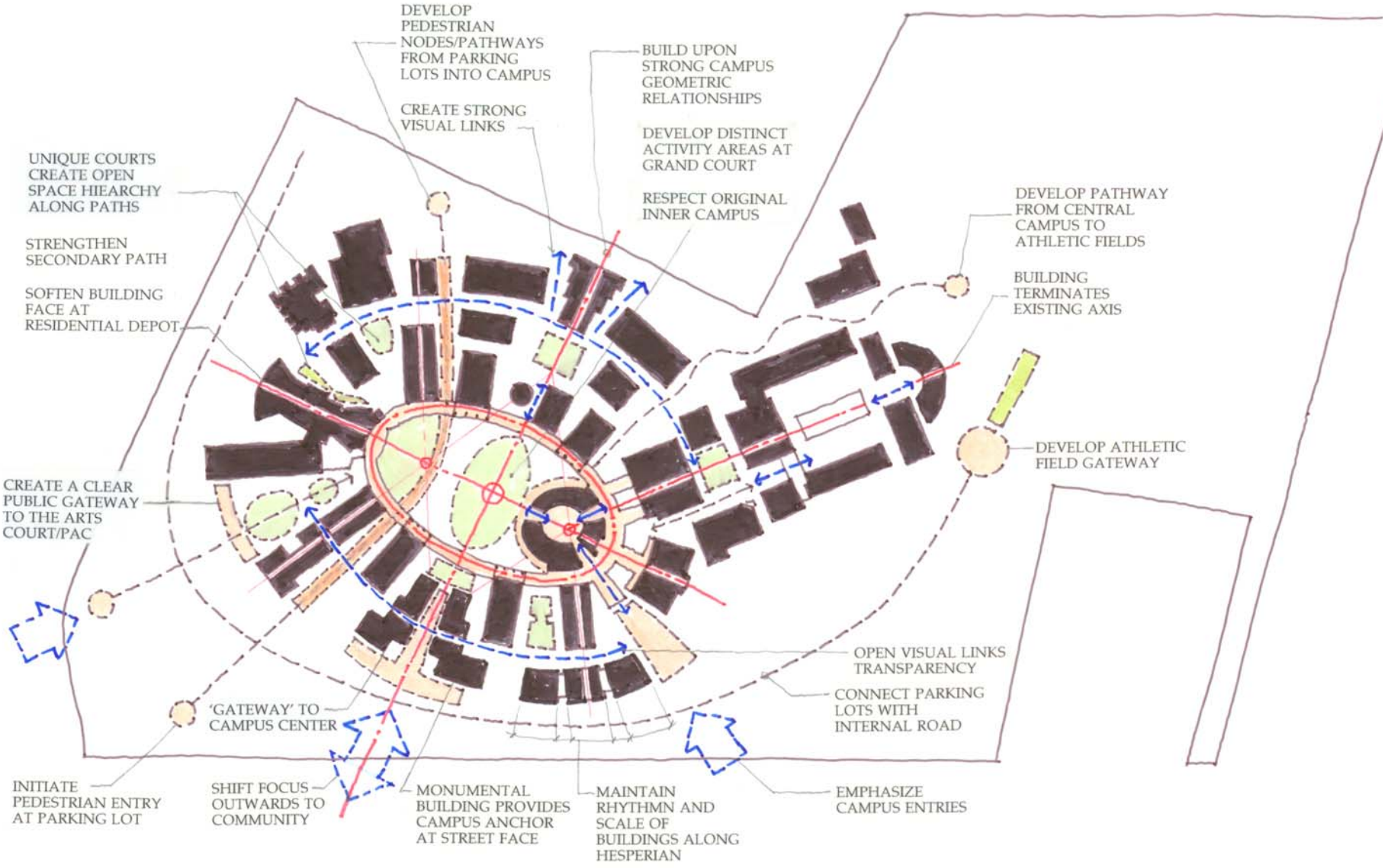
A strong architectural framework defined by the elliptical arcade which encloses the Grand Court defines all the building relationships on the Chabot Campus. This tight geometry served the original intent of encouraging student and faculty interaction regardless of academic discipline. In keeping with the precept of "form follows function" the classroom, library and theatre are defined by simple building forms expressing their underlying function. The original designers referred to the Chabot College architectural style as "Mediterranean West" borrowing the classical language of arches, expressed columns, and decorative elements merged with the distinctive Bay Area flavor of the 1960's.

- Campus Character: Future buildings should balance the existing formal geometric vocabulary with the informality of student life.

- Buildings and court placement are arranged with the existing Campus spatial geometry.

- Buildings along the Grand Court should retain their original architectural character and scale.

- Retain the scale of the Campus - do not exceed two stories.

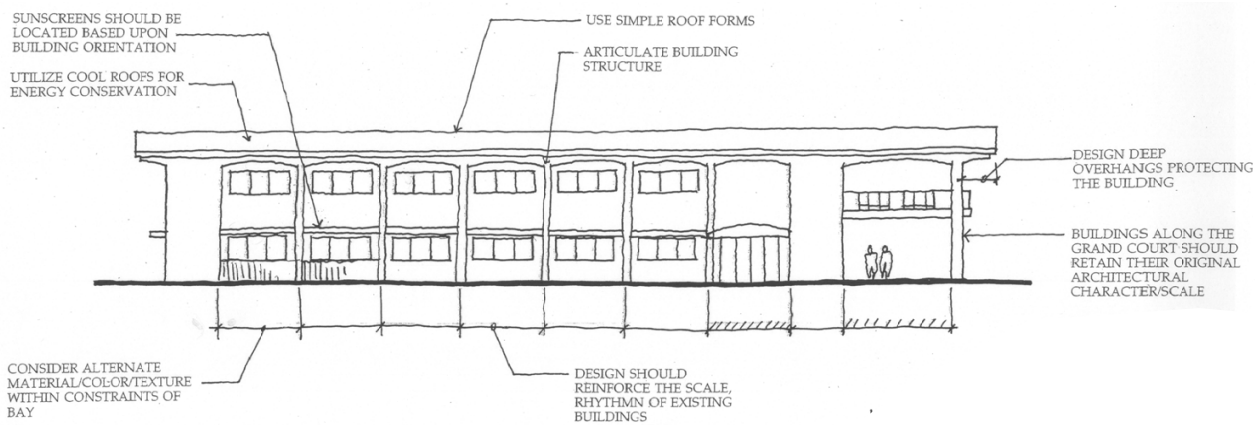


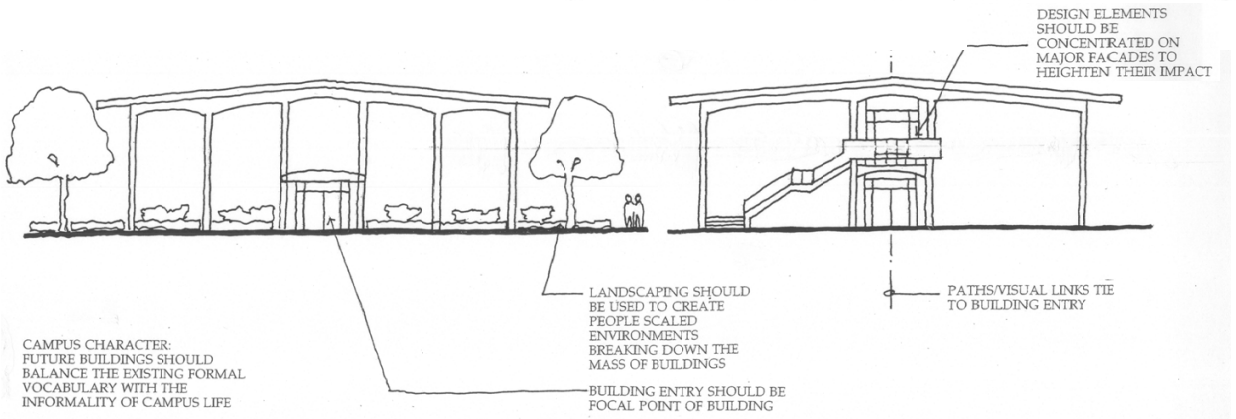
Campus Planning Concepts CHABOT COLLEGE

Design Elements

Chabot's architectural character is created with a simple collection of design elements arranged in a strong spatial geometry. The main entry introduces a gentle arch which is expressed in the buildings and arcades structural framework. Reinforced concrete takes on many forms; tilt-up panels with exposed aggregate, smooth integral colored concrete structural elements and limited use of decorative forming creating pattern and texture. Scale is reinforced with a regular rhythm of columns along the arcade and in the expressed column structure of the buildings. Deep roof overhangs project well beyond the building faces and extend over the arcade at two story buildings defining entries. Decorative elements are used sparingly; metal grille sunshades at windows, light fixtures shades and balcony balustrades maintain a language of simple repetitive circular patterns. There is an adherence to simple details and forms creating a unified architectural expression.

- Consider material/color/texture alternatives compatible with the existing exposed aggregate concrete panels and integral colored concrete structural elements.
- Develop color and material studies developed in conjunction with the Campus/Building Aesthetics & Sustainability Sub-Committee.
- Concentrate design elements on major facades to heighten their impact emphasizing building entries.
- Continue the use of simple roof forms with deep overhangs developed in conjunction with site specific daylighting and shading studies.
- Articulate building structure.
- Reinforce the scale and rhythm of existing buildings.
- Provide uniform accessible signage incorporating color and clear graphics.
- Maintain circular forms as a campus theme.

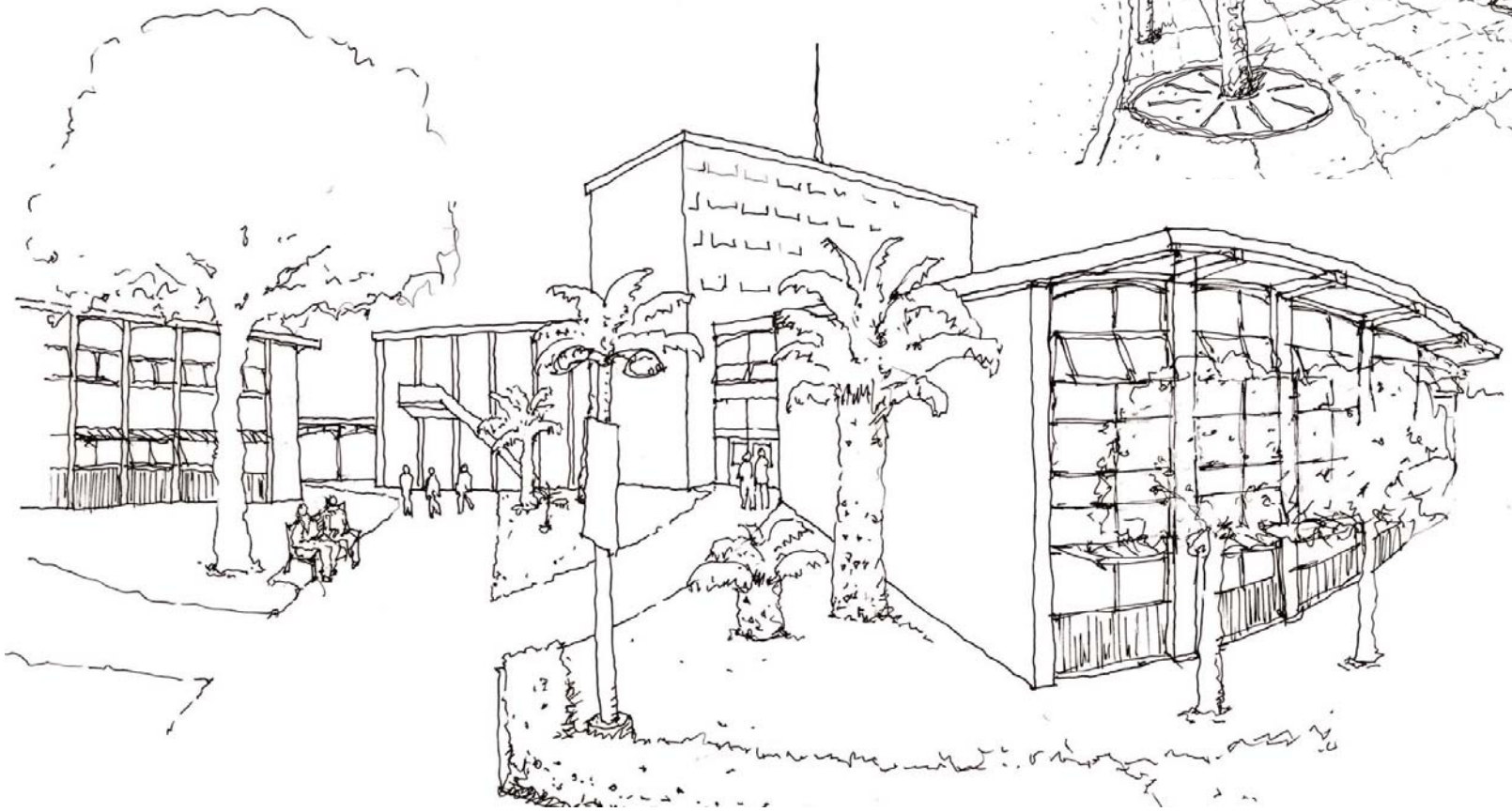




Gateways and Paths

Strengthen the 'sense of arrival' along pedestrian paths with appropriately scaled gateway elements.

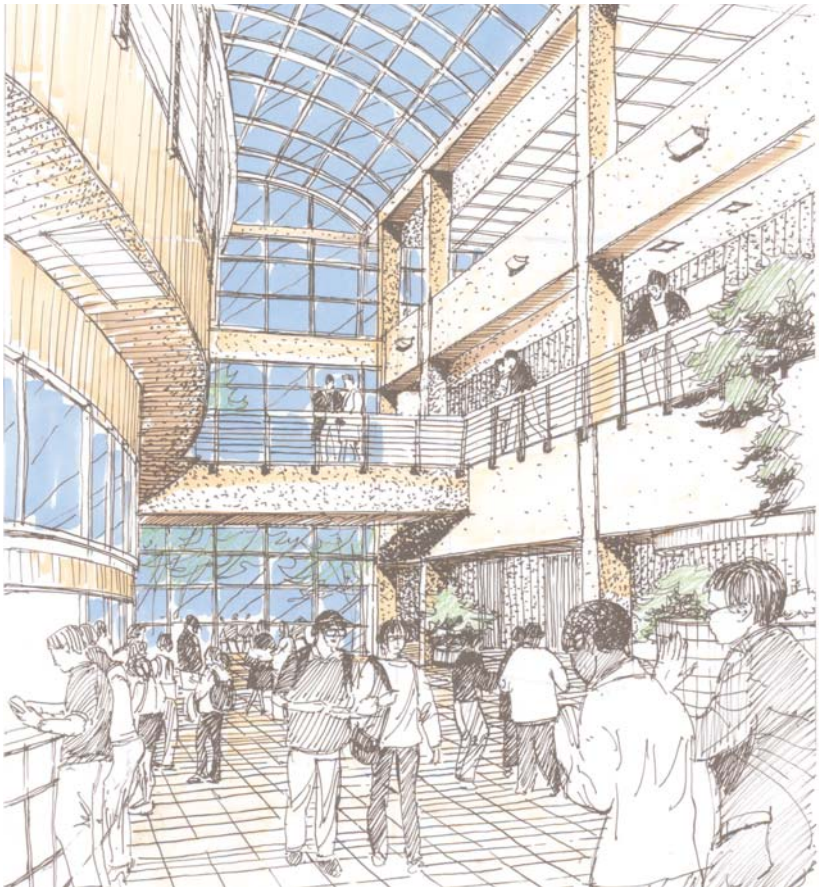
- Create a monumental entry celebrating Chabot College.
- Paths and visual links orient the pedestrian on Campus.
- Articulate campus entries with gateways, portals, arcades and trellises.



Transparency

The existing Campus design utilizes transparent building lobbies to connect pedestrian paths visually and to demarcate building entryways and passageways. Continuing this tradition, there is an opportunity to enhance connections between interior and exterior spaces, aid in way-finding and shift the inwardly focused Campus outward to the Community.

- Carefully placed glazing optimizes natural daylighting and ventilation improving energy efficiency and building occupant comfort.
- Decorative semi-transparent materials add visual interest and provide screening at equipment enclosures.
- Transparent entry lobbies assist in way-finding, accenting building entries and improving safety.



SUSTAINABILITY

Chabot Las Positas Community College District is committed to design principles using the LEED™ (Leadership in Energy and Environmental Design) Green Building Rating System as the standard for developing high performance, sustainable buildings. Specific sustainable design goals on the Chabot Campus have been identified by the Campus/Building Aesthetics & Sustainable Design Sub-Committee in keeping with the District Sustainable Guidelines. Additional District Sustainable Guidelines have been developed and should be referenced as a supplemental document.

GOAL 1. Design and build all major new projects at Chabot College to achieve a performance level equivalent to a Certified Rating or Silver Rating as defined by LEED™.

BACKGROUND:

The work of the design teams and builders for new facilities need a system for evaluating the incorporation of sustainable design into the overall campus. "The LEED™ (Leadership in Energy and Environmental Design) Green Building Rating System is a voluntary, consensus-based national standard for developing high-performance, sustainable buildings. Members of the U.S. Green Building Council representing all segments of the building industry developed LEED™ and continue to contribute to its evolution."

All new buildings and major renovations should achieve a performance level equivalent to a LEED™ Certified project.

"LEED™ was created to:

- *define "green building" by establishing a common standard of measurement*
- *promote integrated, whole-building design practices*
- *recognize environmental leadership in the building industry*
- *stimulate green competition*
- *raise consumer awareness of green building benefits*
- *transform the building market*

LEED™ provides a complete framework for assessing building performance and meeting sustainability goals. Based on well-founded scientific standards, LEED™ emphasizes state of the art strategies for sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality. LEED™ recognizes achievements and promotes expertise in green building through a comprehensive system offering project certification, professional accreditation, training and practical resources."

LEED™ Projects are rated based on points. Bronze, Silver, Gold and platinum ratings are awarded. This college goal should be to achieve the equivalent to a certified rating or a silver rating for all projects.

RECOMMENDATIONS:

a) The project team for each building should be selected with the ability and expertise to implement sustainable design standards. They should have team members with experience, a belief that sustainable design is an integral aspect of design, a ability to model energy and day lighting behaviors of any design proposed, that sustainability is an essential component of design from project initiation through construction.
b) Life cycle costing should be as important an economic factor as first cost. Sustainable design and building practices often cost more up front, but are more economic over the long term.
c) LEED™ design standards must be incorporated into the specifications.
d) Operations and maintenance must be factored into the design.
e) All major building projects should include the option for third-party commissioning to ensure sustainable design principals are incorporated into the designs.

GOAL 2. Maximize the energy efficiency of all buildings.

BACKGROUND:

Maximizing energy efficiency is a sound strategy for reducing a building's impact on the environment, reducing operating costs for the district, and making the building more pleasant to use. Energy efficiency requires a holistic approach to building design affecting all aspects of the structure. Solar orientation, building envelope design, glazing placement and design, HVAC system design, lighting control, even landscape design, all of these and many other factors must be carefully considered to make a building efficient.

While a carefully considered energy efficient structure takes more tim (and thus money) to design, it does not need to incorporate expensive, exotic systems.

RECOMMENDATIONS:

a) Integrate energy analysis tools into the design process. Require design professionals to simulate energy and day lighting patterns with various computer modeling software from the earliest design stages.
b) Take advantage of passive solar heating including:
    i) Coordinate the development of building orientation, glazing design, thermal mass
c) Take advantage of cooling opportunities. Large buildings typically over heat from lighting, equipment and occupants. This can be minimized by:
    i) Developing heat absorbency that occurs during evaporation. One method of achieving this is to cool with evaporative cooling towers.
d) Design building envelopes to optimize thermal control by:
    i) Specifying appropriate insulation levels,
    ii) placement of overhangs and sun shading devices
    iii) selection of glazing, particularly to reduce heat gain.
e) Provide multiple light switches in large rooms to control light levels.

GOAL 3. Design buildings to take advantage of our sunny climate: incorporate natural day lighting; harvest energy from the sun.

BACKGROUND:

Orientation of the building is critical to the success of day lighting.

RECOMMENDATIONS:

a) Avoid east or west orientations; where possible, orient buildings along the east-west axis for maximum north-south building exposures.
b) incorporate photovoltaic technology into shading devices and rooftops when economically feasible.
c) utilize overhangs, shading devices.
d) use photovoltaic power for site lighting.

GOAL 4. Encourage low maintenance, ecological, self-sustaining landscaping designs.

RECOMMENDATIONS:

a) Xeriscapes.
b) Preserve top-soil at sites used for new construction.
c) Limit grass/lawns which require high levels of water and care.
d) Tree survey (location genus and species).
e) Maximize irrigation system efficiency.
f) Use of native vegetation.
g) Planting of deciduous trees; create shade.
h) Where possible, use broadleaf evergreens.
i) Emphasis on low maintenance planting.
j) Aesthetics vs. conservationism; should we minimize lawn areas?
k) See Landscape Master Plan for additional information.

GOAL 5. Manage water resources on campus by reducing consumption, recycling waste water and minimizing run-off.

RECOMMENDATIONS:

a) Investigate use of reclaimed water from wastewater treatment plant.
b) Use of grey water for vegetation grey water from sinks and showers.
c) Minimize storm-water run-off by minimizing impervious surface areas. Incorporate previous concrete, asphalt and open-cell pavers.
d) Incorporate vegetated buffers to treat storm-water run-off from parking lots and rooftops to minimize point-source pollution from reaching the Bay.
e) Rainwater harvesting.
f) Specify waterless urinals. Some high profile installations include Liberty Island, New York; Petronas Towers, Malaysia; The Jimmy Carter Library, Georgia; Alameda County; City of Santa Monica; Kaiser Permanente; UC Santa Barbara.
g) Minimize impervious surface areas.

GOAL 6. Promote links to mass-transportation, carpooling, pedestrian and bicycle commuting.

RECOMMENDATIONS:

a) Encourage bicycling to campus by providing safe racks and/or bicycle lockers and showering and changing facilities.
b) Provide methods for encouraging carpooling by making preferred parking available for high-occupancy vehicles (HOV's).
c) Provide easy public transportation connections.

GOAL 7. Minimize waste through integrated recycling, composting and the salvage and reuse of existing materials.

RECOMMENDATIONS:

a) Campus recycling:
    i) Incorporate recycling bins/containers with trash containers; harmonize with buildings, provide throughout campus
    ii) Provide ample and integrated staging areas for recycling, compactors and balers
    iii) Work with recyclers for the most labor-efficient method of gathering recycled materials, including levels of co-mingling vs. individually separated collection systems
b) Composting
    i) Incorporate composting of landscaping debris and organic waste either on-campus or off campus
c) Salvage/reuse/recycling: Find ways of using debris from demolished buildings on site and through recyclers (avoid sending to land-fill)
    i) Crushed gravel for walkways
    ii) High-value use for all building components
    iii) Shredded wood for mulch
    iv) Recycle mineral fiber acoustical ceiling tile. See Armstrong Ceilings Reclamation Program for recycling options. Recycle carpeting through various reclamation programs run by DuPont, Monsanto, and BASF
d) New construction and demolition recycling.

GOAL 8. Promote the selection of resource-sensitive materials.

RECOMMENDATIONS:

a) Document minimum recycled-content requirements for building materials. See various national organizations such as the National Recycling Coalition.
b) Document environmental requirements in the specifications; monitor adherence to these standards through the submittal process.
c) Avoid use of finish materials where not absolutely necessary for performance or aesthetics.
d) Dimension buildings using standard-sized modules to minimize generation of waste.
e) Apply the Summary of Material Recommendations from The HOK Guidebook to Sustainable Design, organized by CSI Masterformat sections, for sustainable material-specific guidelines.

GOAL 9. Protect occupant health and well-being through better Indoor Air-Quality (IAQ), access to daylight, thermal comfort, quality acoustics, and a connection to nature.

BACKGROUND:

"The USA EPA ranks indoor air pollution among the top five environmental risks to public health. Unhealthy indoor air is found in up to 30% of new and renovated buildings." (*Sustainable Building Technical Manual*, Washington DC, Public Technology, Inc. 1996) Sources for indoor air pollution are found in a multitude of common building products including plywood and particle board, carpeting, paints and sealants, and resilient flooring products.

RECOMMENDATIONS:

a) Protect Indoor Air Quality (IAQ):
    i) Specify maximum low-level volatile Organic Compound (VOC) off-gassing levels for all building materials.
    ii) Incorporate easily maintained and durable surfaces where traffic is greatest to minimize use of harsh cleaning chemicals
    iii) Avoid the interior use of engineered wood products with high emission levels of formaldehyde.
    iv) Minimize use of materials with significant quantities of toxic, flammable, corrosive, or carcinogenic material
    v) Sequence construction so wet and/or odor-emitting materials are installed well in advance of "dry 'sink' materials, such as carpet, ceiling tile, fabric wall covering, and upholstered furnishings, that can absorb contaminants." (The HOK Guidebook to Sustainable Design)
    vi) Provide pre-occupancy flush-out ventilation with 100% outside air prior to occupancy
    vii) Avoid bake-out procedures to preemptively accelerate VOC emissions.
    viii) Where possible, continuously ventilate areas undergoing remodeling to minimize residual airborne VOC concentrations

b) Provide managed natural day lighting without glare.

GOAL 10. Utilize biological controls to manage pests.

BACKGROUND:

"What is IPM? Integrated pest management (IPM) is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment."

RECOMMENDATIONS:

a) Implement Integrated Pest Management (IPM) for the campus.

GOAL 11. Design for the Cliff Swallows.

BACKGROUND:
Chabot College has a mixed attitude toward the Cliff Swallows - a vestigial remnant of our natural environment. Swallow guano can pose a potential health hazard and mud nests can fall off buildings. Nest have been water blasted off the buildings and vast nets are installed to keep these birds away. Simultaneously, many faculty staff and students celebrate their arrival from South America. The design process should analyze how to work with these birds, not just treat them as an issue of vector management.

RECOMMENDATIONS:
a) Allow for nesting in designated areas. Protect people from bird guano by planting the base of these walls with plants that would be naturally fertilized.

b) Attenuate nesting in areas where the birds can cause a nuisance.

LANDSCAPE GUIDELINES

Landscape Framework

The landscape and open space framework provides the structure for the campus plan. Key concepts such as the Grand Court as the central iconic space, primary circulation paths leading from campus entries to the campus core and themed internal courtyards set the foundation for the plan. The plan emphasizes the pedestrian experience and stresses the development of a distinct character for the outdoor spaces to provide an interesting campus experience while increasing educational opportunities in the outdoor environment. The design guidelines provide a general approach to future landscape development that will establish a cohesive campus landscape identity. Detailed landscape decisions will be made when designing and siting new buildings.

<u>Planting</u>

- Evaluate existing trees and retain large and unique specimens where possible.
- For all new plantings, provide high quality topsoil amended to optimize soil fertility.
- Provide drainage for all planting areas and raised planters where necessary.
- Provide adequate planting area for all tree root zones. Use deep root planters where necessary to prevent damage to paving areas.
- Select disease and pest resistant plants.
- Select plants that require minimal maintenance. Landscape improvements should be designed to be consistent with realistic projections of future maintenance budgets.
- Incorporate the use of native plant materials where possible.
- Remove trees in poor health or in incompatible locations.
- Provide plants with seasonal color change.
- Use flowering trees to accent entries and other key site areas.
- Limit turf to high visibility and use areas.
- Use ground covers to substitute for turf in areas where lawn serves no practical function and in areas that are small, complicated or non-contiguous.
- Locate shrubs higher than 3' in areas well away from pedestrian pathways and use areas for security.

- Avoid planting trees within 10' of underground utility lines, within 10' of building walls and under overhead power lines.
- Follow sustainable principles when locating trees. Provide deciduous trees along south building faces to allow sunlight to penetrate in the winter.
- Create educational opportunities with plant materials. Create botanical species groupings for study.

Irrigation
- Provide centralized irrigation system following guidelines provided by maintenance staff.

Paving
- Develop common palette of paving materials and hardscape elements to unify campus character.
- Utilize special paving in key site areas.
- Utilize concrete paving for proposed pedestrian walkways within the campus core. In feature areas, utilize special paving such as integrally colored concrete with sawcut score joints, concrete pavers and permeable concrete.
- Meet all current ADA codes for paving.

Site Furniture
- Provide bicycle parking in association with each site zone.
- Utilize sturdy, vandal-resistant site furniture.
- Provide uniform furniture vocabulary throughout campus.
- Provide disabled access seating in all areas to meet current codes.
- Screen dumpsters from view with walls and planting. Enclosures should have gates that are easily accessible.
- Provide drinking fountains throughout campus as part of architecture.

Signage
- Provide uniform sign system for identity, informational, directional and regulatory signage.
- Harmonize sign design with architectural vocabulary.
- Locate signs to be viewed from key directions of travel.

Lighting
- Provide adequate lighting outside building entrances and exits, along pedestrian routes, in parking lots and at other key areas to meet standards for public safety and security.
- Use lighting to enhance the aesthetic qualities of the campus and highlight special features.
- Coordinate lighting locations and pole heights with tree and landscape locations.

Art and special features
- Include works of art and special features in developing courtyards and major outdoor spaces.
- Use a variety of art options including sculpture, inscribed quotes and images, seating and site furniture design, lighting, murals and water elements.
- Select art to relate to adjacent building uses to enhance learning experience.

Sustainability

Stormwater Management
- Provide bioswales for on-site water filtration and ground water recharge (also reduces impact on sewer system).
- Increase permeable surfaces on the site by maximize planting areas and permeable paving.

Water Conservation
- Use low water-use and drought tolerant trees and plants, preferably native species
- Use recycled gray water for irrigation, toilets and urinals where possible.
- Minimize lawn areas that have high maintenance and fertilizer needs.

Solar/Light

- Provide tree cover for shade in parking lots and plazas. Tree-lined streets and sidewalks reduce solar exposure, glare and heat.
- Specify light fixtures that minimize night time light pollution and glare.
- Choose plant materials to work in concert with building heating/cooling needs. For example, use deciduous trees adjacent to building elevations that would benefit from additional solar exposure in fall/winter. Use evergreen trees/plants for the opposite effect.

Materials

- Specify locally manufactured, recycled and/or sustainably harvested (i.e. certified forest products) landscape materials and products.

Transportation Planning

- Provide access to alternative transportation (bus shelter, bike lanes/parking, carpool parking, provisions for alternative fuel vehicles).