

Background

INTRODUCTION

This report is intended primarily to assist the Palomar Community College District in planning for the growth and change of its educational programs and facilities needs over the next 20 years. This document is written for those concerned with the interrelationship between the educational process and the facilities needed to support the educational process at Palomar College. Therefore, local and state planning agencies, local and state governments, local and state educational institutions, local taxpayers, and students, faculty, and staff of Palomar Community College District will find this document of interest.

This chapter will discuss the California Community College master planning process and then the master planning process at Palomar. The final section of this chapter will place the Palomar Community College District Master Plan 2022 within the context of California Community College State Rules and Guidelines related to reviewing and improving new campuses and individual capital outlay projects.

THE MASTER PLANNING PROCESS

Master Planning can be defined as a process by which institutions periodically reevaluate themselves. This is done in the light of past experience, environmental influences, and future goals. The plan is driven partially by current data and other quantifiable information, but it also recognizes qualitative considerations such as the College Strategic Plan and internal and external political, social influences.

The analysis proceeds from the general to the specific and from the past, through the present, to a projection of the future. Because this is a revisualization of the entire Palomar Community College District it is important to consider how each part of the plan relates to the District as a whole. The past is reviewed and ana-

lyzed to determine its effect on the present and on the future. The plan must be realistic, focusing on the realm of the "possible" while avoiding the fanciful and unrealistic. The plan will then have two major sections: 1) The Educational Master Plan that forecasts the future of the educational program and 2) The Facilities Master Plan that visualizes the spaces and technology needed by the educational programs and services discussed in the Educational Master Plan.

Once completed, the Educational and Facilities Master Plan, to be referred to in the future as the Palomar Community College Master Plan 2022, can be used to guide future educational and facilities development in the District. The plan will help support innovation in the educational program as well as any requests for capital outlay and/or bond money from state or local taxpayers.

EDUCATIONAL MASTER PLANNING

It is essential that every community college district develop an Educational Master Plan that will guide the overall process of planning and development. In fact, an up-to-date educational plan is required by the State Chancellor's Office as a prerequisite to submitting a Facilities Master Plan.

The plan should be *dynamic*. It should accommodate change as conditions that affect the educational programs change. This is sound practice for a variety of reasons ranging from staying in tune with current needs and methods to being responsive to opportunities or challenges when they arise unexpectedly.

The plan should also be *inclusive*. It must involve as much of the college community as possible and be broadly supported.

The educational plan itself should be based on the mission and philosophy statements of the District and

reflect the priority concern of the students, what is best for them and what can be done in the future to enhance their access and success. An educational master plan is designed to describe current programs and the direction these programs should take in the future. For instructional programs, this includes proposed changes in technologies and educational delivery, new programs and classes to be offered, deletion or revision of current programs, equipment and facility needs, and other needs that will improve programs. For other related services, the plan will have the same components with the exception of instructional programs. The emphasis should be centered on ways to improve student learning and services within the constraints defined by state laws and regulations, financial support and program cost, present facility limitations, and political realities.

This plan should also include a general plan of action, describing what steps will be taken to implement the plan.

Combined Educational & Facilities Master Plan

This report presents an integration of two areas of planning: 1) educational/operational planning, and 2) facilities planning.

There are distinct advantages of such a combined effort. By combining both into one report, each must be written into the context of the other. The facilities plan is a response to needs or requirements expressed in the educational plan. However, the realities of funding and the limitations imposed by what "already exists" force the educational plan to acknowledge the facilities plan. In that sense, each is written to the other with the goal of producing a more realistic and responsive document.

The main benefit of a master plan is the determination of a logical structure for ordered growth and change following general planning principles, while incorporat-

ing the flexibility to accommodate the unexpected changes of educational development and regulations.

State Codes and Regulations

The planning process must take into consideration State Codes and Regulations. Laws and regulations such as: the 75% / 25% full-time/part-time ratio of faculty; the 50% law which requires 50% of the operating costs be spent for instruction; funding caps which limit growth of the district; collective bargaining which determines class size limitations and other working condition issues; graduation requirements; prerequisite regulations; and requirements for categorical programs can have a great influence on long term planning.

Long Term Budgetary Considerations

Long term planning in the California Community Colleges has become increasingly difficult due to inadequate funding in the past few years. The prospect of inadequate funding will probably persist in the near future, although passage of a local facilities bond could allow construction of additional facilities. This uncertainty makes the creation of a definitive time line for planning difficult or impossible. However, this should not deter the development of a Master Plan. Every district and college needs to know where it wants to go in terms of educational programming and then determine the best way to get there within the constraints imposed. The action plans may take longer than originally projected, but many of the goals still can be reached.

Cost-Benefit of Programs

It is important that student and community needs be given first consideration in the planning process, however, it is also necessary to consider the cost/benefit of programs and services. Some programs will cost much more than others due to high equipment costs, small class size, large or inefficient use of space, and other cost considerations. With enrollment caps in place and a need to serve as many students as possible within the financial constraints, it becomes even more important to analyze programs for their cost effectiveness and benefit to students.

Improved Facilities Utilization

The facilities master planning process must take into consideration the lack of known funding sources in the future. State funding for capital projects is contingent upon bond issues passing and/or the development of alternative revenue sources. The State also looks at better use of current facilities and alternative instructional delivery modes to lessen the need for additional buildings. Even though a college does qualify for additional buildings, according to State formulas, they may not be funded. Therefore, other funding sources and/or better use of present facilities must be included in future planning considerations.

Classroom Scheduling

Scheduling classes to provide the best opportunity for students is difficult. There are many factors which must be considered, including: faculty preference of rooms, availability of rooms, size of rooms, equipment needs, physical adequacy of rooms to teach certain kinds of classes, availability of faculty block class scheduling, and conflicts with other required courses. There are also the more intangible issues such as faculty and students preferring classes scheduled during the morning hours and the perceived "territorial rights" of divisions, departments, and individual faculty members. The process is a complex one and requires concentrated attention to best serve students while efficiently utilizing facilities.

Classrooms and laboratories are often assigned to a Department which is given "first scheduling rights" to such space. Others may use these classrooms once those with first scheduling rights have been assigned.

However, the above described method should be discouraged because it implies a level of "ownership" of space. In such a system, it is imperative that the original room assignments are correctly distributed so that the actual needs of students are a priority and thus classes in high demand take priority over those in lower demand. Room seating capacities need to be matched with anticipated class sizes to optimize space utilization according to State formulas. Proper schedul-

ing will result in the most efficient use of facilities while providing course offerings which are most in demand by the students.

Impact of New Technologies and Methods in Educational Delivery

The rapid development of new technologies has created the opportunity to revise, improve, and expand the learning environment for students. Many educational institutions are looking at how they might provide better learning experiences for students through technological means.

The learning environment has changed considerably in colleges over the past few years and it is speculated that the classroom of the future will be much different from today's.

Lap Top Computers and Network Access

It is likely that in the future, every classroom will include a video monitor or projection TV unit and network access, plus computers depending on the application and subject matter. As computers become more compact and lower in cost, students could be expected to purchase their own portable computers. Thus the college will only need to provide network and internet access at each work station via a wireless connection.

FACILITIES PLANNING

The following sections describe the general principles of facilities planning as they apply to California community colleges in general. Specific application of these principles are included in the detailed chapters on each of the campus facilities.

As was described for education master planning, there is a need to develop a physical plan which will guide the growth and change of a campus. That plan should always respond to and be in coordination with the educational plan. Facilities and the ability to accomplish growth and change will inherently limit or dampen the possibilities in educational planning.

This is due to the fact that while educational ideas can change and evolve quickly, buildings and the other physical aspects of a campus are slow to construct and even slower to change. Public education construction funding is always short of the need and there is built-in inertia in publicly funded projects. There are also state standards and codes which limit the quantity of space and how that space can be used. For these reasons, the educational plan needs to recognize and be coordinated with the facilities plan. There is a *circular relationship* between educational and facilities planning; each is dependent upon the other.

Community College Growth & Change

Community colleges are uniquely difficult to plan due to their potential for growth many times their original size, sometimes ten times and more. Maintaining a coherent campus design where all functions remain in scale with one another throughout the various stages of growth is a major challenge. This is aggravated by the fact that most community colleges tend to grow and evolve over long periods of time rather than quickly. They are subject to changes in code and regulation, construction materials and techniques, styles and public taste, technology, and how they are used and organized from within. They are also subject to changes in board of trustees composition, administration, faculty, and students. The economy and population of the area served can change substantially over time, therefore, needing different educational programs and teaching delivery processes.

Campus Design Guidelines

The following are generally accepted design guidelines for community college planning:

1. *The design of a campus is largely defined and perceivable by its outdoor spaces rather than its buildings.* Outdoor spaces and landscaping provide the campus a unifying circulation network, a campus environment, a feeling of orientation, and a sense of identity.
2. *Open-ended linear campus organizations tend to be superior to circular or other closed organizations.* The classic Jeffersonian linear campus plan of buildings lining both sides of a landscaped mall remaining open for growth can be superior to other plans. Open spaces that “grow” with the buildings will tend to be roughly proportionate with the needs of the building and their occupants.
3. *Most functions within a campus should be within a 10-minute walk of one another.* This is based on the 10-minute passing time between classes, as well as the traditional scale of villages and other successful pedestrian environments defined by comfortable walking distances.
4. *Ideally, every function should be “open-ended” to allow for future expansion.* The Library in particular needs space around it for future expansion. Unlike some other functions, it needs to remain in one building which should have adjoining open space for future growth.
5. *Planning should strive to achieve maximum flexibility within each building for changing needs.* Open frame modular grid building construction is preferable to bearing wall construction due to its greater ability to accommodate change.
6. *Interdisciplinary functions should be more accessible and closer to the campus center:*
 - Classrooms & Lecture Halls,
 - Library,
 - Student Center & Bookstore,
 - Student Services,
 - Learning Assistance & Self-Paced Instruction,
 - Open, Self-Paced Computer Laboratories,
 - Interdisciplinary Computer Center & Laboratories.
7. *More specialized functions need not be as close to the campus center:*
 - Laboratories, vocational-technical space,
 - Faculty offices,
 - Administrative offices,
 - Theatre,
 - Physical Education,
 - Maintenance/Warehouse facilities,
8. *Some functions are best located on an edge of campus near public access:*
 - Child Development Center.
 - Administration,
 - Student Services (registration),
 - Theatre/Performing Arts,
 - Physical Education,
 - Gallery and Exhibit.
9. *Parking should not be favored over building locations.* The introduction of parking and vehicular roads to older campuses has often resulted in fragmentation and loss of coherent campus structure.
10. *Parking lot expansion should parallel the sites of building expansion.* Again, this is best accomplished through a linear campus organization where parking lots are constructed in parallel with the buildings and left open-ended for growth as the buildings grow.
11. *All parking lots and parking structures should, if possible, be interconnected by on-campus roads.* Because community colleges can be one of the biggest traffic generators in a community, they can severely impact off-campus traffic when an interconnecting network of on-campus roads is lacking.
12. *All student parking should, if possible, be equidistant from the campus center, or at least to the respective areas they serve.* By doing so, less traffic congestion is created by students seeking closer parking.

STATE RULES & GUIDELINES

California community colleges are governed by a variety of rules that are included in various legal documents as well as building codes. They are also shaped by formal and informal guidelines that are utilized by the community college Chancellor's Office, the community college Board of Governors (BOG) and the California Postsecondary Education Commission (CPEC) in their process of reviewing and approving new campuses and individual projects.

California Postsecondary Education Commission Guidelines

CPEC has the ultimate responsibility to approve the location and scope of new community college sites. In doing so, they have developed a general classification of various kinds and sizes of operations required to serve various sizes of communities and locales throughout the state. This is covered in detail in their handbook: Guidelines for Review of Proposed University Campuses, Community Colleges, and Educational Centers, August 1992. Amendments to this document are available at the CPEC website. [www.cpec.ca.gov]

The following is a listing of the various types of campus facilities described by CPEC and other sources, followed by a description:

- Rented Facilities
- Off-campus Center Operations
- Educational Centers
- Joint-Use Center
- Small Campus or Small College
- College
- Large College

Rented Facilities

These are typically located at public schools or public/private meeting facilities where space is normally empty during evenings. These are typically year-to-year agreements and are limited to general-purpose classrooms, which severely limits the courses that can be offered. Non-public school facilities do not meet the Field Act, therefore, only non-credit classes can be offered. Parking at public schools, such as high schools, typically does not present a problem; however, parking at other sites typically limits the number of classes that can be offered. These facilities are not reported in the Space Inventory Report, and therefore, are not included in capacity-load analysis that determine District eligibility for state funded facilities.

Off-campus Center Operations

This is a facility operated away from a college or campus that offers courses supported by state funds, but

serves fewer than 500 Full-time Equivalent Students (FTES). These may be leased, donated, or owned facilities; it is not required that the District own them. There is also no minimum land size requirement.

An Off-campus Center typically is employed to serve thinly populated or remote areas or targeted urban populations that would otherwise go unserved.

Educational Centers

Educational Centers are CPEC-approved off-campus operations owned or leased by the parent district and administered by a parent college. They offer certificate and degree programs that are conferred by the parent college. Their characteristics include:

- Must generate a minimum of 500 Fall Semester FTES (about 1,000 headcount or 7,500 WSCH).
- Maximum size (informally) about 5,000 unduplicated students or 40,000 WSCH.
- Typically offer limited scope curriculum and services to students.
- A minimum of 50 acres of land, 80-100 acres if it is to grow into a college.

Advantages: Educational Centers have the advantage of being able to economically serve areas with insufficient population to support a full campus or college.

Disadvantages: Because of their small size, centers lack the "critical mass" of programs, services, and activities that many students require. They can also be expensive to operate. As a result of limited curriculum and services, a center typically serves only about 50 percent of students who would otherwise be served by a comprehensive campus. This is especially true where there are competing colleges nearby.

Joint-Use Center

The Joint-Use Center is a relatively new development, defined as "a public higher education enterprise where facilities and operations are shared by two or more of the following segments: California Community College, CSU, UC, California public high schools, and independent California colleges and universities."

It may be owned or leased, but administrative responsibility must be exercised by one of the three public systems of higher education. Regardless of operational control, a joint-use center must enroll a minimum of 500 Fall Term FTES to qualify for State capital outlay funding. There is no requirement on land area or ownership

Advantages: Save cost by sharing facilities and other resources.

Disadvantages: New and relatively untested in terms of fiscal and operational considerations

Small Campus or Small College

Small campuses/colleges usually range in size of 5,000 to 10,000 students. Informally, this range is from 40,000 to 100,000 WSCH. A college is self-administered while a campus is not. Property must be district-owned and with a minimum of 80 to 100 acres of useable land. Small campuses/colleges offer full-scope academic programs with some limitations for costly science and vocational/technical programs. They may offer vocational/technical programs specific to their location. And, they may provide limited physical education and Athletic programs. Small campuses/colleges offer a full range of student services with limited student activity programs.

Advantages: The small campus/college include being able to offer a fairly comprehensive curriculum and services to smaller and medium size communities.

Disadvantages: Due to the California Community College state funding process, there is the lack of a "critical mass" to support costly and/or specialized science/technical programs and services.

College

A college in the California Community College system usually ranges in size from 10,000 to 20,000 students. Informally, this is 100,000 to 200,000 WSCH. Colleges are self-governing with full-scope academic, student service, and student activity programs. The academic programs offer fully comprehensive laboratory, vocational/technical, Physical Education and Athletic pro-

grams. And, unless there are nearby facilities, colleges typically have a theatre or other public venues.

Advantages: 1) economy of scale to support more costly programs and services. 2) ability to serve higher populated service areas.

Large College

Large colleges are usually thought of as being those with 20,000 or more students. The informal definition is 200,000 WSCH and above, although Title V indicates 140,000 WSCH is the minimum large college. The San Marcos Campus is now in this category. Large colleges are self-governing and usually have a minimum of 150 to 175 acres of usable land. They offer a comprehensive curriculum with a wide choice of programs and services.

Advantages: 1) greater economy of scale to support specialized programs and services 2) expansive social activities

Disadvantages: 1) sheer size that may be alienating for some 2) can also lead to a more complex, multi-layered administration.

Colleges of 30,000 students are still relatively uncommon in California. But with population growth and little remaining open land, many campuses originally planned at a smaller scale will be compelled to grow to 30,000 and larger to serve the demand.

Additional CPEC Requirements

The CPEC guidelines manual also contains specific rules about the distance separating community college campus property from airport property (2 miles minimum) and from seismic fault lines and zones. These are also covered in Title V. They should be carefully evaluated before selecting a new site.

Non-CPEC Site Selection Considerations

CPEC guidelines do not go to the point of making specific recommendations about defining and locating suitable properties. Therefore, the following additional items need to be considered:

- Availability of affordable and usable land without environmental limitations.
- Large acreage preferably with single owners.
- Sites located in un-congested areas with convenient freeway/highway and transportation access.
- Located within a 20 to 30 minute drive time for enough students to support a center, campus and/or college.
- New sites should not detract from the growth of existing campuses.

Offset Service Area

Locating a campus in terms of reaching a targeted population can be counter-intuitive.

This is due to uneven traffic congestion. In the mornings, freeways and roads are generally clogged in one direction while free and open in the opposite direction. The pattern can reverse in the evenings. Those traveling opposite the direction of congestion, therefore, can travel greater distances in a given time.

This has the effect of extending the service area of a campus in the direction of the predominant congestion, which in turn produces an off-setting service area relative to the location of a campus.

California Environmental Quality Act

The California Environmental Quality Act (CEQA) of 1970 has ushered in a whole new body of legislation and de-facto codes that affect community college campuses, both existing and new. It has had far reaching impact on site selection and on the design of individual projects. Intended to preserve the natural environment and protect wildlife, its purpose has been broadened to give individuals and communities a voice in decisions affecting the man-made environment.

On the whole, the CEQA has had an effect because it has mandated that new developments (community college included) account for their impact on neighboring properties and the community.

A campus can have impact on the following:

- vehicular traffic
- pedestrian traffic
- nighttime light
- noise
- views and view corridors
- utility and water consumption
- topography and natural features (via grading)
- storm water runoff
- natural vegetation and trees
- wildlife habitat
- historic structures and features
- archaeological and burial grounds

Districts should be proactive in addressing the impacts of their facilities with neighbors who may be legitimately impacted. By doing so, problems can be identified early and hopefully mitigated.

College campuses as a whole tend to be good neighbors, bringing amenities such as open green space, indoor and outdoor recreation, culture and entertainment, and education. As a result, most communities welcome a college campus within their boundaries. It enhances their attractiveness to existing and prospective businesses and the residents' general quality of life.

EIR's and Other Vehicles for CEQA Approval

The vehicle by which major projects such as an entire campus are approved is the Environmental Impact Report (EIR). But there are lower levels of approval. They are as follows:

- Notice of Exemption
- Negative Declaration
- Mitigated Negative Declaration
- Abbreviated or Partial EIR
- Full EIR

To review and approve these, the state has established a prescribed process for public hearings and public comment that must be followed.

County and statewide entities receive and record the submittals and the state maintains a clearinghouse to

process and archive the approved submittals. Approved projects are given a *clearinghouse number*. The approvals have a specific lifetime and must be periodically renewed.

Currently state approval of state funded projects is dependent upon completion of CEQA approvals. So without them, a project cannot go forward. Substantial project delays can occur until CEQA is complied with and the project has a clearinghouse number.

The complexity of this has spawned a whole field of specialization related to CEQA compliance. Professional consultants may be retained to develop and write the EIRs and other documentation as well as conduct the public hearing process.

State Chancellor's Office Guidelines

In recent years, the State Chancellor's Office has changed or refined its recommended guidelines to reflect the post-Proposition 13 budget constraints and to incorporate lessons learned from the past. The following are some of their informal guidelines followed by the current Priority Criteria for State Funding of various project types and the Title V Regulations which govern entitlement for space (The specific application of these are included in later chapters):

Informal Guidelines

- District Boundaries no longer define the service area of a particular campus. With the adoption of 'Free-flow' in the mid-1980's, students can attend whatever campus meets their needs without special permission or fees. The potential effect of this is redefining the service area of each campus from traditional legal boundaries to other criteria such as driving times, curricula, or programs.
- Campuses should be no closer together than 10 miles, and in rural areas can be considerably farther apart. Research has found 20 minutes to be the ideal limit and 30 minutes the maximum commuting time, with a noticeable drop-off in participation when times are greater. This suggests campuses be spaced at a 40- to 50-minute drive apart. In non-

congested rural areas, campuses may be spaced as much as 70 miles apart and still adequately serve the region. But in dense urban areas with heavy traffic congestion, the distance between campuses may need to fall below 10 miles.

- Roughly 40,000 to 45,000 WSCH (weekly student contact hours) seem to form the minimum "critical mass" to support a full-service campus. Below that figure, except in isolated rural areas, there appears to be insufficient enrollment to sustain a governance structure. This is especially true with the presence of nearby competing campuses.
- For a satellite center to be considered for capital outlay support, it should be capable of generating 500 FTES (full time equivalent students) or roughly 7,500 WSCH by the third year of operation. However, this is not intended to discourage smaller operations which can be accommodated without capital outlay support in temporary rentals.
- Where a new full service campus or college is ultimately anticipated, the area of the site should be at least 100 acres, preferably 120 acres. Where large-scale P.E./athletics programs, space-intensive lab programs such as agriculture, or simply very large enrollments are planned, added space should be considered. *However, it should be noted that there is no legal definition as to the minimum required campus acreage.*
- Where a campus is expected to remain a center, the area of the site should be at least 50 acres.

Fixed or Prescriptive Rules

The following are the current rules under which the qualification and funding of community college space is governed and justified, from the Chancellor's Office's Facilities Planning Manual* for priority criteria for state funding 2002 and on.

The Chancellor's Office has developed a six-category (A-F) breakdown to replace the previous three (A,B,C) categories, beginning with 2002-03 funding year new start projects. They are as follows:

Category A

To provide for safe facilities and activate existing space. No more than 50% of funds available in any given year.

- A-1 Imminent danger to the life or safety of the building occupants with adequate documentation from a qualified independent third party (least cost/no growth)
- A-2 Equipment to complete previously state funded construction projects
- A-3 Seismic deficiencies, potential seismic risk (least cost/no growth)
- A-4 Immediate infrastructure failure (least cost/no growth)

Category B

To increase instructional capacity. Up to 50% of funds available in any given year after funding Category A projects.

- Reconstruction of existing space
- Construction of new space

Category C

To modernize instructional space. Up to 25% of funds available in any given year after funding Category A projects.

- Reconstruction of existing space
- Replacement of existing space

Category D

To promote a complete campus concept. Up to 15% of funds available in any given year after funding Category A projects; funds may be shared with Categories E & F as necessary to fully fund a project.

- D-1 Physical education, performing arts, child development facilities, and other capital projects which promote a complete campus
- D-2 Cafeterias, maintenance shops, warehouses and capital energy projects

Category E

To increase institutional support services capacity. Up to 5% of funds available in any given year after funding Category A projects; funds may be shared with

* The Facilities Planning Manual for the California Community Colleges, November 1997, Chapter 3.3 Priority Criteria for Capital Outlay Projects, p. 3.

Categories D & E as necessary to fully fund a project.

- Reconstruction of existing space
- Construction of new space

Category F

To modernize institutional support services space. Up to 5% of funds available in any given year after funding Category A projects; funds may be shared with Categories D & E as necessary to fully fund a project.

- Reconstruction of existing space
- Replacement of existing space

The Eligibility Point System for Category B

Augmenting the six new categories is the development of a point system intended to more objectively measure relative priority need between the dozens of projects competing each year for funding. The point system uses four eligibility factors:

1. Enrollment Growth
2. Existing Inventory
3. Assignable Square Footage (ASF) change
4. Local Contribution

The maximum number of eligibility points in each category is 50; therefore, the total possible points earned for a project is 200.

- Projects at campuses with rapid projected enrollment growth, up to roughly 5,000 WSCH per year for five years, will receive on a sliding scale up to 50 points.
- Projects at campuses with existing space shortages, using Capacity/Load Ratios as a measure, will on a sliding scale receive up to 50 points.
- A project that directly addresses the identified need for more instructional or institutional support space generates on a sliding scale up to 50 eligibility points.
- Projects with a significant local financial contribution, up to 50% of the state supportable cost, may earn on a sliding scale up to 50 eligibility points.

Title V Regulations

California's community colleges are governed by a complex and highly variable set of rules regulating certain categories of space.

Under Title V of the State Administrative Code, California community colleges entitlement for space is regulated in five general categories of use:

- Classrooms (Lecture) and Seminars (110-115)
- Laboratories (210-255)
- Office (310-355)
- Library (410-455)
- AV Radio TV (530-535)

Classrooms and Seminars

Lecture space is governed by hours of use per week. Large campuses such as the San Marcos Campus are expected to use their lecture space on the basis of 53 hours per week with 66% of their stations occupied to achieve 100% utilization. This translates into approximately 15 ASF/station.

Laboratories

Laboratory space is also governed by hours of use per week. All campuses regardless of size are expected to use their laboratory space on the basis of 27.5 hours per week with 85% of the stations occupied to achieve 100% utilization. However, this translates to a series of variable area calculations which depend upon the nature of the laboratory use. It ranges from a high of 200 ASF/station for industrial programs such as Diesel and Auto Mechanics to a low of 30 ASF/station for Business and Management. Each campus becomes quite unique in its allocation of instructional space, because laboratory programs differ considerably from campus to campus and the percentage of Lecture WSCH versus Lab WSCH can also vary,

Office

Office space is based on the Full Time Equivalent Faculty (FTEF) currently on campus (as opposed to off-campus) and projected in the near future. The formula for computing all college office needs is 140 ASF/FTEF. Of

that, 80 ASF is allocated to each FTEF (faculty office) and the balance of 60 ASF is for all other office uses on campus. As a result of the recent AB 1725 legislation which increased demand for office space, the Chancellor's Office is permitting AB 1725, related uses to be moved to a non-office category, usually Room Use Category 680 or 250.

Library

Library space has been based on Day Credit or Day Graded (D.G.) Enrollment. It is computed on a sliding scale:

- Initial allotment 3,795 ASF
- First 3000 students 3.83 ASF/D.G.
- Between 3,000 & 9,000 3.39 ASF/D.G.
- Above 9,000 students 2.94 ASF/D.G.

The current system of qualifying for library space is under consideration for reform of the Title V standards*.

The system using Day Graded Enrollments ignores evening enrollments which represent roughly 33% of total enrollments statewide. Furthermore, it considers only credit (graded) enrollments in the qualification of space. Statewide, graded enrollments represent 86.4% of the total. Thus the remaining 14 percent, as well as the 33% evening enrollments qualify for no library space at all. Finally, Day Graded enrollments are not normally recorded with the college's Enrollment Projections provided by the state, but rather require an analysis of each college's 320 Report to ascertain the required information. This has led to misinterpretation and errors in the calculation of entitlement for library space.

The effort to reform the standards would substitute Full Time Equivalent Students (FTES) for Day Graded Enrollment criteria. New formulas for the calculation of the various categories of library space would be coupled with FTES as a load factor.*

*An Analysis of the California Community Colleges Library Space Standards with Proposed Revisions to the California Code of Regulation, Title 5. A working paper prepared by Linda Demmers, Library Consultant, July 1999.

This conversion is not expected to greatly increase or decrease the overall entitlement for library space. Furthermore, it is unknown at the time this report is being written when the new standards will be formally adopted.

AV Radio TV

AV Radio TV space is also based on Day Credit or Day Graded (D.G.) Enrollment. It is computed on a sliding scale:

- Initial allotment 3,500 ASF
- First 3000 students 1.50 ASF/D.G.
- Between 3,000 & 9,000. 7.5 ASF/D.G.
- Above 9,000 students 2.5 ASF/D.G.

It is assumed that the adoption of new Title V Library standards using FTES will also apply to the AV Radio TV standards.

Other Categories of Space not Regulated

Other categories of space currently not governed by special Title V regulations include the aforementioned office categories mandated by the AB 1725 legislation as well as independent learning (250-255), indoor physical education (520-525), cafeteria (630-635), bookstore (660-665), maintenance (720-725) and warehouse (730-735), etc. Some of these categories are governed by unpublished internal Chancellor's Office guidelines as well as 'generally accepted practices.'

The Title V space standards have not been fundamentally updated in more than 30 years. In many areas they no longer reflect current needs or practice. In categories such as lecture and office, there is evidence that the allowance for space is inadequate. Newly emerging uses of space such as open computer laboratories, computerized lecture, and independent learning are not addressed at all.

Five Year Plans

Five Year Plans comprise the application of the Title V standards in association with the District's short-to-mid term facilities plans. The Five Year Plan comprises an annually updated report to the state of each Dis-

trict's (and each college or campus with the district) existing facilities capacities against their usage, or load.

Expressed as a capacity / load ratio, the usage of each of the five categories (Lecture, Lab, Office, Library, and AV/TV) governed by Title V is compared against the State standard. Capacity for instructional space is measured in terms of the WSCH-capacity of any given category of spaces divided by load, or the WSCH actually being generated both present and future. Capacity / load ratios for Office, Library, and AV/TV similarly divide existing space, (but in terms of square footage) against what they would earn in terms of square footage. When capacity / load ratios for a given category are under 100%, there exists an entitlement for additional space.

Each district's Five Year Plan looks ahead six years into the future using Enrollment Projection data (future load) provided by the State and the District's plans for individual new projects which add future capacity. Each successive Five Year Plan drops the oldest year and adds another year. The Five Year Plan is the primary document referred to by the Chancellor's Office in its consideration of prospective projects.

Palomar's Five Year Plan portrays the educational directions and facility expansion and alterations that allow the College to continue its role as a responsive educational institution committed to serving its constituency in creative and innovative ways.

Space Utilization

The utilization of space applies the same State Standards and formulas used in the Five Year Plan to compare the actual use of space against what it should be.

Space utilization can be applied on a "micro" room-by-room basis, or it can be applied on a "macro" total campus basis. On a room-by-room basis, space utilization can be used to compare each department's relative efficiency in usage of space to improve scheduling and space assignment, or for other internal purposes. On an overall campus or campus-by-campus basis, it can be used in a broader way to compare a district's existing

geographic distribution of resources against present and future demographic trends.

Historical Development of Community Colleges

The following is a general review of the historical development of community college architecture in California. There are perhaps three distinct periods in the development of community colleges in California:

- 1920 thru 1945
- 1945 thru 1980
- 1980 to the Present

1920 -1945

The oldest community college campuses and buildings that have survived to today were constructed during the 1920's and 1930's. Before the 1920's, community colleges did not typically have stand-alone campuses and instead shared space with local high schools, usually as a tenant. All were governed by local school districts.

These earliest campuses are characterized by multi-story buildings located on relatively small sites, often in downtown settings and near public transportation. They were, out of necessity, planned for efficiency in layout and were often oriented outward toward the community rather than inward toward central courtyards.

Architecturally they tended toward classical and other styles characteristic of "civic" architecture. They tended to be located in larger communities with adequate economic resources to support and construct them. Many were built of high quality materials with permanence in mind. As such, they were an expression of local civic pride and the importance education and job training played in their communities.

A weakness with these designs, was the lack of provisions for the automobile. Students during that era seldom owned cars, so space for parking was not a con-

sideration. However, once student ownership of cars grew more common, this proved to be a handicap.

Post World War II – 1970's

Following World War II, a distinctly different plan emerged, the "garden" campus. These were groupings of smaller, mostly low profile buildings situated on well-landscaped sites of much larger acreage. In contrast with older plans, these new campuses were frequently designed around a central "green" or mall and on their periphery were parking lots for student use.

Freed by student use of cars, the newer campuses no longer needed to be near public transportation, and were also not constrained by the need to be in an urban setting. Newly formed districts during this period were often organized to serve much larger areas, sometimes an entire county. Because their tax base was derived from the wider region rather than a single community, the campus needed to be located closer to the center of the population, not necessarily within urban boundaries. Lower land costs and limited budget also contributed to decisions to move away from existing urban areas.

Post World War II was a period of unprecedented growth in California. Toward the late 1960's, enrollments were further inflated by the "Baby Boom." The result for many districts was tighter construction budgets requiring less costly architecture. In these cases, community college architects shifted toward a model similar to the K-12 schools, consisting of simple one-story bearing wall construction on a concrete slab. Roofs were lightly framed, often without attics or insulation. The buildings were typically configured in linear plans with exterior covered walkways and operable windows. These substituted for interior corridors and air conditioning. The design of these buildings contained little adaptability for changes in layout or changes in utilities and wiring. Often substituting for permanent buildings, in less affluent areas, were temporary buildings and even relocated WWII military barracks.

Fortunately land was still cheap allowing community college buildings to have better quality of materials and

design than K-12 buildings. However, this led to many campuses being simpler and less identifiable than earlier. The generous landscaped open spaces often then became a campus' primary identity. But the inherent inefficiency of the plan and long walking distances would become serious limitations.

This post WWII phase lasted until roughly 1980 when enrollments began to subside. It also roughly coincided with the Passage of Proposition 13, the landmark initiative that drastically curtailed community college funding for many years.

1980's to the Present

The current phase of community college architecture is denoted by a renewed surge of growth driven by "Tidal Wave II", or what others call the "Echo Baby Boom". After a comparatively quiescent period during the 1980's through mid-1990's, Tidal Wave II has initiated a period of accelerated growth and expanded enrollments expected to last until roughly 2020.

Campuses are also impacted by changes in teaching by the introduction of technology and perhaps budgetary constraints. Instructional buildings originally suited for ordinary classrooms and laboratories are now filled with expensive computers and technology. The added power and heat generation has resulted in the need for air conditioning. The traditional 35-station classroom is no longer valid for all the modes of teaching and learning. Space to accommodate teaching and learning at ratios of one-on-one (independent learning) up to 100 and more are needed. Long narrow buildings are no longer suitable. Larger easy-to-secure buildings with wider, more square floor plans are needed. An architecture that is open and flexible without permanent walls is needed to accommodate the proliferation of network pathways and resulting changes in layout.

Temporary Buildings

The current enrollment surge has vastly outpaced the state's financial ability to keep up with permanent facilities. Despite districts being short of space they are still compelled to serve as many students as possible. To handle the overflow they frequently install temporary

buildings using their own funds. These structures, when needed on short notice, play a vital role in providing quick and versatile space.

Temporary buildings are wasteful of land. At some campuses, they occupy upwards of 25% of the land devoted to buildings. They are small, one story, and usually spaced apart from one another, often up to 40' to meet code. Where campuses are short of land, they often displace needed parking and PE fields

They are typically leased when needed for only short periods of time and purchased when needed over longer periods. Their light weight construction gives them poor durability and their unitized "package" air conditioning units are energy wasteful when compared with good quality centralized systems.

Temporary buildings also can interfere with long term facility planning. Some times they are unwittingly placed on the planned locations of future permanent construction, forcing alterations to approved plans. They also can undermine the process of qualifying for permanent space.

Impact on Space Inventory

Under current state rules, temporary buildings are considered the same as permanent space in the Space Inventory. The combination of the two is used to calculate Capacity/Load Ratios that can be vital to the qualification of new space.

The state has attempted to address this with recent changes in their qualification process. However, a campus that "solves" its space problem on its own by adding temporary space may reduce its competitive position for permanent space.

In the end, these structures come at a cost. If permanent space is needed and temporary space is substituted, the space will be paid for twice. The recent passage of Proposition 39 may address this. Local bonds now pass with a 55% plurality instead of the old two thirds. This has had the effect of increasing the overall statewide funding pool. In many instances, it should

permit construction of permanent buildings from the outset.

Community College Architecture

Community college architecture has certain defining characteristics. Some are shared with other forms of architecture, both educational and non-educational, while others are unique to community colleges. If properly addressed they can help ensure a successful design.

Some of the most salient are:

- Identification
- Visual appropriateness
- Environmental appropriateness
- Adaptability
- Timelessness
- Consistency
- Variety

Identification

A campus architecture functions to identify the college to the area it serves. It should contain elements that are memorable and sufficiently distinctive so the public remembers it. It can also assist in locating the campus where it is close enough to be visible from major transportation routes.

Visual appropriateness

A campus should be visually appropriate to the area it serves. It can reflect that area's architectural history, its industries, or its local materials. Community college architecture should seek to incorporate and express the prevailing and historical styles of the area it serves; for example, the "Mission Style" in many coastal communities. The use of architectural forms and materials identifiable with the area visualizes the strong connection between campus and community. It also serves to establish a unique identity for the campus which distinguishes it from other college campuses.

Environmental appropriateness

Community college architecture should be shaped by environmental, climactic, geographic, and regulatory considerations. Materials should be appropriate to the intended use, and forms appropriate to the function. While buildings are designed to satisfy the college's primary mission of education and cultural enhancement, they should also be configured to minimize use of resources such as energy and water. And it must always be configured for personal safety and security of property, as well as protection against the elements and natural calamities such as earthquakes.

Adaptability

Rampant changes in technology and delays in funding and approval have begun to cause buildings, especially community college buildings, to become obsolete before they are completed. As a result, an "open architecture" to accommodate change is most desirable. Open frame structures, non-bearing partitions, removable ceilings, and accessible floors allow for changes such as space alterations and replacement of technology that may become necessary in the future.

Timelessness

Community college architecture should be timeless. It should avoid the "trendy" or other stylistic extremes. Community college buildings must last for generations and they should be designed for universal appeal and to bridge the periodic changes in public taste. Well-designed buildings that are authentic in material and form are by their nature timeless.

Consistency

Community college campuses should create a consistent architecture that will stand-out against its diverse, often incongruent surroundings. Campus buildings should be constructed using consistent materials and colors and appear as if designed "by one hand." Consistency in and of itself creates campus unity.

Variety

Community college campuses contain a wide variety of functions ranging from classrooms to entertainment, to food service, physical education and retail. These functions will tend to generate a design that can be more

interesting and even functional. In fact, forcing overly repetitive architecture would in a sense belie the differing functions within the various buildings. It would also be monotonous. The various functions can generate a variety of forms which can be "choreographed" into a composition that makes a campus more interesting than it might otherwise be. The choreography would create foreground buildings and background buildings to suit their functions. Well designed grouping of buildings can create a compositions that is greater than the sum of the parts.

Construction budgets are another important determinant of architecture, especially that of community colleges. Community colleges, in terms of operation and budget, traditionally fall somewhere between the public higher education UC/CSU system and the public K-12 system. Operationally they share much in common with the other higher education systems in terms of postsecondary education and extended hours. But they are similar to K-12 schools in terms of student density loads. Thus although officially all higher education systems have the same cost guidelines, construction budgets of community colleges tend to be lower due to their wider range of education. They handle a far greater number of students within a given amount of space and inherently handle a wider variety of services. These range from the traditional general education and workforce training to special remediation and outreach to targeted groups.

This heavy student loads necessitate a "durable" architecture that is long lasting. The wide variety of services dictates an "open" architecture that is flexible and changeable. The two characteristics are by nature somewhat divergent and they both add cost. Architects have the added challenge of making these buildings attractive and blend well into the campus while meeting the budget.

THE PALOMAR MASTER PLANNING PROCESS

The Formation of the Educational and Facilities Master Plan Task Force

On November 20, 2001 the Educational and Facilities Master Plan Task Force was approved by the President's Advisory Council. The task force was charged with developing a comprehensive District-wide educational programs and services plan tied to the 20-year facilities master plan. The goal was to produce the Palomar Community College District Educational and Facilities Master Plan 2022 by June, 2003. The task force was co-chaired by a faculty member appointed by the Faculty Senate and an administrator appointed by the Superintendent/President. Campus constituency groups were represented as follows: 7 faculty appointed by the Faculty Senate, 2 students appointed by the Associated Student Government, 1 classified employee appointed by CCE/AFT, 1 administrator appointed by the Administrative Association, 3 vice presidents (Instruction, Finance & Administrative Services, Student Services), 2 deans (1 Instruction, 1 Student Services), 4 directors/managers (Institutional Research and Planning, Extended Education, Facilities, Facility Planning), and the Superintendent/President (ex-officio). In addition, Jennifer Lebedeff an interested community member and at least one employee of Spencer/Hoskins Associates attended the meetings on a regular basis. All agendas, minutes, reports, presentations, and draft documents were published on the Educational and Facilities Master Plan Task Force Website [<http://www.palomar.edu/masterplan/>].

Educational and Facilities Master Plan Task Force Meetings

The first meeting of the Task Force took place on Thursday, February 7, 2002. At that meeting the members were introduced to the educational planning process, and a tentative timeline was established for the completion of the various tasks assigned to the task force. The need to create individual educational plans

for departments, programs, and services, facilities plans for the San Marcos Campus, facilities plans for existing Centers, as well as plans for possible new centers and campuses was discussed. Jim Spencer and Mike O'Brien of Spencer/Hoskins Associates presented information on the facilities planning process and discussed an analysis of student free-flow data for the Palomar Community College District as well as adjacent community college districts.

The discussion during the next few meetings focused on how to accommodate the expected growth in enrollment over the next 20 years. The Task Force looked at demographic data supplied by the Palomar College Office of Research and Planning, SANDAG, and Spencer/Hoskins to analyze demographic data that included adult population projections, 20 minute drive times, inter-district free flow, and District enrollment projections. Given that the District enrollment was projected to grow more than 50% over the next 20 years, a decision had to be made as to how the District was to accommodate that growth. There were basically four different possible ways that this additional growth might be accommodated: 1) Build new multi-story buildings and parking structures on the San Marcos Campus, 2) Expand existing centers, 3) Build at least one new comprehensive campus, or 4) Some combination of the three other alternatives. After several months of discussion, the task force asked the consultants to focus on expanding the San Marcos Campus to accommodate at least 25,000 students in conjunction with a combination of existing centers and at least one new center in the North or the South of the District and at least one new Campus in the North or the South of the District. On November 19, 2002 this information was presented to the Governing Board and they agreed on a New District Structure on December 10, 2002. This New District Structure is described in the Selection of New Sites Chapter.

While the discussion of what would be the shape of the New District Structure was moving forward, the Task Force was also gathering the data necessary to begin writing the educational master plans for the depart-

ments. During the first two weeks in May 2002 Spencer/Hoskins and several members of the Task Force conducted over 60 separate one-hour interviews with faculty and staff from over 90 different disciplines, services, programs, and departments. Each interview began with a discussion of the current status of the program and quickly moved to a discussion of the future educational and facilities needs. Transcripts of these interviews along with demographic data for each program were then provided to the Task Force. The Task Force then formed several writing teams that were to be responsible for consulting with each department or program and then producing a draft education plan for that unit. The draft education plans were completed by September 2002. These draft plans were then sunshined to the general campus community. The sunshine process lasted three months during which each department/program had a chance to review their document and make changes or corrections as necessary. The education plans were finalized in December 2002, and the sunshining process continued until the final draft of the educational master plan was presented to the Governing Board at their March 11th meeting.

Because the Educational Master Plan was to drive the Facilities Master Plan, once the Future District Structure had been determined and the draft Educational Master Plan was finalized, Spencer/Hoskins had all the information that they needed to begin finalizing the Facilities Master Plan.

FUNDING FOR CAPITAL OUTLAY PROJECTS DESCRIBED IN THE PALOMAR COMMUNITY COLLEGE DISTRICT EDUCATIONAL AND FACILITIES MASTER PLAN 2022

This master plan makes it clear that the Palomar Community College District will encounter significant population growth over the next 20 years. In order to accommodate this growth, and the expanded and new educational programs and services that this growth will

demand, the District will need to upgrade and expand its current facilities and purchase land in anticipation of building new campuses and centers. Many of the capital outlay projects proposed in the Facilities Master Plan fall within Category B and are likely to qualify for State funding. The rest of these projects fall within Category C may require some extra resources in order to obtain state support. Therefore nearly all of the projects described in the Facilities Master Plan will benefit if some percentage of the cost to is funded via a local bond or local donations. Adding local funding to state support also will allow the District to leverage what local funds are available in order to build the new facilities desperately needed by the District.

The next two chapters, The District and Study of Growth will help put into perspective the need for new facilities by describing the size of the District and projecting the growth in the student population out to the year 2022.



Image 1.1

Master Planning Workshop with the Palomar Community
College District Governing Board