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Designed to assist those persons responsible for planning and decision-making concerning community junior colleges, this guide discusses the steps that should be taken in order to prepare for new buildings and/or campuses. It is divided into six major headings--(1) an introduction to planning, (2) the study and interpretation of educational needs, (3) the long range plan, (4) the short range plan, (5) the planning team, and (6) some solutions to planning problems. Some of the areas discussed under the above broad headings are how to begin planning, time required, enrollments, sites, finance, quantitative and qualitative aspects of space requirements, educational specifications, and the securing of funds for planning. Bibliographies of pertinent resource materials are cited at the end of each section. (NI)

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A guide for planning COMMUNITY JUNIOR COLLEGE FACILITIES

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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New community and junior colleges are being established at the rate of at least one per week. More than 900 such institutions are in existence now, and there will probably be 1,000 by 1970. They are enrolling nearly two million students. There is no question but that the community colleges will assume an increasingly important role in providing for millions of Americans who can benefit from education beyond high school.

Those responsible for directing development of new community and junior colleges require assistance and information in undertaking the planning required to develop educational programs, in providing the buildings to house the programs, and in preparing a long-range plan to guide the future growth of the institutions. The resources that are available to assist the new and developing colleges in establishment and planning are few. Thus, the effort by the Council of Educational Facility Planners (formerly the National Council on Schoolhouse Construction) to add to the information in this area is most welcome.

Planners of new colleges should find this guide a useful outline in describing the steps that should be taken in preparing for new buildings or new cam-

puses. They will find it helpful as they attempt to clarify and understand the functions and aims of community junior colleges and some of the diversity that exists among the institutions. The *Guide* emphasizes what needs to be done and how to go about doing it. It properly suggests that the detailed information is derived from the exploration of the role the college is to play, the objectives it sets, the philosophy it adopts, and the decisions it makes.

In addition to providing guidelines for facilities development, the *Guide* also points up other resource material available on the subject. It is extremely important that planners investigate all possible resources rather than rely on the judgments of one or a few experts.

Sound planning is the foundation of all successful colleges. Comprehensive planning cannot be avoided if the community junior college is to achieve its objectives through its educational program and physical facilities.

Edmund J. Gleazer, Jr.
Executive Director
American Association of
Junior Colleges

This report was prepared by D. Grant Morrison under a contract between the National Council on Schoolhouse Construction (now the Council of Educational Facility Planners) and the Office of Education, U.S. Department of Health, Education, and Welfare under the provisions of Public Law 89-10, as amended, which authorize educational research, research training, and dissemination of research findings. The opinions expressed are those of the author and do not necessarily reflect the official opinion of the Office of Education.

A guide for planning **COMMUNITY** **JUNIOR** **COLLEGE** **FACILITIES**

FOREWORD

The number of community colleges has grown at a rapid pace in recent years, and all signs point to similar expansion in the years ahead. If these educational institutions are to achieve their objectives, adequate planning is essential. This publication is designed to assist those responsible for planning and making policy decisions concerning community junior colleges.

Superintendents, board members, presidents, and deans of junior colleges, as well as faculty and staff members should find the publication a valuable tool. It suggests procedures for planning finances, personnel, and facilities for community junior colleges and serves as a sourcebook of information and services useful in all areas of decision-making. Architects also should find the publication worthwhile for understanding the role of the community junior college and for working effectively with other members of the planning team.

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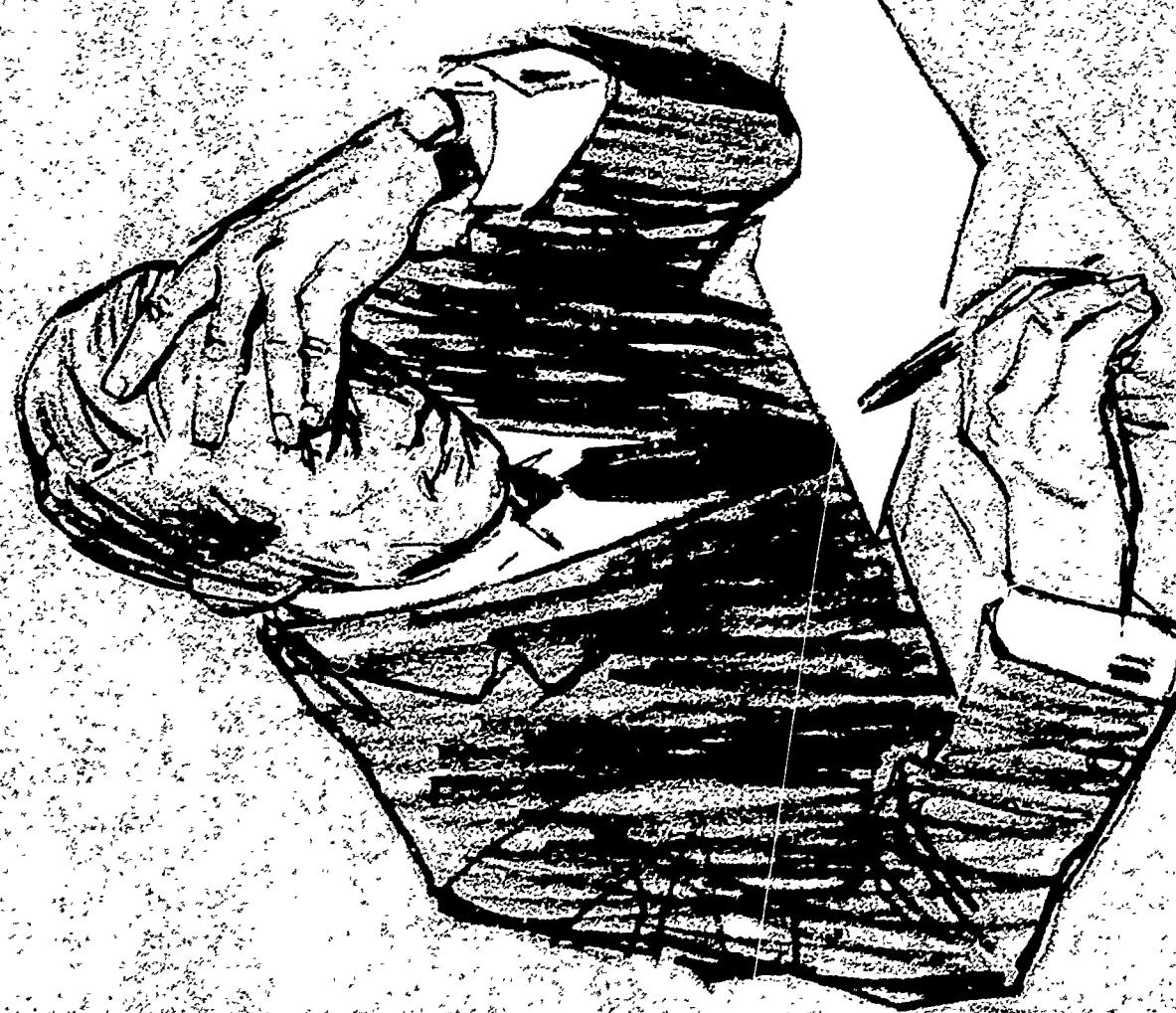
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Unit A An Introduction to Planning



Perhaps you will be involved in planning one of the new junior, or 2-year, colleges to be established in hundreds of communities in the United States in the next 10 to 20 years. How would you begin? Where would you go for help? These and other questions are answered in this unit.

What Is a Junior College? A Community Junior College?

The term *junior college* is used for any postsecondary education institution which offers 2 years of college-level academic work.¹ Some are public, some private, some church-related, and some independent. In size, they range from fewer than 100 students to many thousands.

Frequently, public junior colleges are known as *community junior colleges*, usually indicating that these institutions serve the major higher educational needs of a specific geographic area, with relatively few outside students, and their programs are much broader than those of the typical junior college. Sometimes the term *comprehensive* is applied also to the community college to indicate that the college includes a wide variety of programs such as general education, vocational-technical education, adult education and community service, basic and remedial education, as well as academic education which parallels the first 2 years of liberal arts in the university program.

Community colleges, in addition to being comprehensive, are also *commuting colleges* where all students return home each night. Exceptions must be noted for those States with an area population too small to provide the necessary 300 to 500 enrollment essential to operate efficiently. Expanding the area served then necessitates at least limited dormitories. Colorado, for instance, realistically meets the problem by providing dormitories where necessary.

What Is the Anticipated Growth of Community College Construction?

If the present rate of increase of one each week continues,

there will be at least 500 new community colleges by 1980. The number of students who will attend the 500 new community colleges can also be estimated. On the basis of 1967 average enrollment figures for public community colleges—2,330, or about 60 students more than in 1966²—an average enrollment of 2,500 for 1980 would appear to be conservative.

The 500 new community colleges, therefore, can be expected to accommodate 1.25 million students; the facilities needed will cost at least 5 billion dollars.

This estimate applies only to new community colleges. It does not take into consideration the much-needed expansion of existing 2-year colleges. There are more than 800 such colleges today, serving more than one and a quarter million students. By 1980, the total enrollment in community colleges could exceed three million students.

Furthermore, this growth is expected to continue. After 1980, there may not be as many communities starting their first community colleges each year; however, more and more communities will be adding a second, third, fourth, or maybe a tenth campus. Thus the growth in enrollment and the need for additional facilities will continue.

Why Is Planning Necessary?

Any community college, if it is to be an effective asset to the community, must be planned, organized, and developed to suit the particular needs and interests of the local community and the people who will use it. Adequate planning is essential to achieving this goal.

The kind of community college established will depend on

¹ For many years there were a hundred or more 4-year junior colleges (found mainly in California and Texas) which included grades 11, 12, 13, and 14. Since the late 1940's, however, these 4-year institutions have gradually changed to 2-year colleges. Today, it is doubtful that more than a few of the 4-year junior colleges exist.

² Statistics for these computations were secured from the 1966 and 1967 editions of the *Junior College Directory* of the American Association of Junior Colleges, Washington, D.C.

the ability of the planners to (1) assess community needs, (2) translate needs into programs and services, and (3) plan adequate facilities to house the needed programs and services. The community college, in its philosophy and function, should reflect the objectives of the community. Its planning should show how to translate these objectives into actual operation. Because the college must be financed, sources of income must be determined and coordinated. If effective budgeting is to be achieved, both income and expenses must be anticipated.

Some of the factors that planners must consider will directly affect the ability of the community college to function effectively. A college which offers only day programs in a highly industrial area may not meet the needs of the community. A college which duplicates the offerings of nearby colleges may provide few, if any, additional opportunities. A college where tuition is so high that the majority of potential students cannot afford to attend serves only a segment of the community. A location not easily accessible by public transportation may not serve all the students it wishes to reach. Likewise, a community college which provides no parking facilities and only limited student facilities for rest, study, food service, and recreation reflects poor planning. Wherever the college is located and whatever its offerings, the need for adequate planning is essential.

Is It Feasible To Establish a Community College?

The answer to this question will depend upon the individual community situation and the State in which you live. In most every case, however, the characteristics of the population, assessed valuation of property, and other local factors will be the major determinants.

As its first priority, therefore, the local committee should determine the statutory provisions for the establishment of a community college and find answers to such questions as:

1. What are the State requirements for establishing a community college? What are the characteristics of the local population, and the extent of unmet labor needs?
2. Has a guide been developed by the State showing a step-by-step approach to obtaining approval of a community college?
3. Has the State completed a long-range plan for higher education or for community colleges? If so, does the plan give a priority for the establishment of a college in the community?
4. Is State money available for a feasibility study? How can such assistance be obtained?
5. Will the State approval agency provide leadership to the local committee for conducting the feasibility study?

How and Where Do You Start?

A community interested in establishing a community college should begin by organizing a local committee to perform a feasibility study. The committee should represent all the educational and governmental agencies of the area as well as representatives of labor and management, religious groups, service agencies, and cultural and philanthropic societies.

This committee should be responsible for (1) determining the feasibility of such a college, (2) gathering information, and (3) recommending appropriate action prior to facility planning.

The answers to these questions will be useful to the local committee in its attempt to determine the feasibility of establishing a college. If there is no official State policy or if a negative answer is received for most of these questions, other alternatives must be sought. One suggestion would be to secure an outline for such a study from the approval agency of another State, such as Florida, Michigan, New York, or Washington.

In most situations, the approval agency within the State will

make the final judgment relative to the present feasibility, but the local committee should satisfy itself and the community on the advisability of continued study. If the feasibility report is accepted and the necessary approval is obtained for the development of a college in the community, the work of the local committee is completed and an official college board should then be established to assume responsibility.

What Is Needed Before Actual Planning of Facilities Begins?

Once a community has been given the green light to establish a college, attention can now be directed to facility planning. An official community college board should be chosen by election, appointment, or by a combination of these methods as required. The president of the college should be selected by the board after careful screening of applicants, and he should recommend for appointment several administrative assistants.

The president and the board now have some important decisions to make. Some typical questions they might be faced with, and suggested methods for securing answers, include:

Q. Should there be one campus or several?

A. The administrative staff and the educational planner or consultant, if one is employed, should be asked to suggest alternative answers based on projected enrollments, accessibility, and other factors, recommending the answer believed most adequate.

Q. What degree of comprehensiveness is projected for the college program?

A. The study of the community needs should be the major determinant in answering this question. (Refer to Unit B.)

Q. What are the admission and graduation requirements going to be?

A. Usually the answer is determined by the State approval

agency, with limited local modification.

Q. What are the site criteria?

A. The administration and the educational consultant usually recommend to the board the criteria for site selection, within the State requirements. (Refer to Unit C.)

Q. What are the classroom sizes and student station sizes to be?

A. The recommendations to the board will be tailored to (1) the philosophy of the college, (2) the types of programs to be presented, and (3) the types of teaching methods involved in each. For example, lecture presentation might require space for several hundred students; a laboratory or shop, from 12 to 24 students; while an audio-tutorial space for independent study might call for individual carrels.

Q. What are the priorities for construction?

A. Frequently, due to financial limitations, it is not possible to construct an entire campus at one time. A sequential priority based on the greatest service to the largest number of students may be a necessity.

Q. What should the college do about parking?

A. There may be four or five alternative solutions, including (1) no parking, (2) limited on-the-street parking, (3) a parking area either on or off campus, or (4) in urban areas, a parking building either owned or rented.

The search for answers to these questions will help the board obtain accurate, factual information upon which to base its decisions.

How Much Time Is Required for Total Planning and Construction?

Frequently when the decision is made to start a college, the need is so urgent that community leaders say, "Let's open next

fall!" Although examples can be cited of colleges that were in operation within 1 year, the dangers of such expediency are apparent. Experience has shown that such an undertaking should have a minimum of 2½ to 3 years of advance planning. The following variable amounts of time for the four phases of development are suggested:

Phase	Months	Years
Feasibility study	3 to 12	0.25 to 1.0
Study of needs, translation of needs into programs and services, long-range planning, and educational specifications		1.0 to 2.0
Architectural solution and letting of contract	15 to 18	1.25 to 1.75
Construction	18 to 24	1.5 to 2.0

The above "guesstimates" could possibly be shortened. For example, the work on the long-range plan could be concurrent with the translation of needs into programs and services. However, should there be difficulty in having plans approved or should bids come in so high that plan revisions are required, even a 5-year period may be too short. Similarly, construction problems often cause unanticipated delays.

Many educators will say, "Let's be realistic. How can you possibly allow 3½ to 5 years to plan and construct a community college?" The obvious response is, "Where can you cut?" Construction and the architectural work can be reduced very little, if any. This leaves only the educational planning. What are the predictable results of short-circuited educational planning? You may expect expensive alterations in a few years because spaces are too large, too small, or poorly located; entire buildings may straight-jacket the instructional program. There is little doubt that many recently built facilities are improvements over those constructed 20 to 30 years ago—they should be, in view of new and improved techniques and knowledge. But in most cases adequate time for educational

planning unquestionably would have saved money by providing much more functional space. It would be illogical to suggest that all community colleges require exactly the same time for planning and construction, regardless of size and local factors. Generally, though, the educational planning has been the most limited phase of the total development. The architect can do much better work and develop more functional buildings if he is provided a clear picture of the educational needs, as well as a description of the type and amount of space required for each program and service.

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Unit B

The Study and Interpretation of Educational Needs



After the feasibility study has been approved, the official community college board can now begin its work by expanding the scope of the committee study or institute another study which will seek more specific information on needs. New York, California, Texas, Washington, Florida, New Jersey, Connecticut, and Hawaii all have developed study guidelines.

The Study of Educational Needs

Briefly, the items most commonly included in the study of needs include:

1. Socioeconomic description of area, including population, manufacturing, building activities, and other major trends.
2. Prospective community college students—estimates, projections.
3. Maps and charts of the area, including topography, land use, highways, and similar items.
4. Programs needed, including desires and expectations of students, occupational needs, community services needed.
5. Description of other post-high-school programs in the area.
6. Land and facilities available on temporary or long-range basis.
7. Community attitudes.
8. Finances.
9. Estimated backlog of needs.
10. Summary and recommendations.

Interpreting Needs Into Programs

This section concerns the major programs needed in the community college. Services will be discussed in the following section. The major programs include: (1) the transfer program, (2) the technical-vocational program, (3) the general education

program, (4) the adult education and community service program, and (5) the developmental program.

The Transfer Program.—Of all the needed programs in a community college, it is generally agreed that the least difficult to develop is the transfer program. This is one for students wishing to secure a baccalaureate degree by transferring to a 4-year college or university after satisfactorily completing a junior or 2-year college program. Frequently two-thirds or more of the entering students follow this plan. Junior college authorities reveal that many of these students will have to change from the transfer program or fail. This situation certainly underlines the importance of the college having outstanding guidance and developmental programs.

In planning transfer programs, the beginning college can secure much valuable assistance from State coordinating officials and from department heads at State universities. This assistance will relate to the material found in each course, the emphasis needed in each part, and the level of knowledge and competency expected from the student who satisfactorily completes the course.

This does not mean, however, that the new community college needs to slavishly follow a course outline developed by the State university or nearby junior college. A new college should develop its own outline and course sequence. Frequent discussions between faculty members of the community college and the university, however, may facilitate the transfer of credits in subjects even before the community college receives regional accreditation. Where there is strong State leadership and coordination, the 4-year colleges and universities frequently indicate their willingness to accept transfer credits as soon as they are offered. This is a tacit acceptance that the standards in general and the quality of teaching in particular are guaranteed by the State coordinating agencies. In effect, the coordinating agency says, "Any student who satisfactorily completes this course is qualified to continue work at the university."

The faculty of a new community college should realize that the wide range in ability, aptitude, and motivation of entering students necessitates ingenuity and imagination in teaching. This difference in method of presentation is mentioned here because it has significant relationship to the amount and kind of space needed. For example, the space requirements for lecture-demonstrations, for seminars, and for audio-tutorial methods differ considerably. The relative demand for each will be an important aspect of planning for the college as a whole.

Basically, the transfer programs of the community college resemble the programs offered in the first 2 years of the university. The starting college should develop one strong curriculum in English, mathematics, social sciences, life sciences, physical sciences, foreign languages, art, music, and physical education. Later, it may be advisable to differentiate somewhat among the various majors. For example, the section of chemistry 101 specifically for nurses might have the same text and outline as chemistry 101 for engineers. The illustrative material, however, may be quite different.

In planning space for the transfer program, the board should use studies of need, studies of plans and expectations of local high school juniors and seniors, and the experience of junior colleges in similar or nearby communities to secure the following information:

1. What is the estimated full-time equivalent enrollment (FTE) of the college for the first 5 years?
2. What percentage of this enrollment will be in transfer programs?
3. What is the best estimate of the student credit hours that will be required in each subject area?
4. How many spaces will be required to accommodate the student credit hours (SCH)?
5. What are the necessary dimensions for each space? What type of space will it be?

6. What is the most desirable space relationship for these programs? How should these programs be related to nontransfer programs? to developmental and counseling programs? to faculty offices? to administration?

The Technical-Vocational Program.—A study of educational needs usually indicates that there are certain vocational-technical programs which are essential to a new college. Some of these are probably already being offered by other 2-year colleges nearby or in neighboring States. An entirely new curriculum need not be developed for each institution. The State approval agency, the State officials responsible for vocational-technical education, and the existing 2-year colleges can assist in developing these programs. The final curriculum draft should be done locally and by professionals. Both labor and industry can and should provide insights into the scope of each program, the level of competency needed for employment, and the number of workers they plan to employ. Program development and the specifics of each curriculum are tasks of the college; however, the use of qualified lay experts for each major vocational-technical area is strongly recommended.

Generally, it is not considered advisable to attempt more than three to four new technical programs a year, although a beginning institution may sometimes successfully develop a larger number, especially if most of these programs are commonly found in other community colleges. A curriculum specifically designed for an area—such as forestry at Lassen, California, or optics technology at Rochester, New York—may not be appropriate in most other localities. Usually programs in medical technology, police and fire science, and commercial cookery, for example, will have a much wider demand. Whatever the program, it will take time to develop and will need the most complete cooperation of educators, industry, labor, and civic leaders.

In addition to the course outline, the board should know the estimated enrollment and the amount of time each stu-

dent will spend in shop, laboratory, lecture, and discussion. The State Employment agency can give valuable assistance by providing a yearly breakdown of statistics concerning the number of people employed in various types of occupations. From these statistics the board can estimate the number and kind of spaces that will be needed to house its vocational-technical curriculums.

The General Education Program.—The general education program is designed to acquaint students with broad aspects of major fields of knowledge. This program includes some of the same courses that are included in the liberal arts (transfer) and certain technology programs. However, the general education program aims to encourage educational experiences along broad lines rather than to present a body of knowledge geared to further study. Basic courses are provided in English, the sciences, the humanities, and physical education.

Some colleges differentiate among various types of curriculums by offering courses in the same fields but with different emphases. A biology course in a transfer program will offer the history and principles of biology, and provide background knowledge needed for other biology courses. In the general education program, biology may be offered as a course in biological science, stressing the important aspects of botany, zoology, and anthropology.

Other colleges design their programs so that the general education courses are identical for all curriculums. In some cases these include: Techniques of Reading and Writing (English), Orientation (psychology), and Principles of Healthier Living (physical education).

Special educational facilities are not needed for the general education programs. The large lecture-demonstration room and the small conference rooms are ideal for the purpose. It is necessary, however, to keep records of the number of students in this program as it will be necessary to account for them in the total facility needs.

Adult Education and Community Service Program.—In gen-

eral, no special facilities are required for adult education and community service programs. Much of the demand for these programs comes in the slack periods of the college schedule and merely increases the overall facility utilization. Sometimes it may be necessary to secure space for an isolated program or programs away from the college. In some instances where the college provides mainly for the adult and community service programs, the facility certainly must be planned to meet this kind of special need.

Developmental Program.—One of the most effective means for preventing the community college from changing its "open" door to a "revolving" door is the establishment of a developmental, remedial, or clinical program. This program is primarily designed to assist the marginal student, but may also be used to advantage by an average student with some deficiency in a subject matter area.

Some colleges, such as Mitchell College in Connecticut, accept high potential students who are failing at some of the more selective institutions in New England. Through a process of evaluation and retraining, a sizable number are "salvaged." Some of these students later graduate with honors and achieve outstanding careers. Truly, this is a high-level conservation program.

In other colleges, such as Montgomery Junior College in Maryland, the potential applicants are screened early, and the doubtful ones are offered a summer school of developmental programs. These programs do not change all of the doubtful students into good students, but they give some a second chance for success. For other students, they make possible a more realistic self-appraisal.

Then there are junior colleges, such as Everett Junior College in Washington State, which provide developmental or remedial work in some of the basic areas, such as English, mathematics, and science. The student who is getting less than a *B* grade is required to spend 5 hours in a 3-credit course, with the additional 2 hours a week being devoted to individual deficiencies.

As there are many types of developmental programs, each new college should decide early the kind of program it will have and the extent of its commitment. From a third to a half of the students in a typical junior or community college would benefit from such a program.

Obviously, a student carrying developmental work cannot also undertake a full credit load. This has considerable effect on scheduling but an even greater impact on planning facilities. No longer can total reliance be placed on student credit hours. A 3-credit hour course may now require 5 class hours. While some of the developmental programs can be planned for the slack hours, an effective program will need special planning and expanded facilities. The quality of the developmental program is much higher when the college has outstanding student services in counseling and guidance.

Interpreting Needs Into Services

In community colleges, there are a number of services for which provisions must be made. Several of these will be examined in this section.

Student Services.—The community college will owe much of its success to the strength of the student services. These services are varied and many, but generally fall under one of the following six headings: (1) Guidance, counseling, and testing; (2) health services; (3) financial aid and employment; (4) placement; (5) student organization and activities; and (6) followup. Each of these services will need attention in planning the new facilities. Before actually planning student services, the administration and board should make a number of

policy decisions, such as those relating to the extent of the program, the ratio of students to trained counselors, and the availability of guidance services for part-time and adult students. After these and similar decisions have been made, the specific planning of the space needs and space relationships in student service will become more meaningful and functional.

Instructional Material Services.—Each part of the instructional material center must be carefully planned to secure the greatest possible economy and efficiency. The reading rooms, carrels, listening and viewing rooms, book stacks, offices, conference rooms, work rooms, and equipment storage rooms must all be planned to meet both immediate and future needs. No other part of the campus is likely to undergo greater change than the instructional center. Although the actual changes cannot be identified now, the planning should provide adequate electric outlets, TV cables, good lighting, and sound barriers strategically placed.

The library standards of the regional accreditation agency and the American Library Association can suggest some useful guidelines for planning the instructional center.

Administrative Services.—To estimate adequately the space needs for administrative services, the board must first determine the number of administrative persons who will be employed and the function of each. With this information and an understanding of the relationship necessary between administration, students, and the faculty, the board can effectively plan administrative services.

Community Services.—In general, no special facilities are needed to house community services. However, provision should be made in the design so that the community service program may be conducted without using the entire facility.

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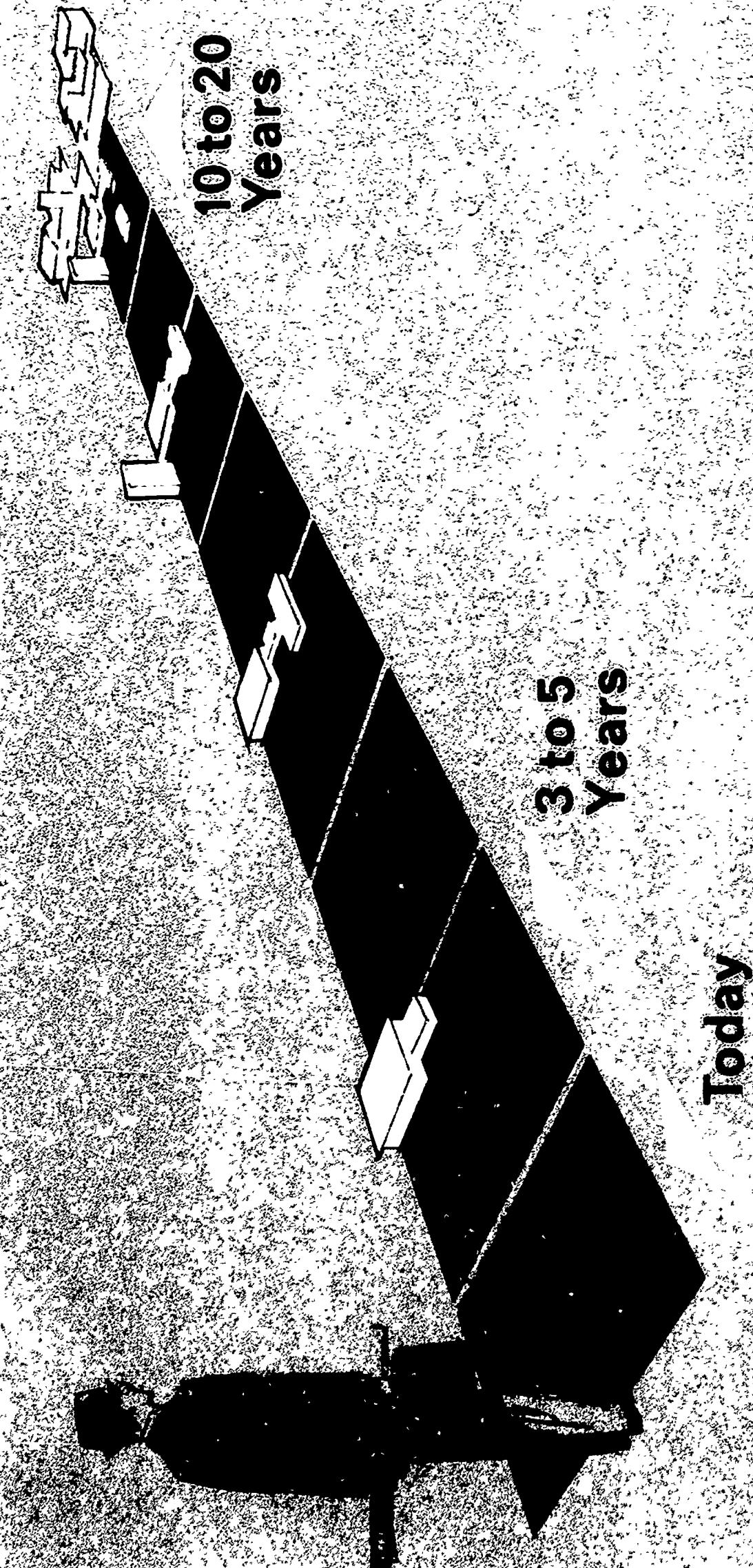
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ED — 010 948*
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Unit C The Long-Range Plan



After the study of needs has been completed and translated, the next step is to develop the long-range plan, an essential ingredient in the stability of a college. It brings direction and order, provides a focus for the administration and the faculty, and keeps the community informed. It should be flexible enough to meet changing conditions.

This plan is based on the policy decisions of the board, on projections, and on identifiable trends; it is not merely a dream of possible expectations. The following are components of the long-range plan.

Time

The first component of a long-range plan is time. The plan is focused on a specific date or a specific period in the future, and all projections are based on this.

Enrollments

Although projections of enrollments are more accurate for 10 years or less, the long-range plan frequently exceeds the 10-year period. If the college has been in operation for some time, its history can provide a baseline projection of enrollment. Experience has shown, however, that when a college constructs a new building, or is relocated on a new campus, the enrollment increases much more rapidly than it did in the past. The percentage of high school graduates entering the community college in similar communities can also provide an index for enrollment projections.

Programs and Services

The long-range plan should include a listing of all of the programs and services needed in the community college. It will include not only the proportional amount of each program and service planned, but also the rationale used to arrive at these proportions. Much of the evidence for this part of the

plan will be found in projections of growth in industrial and educational needs for the area.

Sites

Many factors should be considered before an appropriate site for the new community college is selected, including the purpose of the college, the programs to be offered, the number of sites to be selected, and the potential number of students at each site.

After these and similar matters are decided, the criteria for site selection may be drawn up. In a rural or suburban setting, some of the criteria to be considered deal with shape (rectangular 5-to-3 ratio generally provides the best utilization), topography (rolling, wooded terrain is preferable), and soil characteristics (especially as related to footings and foundations). Accessibility to students and site size are also of major importance. This publication will deal briefly with only one of these—site size.

No one can set up a precise standard formula for determining the size of a community college campus. The programs, the potential enrollment, and many other factors must be considered. Certainly, there is no magic in 100 acres, 200 acres, or any other specific acreage.

Sites are almost never too large. Generally, without a plan for meeting future needs, an apparently adequate site soon becomes completely covered with one- and two-story buildings. After the area surrounding the campus is developed for residential or commercial purposes, expansion of the campus site becomes prohibitive in cost. The college then has really few alternatives if it wants to expand. One is to obtain more land by condemnation. (This can be expensive and detrimental to the college in its community relations.) Another alternative is to tear down some of the permanent buildings and replace them with high level structures. (This also is expensive and indicates weaknesses in the original planning.) A third alternative is to seek an additional campus site.

Some States have set up a standard minimum site size for community colleges in rural or suburban areas. Two of them are:

- (1) 40 acres plus 2 acres for each 100 students enrolled.
For N students, the minimum is $40 + \frac{2N}{100}$
- (2) For fewer than 1,500 students, 100 acres are recommended. For more than 1,500 students, 200 acres are recommended.

The following are examples of suburban site acreages for existing community colleges as taken from the 1968 *Junior College Directory*, published by the American Association of Junior Colleges, Washington, D.C.

Approximate enrollment	Site acreage
Miami, Florida	185,247 ¹
Dekalb, Georgia	100
Gulf Coast, Mississippi	92,120
Fort Worth, Texas	158
East Los Angeles, California	82
Montgomery, Maryland	5,000 (original site) 8 and 88 ¹
Independence, Kansas	35
Pasco, Washington	158
Grays Harbor, Washington	40

¹ Two campuses.

For the urban community college, recommended minimum acreage or other formulas are of little value; the major determinants appear to be availability of land and cost. Examples of this can be seen in New York State. The recommended minimum acreage for an urban college is 40 acres. In New

York City, however, the Fashion Institute of Technology has 1.87 acres; the Bronx Community College, 2 acres; and the New York Community College, 2.99 acres. In smaller cities, the acreage is somewhat larger; for example, New Orleans has 57 acres; Seattle, 65.

Rather than present a set formula to use for urban site size, the college board might seek answers to the following questions:

1. Is it essential to have an urban campus or would a suburban campus be adequate, less expensive, and possibly more accessible?
2. If the urban campus is essential:
 - a. Is Government property available or will it be declared surplus soon? Does the acreage available appear adequate for the community college?
 - b. If urban renewal projects are or have been underway in the city, could a site be secured from this source? Would the amount of space and the environment make this area satisfactory?
 - c. Can air space over a railway, a river, a parking lot, or some other facility be secured?

The board should not assume that affirmative answers to any of these questions would necessarily provide a satisfactory solution to the site problem, or that such compromise solutions would be equally useful. The evaluation of each site should be made on the basis of informed opinion. On occasion, the experience of other colleges can also provide certain guidelines for decisionmaking.

Finances

The proposed financing of the college is an essential element of the long-range plan. Expenditures for both capital outlay and current operations have to be considered. School districts that operate as separate units of government, including com-

munity junior colleges, are usually limited by statute to the property tax as the basis of public support for their schools. School districts that operate within the framework of total city and county governments often receive additional, and frequently substantial, revenue from a wide variety of nonproperty taxes, including a local sales tax. Community junior colleges can be supported at more adequate levels when both property and nonproperty taxes are allocated to them. Alternative methods of support, including levies, bonds, loans, pay-as-you-go plans, cooperative State-local support, and donations, should be reviewed.

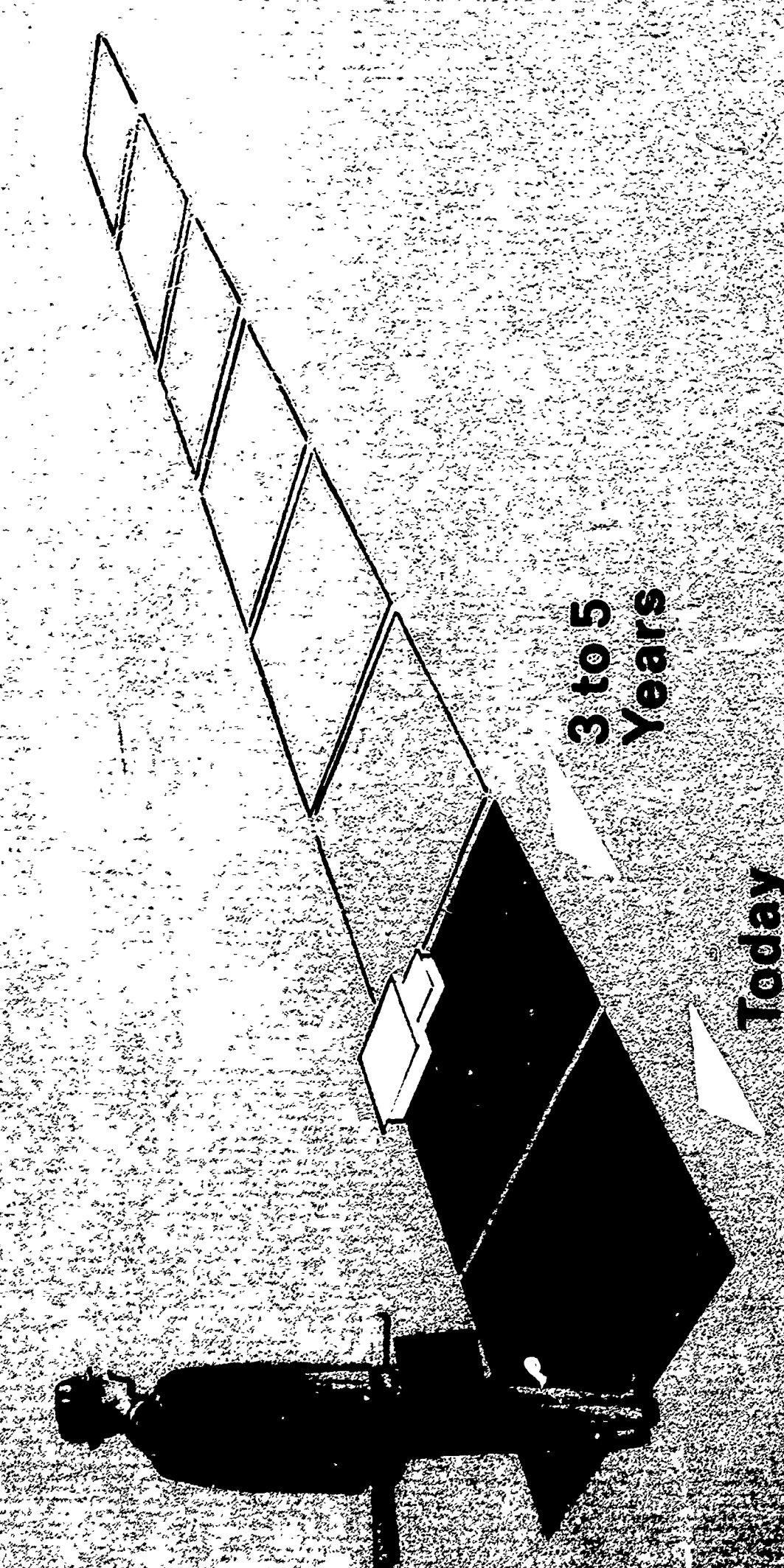
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Unit D The Short-Range Plan



The short-range (or immediate) plan consists of all the elements found in the long-range plan, but presents a closer and more detailed estimate of specifics for the project. Although this plan utilizes the same type of analysis required for the long-range plan, the focus is much shorter, possibly 3 to 5 years instead of 10 to 20. Constant reference must be made to the long-range plan, however, to make sure that the major conclusions and plans for the future are not abrogated by the pressing needs of the present.

There are at least five sequential steps in the short-range plan, each of which is described briefly below.

Review the Long-Range Plan

A review should be made of any statewide plan dealing with all community colleges (if such a plan exists) and the comprehensive long-range plan described in the previous chapter. Both will need to be reexamined for designing either a specific campus or a building. The review should consider (1) the overall purpose of the college and (2) the relationship of specific program objectives to the agreed institutional purpose. Programs or objectives should be modified in terms of new or previously unidentified conditions.

Estimate Teaching-Station and Student-Station Requirements

Having estimated the number of student hours needed in each program and each course, and having decided the number of students to be accommodated at one time in each, the board can now calculate the size of each space and the number of spaces required. The calculations should be as specific as possible. These figures should be developed for each of the various programs and services to be offered. This point cannot be overemphasized. The extent to which various teaching methods, such as the lecture-quiz, the seminar-discussion, the audio-tutorial, etc., are to be used in the college will have to

be evaluated. Each method will put differing demands on space in terms of amount and kind. Therefore, each will have to be considered separately to arrive at realistic estimates. Calculations must also be made for space to provide needed services in student activities, administration, guidance, and maintenance.

Thus, the comprehensive community college, with its wide variety of transfer and vocational and technical programs, is more complex to plan than a liberal arts college with its narrower curriculum.

Assess the Qualitative Aspects of Each Space Needed

The purpose of each space and the relationship of one space to another should be assessed. The most desirable size and shape must be found for the specific activities being housed, as well as for the types of materials, equipment, and storage required. Certain programs may have a positive physical affinity—a science program with science technology, or engineering-drafting with art. On the other hand, the band room and the library would have a negative affinity to each other.

Write Educational Specifications

For the short-range plan, the educational specifications may relate to a specific campus or to a certain building on the campus. They are intended to give the architect a clear picture of exactly what the space requirements will be and what they should accomplish. In other words, they should say to the architect, "Here is the problem we are asking you to solve. These are the number, size, and kinds of spaces we need. Some of the spaces are closely related to others; in other cases, the relationships are not important."

Both the purpose of the college and how the purpose will be met are described in the educational specifications. Additional discussion time and information regarding the scope or variety of programs and services needed should be readily

available to the architect. The specifications and their contents are described in Unit E.

Review the Architectural Plans

After the architect has developed a suggested solution, he will present it to the board of the college for review. Sometimes the board will ask the educational consultant and/or the administration to review the tentative plans. This examination and review for compliance with the broad principles and details of the educational specifications should consider such items as:

1. The purpose of the college.
2. Any previous construction on the campus.
3. Environmental factors.
4. Community attitudes and feelings.
5. Economic factors.
6. The entire educational planning to date, including the educational specifications.
7. Policy decisions made by the board.

A Planning and Construction Progress Chart

A wall chart often proves useful to those responsible for initiating and expediting the step-by-step progress of a community acquiring a new college. A suggested form for such a chart appears on page 27.

From the first suggestion of need to lay the community college opens, many steps will need to be taken. They can be grouped into two basic phases—the planning phase and the construction phase. The chart provides planners with a specific series of steps to be followed for the planning sequence. Since the construction sequence varies considerably, depending on the project, its steps can best be projected by the planning team and/or the architect.

Following the specific steps to be taken is a column for entering the proposed or target dates set up by the planning committees. Adjacent to the proposed date is space to enter the actual date of accomplishment. Hopefully, these two dates will coincide.

The final column provides space for entering the names of individuals, companies, or actions taken in regard to the individual steps. There is also a reference to the unit of this publication which provides information concerning that step.

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ED — 011 200*
JC — 660 281†

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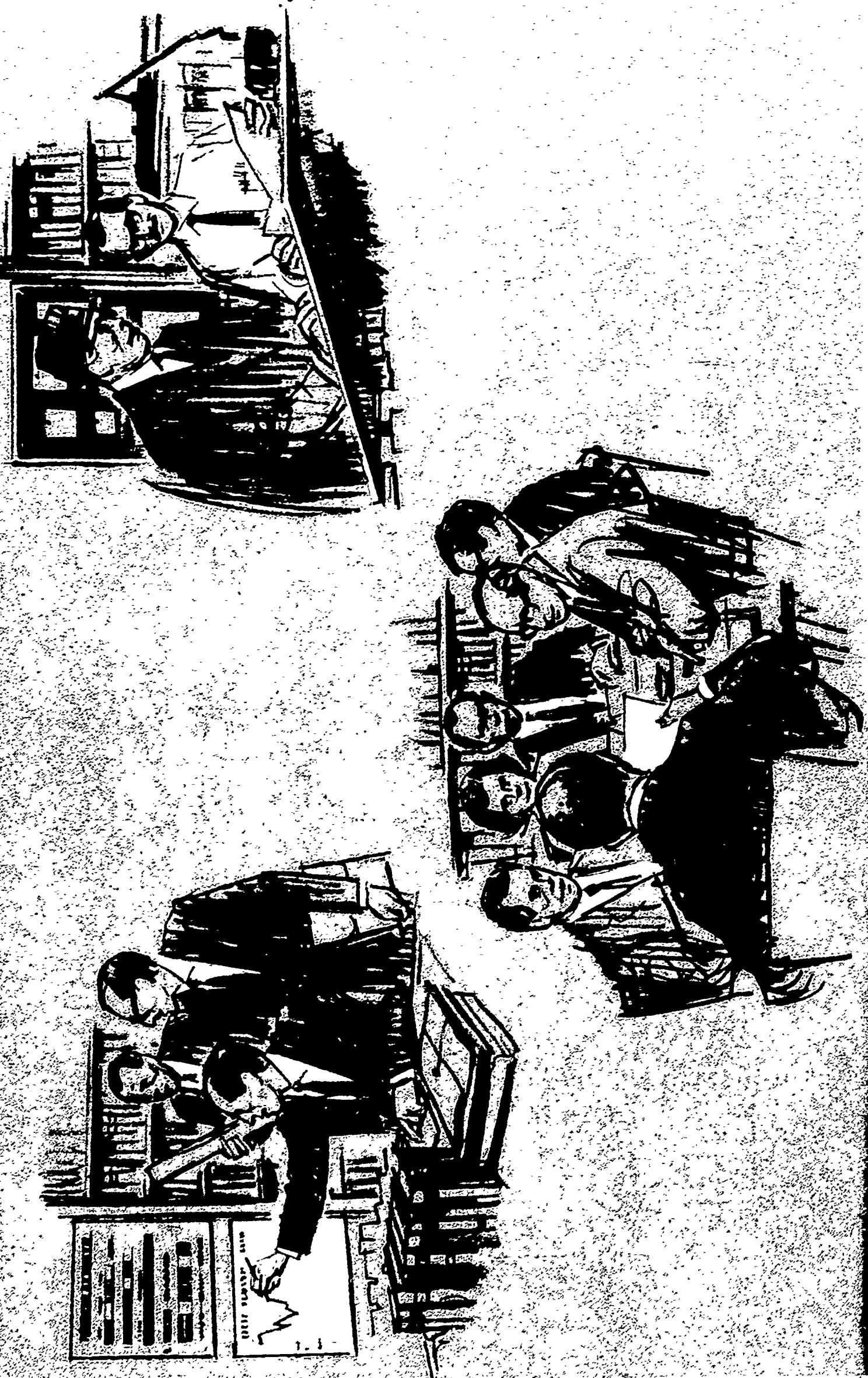
PLANNING & CONSTRUCTION PROGRESS CHART

STEP	ACTION	RESPONSIBLE UNIT	ACTUAL DATE	DATE IN COMMENT
1	Local committee created.			For information on this subject, refer to the publication by Unit A
2	Feasibility study completed.			Refer to Unit A
3	Approval for establishment sought.			Refer to Unit A
4	College board selected.			Refer to Unit A
5	Community survey completed.			Refer to Unit A
6	President selected.			Refer to Unit B
7	Local planning staff and/or consultant selected.			Refer to Unit C
8	Needs translated into Programs and Services.			Refer to Unit C
9	Long-Range Plan developed.			Refer to Unit C
10	Architect selected.			Refer to Unit E
11	Board decisions as needed throughout planning.			Refer to Unit A
12	Educational specifications prepared and communicated to architect.			Refer to Unit D
13	Site criteria established.			Refer to Unit C
14	Potential sites tested against criteria are selected and purchased.			Refer to Unit C
15	Short-Range Plan developed.			Refer to Unit D
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Developed by the Council of Educational Facility Planners

The Planning Team

Unit E



This unit deals with the types of communication between the administration, faculty, educational planner or consultant, and the architect, and the roles of the various members of the planning team. In some local situations, for appropriate reasons, there will be some deviation from the roles described.

Discussions

The president of the college has the major responsibility for setting up the planning team and bringing it together. An early meeting should be arranged between the architect, the educational planner or consultant, and those administrative and faculty members who have been assigned to the task of planning. At this meeting, a review should be made of the purpose of the college, the nature of program and service needs, and the nature and characteristics of the community and potential students. In subsequent meetings, reports on studies will reveal more information about the projected number of students, the qualitative elements of space needed for various programs and services, and some general agreements on teaching-station and student-station requirements. These early discussions are mainly informational in nature, with the president and the educational planner having the major leadership roles.

Faculty suggestions also can be helpful in planning space needed, how it is to be used, and the relationships that should be considered between programs. After preliminary plans are prepared, the architect describes and interprets his architectural solution to the administration and the educational planner. He will frequently use scale models, mockups, schematic drawings, sketches, and charts to help achieve a complete understanding.

Educational Specifications

Educational specifications are organized and written as a guide for the architect. They should not attempt to tell him

how to solve the architectural problem, but should describe the entire educational need. Following is a general outline of a suggested set of educational specifications reproduced with permission from the *Guide for Planning School Plants*.¹

A. General Information

1. Philosophy and objectives of the school
 2. Community characteristics
 3. Students to be housed
 4. Provision for community use
 5. Site and site development
 6. General design of the building
 7. General arrangement of interior spaces
 8. Policy concerning multiple use of space
 9. Funds available
 10. Nature of any likely future expansion
- B. Complete listing of the facilities to be provided
- C. Detailed description of each room and space to be provided
1. General description of the space
 2. Activities to be carried on in each space
 3. Location and traffic circulation
 4. Furniture and equipment
 5. Storage
 6. Audiovisual requirements
 7. Utility requirements
 8. Other special considerations

D. Miscellaneous requirements

¹ Council for Educational Facility Planners. *Guide For Planning School Plants*. Columbus, Ohio: The Council, 1964, p. 15.

The importance of having building specifications written by the architect for the contractor and the potential user of the facility is obvious. Perhaps not as obvious—but just as important—are the educational specifications written as a guide for the architect, which should be as accurate and specific as building specifications.

Roles of the Planning Team

Communication, to be truly effective, must be based upon mutual respect and understanding. Each member of the planning team must understand not only his own role in planning but also that of the other team members. A good team approach to sound planning is evident when the educational specifications are clearly and concisely written, when the architect makes a logical and creative interpretation, and when a free interchange takes place among the team members. The roles of the members of the planning team are as follows:

The College Board.—The major responsibility of the college board is making decisions at each stage of the planning process. The board may delegate responsibility to the administration for a review of progress at various times, or it may suggest that certain recommendations be documented more fully by factual data.

The Administration.—The administration has at least three roles in planning—initiation, recommendation, and implementation. First, the administration, together with the board, is the prime mover in the planning process. This includes initiating a study of need, hiring faculty and consultants to aid in translating needs into programs and services, and developing the educational specifications. Second, the administration recommends to the board the necessary decisions so that planning may proceed in an orderly manner. And finally, the administration implements the decision of the board with regard to selecting the architect and the educational consultant, purchasing the site(s), approving the architect's solution to the edu-

tional problems, and accepting the building when completed according to the contract.

College Staff.—The faculty and the service staff of the college have a fundamental concern for the facility being planned; they will no doubt be using it on a regular basis for a long time. Furthermore, their experience in a program or service makes them well qualified to specify the amount and kind of space needed, and the way in which this space will be utilized. In committees, they can assist in the educational planning in many ways; for example, in the evaluation of relationships between and among many programs. They should not make decisions nor attempt to solve the educational problems; but as a resource for developing educational specifications, they are in a position to offer unusual contributions.

The Educational Planner.—The major role of the educational planner is a coordinating one, bringing together the experience, training, and resources of the entire college for the development of the educational specifications. In these specifications, the educational planner will be able to describe a functional building for the needed programs and services in a manner consistent with the philosophy and purpose of the community college. In addition to this coordinating role, the planner has the responsibility of providing the administration with background information which will enable it to judge the validity of recommended decisions.

Regardless of the experience the planner has had with facilities, he should not assume any responsibility for architectural or engineering matters. His advice may be especially valuable, however, when relating the characteristics of certain types of facilities to certain programs to be offered.

The Educational Consultant.—Frequently the board may not have a qualified educational planner available. The board then . . . three basic alternatives:

1. Ask the president to direct the educational planning with the help of delegated staff members.

2. Ask the architect to undertake both the educational and the architectural planning.
3. Select a consultant or consulting firm to do all or part of the educational planning.

In some cases, the role of the educational consultant is limited to selecting a suitable site, developing a long-range plan, or writing the educational specifications for one building or one campus. In other cases, an educational consulting firm will do all the planning including, in addition, provision for student and community services, finances, curriculum and other educational specifications.

The educational consultant should not assume responsibility for architectural or engineering matters. Appropriately, he is the middleman, assisting the faculty and administration to interpret their needs to the architect, and assisting the architect to interpret his solution to the faculty, administration, and board.

The Architect.—The major task of the architect is to create an environment for learning which will accomplish the aims of the community college. From the educational specifications, he develops the plans and building specifications that will guide the contractor in constructing the needed facilities. The architect should be involved as fully as possible in the discussion leading up to the development of educational specifications. He will then be acquainted not only with the educational specifications but also with the reasons for the decisions reached. If the community is to get the most from the architect, he must have the fullest opportunity to use his training, skills, and imagination in designing the new facility. His complete understanding of the characteristics of the educational problem is most essential.

The State Approval Agency in Planning.—There is great variety in the control, form, and structure of State community college approval agencies, and even greater variety in the role of each. In some cases, the agency participates as a consultant in nearly all aspects of planning. A statewide master plan identifies need and establishment (Florida, for example). It will require from the district a specific feasibility study for the area wishing to establish a college, and then requires a second study to validate the local one (New Jersey, as an example). Some States (such as Washington) have regulatory functions with respect to minimum provisions, including such matters as checking and approving architectural plans prior to the construction of buildings. Generally, a check is not to say what the district can or cannot do, but rather what part of the total construction is eligible for State aid.

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Unit Some solutions to planning problems



The following problems arise at some time during the planning of community college facilities. Practical approaches and solutions are offered by those who have already traveled this route.

The "Inexpensive" Site

A newly approved community college frequently is offered a number of sites at little or no cost. If neither the State nor the local district has developed criteria for site evaluation, the local board is placed in a difficult situation. It does not wish to offend potential college patrons by refusing the offer, especially if a site appears to be a bargain. On the other hand, it does not want to bear the blame of accepting a site that turns out to be basically inadequate or very costly to develop. Many boards have wisely refused to accept a site until site selection criteria have been set up, preferably by out-of-district people who have no relationship to the sites considered. Once these criteria were accepted, the boards carefully followed them. Sometimes, due to strong political or other local pressures, a board reluctantly accepts an inadequate site and is criticized later for "lack of vision."

In recent years, the availability of site criteria and specialists who can help set up criteria have greatly improved the quality of college sites chosen or accepted.

Surplus Property Sites

A number of new community colleges have solved their site problem with the assistance of the General Services Administration of the U.S. Government. Another good source is the Director of the Office of Surplus Property Utilization, U.S. Department of Health, Education, and Welfare, Washington, D.C. Curriculum materials, furniture, and other aids may be secured as well as real estate. The office of the State approval agency or the State Surplus Property Agency is an excellent place to start gathering information on what sites are available. The State's congressional delegation's help may also be solicited.

Temporary Facilities

Another decision which most community college boards must make can be stated as follows: If a college decides to open in temporary facilities, should it build a complete campus before admitting any students, or should a compromise solution be reached to build on a priority basis, serving as many students as possible? The following specific examples of decisions by other community colleges demonstrate a wide variety of apparently workable solutions.

St. Louis District Junior College.—This junior college began operations in February 1963 in two high schools. There was nothing unusual or innovative about this arrangement since hundreds of junior colleges start this way. What was innovative was the way in which the master plan was developed and the speed with which it was carried out, establishing both temporary and permanent facilities. Articles in the *Junior College Journal* by the president of the Board of Trustees and others give the full picture of the rapid progress made in planning and constructing this college.

In this study, attention is called to four devices used effectively by St. Louis:

1. The utilization of data-processing in planning.
2. The provision for detailed collection of information on a permanent basis to facilitate research, especially in curriculum and course content.
3. The selection and purchase of three sites—one in South St. Louis County (78 acres), one in North St. Louis County (108 acres), and one in the city of St. Louis (37 acres).
4. The construction of temporary facilities in such a way, and in such locations, that they did not interfere with the master plan construction program.

The enthusiasm of the faculty was matched by that of the community, which voted \$47 million for construction of facil-

ties, and by the board, which agreed in 1966 to a total expenditure of \$62 million on the three sites.

Ocean County College.—Located at Toms River, N.J., this college operated in temporary facilities until its own campus was ready. The temporary quarters included (1) the high school from 4:00 p.m. until 10:00 p.m., (2) the local armory, and (3) the Community Memorial Hospital. The president said there were several advantages to the use of temporary facilities: more time was available for planning; faculty were available to assist in planning; the use of inadequate facilities clarified the understanding of what was needed; and the staff, students, administration, and community had time to understand the details of the master plan for the campus.

Adirondack Community College.—This college in Glens Falls, N.Y., operated in an old furniture store for several years. According to the president, this location afforded the college considerable time for solving the site problem (35 different sites were offered), and for securing the cooperation of two counties that shared in the administration and the expense of the college. In addition, more time was available for planning, and ultimately fewer changes were necessary.

Bucks County, Pa.—This community college site was purchased from Temple University. The site of 200 acres, plus a \$1 million mansion built in the 1930's, had been given to Temple University by the original owners. The remodeling of the mansion and the use of mobile trailers served to provide temporary facilities for several years while the new facilities were being planned and constructed. The trailers were sold when they were no longer needed. According to the president, the college expects to use the mansion permanently. Its charm and quality have set the tone for the entire campus.

Northampton County Area Community College.—This Pennsylvania community college developed several innovations that appear to be working effectively. One was the "permanentizing" of the temporary facilities. Stone facings

and corners were used to improve the appearance and prolong the life of the temporary facilities. Each building was designed for three or four different functions in the next 10 years. The location of bearing walls on the outside only, the placing of utility outlets, and the general arrangement of the building—all contributed to the plan. The use of these semipermanent structures gave adequate time for planning the permanent facilities, and insured the presence of faculty, architect, and administration in the planning.

The Pitfalls of Temporary Facilities.—Many communities hesitate to begin operating in temporary facilities, having learned from the experience of others that:

1. Temporary facilities frequently become too permanent, some continuing in use for 20 years or longer.
2. Temporary facilities sometimes give the wrong image by suggesting that the quality of the instruction is on a par with the inferior facilities.
3. The habit of getting along with inferior facilities sometimes causes the board, the administration, and even the faculty to willingly continue to accept what is available as sufficient.
4. Temporary college facilities, especially those in a high school, deter many students from continuing their education in the local area.

The question can well be asked, "How can one avoid the pitfalls that others have found in the use of temporary facilities?" The following five basic safeguards, developed from long experience with community colleges and checked out through visits to new community colleges in January 1968, appear to be helpful in preventing the negative effects attributed to temporary facilities:

1. Begin a master plan for the development of the permanent facilities before going into temporary facilities.
2. Make sure that the faculty, students, and community

are thoroughly acquainted with the master plan.

3. If the master plan shows that a certain building is to be available by a certain time, accept this as a definite commitment and not as a vague promise.
4. Exercise caution in providing temporary facilities. The buildings should be reasonably adequate without entailing such great cost for construction or renovation as to seriously affect the quality of the permanent facilities.
5. Budget time and money for planning and constructing the permanent facilities in accordance with the master plan.

Generally, community college administrators agree that the simplest way to avoid the problems arising from the use of temporary facilities is to start the college in permanent facilities. The community, however, may have persuaded the board that the responsibility for postsecondary education cannot await the construction of permanent facilities. When the board accepts a commitment to open a college within a very limited time, the only question remaining is, "How can it be done?" When temporary facilities appear to be the only reasonable answer, the five aforementioned safeguards should be seriously considered. When they are carefully followed, the administrator may later come to admit that "there really were some advantages to our use of temporary facilities."

Impersonalization

With the rapid growth of enrollments, many community colleges face the real danger of their students becoming little more than numbers. As a precaution, some colleges are including in their facility planning devices designed to overcome impersonalization. A few examples follow:

1. A college is expected to provide reading room space for a quarter to a fifth of the full-time equivalent students at one time. Many new colleges are meeting this requirement by

having not one room but many. Each is planned for different numbers of students and for different purposes—reading, listening, viewing, and discussing.

2. Instead of having one enormous cafeteria or snack bar, many colleges are planning several eating facilities, including one dining room, one cafeteria, and several snack bars. Some are planned for additional service to the community and community groups. The main attraction, however, is directed to students and faculty. Opportunities for coffee and conversation among students, or among faculty and students are provided for in this type of planning. Several of the North Carolina community colleges have used this method effectively.
3. Rarely is the student center the first permanent building on campus, yet as the center of student activities, it should have a high priority on any community college master plan. Unfortunately, it sometimes comes last, and only after years and years of waiting. The students should be involved in planning the center. In developing the educational specifications for the student center, the planners should stress serving student needs and activities and avoiding impersonalization. The Seattle (Washington) Community College has used these principles in the development of student centers on its first two campuses.

Variety in teaching methods helps the individual student to realize the educational process has not been reduced to a machine operation. Remedial and developmental programs, a diversity of offerings, and a range of opportunities for self-teaching and self-testing effectively show the student that he is regarded as an individual and not as a number. These programs and methods must be considered in the planning of facilities.

Some community colleges have tried to discourage impersonalization by setting up (1) situations to promote the mingling of faculty and students, (2) houses of students of similar interests, and (3) schools within colleges. Some of these methods, however, have not proved entirely effective.

Relating Facility Planning to the Purpose of the College

Even though most community colleges accept the idea that they should be comprehensive, the planning of some segments of the campus would appear to deny this fundamental principle. When the vocational-technical facility is carefully concealed in a clump of trees at some distance from the rest of the facilities, for example, doubts are raised concerning the real comprehensiveness of the institution.

On the other hand, when "from the outside you can't tell which building is the technical-vocational one," it is probable that the comprehensive concept has sincere acceptance.

Many colleges house their vocational-technical programs in prominent facilities on their campuses. Some of these—in Oregon, Washington, Hawaii, and North Carolina—began as predominantly vocational-technical institutions and only later became comprehensive by adding transfer and adult education programs. In the past, many educators have suggested that this is the best way to get a proper balance of all types of community college programs.

The community colleges at San Mateo, Calif., and Glens Falls, N.Y., while far apart geographically, serve equally well as examples of facilities in which internal relationships express a recognition of the importance of technical programs. Each took particular care to ensure that the close relationships between the technical programs and the basic foundation programs of mathematics, science, and the communication skills be expressed and "facilitated" through the physical relationships set up between the buildings within the complex.

Securing Funds and Assistance for Educational Planning

Ordinarily no problem appears more serious in planning a community college facility than securing and apportioning the necessary funds. Most communities can agree that they will have to secure a competent builder and that the construction costs will be sizable. They generally accept the fact that a good

architect is essential. However, it is much more difficult to persuade some community college boards that adequate money should be set aside for educational planning.

Some community college boards provide the president with four or five administrative personnel and the equivalent of 40 full-time faculty for an entire year before any students are enrolled. Some of this time is spent in (1) developing course outlines, (2) preparing a catalog, and (3) reaching decisions regarding the new college. Most of the time, however, is used to assist the consultants and the educational planner in studying the program and service needs, and in planning for functional buildings to house them.

Some communities have provided the president and his staff with consultant help plus a smaller number of faculty for planning purposes. Where the president has had considerable experience in planning facilities, he may assume the task himself, employ consultants on a short-term basis, or hire a full-time planning coordinator.

On the local level, industrial firms will sometimes offer funds to design a course or plan a building.

In some States, the State approval agency has a sizable staff available to help the community with its study of need, site selection, curriculum development, and the writing of educational specifications.

State labor agencies can provide valuable information for use in evaluating needs, and education agencies can provide criteria and guidelines for planning.

Federal funds, although not allocated directly to local communities for planning purposes, may be obtained by a State higher education commission for its State planning. Also, foundations and philanthropic agencies sometimes provide funds for a special type of building, such as a library or student union. Professional associations such as the American Association of Junior Colleges in Washington, D.C., and the Council of Educational Facility Planners, Columbus, Ohio, are sources for publications, consultant help, and workshops on planning.

A continuing source of information on planning for community junior college facilities is the monthly journal **RESEARCH IN EDUCATION**, which contains abstracts of documents on all subjects of interest to educators. Issued by the Educational Resources Information Center of the U.S. Office of Education, RIE is available from the U.S. Government Printing Office, Washington, D.C. 20402, on a subscription basis—\$21 for 12 issues per year; \$26.25 for foreign mailing. Reference copies of issues of RIE, as well as microfiche of the full text of all documents cited in RIE, are available in many local or university libraries. State departments of education, local school districts, and other organizations involved in education throughout the country.



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