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ABSTRACT

A guide is presented for use by school districts in the formulation of educational specifications for school plant construction projects. Following a discussion of the meaning of educational specifications and a description of their content and format, information is given regarding the organization and procedures for formulating educational specifications. (FS)

UTAH STATE BOARD OF EDUCATION

Research Report

Planning a School Plant

--THE EDUCATIONAL SPECIFICATIONS

School Plant Planning Series

PLANNING A SCHOOL PLANT--THE EDUCATIONAL SPECIFICATIONS

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PLANNING A SCHOOL PLANT--THE EDUCATIONAL SPECIFICATIONS

Between a firm decision by a school district board of education to start a building project and occupancy of the completed school plant, the many things which must be done, with some desirable overlapping, fall into three phases.[1] These are:

Planning Phase
Designing Phase
Construction Phase

The 1963 legislature gave a mandate to the State Board of Education (Section 53-11-3(5), UCA 1953 as amended) to prepare a guide to be used by school districts in the formulation of the educational specifications for school plant construction projects which, of course, has to do with the first of the three phases named above. This brochure is intended to fulfill that mandate.

MEANING OF THE TERM

The term, educational specifications, has acquired a generally common meaning. It designates the written expression of the results of the planning phase. The nature of the document makes it the logical responsibility of educators to formulate it. In setting forth the nature of the educational specifications we could wish for such eloquence as would do full justice to the critical importance of the planning

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[1]Russell E. Wilson in his article, "Educational Specifications" in the October, 1955 issue of the Nation's Schools says that each new school plant should be built three times - by educators in written educational specifications, by architects in the architectural plans and specifications, and by the construction contractors.

phase. It is certain that in the effort to achieve satisfactory school facilities, economically, it is the planning phase which is most decisively determinant; and it is certain that most of the identifiable shortcomings of completed facilities can be traced to antecedent shortcomings of the educational specifications.

The purpose of the educational specifications is to set forth the educational requirements, the expected values, to be achieved in the facilities. Moreover, the expected values must be so stated that the design profession can readily formulate the architectural program for the project.

To see clearly what must take place in the formulation of the educational specifications, it is necessary to understand the role of the design professions in the design phase; and necessary, as well, to have vision of the team relationship between educators and architects. This relationship will be discussed later in a consideration of organization and procedures. But, at this point, it is important to see the unique functions of the members of the team in order to avoid the futility which lies in the too common interference by confused educators and laymen with the legitimate professional responsibilities of the architects.[2]

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[2]"The Three C's of Confusion" by W. W. Candill, The School Executive, November, 1959.

In other words the expected educational requirements, the values to be achieved, must be stated as such - not as design solutions. The importance of this concept has been emphasized many times.[3]

CONTENT AND FORMAT

The educational specifications constitute a description, an identification of a composite of numerous design problems. As stated above, the architect used the educational specifications as a basis for his architectural program and proceeds to work out and coordinate the many design solutions which will result in satisfactory school plants containing the values and meeting the educational requirements identified in the educational specifications.

What, then, should be the content of the educational specifications? What will they look like? How may they be effectively expressed - keeping in mind the very real problem of communications between professions?

As the planners start to decide what shall be included in the educational specifications for a project, one all-important guiding principle

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[3]See such references as the following:

a. "Educational Specifications for a School Building," by Frank G. Lopez, AIA, Journal of the American Institute of Architects, Aug., 1962. Reprinted in AIA School Plant Studies, BT 1-49, American Institute of Architects, 1735 New York Ave., N. W., Washington 6, D. C.

b. "Educational Planning Procedures for School Building Construction," by Robert E. Hummell, California School Administrator, Vol. XVI, No. 4, June, 1961.

c. "Partial Design Solutions - A Waste," by Fred M. Fowler, The American School Board Journal, October, 1962.

d. "Obsolescence in New Schools," by Fred M. Fowler, The American School Board Journal, April, 1962.

e. "How Do You Plan What to Tell an Architect"? By Charles C. Gibson, Overview, January, 1960.

should constantly be considered, which includes all of the educational requirements the facilities must provide, all of the values which must be achieved should be identified and described in the educational specifications. Moreover, the obligation rests upon the planners to engage in research and study so that all of the values are identified and described

PLANNING A SCHOOL

Educational planning for a given school is similar to general planning for the total system. It includes five major steps; (1) review of educational planning, (2) calculation of teaching-stations and space requirements (3) determination of quantitative and qualitative aspects of each room or space, (4) preparation of written educational specifications, and (5) review of architectural plans and reinterpretation of the educational specification to the architect.

PREPARATION OF WRITTEN EDUCATIONAL SPECIFICATIONS. The findings of the various studies and plans suggested must be communicated to the architect. Although many conferences and discussions will be necessary, there is no substitute for written educational specifications. They clearly state all decisions growing out of the educational planning process. The educational specifications pull together the many policy decisions to be furnished to the architect by the school district as a primary guide in the development of building plans and specifications.

The educational specifications can be considered the Board of Educations' general statement of the problem which the architect is to solve. It is imperative, therefore, that the document be organized and written for the architect in language he can understand. Such a document is a guide rather than a minute instruction manual.

I GENERAL INFORMATION

A. Philosophy and objectives of the school

B. Characteristics of the community

C. Number of pupils to be housed.

D. Grades to be included

E. Provision for communi- use

F. Kind of project (complete new plant, new building to replace existing structure, added new building,addition to existing building, etc.).

G. General purpose of project (to provide for increased enrollment relieve overcrowding, replace obsolete facilities, to allow for reorganization of attendance areas, to permit change in type of grade organization.)

H. Site and site development

I. General design of building or buildings

1. Number of stories

2. Type of design-open, compact, loft type, cluster, compus, pods, degree of flexibility.

3. Degree of fire resistiveness

J. General arrangement of interior spaces

K. Policy of multiple use of space

L. Nature of any future expansion

M. funds available

N. Name of School

O. Scheduled date of occupancy.

P. Total staff other than teachers (identify positions).

Q. Requirements as to auditory comfort and sound control.

R. Requirements as to visual comfort.

S. Requirements as to thermal comfort.

T. Requirements as to communications systems.

U. Floor coverings.

1. tile
2. carpeting
3. none
4. other

V. Policy to be followed with respect to quality level of design-how important is it to minimize long-time costs of maintenance and operation?

W Policy to be followed with respect to aesthetics.

2. Complete listing of facilities to be provided.

3. Detail description of each room, space or area to be provided.

A. General description of each space

B. Activities to be carried on in each space.

C. Location and Traffic circulation

D. Furniture and equipment

E. Storage

F. Audio-visual requirement

G. Utility requirements

H. Other special consideration.

GUIDE FOR PLANNING SCHOOL PLANTS

Published by the National Council on Schoolhouse Construction - 1965.

In this section of the educational specifications there should be a sub-section for each separate kind of space t be included in the project. The format may be in narrative style or appear in listed items, or both. Even a chart may be devised. The important thing is to make it so clear to the architect what activities will be carried in each span and which will enable the architect to see the facility needs. The equipment to be u d, the methods and materials, and the groupings of pupils must be clearly set forth.

Sketches showing how and where the activities are to be located in relationship to each other and the relative amounts of space needed will be helpful. A traffic flow chart should show pupil circulation and the volume of flow through the day.

It is impossible to err in making these descriptions too detailed. The architect must be able to know the kind of climate to create for the different activity areas. He must be able to see which activities may best be carried on in close proximity and which may better be remote or relatively isolated. He must be able to see clearly the kinds of furniture and equipment to be used so suitable space and service facilities can be provided. It is unfortunate that furniture and equipment is so often given slight attention in the educational specifications. Even though the items are not to be included in the contract, the architect should have them identified. The needed amounts and kinds of storage facilities should be explicitly indicated.

Preparing and filling in a chart like the one shown below has been found to be helpful in deciding upon the numbers and kinds of instructional spaces which must be provided in a contemplated secondary school.

(1) Courses to be Offered	(2) Total Number of Students	Total(3) Number of Sections Per Week	Number(4) of Teacher Stations	Adjusted(5) Number Teacher Stations	(6) Kind of Space

The operating practice with respect to pupil grouping and time schedules must, of course, influence the entries in the chart, especially columns (5) and (6). Descriptions of the kinds of spaces may be coded and only the code symbol inserted in the chart. It is, of course, a task of the planners to prepare the descriptions.

ORGANIZATION AND PROCEDURES

The goal of effective planning is to assure the achievement of satisfactory facilities at the time of need with good economy. Certain key points are critically important. Some of these key points having to do with the completeness and clarity with which desired values and educational requirements are identified in the educational specifications have been discussed above. It remains to consider other critically important key points having to do with the organization to set up and the procedures to follow in carrying out the planning phase.

1. The Planning Team Concept is Vital.

Under the authority of the board of education and the responsibility borne directly by or assigned by the superintendent an educator must serve as the directing head of the planning team. This person should set up a central committee in which members of the administrative, supervisory, and instructional staffs are represented.

It is suggested that the central planning team should be kept reasonably small. This small group may organize a number of working committees which will utilize a larger number of persons who are able to make real contributions. The idea is offered that these committees are not set up for the public relations purposes, but rather for the single purpose of turning out a good set of educational specifications. Neither the numbers of persons to be involved nor their representation are of primary importance - only their ability and willingness to produce.

It is of the greatest importance to invite the architect to be a member of the planning team - not as a consultant merely. And we should say, parenthetically, that this is the reason why the arthitect

should be engaged as soon as a firm decision has been made by the board to go ahead with a project. It is in this identification of the architect with planning that some of the desirable overlapping, referred to previously, between the planning and designing phases takes place. For the sake of perspective, we suggest at this point that equally desirable overlapping should occur during the design phase by having the architect confer frequently with the other members of the planning team about the many design solutions as they are worked out and coordinated in the total design - through schematics and preliminary plans, up to the final working drawings and complete specifications.

2. Competent Professional Consultants.

It is important to arrange for the help of competent professional consultants, including the staff of the State Board of Education. Consultation with competent educators is most helpful in reviewing the educational specifications and in reviewing schematic and preliminary plans and outline specifications.

3. The Problem-Solving Approach.

The use of the problem-solving approach by the planning team can make a significant contribution to assuring completeness of coverage in the educational specifications. The problem-solving approach starts out with a firm will to do just that - to consider the implications for physical facilities of every part of the educational program and of all the methods which may be used.

The problem-solving approach proceeds by systematically describing the program and studying the implications for kinds and amounts of space, space organization and relationships, treatment of space, physical environmental factors, storage facilities, furniture and equipment (including the use of television and audiovisual media), and service systems.

Furthermore, the problem-solving approach is prodded by an abiding feeling of unease until reference to all resources - printed and personal - gives the assurance that all available helpful information has been tapped.

4. The Importance of Allowing Enough Time.

This is a strategic point for mentioning one of the critically important key points in the formulation of a good set of educational specifications, a point which sadly has been most often violated. It is the importance of allowing enough time. Desirably, the planning team should be allowed from one to two years to formulate the educational specifications for a project of substantial size. For the sake of perspective it should be recognized that the architect must be given fully as much time if he is to be epxected to operate on a professional level.

The length of time to be allowed for planning and for design is particularly critical in situations where there is the beginning of an awareness of the need to move forward into new methodology - team teaching, large and small group instruction, programmed learning, individual pacing, use of educational television and expanded use of audiovisual media. The problem is the more critical when facilities must be constructed and occupied in advance of a full readiness to move into the use of the new methodology.

5. An Adequate Budget.

The provision of an adequate budget for planning is a critical key point which should not be overlooked. Funds should be available to cover the cost of printed reference materials, of the service of consultants, of travel by planners to view carefully selected existing facilities; and to pay for clerical expense and the cost of production of the tentative and final documents.