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A SYNTHESIS OF RESEARCH PERTAINING TO SCHOOL BUILDINGS CONDUCTED BY EDUCATORS AND ARCHITECTS.

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THE FIELD OF SCHOOL PLANT PLANNING RESEARCH WAS SURVEYED TO DETERMINE THE SOURCES OF RESEARCH MATERIALS. THE SOURCES INCLUDED (1) DOCTORAL DISSERTATIONS, (2) LIBRARIES AND COLLECTIONS, AND (3) PERIODICAL LITERATURE. THE STUDY FOCUSED ON SCHOOL FACILITIES AS THEY RELATE TO THE LEARNING PROCESS. SINCE LIBRARY COLLECTIONS WERE FOUND INADEQUATE, IT WAS DECIDED TO SEARCH PERIODICAL LITERATURE AND DISSERTATION ABSTRACTS. PERIODICAL ARTICLES LISTED IN THE "EDUCATION INDEX" AND THE "ART INDEX" WERE SURVEYED. ALL ARTICLES SELECTED WERE COMBINED INTO AN EXTENSIVE BIBLIOGRAPHY OF 2,188 ENTRIES. THE LITERATURE WAS SORTED, REPORTED FOR EACH DISCIPLINE, AND DISPLAYED ON A BAR GRAPH. THERE WAS A TREND FOR SCHOOL PLANT ARCHITECTS TO WRITE ARTICLES FOR EDUCATIONAL PERIODICALS. ONE OF THE RECOMMENDATIONS WAS THAT MORE DISSERTATIONS AND GRADUATE DESIGN PROJECTS BE PUBLISHED IN PROFESSIONAL JOURNALS OF BOTH FIELDS. (RS)

U. S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE
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A SYNTHESIS OF RESEARCH PERTAINING TO SCHOOL BUILDINGS
CONDUCTED BY
EDUCATORS AND ARCHITECTS

COOPERATIVE RESEARCH PROJECT NO. S-356

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CHAPTER ONE

INTRODUCTION

For a considerable period of history, school plant architecture underwent little change. During the past two decades, however, the educational program and the physical plant to house it underwent rapid and often undirected change. While there were some indications of the coming changes before 1942, the majority of the changes resulted from educational developments and methodologies that emerged after World War II.

In character with previous architectural developments, however, the recent changes, while rapid, have been largely derivative. That is, they have been readjustments of traditional architecture rather than direct, inventive responses to changing educational needs. To this, there have been the few exceptions of leading architectural firms that are truly innovative and creative. No small amount of blame can be laid to the local building committees that demanded conventional structures with modifications only as new developments came about. In view of the increasing educational and economic pressures to which boards, superintendents, architects, and building committees are subjected, there can be little doubt as to the critical aspects of school plant decisions.

It is becoming increasingly evident that the speed of the derivative process of developing new school structures will not answer the problems created in the current educational crisis. Research is the major, if not the only, avenue for accumulating knowledge which can improve educational effectiveness and also produce favorable economic consequences. The subsequent testing, demonstrating, and disseminating of findings will flourish only if fed by a steady stream of coordinated and complimentary research activity.

Some research has been conducted but, at the present time, there is little if any coordinated effort on the part of either educators or architects to develop a pattern for research. There is, however, an increasing awareness of the problems that this lack of coordination presents. With regard to existing literature, an initial investigation indicated two basic problems:

1. While a sizable amount of literature exists, only a small amount of it may be considered generalizable research with a potential for changing the derivative nature or speeding up the process of school development.
2. Educators and architects have a significant gap to bridge between their respective concepts of research.

It was the primary purpose of this investigation to locate, identify, and synthesize the accessible school-plant

research conducted by educators and architects over the past ten years and then to analyze and classify it in order to develop a framework which may be useful in giving direction to future research. In the process of analyzing and classifying the research, attention was given to:

1. The focus of the research.
2. The design, techniques, and procedures employed.
3. The individuals and agencies involved.
4. The source of support.
5. Agreement or disagreement in findings.

A secondary purpose of the study was to present a classified bibliography of the literature that was not included as research in this study.

Background

The physical plant facilities in elementary and secondary education have been playing an increasingly influential role in American education since the end of World War II. From all indications, this increasing influence will continue into the foreseeable future, with school plant decisions being critical to the educational and financial welfare of communities, states, and the nation. At the present time, school building structures are generally expected to have a depreciation span of at least forty to fifty years, or well into the 21st century. Unless some presently unheralded development drastically changes the building industry, school plants being planned and constructed today will be

likely to have long-lasting impact on the educational opportunities afforded students and, consequently, on the very productivity of society. Unfortunately, these decisions often are made in the absence of available knowledge or even with indifference to it.

The problems of physical plant planning are not new problems. Books and articles dealing with physical plant planning problems date from before the Civil War.¹ The problems at that time, while not nearly as complex as those of today, were not a great deal different; they included size, cost, heat, light, sound, the use of space, and many of the other construction and maintenance problems which still exist. While educators sought solutions to the problems of that day, not a great deal of change was effected, and, for all but a few school buildings, school architecture remained rather constant from decade to decade down to World War I.² In defense of these schools it must be said that they probably filled the needs of their day. Referring to the Skinner Elementary School, which was built in 1859, Chicago's Superintendent of Schools, W. H. Wells, on March 3, 1860, said:

¹William A. Alcott, Essay on the Construct of School-houses, to which was Awarded The Prize Offered by the American Institute of Instruction, August, 1831, Boston: Hilliard, Gray, Little and Wilkins, 1832; and, Henry Barnard, School Architecture; or Contributions to the Improvement of School-houses in the United States, Cincinnati: A. S. Barnes & Company, 1848.

²For a discussion of early schools, see John McGrath and Leo E. Buehring, "100 Years of School Plant Design," The Nation's Schools, 59: 50-58 (January, 1957).

I believe no better models can be found than those of the Skinner; I trust, however, that the city will never build houses [schools] so large as these from choice. I trust it will not be long before we shall have the means of building houses only three stories high [Skinner had four] with accommodations for [only] about six hundred pupils.³

In its report for the same year, the Chicago Board of Education referred to the Skinner and another school as:

...models for buildings affording such accommodations. The arrangements for ingress and egress are ample; in all of the twenty rooms the light is abundant and admitted on two sides; the halls and stairways are spacious and well lighted, and the means of ventilation seemingly perfect. In short, the whole arrangement leaves little room for improvement.⁴

Between World War I and World War II a somewhat improved building style prevailed. A considerable number of structures of this style, as well as many pre-World War I elementary schools, still serve communities throughout the country. Many school boards and school administrators have experienced the nearly impossible problems involved in trying to conduct emerging educational programs with these structures as they are or in trying to modify them for current educational innovations. In a relatively short span of time those persons involved in school plant planning and construction have had to travel from a period of practically no change to a period in which design and function are in danger of becoming outdated between the blueprint stage and the end

³Ibid., pp. 53-54.

⁴Ibid.

of construction.

School plants can promote and facilitate or limit and obstruct effective learning and teaching. The educational implications are of prime concern to all consumers of educational services. For most school systems, about 70 per cent of the budget is devoted to instruction; about half of the remaining 30 per cent is allocated to the provision of facilities. The economic impact is of concern to all citizens and taxpayers. Two and three-tenths billion dollars was spent on school construction in 1963--down from \$2.6 billion in 1962. Seventy per cent of the total was devoted to new construction and thirty per cent for additions; \$1.5 billion of the sum was allocated to secondary schools. In terms of school districts and buildings during 1963, 2900 school districts completed schools. In the nation as a whole, nearly one out of every four school districts completed some construction during 1963. More than 4,600 projects were reported. Almost all (96.5 per cent) of the larger districts (25,000 or more pupils) completed some kind of school construction. The average cost per classroom rose from \$39,000 in 1962 to \$41,200 in 1963. This rather sharp increase was due to a combination of rising construction costs and, significantly, the increased use of special purpose areas.⁵ In light of the amount of construction and the

⁵"Current Trends in School Facilities," School Management, 8(2): 92-125 (July, 1964). Figures are based on all school districts of 300 students or more, 100% response; 11,911 districts were involved. Figures were compiled by

costs involved, it is understandable that the taxpaying citizen is interested in obtaining the most educational value for his economic investment and that he wants to be sure the buildings are designed for the latest instructional innovation. Since the taxpayer has observed the recent rapid educational change, he is also concerned that his new construction should not soon go out of date from an educational standpoint.

There seems to be little doubt that in the future both public education and school architecture will be characterized by rapid developments--designed and controlled, or not. Speaking to the National Council on Schoolhouse Construction in 1964, one of the outstanding authorities on school architecture, William W. Caudill, pointed out that:

technology is not strong enough to shape a schoolhouse because education always overrides these technological factors. . . education is going to change, and change radically. If it does, it is going to be hard to recognize a schoolhouse and, believe me, this organization NCSC is going to have to change its books so fast that you will have to have three or four publications committees; one for twenty years from now, one for ten years from now, one for five years from now, and one for next year.⁶

(Footnote 5 continued) Management Publishing Group Reports, a division of School Management. The 1964 information, less complete, shows building at \$2.5 billion and a total of 4,951 projects reported. The use of special facilities decreased in 1964 except in new secondary school buildings. The 1964 figures indicate an upward trend after a falling off from 1962 to 1963.

⁶William Caudill, "Trends in School Building," in National Council on Schoolhouse Construction, Proceedings of the Forty-First Annual Meeting, East Lansing: The Council, 1965, p. 41.

There appears to be instances of good collaboration between educators and architects--in some organizations, some architectural firms and consultant firms, and at some educational and research institutions. By and large, however, there has not been a lot of cooperative effort and, to some, there appears to be a gulf. It was not until October of 1965 that the National Council on Schoolhouse Construction voted to change its membership requirements to admit architects and then only on an architectural firm membership basis rather than as individual members. This appears to be an effort on the part of educators to bridge the gap. Frank G. Lopez, a prominent authority in the field of school architecture, writing a short report of the 1956 AASA convention, felt that "the respect the educators generally tendered the architects was impressive", but that things did not really go very well. While given charge of some entire sessions and participation in others," the architects . . . had muffed their one big opportunity, the discussion meeting on school architecture. They spoke up at others with, generally speaking, less strength than the respect accorded them led one to anticipate."⁷

Research conducted by educators with respect to the school plant has, generally, ignored related research by architects and persons in associated technical fields. A pilot study of available research also supports the converse:

⁷Frank G. Lopez, "Thousands of Schoolmen, a Handful of Architects," Architectural Record, 119(2): 28 (April, 1956).

that there has been little effort by architects to relate to or build on the findings of educators. Hence, it appears that there may be an unwarranted lack of coordination and a consequent dissipation of resources. The nature of school plant problems and issues, and their relationship to learning, support the need for an interdisciplinary approach to these vital topics. Similarly, there is a need to integrate in school plant research the human factors--social, psychological, educational, etc., as well as the physical factors--thermal, visual, sonic, etc.

Preliminary investigation of the research carried on by staff and students at major universities over the past half century reveals that the research concerning the school plant has been limited in scope and approach. And it was only within the last few years that research relating specific environmental factors to the learning process made a notable appearance in Dissertation Abstracts or that "Environment" appeared as a heading in the Education Index.

The school plant planning field is not abundantly endowed with bibliographical references. Early bibliographies were highly specialized, principally in the field of finance. The first notable bibliography dealing principally with school plant planning was by Fowlkes and Carlile.⁸ It was published by the Bureau of Educational Research at The University of Wisconsin in 1925 and contained 408 references to magazine

⁸John Guy Fowlkes and A. B. Carlile, Bibliography on School Buildings, Madison: University of Wisconsin, Bureau of Educational Research, 1925.

articles and 69 references to books, bulletins, pamphlets, and scorecards.

From 1928 to 1945, the Bureau of Cooperative Research at Indiana University⁹ published a series of six bibliographies on school buildings, grounds, and equipment totaling nearly 7,100 briefly annotated references.

A study by Sol Levin¹⁰ was the first locatable bibliographical work at the doctoral level. The Levin study was done in 1952 and included more than 1200 references which were grouped into as many categories as possible. While the Levin study was aimed at and based upon the school business manager's job, several of the major categories pertained to the school plant and to the school plant planning field. Interestingly, Levin selected his references on the basis of the following criteria: 1) authoritativeness; 2) comprehensiveness; 3) recency; 4) accessibility; and, 5) particular recommendation by other references, bibliographies, or persons consulted. The Levin dissertation was published in 1953 by the American Association of School Business

⁹H. L. Smith, L. M. Chamberlain, and Others, A Bibliography of School Buildings, Grounds and Equipment, Volume IV, No. 3; Volume IX, Nos. 2 and 3; Volume XI, No. 2; Volume XXI, Nos. 2 and 5, Bloomington: Bureau of Cooperative Research and Field Service, School of Education, Indiana University, 1928-1945.

¹⁰Sol Levin, "A Practical Bibliography of Business and Plant References for the School Administrator," (unpublished Ed.D. dissertation, Teachers College, Columbia University, 1952).

Officials of the United States and Canada.¹¹

Another investigator who included school plant in his research classification was Harris A. Taylor,¹² who wrote his dissertation in 1954. Taylor classified doctoral dissertations according to thirteen problem areas, which he subjected to a paired comparison instrument as a part of his effort to ascertain research needs as perceived by professors of school administration and by professional school administrators. He further attempted a comparison of perceived research needs with an analysis of problem areas investigated in doctoral dissertations in the field of school administration from 1945 to 1952. Taylor found that research priorities of professors generally agreed with those of school administrators; disagreements were found in some areas.

In a dissertation at the University of New York in 1956, Whigham¹³ worked out a synthesis of factors in school plant planning. He developed a theoretical guide to educational planning for school plant construction by analyzing the related literature, by studying the planning experiences in

¹¹Sol Levin, A Practical Bibliography of Business and Plant References for the School Administrator, Kalamazoo, Michigan: The Association of School Business Officials of the United States and Canada, 1953.

¹²Harris A. Taylor, "An Analysis of Doctoral Research Problems in School Administration" (unpublished Ed.D dissertation, Stanford University, 1954).

¹³Edward L. Whigham, "Educational Planning for School Plant Construction," (unpublished Ph.D. dissertation, University of New York, 1956).

fifteen school systems, and by utilizing judgments from a selected group of authorities.

In 1958, Collins,¹⁴ at Columbia, undertook an analytical review of selected doctoral dissertations and projects on school plant planning and design. His study was designed to bring together in one publication a list of American doctoral theses relating to school plant planning from 1912 to 1957, to point out the strengths and weaknesses of the overall pattern of completed doctoral theses in school plant planning and design, and to recommend promising directions for future doctoral theses in school architecture. Collins worked out a rather elaborate code for classifying the dissertations. He reviewed nearly 16,000 theses, of which 911 were classified by the coding system as applicable to school plant planning. In addition, Collins utilized three categories of pertinence: directly related, a part of the thesis devoted to the code described, and implications for the code description assigned.

The need for the study here proposed has been pointed out by Griffiths, who stated:

One of the kinds of research most needed at this time is a set of reviews of the literature in particular areas, such as school buildings, morale, merit rating. Each of these reviews would report the research done on each topic, synthesize it in terms of an explicit framework, report the generalizations of value to researchers and practitioners,

¹⁴George J. Collins, "An Analytical Review of Selected Doctoral Dissertations and Projects Undertaken in American Colleges from 1912-1957 on School Plant Planning and Design with Proposals for Further Research (unpublished Ed.D dissertation, Columbia, 1958).

and indicate the kinds of research needed to be done together with an estimate of priorities.¹⁵

Basic to such action are, first, the creation of a system of classifying data in a meaningful manner (which now appears to be noticeably lacking) and, eventually, the development of a taxonomy. While few taxonomies have much potential for being developed into theories, some of the taxonomic approaches to theory development may form a useful structure in moving school plant research forward. Griffiths has incorporated the levels of stages of the development of a theory in a paradigm¹⁶ which may prove useful in the eventual development of such a structure for research. Stodgill's¹⁷ evaluation of investigations of personal factors associated with leadership and the analyses of decision-making research by Rossi¹⁸ and Edwards¹⁹ are representative of efforts made to synthesize and compile research findings into a structure useful for the development of a theory or for the guidance of

¹⁵Daniel E. Griffiths, Research in Educational Administration (New York: Bureau of Publications, Teachers College, Columbia University, 1959), p. 55.

¹⁶Daniel E. Griffiths, "Nature and Meaning of Theory" in Behavioral Science and Educational Administration, Daniel E. Griffiths, ed., (NSSE 63rd Yearbook, Chicago: University of Chicago Press, 1964), pp. 104-5.

¹⁷Ralph Stodgill, "Personal Factors Associated with Leadership," Journal of Psychology, 25: 35-71 (1948).

¹⁸Peter N. Rossi, "Community Decision Making," Administrative Science Quarterly, 1: 415-43 (March, 1957).

¹⁹Ward Edwards, "The Theory of Decision-Making," Psychological Bulletin, 51: 380-417 (1954).

further research. Homans²⁰ made some suggestions on theory building that would also apply to the development of a taxonomy of school plant research. He suggested examining the obvious and familiar, choosing words that distinguish between categories, and limiting the categories to the smallest possible number.

In developing a classification scheme of the research about school plant planning by two groups with such diverse approaches as those exhibited by educators and architects, it is essential, in so far as possible, to utilize an interdisciplinary approach. In deploring the fact that there are apparently several specialized kinds of administration but seemingly little that can be agreed to under the general topic of administration qua administration, Litchfield has stated that "the most serious indictment which must be made of present thought is that it has failed to achieve a level of generalization enabling it to systematize and explain administrative phenomena which occur in related fields."²¹ School plant research should emerge from the same state of insularity which has characterized education generally and should manifest, instead, an integrated approach. The 1964 NSSE Yearbook demonstrated the trend toward utilizing pertinent research of the behavioral sciences to illuminate educational problems. In

²⁰George C. Homans, The Human Group (New York: Harcourt, Brace and Company, 1950), pp. 16-17.

²¹Edward H. Litchfield, "Notes on a General Theory of Administration," Administrative Science Quarterly, 1:7 (June, 1956).

addition, it was pointed out in Chapter One of the yearbook that educational administrators are interested in efforts to determine the generalizable factors of administration from the specialized fields of administration. It is further pointed out in this respect that there is more commonality than differentiation in administrative practice.²² There is little reason to suspect that commonality is any less characteristic of architectural and educational research.

Statement of the Problem

The following questions formed the basis for this investigation:

1. What is the nature of the research in school plant design which has been conducted by educators and architects during the decade 1955-1964?
2. What are the patterns of strengths and weaknesses of existing research by educators and architects and how may their identification be utilized to give appropriate emphasis and direction to future research endeavors?
3. Does an analysis of the basic patterns and relationships of existing school plant planning research by educators and architects suggest a logical and

²²Daniel E. Griffiths et al., "The Theme" in Behavioral Science and Educational Administration, Daniel E. Griffiths, ed., (NSSE 63rd Yearbook, Chicago: University of Chicago Press, 1964), p. 3.

useful classification of such research?

As a part of the study, the research relationships of educators and architects were noted to determine the extent to which each has utilized the research findings of the other.

Procedure of the Study

The basic procedure followed in this research was to locate, classify and evaluate both the socio-psychological and the technical aspects of school plant development as revealed in the research literature. An attempt was made to accomplish this purpose by dealing with the research of both educators and architects which relates to the quality of the environment provided for the learning process. The plan for the study was based on the premise that all major relevant research with reasonable accessibility would be listed in the standard references to periodical literature. More specifically, the procedure of this research was to:

1. Locate and identify the school plant literature reported during the ten-year period 1955 through 1964 in American periodicals;
2. Identify by instrument those items in the literature acceptable as research endeavors;
3. Classify the research in such a way as to reveal the initial stages of a taxonomy of school plant research;
4. Analyze and interpret the existing research, noting

- inadequacies regarding its nature and techniques;
5. Report and relate the findings in a manner useful to educators, architects, and related technicians; and
 6. Compare the research methods and findings of the two fields as to cooperative effort, overlap or duplication of effort, and similar and dissimilar findings.

The initial procedure undertaken in this study was to locate the appropriate periodical literature in the fields of education and architecture. Since the study was designed to emphasize utilitarian value, the research should be reasonably accessible to be of use. Two major periodical indices were used: the Education Index, the major reference guide to periodical literature in the field of education, and, the Art Index, which cites from all of the periodicals pertinent to the field of architecture. These two bibliographical references were analyzed under all appropriate major headings and subheadings and all school plant titles were placed on reference cards. All such titles, even though they were unclear as to content or otherwise in doubt, were recorded during the initial screening.

To evaluate completeness, a search was also conducted utilizing several standard references and bibliographies which include the field of school plant planning. These references were: the Review of Educational Research, the Encyclopedia of Educational Research, the 1964 NCSC

Proceedings, BRI School Building Research, and the AIA Research Survey. Also included in this search were the reports and publications of known research centers or institutions, such as the Educational Facilities Laboratory; the Texas Experimental Station; Caudill, Rowlett, and Scott; the School Construction Systems Development Project; and the Cooperative Research Program of the United States Office of Education. All titles were placed on reference cards. These titles were cross referenced against those reported in the periodical indices to disclose whether or not major gaps or oversights existed and, in the event that they did exist, to form the basis for evaluating and reporting the problems of coverage.

The second step was to reduce the references to those which met specific criteria. All reference cards were placed in chronological order by periodical (excluding any periodical with fewer than three references) and each reference was quickly scanned by the researcher and accepted or rejected as an appropriate research report on the basis of the following three criteria:

1. The reference must bear a relationship to the quality of the environment which is provided for the learning process.
2. The reference must be acceptable as research according to the instrument designed for that purpose for use in this study.²³

²³See Chapter III.

3. The research in the original form, or a summary in adequate detail, must be published in such a manner as to be available to the practitioner and to the researcher.

All literature (such as doctoral dissertations) deriving from work conducted under conditions acknowledged to be acceptable for research was included provided it met criteria one above.²⁴

The reported research was examined in terms of:

1. The Problem
 - a) motivating factor
 - b) focus
2. The Design
 - a) methods of research
 - b) population
 - c) techniques of collecting data
 - d) statistical methods
3. Findings and Conclusions
 - a) nature of the findings
 - b) agreement or disagreement between educators and architects
 - c) generalizability
 - d) implications

²⁴For the purpose of this study, all dissertations listed for the period under consideration in American Doctoral Dissertations will be included in the classified bibliography, however, only those dissertations that are also abstracted in the Dissertation Abstracts will be treated with the research disclosed in the periodical literature.

4. Sources

- a) researcher
- b) institution or place
- c) support

A checklist based on the above classification scheme was utilized.²⁵ Through logico-deductive analysis of the data, an effort was made to determine suitable categories of classification. Existing research was placed in the appropriate classification categories and an overall evaluation of the research available in the various categories was attempted. Strengths and weaknesses of the research were noted for the purpose of indicating categories or problem areas needing the attention of future research efforts.

The present study was limited to research reports that are reasonably available, either in the original or in useable reported form. It is probable that there is a fair amount of research that has not been reported at all or has been released in only limited distribution. This appears to be particularly true in the field of architecture.²⁶

Limitations of the Study

The limitations of this study include the following:

²⁵See Appendix "A".

²⁶Benjamin H. Evans, "AIA Research Programs," American Institute of Architecture Journal, 41:58 (January, 1964).
"Unfortunately, most of those who are doing research cannot afford to distribute copies of their reports to the entire profession, and consequently, the results of their efforts go unnoticed by the majority."

1. This study necessitated the rapid disclosure of pertinent periodical works in a minimum span of time. As a result, it is possible that the tools and measures of the screening system may have overlooked a few items of research that might be included by other researchers. The procedure utilized to locate the major research represents an attempt to include as many relevant works as possible, recognizing that it is not possible, in a single one-year study, to conduct a comprehensive open-ended search.
2. This study involved a degree of subjectivity which was unavoidable. It was not possible to evolve a definition of research that could be applied objectively to both education and architecture and that would prove to be functional when applied in all operational situations. This problem was even more of an enigma to the educational researcher when working in the field of architecture than when he was working in the field of education. A publication was accepted or rejected as a report of research entirely on the basis of whether or not it met the criteria of the instrument; it will be left to the user of the report to determine whether the data have any value for his particular use.
3. This study can only represent a beginning of the work needed in this field of endeavor. It is hoped that further work of this nature will lead eventually

to the development of a fullblown taxonomy, and perhaps to the formulation of functional theoretical constructs useful to future researchers. Prerequisite to these developments, however, is the formulation of a beginning system of classification, which is perhaps as far as this study can be expected to advance the process.

Organization of the Study

This study will be reported in six chapters. Chapter One presents an organizational overview of the work done, including the purpose of the study, a statement of the problem, background information, the procedure of the study, and the limitations of the study. Chapter Two discusses the nature of school plant research from the architectural standpoint and from the educational administration standpoint, and it attempts to explain past and present relationships between architects and educators. Chapter Three presents the instruments and checklists used in the study. Chapter Four presents and evaluates the research studies located in the educational periodical sources. Chapter Five presents the same treatment of studies from the architectural periodical sources. Chapter Six presents a summary of the data from both educational and architectural sources, attempts to develop a classification system, and presents an overview of needed research in the school plant field.

CHAPTER II

BACKGROUND OF SCHOOL PLANT RESEARCH

Man has been investigating his surroundings and seeking to improve them for as long as he has inhabited the earth. And his investigations have led to a degree of control over certain features of his earthly surroundings. At the present time, he is extending his efforts at control to the areas beyond the planet he inhabits, primarily because he has perfected the requisite tools and equipment. He has arrived at his present state of space-age sophistication and is continuing to advance his progress toward the moon by means of research. It has often been estimated that man has made more scientific progress in the "space years" than he achieved in all the previous years.

Yet there are many areas in which man has not made such startling and evident progress. There are, in fact, some areas in which he has made little or no progress at all. Current advancements in man's knowledge, if plotted by area, would range along a continuum from no progress to spectacular space progress.

Man's levels of achievement in improving the physical and environmental conditions within which he houses his children for the purpose of educating them likewise occupy varying positions on a continuum. This continuum would range from the one room shack to the latest edifice promoted as the

space-age school.

In his book on educational research, J. Francis Rummel points out that in most disciplines, the research approach to the solving of problems has been preceded by three other approaches:

- (1) Trial and error
- (2) Authority and tradition, and
- (3) Speculation and argumentation.

In the trial and error method, Rummel describes man as "muddling" along. As "the process of sifting out those methods and procedures that do not produce satisfactory results continues, a few principles gradually emerge." In the second stage, "leaders" of the past are quoted and people rely on tradition if they lack the time or the training to settle particular problems. In the third category, speculation and argumentation, the "authorities are frequently doubted and solutions of fact are sought through debate."¹ There is good reason to suspect that far too many local bond issues and sets of educational specifications for school buildings fall into these three categories. There is also good reason to suspect that far too many school buildings are designed by one of these three methods, particularly the first.

Research in Education

Rummel's fourth stage, research, involves the use of

¹J. Francis Rummel, An Introduction to Research Procedures in Education, New York: Harper & Row, Publishers, 1964, pp. 6-7.

hypothesis and experimentation--the securing of facts and the drawing of conclusions. This stage may lead to a fifth and more precise stage if the information involved lends itself to being reduced to quantitative terms, a considerably more precise refinement of the research stage and subject to the tests of scientific analysis based upon one of the acceptable methods--experimental, historical, survey, et cetera--objective and replicable. Rummel states that the fourth stage, the scientific or research stage, may conceivably be quite inadequate without the further advancement to the interpretation and evaluation criteria of the fifth stage.²

The general format for educational research is usually not in much dispute among educators. However, there are many aspects both within and in addition to the generally accepted procedure for research on which there is a lack of agreement. The controversy about the kind and quality of research reflects one of the serious problems in education. As in most other professions, there are purists, those who would interpret research liberally, and a significant number who occupy the middle ground. Agreement over procedure for identifying research presents a more difficult problem than agreement over the procedure for pursuing research. Many reports and articles have appeared that have not followed customary research procedures but nevertheless bear many of

²Ibid., p. 8.

the characteristics common to research. Classifying these reports and articles in a useful manner, widely acceptable to educational practitioners, is one of the remaining unsolved and serious research problems of the profession. This problem is further compounded by the fact that such approaches as library research, action research, and information surveys are easily confused with generalizable research. At the present time there are no widely accepted criteria as to what is and what is not recognized as research, and there is no instrument presently available that will discriminate between what is and what is not a piece of research.

Research in Architecture

As education is akin to the social sciences and draws on them for its methods of operating, architecture is closely related to and draws much of its rationale from the arts. In a creative atmosphere, hard and fast lines of demarcation (such as those necessary for defining and classifying research or for identifying research) are difficult to draw.

A review of the periodical literature in the field of architecture for the period under consideration reveals an increasing concern for identifying and defining research in architecture. The same review of literature also reveals that there is as much disagreement and concern over what is research in architecture as there is in the field of education. As was true of research in education, there is no standard pattern for conducting research in architecture.

In the past, the development of architectural change was primarily derivative, although there were such exceptions as Frank Lloyd Wright. However, it has only been in recent years that the concern for bypassing the derivative process has manifested itself in architecture.

Benjamin H. Evans, Director of Research Programs for the American Institute of Architects, writing in the journal of that organization, states that, insofar as the AIA is concerned, research might be classified as basic, applied and product. Evans states that "basic research might be defined as that systematic investigation which produces new knowledge and which is applicable to mankind in general." He sees applied research as research which "might involve those investigations which result in new knowledge or in the application of knowledge in new and different ways, primarily of benefit to the architectural profession." And, the term product research, according to Evans, is "self-explanatory--it deals with the development of new materials, products and systems which normally will result in salable goods."³

The fact that there have been numerous articles written on research in architecture by those associated with the profession and for the consumption of architects via their professional journals indicates a real concern over research. In its principal headquarters at the Octagon in Washington,

³Benjamin H. Evans, "What Is Research for Architecture?," Journal of the American Institute of Architects, 41:87-88 (January, 1964).

D.C., the American Institute of Architects does maintain a section on research, with a director and a research staff. The organizational structure of the AIA provides for a committee on research for architecture. The committee on research is comprised of practicing architects. Because they are practitioners, their primary responsibility is directive in nature. The committee on research sponsors conferences from time to time.

One such conference recently took place at AIA headquarters in April of 1964. The conference was financed through supplementary dues of the AIA. Twelve of the eighteen listed participants represented institutions of higher education. Two participants were listed as private practitioners, two as representing foundations or institutes, one as representing private industry, and one who was associated with an extensive research development project. Most of the participants undoubtedly also maintained several other ties and associations with other phases of architectural practice and activities in addition to their primary professional job description.

The conference first took up the task of establishing the factors which could create a more favorable climate for research in architecture. The factors were (1) moral support from the profession, (2) personnel trained for research, (3) money, (4) communication-publication, and (5) freedom-- fewer restrictions. At the end of the conference the participants were able to list means of implementing this

favorable climate. They recommended a modest start toward a research publication, a forum for the exchange of ideas (both scholarly papers and informal discussions), the establishment of research as a category for AIA Fellowship, a strong policy that AIA take the lead in research, an attempt to improve the attitude in school of architecture faculties and enhance the image of the researcher in the profession, and a statement favoring government funding of specific kinds of research for architecture. The consensus of the group was that the conference was worthwhile.⁴

The consensus that the conference was worthwhile was borne out one year later at the Second Annual AIA Architect-Researchers' Conference, held on the campus of the University of Michigan. The AIA Committee on Research for Architecture, which sponsored the conference, judging from the previous year's attendance, had anticipated about 35 participants. The conference attracted 110 participants. Highlights of the conference, as observed by the assistant editor of the AIA Journal, Marilyn Ludwig, included the beginning of an interdisciplinary approach to architectural research, a recognition that there still is strong resistance within the profession to the image of the architect as the technocrat of tomorrow's society, a consensus that the profession must relinquish what one speaker termed "the Renaissance-man

⁴Benjamin H. Evans and Marilyn Ludwig, "AIA Architect-Researcher's Conference," Journal of the American Institute of Architects, 42:61-68 (July, 1964).

syndrome," a discussion of the use in research of whatever appropriate knowledge and tools are available, and disagreements over whether or not duplication of effort is a problem.

Significantly, there was little evidence of the previous year's preoccupation with defining "research for architecture" but, rather, notable concern about where tomorrow's researchers will come from. Mrs. Ludwig observed that, generally, the papers at the Ann Arbor conference were short on theorizing and long on practical application. John Eberhard, Director of the National Bureau of Standards' Institute of Applied Technology, pointed out what may be one of the basic motivating factors that will alter the traditional developmental form that architecture has followed when he said,

New research and practice tools are becoming available at a fantastic rate. Others are learning to use them as rapidly as they are developed. . . .we have perhaps five years before technology will have passed us by--unless the architectural profession acts quickly."⁵

In general, while paying considerable attention to research for architecture over the past ten-year period, the architectural profession is more than somewhat troubled by its inability to free itself from the feeling that architecture is primarily an art--an art with strong and traditional humanistic orientation. While architecture is likely to remain an art, for the most part, it will probably have to make provision within this setting for a strong research program.

⁵Marilyn E. Ludwig, "Architectural Research Comes of Age," Journal of the American Institute of Architects, 44:6 (November, 1965).

Background of School Plant Planning

Very little written background was located to document the historical relationship of the architect or the educator to school plant design. Obviously, the American educator's role in planning has existed since some local schoolmaster supervised the construction arrangement of the first log schoolhouse in colonial times. Equally apparent is the fact that, at some point in the evolution of the schoolhouse, the building became sufficiently complex to require professional supervision instead of local lay supervision, particularly as cities grew and schools became more than several one-room schools attached together. These professionals were the engineers and the architects or their early forerunners. As the country developed, so did the relationship between the architect and the local school authorities, becoming the architect-client relationship that exists today, although the present-day relationship has taken on many new aspects of community involvement.

According to Caudill, in spite of considerable criticism of the old school buildings, "for the most part they did a pretty good job for what they were intended to do. The reason they do not work so well today is that their job is different."⁶ Caudill goes on to provide a brief survey of architectural change over the past one hundred years:

⁶William W. Caudill, "Form Follows Function," National Education Association Journal, 46:152-155 (March, 1957), p. 153.

Let's go back a hundred years to examine some of the forces which have shaped our architecture.

In the mid-19th century, the growth of industry introduced the engineer to building. A change in architecture was inevitable. The engineer, no traditionalist, made use of the new technology to build quickly, cheaply, and efficiently.

Architects, on the other hand, were becoming obsessed with beauty. Convinced by Ruskin and Greenough of the inadequacies of classic design, they countered with a romantic kind of design, marked by "gingerbread" flourishes.

At the same time, however, in the midwest, varying social, political, and physical conditions, including the great Chicago fire of 1871, fostered change resulting in a new and meaningful architecture.

The famous "Chicago School" of architects (Richardson, Wright, Sullivan, and others) made significant advances. Challenged by America's industrial progress, they made use of the vast improvements in equipment, materials, and processes which were the products of industrial building. Their architecture possessed not an applied beauty, but an innate beauty that represented the spirit of the times.

The Chicago School did much for school architecture--it wedded common sense and creativeness to school building. Some of today's outstanding school buildings are the outgrowth of schools constructed right after the turn of the century. Bilateral and even trilateral lighting (often considered modern techniques) were, in fact, used by these men.

While American architecture in general retrogressed somewhat after the first advances of the Chicago School, school architecture drifted backwards for an even longer time. From 1915 to 1940, progress in school planning ebbed, curtailed by the enactment of restrictive codes and regulations.

This was the Dark Age of educational architecture. Laws stipulated unilateral lighting, regulated the size and shape of classrooms, even controlled the orientation of buildings. We still have some of these laws in a few of our states.

The last noteworthy movement in the advance toward modern school architecture was triggered by the famous Crow Island School in 1940, but did not gain much momentum until 1950. It finally had dawned on school architects that their real client

was the pupil, and at last architects and educators began to work together to solve their common problems.

Many conferences were held, citizen groups demanded better school buildings, and cities and states began to revise their codes. Creative architects and creative educators throughout the nation worked together to forward the cause of school children, as America took the lead in building better school plants. Children--at least a few of them--were taught in a warm, friendly, efficient learning environment.

Today [1957], thinly scattered throughout the U.S. are beautiful, functional schools serving the needs of youngsters and their learning processes.⁷

While the Crow Island School is often cited as the pilot school prior to World War II, there were a few other experimental designs in the 1940's and early 1950's both before and after World War II. As is well known, building of all kinds, including design innovations, was at a low ebb due to the war effort from 1941 to 1945. When the building industry began to recover from the war shortages, there was a considerable amount of catching up to be accomplished. Accelerating population growth was demanding additional classroom space as rapidly as possible. However, by the 1950's, considerably more attention was given to designing innovations for the educational program which was then beginning to change markedly. While the evolutionary process of changing school architecture has not been significantly altered, there have been some notable departures from the evolutionary process in order to meet the demands of an entirely different form of the educational progress.

⁷Ibid., pp. 153-154.

Transition to Research Orientation Necessary

As has been pointed out, the traditional relationship between architect and educator at the local level has been that of architect-client. This basic relationship holds for all types of building programs. By and large, this relationship has been a good one; the architect is interested in receiving the contract, thereby adding to his firm's financial gain and to its reputation, and the school authorities are interested in fulfilling the community's schoolhousing requirements. While not all building programs end on a note of harmony between the school authorities and the architect, the architect-client relationship during the planning stage is generally cooperative. The architect is recognized as an expert with special competencies necessary to the construction program, and the school authorities are recognized as spokesmen qualified to interpret the community's educational wants and needs. This same tone of planning together does not necessarily exist above the local level; at other levels, however, the relationship is likely to take the form not of vocal disagreement but of "separate tables."

It is assumed that all good architectural firms keep abreast of technological changes and incorporate new product research developments in their designs and construction specifications whether the project is a home, a factory, an office, or a school. However, there are countless aspects of schoolhousing design and changing technological educational program developments which make the resemblance of educational

facilities to other types of structures superficial. It is evident that in the period since World War II these educational changes have altered drastically in two directions: (1) the spaces and facilities that they require no longer resemble traditional classrooms, and (2) the changes are coming in rapid fire succession and are not necessarily evolving one from another or from a previous pattern.

Because of the nature of the construction industry--the large costs involved, the relative permanency of the materials that are used and the way they are put together, the lengthy anticipated depreciation span, and the important human resources for which the structure is designed--it is anticipated that the evolutionary approach to design by architects and the evolutionary approach to specifying the desired and perhaps even mandatory educational program by school authorities are no longer equal to the task. It will be necessary for both groups to depend upon research in their approaches to solving the schoolhousing problem.

CHAPTER III

DESIGN FOR IMPLEMENTING THE STUDY

In order to arrive at the point where it would be possible to treat the questions that form the basis for this investigation, it was necessary to make two assumptions on which two devices and an instrument could be developed to reduce the bulk of the written material in the field of school plant planning to literature acceptable as research literature. The first assumption was that the periodical literature in architecture and education represented the research accomplished in these fields; i.e., that the researchers utilized the periodical literature as a means of publicizing their findings. The second assumption was that devices and instruments could be developed to distinguish the reports of research from the rest of the non-research periodical literature.

The first assumption was based on the fact that the professional journals are one of the few means of wide news circulation in the two professions under consideration. Both professions have, or have had during most of the period under consideration, at least four widely publicized professional journals. Most of these publications have established, as a part of their dedication of service to the profession that they serve, purposes and goals that cannot be achieved other than by professional updating. The professional

journals are one of the few outlets--along with books, pamphlets, and conferences--for the publication of important findings, particularly for personal advancement or for prestige. Publication is particularly important to those working in college and university surroundings, and articles on research in school plant indicate that much of the research is done at institutions of higher education. This first assumption was also based on an important consideration which stems from an initial investigation of the literature for this study; if school plant literature was to be located within the limited time and resources for this project, it would have to be initially organized through the readily available periodical literature. Original pamphlets and reports often have been produced only in limited numbers and are located in widely scattered and frequently unorganized settings in private or institutional collections.

The second assumption, that the research reported in the periodical literature could be located and identified, was based on the availability of two adequate indices--the Educational Index and the Art Index--which include not only all of the major publications in the two fields but also most of the periodicals which may be considered as lesser publications with reference to reporting school planning research. The second assumption was further based on the belief that, although research may not be defined at the operational level to the satisfaction of educators and architects, a sufficient number of essential characteristics of

research could be incorporated into an instrument to enable the user to discriminate research reports from non-research reports. The objective application of basic research characteristics to discriminate research reports appeared to be an essential step for enabling future researchers to build on the classification and to update the research reports that were revealed by this study.

In order to locate, identify, and evaluate the research reports used in this study, it was necessary to develop two devices and an instrument. The first step was to develop a procedure for organizing the literature. The device needed was a card sort system to show necessary citation information and to record certain essential facts about each item of literature for easy future sorting. The second step was to select the research items from the literature. For this purpose it was necessary to design an instrument that would distinguish research reports from non-research reports. This instrument was the most refined of the three mechanical procedures devised and was validated by means of a pilot study. The third step was to evaluate the research that was revealed by the instrument. For this purpose a checklist device was designed to record a selected collection of information about each item of reported research. The checklist formed the basis for evaluating the research located in terms of problems studied, the design of the research, the findings and conclusions, and the sources of support.

The card sorting system. The first important procedure

in this study was to locate the periodical literature in the fields of education and architecture and to organize an arrangement for quickly scanning it. A card sort system was considered to be the most appropriate because it would facilitate the arrangement of the periodical articles in the most convenient order for reviewing them. In addition, the cards could be re-sorted for other essential uses such as organizing bibliographies and developing a system of classification.

A four inch by six inch plain index card was used. The following information was imprinted on one side by means of mimeograph: (1) lines for the complete citation of the article, (2) blanks for a code sorting system, and (3) several labeled boxes for color smears to be used in the initial sorting.¹ The card was utilized in the following manner:

1. The complete citation information was placed on the card using one card for each reference located under all possible topics in the Education Index and the Art Index.
2. A color smear indicating the source from which the reference was obtained was placed in the appropriate box (red for the Education Index and green for the Art Index).
3. The cards were separated by periodical and all of the references within each periodical group were

¹See Appendix B.

placed in chronological order by date of publication and page number.

4. The articles were quickly scanned by the investigator using the instrument described below for discriminating research from non-research, and a color smear was used to record whether the article was a research (green) or a non-research article generally appropriate to school plant planning (yellow); at the same time, the background of the author was noted (red for education or related, green for architecture or related, and yellow for no author information given, author not related to either group, or no author specified), and a color notation was made (green smear in the lower right hand corner) if the article was only a description of a completed school facility or collection of completed school facilities.

The card collection was then separated into three groups: research articles, non-research articles generally applicable to the school plant planning field, and reports of completed school building projects. The latter group has often been referred to as the "how we (they) did it" reports. The cards within each group were placed in alphabetical order by author.

The instrument for identifying research. The standard

publications² in the school-plant evaluation and planning field do not suggest any procedures for identifying research related to this field of investigation. While some published articles have suggested the need for research regarding school plant, the authors have not set forth definite criteria for such research nor have they developed checklists to apply to the research. Such well-known research sources as the Encyclopedia of Educational Research and the Review of Educational Research do not indicate the criteria by which the research reported was selected, and, indeed, often contain a considerable number of non-research items. In most cases the selection of research to be reported was left to the judgment and discretion of the person who was selected to write a particular section. The basic literature in the field of educational research did not give specific directions for determining what is and what is not research. However, the attempts made in such literature to describe the generally acceptable types of research did offer an entry into instrument development. Sections of books such as those by Best, Travers, Mouley, and others provide an informational basis for the initial development of the instrument employed in

²Examples of these publications include: Harold W. Boles, Step By Step to Better School Facilities, New York: Holt, Rinehart and Winston, Inc., 1965; Wallace H. Strevell and Arvid J. Burke, Administration of the School Building Program, New York: McGraw-Hill Book Company, Inc. 1959; and National Council on Schoolhouse Construction, Guide for Planning School Plants, East Lansing: The Council, 1964.

the present investigation.³

Two conventional ways of classifying research are (1) the basic and applied research distinction and (2) the method used by the investigator to conduct the research (survey, historical, empirical, etc.). The major educational research publications, such as those cited above, treat both of these methods but devote much more extensive space and treatment to the "method used" type of classification. A third and more recent possibility has been proposed by Guba:

[the system is] based on the formal properties of the design and of the sample used in the research whose categories range from "investigations" (the class with the least rigorous formal properties) through "surveys" and "studies" and culminating in "experiments" (the class with the most rigorous formal properties).⁴

Guba and Clark describe all three of these systems as "widely used but inadequate classification schemes in educational research," and go on to propose a new system that they

³The reader is referred to such publications as the following: John W. Best, Research in Education, Englewood Cliffs: Prentice-Hall, Inc., 1963; Robert M. W. Travers, An Introduction to Educational Research, New York: The Macmillan Company, 1958; George J. Mouley, The Science of Educational Research, New York: American Book Company, 1963; J. Francis Rummel, An Introduction to Research Procedures in Education, New York: Harper & Row, 2nd Edition 1964; Tyrus Hillway, Introduction to Research, Boston: Houghton Mifflin Company, 2nd Edition 1964; and David R. Cook, A Guide to Educational Research, Boston: Allyn and Bacon, Inc., 1965.

⁴Egon G. Guba and David L. Clark, "Types of Educational Research," Mimeographed manuscript, pp. 1-2. See also Egon G. Guba, "Experiments, Studies, Surveys, and Investigations," Chapter 14 in Jack A. Culbertson and Stephen P. Hencley, eds., Educational Research: New Perspectives, Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963, pp. 237-249.

currently have under development.⁵ This new system does appear to hold promise for future communication of research findings to other researchers; however, it is not at the present time sufficiently expanded to be applied to the research problem that is central to this study. The stage of development of the new system is pointed out by the authors of the system in their statement that development of the system was largely intuitive and that "the question of its utility can only be answered through widespread application and empirical testing."⁶ No such substantiation is yet under way.

For the purposes of the present study the classification scheme based on "methodology" was utilized for identifying research in the field of school plant planning. A checklist type of instrument was developed which utilized the central characteristics of the various methodological types of research. This checklist should not be viewed as a description of educational research in general, since the characteristics were selected and described in order to be functional with respect to research pertaining to school-plant planning.

Several different checklists of characteristics of educational research as deemed applicable to school-plant planning were developed. The early lists varied from a few broad descriptive statements to as many as twenty-six very specific items. The problem of a choice of an appropriate checklist

⁵Ibid.

⁶Ibid., p. 21.

raised two basic considerations: first, the use of a statement that was broad and inclusive would require many simultaneous value judgments by the investigator to produce a defensible objective selection, and, second, a large number of very specific statements would make the instrument too unwieldy to deal with the large volume of material which was to be evaluated. The initial instrument tested was a condensation of the original twenty-six specific characteristics to only ten and seemed to represent an optimum compromise between the above basic considerations.

The initial instrument consisted of a mimeographed checklist containing ten statements of characteristics of research and a YES-NO value judgment asking whether or not each of ten different published articles was considered by the respondent to be a research report. The ten articles were Xeroxed from the originals and were selected to include some articles that were likely to be classified as research, some that obviously lacked research characteristics, and some which were borderline and were likely to present the evaluator with a difficult choice. Although the articles were selected in an attempt to present a range of characteristics, no attempt was made to pre-judge anticipated responses. A random selection was not utilized due to the very small fraction of the total number of articles which could be expected to be evaluated as reports of research.

The ten characteristics were presented as follows, along with ten columns of blanks (one column for each article) to

be marked with an X when the characteristic was judged to be present in the article:⁷

1. The problem is clearly defined (in terms of hypothesis(es) or general statement).
2. The related literature is reviewed and documented with at least six references.
3. The population studied is explicitly defined.
4. The study is based on expert opinion.
5. The study is based on survey data.
6. The study is based on case study (-ies).
7. The study is based on experimental investigation.
8. The study utilizes theoretical constructs (concepts).
9. The results of the study are generalizable.
10. The study can be replicated by another investigator.

The YES-NO evaluation was stated as follows:

Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research?

A YES-NO marking arrangement was provided for each column. A cover letter was attached to explain the procedure to be followed.

Twenty-five persons plus the investigator participated in the pilot project in an attempt to assess the usefulness of the instrument for the selection of research reports.

Twenty of the subjects were advanced graduate students in educational administration at The University of Wisconsin. Five

⁷See Appendix C.

of the subjects were professors of educational administration. The investigator also evaluated each of the articles in the same manner as did the other twenty-five subjects and included his responses in the tabulations. Another color was utilized in tabulating his responses so that he could later determine the relationship of his evaluations to those of the group.

The responses of the pilot project were charted both by number and by percentage.⁸ Areas of high agreement and areas of low agreement were identified. The definition of a high level of agreement was set when eighty per cent or more of the pilot respondents indicated that a statement of a characteristic either (1) was, or (2) was not applicable to an article. The definition of a low level of agreement was set when more than twenty but less than eighty per cent of the respondents indicated that a characteristic was applicable to an article. There were one hundred spaces to be marked, or left blank, on the instrument. Utilizing the above criteria, high agreement was indicated in sixty per cent of the spaces and low agreement in forty per cent of the spaces. More than half of the low agreement spaces were located in the columns for only three of the articles.

The YES-NO section of the instrument indicated high agreement among evaluators on seven of the articles, or seventy per cent, and low agreement on three articles, or thirty per cent. The criteria level used was the same as

⁸See Appendices D, E, F, and G.

that set for the statements of characteristics above--eighty per cent of the evaluators concurring that the article (1) was, or (2) was not research. The low agreement in the three articles was not surprising when considered in light of the fact that predicted borderline articles were intentionally included. The three articles which indicated low agreement were articles five, seven, and ten. None of the three low agreement articles was questionably close to the eighty per cent cut-off point--two were divided fifty-eight per cent to forty-two per cent and the third was divided fifty-four per cent to forty-six per cent. Equally as significant was the division on the statements of characteristics for these three articles. There was low agreement on seven of the ten statements for articles five and ten, and low agreement on eight of the ten statements for article seven. This represented twenty-two low agreement items out of the total of forty low agreement items for the entire instrument. Conversely, for the seven articles on which the value judgment showed high agreement, there was also high agreement in a majority of the statements of characteristics, ranging from six to nine high agreement characteristics. It is significant to note that more than half of the items of disagreement were concentrated in the three articles in which the subjects greatly disagreed in their value judgment as to whether or not the articles were research; none of the other seven articles showed a majority of low agreement items. This would indicate that the instrument did discriminate research in most articles where research existed

but that there were several articles of a difficult nature which were not satisfactorily treated by the instrument.

In the value judgment portion of the instrument, the judgment of the investigator was the same as the majority of the subjects on nine out of the ten articles in assessing whether or not the articles qualified for classification as research. In the one article in which the investigator cast his judgment with the minority, the tabulation was a closely divided twelve to fourteen split.

The analysis of the tabulation of the pilot project resulted in the decision to review the problem portion of the instrument with a representation of the twenty-five subjects to determine the ambiguity of articles five, seven, and ten. As a part of this review, the investigator elected to enlist a portion of the pilot project's subjects to evaluate the three articles of low agreement and to refine the statements of characteristics to make them more discriminatory in selecting research in borderline cases. An evaluation sheet was prepared and ten of the original subjects were selected and asked to participate. Eight of the subjects were from the advanced graduate student group and two of the subjects were from the professor group. The subjects were given the evaluation sheet and the original Xerox copies of articles five, seven, and ten. The subjects were not informed of the low agreement of these three articles but were told that the purpose was refinement of the statements.

The evaluation sheet⁹ contained three parts, labeled A, B, and C. Part A asked the subject to indicate by circling YES or NO for each article whether, with reference to the articles originally rated, he experienced more than average difficulty in judging if the article qualified for classification as research. The purpose of this question was to determine whether the relatively even original division was a difference in evaluation or the result of inability to reach a conclusion due to confusion. Part B asked the subject to indicate by circling YES or NO for each article if, with reference to the articles originally rated, he experienced more than average difficulty in assessing the characteristics for the article. The purpose of this question was to determine whether there was indeed a confusion on the application of the statement to the three articles of low agreement. Part C asked the subject to make eight of the ten statements more clearly discriminatory by changing words or phrases, or by rewriting the statement, or by giving written comments. Two statements of characteristics were not included because they did not show up as areas of low agreement in the three borderline articles under consideration. The original statement, double-spaced, was presented on the left side of the evaluation sheet and a long blank was provided on the right side of the sheet.

The results of part A indicated that there was probably

⁹See Appendix H.

not significant confusion in making a judgment as to whether or not an article was research but that the subjects were disagreeing with one another on borderline cases. Two of the ten subjects marked YES to article five, two to article seven, and two to article ten. Eight subjects indicated NO to article five and seven subjects indicated NO to articles seven and ten with each also getting one no response. Part B showed more confusion than did Part A. Half of the respondents indicated more than average difficulty in assessing the characteristics for article seven; four reported more than average difficulty for article ten; and three marked Yes for article five. The balance of the subjects reported NO for each of the three articles for Part B with no subject failing to respond. The results for these three articles followed the original instrument closely in that the respondents were quite evenly divided but with article five moving closer to borderline classification.

The comments in Part C were varied. In addition to the written comments, the investigator talked with some of the subjects after the subjects had returned the evaluation sheet. Some of the subjects felt that the problem resided in the articles rather than in the statements of characteristics on the instrument and that the format of the articles was such that statements of characteristics could not really be designed to solve the problem more adequately. This point of view was taken under advisement by the investigator as well as his own observation that there was a wide range of purism, from strict

to liberal, toward educational research among the subjects which would easily constitute an interesting study in itself.

As a result of the evaluation and contribution of the subjects, the instrument for selecting reports of research was carefully modified. Cautious attention was given to the incorporation of significant suggestions for making the statements more clearly discriminating. Care was taken not to alter the original research characteristic which each statement was designed to disclose.

The final instrument¹⁰ used to select the items of research contained the following statements:

1. The problem is clearly stated as a hypothesis(es) to be tested or as a question(s) to be researched.
2. The related literature is reviewed and documented with at least six references.
3. The population (or a population sample) investigated is explicitly defined.
4. The report includes the collection and analysis (or synthesis) of expert opinion.
5. The report utilizes the collection and analysis (or synthesis) of survey data.
6. The report includes the collection and analysis (or synthesis) of data pertaining to a case study (-ies).
7. The report utilizes an experimental design and control.

¹⁰See Appendix I.

8. The report utilizes theoretical constructs (concepts).
9. The investigator explicitly indicates how and to what related problems the results may (or may not) be generalized.
10. From the information reported, the procedure of the investigation may be replicated by another researcher.

From the pattern of responses in the original pilot study, it was determined that a minimum of three statements should be checked before an article would be accepted as research in school-plant planning for the purposes of this study.

The instrument was applied to the references by the present investigator and the resulting list of research articles was incorporated in the evaluation sections of this study.

Checklist for evaluating research articles. It was necessary to develop a device to standardize the gathering of certain basic information needed for evaluating the research articles.¹¹ The four areas in which information was desired, if available, were: (1) the problem studied, (2) the design utilized, (3) the findings and conclusions, and (4) the sources of support. A checklist was developed to briefly and quickly record the needed information in these categories. As far as possible, a standardized list of items that could be checked was utilized. In several instances this was not possible and space for a brief annotated statement was provided.

¹¹See Appendix A.

The following information on research articles was recorded when available: (1) the motivating factor and the focus; (2) the method of research, the population, the techniques for collecting data, and the statistical method; (3) the nature of the findings, the agreement or disagreement between educators and architects, the generalizability of the results, and the implications of the study; and (4) the background of the researcher (s), the location where the research was carried on, and the source of support. The checklists were tabulated and the information evaluated with strengths and weaknesses regarding availability of desired information noted.

CHAPTER IV

REVIEW OF THE PERIODICAL LITERATURE--EDUCATION

A total of 2,188 items of periodical literature were reviewed in the course of this study. The total includes all of the items in American periodicals listed under all relevant topics in both major bibliographic indices and the American Doctoral Dissertations sections of the Dissertation Abstracts, which was considered a periodical source for the purpose of this study.

From the references in the Education Index, thirty-three articles were selected as meeting the criteria established. It will be recalled that these criteria were:

1. The reference must bear a relationship to the quality of the environment which is provided for the learning process.
2. The reference must be acceptable as research according to the instrument designed for that purpose.
3. The research in the original form, or a summary in adequate detail, must be published in such a manner as to be available to the practitioner and to the researcher.

Three of the thirty-three references were listed in both the Education Index and the Art Index. Since all three of these references were from an architectural periodical, they are treated with the architectural periodicals in Chapter Five.

A total of one hundred fifty-four doctoral dissertations on school plant were located in the American Doctoral Dissertations. Of this number, forty dissertations could not be treated because they were not located in the Dissertation Abstracts. These forty dissertations were, however, included in the comprehensive guide to school plant periodical literature located in an appendix to this report. Of the remaining total, forty-six dissertations met criteria one above (must bear a relationship to the quality of the environment which is provided for the learning process). These forty-six titles and the thirty titles from the Education Index are reviewed in this chapter.

In the initial screening process, a combined total of nine hundred and sixty-three of the references in both education and architecture were categorized as examples of completed school plants, or "how we [they] did it." This total would have been greater except for the fact that several periodicals grouped their examples of school construction in particular issues during the year and titled the section as well as the article; whenever possible, references of this nature were included as one citation by section title in the extensive classification to school plant references located in an appendix to this report. For the most part, these articles followed a stereotyped pattern of pictures, diagrams, and construction cost and size data, generally mentioning the superintendent and the architect. Not infrequently one or both of these persons authored the article. These articles

were considered to be of value basically to those persons looking for ideas or solutions to specific problems. All of the references of this type, including collections of architects' work and design contests of various sorts, were included in one section of the classified reference section of an appendix under the title "Portfolio of Schools".

Major Sources Indexed

There were five educational periodicals that were prominent during the period 1955 to 1964. Not all five of the periodicals spanned the entire ten-year period. These five periodicals were The American School Board Journal, The Nation's Schools, American School and University, School Executive, and Overview. In addition, there were fifty-six other periodicals represented. This number did not include those periodicals eliminated because they had less than three references for the entire ten-year period. Many of the peripheral periodicals contained only a very few school plant planning articles.

Nature of the Literature

Many of the periodical references presented a problem in classification inasmuch as they were generally not written as research and frequently contained a variety of characteristics of a vague and ambiguous nature. When authored by an architect, engineer or related technician, articles frequently contained charts, tables, diagrams or other instruments which, to the

uninitiated eye, give the appearance of original research but which, in fact, are commonplace tools of the trade. It was frequently necessary to inspect the article in great detail in order to apply the instrument for discriminating research.

As might be expected, the references exhibited a very wide range of writing skills and organizational abilities as well as degrees of sophistication of material and subject matter reported. Included were many learned and esoteric articles of an essay nature that in some cases appeared to contribute more than some of the articles of research. Indeed, in many instances, these articles represented the refined and evaluative thinking of many years of experience, study, and discussion on the part of well-known authorities. Unfortunately, unless some qualitative measure is developed to identify this type of article--a task more difficult than defining research--these articles will have to be ranked as being as valuable as research by subjective judgment or not at all.

The dissertation research exhibited a generally uniform characteristic, probably due to the requirement of a six-hundred-word abstract for the Dissertation Abstracts. A few abstracts did not appear to summarize the research from the formulation of the problem through the results of the investigation. These few exceptions were principally in the field study category and were usually of a specialized nature. The research articles in the periodical literature, on the other

hand, exhibited no recognizable pattern or arrangement and included research reports and reports of research--that is, some articles were the original and complete research report but, more frequently, articles were summaries or abridged reports of results published in the original elsewhere or not at all. As such, the reports varied in length and quality from the bare minimum to a full-blown report. Since the major instrument developed for this study discriminated research but did not evaluate the fullness of the content beyond the minimum, the method of determining whether sufficient information was present to merit inclusion in this study was by means of the reference data form used to standardize the information collected; if sufficient information was present to satisfy the most basic parts of the form, the article was included in the study. A few reports were very brief summaries.

Review of the Literature Located

The following is a brief summary of the research located. Planning Procedure. Seven of the dissertations and four of the articles fell in this category.

Whigham¹, in a dissertation at New York University in 1956, attempted to develop a theory for school plant planning. He analyzed the resources in the related literature, conducted interviews and observations in fifteen school systems, and

¹Edward L. Whigham, "Educational Planning for School Plant Construction," (unpublished Doctor's thesis, University of New York, 1956). Dissertation Abstracts, 16: 1392, 1956.

used a jury technique for authoritative judgments. He concluded that complex factors were involved, that the factors were interrelated, that complex human relations were involved, that the factors were dynamic and changing, and that the situation was unique for each planning experience.

Two periodical articles, one in the School Executive and one in the American School Board Journal, reported on general educational planning. The article in the School Executive, by the School Executive Research Department,² entitled "Educational Planning of the School Plant: Symposium," reported a questionnaire survey of one thousand school superintendents throughout the United States and a six-district case study. The superintendents agreed that there were many different people and groups involved, that varying amounts of time were involved, and that more time should be spent on educational planning. The study implied that the importance of school planning was recognized even when planning was not adequately practiced. The article in the American School Board Journal, by Robert E. Hummel,³ entitled "Who Does the Educational Planning for Your School?," dealt with what educational planning should be. This article was one of only two located in the periodical literature which indicated in some manner that it was based

²School Executive Research Department, "Educational Planning of the School Plant; Symposium," School Executive, 75: 73-87 (February, 1956).

³Robert E. Hummel, "Who Does the Educational Planning for your School?," American School Board Journal, 144:32-35 (March, 1962).

on a doctoral dissertation.⁴ The research was a survey of more than one hundred California school districts ranging from 5,000 to 40,000 in average daily attendance. Superintendents and school planning directors were surveyed to identify current practice and to secure improvement ideas. In addition, nearly thirty practicing architects oriented toward school design were questioned. Hummel's study disclosed the following information: 1) well-written specifications were essential; 2) a minimum of six months planning for elementary schools and one year for secondary schools was desirable; 3) release time for staff involvement was worthwhile; 4) outside planning direction was necessary if the staff was unable or unwilling to participate; 5) a recently completed facility evaluation was a necessary preliminary procedure; 6) the areas of responsibility should be clearly defined; 7) educational planning groups were a valuable part of the planning; and 8) the employment of an able architect was a vital part of the program.

Two dissertations dealt with specific involvement of staff groups. A dissertation by Ralph E. Lee,⁵ titled "An Appraisal of Teacher Participation in Secondary School Planning," is a case study of three school districts in California.

⁴Robert E. Hummel, "Educational Planning Procedures for School Building Construction," (Unpublished Doctor's thesis, University of Southern California, 1961). Dissertation Abstracts, 21:3686, 1961.

⁵Rolf E. Lee, "An Appraisal of Teacher Participation in Secondary School Planning," (unpublished Doctor's thesis, Stanford University, 1957). Dissertation Abstracts, 17: 2482-2483, 1957.

Lee found little productive results in the three districts he worked with. He did find that the administration considered the construction a result of teacher planning but that the teachers doubted that their thinking was included in the structure. Further research was indicated as necessary to illuminate optimum methods for teacher participation. A recent dissertation at Columbia University by Alden A. Larson⁶ dealt with the planning role of the high school principal. The dissertation developed guidelines for the role of the building principal in school plant planning. It focused on the Greenburgh school project and was a single case study. As a result of the analysis of this case study, Larson made general recommendations of good procedures and guidelines for school plant planning.

In a dissertation of a regional nature, at Temple University in 1964, Henry R. Hoerner⁷ surveyed educational planning in Delaware. He focused his attention on investigating the role that educational planning played in determining school plant design for elementary and secondary schools in that state. Utilizing questionnaires and interviews, Hoerner compared opinions of authorities in the literature with question-

⁶Alden A. Larson, "The Development of Guidelines As To the Role of the High School Principal In Planning A Secondary School Building," (unpublished Doctor's thesis, Columbia University, 1964). Dissertation Abstracts, 25: 5062-5063, 1965.

⁷Henry R. Hoerner, "A Comparative Investigation of the Role Educational Planning Plays in Determining School Plant Design for Elementary and Secondary Schools In the State of Delaware," (unpublished Doctor's thesis, Temple University, 1964). Dissertation Abstracts, 25: 4497-4498, 1965.

naire responses and best planning practices as revealed in the interviews. He found that there were written educational plans by only forty-four per cent of the districts in the study and listed nine other lesser characteristics.

Hoerner also indicated that educational plans should be written and that broad involvement of people in the planning process is a necessity.

In another regional study of school plant planning, Thomas Terjeson,⁸ in a doctoral dissertation at the University of Washington in 1963, surveyed existing practices in school plant planning to determine the manner in which selected school districts had developed the administration of the school plant and the actual procedures of the planning program. Terjeson used the questionnaire technique with superintendents of first-class school districts in Washington and selected districts in other states. He found that there were no uniform practices for planning, that responsibility was centered in one person authorized by the board, that committees which included citizens and staff members assisted the superintendent and were appointed by him. The queried group considered five to nine years as long-range. Most districts prepared educational specifications; and citizens participated. Oral reporting was found to be the most common and studies were found to be community-wide in nature.

⁸Thomas Terjeson, "An Analysis of School Plant Planning in Selected Districts in Washington and Certain Other States," (unpublished Doctor's thesis, University of Washington, 1963). Dissertation Abstracts, 24: 4518-4519, 1964.

In a doctoral dissertation in 1963, Thomas N. Keating,⁹ at the University of Nebraska Teachers College, sought to determine the effectiveness of various procedures which had been used in school building programs by Nebraska schools. In a survey of ten Nebraska schools selected on rather detailed criteria, and using an open-ended, tape-recorded interview on questions pertaining to the study, he developed a list of nine procedures classified as effective in Nebraska. Keating recommended his study to superintendents^s facing bond issues and students of educational administration.

The results of school plant planning were surveyed by Stanley C. Campbell¹⁰ at the University of Wisconsin. Utilizing the questionnaire technique in his study of six schools, he found a negative relationship between comprehensiveness of planning and juror evaluations of the resultant plant quality. Because his sample was so small, Campbell cautioned against generalizing his results. He also found that each plant planning experience was unique.

The failure to provide sufficient prior planning was

⁹Thomas N. Keating, "The Effectiveness of Procedures Used in School Building Programs in Nebraska," (unpublished Doctor's thesis, University of Nebraska Teachers College, 1963). Dissertation Abstracts, 24: 5132-5133, 1964.

¹⁰Stanley C. Campbell, "Relationships Between the Comprehensiveness of School Plant Planning Procedures and the Quality of Resultant School Plants," (unpublished Doctor's thesis, University of Wisconsin, 1961). Dissertation Abstracts, 22: 1880-1881, 1961.

surveyed by Matt O. Hanhila¹¹ in a study to determine whether or not double sessions affected educational opportunities of high school students. Utilizing delinquency records and an annoyance scale instrument, he found that there was no statistical significance in the grade points, no significance on a comparison of gains in the Iowa test of educational development, and no significance in juvenile reports between morning and afternoon sessions. He did find that differences between double and regular sessions on the annoyance scale were significant at the .05 level.

Educational Specifications. One study dealt with the topic of educational specifications. In this study at the University of Tennessee, Ova P. Roaden¹² attempted to identify the essential elements of educational specifications. The dissertation utilized the survey and jury system methods. The literature was examined and twenty-five sets of educational specifications were analyzed, resulting in a list of twenty-four tentative essential items. This list of items was submitted to a jury and seventeen elements evolved as being essential to educational specifications. Roaden found that educational specifications, while vital, were not yet in widespread use although their use was increasing. Their main

¹¹Matt O. Hanhila, "Are Double Sessions Students Penalized Academically?," American School Board Journal, 143: 13 (December, 1961).

¹²Ova P. Roaden, "The Essential Elements of Educational Specifications for School Plant Facilities," (unpublished Doctor's thesis, University of Tennessee, 1963). Dissertation Abstracts, 24: 593, 1963.

purpose was for use by the architect. Of the seventeen essential elements identified, ten were general elements and seven were specific elements. Roaden also included a list of additional items that might be considered.

Pupil Capacity and Desirable Size. Three investigations, all doctoral dissertations, dealt with the pupil capacity of schools.

In a doctoral dissertation at Ohio State University in 1952, Marion J. Conrad¹³ developed a formula for determining the operating capacity of secondary school buildings. The formula was developed by means of analyzing and synthesizing the essential factors. In addition to developing the formula, Conrad concluded that true operating capacity involved more than size and numbers and that it was impractical to use every room every hour of every day of every week. Conrad indicated that with slight modification, the formula would determine housing requirements in planning new school buildings. He also indicated that the subject would have to have more research on such input factors as desirable class size and grouping. In a study on space allocations, pupil capacity, and unit cost of twenty Indiana secondary schools, William S. Fuller¹⁴ found

¹³Marion J. Conrad, "A Technique for Determining the Operating Capacity of Secondary School Buildings," (unpublished Doctor's thesis, Ohio State University, 1952). Dissertation Abstracts, 17:2891-2893, 1957.

¹⁴William S. Fuller, "Space Allocation, Pupil Capacity and Unit Costs of Twenty Selected Public Secondary School Buildings Constructed in Indiana During 1948-1958," (unpublished Doctor's thesis, Indiana University, 1960). Dissertation Abstracts, 21: 517, 1960.

that there was an interrelationship between enrollment, instructional space, number of grades, and accreditation. Fuller utilized the original drawings for most of his data in the twenty Indiana schools and obtained cost data from school officials. In another regional study, Henry J. Gatski¹⁵ attempted to analyze the effectiveness of four formulae designed to indicate the rate of pupil capacity of secondary schools. Gatski utilized fifty selected junior, senior, and junior-senior high school buildings in Pennsylvania and applied the Pennsylvania State Department of Public Instruction capacity formula and three other formulae. In addition he surveyed administrative opinion. He calculated the percentage of difference between enrollment and the various capacity ratings. Gatski found that twenty of the fifty schools had enrollments that exceeded rated capacities and twenty-three schools had enrollments that were near or exceeded rated capacities. He recommended that the state of Pennsylvania review the present rating formula and use his system to keep the state formula current.

Two dissertations, both of a regional nature, dealt with the relationship between size of high school and achievement. In a study at Iowa State College in 1958, Irvin T.

¹⁵Henry J. Gatski, "A Comparison of Four Formulae for Rating Pupil Capacity of School Buildings in Selected Secondary Schools in the State of Pennsylvania," (unpublished Doctor's thesis, The Pennsylvania State University, 1963). Dissertation Abstracts, 1045-1046, 1963.

Lathrop¹⁶ utilized a sample of 1,516 students to focus on high school size and course pattern. He found that high school size had little relationship with achievement at Iowa State College but that the high school course pattern did influence achievement. In a similar study at the University of Arkansas, Fay W. Smith¹⁷ studied high school size to achievement of college bound seniors in Arkansas. Smith utilized a random selection from 3,250 Arkansas college bound seniors. Applying the sample to the ACT program, the group was divided according to high school size and five groups were set up. Using a statistical test, Smith found that size was significant. In general, the study indicated that college bound seniors from high school classes of 400-plus achieved at a higher level than small high school graduates. In some subject areas, the six hundred-plus group size achieved higher.

Two dissertations focused on high school size, cost, and other factors. Desmond H. Bragg¹⁸ studied the relationship between the net enrollment, the per pupil cost, and student

¹⁶Irvin T. Lathrop, "Scholastic Achievement at Iowa State College Associated with High School Size and Course Pattern," (unpublished Doctor's thesis, Iowa State College, 1958). Dissertation Abstracts, 19: 78-79, 1959.

¹⁷Fay W. Smith, "An Analysis of the Relationship of Size of Arkansas High Schools and the Achievement of College Bound Seniors," (unpublished Doctor's thesis, University of Arkansas, 1961). Dissertation Abstracts, 21: 3332-3333, 1961.

¹⁸Desmond H. Bragg, "A Study of Size-Cost-Achievement Relationships in Reorganized School Districts of Wisconsin," (unpublished Doctor's thesis, University of Wisconsin, 1960). Dissertation Abstracts, 21: 1432-1433, 1960.

achievement in the elementary schools in the reorganized districts of Wisconsin. Utilizing all ninth graders who spent their entire school life in the district, he found no correlation between size and achievement and none between cost and achievement. He further found that the only factor consistently agreeing with achievement was the student's intelligence. Ralph D. Jantze,¹⁹ in a study comparing high school size, accreditation, and finance to scholastic achievement in Nebraska, sampled forty-six Nebraska secondary schools that were categorized into accreditation rankings by the Nebraska State Department of Education, into cost groups on per pupil cost, and into size groups. Jantze found achievement was greater in the two higher levels of accreditation, but achievement was greatest when per pupil expenditure was greatest, with some exceptions. He also found that achievement increases with enrollment to between 400 and 799 students, and then it decreases.

Three dissertations focused on elementary school size. Utilizing 90 elementary schools of grades one through six in six Florida counties, Louis E. Teets²⁰ related size, per pupil

¹⁹Ralph D. Jantze, "An Analysis of the Relationship of Accreditation, Finance, and Size of Nebraska High Schools to Scholastic Achievement," (unpublished Doctor's thesis, The University of Nebraska Teachers College, 1961). Dissertation Abstracts, 22:1068-1070, 1961.

²⁰Louis E. Teets, "Relationship in the Elementary School Between Size, Per Pupil Cost, and the Extent of Educational Opportunity," (unpublished Doctor's thesis, University of Florida, Gainesville, 1956). Dissertation Abstracts, 16: 2375-2376, 1956.

cost, and the extent of educational opportunity. He found a peak size at 300 to 399 students, a greater peak at 600 to 699 students, a plateau at 700-plus students and an optimum size of 600 to 699 students. Teets found that the lowest cost was in the 600 to 699 group and that the opportunity-cost ratio was at 600 to 720 students. David D. Basler²¹ studied some of the factors involved in the determination of the optimum size for elementary units at the University of Iowa in 1960. Utilizing single, double, and triple size elementary school units, he found the weight of evidence favored the double unit. A third study on the size of elementary school relationships was conducted by Urban J. D. Leavitt.²² Leavitt explored the relationship of elementary school size intervals to the provision and utilization of facilities, space, and personnel. Utilizing a jury of 438 professional educators and a sample of seventeen selected elementary schools of different sizes, Leavitt concluded that the optimum size interval "may" lie within a range of 200 to 699 pupils and that the best personnel usage was in the 200 to 399 pupil range.

²¹David D. Basler, "An Investigation of Certain Factors Influencing the Optimum Size for Elementary School Attendance Units," (unpublished Doctor's thesis, State University of Iowa, 1960). Dissertation Abstracts, 21: 1812-1813, 1961.

²²Urban J. D. Leavitt, "Elementary School Size Relationships," (unpublished Doctor's thesis, The University of Texas, 1960). Dissertation Abstracts, 20: 4572; 1960.

In a study of a more regional nature, Jack W. Crocker²³ studied the size and organization of white junior high schools in Alabama. Crocker's findings were, in general, that as size of enrollment rose, level of teacher preparation rose, and that variety increased with size, including a finding of a wider variety in three-year schools than in the two-year types.

Four studies were located that focused on the optimum size of secondary schools, some of which included factors in addition to size. In an article entitled "Is There An Optimum Size High School?," A. H. Livingston,²⁴ in a documentary study, concluded that the particular needs of the community must be the criteria on which the decision of high school size is made. All other things being equal, and if the decision is made on size alone, 2,000 seems the most desirable size to select. A smaller size school was the recommendation of the doctoral study of Clifford B. Smith,²⁵ who surveyed 352 secondary schools by questionnaire. In addition to the questionnaire, Smith utilized the Annual Principal's Report of the State Department of Education. In a statistical analysis, Smith concluded that 800 to 1200 pupils is the size range

²³Jack W. Crocker, "The Relationship of Size and Organizational Type to Certain Factors in Alabama's White Junior High Schools," (unpublished Doctor's thesis, University of Alabama, 1960). Dissertation Abstracts, 21: 2529-2530, 1961.

²⁴A. H. Livingston, "Is There an Optimum Size High School?," Progressive Education, 33: 156-159 (September, 1956).

²⁵Clifford B. Smith, "A Study of Optimum Size of Secondary Schools," (unpublished Doctor's thesis, Ohio State University, 1960). Dissertation Abstracts, 21: 2181-2182, 1961.

at which favorable factors approach the maximum and unfavorable factors approach the minimum. Still another finding resulted from a doctoral study by Stuart C. Gray,²⁶ who examined twenty seniors from each of forty Iowa secondary schools. Gray's statistics indicated that there was a very small difference of achievement favoring larger schools, but that the difference was not significant; other factors such as faculty turnover, multi-use, special services, and extra-curricular activities were statistically significant in favor of the larger school. Gray found that a plateau was reached on most factors at around 400 students. In an article in the American School Board Journal, S. S. Mayo²⁷ agreed with the findings of A. H. Livingston when he concluded that a high school of 2,000 appears to be the maximum desirable size. Mayo based his study on extensive recorded experience in California high schools.

General Planning and Design Factors. One of the early significant planning ventures in design for design's sake was the Random Falls idea by Archibald B. Shaw and John Lyon Reid.²⁸ As a primary example of the "search" in research, Shaw and

²⁶Stuart C. Gray, "A Study of the Relationship Between Size and a Number of Qualitative and Quantitative Factors of Education in Four Sizes of Secondary Schools in Iowa," (unpublished Doctor's thesis, State University of Iowa, 1961). Dissertation Abstracts, 22: 2631, 1962.

²⁷S. S. Mayo, "What Size High School?," American School Board Journal, 144: 32-33 (January, 1962).

²⁸Archibald B. Shaw and John L. Reid, "Random Falls Idea; An Educational Program and Plant for Youth and Community Growth," School Executive, 75: 47-86 (March, 1956).

Reid proposed an extensive redesigning of the program of secondary education. Utilizing a hypothetical situation that was not tied to present standards in any way, they formulated specifications and proposed a building design for an entirely new type of program. The program included nothing in the way of unusual materials or ideas presented but was put together in its entirety; this had not been done in an actual building program. Six years later, Shaw and Linn Smith²⁹ undertook a similar project entitled "New High School." In this study, an attempt was made at design unhibited by usual demands on the architect, board of education, and administrator. The result of this study was a hypothetical school of today which sought solutions to current problems. More recently, in March of 1964, the staff of American School and University, in a study similar to the ideas of the previous hypothetical studies, put forth a proposal titled "All-Age School."³⁰ The school was the result of what was described as a summary of research statistics and the commentaries, reports, symposia, pleas, calls and intuitions of educators. The hypothetical all-age school was designed to bridge the gap between the very young and the over-age-fifty-five group. If reported in a manner that would meet the limited criteria of this study, such valuable contributions as C. W. Brubaker's "Q space" concept and some of the hypothetical research by

²⁹Linn Smith and Archibald B. Shaw, "New High School," Educational Executives' Overview, 3: 33-48 (March, 1962).

³⁰American School and University, "All-Age School," American School and University, 36: 27-31 (March, 1964).

W. W. Caudill could be reviewed here.

In a statistical study utilizing three matched pairs of students in grades two, four and six, Barney Kyzar³¹ studied the relationship between school plant design and the instructional program. He deals specifically with an "open plan," which consisted of classrooms with three walls and separation from the corridor by means of movable partitions or storage space. Collecting his data by means of observation, Kyzar found that in five of the seven components of instruction (curriculum organization, social organization, psychological climate, order-maintaining techniques, and provision for individual differences) statistically significant differences were found favoring schools designed on the "open plan." In interpreting his findings, Kyzar indicated that the "open plan" classrooms were not sufficiently different from conventional classrooms to cause significant differences directly attributable to design. Dr. Kyzar's article was quite similar to the study he undertook for his doctoral dissertation at the University of Texas.³² In his dissertation, he analyzed by observation with an instrument designed to investigate noise, nine schools. Three of the schools were designed with three-wall classrooms, three with three-open or incomplete, and

³¹Barney Kyzar, "School Plant Design and the Instructional Program," American School Board Journal, 145: 25-26 (August, 1962).

³²Barney Kyzar, "A Comparison of Instructional Practices in Classrooms of Different Design," (unpublished Doctor's thesis, The University of Texas, 1961). Dissertation Abstracts, 22: 3490-3491, 1962.

three with conventional classrooms. Kyzar found that the open plan was favored but he questioned whether the design of the building was totally responsible. He further found that the design did not appear to affect activities or the utilization of activities or of floor and display areas, that noise was not a problem, and that little use was made of corridor space other than for passage.

Carl T. Bergstrom,³³ in a dissertation at Michigan State University, studied changing programs and their effect on school plant. Utilizing Detroit schools from which grades one, two and three had been removed by a program change, he found that degree of modification necessary does decrease educational adequacy of buildings.

Two dissertations and an article dealing with desirable features of buildings were located. Paul Phillips,³⁴ in a dissertation at Temple University in 1956, attempted a survey of current elementary school construction features utilizing a questionnaire and field trip observation with thirty-nine select elementary schools in various sections of the nation. Phillips also sent 325 questionnaires to administrators of new construction. He produced a long list of recommendations

³³Carl T. Bergstrom, "An Analysis of the Impact of Program Change on School Plants," (unpublished Doctor's thesis, Michigan State University, 1961). Dissertation Abstracts, 22: 4264, 1962.

³⁴Paul Phillips, "A Survey of Construction Features Found in 325 New Elementary School Buildings," (unpublished Doctor's thesis, Temple University, 1956). Dissertation Abstracts, 17: 291-292, 1956.

and concluded that there were quite a few successful ideas and features that ought to be used by more schools. Louis A. Bohn³⁵ focused his attention on the desirable and undesirable features and space in elementary schools. Surveying twenty-six buildings with check lists, questionnaires and personal interviews, Bohn found most of the newer innovations to be desirable. He also found a long list of common undesirable features. More recently, in October of 1964, the Nation's Schools³⁶ polled schoolmen concerning those facilities and new construction that schoolmen wanted most and those that they would reject for elementary schools and secondary schools. Of the four per cent of the 16,000 schoolmen in the continental United States that were sent questionnaires, thirty-one per cent responded to the questions. By simple tabulation, lists of desirable and undesirable features were presented. In the elementary school, most desirable features included operable walls for team teaching and least desirable features were windowless classrooms. In the secondary schools, most desirable features were also operable walls for team teaching and the least desirable features were smoking facilities for students.

Three references were located with regard to space

³⁵Louis A. Bohn, "Desirable and Undesirable Building Features and Spaces in Selected Elementary Schools," (unpublished Doctor's thesis, The University of Texas, 1958). Dissertation Abstracts, 19: 997-998, 1958.

³⁶Nation's Schools, "What Schoolmen Want in Buildings," Nation's Schools, 74: 76-77 (October, 1964).

allocation and utilization. In an area study in the state of Washington, Ernest Hayes³⁷ reported the results of a survey of twenty-three new public high schools. He found a greater variation than expected in space allocations to instructional areas, no trends, and many unanswered questions about planning and designing. Also in an area study, in the state of Indiana, George Lucht³⁸ studied space allocations and unit costs in elementary schools. Lucht determined allotment of floor area percentage of major portions of construction contracts and calculated the cost per station, per square foot, and per classroom. In a dissertation at Penn State University, Donald R. Salisbury³⁹ considered outstanding school plants in order to determine the space allocation for instructional service and administration in the selected school plant. Utilizing an instrument that was mailed out, he concluded that costs of the selected school buildings were in keeping with the percentage of productive space within the buildings, that administration and service space was not excessive, and that the relationship between teaching, administration, and service

³⁷Ernest Hayes, "Space Allocation in Washington High Schools," American School Board Journal, 130: 39-40 (June, 1955); 131: 21-22+ (July, 1955); 131: 27-28 (August, 1955).

³⁸George Lucht, "A Study of Space Utilization and Unit Costs of 75 Elementary School Buildings Constructed in Indiana During 1948-1954," (unpublished Doctor's thesis, Indiana University, 1954). Dissertation Abstracts, 15: 368-369, 1955.

³⁹Donald R. Salisbury, "Space and Cost Allocation for Service, Administrative and Instructional Areas in Selected Elementary and Secondary Schools," (unpublished Doctor's thesis, Pennsylvania State University, 1957). Dissertation Abstracts, 18: 135, 1958.

space was exemplary.

Pupil control factors to be included in educational specifications for the architect was the topic of a dissertation by Earle E. Wenbourne.⁴⁰ In a survey of administrative personnel, teachers and students, Wenbourne found pupil control was improved through planning and subsequent design.

In a specialized study, John J. McNicholas, Jr.⁴¹ investigated thirty-seven new elementary schools in Chicago. Utilizing an instrument design based on the latest criteria located in the literature, he made recommendations for the educational criteria to be used in planning new elementary school buildings in Chicago. McNicholas indicated that Chicago and other urban districts might utilize the data and criteria in their elementary school studies. In a more general study, Frank R. Yulo⁴² studied the small school design in detail. With twenty-seven schools serving as a laboratory to point up needs, Yulo listed five areas of major concern based upon organizational patterns and learning materials for the

⁴⁰Earle E. Wenbourne, "Pupil Control Factors to be Considered in Planning School Plants for the Grossmont (California) Union High School District," (unpublished Doctor's thesis, The University of Nebraska Teachers College, 1962). Dissertation Abstracts, 22: 4249-4250, 1962.

⁴¹John J. McNicholas, Jr., "The Development of Educational Criteria for New Elementary Schools in Chicago," (unpublished Doctor's thesis, Michigan State University, 1961). Dissertation Abstracts, 22: 1889, 1961.

⁴²Frank R. Yulo, "General Factors Related to the Educational Specifications for the Physical Facilities of the Small Twelve-Year School (Grades K-12)," (unpublished Doctor's thesis, Columbia University, 1962). Dissertation Abstracts, 23: 4206-4207, 1963.

Catskill area of New York.

In two studies which indicated promise for school research of the future, K. Gibbons and K. T. Hereford⁴³ analyzed in 1955 school design trends indicated by 100 schools entered in the School Executive Design Competition. By means of a synthesis of evaluations of the schools and "jury" findings, the editor and architect determined that the objectives of the architects seemed to be economy, functional building, and "liveableness." In a similar study the following year, M. J. Pillard and Gibbons⁴⁴ focused on the 147 new educational structures that were entered in the design competition. The findings for that year were that the future of school architecture promised many variations and that budgetary problems were still paramount. After two years, the practice of analyzing the design schools tapered off and the format changed to another approach.

In a staff article by Educational Executives' Overview⁴⁵ in March of 1963, the middle school was the subject of a detailed study. Specifications for the middle school were established by means of expert opinion and eighteen characteristics of a new building program were outlined. It was the intent of the research to serve as a guide for the sixth-,

⁴³K. Gibbons and K. T. Hereford, "Panorama of 100 New Schools," School Executive, 74: 69-101 (April, 1955).

⁴⁴M. J. Pillard and K. Gibbons, "Let's Take a Look at New Schools," School Executive, 75: 61-91 (June, 1956).

⁴⁵Educational Executives' Overview, "Planning and Operating the Middle School," Educational Executives' Overview, 4: 52-55 (March, 1963).

seventh-, and eighth grade middle school program.

Thermal Environment. Three studies dealing with the effect of the thermal environment on learning were located. In a dissertation entitled "A Study of Factors Involved in Establishing a Satisfactory Thermal Environment in the Classroom," Homer F. Mincy⁴⁶ analyzed and appraised conditions in twenty-seven classrooms in nine schools. Utilizing instruments to measure room conditions, Mincy found that classroom conditions varied widely and often were not within accepted levels. Rooms that met standards typically had unit ventilators. Working in conjunction with the Lennox Research School, Charles M. Peccolo⁴⁷ completed his doctoral dissertation at the State University of Iowa on the effect of thermal environment on learning. To determine differences in learning due to thermal environment, Peccolo utilized matched pairs of fourth grade children. By means of the detailed instrumentation of the Lennox classrooms, he determined that, with some exceptions, significantly higher gains were achieved by the experimental group in the ideal thermal environment. Peccolo noted that many additional factors needed experimentation in greater depth and detail. In a staff article titled "Two Studies on

⁴⁶Homer F. Mincy, Jr., "A Study of Factors Involved in Establishing a Satisfactory Thermal Environment in the Classroom," (unpublished Doctor's thesis, The University of Tennessee, 1961). Dissertation Abstracts, 22: 3069, 1962.

⁴⁷Charles M. Peccolo, "The Effect of Thermal Environment on Learning," (unpublished Doctor's thesis, State University of Iowa, 1962). Dissertation Abstracts, 23: 2775, 1963.

Thermal Environment and Learning" in the December 1963 issue of American School Board Journal,⁴⁸ a study of the effect of thermal environment on learning was reported. Using forty-four matched pairs of fourth grade pupils in the Lennox research school, the study found that on the whole there was large improvement by every child taking part in the ten types of tests; in every task the experimental group improved more than the control group.

A number of studies in thermal environment with regard to air-conditioning have been conducted by Henry Wright. Two such studies were reported in the American School Board Journal. In an article entitled "What Does School Air-Conditioning Cost?,"⁴⁹ Wright described a survey of seventeen schools in twelve states which indicated that the average cost of air-conditioning was approximately 75¢ more per square foot than conventional heating. Wright concluded that common sense indicates that air-conditioning costs are not "outlandish". In a later article titled "A Definitive Experiment With Air-Conditioning,"⁵⁰ Wright attempted to determine whether there was significant difference in cost of operation, educational achievement, and incidence of illness or psychological problems with the use of air-conditioning. Utilizing an actual building and basic costs, Wright concluded that there was no difference in costs. The study of the educational achievement and incidence

⁴⁸American School Board Journal, "Two Studies on Thermal Environment and Learning," American School Board Journal, 147: 22-24 (December, 1963).

⁴⁹Henry Wright, "What Does School Air Conditioning Cost?," American School Board Journal, 136: 33-34+; (January, 1958).

⁵⁰Henry Wright, "A Definitive Experiment with Air Conditioning," American School Board Journal, 142: 29-32 (January, 1961).

of illness and psychological problems was incomplete at the time of the writing.

Sonic Environment. Because the use of carpeting is frequently associated with sound control, carpeting has been included under the sonic classification. Although several experiments have been conducted with carpeting, only one report of such research was located. Elizabeth Nabors⁵¹ reported a sufficient portion of the Shaker High School carpet experiment to merit inclusion in this study. By means of a time log technique, the investigators concluded that the cost of carpet averaged two-thirds more than the cost of asphalt tile and that the maintenance cost of carpet was one-half that of asphalt tile. The study implied that the cost image of carpeting was a more serious problem than long-run total costs.

Darwin W. Womack,⁵² at the University of Tennessee, conducted a doctoral study on classroom acoustics entitled, "A Study of Factors Involved in Establishing a Satisfactory Acoustical Environment in the Classroom." Womack worked with three classrooms from each of nine schools. His criteria were drawn from the literature and he applied the criteria to the classrooms by methods that included observation and acoustical measurements. His findings led to the conclusion that the

⁵¹Elizabeth Nabors, "School Carpet--Does It Make Sense?," American School Board Journal, 147: 34-36 (October, 1963).

⁵²Darwin W. Womack, "A Study of Factors Involved in Establishing a Satisfactory Acoustical Environment in the Classroom," (unpublished Doctor's thesis, The University of Tennessee, 1962). Dissertation Abstracts, 23: 3217-3218, 1963.

acoustical environment in all the classrooms was inadequate for optimum speech communication and that most of the classrooms were too noisy for optimum speech intelligibility.

Esthetic Environment. Although many other considerations are included in the make-up of the esthetic environment, the most predominant consideration has been that of color. All five of the esthetic studies that were located dealt with color.

Two psychological journals reported color studies. In a study by T. A. Pasto and P. Kivisto,⁵³ 120 subjects were tested with color charts and with the Roshard Card X. The subjects were asked to select the most and least pleasing or attractive on both the color chart and the card X. The percentage response within each group was calculated and the findings indicated that blue and red were the popular choices of both groups--gray and brown the least. Normal women shifted their preference more than normal men. In a study entitled "Effect of Color Illumination Upon Perceived Temperature," P. C. Berry,⁵⁴ writing in the Journal of Applied Psychology, reported a study to determine whether a person's surroundings would affect perceived temperature and if this could be used to improve comfort. Utilizing twenty-five paid volunteer

⁵³T. A. Pasto and P. Kivisto, "Group Differences in Color Choice and Rejection," Journal of Clinical Psychology, 12: 379-381 (October, 1956).

⁵⁴P. C. Berry, "Effect of Color Illumination Upon Perceived Temperature," Journal of Applied Psychology, 45: 248-250 (August, 1961).

adults, high school graduates, in a controlled situation involving an auto trainer as a guise, Berry found that subjects did not show any change in the levels of heat they would tolerate as a function of the colors of illumination, and that the subjects nevertheless persisted in the conventional belief that green and blue were "cool" colors when asked to rank the colors they had experienced.

Three doctoral dissertations were located which dealt with the color environment. As in the case of the two psychological experiments, these studies also fell in the latter part of the time period of this investigation. In a doctoral dissertation at New York University in 1962, Morris J. Rudner⁵⁵ studied color and student achievement by means of classrooms that were painted at mid-year. Rudner utilized six elementary school classrooms and eight secondary school classrooms and had sufficient prior data regarding the use of the rooms. In a statistical analysis, he concluded that in only one of the fourteen tested classrooms was color a significant factor in student achievement, within the hues, values and intensities of colors used in his experiment. He found that paint companies kept no records of paint sales to schools. At the University of Tennessee, also in 1962, in a historical type of research on the effects and importance of color on human beings and appropriate school environment, Bettye U.

⁵⁵Morris J. Rudner, "A Study of the Effect of Classroom Color on Student Achievement," (unpublished Doctor's thesis, New York University, 1962). Dissertation Abstracts, 23: 1989-1990, 1962.

Johnson⁵⁶ compiled a list of eight factors and two implications that influence color choices for the various school-house areas. Johnson indicated that the prime factor in color choice should be the provision of the appropriate learning environment to enhance the mental, physical and emotional well-being of the occupants. Further, the selection of colors should fit the individual school and its unique features.

Visual Environment. In a review of research to determine the results of efforts to produce good classroom lighting, Ben M. Harris,⁵⁷ writing in 1955, summarized the literature in problem areas or "misconceptions." He defined two basic problems of that time: (1) failure of the fields of education and illuminating engineering to pool their talents to push existing lighting developments into new functional designs and (2) reverence for combining artificial and daylight and too few educational specifications for lighting needs that discourage departure from traditional methods to test designs possibly more functional.

In 1962, at the University of Tennessee, William T. Acuff⁵⁸ attempted to analyze and appraise the visual environment in the

⁵⁶Bettye U. Johnson, "A Study of Color in the Classroom Environment," (unpublished Doctor's thesis, The University of Tennessee, 1962). Dissertation Abstracts, 24: 1903, 1963.

⁵⁷Ben M. Harris, "Are Modern Classrooms Lighted for Better Learning?," American School Board Journal, 131: 49+50- (September, 1955).

⁵⁸William T. Acuff, "A Study of the Visual Environment in Selected Classrooms," (unpublished Doctor's thesis, The University of Tennessee, 1962). Dissertation Abstracts, 23: 3191, 1963.

classrooms of selected schools. He surveyed thirty classrooms in ten schools. By means of library research plus the visual conditions from thirty surveyed classrooms, Acuff concluded that for many measurements taken (levels of illumination, surface brightness relationships, etc.) a majority of the classrooms did not meet established standards.

Writing in Research Report 8, William M. Pena,⁵⁹ a member of the architectural firm of Caudill, Rowlett, Scott and Associates, described the use of the model testing method to take the guesswork out of lighting techniques. By testing a model with the equipment at the Texas Engineering Experimental Station, it was determined that certain fenestration problems could be solved without the use of skylighting. The experiment indicated that model testing of proposed buildings for natural lighting does work. The results from the model testing were later compared with the actual constructed building.

The Education Index disclosed three school lighting research reports in illuminating engineering. All three were during the early part of the ten-year period under consideration--1956.

R. F. Hammel and L. E. Johnson⁶⁰ reported an attempt to examine the roles of daylight and manufactured light. Four classrooms, similar to those used in the Upper Mississippi Valley and similar to each other, were used. Costs were amortized and lighting measured by mechanical means. The

⁵⁹William M. Pena, "Predetermination of Natural Illumination by the Model Testing Method; Research Report 8," American School and University, 1956: 433-436.

⁶⁰R. F. Hammel and L. E. Johnson, "Manufactured Light vs. Daylight for School rooms," Illuminating Engineering, 51: 493-503 (July, 1956).

results indicated that basic utilitarian light can best be supplied by manufactured light while daylight can function best in providing variation and change in the visual picture. J. R. Williams,⁶¹ of the Arizona Public Service Corporation, reported a study to determine how much daylight illumination was provided with fenestration in a sunny part of the country. Four post-World War II classrooms in separate locales in the Salt River Valley area of Arizona were utilized. Foot-candle levels were measured by student teams with light meters in nine room locations every hour classes were in session on forty-five school days. Readings totalled 15,000. The results were averaged and it was concluded that the use of natural light for illumination purposes in classrooms had not been subjected to the precise control that is typical of artificial illumination. E. M. Linforth,⁶² working under the auspices of the Rohm and Haas Company, reported an experiment on the use of louvered wall panels of transparent acrylic plastic sheet applied neither outside nor inside but as the window itself to control sunlight and heat. Using a one-half scale adjustable and rotatable test building with measured constant reflectancies of floor, wall and ceiling, it was determined that forty-five degree louvers were not appropriate for control of daylight in classrooms. It was further determined

⁶¹J. R. Williams, "Measurements in Daylighted Classrooms in Arizona," Illuminating Engineering, 51: 633-634 (September, 1956).

⁶²E. M. Linforth, "Acrylic Louver Wall Panels for Classroom Daylighting," Illuminating Engineering, 51: 231-238 (March, 1956).

that twenty degree louver panels would provide excellent visual environment. Extreme variation as the sun moved across the sky was reduced and brightness balance was maintained.

In a research report that appeared between revisions of the Illuminating Engineering Society recommendations on schoolhouse lighting, C. L. Crouch⁶³ reviewed the research on brightness contrast. After reviewing the literature to establish a basis for recommendations on schoolhouse lighting, Crouch determined that the three aspects of visual environment that had to be illuminated and refined by research were the proper ratios for brightness contrast, the need to shield all light sources, and methods and materials to minimize glare. It is only through reviews of available literature in the manner of C. L. Crouch that the reader of periodical literature is likely to find out about such otherwise well-known reports as these of Dr. H. Richard Blackwell at the University of Michigan.

General Environment. Because of the several environmental factors resulting from the windowless classroom, this topic has been placed under a general environmental classification rather than with the preceding environmental studies. In spite of the fact that much has been written and said about windowless classrooms, only one item of research was

⁶³C. L. Crouch, "Research Establishes Proper Ratios for Brightness Contrast, Need to Shield All Light Sources, and Methods and Materials to Minimize Glare," Nation's Schools, 66: 79-83 (September, 1960).

located, and that in the Dissertation Abstracts rather than in the general periodical literature. Other known experiments have been conducted.

James A. Chambers,⁶⁴ in a dissertation titled "A Study of Attitudes and Feelings Toward Windowless Classrooms" in 1963 at the University of Tennessee, attempted to analyze reactions of students and teachers towards windowless classrooms. His study utilized elementary students in Artesia, New Mexico, secondary students and teachers in Roswell, New Mexico, and undergraduate and graduate students at the University of Tennessee. By means of reaction sheets, Chambers concluded that windowless classrooms were accepted by 91 per cent of the students and teachers in Roswell and Artesia. The most favorable features indicated in Roswell and Artesia were the lack of outside distraction, optimum temperature, and ease of concentration. Major objections included the inability to see outside and lack of a knowledge of weather conditions. At the University of Tennessee there was little "first reaction" against windowless classrooms or objection to them.

One dissertation was located which dealt with the effect of the school plant on the personality of children. In a different type of study, Seymour Gang⁶⁵ studied the effect that

⁶⁴James A. Chambers, "A Study of Attitudes and Feelings Toward Windowless Classrooms," (unpublished Doctor's thesis, The University of Tennessee, 1963). Dissertation Abstracts, 24: 4498, 1963.

⁶⁵Seymour Gang, "Influence of School Plant Upon Personality Ratings of Elementary School Children in the New York City Public School System," (unpublished Doctor's thesis, New York University, 1961). Dissertation Abstracts, 23: 493, 1962.

moving into a new building from an old obsolete building had on Puerto Rican children in New York. Utilizing a statistical analysis and a control group, Gang found a significant difference in favor of the Puerto Rican pupils in the group which changed schools. At the sixth grade level, a marked upward change occurred in the average I.Q. of Puerto Rican girls.

Multipurpose Rooms. Although the multipurpose room has been subjected to much discussion over the past ten-year period, only two research references were located on this topic. Both were in the dissertation classification.

In 1957 at Stanford University, Stanley D. McDougall⁶⁶ did a survey on the use and function of multipurpose rooms. Utilizing a questionnaire sent to teachers, principals and community leaders in Santa Clara County, California, McDougall established a calendar of use and analyzed the questionnaires to conclude that multipurpose rooms were being used for the same range of purposes that educators had recommended. Some dissatisfaction was registered in his findings but most indicated the multipurpose room was meeting the needs of the school. In another California study of multipurpose rooms, Francis B. Martin⁶⁷ compared a survey of the uses of multi-

⁶⁶Stanley D. McDougall, "The Use and Functions of Multipurpose Rooms in Santa Clara County, California," (unpublished Doctor's thesis, Stanford University, 1957). Dissertation Abstracts, 17: 1500-1501, 1957.

⁶⁷Francis B. Martin, "Multi-Purpose Units in the Elementary Schools: Appropriate Activities and Required Facilities," (unpublished Doctor's thesis, University of Southern California, 1960). Dissertation Abstracts, 21: 1440-1441, 1960.

purpose rooms with judgments by a selected jury on the topic. Martin supplied a list of activities and facilities for the users and an augmented list for the jury's approval or disapproval. He found that multipurpose unit to be a desirable and integral part of most schools. He also found that local specifications for the multipurpose room were necessary.

Science Facilities. In a study in the Science Teacher, T. W. Munch⁶⁸ sought to determine the effectiveness of science facilities constructed for grades seven through twelve between 1953 and 1958. Utilizing a questionnaire distributed nationally, he received 251 returns of which 234 were usable. By means of simple tabulation, Munch concluded that more teachers who use science facilities need to be included in the planning of these facilities, that the trend to multipurpose science facilities was apparent in 1958, that the number of rooms was adequate for new students taking science, that storage and preparation areas were inadequate, and that specific weaknesses were noted and some unique facilities were indicated.

Social Studies Facilities. In another study of specific facilities, Glenn F. Ovard,⁶⁹ in a doctoral dissertation at Stanford University in 1959, focused his attention on educational specifications for secondary social studies facilities. Utilizing

⁶⁸T. W. Munch, "Secondary School Science Facilities: Recent Construction--How Effective?," Science Teacher, 25: 398-400+; (November, 1958).

⁶⁹Glen F. Ovard, "Planning Social Studies Facilities for the Secondary Schools," (unpublished Doctor's thesis, Stanford University, 1959). Dissertation Abstracts, 19: 2833-2834, 1959.

the jury technique, visitation and interviews, Ovard established a set of fourteen positive statements called specifications.

Large and Small Group Instruction. Although facilities for large and small group instruction have been largely of recent origin, a 1963 dissertation dealing with this topic was disclosed. Otto Roemmich,⁷⁰ working at the University of Southern California, focused his attention on the evaluation of school plant facilities which had been constructed or which were being planned for large group instruction. Using the survey technique, Roemmich examined and evaluated facilities for large group instruction in high schools and junior colleges in California and attempted to develop therefrom a set of desirable procedures, specifications, and practices to be followed in planning, designing, and utilizing such facilities.

Guidance Facilities. One study, a doctoral dissertation, was located in the area of guidance facilities. Kenneth H. Parker⁷¹ focused his attention on the location of guidance facilities. By means of mailable materials and statistical analysis of the results of the questionnaires, Parker concluded

⁷⁰Otto Roemmich, "Planning, Design, and Use of Large Group Instruction Units," (unpublished Doctor's thesis, University of Southern California, 1963). Dissertation Abstracts, 24: 3612-3613, 1964.

⁷¹Kenneth H. Parker, "Relating Guidance Philosophy to Function: A Study of the Location of Guidance Facilities Within the School Plant," (unpublished Doctor's thesis, Michigan State University, 1956). Dissertation Abstracts, 17: 798, 1957.

that plans for the location could be categorized as "authoritative" or "permissive." He found that the present locations fell into one of the two categories and that two-thirds of both principals and guidance men were dissatisfied with present physical facilities for guidance. He cautioned that careful, cooperative planning was necessary before locating guidance facilities in new secondary construction.

Central Office Facilities. Two doctoral dissertations dealing with central office facilities were located. The earlier of the two, 1960, by Norman C. Richardson,⁷² dealt with educational specifications. Richardson carried out a survey of the related literature and visited twenty-two administrative offices in three states. His study supported the assumptions that a lack of proper educational planning, of involvement of building personnel in the planning process, and of written educational specifications were "prime reasons" for administrative building inadequacies. Specific shortcomings were listed and recommendations were made. In a doctoral dissertation at Ohio State University in 1961, Leonard Chaffee⁷³ worked out a study on the location of the superintendent's office. By means of survey, 82 school districts and 410

⁷²Norman C. Richardson, "Planning Central Office Facilities for Local School Districts," (unpublished Doctor's thesis, Stanford University, 1960). Dissertation Abstracts, 21: 2562-2563, 1961.

⁷³Leonard Chaffee, "The Influence of the Location of the Superintendent's Office on the Educational Administration Complex," (unpublished Doctor's thesis, Ohio State University, 1961). Dissertation Abstracts, 22: 3482, 1962.

school personnel were queried. Chaffee utilized the questionnaire and the jury system and subjected his findings to a weighted index and appropriate statistical measures. He concluded that the location of the superintendent's office in a building used for instructional purposes had a negative influence on the relationship that existed within the administrative complex of the school district. Chaffee recommended a separate facility for the superintendent and a further study of superintendent-principal relationships.

Audio-Visual Considerations. Of the published material on the Rensselaer Polytechnic Institute's audio-visual classroom, one report of research magnitude was located in the educational literature. This report was from the Audiovisual Instruction,⁷⁴ prepared by the staff and reported in "New Spaces for Learning." Although the results of the Rensselaer classroom were inconclusive at the writing of the article, sufficient preliminary findings of the Architectural Research Center's experimental classroom were presented in the article.

Deac Martin⁷⁵ reported a study accomplished in 1956 by the Indiana Audio-visual Research Center on audio-visual lighting. The study focused on conditions that affect audio-visual teaching and was designed to develop suitable controls for audio-visual lighting. By mechanical means, the lighting in the audio-

⁷⁴Audiovisual Instruction, "From Research to Mock-up in Three Years," Audiovisual Instruction, 8: 206-207 (April, 1963).

⁷⁵Deac Martin, "Indiana's Audio-Visual Research Center," American School Board Journal, 133: 45+ (December, 1956).

visual room was controlled and evaluated. It was determined that the most satisfactory minimum lighting balance appeared to be about seven-tenths of a foot-candle, although it was possible to read and take notes down to three-tenths of a foot-candle. The experiment was carried on at the Ben Davis Elementary School in Indianapolis so that actual classroom conditions would be present.

Demountable Construction. One item on demountable construction was located which bore relationship to this study. The primary relationship between standardized construction and the subject of this study is the increased flexibility which is claimed for some of this type of construction. The research was reported by Sun Chien Hsiao⁷⁶ in American School and University in 1957. The focus of the study was a standardized, low cost school construction by application of the Unistrut system to schools. It was designed for both flexibility and economy and was experimental in nature. A Unistrut school construction model was erected and tested, a variety of surfacing materials for the building were tested, and the Hoover school was built as a prototype model.

⁷⁶Sun Chien Hsiao, "Demountable, Low Cost Elementary School," American School and University, 1957: 157-162.

CHAPTER V

REVIEW OF THE PERIODICAL LITERATURE--ARCHITECTURE

Of the total of 2,188 items of periodical literature that were reviewed in the course of this study, a total of fifteen articles were discriminated as research from among the architectural literature. This number includes three articles that were located in both the Education Index and the Art Index; they are treated in this chapter because they were published in an architectural professional journal.

Exclusive of those articles that were classified as graphic illustrations of completed schools and collections or design competitions of completed schools, 198 articles were located in the architectural periodical literature. This was only about one-fourth of the total of 873 located in the same manner among the educational periodicals.

Major Sources Indexed

The use of the Art Index provided access to the four major professional journals in the field of architecture--Architectural Record, Architectural Forum, The Journal of the American Institute of Architects, and Progressive Architecture. In contrast to the minor sources among the educational periodicals, of which there were over fifty found through the Education Index, the elimination of all architectural sources that published less than three school plant articles for the ten-year

period under consideration reduced the number of minor sources in architecture to two--Arts and Architecture and Architect and Engineer. Observation of footnote references in the articles scanned indicated to the investigator for this study that some minor references of a specialized nature, especially in the technical and product-promotion aspects of engineering, may not have been located through the use of the Art Index. No practical means of rectifying this problem was found.¹

In general, the minor sources that were referenced and checked were not a significant source of research. The references that were eliminated as presenting less than three references to school plant planning over the ten-year period were spot checked and found to be fringe articles of dubious value to this study or, not infrequently, they were misreferenced by the indices or had been mistakenly included by the investigator of this study in the initial screening because of the ambiguity of titles. The topic "Environment," for example, could apply to the physical surroundings or to the emotional atmosphere created by the teacher, and the distinction could only be made by scanning the reference or eliminating the periodical from consideration by means of a cut-off as was done by requiring more than two articles during the ten-year span of the study.

¹For example, the best research report of the Shaker Heights school carpet experiment was in Noise Control, a periodical not indexed nor widely available.

Nature of the Literature

The architectural periodical literature contained a higher percentage of illustrative articles and collections of design award articles in proportion to the total number of articles than did the education references. This was not surprising in light of the emphasis placed on design ideas and on the dissemination or exchange of such ideas by architects and related technicians. Pictures, drawings, graphic illustrations, and diagrams are a much more necessary and vital part of the architectural profession and a much more practical and commonly used method of exchanging ideas. In some areas of design, these methods are the only means of communicating ideas.

The difference between the number of articles located in architectural sources and those located in educational sources is not so great when viewed in light of the fact that the educational sources were augmented by the Dissertation Abstracts. Without this singularly significant source, the ratio would be about two to one, with neither educators nor architects reporting any significant volume of identifiable research by means of the professional journals. Unfortunately, there is no publication similar to the Dissertation Abstracts to augment the periodical research in architecture. The Ph.D. in architecture is extremely rare, and the researcher in this profession often achieves his position by means of special training at the fifth year level and by means of special research interest and selection of his graduate design project. There is

no known comprehensive listing of design projects published. Only one article in the periodical literature scanned stated that the author drew his material from his design project in a school of architecture.

Problems of Research

As was true when architects and engineers authored articles for educator-oriented periodicals, they also frequently presented charts, graphs and other technical materials in their own periodical literature in such a way that the appearance of the common tools of the trade took on the trappings of research findings. A technical "how to" article accompanied by several charts and graphs containing the necessary information for design or engineering calculations, not so identified, presents an impressive picture, although the trained reader might recognize the materials and content at first glance.

Again, as was characteristic of the educational materials, there were many excellent and valuable articles which were not research. One excellent source was the architect conference, a widely used method of disseminating new techniques, ideas, and findings. However, such conferences were frequently reported as edited dialogue of the participants, starting without much introduction and ending without summary or conclusion.

Similarly, many learned and informative articles began immediately on the core of the subject matter and ended without any summation or conclusion or, for that matter, without

any type of recognizable ending--they simply stopped. Regardless of other merits, the reader is forced to conclude that they were written only to inform and were not research even though some resemblance to research was recognizable in the core of subject matter presented.

Review of the Research Located

The following articles were discriminated as research by the instrumentation of this study and have been classified in the categories indicated.

Sites. One study which dealt with the school site was located. J. R. Holmes and C. W. Chance² sought to provide guidance for planners who had to fix the permanent orientation of school buildings. This study presented information on a technique for checking the shielding of glass windows from unwanted sunshine. The researchers utilized about fifty Texas temporary school buildings facing all points of the compass. Using the Olgyay method, they mechanically measured the light in the temporary school buildings. For the purposes of the report, they presented only two comparisons, one very poor and one very good. The results, then, showed that by selecting proper orientation for this temporary type of building, school officials could obtain the efficiency rating of eighty-seven per cent instead of the poor rating of only twenty-nine per

²James R. Holmes and Clayton W. Chance, "School Building Orientation," American Institute of Architects Journal, 34: 69-72 (August, 1960).

cent. The difference in the two ratings represented a large savings from unwanted heat. The authors found that there was a direct correlation between good orientation and lower temperatures. In a preliminary study of the building under similar conditions except for orientation, the authors reported temperature differences up to 13°F.

Standardized Construction and Modular Planning. One of the most highly publicized research activities in the area of school architecture has been the School Construction Systems Development, otherwise referred to as SCSD. While many interim reports and other information on the project have been produced, only one has been presented in sufficient detail to be detected by the instrument as a report of research. This report was located in the Architectural Record and was titled "School Component Designs, Costs Revealed."³ Although cost oriented, the project encompassed thermal, sonic, and flexible aspects of the program relating the project to the learning process in a direct manner. The focus of this study was to develop a component system for school construction. As reported, the technique was model testing and bidding. At the time reported, the nature of the findings were primarily descriptive of the features of the component parts and the costs that were bid for installing them.

General Planning and Design Factors. Two articles were

³Architectural Record, "School Component Designs, Costs Revealed," Architectural Record, 135: 166-172 (February, 1964).

reported that dealt with general design. The first article was by T. H. Creighton⁴ and was titled "Most Like 'em Modern." Creighton reported an appraisal of new elementary schools in New Orleans, conducted by the New Orleans School authorities. Although fifteen schools were studied, only four of them were included in this report. Utilizing the questionnaire technique and reporting by percentage, the investigator ascertained that seventy-nine per cent of the teachers preferred their new school to the traditional school they had taught in, forty-one per cent of the teachers had no complaints, and fifty-six per cent found serious drawbacks. All of the features of the four new schools were not uniformly criticized by the teachers. In an article published by Architectural Forum, H. D. Hauf, W. F. Koppes and A. C. Green⁵ reported on research sponsored by the State Education Department, the University of the State of New York. The research was accomplished by the authors at the School of Architecture, Rensselaer Polytechnic Institute at Troy, New York. While built around the theme of economy, the report discussed the value of many features of school construction which apply to the learning process. The report treated and evaluated the following topics:

⁴Thomas H. Creighton, "Most Like 'em Modern," Progressive Architecture, 39: 278 (March, 1958).

⁵Harold D. Hauf, Wayne F. Koppes and Alan C. Green, "Economy in School Design," Architectural Forum, 125: 220-224 (May, 1959).

(1) single story vs. multi-story buildings, (2) campus plan vs. compact plan, (3) the use of repetitive units in planning, (4) the space module concept, (5) natural vs. artificial lighting, (6) perimeter length of exterior walls, (7) exterior walls, (8) interior partitions, (9) cost of casework, (10) thermal insulation, (11) prefabrication, (12) maintenance costs, (13) mechanical equipment, (14) heating and ventilating, (15) cost of control equipment, (16) plumbing systems, (17) economy measures: regulations and requirements, (18) state school design requirements, and (19) fire insurance rates.

The authors reached the following general conclusions. Some of the economy ideas offered little or no predictable savings. Some offered economies of small overall significance. Others were certain to reduce costs but only to an indeterminate extent. It appeared to the researchers that the source of greatest potential economies in relation to design would result from (1) wider use of modular planning, repetitive units, and off-site fabrication, (2) recognition of the importance of maintenance costs and consistent efforts to reduce them and (3) objective research as to the real needs in schools, aimed at reducing arbitrary but unessential requirements for structure and equipment.

Thermal Environment. The largest category of research reports was that of thermal environment. In an article that was cited in both the Education Index and the Art Index in

1956, Henry Wright⁶ reported experiments on thermal equipment and design in a school available for test purposes. Mechanical equipment was either available or designed to gather the desired readings. The conclusions reached by technical consultant Wright included information that unit ventilators could heat end-on room additions and that blast heating was the simplest and most economical standby. Other factors about thermal comfort were discussed.

Three items on air-conditioning were discriminated as research by the instrument. All three were published in the period since 1961. The first of the three was a report of research by a Senior Editor of Architectural Forum, Jane Jacobs.⁷ Editor Jacobs discussed the report of two schools (one air-conditioned and one not air-conditioned) that were compared in a Florida experiment with building costs and design. Data were gathered both from the costs and by mechanical means. Included in the findings was the fact that compactness of the floor plan saved so much on construction costs that the air-conditioned school cost \$22,496 less than the non-air-conditioned school. It was pointed out that the saving was not possible without the air-conditioning because the extremely compact design of the school would then be intolerable.

⁶Henry Wright, "Thermal Comfort Report," Progressive Architecture, 37: 142-152 (January, 1956). This article was one of three that were located in both the Education Index and the Art Index.

⁷Jane Jacobs, "Trial by Cooling," Architectural Forum, 115: 115-121 (August, 1961).

The results of a conference at the school by eminent school planners produced mixed reactions to many features of the school. There were disagreements among the conferees, but by no means an architect-educator split. Writing in Progressive Architecture in March of 1964, W. J. McGuinness,⁸ in his column entitled "Mechanical Engineering Critique," cited sufficient material from a school air-conditioning study to merit consideration in this investigation. The report expressed current opinions of public school superintendents concerning the acceptance and efficiency of air-conditioning for elementary and secondary schools in the United States. The report compared figures gathered in 1960 with figures gathered in 1963, and included about 300 superintendents. By means of a questionnaire technique, the investigators discovered that the acceptance and use of air-conditioning had increased several times over in the period under consideration. Henry Wright,⁹ probably the most avid advocate of school air-conditioning, writing in the Architectural Record of February 1964, reported a study on air-conditioning and its effects on school design. Wright had completed a survey of two-score architects and educators in seventeen states during the previous year. He utilized a tape recorder in the interviews and structured them as a free exchange of ideas.

⁸William J. McGuinness, "School Air Conditioning," Progressive Architecture, 45: 174 (March, 1964).

⁹Henry Wright, "Air-Conditioning, Architecture and Education," Architectural Record, 135: 146-153 (February, 1964).

In summarizing his findings, Wright found the group generally against windowless "boxes" to save money for air-conditioning, in favor of interior courts, and willing to acknowledge that educational requirements were changing and thus demanded changes in architecture. Further findings included pro and con feelings on the campus plan with outside passages and agreement that flexible spaces are important. In general, however, Wright found no general overall trends.

In an earlier report in his column in Progressive Architecture, W. J. McGuinness,¹⁰ of the Pratt Institute, reported a study dealing with the effects of insulation on the cost and quality of numerous roofs and walls. His digest indicated that the original study surveyed seven roof types and seven wall types. The study was conducted by using fourteen specialists on a panel, by inspecting schools, and by interviewing board members. In addition to the economic cost finding that increase in first expense through the use of any insulation is well repaid in savings over a thirty year period, the study also found that condensation on ceilings and comfort were important matters in considering the use of insulation.

Visual Environment. Two studies dealt with the visual environment. The first of these was reported in December of 1955, very early in the time span covered by this investigation.

¹⁰William J. McGuinness, "Mechanical Engineering Critique," Progressive Architecture, 39: 9+ (April, 1958).

In this study, W. Allphin¹¹ evaluated the daylight received by typical desks in six New England schools. The study was experimental in nature and investigated six schools in north-eastern Massachusetts and southern New Hampshire. The data were collected by mechanical measurement. Every hour the lights were turned off and students read a photo meter for a total of more than 5,000 readings. The readings were charted and plotted on a diagram. The investigator concluded that it was not possible to depend on outside light sources to eliminate artificial lighting. The study was found to be applicable to the middle New England and darker latitudes. Efforts to reduce costs by dividing the light load between artificial and natural sources were not recommended.

F. K. Sampson¹² reported sufficiently on the work of Doctor H. Richard Blackwell to merit inclusion in this study. Writing in the American Institute of Architects Journal in October of 1960, Sampson reported on Blackwell's effort to determine how the eye sees a standard test object, and then to relate this laboratory data to field conditions of "moving" eyes and differing details of various school tasks. Blackwell's research was experimental in nature and his data were collected by optical and mechanical apparatus. His findings, which have

¹¹Willard Allphin, "Daylight Measurements: Six New England Schools," Progressive Architecture, 36: 110-114 (December, 1955). This article was one of three that were located in both the Education Index and the Art Index.

¹²Foster K. Sampson, "Effects of Teaching Equipment and Supplies on Visual Environment," American Institute of Architects Journal, 34: 86-88 (October, 1960).

been evaluated as quite important by some, indicated that tasks having good contrast require low levels of illumination and that those having poor contrast need much more than a proportional increase in illumination. Blackwell's findings further indicated that lighting specifications and surrounding surfaces provide a basis for determining proper levels of illumination for classrooms.

General Planning and Design Factors. In a staff article in January of 1956, Progressive Architecture¹³ reported more generally on the experiments conducted at the Washburn school previously mentioned by Henry Wright in an article on thermal environment at that school. The purpose of the study was to effect economy with no impairment of teaching efficiency, weighing and isolating factors that contribute an economical school-building solution--in classroom planning, in structure and use of material, in fenestration, and in equipment. Washburn school consisted of one original building and two additions, one addition being a side-on addition and the other an end-on addition. It was the finding of the study that the end-on addition was cheaper and more satisfactory, more flexible.

Physical Education Facilities. In a 1962 Architectural Record article, Nicholas L. Engelhardt, Jr.¹⁴ reported a

¹³Progressive Architecture, "Auburn, Washburn School Problem--Super Test School," Progressive Architecture, 37: 137-141 (January, 1956). This article was one of three that were located in both the Education Index and the Art Index.

¹⁴N. L. Engelhardt, Jr., "Search for a Solution: Physical Education," Architectural Record, 131: 138-145 (February, 1962).

"Search for a Solution: Physical Education." Engelhardt focused on two questions. Is youth receiving sufficient physical education to prepare it for its responsibility? Is the cost of physical education facilities in proper proportion to its educational value? Engelhardt surveyed the educational facilities of eight schools. He charted the physical education areas and made diagrams of the physical education sections of the buildings. After reviewing recommended physical education facility dimensions and his data, Engelhardt concluded that, because of the wide variation in the point of view toward physical education facilities in various communities, there was no standard solution to the problem but that the matter needed further study.

Large and Small Group Instruction Areas. One of the basic problems of research in architecture is the very high cost of building an experimental structure. This was done in a project at the school of architecture at Rensselaer Polytechnic Institute and was reported by Alan C. Green¹⁵ in an article titled "New Spaces for Learning" in the American Institute of Architects Journal. The test classroom was utilized as a college facility, but the experimentation with multimedia teaching facilities has a more universal application. The classroom was built as an experiment and was evaluated by means of observation. In the experimental phase of the research, the construction of

¹⁵Alan C. Green, "New Spaces for Learning," American Institute of Architects Journal, 38: 45-48 (September, 1962).

the room was such that walls and other features could be changed around to try different solutions to problems. At the time of reporting, the findings were favorable but incomplete. The classroom was reported as a successful blending of design with developments in aids and media.

Demountable Facilities. Another report of the demountable space frame of the Unistrut structural system was presented in a July 1955 edition of Architectural Forum.¹⁶ This early experiment with standardized structures was designed to be an economy move but also developed into the area of flexible learning facilities. An experimental structure, which was designed under the direction of C. Theodore Larson, professor of architecture at Michigan, was erected. The frame was subject to mechanical testing and many of the other features of an educational structure were tested in the pilot building. The research resulted in a building design that provided for rapid erection, demountability, putative economy, and easy maintenance as well as a well-designed classroom cluster with a single core for facilities.

¹⁶Architectural Forum, "Demountable Space Frame," Architectural Forum. 103: 140-147 (July, 1955).

CHAPTER VI

FINDINGS OF THE STUDY

In the previous two chapters, attention was centered on the two bodies of professional literature. Chapter Four was devoted to a discussion of the periodical literature in education and a summary of the research articles. The same procedure was followed with the architectural literature in Chapter Five. It is the purpose of Chapter Six to bring the research articles of the two separate fields together and to present an evaluation. In addition, conclusions, observations, and recommendations are presented.

Synthesis of the Research

One of the purposes of this study was to bring together the literature in the two fields in such a form that it might be evaluated. To accomplish this, the research articles were presented so that they could be observed in their relationship with one another and so that the strengths, weaknesses and problems of the research associated with the periodical literature could be analyzed.

Development of the System of Classification. An early review of the nature of the research in school plant planning indicated either that the periodical literature was a rather meager source of school plant research or that there was only a small amount of school plant research. Assuming either or

both possible problems, it was apparent that there probably was not sufficient available research in school plant planning to develop a satisfactory system of classification. It was then deemed best to initiate the classification scheme through the use of the general total body of the school plant literature and from there to refine and condense the classification by adapting it to the research located.

The first step was to separate out the "open house" and design award collection type of article. This process left 1,071 articles from the general periodical literature and 154 from the American Doctoral Dissertations. The 1,225 reference cards representing these articles were sorted and resorted until a pattern began to develop. The piles of cards were combined or divided until a natural breakdown was established. It was assumed that the general literature would represent all of the important areas--that it would present the areas of interest, the problem areas, and the areas of general plant planning concern. Since the bulk of the literature was collected under the general topic of school plant planning, the resultant system of classification was much broader than the topic of this investigation. This broad system of classification was later used to present the classified references to periodical literature--all of the articles uncovered by this investigation--in an appendix to this study.

The classification scheme was inspected and it was determined that the arrangement could easily be modified for classifying the research located by this investigation.

In order to focus more precisely on those items of research that related directly to the learning process, both the first and the last parts were eliminated from the initial outline of classification. (The classified guide to periodical school plant literature, presented in an appendix to this study, follows this outline.) In addition, some of the single items within the remaining portion of the outline were eliminated or combined with other items. The classification system was further modified by inspection after the research literature had been sorted according to it.

The final scheme kept the same numbering system as the initial, comprehensive outline. The categories eliminated at either end of the outline were removed with the knowledge that some of the articles to be ordered by the outline might be directed toward, for example, economies or cost comparisons and still relate directly to the learning process. It was determined by a trial sort that articles that would normally be sorted into the general, financing, construction, evaluating, or miscellaneous categories could also be included in the organizing and planning categories if they bore "a relationship to the quality of the environment which is was provided for the learning process."

The resultant classification system was as follows:

4000 ORGANIZING FOR PLANNING

4010 Planning Procedures

4020 Community Involvement

4030-4040 Architect and Consultant Services

5000 PLANNING NEW SCHOOL PLANTS

5010 Sites

5020 Educational Specifications

5030 Building Layout

5040 Standardized Construction and Modular
Planning

5050 Flexibility

5060 Size and Capacity

5080 General Planning and Design Factors

5090 Environmental Considerations

5091 Spatial

5092 Thermal

5093 Sonic

5094 Esthetic

5095 Visual

5096 General Environment

5100-5110 Special Purpose Planning--Instruction

5101 Instructional Materials Area and
Library

5102-5113 Special Purpose Classrooms

5114 Large and Small Group Instruction
and Team Teaching5120 Special Purpose Planning--Auxiliary to
Instruction

5121 Auditorium and Theater

5122 Cafeteria and Kitchen

5123 Guidance

5124 Central Office

CHART I

This chart contains all of the references found in the two previous Chapters to which have been added 14 references from the AIA Research Survey and the non-abstracted references from American Doctoral Dissertations which were judged by title to be applicable. In some instances the categories have been condensed and some references applicable to more than one category have been shifted if the original category was eliminated.

KEY: (D) Dissertation (Not Abstracted); (P) Periodical Article
 (DA) Dissertation (Abstracted); (RS) AIA Research Survey

4000 ORGANIZING FOR PLANNING 5000 PLANNING NEW PLANTS

4010 (14 Items) 4020 (0 Items) 4030-4040 (0 Items) 5010 (1 Item)

Planning Procedures Community Involvement Consultant Services Sites

(DA) "Educational Planning for School Plant Construction." Whigham
 (P) "Educational Planning of the School Plant." School Executive
 (P) "Who Does the Educational Planning for your School?" Hummel
 (DA) "Educational Planning Procedures for School Building Construction." Hummel
 (DA) "An Appraisal of Teacher Participation in Secondary School Planning." Lee
 (P) "School Building Orientation." Holmes and Chance.



Planning Procedures, cont.

(DA) "The Development of Guidelines As To the Role of the High School Principal in Planning a Secondary School Building." Larson

(DA) "A Comparative Investigation of the Role Educational Planning Plays in Determining School Plant Design for Elementary and Secondary Schools in the State of Delaware." Hoerner

(DA) "An Analysis of School Plant Planning in Selected Districts in Washington and Certain Other States." Terjeson

(DA) "The Effectiveness of Procedures Used in School Building Programs in Nebraska." Keating

(DA) "Relationships Between the Comprehensiveness of School Plant Planning Procedures and the Quality of Resultant School Plants." Campbell

(P) "Are Double Sessions Students Penalized Academically?" Hanhila

Planning Procedures, cont.

(D) "A Procedure Guide for School Plant Construction for the State of Wyoming." Foreman, Charles M. (56-7)

(D) "A Mathematically Sound Hypothesis for Estimating Future School Enrollments." Di Paola, Peter P. (55-6)

(RS) "The Planning and Design of Facilities to House the Current Trends in Instructional Methods and Techniques." Green & others

5020 (2 Items)
Educational Specifications

5030 (2 Items)
Building Layout

(DA) "The Essential Elements of Educational Specifications for School Plant Facilities." Roaden

(D) "The Schools Within A School Plan." Hodgson, John A. (58-9)

(D) "Educational Specifications for a Proposed New Senior High School Building for Caldwell-West Caldwell, New Jersey." Monez, Thornton B. (58-9)

(D) "The Schools Within A School: A Study of Selected Secondary High Schools That Embody This Plan." York, William J. (58-9)

5040 (4 Items)
Std. Construction & Modular Planning

(P) "School Component Designs, Costs Revealed." Architectural Record

5050 (4 Items)
Flexibility

(P) "Demountable Space Frame." Architectural Forum

(RS) "Development of Standard and Correlated Dimensions of Material Components: School Construction." Turner

(P) "Demountable, Low Cost Elementary School." Hsiao

<u>Std. Const., cont.</u>	<u>Flexibility, cont.</u>
(RS) "School Construc- tion: Systems Devel- opment." Ward	(RS) "Attwood System of Demountable Space-Frame Building Construction." Larson
(RS) "A Structural System for Prefabri- cated School Build- ings." Goody and Schiffer	(RS) "School Building Types." Seymour
5060 (17 Items)	5092 (10 Items)
<u>Size and Capacity</u>	<u>Spatial Environment</u>
(DA) "A Technique for Determining the Opera- ting Capacity of Sec- ondary School Build- ings." Conrad	(P) "Thermal Comfort Report." Wright
(DA) "Space Alloca- tion, Pupil Capacity and Unit Cost of Twenty Selected Public Secondary School Build- ings Constructed in Indiana During 1948- 1958." Fuller	(P) "Trial by Cooling." Jacobs
5080 (24 Items)	
<u>General Planning and Design Factors</u>	<u>Thermal Environment</u>
(P) "Random Falls Idea: An Educational Program and Plant for Youth and Community Growth." Shaw & Reid	
(P) "New High School." Smith & Shaw	

Size & Capacity, cont.

(DA) "A Comparison of Four Formulae for Rating Pupil Capacity in School Buildings in Selected Secondary Schools in the State of Pennsylvania." Gatski

(DA) "Scholastic Achievement at Iowa State College Associated with High School Size and Course Pattern." Lathrop

(DA) "An Analysis of the Relationship of Size of Arkansas High Schools and the Achievement of College Bound Seniors." Smith

(DA) "A Study of Size-Cost-Achievement Relationships in Reorganized School Districts of Wisconsin." Bragg

(DA) "An Analysis of the Relationship of Accreditation, Finance and Size of Nebraska High Schools to Scholastic Achievement." Jantze

Gen. Planning, Cont.

(P) "All-Age School."
American School and University

(P) "School Plant Design and the Instructional Program." Kyzar

(DA) "A Comparison of Instructional Practices in Classrooms of Different Design." Kyzar

(DA) "An Analysis of the Impact of Program Change on School Plants." Bergstrom

(DA) "A Survey of Construction Features Found in 325 New Elementary School Buildings." Phillips

Thermal Environment, cont.

(P) "School Air Conditioning." McGuinness

(P) "Air-Conditioning, Architecture and Education." Wright

(P) "Mechanical Engineering Critique." McGuinness

(DA) "A Study of Factors Involved in Establishing a Satisfactory Thermal Environment in the Classroom." Mincy

(DA) "The Effect of Thermal Environment on Learning." Peccolo

Size & Capacity, Cont.

(DA) "Relationship in the Elementary School Between Size, Per Pupil Cost, and the Extent of Educational Opportunity." Teets

(DA) "An Investigation of Certain Factors Influencing the Optimum Size for Elementary School Attendance Units." Basler

(DA) "Elementary School Size Relationships." Leavitt

(DA) "The Relationship of Size and Organizational Type to Certain Factors in Alabama's White Junior High Schools." Crocker

(P) "Is There An Optimum Size High School?" Livingston

Gen. Planning, cont.

(DA) "Desirable and Understandable Building Features and Spaces in Selected Elementary Schools." Bohn

(P) "What Schoolmen Want In Buildings." Nation's Schools

(P) "Most Like 'em Modern." Creighton

(P) "Space Allocation in Washington High Schools." Hayes

(DA) "A Study of Space Utilization and Unit Costs of 75 Elementary School Buildings Constructed in Indiana During 1948-1954." Lucht

Thermal Environment, cont.

(P) "Two Studies on Thermal Environment and Learning." American School Board Journal

(P) "What Does School Air Conditioning Cost?" Wright

(P) "A Definitive Experiment with Air Conditioning." Wright

Size & Capacity, cont.

(DA) "A Study of Optimum Size of Secondary Schools." Smith

(DA) "A Study of the Relationship Between Size and a Number of Qualitative and Quantitative Factors of Education in Four Sizes of Secondary Schools in Iowa." Gray

(P) "What Size High School?" Mayo

(D) "High School Size: Its Relationship to Selected Educational and Cost Factors." Brown, William E. (57-8)

(D) "An Attempt to Determine the Optimum Size of Public Secondary Schools." Menozzi, John C. (59-60)

Gen. Planning, cont.

(RS) "Identification and Evaluation of Potential Economies in Public School Construction." Koppes, Green, & Hauf

(RS) "School Obsolescence and School Financing." Bennet and Others

(P) "Economy in School Design." Hauf, Koppes and Green

(DA) "Space and Cost Allocation for Service, Administrative and Instructional Areas in Selected Elementary and Secondary Schools." Salisbury

(DA) "Pupil Control Factors to be Considered in Planning School Plants for the Grossmont (California) Union High School District." Wenbourne

Gen. Planning, cont.

- (DA) "The Development of Educational Criteria for New Elementary Schools in Chicago." McNicholas
- (DA) "General Factors Related to the Educational Specifications for the Physical Facilities of the Small Twelve-Year School (Grades K-12)." Yulo
- (P) "Panorama of 100 New Schools." Gibbons & Hereford
- (P) "Let's Take a Look at New Schools." Pillard & Gibbons
- (P) "Planning and Operating the Middle School." Educational Executives' Overview
- (D) "A Study of the Problem of the Allocation of Spaces in New High Schools to Meet the Needs of Various Departments." Webber
- (D) "A Study of the Functional Aspects of the Modern School Classroom." Goetschius, Donald G. (56-7).

5093 (2 Items)

Sonic Environment

(P) "School Carpet-- Does It Make Sense?" Nabors

(DA) "A Study of Factors Involved in Establishing a Satisfactory Acoustical Environment in the Classroom." Womack

5094 (4 Items)

Esthetic Environment

(P) "Group Differences in Color Choice and Rejection." Pasto & Kivisto

(P) "Effect of Color Illumination Upon Perceived Temperature." Berry

(DA) "A Study of the Effect of Classroom Color on Student Achievement." Rudner

(DA) "A Study of Color in the Classroom Environment." Johnson

5095 (10 Items)

Visual Environment

(P) "Daylight Measurements: Six New England Schools." Allphin

(P) "Effects of Teaching Equipment and Supplies on Visual Environment." Sampson

(P) "Are Modern Classrooms Lighted for Better Learning?" Harris

(DA) "A Study of the Visual Environment in Selected Classrooms." Acuff

(P) "Predetermination of Natural Illumination by the Model Testing Method: Research Report 8." Pena

5096 (6 Items)

General Environment

(P) "Auburn, Washburn School Problem; Super Test School." Progressive Architecture

(DA) "A Study of Attitudes and Feelings Toward Windowless Classrooms." Chambers

(DA) "Influence of School Plant Upon Personality Ratings of Elementary School Children in the New York City Public School System." Gang

(RS) "Effect of Environment on the Learning Process." Larson and Others

(RS) "Environmental Case-Study: The Effect of Windowless Classrooms on Small School Children." Larson, Fox, and Others

Visual Envir., cont. Gen. Envir., cont.

(P) "Manufactured Light vs Daylight for Schoolrooms." Hammel & Johnson

(RS) "A Study of the Relationship Between the Design of High School Building Design and Student Learning." Myrick & Marx

(P) "Measurements in Daylighted Classrooms in Arizona." Williams

(P) "Acrylic Louver Wall Panels for Classroom Daylighting." Linforth

(P) "Research Establishes Proper Ratios for Brightness Contrast, Need to Shield Light Sources, and Methods and Materials to Minimize Glare." Crouch

(RS) "Development of a Model System for Study of Light and Color in Architecture." Peters, Pollack & Hasenstab

5101 (0 Items)
Instructional Materials Area & Library

5102-5113 (6 Items)
Special Purpose Classrooms

(P) "Search for a Solution: Physical Education."
Engelhardt

(DA) "The Use and Functions of Multipurpose Rooms in Santa Clara County, California."
McDougall

(DA) "Multi-Purpose Units in the Elementary Schools: Appropriate Activities and Required Facilities."
Martin

(P) "Secondary School Facilities: Recent Construction--How Effective?"
Munch

(DA) "Planning Social Studies Facilities for the Secondary Schools."
Ovard

5114 (6 Items) 5121 (0 Items)
Is. & Sm. Group Inst. and Team Teaching Auditorium & Theater

(P) "New Spaces for Learning."
Green

(DA) "Planning, Design, and Use of Large Group Instructional Units."
Roemmich

(P) "From Research to Mock-up in Three Years."
Audiovisual Instruction

(P) "Indiana's Audio-Visual Research Center."
Martin

(RS) "Definition of Appropriate Components for Rear Projection Systems."
Caravaty

<p><u>Special Purpose Classrooms, cont.</u></p> <p>(D) "Planning Facilities for Secondary Art Rooms." Burley</p>	<p><u>Lg. & Sm. Group Inst. and Team Teach., cont.</u></p> <p>(RS) "Development of Detailed Planning Criteria for Group Instructional Facilities Utilizing Aids and Media." Koppes, Green, and Gassman</p>	<p>5122 (0 Items)</p> <p>5123 (1 Item)</p> <p>5124 (2 Items)</p>
<p><u>Cafeteria & Kitchen</u></p> <p>(DA) "Relating Guidance Philosophy to Function: A Study of the Location of Guidance Facilities Within the School Plant." Parker</p>	<p><u>Central Office</u></p> <p>(DA) "Planning Central Office Facilities for Local School Districts." Richardson</p> <p>(DA) "The Influence of the Location of the Superintendent's Office on the Educational Administration Complex." Chaffee</p>	<p><u>Guidance</u></p>

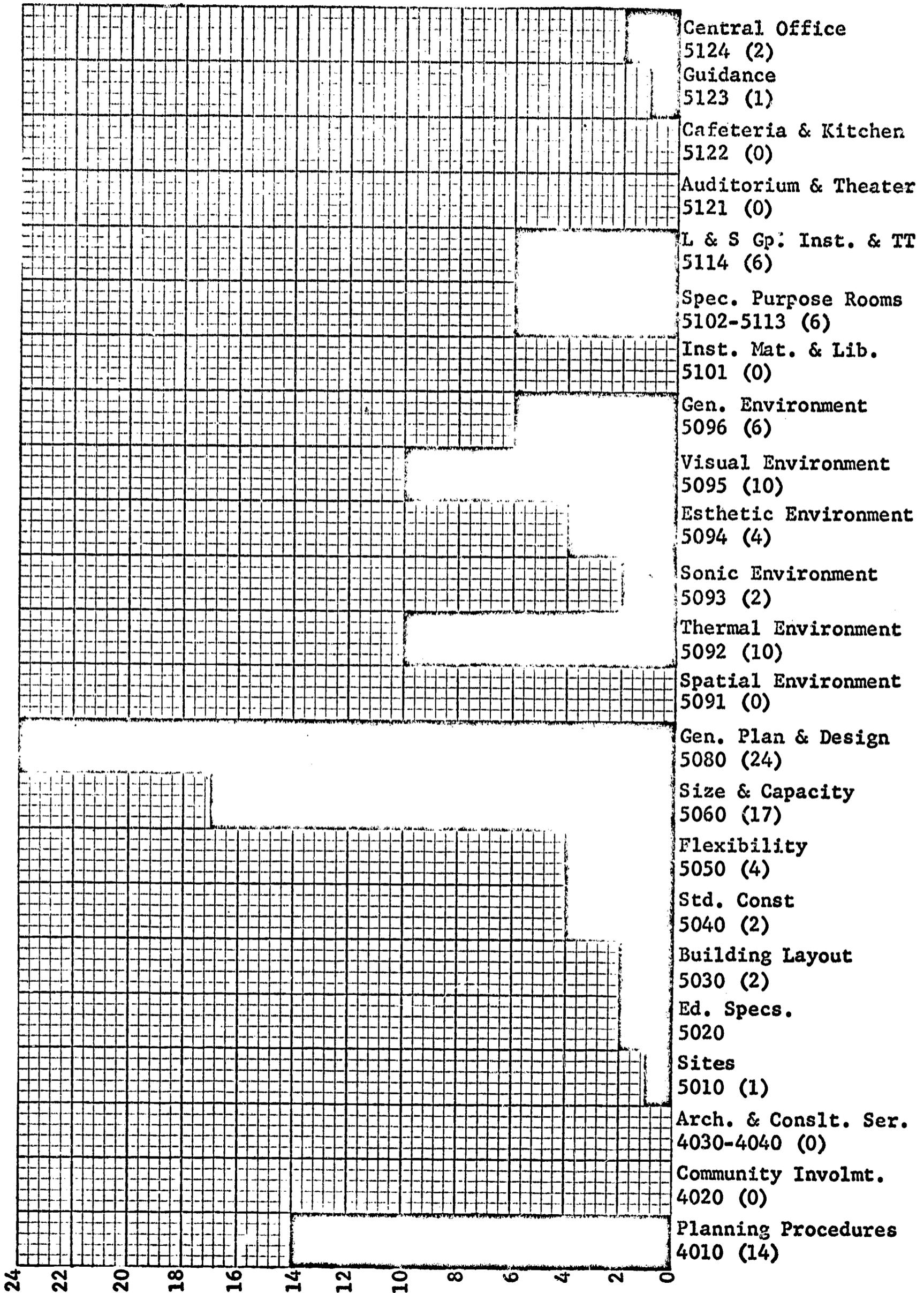


CHART 2. GRAPH OF RESEARCH CATEGORIES

Classifying the Research. Chart One presents the research classified according to the above outline. The chart presents all of the references that were identified as research by the instrument developed for this purpose (described in Chapters Four and Five). The research items for the purpose of this classified presentation were augmented by fourteen references from the AIA Research Survey and by ten non-abstracted references from American Doctoral Dissertations which were judged by title to be applicable. These references could not be included earlier in this study because they lacked sufficiently complete details. However, it is important that they be considered by anyone reviewing the literature and have, for that reason, been included in Chart One.

As presented, the references provide only minimum information because of the limitations of the chart. The source is identified by a key, the title is given in full and, except for the non-abstracted references, the last name of the author is listed. For the dissertations that were abstracted and for the periodicals, the complete citation was footnoted in one of the two previous chapters of this study. For the dissertations not abstracted, the author's full name is given, followed by the academic year, in parenthesis, when the dissertation was reported. Only the title and last name of the researcher(s) were listed for the AIA Research Survey since that source has an author index and the information is not applicable to any other reference.

The references in each category cited on Chart One are

not necessarily exhaustive but rather represent careful scrutiny of the sources stipulated in the design of this study. While many of the references clearly fall into one or another of the classifications, there are some which would fit equally well into more than one category. Within each category, the references are grouped if a natural pattern could be determined.

On the page following the classification system, the number of items is presented in graph form as Chart Two. The graph presents the relationship of the amount of effort or lack of attention that exists among the subject areas classified.

Evaluation of the Research Available. From the graph it would appear evident that there are discrepancies in the order of priority given research attention and that some areas have not been dealt with in spite of their importance. It is also evident that not all categories are of equal or even nearly equal importance in the amount of attention merited.

The singularly significant bar on the graph is not unexpected. The general planning and design factors category is in some respects a "catch-all" category and as such does contain a large number of research items. There does not appear to be a pattern from the listing of the research references and there is no large concentration of studies within this category.

The second largest category, size and capacity, while probably not the most important of the classifications, is

one that has received a considerable amount of attention during the ten-year period under consideration. It also has characteristics which may be more measurable than the characteristics in some of the other categories. Four of the endeavors dealt with capacity and thirteen dealt with size--most of the studies sought to compare size or capacity with one or more related factors, such as achievement, cost, and educational opportunity.

The third largest category, planning procedures, presented fourteen pieces of research. Again, there was no pattern. The category is characterized by general considerations of planning procedures and a scattering of other considerations.

The six categories that cover the research in environment could be ranked from ten items of research down to no research. Two of the environment studies recorded ten research reports each--thermal environment and visual environment. Seven of the ten thermal studies dealt with heating and air-conditioning and just three treated the general topic of the effect of thermal environment on learning. General environment was third among the environment studies with six research reports, followed by esthetic with four, sonic with two, and spatial with none. Central office, guidance, building layout, educational specifications, and sites each contained just one or two reports and at least several of them are of such importance that they merit more consideration than they received. Six categories were vacant. Several of the six will probably never achieve a record of high popularity nor merit extensive

consideration as they do not relate strongly to the learning process; however, spatial environment, instructional materials areas, and, possibly, auditorium and theater should receive much more attention than they have. Auditorium has received a notable amount of attention in the area of design, but this area was not identifiable as a research characteristic by the criteria of this study.

Summary of the Study

The field of school plant planning research was surveyed, and it was determined that there were several possible sources of research materials. One possible source was doctoral dissertations; this source had been subjected to some prior investigation and was accessible through abstracts and comprehensive listings. Another source was libraries and collections; with the exceptions of some bibliographies and other lists, little information was available as to the quality and quantity of materials accessible through this source. A third source was the periodical literature; insofar as could be determined, this was a neglected source and was accessible, at least for the principal periodicals, through adequate indices.

Initial investigation indicated that library collections were noticeably lacking in the type of literature that reported research findings, although such prominent items as The Educational Facilities Laboratories reports were available. A series of letters indicated that there was no real access to the pamphlets, monographs, mimeographed reports, and other

"scarce" forms of reports that were in scattered private collections or in research centers. The letter responses would not encourage the hope of finding any amount of this type of material in accessible locations, systematized so that it could be used. Subsequently, it was decided to explore the periodical literature in the professional journals and the related periodical sources, and to add to this source the Dissertation Abstracts. It was further determined that the study should focus on the facilities as they relate to the learning process.

The periodical literature was surveyed in both the Education Index and the Art Index and all possible topics and all titles were recorded on prepared cards. Other information was also recorded. The cards were placed in chronological order by periodical and the articles were scanned by the researcher. A specially prepared instrument was used to determine if sufficient research characteristics were present to classify the reference as an original research report, or, if the article reported a research activity in sufficient detail to be included in this investigation. Thirty-three educational periodical articles and fifteen architectural periodical articles were identified in this fashion. Three of this total were cross-referenced duplicates. The remaining articles were divided into two classifications at this point--those which were not research but which were school plant literature, and those which were "how we [they] built a school building" or collections of designs or design competitions.

All of the articles, including the research, were combined in an extensive reference guide to school plant periodical literature, with the design collection and reports of new schools forming a "portfolio of schools" at the end of the listing. The collection consisted of 2,188 articles and abstracts and is found in an appendix to this study. In addition, the research articles were combined with the doctoral theses that were reported in the Dissertation Abstracts and were recorded on a standardized form for consistent analysis of the available information about each item of research. Initial investigation had indicated that perhaps about one periodical article in one hundred might prove to be identified as research. In the final analysis the figure proved to be closer to one item in fifty. A larger number of articles discussed research that was being conducted but not in sufficient detail or in a manner to be useful to this study.

The research was sorted according to a system that was worked out using the larger lot of all of the periodical articles--the system was then refined and condensed to report the research literature. After sorting, the standardized form for recording the essential information was utilized to report the information in narrative form. After the literature was reported separately for each discipline, the titles were combined and were supplemented by two additional sources--the applicable school plant planning references from the AIA Research Survey and the non-abstracted titles from the Dissertation Abstracts. These 115 references were sorted according

to the system of classification and were briefly identified in a chart form. The total number of each category was placed on a bar graph. The literature was discussed with reference to the chart and the graph.

Evaluation of Procedures

The following conclusions constitute the investigator's appraisal of the procedures for this study:

1. The Education Index was a reasonably accurate index to the periodical literature that it classifies. Spot checks of complete volumes of periodicals indicated nearly total coverage on major periodicals for school planning.
2. The Art Index was a reasonably accurate index for the periodicals that it classifies; however, it did not provide complete coverage of the peripheral periodicals. Spot checks of complete volumes of major periodicals indicated nearly total coverage for school planning.
3. The card system for organizing the references proved to be efficient, accurate, and easy to use. In a more extensive endeavor, computer cards or punch cards would be essential.
4. The instrument for identifying research demonstrated both success and shortcomings. It did identify research and reports of research as it was devised to do, but it possessed no qualitative characteristics

and selected short summaries as well as extensive full-blown projects. The instrument was still difficult to apply in borderline cases.

5. The survey sheet for gathering information from which to evaluate research findings was a satisfactory instrument but failed to fully achieve its intended purpose because of the nature of the literature that it was used to evaluate. Periodical articles and the Dissertation Abstracts simply did not state the information at all or stated it indirectly, requiring surmise and interpretation by the investigator.

Adequacy of the Research Disclosed

In general, the research revealed in this study agreed with the items of research reported in other reviews of research publications. Some discrepancies, however, were noted. The coverage was nearly duplicated insofar as doctoral theses were concerned. It was found that the published reviews of research classified some of the articles as research and the instrument designed for this investigation did not agree with that classification. Consequently, several of the items of this type were placed in the general literature classification by this investigator. The reviews of research also included some research studies that were unpublished or were from more less accessible sources, probably included because of specialized knowledge of the person responsible for the authorship of

the review.

Insofar as the centers of research activities were concerned, the periodical literature and consequently this investigation did not satisfactorily reveal the research they have conducted. While not reported in full, the Educational Facilities Laboratories activities and the School Construction Systems Development project received at least adequate coverage in the literature. This coverage was not of the detail that was demanded by the instrument for this investigation. The other research centers received less coverage. No adequate explanation was found for this shortcoming of the major periodical sources.

Conclusions

In response to the questions raised at the beginning of this study, the following statements represent the conclusions of the investigation:

Question One: What is the nature of the research in school plant design which has been conducted by educators and architects during the decade 1955-1964?

1. The amount of research reported in the periodical literature as revealed through this study was not of sufficient volume to evaluate the nature of the research in school plant design by architects.

2. The amount of research reported in the periodical literature as revealed through this study was not of sufficient volume to evaluate the nature of the research in school

plant design by educators. The methodology of the research located through the Dissertation Abstracts did indicate that the survey was still the predominant type of research used. Only one historical dissertation per se was revealed. A marked trend was noted toward an increasing use of the jury system, generally evaluated against the literature or against a questionnaire. About one-third of the dissertations were of a regional or local-district survey type.

3. There appears to be no organized pattern to the research conducted by architects and educators during the period covered by this study and, at the present time, little if any organized pattern exists in either discipline. Research appears to be motivated by individual or institutional interest and by funds available, which often specify the area to be investigated.

Question Two: What are the patterns of strengths and weaknesses of existing research by educators and architects and how may they be utilized to give appropriate emphasis and direction to future research endeavors?

1. Due to the limited number of articles revealed by the study, an established pattern of strengths and weaknesses was not evidenced except that research appears to be moving principally in the areas where some sort of mechanical testing or measurement is possible and in areas where funds are available. For the most part, the pattern of research appears to be undirected.

2. From the limited research available, it appears that

there is very little if any evidence of overlap or disagreement between educators and architects in the research literature. The relationship seems cordial but distant.

3. The research efforts of educators and architects neither meet nor mesh sufficiently at the present time to give direction to future research endeavors. Present relationships appear to offer little more than a precedent for future meetings on which a well directed effort may be based. The work of the Educational Facilities Laboratories appears to contribute to this end.

4. The classification of the research in this study indicates that there probably is a basic pattern of background and professional responsibility whereby it should be possible to define spheres of competency and responsibility in school plant planning and research so that the task areas attributable to each discipline might mesh.

Question Three: Does an analysis of the basic patterns and relationships of existing school plant planning research by educators and architects suggest a logical and useful classification of such research?

Such a classification was a product of this study. It was organized, however, by means of a preliminary procedure that first utilized the larger body of school plant planning literature which was subsequently refined by application to the research literature. The research literature as revealed by this investigation was not of sufficient significance to produce its own classification without the aid of the larger

body of literature.

Secondary Question

As a part of this investigation, an attempt was made to determine research effects of educators and architects on each other by tabulating the authorship of the research articles and the authorship of the literature at large in the periodicals of the two disciplines. There were four possible arrangements--authorship by an educator, authorship by an architect, authorship by one or more of each, and no authorship indicated (or authorship by an author unrelated to either field). The latter category was assumed to include a large number of articles written by one or more members of a magazine's staff.

Excluding the dissertations, all of which were in the field of education, there were a total of 2,034 periodical articles revealed by this study. Seven hundred forty-one were authored by educators, four hundred seventy-eight were authored by architects, seven hundred forty-three were by unnamed authors, and seventy-two were co-authored by a combination of an educator and architect or technician.

Dealing solely with the research, twelve articles were authored by educators (one in an architectural periodical), twenty were authored by architects (six in educational periodicals), nine were not identified (six education and three architect), and four were co-authored (all in an educational periodical).

In the general literature, excluding the "how we did it"

articles, four hundred forty-nine articles were educator-authored, three hundred twelve were architect-authored, two hundred forty-one were not identified, and twenty-four were authored by a combination.

With regard to the collections of school descriptions, about half were not identified as to authorship (four hundred ninety-three), two hundred eighty were produced by educators, one hundred forty-six were accomplished by architects, and forty-four were a cooperative effort.

In general, there was a trend in the direction of having architects author articles for educational periodicals; this was not reciprocated. Only twenty-four articles by educators and one cooperative effort appeared in architectural periodicals. On the other hand, three hundred forty-five architects appeared in educator periodicals. A large number of staff articles were found in the architectural periodical literature.

Observations

The following observations were made as the result of this study:

1. The available periodical professional journals in the fields of education and architecture are not contributing significantly to the promotion, evaluation and dissemination of research in the field of school plant planning in proportion to what would appear to the investigator of this study to be their obligation.

2. The obligations of researchers in the disciplines of education and architecture have not been well defined nor well organized and this discrepancy has manifested itself in a most apparent manner with the rapid developments in educational trends over the past decade.
3. With some notable exceptions, both architects and educators have demonstrated a certain inflexibility and reverence for past practices which have not been justified in any reliable fashion. There has been more effort at trying to define research to fit what people are doing than to conduct research.
4. There is a certain characteristic problem of working with public property which keeps research from becoming as important a facet of school design development as it might well deserve. There is a lack of money for research, a conservative public attitude, and the dimension of permanent investment that resist experimentation. In addition, there has been a tendency to utilize these facts as reasons for not moving ahead at a faster pace.
5. There is a definite lack of common ground, in spite of a common basic problem, between educators and architect. The most significant reason behind this shortcoming is the conceptual difference underlying the philosophies and practices of the arts and the sciences, or their adaptations to the

two disciplines herewith under consideration. To try to arrive at some consensus by means of conferences and other discussion meetings is to attack the problem in the middle. No known attempt to close this gap in an applicable organized study was located, although the architectural profession has thought along the lines of defining esthetic research.

Recommendations

1. From the standpoint of strengths and weaknesses of research in the two disciplines under consideration in this investigation, no topic for potential research has yet been treated extensively enough and, hence, no recommendation for focus of research is here attempted. Research is needed in all areas. In particular, there is an early basic need for research in the philosophical relationship between education and architecture and a need for a study of ways and means for improving present relationships. This need is just as real, if not more real, than the need to study the effect of the educational structure on learning.
2. A by-product of this study was a realization of the disorganized state in which research in school plant planning is functioning. It cannot be recommended strongly enough that a central agency be designated and financed to collect, abstract and disseminate the

research literature in school plant planning. The problem has been recognized and solutions have been attempted, but as of the present writing no recognizable progress has been made.

3. It is recommended as a result of this study that a concerted effort be made to set up channels to actively pursue funds for research in school plant planning. The present sources, which are primarily from the government with some from private foundations, do not begin to compare with the research and development funds necessary to keep pace.
4. As a result of this investigation, it is suggested that additional organizations are necessary. Such organizations should encompass both the fields of education and of architecture. Organizations that are a by-product of other organizations and need to beg for the attention of the few active participants will probably continue to be only sporadically effective.
5. It is recommended that more and better publicity be given to the research that is accomplished in the field. Abstracting and publication of worthy research efforts is essential and presently lacking.
6. Finally, it is recommended that more dissertations and graduate design projects which are worthy of the attention of the practitioner because of their generalizability be published in the professional

journals of both fields. Graduate departments could encourage this by requiring students to submit abstracts of their work. As publication was once a doctoral requirement, at least a resulting published article could be encouraged, if not required.

Postscript

In the course of this study, the investigator came across an observation by Archibald B. Shaw which seemed to sum up several of the central problems of the study:

The architect joins us, listens to what we say. He reads things like Dr. Conant's report; the Trump reports; maybe even reads the Random Falls Idea and "Q-Space" and the EFL reports. But just when he gets enthusiastic, we back away. We talk about economy, community acceptance, and about our present staff. We settle with him on something called Flexibility so that--maybe--some day-- we can change . . . He draws collections of classrooms-- the same old eggcrates with new doodads: student commons, centrally served cafeterias, television sets in the auditorium, a language laboratory. But that's not The New High School...¹

¹Archibald B. Shaw and Linn Smith, "The New High School," Educational Executives' Overview, 3: 33-48 (March, 1962). p. 34.

BIBLIOGRAPHY

- Alcott, William A. Essay on the Construct of Schoolhouses, to which was Awarded The Prize Offered by the American Institute of Instruction. Boston: Hilliard, Gray, Little and Wilkins, 1832.
- American Association of School Administrators. Planning America's School Buildings. Washington, D. C.: The Association, 1960.
- American Institute of Architects. AIA Research Survey. Washington, D.C.: the Institute, February, 1966.
- American Institute of Architects Journal. "New Fields of Architectural Research." American Institute of Architects Journal 30: 55-68; August 1958.
- American Institute of Architects Journal. "Research for Architecture--Part II." American Institute of Architects Journal 32: 69-73; October, 1959.
- American Institute of Architects Journal. "Report by the Special Committee on Education AIA." American Institute of Architects Journal 39: 127-134; April 1963.
- American Standards Association. American Standard Guide for School Lighting. New York: Illuminating Engineering Society, 1962.
- Architectural and Engineering News. "Dissemination." Architectural and Engineering News 7: 42-47; August 1965.
- Architectural and Engineering News. "Paying for Research." Architectural and Engineering News 7: 48-50; August 1965.
- Architectural and Engineering News. "Research 1. Basic." Architectural and Engineering News 7: 21-31; August 1965.
- Architectural and Engineering News. "Research 2. Products." Architectural and Engineering News 7: 32-36; August 1965.
- Architectural and Engineering News. "Research 3. Applied." Architectural and Engineering News 7: 37-41; August 1965.
- Bannister, T. C., editor. The Architect at Mid-Century-- Evolution and Achievement (Vol. I). New York: Rinehold Publishing Corporation, 1954.
- Barnard, Henry. School Architecture; or Contributions to the Improvement of School-houses in the United States. Cincinnati: A. S. Barnes and Company, 1848.
- Best, John W. Research in Education. Englewood Cliffs: Prentice-Hall, Inc., 1963.
- Birren, Faber, and Logan, Henry L. "The Agreeable Environment." Progressive Architecture 41: 174-177; August 1960.
- Boies, Harold W. Step By Step to Better School Facilities. New York: Holt, Rinehart and Winston, Inc., 1965.
- Building Research Institute. School Building Research. Washington, D. C.: The Institute, 1962.
- Bursch, C. W., and Reid, J. L. High Schools, Today and Tomorrow. New York: Reinhold Publishing Corporation, 1957.

- Campbell, Roald F., and Bunnell, Robert A. "Research: What It Really Is and How to Use It in Your District." Nation's Schools 70: 36-40; December 1962.
- Caudill, William W. "Form Follows Function." National Education Association Journal 46: 152-155; March 1957.
- Caudill, William W. Toward Better School Design. New York: F. W. Dodge Corporation, 1954.
- Collins, George J. An Analytical Review of Selected Doctoral Dissertations and Projects Undertaken in American Colleges from 1912-1957 on School Plant Planning and Design with Proposals for Further Research. Doctor's thesis. New York: Columbia University, 1958.
- Collins, George J. "An Analytical Review of Selected Doctoral Dissertations and Projects Undertaken in American Colleges and Universities from 1912 to 1957 on School Plant Planning and Design." School Business Affairs 31: 35-36; February 1965. 31: 57-58; March 1965. 31: 83-84; April 1965.
- Conrad, Marion J., and Griffith, William. "Organizational Character of Education: Facility Planning and Business Management." Review of Educational Research 34: 470-484; October 1964.
- Cook, David R. A Guide to Educational Research. Boston: Allyn and Bacon, Inc., 1965.
- Cornell, Francis G., and McLoone, Eugene P. "Finance and Material Management." Review of Educational Research 25: 351-363; October 1955.
- DeBernardis, Amo, and Others. Planning Schools for New Media. U. S. Department of Health, Education, and Welfare, Office of Education, OE-21021. Washington, D. C.: Government Printing Office, 1962.
- Educational Facilities Laboratories. Grants and Projects 1961-1963. New York: Educational Facilities Laboratories, 1964.
- Edwards, Ward. "The Theory of Decision-Making." Psychological Bulletin 51: 380-417; 1954.
- Evans, Benjamin H. "AIA Research Programs." American Institute of Architects Journal 41: 57-59; January 1964.
- Evans, Benjamin H. "What Is Research for Architecture?" American Institute of Architects Journal 41: 87-89; May 1964.
- Evans, Benjamin H., and Ludwig, Marilyn. "AIA Architect-Researcher's Conference." American Institute of Architects Journal 42: 61-68; July 1964.
- Fitzroy, Dariel, and Reid, John L. Acoustical Environment of School Buildings. New York: Educational Facilities Laboratories, 1963.
- Flesher, William R., Crim, Kenneth, and Hack, Walter G. "Financing, Housing, and Operating School Programs." Review of Educational Research 28: 319-333; October 1958.
- Fowler, Fred M. "Partial Design Solutions--A Waste." American School Board Journal 145: 35-36; October 1962.

- Fowlkes, John Guy, and Carlile, A. B. Bibliography on School Buildings. Madison: University of Wisconsin, Bureau of Educational Research, 1925.
- Frey, Albert. "Some Thoughts on Esthetic Research." American Institute of Architects Journal 30: 40-41; December 1958.
- Gores, Harold B. "Creating an Environment for Learning." Bulletin of the Indiana University School of Education 39: 17-21; March 1963.
- Gores, Harold B. "New Lab to Study Plant Problems." School Executive 78: 21-23; December 1958.
- Griffiths, Daniel E. "Nature and Meaning of Theory." Behavioral Science and Educational Administration. (Edited by Daniel E. Griffiths.) Sixty-third Yearbook, National Society for the Study of Education. Chicago: University of Chicago Press, 1964.
- Griffiths, Daniel, E. Research in Educational Administration. New York: Bureau of Publications, Teachers College, Columbia University, 1959.
- Griffiths, Daniel E., et al. "The Theme." Behavioral Science and Educational Administration. (Edited by Daniel E. Griffiths.) Sixty-third Yearbook, National Society for the Study of Education. Chicago: University of Chicago Press, 1964.
- Guba, Egon G. "Experiments, Studies, Surveys, and Investigations." Educational Research: New Perspectives. (Edited by Jack A. Culbertson and Stephen P. Hencley.) Danville, Illinois: The Interstate Printers and Publishers, Inc., 1963.
- Guba, Egon, G., and Clark, David L. "Section IV--Types of Educational Research." (Mimeographed manuscript used with permission.)
- Harmon, Darrell, B. "Needed Research." Bulletin of the Indiana University School of Education 29: 52-61; November 1953.
- Harris, Chester W., editor. "Plant and Equipment." Encyclopedia of Educational Research. Third edition. New York: Macmillan Company, 1960.
- Heffernan, H., and Bursch, C. Curriculum and the Elementary School Plant. Association for Supervision and Curriculum Development, NEA, 1958.
- Hillway, Tyrus. Introduction to Research. Second edition. Boston: Houghton Mifflin Company, 1964.
- Himes, Harold, W., editor. Environmental Abstracts, School Environments Research (SER-1). Ann Arbor, Michigan: Architectural Research Laboratory, 1965.
- Homans, George, C. The Human Group. New York: Harcourt, Brace and Company, 1950.
- Horowitz, Harold. "An Introduction to Research Methods for Architecture." American Institute of Architects Journal 41: 62-66; January 1964.
- Kliment, Stephen A. "Building Research: What Next?" Architectural and Engineering News 7: 52; August 1965.

- Kliment, Stephen A. "Building Research: Who Needs It?" Architectural and Engineering News 7: 27-28; August 1965.
- Knezevich, Stephen J. "Managing the School Plant and Business Affairs." Review of Educational Research 31: 428-438; October 1961.
- Levin, Sol. A Practical Bibliography of Business and Plant References for the School Administrator. Kalamazoo, Michigan: The Association of School Business Officials of the United States and Canada, 1953.
- Levin, Sol. A Practical Bibliography of Business and Plant References for the School Administrator. Doctor's thesis. New York: Teachers College, Columbia University, 1952.
- Litchfield, Edward H. "Notes on a General Theory of Administration." Administrative Science Quarterly 1: 7; June 1956.
- Llewelyn-Davies, Richard, and Cowan, Peter. "The Future of Research." Architectural Record 136: 105+; September 1964.
- Lopez, Frank G. "Thousands of Schoolmen, a Handful of Architects." Architectural Record 119: 28; April 1956.
- Ludwig, Marilyn E. "Architectural Research Comes of Age." American Institute of Architects Journal 44: 6; November 1965.
- McConnell, J. D. Planning for School Buildings. Engelwood Cliffs: Prentice-Hall, Inc., 1957.
- McGrath, John, and Buehring, Leo E. "100 Years of School Plant Design." Nation's Schools 59: 50-58; January 1957.
- McQuade, Walter, editor. Schoolhouse. New York: Simon and Schuster, 1958.
- Mouley, George, J. The Science of Educational Research. New York: American Book Company, 1963.
- National Council on Schoolhouse Construction. Elementary School Plant Planning. East Lansing, Michigan: The Council, 1958.
- National Council on Schoolhouse Construction. Guide for Planning School Plants. East Lansing, Michigan: The Council, 1964.
- National Council on Schoolhouse Construction. Proceedings of the Fortieth Annual Meeting. East Lansing, Michigan: The Council, 1963.
- National Council on Schoolhouse Construction. Proceedings of the Forty-First Annual Meeting. East Lansing, Michigan: The Council, 1964.
- North, Stewart D. To Create a School. Winneconne, Wisconsin: Wisconsin Association of School Boards, Inc., 1965.
- Pawley, Eric. "Nature of Research for Architecture." American Institute of Architects Journal 34: 56-57; July 1960.
- Pawley, Eric. "Research for Architecture." American Institute of Architects Journal 36: 91-92; October 1961.

- Rolfe, Walter T. "Research and the Architect." American Institute of Architects Journal 41: 59-61; January 1964.
- Rossi, Peter N. "Community Decision Making." Administrative Science Quarterly 1: 415-443; March 1957.
- Rummel, J. Francis. An Introduction to Research Procedures in Education. Second Edition. New York: Harper and Row, 1964.
- School Management. "Current Trends in School Facilities." School Management 8: 92-125; July 1964.
- School Planning Laboratory. Planning Tomorrow's Secondary Schools. Stanford, Calif.: School of Education, Stanford University.
- Silverthorn, Harold. "Wanted: More and Better Research for Schoolhouse Planning." Nation's Schools 62: 66-67; September 1958.
- Smith, H. L., Chamberlain, L. M., and Others. A Bibliography of School Buildings, Grounds, and Equipment. Volume IV, No. 3; Volume IX, Nos. 2 and 3; Volume XI, No. 2; Volume XXI, Nos. 2 and 5. Bloomington: Bureau of Cooperative Research and Field Service, School of Education, Indiana University, 1928-1945.
- Stodgill, Ralph. "Personal Factors Associated with Leadership." Journal of Psychology 25: 35-71; 1948.
- Strevell, Wallace H., and Burke, Arvid J. Administration of the School Building Program. New York: McGraw-Hill Book Company, Inc., 1959.
- Sumption, M. R., and Landes, J. L. Planning Functional School Buildings. New York: Harper and Row, 1957.
- Taylor, Harris A. An Analysis of Doctoral Research Problems in School Administration. Doctor's thesis. Stanford, Calif.: Stanford University, 1954.
- Tjomsland, Arnold C. "School Construction Pays Attention to Research." Nation's Schools 75: 44-45; March 1965.
- Travers, Robert M. W. An Introduction to Educational Research. New York: The MacMillan Company, 1958.
- Whigham, Edward L. Educational Planning for School Plant Construction. Doctor's thesis. New York: New York University, 1956.

APPENDICES

REFERENCE DATA SHEET

1. THE PROBLEM

TYPE OF PUBLICATION

A. Motivating Factor:

- | | | |
|---|---|------------------------------------|
| <input type="checkbox"/> Product Research | <input type="checkbox"/> Dissertation | <input type="checkbox"/> Book |
| <input type="checkbox"/> Consultant Service | <input type="checkbox"/> Professional Advancement | <input type="checkbox"/> Magazine |
| <input type="checkbox"/> Job Related | <input type="checkbox"/> Research qua Research | <input type="checkbox"/> Pamphlet |
| <input type="checkbox"/> Other _____ | | <input type="checkbox"/> Monograph |
| | | <input type="checkbox"/> Other |

B. Focus: _____

2. THE DESIGN

A. Method of Research:

- | | | | | |
|---------------------------------------|--------------------------------------|------------------------------------|-------------------------------------|--|
| <input type="checkbox"/> Historical | <input type="checkbox"/> Descriptive | <input type="checkbox"/> Survey | <input type="checkbox"/> Case-Study | <input type="checkbox"/> Documentation |
| <input type="checkbox"/> Experimental | <input type="checkbox"/> Causal | <input type="checkbox"/> Follow-up | <input type="checkbox"/> Trend | |
| <input type="checkbox"/> Other _____ | | | | |

B. Population _____

C. Techniques of Collecting Data:

D. Statistical Methods:

3. FINDINGS AND CONCLUSIONS

A. Nature of the Findings:

B. Agreement or Disagreement Between Educators and Architects:

- | | |
|-----------------------------------|--|
| <input type="checkbox"/> Agree | <input type="checkbox"/> No Conflict Indicated |
| <input type="checkbox"/> Disagree | <input type="checkbox"/> Other _____ |

C. Generalizability:

- | |
|---|
| <input type="checkbox"/> Not Generalizable |
| <input type="checkbox"/> Generalizable to _____ |
| <input type="checkbox"/> Other _____ |

D. Implications:

4. SOURCES

A. Researcher(s):

- | | |
|---|---|
| <input type="checkbox"/> Education | <input type="checkbox"/> Education |
| <input type="checkbox"/> Professor | <input type="checkbox"/> Professor |
| <input type="checkbox"/> Graduate Student | <input type="checkbox"/> Graduate Student |
| <input type="checkbox"/> Consultant | <input type="checkbox"/> Consultant |
| <input type="checkbox"/> Administrator | <input type="checkbox"/> Administrator |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |
|
 |
 |
| <input type="checkbox"/> Architecture | <input type="checkbox"/> Architecture |
| <input type="checkbox"/> Architect | <input type="checkbox"/> Architect |
| <input type="checkbox"/> Engineer (P.L.) | <input type="checkbox"/> Engineer (P.L.) |
| <input type="checkbox"/> Related Technician | <input type="checkbox"/> Related Technician |
| <input type="checkbox"/> Staff Writer | <input type="checkbox"/> Staff Writer |
| <input type="checkbox"/> Professor | <input type="checkbox"/> Professor |
| <input type="checkbox"/> Graduate Student | <input type="checkbox"/> Graduate Student |
| <input type="checkbox"/> Other _____ | <input type="checkbox"/> Other _____ |

B. Institution or Place _____

- | | | |
|--|-------------------------------------|---------------------------------------|
| <input type="checkbox"/> College or University | <input type="checkbox"/> Foundation | <input type="checkbox"/> Professional |
| <input type="checkbox"/> Private Practice | <input type="checkbox"/> Industrial | <input type="checkbox"/> Other _____ |

C. Support _____

- | | |
|--|--|
| <input type="checkbox"/> Foundation | <input type="checkbox"/> Federal Government |
| <input type="checkbox"/> College or University | <input type="checkbox"/> State Government |
| <input type="checkbox"/> Private | <input type="checkbox"/> City or Local School District |
| <input type="checkbox"/> Un-sponsored | <input type="checkbox"/> Industry (Product Promotion) |
| <input type="checkbox"/> Professional Organization | <input type="checkbox"/> Industry (Unencumbered) |
| <input type="checkbox"/> Other _____ | |

APPENDIX B
SORTING CARD

ED OR ARCH	APP, NON-APP, R	RES OR REL
_____ Sort	1. PUBLICATION _____ _____	
_____ Sort	2. VOLUME _____ YEAR(S) _____	
_____ Sort	3. PAGES _____	
_____ Sort	4. AUTHOR(S) _____ _____	
_____ Sort	5. TITLE _____ _____	

APPENDIX C - PILOT PROJECT INSTRUMENT

Dear Associate:

As you are probably aware of as a result of the department seminar, I am trying to develop an instrument that will assist me in selecting items of research in the school plant field. I am seeking your assistance in establishing the reliability of the instrument that has been worked out to do this task. Using the attached instrument for reporting research characteristics of selected articles from periodicals should take only a short period of your time and will be greatly appreciated by me.

There are ten accompanying duplicated articles and ten columns on the instrument. Please place an X in each blank space when you find the described characteristic to be present in the article. Since the purpose of this trial run is to establish reliability, it is essential that you check the characteristics with as much care as possible and that you evaluate each article on all ten characteristics and also on the final YES-NO item for each article. If a characteristic is not represented in the article, leave the space blank. Bear in mind that the articles may not necessarily be research; the range of characteristics per article may run from none to a large proportion of the ten characteristics.

Most of the characteristics will be very familiar to you and should be viewed in terms of your background and understanding of the field of educational research. If you have a question, do not hesitate to ask it. Thank you very much for your assistance.

Ross R. Papke

APPENDIX C, CONTINUED

THE ARTICLE (PUBLICATION) IS CHARACTERIZED AS FOLLOWS:	<u>ARTICLE 1</u>	<u>ARTICLE 2</u>	<u>ARTICLE 3</u>	<u>ARTICLE 4</u>
1. The problem is clearly defined (in terms of hypothesis(s) or general statement).	_____	_____	_____	_____
2. The related literature is reviewed and documented with at least six references.	_____	_____	_____	_____
3. The population studied is explicitly defined.	_____	_____	_____	_____
4. The study is based on expert opinion.	_____	_____	_____	_____
5. The study is based on survey data.	_____	_____	_____	_____
6. The study is based on case study(ies).	_____	_____	_____	_____
7. The study is based on experimental investigation.	_____	_____	_____	_____
8. The study utilizes theoretical constructs (concepts).	_____	_____	_____	_____
9. The results of the study are generalizable.	_____	_____	_____	_____
10. The study can be replicated by another investigator.	_____	_____	_____	_____

Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research? (Please circle YES or NO)	YES	YES	YES	YES
	NO	NO	NO	NO

ARTICLE 4 ARTICLE 5 ARTICLE 6 ARTICLE 7 ARTICLE 8 ARTICLE 9 ARTICLE 10

_____	_____	_____	_____	_____	_____	_____
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_____	_____	_____	_____	_____	_____	_____

YES YES YES YES YES YES YES

NO NO NO NO NO NO NO

APPENDIX D - NUMERICAL RESULT OF

THE ARTICLE (PUBLICATION)
IS CHARACTERIZED AS FOLLOWS:

ARTICLE 1 ARTICLE 2 ARTICLE 3 ARTICLE 4

1. The problem is clearly defined (in terms of hypothesis(s) or general statement).	<u>12</u>	<u>4</u>	<u>24</u>	<u>26</u>
2. The related literature is reviewed and documented with at least six references.	<u>0</u>	<u>0</u>	<u>24</u>	<u>3</u>
3. The population studied is explicitly defined.	<u>1</u>	<u>5</u>	<u>23</u>	<u>13</u>
4. The study is based on expert opinion.	<u>22</u>	<u>5</u>	<u>3</u>	<u>5</u>
5. The study is based on survey data.	<u>0</u>	<u>3</u>	<u>9</u>	<u>0</u>
6. The study is based on case study(ies).	<u>1</u>	<u>12</u>	<u>4</u>	<u>7</u>
7. The study is based on experimental investigation.	<u>1</u>	<u>1</u>	<u>18</u>	<u>24</u>
8. The study utilizes theoretical constructs (concepts).	<u>4</u>	<u>0</u>	<u>4</u>	<u>12</u>
9. The results of the study are generalizable.	<u>3</u>	<u>2</u>	<u>17</u>	<u>20</u>
10. The study can be replicated by another investigator.	<u>3</u>	<u>3</u>	<u>25</u>	<u>25</u>

Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research? (Please circle YES or NO)

YES 1	YES 0	YES 26	YES 23
NO 25	NO 26	NO 0	NO 3

ULT OF PILOT PROJECT

<u>ARTICLE 4</u>	<u>ARTICLE 5</u>	<u>ARTICLE 6</u>	<u>ARTICLE 7</u>	<u>ARTICLE 8</u>	<u>ARTICLE 9</u>	<u>ARTICLE 10</u>
<u>23</u>	<u>15</u>	<u>13</u>	<u>6</u>	<u>9</u>	<u>15</u>	
<u>1</u>						
<u>8</u>	<u>1</u>	<u>11</u>	<u>1</u>	<u>1</u>	<u>19</u>	
<u>11</u>	<u>19</u>	<u>8</u>	<u>16</u>	<u>15</u>	<u>9</u>	
<u>13</u>	<u>4</u>	<u>7</u>	<u>1</u>	<u>1</u>	<u>3</u>	
<u>1</u>	<u>1</u>	<u>15</u>	<u>0</u>	<u>3</u>	<u>12</u>	
<u>6</u>	<u>1</u>	<u>7</u>	<u>4</u>	<u>0</u>	<u>9</u>	
<u>9</u>	<u>1</u>	<u>5</u>	<u>10</u>	<u>6</u>	<u>2</u>	
<u>19</u>	<u>3</u>	<u>12</u>	<u>7</u>	<u>3</u>	<u>8</u>	
<u>16</u>	<u>3</u>	<u>14</u>	<u>5</u>	<u>3</u>	<u>14</u>	
YES 23	YES 14	YES 2	YES 11	YES 4	YES 1	YES 11
NO 3	NO 12	NO 24	NO 15	NO 22	NO 25	NO 15

APPENDIX E - PERCENTAGE SUMMARY

THE ARTICLE (PUBLICATION) IS CHARACTERIZED AS FOLLOWS:	<u>ARTICLE 1</u>	<u>ARTICLE 2</u>	<u>ARTICLE 3</u>	<u>ARTICLE 4</u>
1. The problem is clearly defined (in terms of hypothesis(s) or general statement).	<u>46%</u>	<u>15%</u>	<u>92%</u>	<u>100%</u>
2. The related literature is reviewed and documented with at least six references.	<u>0%</u>	<u>0%</u>	<u>92%</u>	<u>12%</u>
3. The population studied is explicitly defined.	<u>4%</u>	<u>19%</u>	<u>88%</u>	<u>50%</u>
4. The study is based on expert opinion.	<u>85%</u>	<u>19%</u>	<u>12%</u>	<u>19%</u>
5. The study is based on survey data.	<u>0%</u>	<u>12%</u>	<u>35%</u>	<u>0%</u>
6. The study is based on case study(ies).	<u>4%</u>	<u>46%</u>	<u>15%</u>	<u>87%</u>
7. The study is based on experimental investigation.	<u>4%</u>	<u>4%</u>	<u>69%</u>	<u>92%</u>
8. The study utilizes theoretical constructs (concepts).	<u>15%</u>	<u>0%</u>	<u>15%</u>	<u>46%</u>
9. The results of the study are generalizable.	<u>12%</u>	<u>8%</u>	<u>65%</u>	<u>77%</u>
10. The study can be replicated by another investigator.	<u>12%</u>	<u>12%</u>	<u>96%</u>	<u>96%</u>

Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research? (Please circle YES or NO)	YES <u>4%</u> NO <u>96%</u>	YES <u>0%</u> NO <u>100%</u>	YES <u>100%</u> NO <u>0%</u>	YES <u>88%</u> NO <u>12%</u>

PAGE SUMMARY OF PILOT PROJECT

<u>ARTICLE 4</u>	<u>ARTICLE 5</u>	<u>ARTICLE 6</u>	<u>ARTICLE 7</u>	<u>ARTICLE 8</u>	<u>ARTICLE 9</u>	<u>ARTICLE 10</u>
<u>100%</u>	<u>88%</u>	<u>58%</u>	<u>50%</u>	<u>23%</u>	<u>35%</u>	<u>58%</u>
<u>12%</u>	<u>4%</u>	<u>4%</u>	<u>4%</u>	<u>4%</u>	<u>4%</u>	<u>4%</u>
<u>50%</u>	<u>31%</u>	<u>4%</u>	<u>42%</u>	<u>4%</u>	<u>4%</u>	<u>73%</u>
<u>19%</u>	<u>42%</u>	<u>73%</u>	<u>31%</u>	<u>62%</u>	<u>58%</u>	<u>35%</u>
<u>0%</u>	<u>50%</u>	<u>15%</u>	<u>27%</u>	<u>4%</u>	<u>4%</u>	<u>12%</u>
<u>27%</u>	<u>4%</u>	<u>4%</u>	<u>58%</u>	<u>0%</u>	<u>12%</u>	<u>46%</u>
<u>92%</u>	<u>23%</u>	<u>4%</u>	<u>27%</u>	<u>15%</u>	<u>0%</u>	<u>35%</u>
<u>46%</u>	<u>35%</u>	<u>4%</u>	<u>19%</u>	<u>38%</u>	<u>23%</u>	<u>8%</u>
<u>77%</u>	<u>73%</u>	<u>12%</u>	<u>46%</u>	<u>27%</u>	<u>12%</u>	<u>31%</u>
<u>96%</u>	<u>62%</u>	<u>12%</u>	<u>54%</u>	<u>19%</u>	<u>12%</u>	<u>54%</u>
YES 88%	YES 54%	YES 8%	YES 42%	YES 15%	YES 4%	YES 42%
NO 12%	NO 46%	NO 92%	NO 58%	NO 85%	NO 96%	NO 58%

APPENDIX F - HIGH AGREEMENT CHART

THE ARTICLE (PUBLICATION)
IS CHARACTERIZED AS FOLLOWS:

ARTICLE 1

ARTICLE 2

ARTICLE 3

ARTICLE 4

1. The problem is clearly defined (in terms of hypothesis(s) or general statement).
2. The related literature is reviewed and documented with at least six references.
3. The population studied is explicitly defined.
4. The study is based on expert opinion.
5. The study is based on survey data.
6. The study is based on case study(ies).
7. The study is based on experimental investigation.
8. The study utilizes theoretical constructs (concepts).
9. The results of the study are generalizable.
10. The study can be replicated by another investigator.

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Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research? (Please circle YES or NO)

YES NO	YES NO	YES NO	YES NO
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MENT CHART (LESS THAN 20% OR MORE THAN 80%)

ARTICLE 4 ARTICLE 5 ARTICLE 6 ARTICLE 7 ARTICLE 8 ARTICLE 9 ARTICLE 10

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YES	YES	YES	YES	YES	YES	YES
NO	NO	NO	NO	NO	NO	NO

APPENDIX G - LOW AGREEMENT CHART (20%

THE ARTICLE (PUBLICATION)
IS CHARACTERIZED AS FOLLOWS:

ARTICLE 1 ARTICLE 2 ARTICLE 3 ARTICLE 4

1. The problem is clearly defined (in terms of hypothesis(s) or general statement).
2. The related literature is reviewed and documented with at least six references.
3. The population studied is explicitly defined.
4. The study is based on expert opinion.
5. The study is based on survey data.
6. The study is based on case study(ies).
7. The study is based on experimental investigation.
8. The study utilizes theoretical constructs (concepts).
9. The results of the study are generalizable.
10. The study can be replicated by another investigator.

Ignoring for a moment the above list of characteristics, does the article or publication in your judgment qualify to be classified as research? (Please circle YES or NO)

YES

YES

YES

YES

NO

NO

NO

NO

APPENDIX H - EVALUATION SHEET

Dear Associate:

Thank you very much for your prior assistance with my instrument intended to select research in the school plant field. The instrument worked out well with but a few minor difficulties. I am now attempting to work out these difficulties by asking a few of the people that reacted to the instrument to tell me if they experienced confusion with the wording of the description of the characteristics. If you will, please look over the material below and note your comments as prescribed.

A. With reference to the articles originally rated, did you experience more than average difficulty in judging whether or not the following articles qualified to be classified as research? (Please circle YES or NO)

ARTICLE 5: YES NO ARTICLE 7: YES NO ARTICLE 10: YES NO

B. With reference to the articles originally rated, did you experience more than average difficulty in assessing the characteristics for (Please circle YES or NO):

ARTICLE 5: YES NO ARTICLE 7: YES NO ARTICLE 10: YES NO

C. If you indicate that you did experience some difficulty with one or more of the articles in item B above, please indicate below what changes you feel would make the statements of characteristics more clearly discriminatory. Eight of the statements of characteristics are presented below. Please cross out or change words or phrases, or, rewrite the statement in the blank provided, or, comment on the statement, in order to make it more discriminatory:

1. The problem is clearly defined (in terms of hypothesis(s) or general statement). _____
3. The population studied is explicitly defined. _____
4. The study is based on expert opinion. _____
5. The study is based on survey data. _____
6. The study is based on case study(ies). _____
7. The study is based on experimental investigation. _____
9. The results of the study are generalizable. _____
10. The study can be replicated by another investigator. _____

APPENDIX I - FINAL INSTRUMENT

	<u>ARTICLE</u>	<u>ARTICLE</u>	<u>ARTICLE</u>	<u>ARTICLE</u>
1. The problem is clearly stated as a hypothesis(es) to be tested or as a question(s) to be researched.	_____	_____	_____	_____
2. The related literature is reviewed and documented with at least six references.	_____	_____	_____	_____
3. The population (or a population sample) investigated is explicitly defined.	_____	_____	_____	_____
4. The report includes the collection and analysis (or synthesis) of expert opinion.	_____	_____	_____	_____
5. The report utilizes the collection and analysis (or synthesis) of survey data.	_____	_____	_____	_____
6. The report includes the collection and analysis (or synthesis) of data pertaining to a case study(ies).	_____	_____	_____	_____
7. The report utilizes an experimental design and control.	_____	_____	_____	_____
8. The report utilizes theoretical constructs (concepts).	_____	_____	_____	_____
9. The investigator explicitly indicates how and to what related problems the results may (or may not) be generalized.	_____	_____	_____	_____
10. From the information reported, the procedure of the investigation may be replicated by another researcher.	_____	_____	_____	_____

ORIGINAL INSTRUMENT

| <u>ARTICLE</u> |
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APPENDIX J
CLASSIFIED GUIDE TO REFERENCES IN THE
PERIODICAL LITERATURE
1955-1964
OUTLINE

- 1000 GENERAL INFORMATION
 - 1010 State and National Trends
 - 1020 Research Facilities and Programs
- 2000 EDUCATIONAL NEEDS
- 3000 FINANCING SCHOOL PLANT
 - 3010 Cost and Finance
 - 3020 Cost Comparisons
 - 3030 Economies
- 4000 ORGANIZING FOR PLANNING
 - 4010 Planning Procedures
 - 4020 Community Involvement
 - 4030 Architect--Selection and Relations
 - 4040 Consultant Services
- 5000 PLANNING NEW SCHOOL PLANTS
 - 5010 Sites
 - 5020 Educational Specifications
 - 5030 Building Layout
 - 5040 Standardized Construction and Modular Planning
 - 5050 Flexibility
 - 5060 Size and Capacity
 - 5070 Building Materials
 - 5080 General Planning and Design Factors
 - 5090 Environmental Considerations
 - 5091 Spatial
 - 5092 Thermal
 - 5093 Sonic
 - 5094 Esthetic
 - 5095 Visual
 - 5096 General Environment
 - 5100-5110 Special Purpose Planning--Instruction
 - 5101 Instructional Materials Area and Library
 - 5102 Shop and Agriculture
 - 5103 Gym, Physical Education, and Pool
 - 5104 Music
 - 5105 Business Education
 - 5106 Home Economics
 - 5107 Multipurpose
 - 5108 Art
 - 5109 Special Education

- 5111 Language Laboratory
- 5112 Science Facilities
- 5113 Social Studies Facilities
- 5114 Large and Small Group Instruction and Team Teaching
- 5120 Special Purpose Planning--Auxiliary to Instruction
 - 5121 Auditorium and Theater
 - 5122 Cafeteria and Kitchen
 - 5123 Guidance
 - 5124 Central Office
- 5130 Special Purpose Planning--Other Considerations
 - 5131 Audiovisual
 - 5132 Safety
 - 5133 Non-Instructional Space
 - 5134 Fallout Shelters

- 6000 CONSTRUCTION

- 7000 EVALUATION

- 8000 MISCELLANEOUS
 - 8010 Remodeling and Additions
 - 8020 Portable, Demountable and Prefabricated Structures

- 9000 PORTFOLIO OF SCHOOLS

1000 GENERAL INFORMATION1010 State and National Trends

- American School and University. "Educational Building in 1954." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 65-72.
- American School and University. "Educational Construction in 1960." American School and University, 1961-1962. Thirty-third edition. New York: Buttenheim Publishing Corp., 1961. pp. 5-14.
- American School and University. "Educational Construction in 1961." American School and University, 1962-1963. Thirty-fourth edition. New York: Buttenheim Publishing Corp., 1962. pp. 5-14.
- American School and University. "New School Buildings of 1955; a Pictorial Review." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 25-56.
- American School Board Journal. "School Building in 1956." American School Board Journal 132: 68; January 1956.
- American School Board Journal. "Schoolhouse Building in 1957." American School Board Journal 134: 64; January 1957.
- American School Board Journal. "Schoolhousing in 1955." American School Board Journal 130: 76; January 1955.
- Architectural Forum. "School Trends." Architectural Forum 111: 110-115; November 1959.
- Architectural Forum. "Biggest States Tackle School Shortage." Architectural Forum 119: 5; September 1963.
- Architectural Record. "Most States Would Like to Know: What Decline in School Needs?" Architectural Record 118: 12+; July 1955.
- Architectural Record. "Not-So-Public Relations." Architectural Record 118: 15; October 1955.
- Architectural Record. "One Hundred Years of Significant Building: Schools." Architectural Record 120: 237-240; September 1920.
- Begrow, H. J. "Architect Interprets New Educational Theory." School Executive 76: 63-66; October 1956.
- Bittle, R. E. An Analysis of the Implementation of Recommendations of the County School Building Surveys of Specified Counties of Florida. Doctor's thesis. Gainesville: University of Florida, 1956-57.
- Burkhard, R. "Review of School Architecture in the Northwest." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 83-92.
- Bush, D. O. Nebraska State-Wide Plan for Determination of School Plant Needs. Doctor's thesis. Lincoln: University of Nebraska, 1956. 282 p. Abstract: Dissertation Abstracts 17: 792; 1957.

- Cocking, W. D. "Educational Building in 1955." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 17-24.
- Cocking, W. D. "Educational Building in 1956." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 8-20.
- Cocking, W. D. "Educational Building in 1957." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 8-20.
- Cocking, W. D. "Educational Building in 1958." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 101-120.
- Cocking, W. D. "Recent Trends in School Architecture." Overview 3: 85; March 1962.
- Cocking, W. D. "Secondary School Design Since World War II." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 185-192.
- Cocking, W. D., and Others. "Educational Building in 1959; Eleventh Annual National Building Survey Including Data on Sites, Furniture and Equipment, and School Bonds." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 117-124.
- Collins, G. J. "Schoolhousing in 1963; USOE Survey Begins Next Month." School Life 46: 8-11; October 1963.
- Faust, B. S. Validation of Claimed Advantages When School Buildings Are Constructed by the State Public School Building Authority Method in Pennsylvania. Doctor's thesis. University Park: Pennsylvania State University, 1960. 231 p. Abstract: Dissertation Abstracts 21: 2550; 1961.
- Gibbons, K., and Hereford, K. T. "Panorama of 100 New Schools." School Executive 74: 69-101; April 1955.
- Hayes, E. "Space Allocations in Washington High Schools, Part I." American School Board Journal 130: 39-40; June 1955.
- Hayes, E. "Space Allocations in Washington High Schools, Part II." American School Board Journal 131: 21-22+; July 1955.
- Hayes, E. "Space Allocations in Washington High Schools, Part III." American School Board Journal 131: 27-28; August 1955.
- Kulstad, W. M., and Peterson, G. K. "What Are Current Trends in the Construction of a New School Plant?" Bulletin of the National Association of Secondary-School Principals 43: 239-243; April 1959.
- Lopez, F. G. "Washington Report: The White House Conference on Education." Architectural Record 119: 26+; January 1956.

- Manla, G. N. "Educational Construction in 1962." American School and University, 1963-1964. Thirty-fifth edition. New York: Buttenheim Publishing Corp., 1963. pp. 17-26.
- Manla, G. N. "New School Buildings of 1956-1957; A Pictorial Review." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 21-52.
- Manla, G. N. "New School Buildings of 1957-1958; A Pictorial Review." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 21-42.
- McGrath, J., and Buehring, L. E. "100 Years of School Plant Design." Nation's Schools 59: 50-58; January 1957.
- McGuffy, C. W. A Study to Determine the Services and Staff Needed to Provide a State School Plant Program for Georgia. Doctor's thesis. Tallahassee: Florida State University, 1957. 249 p. Abstract: Dissertation Abstracts 17: 2897-2898; 1957.
- Mickel, E. "Washington Report: Spotlight on Schools." Architectural Record 117: 10-11; March 1955.
- Mowry, W. H. The Development of School Plant and Building Procedures in Pennsylvania. Doctor's Thesis. University Park: Pennsylvania State University, 1960. 280 p. Abstract: Dissertation Abstracts 21: 109-110; 1960.
- Nation's Schools. "What Schoolmen Want in Buildings." Nation's Schools 74: 76-77; October 1964.
- Oliver, K. D. A Proposed Plan for a Nationwide Continuous School Census. Doctor's thesis. Columbia: University of Missouri, 1957. 274 p. Abstract: Dissertation Abstracts 17: 2194-2195; 1957.
- Parker, F. G. The Role of the Nebraska State Department of Education in Providing School Plant Services. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1956. 174 p. Abstract: Dissertation Abstracts 16: 1627; 1956.
- School Executive. "Review of 1956: School Plant." School Executive 76: 66-67; January 1957.
- School Executive. "Trends in School Building; A Symposium." School Executive 75: 67-79; August 1956.
- School Life. "States Report Long-Range Plans for School Facilities." School Life 38: 5-6+; March 1956.
- School Management. "Current Trends in School Facilities." School Management 7: 80-95; July 1963.
- School Management. "How Many More Classrooms Do We Need?" School Management 7: 32-33; September 1963.
- Terjeson, T. An Analysis of School Plant Planning in Selected Districts in Washington and Certain Other States. Doctor's thesis. Seattle: University of Washington, 1963. 104 p. Abstract: Dissertation Abstracts 24: 4518-4519; 1964.
- Thomas, J. E. A Study of Trends in School Building Construction of Tennessee. Doctor's thesis. Memphis: University of Tennessee, 1956-57.

Wilson, W. O. State School Plant Standards and Requirements. Doctor's thesis. Bloomington: University of Indiana, 1955. 328 p. Abstract: Dissertation Abstracts 15: 1539; 1955.

1020 Research Facilities and Programs

- American Institute of Architects Journal. "Report by the Special Committee on Education AIA." American Institute of Architects Journal 39: 127-134; April 1963.
- American School and University. "State Education Department Publications of the School." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 217-222.
- American School Board Journal. "Profiles of Significant Schools." American School Board Journal 149: 17; November 1964.
- American School Board Journal. "Washington's School Design Laboratory." American School Board Journal 137: 40; November 1958.
- Architectural Forum. "School Research." Architectural Forum 109: 114; July 1958.
- Celli, M. C. "Working Commission on Schools: Report of I.U.A. Meeting in Mexico City." American Institute of Architects Journal 41: 33-36; March 1964.
- Cocking, W. D. "Need for School Plant Research." School Executive 76: 7; September 1956.
- Collins, G. J. An Analytical Review of Selected Doctoral Dissertations and Projects Undertaken in American Colleges from 1912-1957 on School Plant Planning and Design with Proposals for Further Research. Doctor's thesis. New York: Columbia University, 1957.
- Darlington, R. P. "Regional Laboratory for School Building Research." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 309-318.
- Dibs, G. A. School Plant Courses for School Administrators. Doctor's thesis. Los Angeles: University of Southern California, 1963. 287 p. Abstract: Dissertation Abstracts 24: 5120; 1964.
- Evans, B. H. "AIA Research Programs." American Institute of Architects Journal 41: 57-59; January 1964.
- Evans, B. H. "AIA Architect-Researcher's Conference." American Institute of Architects Journal 42: 61-68; July 1964.
- Goldhammer, K. "Concepts of Educational Research for School Plant Planners and Designers." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 11-14.

- Gores, H. B. "The Educational Facilities Laboratories--Its Role and Its Objectives." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: the Association, 1959. pp. 353-359.
- Gores, H. B. "New Lab to Study Plant Problems." School Executive 78: 21-23; December 1958.
- Llewelyn-Davies, R., and Cowan, P. "The Future of Research." Architectural Record 136: 105+; September 1964.
- Martin, D. "Indiana's Audio-Visual Research Center." American School Board Journal 133: 45+; December 1956.
- Pawley, E. "International Relations: UIA Working Commission on School Buildings, Hamberg--May 1963." American Institute of Architects Journal 40: 93-98; November 1963.
- Peters, J. S., and MacConnell, J. D. "Fifth Annual School Planning Conference at Stanford University." Architect and Engineer 202: 6-9+; September 1955.
- Progressive Architecture. "Classroom Laboratories for Thermal Comfort Studies." Progressive Architecture 38: 136-138; July 1957.
- Progressive Architecture. "Kindergarten-Through-Junior-College School Studied at Columbia." Progressive Architecture 43: 76; March 1962.
- Progressive Architecture. "New Designs for Learning: Conference on School Planning. Sarasota, Florida." Progressive Architecture 42: 48-49; January 1961.
- Progressive Architecture. "School in the Urban Environment: An Architectural Study and Conference Conducted at the Harvard Graduate School of Design." Progressive Architecture 42: 142-155; May 1961.
- Shaw, A. B., and Reid, J. L. "Random Falls Idea: An Educational Program and Plant for Youth and Community Growth." School Executive 75: 47-86; March 1956.
- Silverthorn, H. "Wanted: More and Better Research for Schoolhouse Planning." Nation's Schools 62: 66-67; September 1958.

2000 EDUCATIONAL NEEDS

- American Builder. "Today's School Crisis: The Builder's Big Challenge." American Builder 77: 78-79+; December 1955.
- American Builder. "What's the Answer to the Schoolbuilding Problem?" American Builder 77: 128-129; March 1955.
- Belnap, R. A. School Building Needs in Wyoming. Doctor's thesis. Laramie: University of Wyoming, 1957-58.
- Collins, G. J., and Langston, L. "Guesstimating Future School Enrollments." American School Board Journal 143: 10-12; December 1961.
- Davies, M. W. Extended Use of School Plant Facilities. Doctor's thesis. Pittsburg: University of Pittsburg, 1956. 194 p. Abstract: Dissertation Abstracts 17: 71-72; 1957.
- DiPaola, P. P. A Mathematically Sound Hypothesis for Estimating Future School Enrollments. Doctor's thesis. Brooklyn, N. Y.: St. John's University, 1955-56.
- Frazier, J. B. "Evolving Urban and Regional Patterns, and the School." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 5-10.
- Fogarty, F. "New Schools for 'Free': Housing Developments and Builder-Supplied Schools." Architectural Forum 109: 120-121+; October 1958.
- Hanhila, M. O. "Are Double Sessions Students Penalized Academically?" American School Board Journal 143: 13; December 1961.
- Leech, R. Y. The School Plant Needs of the Woonsocket Public Schools of Woonsocket, Rhode Island. Doctor's thesis. New York, N. Y.: Columbia University, 1955-56.
- McConnell, W. R. A Plan for the School Census and Its Use to Meet the Needs of Illinois School Districts. Doctor's thesis. Urbana: University of Illinois, 1958. 184 p. Abstract: Dissertation Abstracts 18: 1698, 1958.
- National Education Association Journal. "The Truth About School-Construction Needs." National Education Association Journal 46: 323-325; May 1957.
- Peterson, D. G. The History and Development of the Long Range Plan in the Bellevue School District. Doctor's thesis. Pullman: State College of Washington, 1959. 270 p. Abstract: Dissertation Abstracts 20: 2661; 1960.
- Peterson, D. An Investigation of Techniques for Predicting School District Enrollments in Florida. Doctor's thesis. Gainesville: University of Florida, 1959. 208 p. Abstract: Dissertation Abstracts 20: 2661-2662; 1960.
- Pindell, W. F. A Survey of the Plant Needs of the Fallsburgh Central School District #1, Fallsburgh, New York. Doctor's thesis. New York: Columbia University, 1955-56.

- Santee, Harold T. Establishing School Building Needs in the Inglewood, California, Unified School District. Doctor's thesis. Stanford, Calif.: Stanford University, 1959. 265 p. Abstract: Dissertation Abstracts 20: 1247; 1959.
- Steinhauer, M. H. "Planning in Terms of the Community." National Elementary Principal 39: 64-65; September 1959.
- Unruh, D. W. An Analysis of Community Uses of Selected Elementary Schools in Indiana. Doctor's thesis. Bloomington: University of Indiana, 1955-56.
- Young, W. R. A Survey of School Plant Needs of Union Free School District #2, Towns of Amenia, Dover, Union, Vale, and Washington; Dutchess County, New York. Doctor's thesis. New York: Columbia University, 1960-61.

3000 FINANCING SCHOOL PLANT3010 Cost and Financing

- Ahlf, Duane R. Measurement of Fiscal Capacity of School Districts in Wisconsin. Doctor's thesis. Madison: University of Wisconsin, 1964. . 249 p. Abstract: Dissertation Abstracts 24: 3597-3598; 1964.
- American Institute of Architects Journal. "Open Letter to the Editors of the Reader's Digest; Who Is Being Unfair to Whom?" American Institute of Architects Journal 31: 59-60; March 1959.
- American School and University. "Price of Better School Buildings." American School and University, 1963-1964. Thirty-fifth edition. New York: Bittenheim Publishing Corp., 1963. pp. 47-50.
- American School Board Journal. "A Cost Analysis of School Heating Systems." American School Board Journal 146: 39; April 1963.
- Angel, F. Controls in State Programs for Financing Public School Plant Facilities. Doctor's thesis. Berkeley: University of California, 1958-59.
- Architectural Forum. "Dangerous Myths About School Costs." Architectural Forum 109: 101+; November 1958.
- Architectural Forum. "Money for Schools." Architectural Forum 107: 166-167+; November 1957.
- Architectural Forum. "School Costs." Architectural Forum 105: 128-153; October 1956.
- Architectural Forum. "That Reader's Digest Article." Architectural Forum 107: 116-121+; November 1957.
- Architectural Forum. "Those Expensive School Palaces." Architectural Forum 107: 107+; October 1957.
- Architectural Record. "School Building Conference Suggests Cost Measures." Architectural Record 125: 48+; February 1959.
- Ayre, M. B. "School Building Boom Follows Rising Enrollments to High School." Architectural Record 133: 18; May 1963.
- Balluff, L. N. "Using a Comparative Check List of Construction Costs." American School and University, 1957-1958. Twenty-ninth edition. New York: Bittenheim Publishing Corp., 1957. pp. 267-272.
- Bleckschmidt, H. C. "Long Range Planning and Financing for New Construction and Modernization." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. p. 139-143.
- Bodley, E. J. "It Pays to Pay-As-You-Go." Nation's Schools 63: 59-61; March 1959.
- Briggs, P. "How to Build a Free School." School Management 6: 45-46+; August 1962.

- Byrnes, F. J. "Tables, Findings and Conclusions from Study: Fees of Local Legal Counsels for Services Related to School Bond Proceedings in the New York Metropolitan Area." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 101-102.
- Chatelain, L., Jr. "Our Problem of Ignorance." American Institute of Architects Journal 29: 167-171; April 1958.
- Christ, C. A. A Survey of Practices in Selected School Districts in Kansas Pertaining to Certain Problems Associated with School Building Construction. Doctor's thesis. Lawrence: University of Kansas, 1959. 195 p. Abstract: Dissertation Abstracts 20: 4011-4012; 1960.
- Clark, H. F. "Bond Rates, Building Costs and School Plant Financing." American School and University, 1957-1958. Twenty-ninth edition. New York: Bottenheim Publishing Corp., 1957. pp. 262-266.
- Cornell, F. G. "High School Size and Building Costs." American School Board Journal 134: 40-42; January 1957.
- Curtin, T. P. The Effect of Increased School Enrollments on School Costs in Connecticut. Doctor's thesis. Storrs: University of Connecticut, 1959-60.
- Darby, F. C. "How to Talk School Building Costs." School Executive 76: 58-59; October 1956.
- Daum, H. F. "Financing School Construction." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: the Association, 1961. pp. 339-342.
- Davidson, E. W. A Comparison of the Costs of Financing School Building Construction in Pennsylvania by the School District Authority and the State Public School Building Authority Methods. Doctor's thesis. Pittsburgh: University of Pittsburgh, 1964. 146 p. Abstract: Dissertation Abstracts 25: 959-960; 1964.
- Davis, J. M. V. A Study of Federal Assistance for School Construction Under the Provisions of Public Law 815 with an Assessment of the Federal Assistance Program in the State of Alabama. Doctor's thesis. Tuscaloosa: University of Alabama, 1961. 258 p. Abstract: Dissertation Abstracts 22: 1479-1480; 1961.
- Dykes, E. W. "School Plant Studies; School Building Costs." American Institute of Architects Journal 30: 63-66; November 1958.
- Eisentrou, G. M. A Study of the Financing of School Building Construction in the State of Washington. Doctor's thesis. Seattle: University of Washington, 1958. 164 p. Abstract: Dissertation Abstracts 19: 1624-1625; 1959.
- Engelhardt, N. L., Sr. "Budgets for School Building Programs." American School and University, 1955-1956. Twenty-seventh edition. New York: Bottenheim Publishing Corp., 1955. pp. 127-132.
- Galloway, A. N. "Legal Problems Related to Marketing of School Bonds." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 111-117.

- Gardner, D. E. Determination of Costs to House an Educational Program in Nebraska. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1961. 257 p. Abstract: Dissertation Abstracts 22: 3057; 1962.
- Gibson, C. D. "The Other Side of the Dollar." School Executive 74: 64-65; April 1955.
- Gott, P. L. Selected Factors Associated with the Success or Failure of School Bond Issue Campaigns in Kentucky. Doctor's thesis. Nashville: George Peabody College for Teachers, 1962. 235 p. Abstract: Dissertation Abstracts 23: 3716-3717; 1963.
- Greeley, W. R. "Cheaper Schools? No!" American Institute of Architects Journal 28: 208-210; July 1957.
- Greeley, W. R. "Cheaper Schools, Please!" American Institute of Architects Journal 26: 187-191; November 1956.
- Greene, L. F. Critical Appraisal of Bonding Practices in Michigan Public Schools. Doctor's thesis. East Lansing: Michigan State University, 1957. 283 p. Abstract: Dissertation Abstracts 18: 118-119; 1958.
- Grinstead, K. L. Financing Capital Outlay in Selected Reorganized Iowa School Districts. Doctor's thesis. Iowa City: State University of Iowa, 1963. 271 p. Abstract: Dissertation Abstracts 24: 2335; 1963.
- Haskell, D. "For All Concerned: False Schoolhouse Economies." Architectural Forum 104: 166; March 1956.
- Haskell, D. "For All Concerned; School Financing." Architectural Forum 102: 164; February 1955.
- Herman, Jerry J. A Study Between Certain Selected Factors and the Success or Failure of Bond Issues in Fourth Class Districts in Michigan. Doctor's thesis. Ann Arbor: University of Michigan, 1959. 260 p. Abstract: Dissertation Abstracts 19: 3188-3189; 1959.
- Herndon, A. J. An Analysis of Certain Factors Associated with Financing Capital Outlay for Texas Public Schools. Doctor's thesis. Denton: North Texas State College, 1956. 197 p. Abstract: Dissertation Abstracts 16: 1385-1386; 1956.
- Hickey, P. J. "Long Range Planning and Financing of Schoolhouse Construction." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 110-118.
- Hutchins, C. D. and Deering, E. C. "Financing Public School Buildings." School Life 41: 9-11; March 1959.
- Jackman, H. L. A Historical Cost Analysis Survey of Three Buildings in the Granite School District. Doctor's thesis. Salt Lake City: University of Utah, 1962-63.
- Jarvis, O. T. "Experts Survey Financing School-Building Programs." American School Board Journal 148: 7-8; January 1964.
- Jones, W. C. A Critical Appraisal of Public School Bonding Practices in Oregon. Doctor's thesis. Eugene: University of Oregon, 1963. 258 p. Abstract: Dissertation Abstracts 24: 3603-3604; 1964.

- Karayan, R. H. Analysis of the Cost of Warehousing in Selected Unified School Districts. Doctor's thesis. Los Angeles: University of Southern California, 1963. 208 p. Abstract: Dissertation Abstracts 24: 159-160; 1963.
- Langford, J. A. The Amortization of Commitments for Capital Outlay in Connecticut School Districts. Doctor's thesis. Storrs: University of Connecticut, 1956. 216 p. Abstract: Dissertation Abstracts 16: 1624-1625; 1956.
- Lindbloom, R. L. Public Voting Behavior on School Budget and Bond Issues and Its Relationship to Local School Property Tax Incidence. Doctor's thesis. New York: Columbia University, 1960-61.
- Linn, H. H. "Are Schools Costly Palaces?" Education Digest 24: 5-7; November 1958.
- Lucht, G. A Study of Space Utilization and Unit Costs of 75 Elementary School Buildings Constructed in Indiana During 1948-1954. Doctor's thesis. Bloomington: University of Indiana, 1954. 283 p. Abstract: Dissertation Abstracts 15: 368-369; 1955.
- Mann, H. V. "Bidding Procedures." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 342-344.
- Marker, R. W. A Comparative Analysis of Selected Generalized Formulas for the Distribution of State Aid for School Plants in Minnesota. Doctor's thesis. Minneapolis: University of Minnesota, 1961. 283 p. Abstract: Dissertation Abstracts 22: 141; 1961.
- Matsler, F. G. State Controls in Provisions for Financing Public School Capital Outlay Support Programs in California and Florida. Doctor's thesis. Berkeley: University of California, 1958-59.
- McGuinness, W. J. "Mechanical Engineering Critique." Progressive Architecture 39: 94; April 1958.
- McLean, R. E. The Relationship of School Plant Expense and Building Compactness in Elementary School Buildings. Doctor's thesis. Stanford, Calif.: Stanford University, 1960. 73 p. Abstract: Dissertation Abstracts 21: 1112; 1960.
- McLure, W. P. "Prediction of School Plant Costs." High School Journal 44: 142-147; January 1961.
- Meadville, H. W. The Relationship of Initial School Plant Cost and Building Compactness in Secondary School Buildings. Doctor's thesis. Stanford, Calif.: Stanford University, 1961. 79 p. Abstract: Dissertation Abstracts 22: 1493; 1961.
- Morrissey, A. E. A Study of Selected School Building Referenda in Nassau County, Long Island, New York. Doctor's thesis. New York: New York University, 1963. 184 p. Abstract: Dissertation Abstracts 25: 1695-1696; 1964.

- North, S. D. Some Characteristics of Programs of State Support for School Plants: Doctor's thesis. Madison: University of Wisconsin, 1959. 333p. Abstract: Dissertation Abstracts 20: 938-939; 1959.
- Polley, J. W. "Financing the Building Program." National Elementary Principal 39: 76-83; September 1959.
- Powell, J. H. A Study of the Factors Involved in the Failure and Subsequent Success of a Voted Tax for School Buildings in Five Selected Counties in Kentucky. Doctor's thesis. Lexington: University of Kentucky, 1962-63.
- Raper, W. E. A Study of Physical Plants and Their Utilization in Tennessee State Supported Schools of Higher Education. Doctor's thesis. Knoxville: University of Tennessee, 1957-58.
- Roberts, C. T. "Reporting Construction Costs." Proceedings of the Association of School Business Officials of the United States and Canada, 1962. Evanston, Ill.: The Association, 1962. pp. 445-447.
- Rowlett, J. M., and Bullock, T. A. "Relationship of Cost to the Geometry of a Building; Research Report 5." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 419-422.
- Salisbury, D. H. Space and Cost Allocation for Service, Administrative and Instructional Areas in Selected Elementary and Secondary Schools. Doctor's thesis. University Park: Pennsylvania State University, 1957. 174 p. Abstract: Dissertation Abstracts 18: 135; 1958.
- School Management. "Cost of Building Index." School Management 6: 16-24; July 1962.
- School Management. "Four Schools for the Price of Three." School Management 6: 85-86; July 1962.
- School Management. "One School--Two Plans--Two Prices." School Management 6: 55-58; June 1962.
- School Management. "School Building: The Cost of 1961 Completions." School Management 7: 28-29; July 1962.
- School Management. "School Buildings: The Cost of 1962 Starts." School Management 6: 30-32; July 1962.
- Seagers, P. W. "How Buildings Can Be Financed." Teachers College Journal 30: 43-45; December 1958.
- Smith, E. B. Ability of Kentucky Public School Districts to Finance Needed School Building Facilities. Doctor's thesis. Bloomington: Indiana University, 1956. 169 p. Abstract: Dissertation Abstracts 16: 1827-1828; 1956.
- Sollars, R. D. The Relationship of Elementary Schools to Operational Cost and Program Quality. Doctor's thesis. Columbus: Ohio State University, 1962. 174 p. Abstract: Dissertation Abstracts 23: 3214; 1963.
- Stollar, D. H. Selected Factors Affecting Marketability of Ohio School Bonds. Doctor's thesis. Columbus: Ohio State University, 1963. 193 p. Abstract: Dissertation Abstracts 24: 4517; 1964.

- Szendy, E. J. "How Choice of Construction and Design Details Determine School Fire Insurance Costs." Architectural Record 125: 172-178+; January 1959.
- Thomas, C. F. Legal Debt Limitations of Iowa School Districts. Doctor's thesis. Iowa City: State University of Iowa, 1964. 210 p. Abstract: Dissertation Abstracts 25: 5076-5077; 1964.
- Trusty, F. M. Perceived Factors in the School-Community Relationship and School Financial Support. Doctor's thesis. Stanford, Calif.: Stanford University, 1960. 127 p. Abstract: Dissertation Abstracts 21: 2569-2570; 1961.
- Tuttle, E. M. "Capital Outlay by School Boards." American School Board Journal 136: 10+; January 1958.
- Viles, N. E. "School Plant Costs." School Life 41: 19; January 1959.
- Wardle, O. D. Equity in the Financial Aspects of the California State Building Program. Doctor's thesis. Berkeley: University of California, 1956-57.
- Wells, J. W. "Are School Costs Really So High?" American Institute of Architects Journal 27: 64-65; February 1957.
- Whitbeck, J. "Financial Problems Related to Marketing of School Bonds." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 103-111.
- Wilber, A. M. A Proposed Plan for the Financing of School Building Construction in Michigan. Doctor's thesis. Ann Arbor: University of Michigan, 1956-57.
- Willis, C. W. A Program of Financing School Construction Designed to Safeguard the Current Operating Program in Maryland. Doctor's thesis. New York: Columbia University, 1957.
- Wilsley, C. E. School Site Costs in Rapidly Expanding Suburban Areas. Doctor's thesis. Stanford, Calif.: Stanford University, 1960. 107 p. Abstract: Dissertation Abstracts 21: 1118-1119; 1960.
- Wood, F. C. "Myth and Mystery in the Cost of Schools." Educational Record 38: 388-359; October 1957.
- Wright, V. P. Post War Capital Outlay Programs in Public School Administration. Doctor's thesis. Cambridge, Mass.: Harvard University, 1956-57.
- Wyatt, S. B. A State-Supported Program for Financing Public School Plant Facilities in Utah School Districts. Doctor's thesis. Logan: Utah State University, 1962. 279 p. Abstract: Dissertation Abstracts 23: 2779-2780; 1963.
- Yeokum, C. F. A Program for the Financing of Capital Outlay in Public Schools of the State of Kansas with Provisions for State Assistance. Doctor's thesis. Lawrence: University of Kansas.

3020 Cost Comparisons

- Architectural Forum. "How to Compare School Costs." Architectural Forum 107: 134-137; November 1957.
- Bartel, R. A. A Comparison of School Operating Costs of Selected Kansas Cities of the Second Class 1956-1957. Doctor's thesis. Lawrence: University of Kansas, 1959. 153 p. Abstract: Dissertation Abstracts 20: 4008; 1960.
- Briscoe, W. S., and Claeysens, P. P. "Comparative Costs of Stucco, Steel and Concrete Construction." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 211-214.
- Cocking, W. D. "Comparing Plant Costs." School Executive 76: 7; February 1957.
- Engelhardt, N. L., Jr. "School Building Costs: Controls, Economy and Comparisons." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 284-296.
- Gores, L. "One More Round in the School Cost Battle." American Institute of Architects Journal 29: 255-260; May 1958.
- Hallberg, E. C., Barrow, J. M., and Sumption, M. R. "Two New Ways to Compare Construction Costs." Nation's Schools 73: 58-61; January 1964.
- Harriman, A. J., and Wheeler, P. P. "Units of Cost for Comparing School Buildings." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 133-138.
- Meadville, H. W. The Relationship of Initial Plant Cost and Building Compactness in Secondary School Buildings. Doctor's thesis. Stanford, Calif.: Stanford University, 1961. 79 p. Abstract: Dissertation Abstracts 22: 1493; 1961.
- Oosting, B. R. "Comparing Construction Costs." Nation's Schools 63: 72-73; April 1959.
- Orton, K. L. "Comparative Costs of Multi-Story vs. One Story Constructed School Buildings." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 160-175.
- Overview. "Ten Deceptions in Building Cost Comparisons." Overview 3: 36-39; July 1962.
- Van Zwoil, J. A. "Students by the Square Foot." Overview 2: 62; September 1961.
- Watterson, J. "School Cost Controversy." American Institute of Architects Journal 33: 72; March 1960.
- Zimmerman, W. J. The Relationship of the Initial Cost and the Maintenance Cost in Elementary School Buildings. Doctor's thesis. Stanford, Calif.: Stanford University, 1959. 108 p. Abstract: Dissertation Abstracts 20: 3608-3609; 1960.

3030 Economies

- Ackley, C. E. "Economies, True and False, In School Plant Planning." American School Board Journal 133: 35-37; September 1956.
- American Association of School Administrators. "Stretching the School Building Dollar." School Executive 77: 66-67; December 1957.
- Architectural Forum. "New Proposals to Cut School Costs." Architectural Forum 115: 110-129; November 1961.
- Architectural Forum. "New Ways to Cut Costs." Architectural Forum 111: 125+; November 1959.
- Architectural Record. "High Voltage and Underground Wire Cut School Electrical System Costs." Architectural Record 131: 148; January 1962.
- Architectural Record. "Lightweight Partitions Cut School Costs." Architectural Record 133: 212; March 1963.
- Architectural Record. "Night Ventilation Cuts Cooling Costs." Architectural Record 121: 255-258; April 1957.
- Architectural Record. "Two Details Cut Mechanical and Electrical Costs in Gyms." Architectural Record 130: 197; November 1961.
- Bird, H. "Ventilation System in New School Cuts Heating, Installation Costs." Heating, Piping and Air Conditioning 27: 76-79; December 1955.
- Boles, H. W. "Sources of School Building Economy." American School Board Journal 136: 52-54; March 1958. 136: 39-40; June 1958. 136: 26-28; July 1958. 136: 21-22; August 1958. 136: 49-50; September 1958. 136: 38-39; October 1958. 136: 46-47; November 1958. 136: 37-39; December 1958.
- Boles, H. W. "Twenty-five Significant Economies in New School Buildings." American School Board Journal 148: 19-20; January 1964.
- Boles, H. W. "What the Administration Can Do to Reduce School Building Costs." American School Board Journal 136: 52-54; May 1958.
- Buehring, L. E. "How to Reduce Construction Costs." Nation's Schools 64: 70+; August 1959.
- Cameron, J. L. "AIA School Plant Studies: Ways and Means of Reducing School Construction Costs." American Institute of Architects Journal 35: 79-82; January 1961.
- Clapp, W. F. "True Economy in School Construction." School Executive 74: 19-21; August 1955.
- Cocking, W. D. "Real Economy in School Building." School Executive 76: 7; July 1957.
- Crabtree, M. N. "A Better Approach to School Economy." American School Board Journal 149: 12-14; November 1964.
- Derthick, L. G. "School Building Frills." School Life 40: 2; January 1958.
- Dykes, E. W. "Nine Ways to Cut Building Costs." Nation's Schools 61: 54-56; February 1958.

- Engelhardt, N. L., Jr. "Unleashed Savings in School Construction." American School Board Journal 130: 47-49†; January 1955.
- Engineering News-Record. "How to Slash School Construction Costs." Engineering News-Record 154: 25; February 10, 1955.
- Engineering News-Record. "How to Stretch the School Building Dollar." Education Digest 21: 1-4; November 1955.
- Engineering News-Record. "Squeezing More Out of School Dollars." Engineering News-Record 156: 37-40. April 26, 1956.
- Finchum, R. N. "Cutting Costs in School Plant Construction." School Life 41: 7-8†; December 1958.
- Harriman, A. J. "How to Cut Costs Without Cutting Corners." School Executive 76: 61-63; July 1957.
- Hauf, H. D., Koppes, W. F., and Green, A. C. "Economy in School Design." Architectural Forum 125: 220-224; May 1959.
- Laurits, J. D. "How Your District Can Get Better Schools for Less Money." School Management 7: 125-130†; July 1963.
- Moomaw, E. "Where's Your Waste-Line?" School Executive 78: 74; February 1959.
- Nation's Schools. "Thirty-five Ways to Engineer School Plant Savings." Nation's Schools 71: 55-56; March 1963.
- Reid, K., and Fessenden, J. D. "The Architect's Part in School Economy." Architectural Record 124: 170-173; August 1958.
- Reiss, W. T. "Handful of Cookies; or, Is Cost Cutting a Myth in School Plant Planning?" American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 19-20.
- Ritch, C. F., and Hill, W. G. "How to Keep Your Building Costs Down." School Executive 75: 70-71; February 1956.
- Saxe, V. P. "Welded Framing for Economical School Buildings." Civil Engineering 26: 508-510; August 1956.
- Severud, F. N., and Williams, L. W. "Techniques in the Economical Construction of Educational Buildings." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 391-396.
- Sharp, J. S. "Achieve Economy in Planning." Catholic School Journal 60: 82-85†; September 1960.
- Shaver, J. "Cut Building Costs with Prebid Conferences." School Management 6: 86-88; September 1962.
- Sheldon, D. R. "Re-Using Building Plans." Nation's Schools 56: 68-69; July 1955.
- Smith, L. W. "They Cut Costs and Made Space." Nation's Schools 68: 69-74; September 1961.
- Tewalt, R. "Oil 'Calms' Economical Waves." American School Board Journal 149: 42; August 1964.
- Wilson, R. E. "Good Schools Can Be Built Economically." American School Board Journal 134: 45-46; March 1957.

4000 ORGANIZING FOR PLANNING4010 Planning Procedures

- American School Board Journal. "Anatomy of the School Building Process; Special Report." American School Board Journal 142: 24-30; March 1961.
- Braun, F. R. A Study of the Relationships in Planning for School Buildings Between City Planning Agencies and School Authorities in American Cities over 100,000 in Population. Doctor's thesis. Minneapolis: University of Minnesota, 1960. 275 p. Abstract: Dissertation Abstracts 21: 1813; 1961.
- Everly, R. G. An Evaluation of Alternative Practices in Planning High School Plants. Doctor's thesis. Los Angeles: University of Southern California, 1957-58.
- Fink, P. J. The Assembly and Analysis of Data Used in Self Surveys of School Plant Needs. Doctor's thesis. New York: Columbia University, 1957-58.
- Foreman, C. M. A Procedure Guide for School Plant Construction for the State of Wyoming. Doctor's thesis. Laramie: University of Wyoming, 1956-57.
- Gavenovis, J. P. An Analysis of Legal Problems in School Building Construction by Authorities in Pennsylvania. Doctor's thesis. University Park: Pennsylvania State University, 1957. 151 p. Abstract: Dissertation Abstracts 17: 2895-2896; 1957.
- Haas, H. L. The Legal Authority Pertaining to the Acquisition and Administration of School Property in New Jersey. Doctor's thesis. New Brunswick, N. J.: Rutgers University, 1956-57.
- Hobbs, W. J. Cooperative Planning for the Construction of School Buildings. Doctor's thesis. New York: Columbia University, 1960-61.
- Hummel, R. E. Educational Planning Procedures for School Building Construction. Doctor's thesis. Los Angeles: University of Southern California, 1961. 456 p. Abstract: Dissertation Abstracts 21: 3686; 1961.
- Hummel, R. E. "Who Does the Educational Planning for Your School?" American School Board Journal 144: 32-35; March 1962.
- Keating, T. N. The Effectiveness of Procedures Used in School Building Programs in Nebraska. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1963. 138 p. Abstract: Dissertation Abstracts 24: 5132-5133; 1964.
- School Executive Research Department. "Educational Planning of the School Plant." School Executive 75: 73-87; February 1956.
- Terjeson, T. "Analysis of School-Plant Planning." American School Board Journal 148: 9-10; January 1964.
- Whigham, E. L. Educational Planning for School Plant Construction. Doctor's thesis. New York: New York University, 1956. 288 p. Abstract: Dissertation Abstracts 16: 1392; 1956.

- Wickens, L. A., Patton, R., and Lockhart, P. "Early Stages in a Building Program." National Elementary Principal 39: 54-59; September 1959.
- Wiltse, E. W. "Before the Architect Begins." American School Board Journal 130: 33-34; January 1955.

4020 Community Involvement

- Clarke, G. E. "Laymen Have a Part in School Planning." National Elementary Principal 39: 66-69; September 1959.
- Engelhardt, N. L., Sr. "Citizen Participation in School Building Planning." Recreation 48: 326-327; September 1955.
- Ford, K. E. "Plan, Promote, and Build Together." American School Board Journal 135: 58; September 1957.
- Holy, R. A. "Community Planning and the School Plant." American School Board Journal 146: 31-32; May 1963.
- Lopez, F. G. "The School and the Community." Architectural Record 118: 157; July 1955.
- Parker, C. "Cooperative Planning Convinces Citizens." Nation's Schools 57: 77-78; May 1956.
- School Management. "How School Construction Affects Your Community." School Management 5: 45+; September 1961.
- Stoneman, M. A. "Community Participation in Planning School Facilities." School Life 43: 11-12+; December 1960.
- Tjomsland, A. C. "Citizens' Participation in School Plant Planning." High School Journal 44: 135-137; January 1961.

4030 Architect--Selection and Relations

- Braun, E. J. "Contracts: Forms and Conditions: Separate and Inclusive Contracts." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 64-69.
- Gwynn, T. S. "Contracts: Form and Conditions." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 127-131.
- Hightower, E. "Administration of the Building Program by Contract vs. Staff Architects." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association 1955. pp. 131-134.

- Hill, F. W. "Administration of the Building Program by Contract vs. Staff Architects." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 95-102.
- Joint Architectural Advisory Committee. "Selecting an Architect for School Building Construction." American Institute of Architects Journal 32: 67-70; July 1959.
- Klager, B. "How to Select an Architect." American School Board Journal 136: 43-44; April 1958.
- McGinnis, G. C. Contracts Between the School District and the Architect. Doctor's thesis. Berkeley: University of California, 1955-56.
- McLeod, J. W. "The School Architect, His Professional Services and Responsibilities." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 83-87.
- Sharp, J. S. "On Labeling an Architect." American School Board Journal 145: 51-52; September 1962.
- Smith, L. W., and Jones, E. E. "Working with the Architect." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 63-64.
- Stewart, H. G. "The School Architect." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 58-64.
- Tanzman, J. "How to Get What You Want from the Architect." Audiovisual Instruction 7: 522-523; October 1962.
- Thomas, C. A. "What Santa Fe Has Done to Establish a Professional Method of Architect Selection." American School Board Journal 149: 264; November 1964.
- Van Nuys, J. C. "Professional and Legal Aspects of Architectural Services." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 104-108.
- Wigmore, J. "What to Expect of the Architect." Proceedings of the Pennsylvania University Schoolmen's Week, 1955. Philadelphia: University of Pennsylvania, 1955. pp. 11-15.

4040 Consultant Services

- Bottomly, F. A Study of Methods for Identifying Adequate Professional Standards for Possible Application to School Plant Consulting Services. Doctor's thesis. Pullman: State College of Washington, 1958. 270 p. Abstract: Dissertation Abstracts 19: 1262; 1958.

- De La Fleur, F. J. "What Can You Expect from Consultant Services?" American School Board Journal 130: 31-33; March 1955.
- Engelhardt, N. L., Sr. "Work of the Educational Consultant in School Surveys and Building Planning." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 54-62.
- Fox, W. "You Need a School-Building Consultant!" American School Board Journal 148: 52; January 1964.
- Hopper, R. L., and Leu, D. J. "School Plant Consultative Services for the Local School District." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 153-156.
- Hutchson, D. W. State School Plant Services. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1962. 343 p. Abstract: Dissertation Abstracts 23: 3723; 1963.
- Lawson, D. E. "The Role of the Educational Consultant." American School Board Journal 140: 38-39; April 1960.
- Rasmussen, G. R. "The Educational Consultant and Educational Planning." American School Board Journal 147: 15-16; September 1963. 147: 17-18; October 1963.
- Root, B. M. A Follow Up Study of School Plant Surveys Completed by the Bureau of Educational Research and Service Between 1946-1956. Doctor's thesis. Columbus: Ohio State University, 1958. 164 p. Abstract: Dissertation Abstracts 19: 721-722; 1958.
- Sargent, C. G., and Mitchell, D. P. "Consultative Services Required in Planning School Buildings." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 149-152.
- School Management. "Could Your District Use a Consulting Engineer?" School Management 6: 56; December 1962.
- Simpson, R. J. Survey Consultancy in Operation in a Union High School District: A Case Study. Doctor's thesis. Stanford, Calif: Stanford University, 1958. 256 p. Abstract: Dissertation Abstracts 19: 2521-2522; 1959.
- Wright, H. "Coordinating Engineering and Architecture in School Design." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 23-28.

5000 PLANNING NEW SCHOOL PLANTS5010 Sites

- Arts and Architecture. "Two Playgrounds Designed by S. Bass." Arts and Architecture 77: 14-15; February 1960.
- Berry, G. G., and Brown, H. J. "Found: A Way to Compensate for an Everything-Wrong School Site." Nation's Schools 68: 56-60+; August 1961.
- Burns, A. "Where Shall We Build?" Nation's Schools 55: 53-55; April 1955.
- Cox, R. T. "Site Planning and Development." National Elementary Principal 39: 94-102; September 1959.
- Currier, C. A. "Planning Requirements of Larger School Sites." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 315-318.
- Darby, F. C. "School Site Selection: Methods, Policies, and Procedures in Acquisition and Purchase." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 98-104.
- DeRemer, R. W., and Lauda, B. G. "The Need for Large School Sites." American School Board Journal 148: 71-74; April 1964.
- Eckbo, G. "Landscape Design Potentials for Education." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 21-28.
- Good, W. R. Procedures and Factors in School Site Selection in Delaware. Doctor's thesis. Philadelphia: Temple University, 1964. 282 p. Abstract: Dissertation Abstracts 25: 3930; 1964.
- Gregg, R. T., and Flesher, W. R. "Site Selection and Development." School Executive 76: 77-80; September 1956.
- Holmes, J. R., and Chance, C. W. "School Building Orientation." American Institute of Architects Journal 34: 69-72; August 1960.
- Jones, D. A. "School Site Selection: Methods, Policies, and Procedures in Acquisition and Purchase." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 71-82.
- Ledermann, A., and Trachsel, A. "Creative Playgrounds and Recreation Centers." Landscape Architecture 51: 86-89; January 1961.
- McQuade, W. "Site and Its Climate." National Elementary Principal 39: 103-109; September 1959.
- Mertz, S. M. "Big Debate over Schools Neglects Important Site." Landscape Architecture 48: 226-227; July 1958.

- Perkins, N. B. The Development of Criteria and Score Card for Use in Selecting Locations for Area Vocational-Technical Schools. Doctor's thesis. University Park: Pennsylvania State University, 1962. 167 p. Abstract: Dissertation Abstracts 23: 907; 1962.
- Perry, C. L. "School Site Selection: Methods, Policies, and Procedures in Acquisition and Purchase." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 53-58.
- Rogers, P. J. Development and Utilization of Elementary School Sites. Doctor's thesis. Los Angeles: University of Southern California, 1964. 364 p. Abstract: Dissertation Abstracts 25: 3369-3370; 1964.
- School Management. "How to Turn a Hilly Site into an Advantage." School Management 8: 68-72+; June 1964.
- Schroder, L. D. Utilization of Elementary School Sites in the Salt Lake City Elementary Schools. Doctor's thesis. Salt Lake City: University of Utah, 1961. 263 p. Abstract: Dissertation Abstracts 22: 1496; 1961.
- Simonds, J. "Check List for Site Planning." Architectural Record 123: 214-217; May 1958.
- Smith, H. L. "Why We Need Larger Sites." Educational Digest 20: 20-22; January 1955.
- White, R. F. "Budget for School Site Development." American Institute of Architects Journal 35: 121-124; April 1961.
- Wynn, W. J. "The Modern Secondary School Site, or Is It Sight?" High School Journal 44: 154-156; January 1961.

5020 Educational Specifications

- Anderson, H. D. "Good Program Justifies Large High School; Interview with H. D. Anderson." Nation's Schools 56: 66-74; November 1955.
- Engelhardt, N. L., Sr. "Educational Specification in Plant Planning." Proceedings of the Pennsylvania University Schoolmen's Week, 1955. Philadelphia: University of Pennsylvania, 1955. p. 1.
- Gardner, D. E. "Do's and Don'ts of Educational Specifications." American School Board Journal 148: 17-19; June 1964.
- George, N. L. "Educational Specifications." American School Board Journal 140: 30-31; January 1960.
- Gibson, C. D. "How Do You Plan What to Tell the Architect?" Overview 1: 66-68; January 1960.
- Lopez, F. G. "Educational Specifications for a School Building." American Institute of Architects Journal 38: 87-90; August 1962.
- Lyman, W. "Taking the Mystery Out of Educational Specifications Writing." American School Board Journal 145: 25-26; September 1962.

- Mochon, C. "Educational Specifications and High School Design." American School Board Journal 146: 30+; January 1963.
- Monez, T. B. Educational Specifications for a Proposed New Senior High School Building for Caldwell--West Caldwell, New Jersey. Doctor's thesis. New York: Columbia University, 1958-59.
- Moore, H., and Tracy, E. "How to Translate "Ed Specs" into a New School." School Management 8: 77-82+; February 1964.
- Parker, F. G., and Featherstone, R. L. "How to Specify Educational Needs for a New School." Nation's Schools 73: 49-53; January 1964.
- Rissetto, H. J. "Communicating Educational Needs to Architects." National Elementary Principal 39: 46-53; September 1959.
- Roaden, O. P. The Essential Elements of Educational Specifications for School Plant Facilities. Doctor's thesis. Knoxville: University of Tennessee, 1963. 170 p. Abstract: Dissertation Abstracts 24: 593; 1963.
- Rosen, H. J. "Man Behind Design: The Specification Writer." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. p. 45-48.
- Rosenstengel, W. E. "Developing the Educational Specifications for the Secondary School Plant." High School Journal 40: 50-53; November 1956.
- Sellew, R. W. "What Information Should Educators Furnish the Architects?" American School Board Journal 130: 49-50; May 1955.
- Tucker, B. F. "Specifications: Form and Content." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 87-93.
- Willey, D. A., and Hanson, N. W. "Is There Vision in Your Educational Specifications?" American School Board Journal 146: 33-36; June 1963.
- Wilson, R. E. "Educational Specifications." Nation's Schools 56: 71-74; October 1955. 56: 75-79; November 1955.
- Wilson, R. E. "Procedures for Preparing Educational Specifications." Nation's Schools 56: 66-68; December 1955.
- Wolfer, W. C. "Educational and Building Specifications." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 347-352.

5030 Building Layout

- Anderson, H. D. "Three High Schools Housed Under One Roof." Nation's Schools 63: 59-63; January 1959.

- Architectural Record. "City School: Students and Professionals Examine Some Possibilities." Architectural Record 128: 12-13; July 1960.
- Ashley, W. H. "Advantages of the Unit Plan for Secondary Schools." American School and University, 1955-1956. Twenty-seventh edition. New York: Bottenheim Publishing Corp., 1955. pp. 219-224.
- Baggs, B. "Departmental Approach." American School Board Journal 138: 32+; January 1959.
- Beatty, W. W. "Comments on Campus Plans." School Executive 74: 58-61; July 1955.
- Brubaker, C. W. "The Big-City School of Tomorrow?" Nation's Schools 66: 74+; December 1960.
- Buehring, L. E. "Checkerboard Classrooms House Common Learnings Program." Nation's Schools 62: 53-55; December 1958.
- Buehring, L. E. "New Pattern: Community Schools." Nation's Schools 61: 35-39; January 1958.
- Carlson, D. B. "City School: Old Problems, New Solutions." Architectural Forum 117: 103-105; November 1962.
- Chase, W. W. "Problems in Planning School Facilities in Metropolitan Centers." School Life 45: 28-32; November 1962.
- Chase, W. W. "Problems in Planning Urban School Facilities." Proceedings of the Association of School Business Officials of the United States and Canada 50: 236-241, 1964.
- Cobert, C. R., and Nelson, R. H. "Perception Core School." Nation's Schools 65: 79-87; March 1960.
- Educational Executives' Overview. "Planning and Operating the Middle School." Educational Executives' Overview 4: 52-55; March 1963.
- Engelhardt, N. L., Jr. "The Campus Type School; A Trend in Secondary School Plant Construction." High School Journal 40: 59-62; November 1956.
- Evans, B. F. "Genealogy of the House Plan." Educational Executives' Overview 3: 31-33; November 1962.
- Featherstone, R. L., Lew, D. J., and Parker, F. G. "One-Story vs. Multi-Story Construction." Overview 3: 40+; July 1962.
- Hick, B. L. "Neighborhood Schools in New York State." American School and University, 1956-1957. Twenty-eighth edition. New York: Bottenheim Publishing Corp., 1956. pp. 153-156.
- Hodgson, J. H. The Schools Within a School Plan. Doctor's thesis. New York: Columbia University, 1958-59.
- Leggett, S. F. "Schools within Schools." American School and University, 1956-57. Twenty-eighth edition. New York: Bottenheim Publishing Corp., 1956. pp. 111-118.
- Mills, G. E. "How and the Why of the Middle Schools." Nation's Schools 68: 43-53+; December 1961.
- Muschell, C. S. "Medill Bair High School." American School Board Journal 141: 20-23; November 1960.

- Musgrave, O. L., and Butler, W. C. "Open Corridors Suitable for Colder Climate." Nation's Schools 64: 68; August 1959.
- Overview. "Downtown School." Overview 2: 29-34; July 1961.
- Rushton, E. W., and Leahy, J. P. "The School-Within-School Concept." High School Journal 44: 138-141; January 1961.
- Saylor, J. G., and Others. "Multi-Purpose High School." National Education Association Journal 45: 300-301; May 1956.
- School Management. "How to Make a Big School Little." School Management 6: 59-63; February 1962.
- School Management. "Supermarket School: What It Is, What It's For." School Management 8: 48-50; August 1964.
- Schulz, G. L. W. "Functional Buildings--Relative Values of Single Versus Multi-Story." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 102-110.
- Sellew, R. W. "Basic School Designs." American School Board Journal 130: 44-47; January 1955.
- Swanson, J. R. F. "Specifications for a Corridorless School." Nation's Schools 55: 72-74; June 1955.
- Volla, V. "Schoolhouse Planning Problems in a Large City." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 15-18.
- West, H. W. "Functional Schools, Relative Values of Single Versus Multi-Story Buildings." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association 1955. pp. 134-139.
- York, W. J. The Schools Within a School: A Study of Selected Secondary High Schools That Embody This Plan. Doctor's thesis. New York: Columbia University, 1958-59.

5040 Standardized Construction and Modular Planning

- American School and University. "New Component Construction System; School Construction Systems Development Project." American School and University 36: 36+; January 1964.
- American School and University. "New Look at Building Components." American School and University 36: 43; May 1964.
- American School and University. "Proving Ground for Flexibility at Palo Alto, Calif.: SCSD's Compatible Components." American School and University 37: 32-35; September 1964.
- Architectural Record. "Component Systems for Schools." Architectural Record 133: 180-181; February 1963.
- Architectural Record. "Components Program for California Schools." Architectural Record 135: 167-169; January 1964.

- Architectural Record. "School Component Designs, Costs Revealed." Architectural Record 135: 166-172; February 1964.
- Architectural Record. "Structural Components for School Buildings." Architectural Record 120: 161-166; August 1956.
- Bucher, P. "One Solution to School Building Problems." Ohio Schools 36: 22-23; May 1958.
- Catholic School Journal. "School Building Economy with Standard Components; Systems Approach to Construction." Catholic School Journal 64: 101; September 1964.
- Ehrenkrantz, E. "SCSD--Better Schools for the Money." American Institute of Architects Journal 42: 96; September 1964.
- Engvall, W. R. "Basic Space Module Solves a District's Problem." School Executive 77: 71-75; February 1958.
- Nation's Schools. "California Program Pushes Toward Big School Construction Savings." Nation's Schools 73: 104; February 1964.
- Nicholas, A. "Standardization of School Construction." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 175-184.
- Progressive Architecture. "The Basic Space Module: A Concept and an Application." Progressive Architecture 38: 129-131; November 1957.
- Progressive Architecture. "Modular Co-ordination Research for Schools." Progressive Architecture 40: 162+; April 1959.
- Roberts, C. T. "Modules for Texas Schools." Architectural Record 124: 230+; October 1958.
- Silling, C. E. "Modular Practice; Review." American Institute of Architects Journal 38: 47-48; November 1962.
- Spring, B. P. "'Plug-in Schools:' Next Step in Educational Design?" Architectural Forum 119: 68-73; August 1963.
- Spring, B. P. "School Costs Cut by New Components." Architectural Forum 120: 112-117; February 1964.

5050 Flexibility

- American School and University. "The Meaning of Flexibility in a High School." American School and University 37: 44; September 1964.
- American School Board Journal. "Adaptable School Buildings Needed." American School Board Journal 148: 36; May 1964.
- Buehring, L. E. "School Where Walls Fold Away and Teachers Have Individual Offices." Nation's Schools 68: 53-61; November 1961.
- Caudill, W. W. "Adaptability and Sacred Cows." Bulletin of the National Association of Secondary-School Principals 46: 192-193; May 1962.

- Chapman, A. B. "Coordinating Flexibility into Building Design." American School and University 37: 40-41; September 1964.
- Kelsey, F. L. "Building Today for Tomorrow's School Program Nation's Schools 69: 73-80; May 1962.
- Paseur, C. H. "Flexibility in School Building Design." American Institute of Architects Journal 32: 91-94; November 1959.
- Price, R. B., Reid, J. L., and Rudolph, P. "For School Flexibility, Versatility and Economy, Three New Ideas in the Design of Roofs." School Executive 77: 43-54; August 1957.
- Taylor, J. L. "Flexibility in School Facilities." School Life 43: 11-13; October 1960.

5060 Size and Capacity

- Andrews, L. N. Relationship of High School Size to School Community Relationships. Doctor's thesis. Stanford, Calif.: Stanford University, 1957. 173 p. Abstract: Dissertation Abstracts 19: 707; 1958.
- Basler, D. D. An Investigation of Certain Factors Influencing the Optimum Size for Elementary School Attendance Units. Doctor's thesis. Iowa City: State University of Iowa, 1960. 254 p. Abstract: Dissertation Abstracts 21: 1812-1813; 1961.
- Bragg, D. H. A Study of Size-Cost-Achievement Relationships in Reorganized School Districts of Wisconsin. Doctor's thesis. Madison: University of Wisconsin, 1960. 172 p. Abstract: Dissertation Abstract 21: 1432-1433; 1961.
- Brown, W. E. High School Size: Its Relationship to Selected Educational and Cost Factors. Doctor's thesis. Los Angeles: University of Southern California, 1957-58.
- Conrad, M. J. A Technique for Determining the Operating Capacity of Secondary School Buildings. Doctor's thesis. Columbus: Ohio State University, 1952. 196 p. Abstract: Dissertation Abstracts 17: 2891-2893; 1957.
- Crocker, J. W. The Relationship of Size and Organizational Type to Certain Factors in Alabama's White Junior High Schools. Doctor's thesis. Tuscaloosa: University of Alabama, 1960. 288 p. Abstract: Dissertation Abstracts 21: 2529-2530; 1961.
- Fuller, W. S. Space Allocation, Pupil Capacity and Unit Costs of Twenty Selected Public Secondary School Buildings Constructed in Indiana During 1948-1958. Doctor's thesis. Bloomington: Indiana University, 1960. 337 p. Abstract: Dissertation Abstracts 21: 517; 1960.
- Gatski, H. J. A Comparison of Four Formulae for Rating Pupil Capacity of School Buildings in Selected Secondary Schools in the State of Pennsylvania. Doctor's thesis. University Park: Pennsylvania State University, 1963. 124 p. Abstract: Dissertation Abstracts 24: 1045-1046; 1963.

- Gray, S. C. A Study of the Relationship Between Size and a Number of Qualitative and Quantitative Factors of Education in Four Sizes of Secondary Schools in Iowa. Doctor's thesis. Iowa City: State University of Iowa, 1961. 150 p. Abstract: Dissertation Abstracts 22: 2631; 1962.
- Green, A. S. "Size and the High School." American School Board Journal 139: 19-20; December 1959.
- Hubbard, F. W. "How Big Is a Good School?" National Elementary Principal 39: 110-115; September 1959.
- Jantz, R. D. An Analysis of the Relationship of Accreditation, Finance, and Size of Nebraska High Schools to Scholastic Achievement. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1961. 79 p. Abstract: Dissertation Abstracts 22: 1069-1070; 1961.
- Lathrop, I. T. Scholastic Achievement At Iowa State College Associated with High School Size and Course Pattern. Doctor's thesis. Ames: Iowa State College, 1958. 225 p. Abstract: Dissertation Abstracts 19: 78-79; 1959.
- Leavitt, U. J. D. Elementary School Size Relationships. Doctor's thesis. Austin: University of Texas, 1960. 353 p. Abstract: Dissertation Abstracts 20: 4572; 1960.
- Livingston, A. H. "Is There an Optimum Size High School?" Progressive Education 33: 156-159; September 1956.
- Mayo, S. S. "Load, Capacity, and Use Factors in Secondary Schools." American School Board Journal 132: 38-39; February 1956.
- Mayo, S. S. "What Size High School?" American School Board Journal 144: 32-33; January 1962.
- Menozzi, J. C. An Attempt to Determine the Optimum Size of Public Secondary Schools. Doctor's thesis. Denver: University of Denver, 1959-60.
- Redfield, D. D. A Comparative Study of Programs, Facilities, and Staff of Secondary School Science Departments in Virginia. Doctor's thesis. Charlottesville: University of Virginia, 1960. 125 p. Abstract: Dissertation Abstracts 21: 1103; 1960.
- Sharp, J. S. "What Size Classroom Units?" School Executive 77: 47-52; February 1958.
- Shaw, A. B. "How Big?" Educational Executives' Overview 4: 11; January 1963.
- Smith, C. B. A Study of Optimum Size of Secondary Schools. Doctor's thesis. Columbus: Ohio State University, 1960. 172 p. Abstract: Dissertation Abstracts 21: 2181-2182; 1961.
- Smith, F. W. An Analysis of the Relationship of Size of Arkansas High Schools and the Achievement of College Bound Seniors. Doctor's thesis. Fayetteville: University of Arkansas, 1961. 124 p. Abstract: Dissertation Abstracts 21: 3332-3333; 1961.

Teets, L. E. Relationship in the Elementary School Between Size, Per Pupil Cost, and the Extent of Educational Opportunity. Doctor's thesis. Gainesville: University of Florida, 1956. 264 p. Abstract: Dissertation Abstracts 16: 2375-2376; 1956.

5070 Building Materials

- Audiovisual Instruction. "New Schools Under Construction: Places to Visit." Audiovisual Instruction 7: 551-557; October 1962.
- Backus, T. A. A Study of Construction and Maintenance Costs in Relationship to True Economy of Operation. Doctor's thesis. Tallahassee: Florida State University, 1961. 155 p. Abstract: Dissertation Abstracts 21: 3682-3683; 1961.
- Betchkal, J. "Carpet Wins Cautious Approval." Nation's Schools 73: 79-81+; April 1964.
- Finley, R. M. "Carpeting in Our Schools." American School Board Journal 147: 43-44; November 1963.
- Garvin, W. L. "New Materials for New Schools." American School and University 36: 29-33; September 1963.
- Goves, H. B. "Where Schools Stand on Carpet." Nation's Schools 73: 77-78; April 1964.
- Nabors, E. "School Carpet--Does It Make Sense?" American School Board Journal 147: 34-36; October 1963.
- Overview. "Finishing Materials: Part I." Overview 2: 52-53; November 1961.
- Overview. "Finishing Materials: Part II." Overview 2: 54-55; December 1961.
- Paret, R. E. "Using Stainless Steel in Schools." American School Board Journal 142: 32-33; June 1961.
- Progressive Architecture. "Carpeting Is in the Specs." Progressive Architecture 43: 166-171; October 1962.
- Progressive Architecture. "Winglike Space-Frame Components--Wood in Architecture." Progressive Architecture 44: 132-133; June 1963.
- Swisher, W. M. "Justification of Better Building Materials." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. p. 120-133.
- Waechter, H. H. "Wood Makes a Comeback." Overview 2: 56-59; September 1961.

5080 General Planning and Design Factors

- Aaron, N. J. "Building Design and Its Relation to Maintenance and the Standardization of Various Functional Units in the School." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 118-125.
- Alexander, R. E. "Architect Views the Client's Role in School Building Planning." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 145-148.
- Alexander, R. E. "It's Time to Look at Tomorrow's Schools." School Executive 78: 60-63; September 1958.
- Allen, W. P., and Raab, G. E. "School Plant." National Elementary Principal 40: 175-184; September 1960.
- American School and University. "All-Age School." American School and University 36: 27-31; March 1964.
- American School and University. "Education and Building Codes." American School and University 36: 32-33; June 1964. 36: 34-35; July 1964.
- American School and University. "Total Energy System for Education." American School and University 36: 28-29; February 1964.
- American School Board Journal. "Good Elementary School Building." American School Board Journal 131: 54; October 1955.
- American School Board Journal. "New Ideas in Concrete for Schools." American School Board Journal 146: 28-29; May 1963.
- Anderson, R. H. "The Junior High School." Architectural Record 129: 126-131; January 1961.
- Architectural Forum. "Big Top for Teaching." Architectural Forum 114: 97-100; May 1961.
- Architectural Forum. "Case of the Westport Schoolhouse." Architectural Forum 116: 5-6+; January 1962.
- Architectural Forum. "Chicago's Program for Improvement." Architectural Forum 113: 110-114+; November 1961.
- Architectural Forum. "Classroom Equipment." Architectural Forum 104: 140-151; February 1956.
- Architectural Forum. "Desegregation's Impact on Building." Architectural Forum 107: 128-131+; November 1957.
- Architectural Forum. "Design for Children." Architectural Forum 117: 84-91; November 1962.
- Architectural Forum. "New Shapes for School Meeting Places." Architectural Forum 105: 128-133; July 1956.
- Architectural Forum. "Rocky Beats a Dead Horse." Architectural Forum 119: 75-76; November 1963.
- Architectural Forum. "Schools: A Look Backward and Forward." Architectural Forum 103: 129; October 1955.
- Architectural Forum. "Schools for an Age of Confusion." Architectural Forum 111: 107+; November 1959.
- Architectural Forum. "School for the Future?" Architectural Forum 111: 126-131; November 1959.
- Architectural Forum. "Three Ace Schools for the Trump Plan." Architectural Forum 112: 118-129; March 1960.

- Architectural Forum. "Tomorrow's High School." Architectural Forum 104: 144-149; June 1956.
- Architectural Forum. "Tomorrow's School Today." Architectural Forum 106: 114-121; May 1957.
- Architectural Forum. "What's Changing U. S. High Schools?" Architectural Forum 113: 94-95; November 1960.
- Architectural Record. "Educational Oasis." Architectural Record 122: 167-176; September 1957.
- Architectural Record. "New York State Offers Stock School Plans." Architectural Record 134: 36; November 1963.
- Architectural Record. "School Plumbing Fixtures, What Goes Where?" Architectural Record 125: 230-233; March 1959.
- Architectural Record. "Vocational High School to Do a Social Job." Architectural Record 118: 168-172; July 1955.
- Baker, M. R. "Maintenance Savings Must Be Planned into New Buildings." Nation's Schools 66: 70-73; December 1960.
- Barrett, W. A. "September 8, 2011." Overview 2: 48-49; September 1961.
- Becker, H. "School Building in Modern Society." American Institute of Architects Journal 36: 93-96; October 1961.
- Bergstrom, C. T. An Analysis of the Impact of Program Change on School Plants. Doctor's thesis. Lansing: Michigan State University, 1961. 177 p. Abstract: Dissertation Abstracts 22: 4264; 1962.
- Bohn, L. A. Desirable and Understandable Building Features and Spaces in Selected Elementary Schools. Doctor's thesis. Austin: University of Texas, 1958. 234 p. Abstract: Dissertation Abstracts 19: 998-999; 1958.
- Borrow, J. M. "Add A Building Contractor to the Planning Team." Nation's Schools 60: 73-74; September 1957.
- Boyan, N. J. "Involving the Custodian in School Building Planning." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 99-102.
- Briggs, P. W. "New High School's Staff Planning and Teamwork." American School and University, 1963-1964. Thirty-fifth edition. New York: Buttenheim Publishing Corp., 1963. pp. 37-40.
- Bruce, W. C. "School Architecture 1963." American School Board Journal 146: 48; January 1963.
- Bullock, T. A., and Passeur, H. "Research Report 14; Form Allows Function." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 387-390.
- Campbell, E. A. "New Spaces and Places for Learning." School Review 68, no. 3: 346-352; Autumn 1960.
- Campbell, S. C. Relationships Between the Comprehensiveness of School Plant Planning Procedures and the Quality of Resultant School Plants. Doctor's thesis. Madison: University of Wisconsin, 1961. 452 p. Abstract: Dissertation Abstracts 22: 1880-1881 1961.
- Carr, L., and Carr, M. "Buildings for Living and Learning: Teachers Dream, Too." Childhood Education 34: 355-356; April 1958.

- Castaldi, B. "Concept of Dynamic Capacity." School Executive 78: 44-45; August 1959.
- Castaldi, B. "Designing for Custodians." Overview 2: 58-59; October 1961.
- Castaldi, B. "New Dimensions in Plant Planning." Overview 3: 44-46; January 1962.
- Castaldi, B. "Profile of Your Next Building." Educational Executives' Overview 4: 30-32+; June 1963.
- Caudill, W. W. "Form Follows Function." National Education Association Journal 46: 152-155; March 1957.
- Caudill, W. W. "Fourteen Ways School Design Has Responded to Modern Education." Nation's Schools 71: 52-63; January 1963.
- Caudill, W. W. "Housing the Secondary School of Tomorrow." Teachers College Record 56: 393-403; April 1955.
- Caudill, W. W. "Three C's of School Planning." School Executive 79: 57-59; November 1959.
- Caudill, W. W., and Bullock, T. A. "Barriers and Breakthroughs; Research Report 9." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 437-442.
- Cerny, R. G. "Educational Use Shapes the Structure." American School and University 37: 29-31; November 1964.
- Chabe, A. M. "Approved for Youth." Overview 1: 99; June 1960.
- Chaffee, L. The Influence of the Location of the Superintendent's Office on the Educational Administration Complex. Doctor's thesis. Columbus: Ohio State University, 1961. 191 p. Abstract: Dissertation Abstracts 22: 3482; 1962.
- Chatburn, J. W. A School Plant Facilities Plan for the Connell School District, State of Washington. Doctor's thesis. Pullman: State College of Washington, 1959. 128 p. Abstract: Dissertation Abstracts 20: 931-932; 1959.
- Cherry, R. W. "Implications of Child Growth and Development for School Plant Design; Research Report 6." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 423-428.
- Cherry, R. W. "Self-Contained Classrooms Make the Grade." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 177-180.
- Chick, C. E. The Influence of State-Approved Surveys of School Plant Planning in Selected Florida Counties. Doctor's thesis. Tallahassee: Florida State University, 1964. 264 p. Abstract: Dissertation Abstracts 25: 5042-5043; 1965.
- Chilton, C. S. "Schools that Teachers Planned." Texas Outlook 39: 15; June 1955.
- Clapp, W. F. "Educational Planning of Schools." School Executive 74: 90-91; January 1955.

- Clark, H. F. "Inefficiency in Our School Buildings." School Executive 79: 11; October 1959.
- Clayton, T. "Trends in Texas School Design." Texas Outlook 46: 22-25; November 1962.
- Cocking, W. D. "Educational Plant in the 1960's." Overview 2: 83; April 1961.
- Cocking, W. D. "Getting Quality School Buildings." School Executive 77: 7; June 1958.
- Cocking, W. D. "Is There a Place for Stock Plans?" School Executive 75: 7; November 1955.
- Cocking, W. D. "Let's Build Superior School Buildings." School Executive 77: 7; September 1957.
- Cocking, W. D. "Planning Good School Buildings." School Executive 75: 21-23; September 1955.
- Cocking, W. D. "Planning School Plants." Educational Executives' Overview 4: 75; May 1963.
- Cocking, W. D. "Secondary School Plant of the Future." School Executive 74: 7; February 1955.
- Collins, G. J. "New Frontiers in Plant Design." American School and University, 1962-1963. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. 23-26.
- Combs, J. R., Graycar, M., and Priddle, I. "The School with Built-in Ideas." National Education Association Journal 44: 73-75; February 1955.
- Conrad, M. J., and Wohlers, A. E. "Associated Schools Approach to Planning School Buildings." Educational Research Bulletin 40: 36-46; February 1961.
- Copple, E. V. "The Administration of a School Building Program." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 151-160.
- Corrigan, D., and Rybus, H. "Role of the Principal-Elect-- Planning for New Directions in Secondary School Plants and Programs." Bulletin of the National Association of Secondary-School Principals 46: 19-30; September 1962.
- Creighton, K. H. "Most Like 'em Modern." Progressive Architecture 39: 278; March 1958.
- Cross, A. J. F. "Principles of Good School Planning." National Elementary Principal 39: 28-35; September 1959.
- Cross, A. J. F. "A School Building Is for Learning." American School Board Journal 132: 27-28+; January 1956.
- Cross, E. A., and Ford, R. S. "Program Can Have Priority in Building Secondary Schools." National Education Association Journal 47: 26-28; January 1958.
- Daly, L. A., Jr. "Cooperative Planning as an Approach to School Design." Nation's Schools 57: 66-76; May 1956.
- Deam, A. F. "Standardizing Elementary Classrooms." School Executive 75: 72-76; October 1955.

- DeAngelis, C. E. "Five Building Decisions that Can Save Money for your District." School Management 7: 109-110+; July 1963.
- Dick, A. H. "Ample Space and Modern Equipment." Nation's Schools 55: 84+; January 1955.
- Domian, O. E. "Role of School Boards in School Plant Programs." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 49-50.
- Donaldson, G. W. "Outdoor Education in the Secondary School." American Institute of Architects 28: 223-226; July 1957.
- Educational Executives' Overview. "Quality Design for Terminal Enrollments." Educational Executives' Overview 4: 6; August 1963.
- Educational Facilities Laboratories. "Schools for Tomorrow." Architectural Record 127: 194-197; May 1960.
- Eitel, G. L. "Maintenance Team and Plant Planning." Educational Executives' Overview 3: 44-45; December 1962.
- Endres, M. P. "School Planning; Who Can Help and How?" National Elementary Principal 39: 36-43; September 1959.
- Engelhardt, N. L., Sr. "Don't Let Inadequate Planning Speed Obsolescence of New Schools." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 44-52.
- Engelhardt, N. L., Sr. "The Future Community and Its Schools." American School Board Journal 132: 77-79; March 1956.
- Engelhardt, N. L., Sr. "Planning the Facilities to Meet the Educational Needs of Our Democracy." American Institute of Architects Journal 30: 37-41; September 1958.
- Essex, D. L. "Creativity in School Planning." School Executive 75: 60; June 1956.
- Essex, D. L. "Trends in School Design." American School Board Journal 134: 37-40; January 1957.
- Fenstermaker, H. F., and Buikema, B. J. "School Plant Today, Business Building Tomorrow." School Executive 76: 68-69; June 1957.
- Fletcher, W. R. "Schoolhouse Construction." School Executive 75: 65-67; January 1956.
- Foose, R. L., and Moore, H. J. "What Factors Should Be Considered in Planning a Modern Secondary-School Plant?" Bulletin of the National Association of Secondary-School Principals 39: 239-243; April 1955.
- Fowler, F. M. "Obsolescence in New Schools." American School Board Journal 144: 30; April 1962.
- Fowler, F. M. "Partial Design Solutions--A Waste." American School Board Journal 145: 35-36; October 1962.
- Fowler, F. M. "Planning the Non-Obsolete Building." Educational Executives' Overview 3: 43; October 1962.
- French, W. C. "Building Design to Provide Student Work Areas and Cooperative Faculty Activities." Bulletin of the National Association of Secondary-School Principals 41: 260-261; April 1957.

- Fry, C. E. "Social Living Facilities in High Schools and Colleges." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 257-260.
- Gang, S. Influence of School Plant upon Personality Ratings of Elementary School Children in the New York City Public School System. Doctor's thesis. New York: New York University, 1961. 114 p. Abstract: Dissertation Abstracts 23: 493; 1962.
- George, N. L. "The Business Manager on the School Planning Team." Nation's Schools 68: 80-83; October 1961.
- Gibbons, N. L. "Scheme for Efficient Schools." Ohio Schools 39: 13; December 1961.
- Gibson, C. D. "Why Standard Plans Don't Work." American Institute of Architects Journal 42: 88-90; September 1964.
- Gilliland, J. W. "What Makes a Good Schoolhouse?" American School and University 36: 25-28; April 1964.
- Gilson, F. C. "Questions for the School Planner." American School Board Journal 132: 53; January 1956.
- Gilson, F. C. "Sanity in School Building." American School Board Journal 134: 35-36; January 1957.
- Goetschius, D. G. "A Study of the Functional Aspects of the Modern School Classroom." Doctor's thesis. Laramie: University of Wyoming, 1956-57.
- Gores, H., and King, J. "New Dimensions in School Design: Are You Planning Obsolete Schools? Interview." School Management 6: 66-70+; July 1962.
- Gores, H., and King, J. "Nine New Things in School Building; Interviews with H. Gores; J. King." School Management 8: 129-137+; July 1964.
- Gores, H. B. "Educational Change and Architectural Consequence." Architectural Record 126: 154-158; August 1959.
- Gores, H. B. "Some Factors that Affect Future Schoolhouse Planning; Interview." Nation's Schools 65: 74-77; April 1960.
- Gores, H. B. "'Still Sits the Schoolhouse'...But Less So." American Institute of Architects Journal 40: 83-90; December 1963.
- Gores, H. B. "What Principals Should Know About New Developments in School Design." Bulletin of the National Association of Secondary-School Principals 47: 190-200; April 1963.
- Gores, H. B. "Where the Schoolhouse Goes From Here." Architectural Record 136: 225-227; September 1964.
- Graham, F. B. "Basic Elements in the Planning of Electrical Systems." Architectural Record 117: 209-212; February 1955.
- Graham, J. P. "Teachers in School Planning." Nation's Schools 58: 73-75; November 1956.
- Gruen, V. "Unit System for Schools." Arts and Architecture 72: 20-21; February 1955.

- Hamon, R. L. "New School Buildings in Europe." School Life 40: 5-64; November 1957.
- Harman, H. J. "Keyman in the Battle for Space." American School Board Journal 147: 28; September 1963.
- Hayward, W. G. "School Buildings and the Learning Program." National Elementary Principal 39: 20-25; September 1959.
- Heeb, L. J. "How to Plan Your Schools for Community Use." American School Board Journal 140: 53-54; February 1960.
- Heffernan, D. J. "Chicago's Educational Plant Program." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. 15-18.
- Heffernan, H. "Elementary Education; Facilities." National Education Association Journal 51: 46-48; September 1962.
- Heffernan, H. W. "Stimulation for Learning." National Education Association Journal 44: 218-221; April 1955.
- Hess, B. A.; and Wohlers, A. E. "What Is the Role of the Principal and the Staff in Planning the New School Plant?" Bulletin of the National Association of Secondary-School Principals 40: 60-64; April 1956.
- Hess, F. An Analysis of Codes Regulating Selected High School Sanitary Facilities. Doctor's thesis. New York: Columbia University, 1960-61.
- Hewens, F. E. "Consider Lockers When You Plan." School Executive 75: 54-55; June 1956.
- Hoerner, H. R. A Comparative Investigation of the Role Educational Planning Plays in Determining School Plant Design for Elementary and Secondary Schools in the State of Delaware. Doctor's thesis. Philadelphia: Temple University, 1964. 255 p. Abstract: Dissertation Abstracts 25: 4497-4498; 1965.
- Holloway, H. H. "Designing Schools for Colder Regions." Nation's Schools 61: 51-53; January 1958.
- Holmes, G. W., III. "Decade of Secondary School Plant Planning." High School Journal 44: 130-134; January 1961.
- Holmes, G. W., III. "Educational Planning for Better Schools." American School and University, 1959-1960. Thirty-first edition. New York: Bittenheim Publishing Corp., 1959. pp. 5-10.
- Hoppock, A. "Schools of the Future." National Elementary Principal 39: 184-189; September.
- Humphrey, J. R. "Designed with a Purpose." Texas Outlook 42: 26-27; May 1958.
- Humphrey, J. R. "Program Precedes Plant." Texas Outlook 42: 20-21; April 1958.
- Hunter, J., Jr. "Expediting Maintenance Through School Design." American School Board Journal 136: 47-48; January 1958.
- Illinois Education. "Let There Be Learning." Illinois Education 48: 62+; October 1959.
- Indiana and Midwest School Building Planning Conference. "Proceedings of the Indiana and Midwest School Building Planning Conference: Highlights of Round Table Discussion on Facilities." Bulletin of the Indiana University School of Education 33: 42-48; November 1957.

- Interiors. "Schools: The Race to Design." Interiors 115: 78-83; November 1955.
- Johns, R. E. A Plan for Area Technical Schools in Chester County Pennsylvania. Doctor's thesis. Philadelphia: University of Pennsylvania, 1955-56.
- Kermoian, S. B. Urban Community Maturation and School Plant Planning. Doctor's thesis. Stanford, Calif.: Stanford University, 1956. 229 p. Abstract: Dissertation Abstracts 17: 77; 1957.
- King, J. "The Sound of Change in the American Schoolhouse." Architectural Record 132: 147-149; July 1962.
- Knezevich, S. J. "Procrustean Bed Or a Functional Plant." American School Board Journal 140: 35-37+; March 1960.
- Knezevich, S. J. "The School Board and School Building." American School Board Journal 136: 28-32; February 1958.
- Knowles, R. "Derivation of Surface Responses to Selected Environmental Forces: Tetrahedron." Arts and Architecture 81: 21-23; June 1964.
- Koopman, G. R. "Changing Secondary School Programs and Their Implications for Design." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 199-204.
- Koopman, G. R. "Planning the General Classroom." Educational Research Bulletin 35: 63-69; March 1956.
- Kyzar, B. A Comparison of Instructional Practices in Classrooms of Different Design. Doctor's thesis. Austin: University of Texas, 1961. 286 p. Abstract: Dissertation Abstracts 22: 3490-3491; 1962.
- Kyzar, B. "School Plant Design and the Instructional Program." American School Board Journal 145: 25-26; August 1962.
- Larson, A. A. The Development of Guidelines As to the Role of the High School Principal in Planning a Secondary School Building. Doctor's thesis. New York: Columbia University, 1964. 188 p. Abstract: Dissertation Abstracts 25: 5062-5063; 1965.
- Leavitt, U. J. D. "Criteria for Provision and Use of Space, Facilities, and Personnel." American School Board Journal 144: 38-40; February 1962.
- Lee, R. E. An Appraisal of Teacher Participation in Secondary School Planning. Doctor's thesis. Stanford, Calif.: Stanford University, 1957. 195 p. Abstract: Dissertation Abstracts 17: 2482-2483; 1957.
- Leggett, S. "Trends in Education of Importance to the School Business Administrator." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 344-347.
- Lewis, P. "Facilities for the School of the Future: A Bibliography." Audiovisual Instruction 7: 562-564; October 1962.
- Lewis, P. "Spaces and Equipment for Education." Progressive Architecture 42: 171-175; November 1961.
- Lopez, F. "Purses of Silk." Overview 1: 62-63; June 1960.

- Lopez, F. G. "Automation in Schools." Progressive Architecture 40: 143-148; November 1959.
- Lopez, F. G. "New High Schools." Architectural Record 118: 205-206; October 1955.
- Lopez, F. G. "Schools." Architectural Record 117: 179; February 1955.
- Lopez, F. G. "What Makes a Good School Building?" Architectural Record 117: 173-176; June 1955.
- Lovejoy, P. "Human Factor in Education." Wisconsin Journal of Education 93: 6-10; January 1961.
- Lovewell, C. C. "Planning High Schools." American School Board Journal 142: 24-27; November 1961.
- Lyman, W. "Eight 'Y's' of School Planning." American School Board Journal 140: 24-25; January 1960.
- Lyman, W. "How to Evaluate Plans for Your New School Building." Overview 1: 50-53; February 1960.
- Architectural Forum. "Little Red Schoolhouse; Excerpts." Architectural Forum 103: 131; July 1955.
- MacConnell, J. D. "Sixty-Seven Questions to Keep Out Planning Errors." Nation's Schools 73: 55-57; January 1964.
- MacConnell, J. D., and Ovard, G. F. "General Procedures in Planning Academic Classrooms." American School Board Journal 144: 34-38; February 1962.
- Mackintosh, H. K., and Barnes, M. "School Buildings with Personality." School Life 37: 136-137+; June 1955.
- Maffeo, A. A. "How to Build a School Your Next Superintendent Can Use." School Management 8: 75-79; March 1964.
- Marsh, J. H., III., and Wagner, W. G. "New Possibilities in School Construction." American School and University 36: 6-7; May 1964.
- Marsh, Z. A. "Architecture, Education, and Industry Working Together." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 159-164.
- McGuinness, W. J. "'Total Energy' for School." Progressive Architecture 44: 148; December 1963.
- McNicholas, J. J., Jr. The Development of Educational Criteria for New Elementary Schools in Chicago. Doctor's thesis. East Lansing: Michigan State University, 1961. 213 p. Abstract: Dissertation Abstracts 22: 1889; 1961.
- Medd, D. L., and Crowley, M. "British School Architects Examine Our Work." Progressive Architecture 41: 125-130; March 1960.
- Mehrtens, H. B. "Before You Build, Consider Needs, Not Traditions." School Executive 77: 90-91; May 1958.
- Mickel, E. "U. S. School Housing Official Calls for Quality Schools Designed for Local Needs." Architectural Record 126: 44+, 48+; October 1959.
- Miller, R. D. "Think First and Last of Maintenance." Nation's Schools 59: 96+; April 1957.
- Miller, W. C. "Hemisphere School No. 318 in the 25th. Century." Nation's Schools 65: 52-56; January 1960.
- Moore, H. A., and Caudill, W. W. "Designed for the Early Teen-ager." Nation's Schools 55: 55-64; January 1955.

- Moore, H. A., and Others. "Classrooms Plus." National Elementary Principal 39: 123-134; September 1959.
- Morrow, R. D. "It's the Little Things that Count." Nation's Schools 59: 74-81; February 1957.
- Moskowitz, D. H. "Problems Common to School People." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 361-362.
- Mueller, W. F. "Architectural Planning." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 110-113.
- Mutrux, R. H. "145th Building Committee Meeting, Or, How One School Was Built." Progressive Architecture 45: 185-187; April 1964.
- Nakata, H. S. "Building for More Students." Bulletin of the National Association of Secondary-School Principals 44: 41-44; October 1960.
- National Council on Schoolhouse Construction. "Your Job in School Plant Planning." School Executive 76: 81-82; August 1957.
- Nation's Schools. "Architectural Exhibit Proves There Is No Single Formula for Planning the School." Nation's Schools 67: 101; April 1961.
- Nation's Schools. "Designing a Schoolhouse Is Educational Planning." Nation's Schools 60: 74; September 1957.
- Nation's Schools. "Plan Your School, Not The School." Nation's Schools 58: 62; December 1956.
- Neterer, E. "Buildings for Living and Learning: Children Dream." Childhood Education 34: 353-354; April 1958.
- Neutra, R. J. "School Building of the Future." Recreation 48: 322; September 1955.
- Neutra, R. J. "Theory of School Design: School Building in Its Context." American School Board Journal 130: 58-604; January 1955.
- Nibecker, A. S., Jr. "School Plants Are Now Down to Earth." Nation's Schools 56: 35-37; August 1955.
- Orput, R. A., Brubaker, C. W., Caudill, W. W., and Haeckel, L. C. "Emerging Instructional Patterns and School Design." American School Board Journal 142: 24-28; January 1961.
- Osgood, J. A. Present and Future School Plant Needs for the Salem, New Hampshire, School District. Doctor's thesis. New York: New York University, 1955. 206 p. Abstract: Dissertation Abstracts 16: 488; 1956.
- Overview. "Contracting for New Buildings." Overview 2: 38-39; January 1961.
- Overview. "Learning Concepts Determined Mayfield's Plan." Overview 3: 66-67; September 1962.
- Overview. "Pragmatic Planning in a Boom Town." Overview 2: 40-43; August 1961.
- Overview. "Tools for Education." Overview 1: 73-84; February 1960.
- Overview. "Wanted: More Tools for Education." Overview 1: 75; March 1960.

- Parker, K. H., and Ittner, H. C. "Begin by Playing with Circles." American School Board Journal 143: 38; July 1961.
- Part, A. "Recent Developments in British School Building." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. p. 71082.
- Pawley, E. "AIA: School Plant Studies: Small Schools." American Institute of Architects Journal 37: 85-96; March 1962.
- Pawley, E. and Hardison, D. "Mexican Rural Schools." American Institute of Architects Journal 39: 101-106; June 1963.
- Pena, W. M. "People and Program: Background for the Architect." National Elementary Principal 39: 44-45; September 1959.
- Perkins, L. B. "The Physical Environment." National Elementary Principal 39: 116-122; September 1959.
- Perkins, L. B., Watson, N. E., and Sharp, J. S. "Concepts for the Modern High School; Special Report." American School Board Journal 142: 22-27; February 1961.
- Peters, J. S. Criteria for School Plant Operations. Doctor's thesis. Stanford, Calif.: Stanford University, 1955. 87 p. Abstract: Dissertation Abstracts 15: 369-370; 1955.
- Phillips, P. A. A Survey of Construction Features Found in 325 New Elementary School Buildings. Doctor's thesis. Philadelphia: Temple University, 1956. 571 p. Abstract: Dissertation Abstracts 17: 291-292; 1957.
- Pike, I. L. "Staff Participation." National Elementary Principal. 39: 60-63; September 1959.
- Pillard, M. J., and Gibbons, F. "Let's Take a Look at New Schools." School Executive 75: 61-91; June 1956.
- Prins, E. "Building Construction and Design in Relation to Maintenance." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 185-192.
- Progressive Architecture. "Original Design Can Affect Long-Range Maintenance Costs." Progressive Architecture 1: 58-60; February 1960.
- Raab, G. E., and Sopsis, J. "Facilities for the Elementary School Science Program." Science Teacher 27: 25-29; February 1960.
- Radder, N. J. "Plumbing Fixtures for Educational Facilities." American School Board Journal 140: 32-34; June 1960.
- Rambo, E. S. "Blueprint for School Planning." Texas Outlook 40: 16-17; June 1956.
- Reese, I. M. "Notes on Elementary Schools." Progressive Architecture 37: 116-129; March 1956.
- Reese, I. M., and Bennett, E. A. "Classroom Planning." Progressive Architecture 38: 116-117; July 1957.
- Reid, J. L. "Architectural Design of Schools." School Executive 74: 92-95; January 1955.

- Reid, J. L. "High Schools." Overview 2: 62-65; March 1961.
- Reid, J. L. "Human Values in School Architecture." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 113-116.
- Reid, J. L. "San Francisco Story; Architecture of the Bay Area." American School and University 37: 36-39; October 1964.
- Reid, J. L. "Secondary School Design in Retrospect." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. 21-32.
- Remmlein, M. K. "Legal Aspects of School Building Programs." National Elementary Principal 39: 84-91; September 1959.
- Rice, A. H. "Why Schoolhouse Design Is Definitely Different Today." Nation's Schools 71: 50-51; January 1963.
- Roberts, H. H., and Mentor, A. "Planning School Facilities for Young Adolescents; Rowland Union Elementary School District, La Puente Valley, Calif." California Journal of Elementary Education 28: 36-47; August 1959.
- Robertson, W. "Environment for Skills." Childhood Education 38: 210-211; January 1962.
- Rogers, A. C. "Toward an Expressive School Architecture." Nation's Schools 57: 81-84; March 1956.
- Sanderson, G. A. "Tomorrow's School Needs Discussed." Progressive Architecture 37: 95; March 1956.
- Sargent, C. G. "Responsibility of School Design." School Executive 76: 50-52; December 1956.
- Saylor, A. G. "Secondary-School Buildings." National Education Association Journal 45: 226-231; April 1956.
- Schoales, R. D. "Building Design And Its Relation to Maintenance and Standardization of the Component Functional Units." Proceedings of the Association of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 144-148.
- Schoales, R. D. "Built-in Maintenance." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association 1956. pp. 291-297.
- School Executive. "New Directions in School Design." School Executive 78: 64-69; June 1959.
- School Executive. "School for Tomorrow; An Architect's View." School Executive 76: 53-68; February 1957.
- School Executive. "Subject: Designing for a High School's Needs." School Executive 79: 69-73; September 1959.
- School Management. "How Teachers Planned a Classroom." School Management 5: 51-53; July 1961.
- School Management. "How to Bring Electricity Down to Earth." School Management 6: 84-85; February 1962.
- School Management. "How to Get More Display Space for Your Teachers." School Management 6: 108-109; May 1962.

- Schreiber, N., and Umstattd, J. G. "What Factors Should Be Considered in Planning a Modern Secondary-School Plant?" Bulletin of the National Association of Secondary-School Principals 42: 98-104; April 1958.
- Schroeter, F. P. "So You Want a New School?" American School Board Journal 133: 28; July 1956.
- Schutte, L. J. "Choosing a Building Framework." School Executive 74: 100-101; March 1955.
- Scott, H. A. "Facilities for the Future." Journal of Health, Physical Education, Recreation 33: 34-36; April 1962.
- Seagers, P. W. "Building Good Maintenance Factors into New School Construction." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 108-110.
- Shapiro, J. W. "How Can I Decide if a Building Plan is Good?" American School Board Journal 144: 41-42; May 1962.
- Sharp, J. S. "For a Unified District That Needed Guidance." Architectural Record 118: 179-188; July 1955.
- Sharp, J. S. "Problems Common to the Architect." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 362-364.
- Sharp, J. S. "Proper Design Limits Vandalism." American School Board Journal 149: 22-23; December 1964.
- Shaw, A. B. "Some Lessons We've Learned about Building." Overview 1: 11; December 1960.
- Shaw, A. B. "Toward Better School Design." School Executive 74: 68; April 1955.
- Silins, J. "Modern Steels Add New Dimensions to School Design and Construction." American School Board Journal 148: 21-25; January 1964.
- Smalling, G. A. "Problems of Schoolhouse Planning and Construction." Proceedings of the Association of School Business Officials of the United States and Canada, 1957. Evanston, Ill.: The Association, 1957. pp. 86-93.
- Smith, L., and Shaw, A. "New High School." Overview 3: 33-48; March 1962.
- Spiller, M. "Taylorville Builds a School." National Elementary Principal 39: 70-73; September 1959.
- Stickle, R. W. "How to Plan a High School." American School Board Journal 143: 28-31; September 1961.
- Stone, H. W. "Planning and Constructing School Buildings." Proceedings of the Pennsylvania University Schoolmen's Week. Philadelphia: University of Pennsylvania, 1955. pp. 2-5.
- Stone, W. J. "School of the Future, Now." Bulletin of the National Association of Secondary-School Principals 46: 241-249; May 1962.
- Summerville, D. G. "School Equipment and the Building Program." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 358-370.

- Tanzman, J. "How to Build around New Teaching Ideas." School Management 7: 49-51+; December 1963.
- Tanzman, J. "Touring the Construction Sites." Audiovisual Instruction 7: 558-561; October 1962.
- Taylor, J., Gore, L., and Gaddard, H. "Planning Schools for Young Children." Educational Digest 27: 50-52; September 1961.
- Taylor, J. L. "Learning Laboratories for Elementary School Children." School Life 41: 17-19; January 1959.
- Temko, A. "Daly City and Its Amazing Schools." Architectural Forum 115: 152-157; November 1961.
- Templeton, A. "Roof Construction, an Unsolved Problem." Proceedings of the Association of School Business Officials of the United States and Canada, 1963. Chicago, Ill.: The Association, 1963. pp. 192-194.
- Templeton, A. "What the School Business Official Must Know about Changes in Education to Build Good Schools." Proceedings of the Association of School Business Officials of the United States and Canada, 1960. Evanston, Ill.: The Association, 1960. pp. 438-447.
- Texas Outlook. "Houston Builds for Tomorrow." Texas Outlook 45: 38-39; October 1961.
- Texas Outlook. "Staying Ahead of the Game." Texas Outlook 46: 33; October 1962.
- Theisen, W. W. "Long-Range Planning for School Plant." Nation's Schools 58: 64-67; July 1956.
- Tjomsland, A. C. "Building Changes Respond to Six School Planning Factors." Nation's Schools 73: 71+; March 1964.
- Tollerud, G. O. "Classroom for All Kinds of Teaching." School Management 6: 128-129; March 1962.
- Tollerud, G. O. "Planning School Buildings." Minnesota Journal of Education 44: 23; May 1964.
- Tollerud, G. O., and Balcer, C. L. "Classrooms for Academic Subjects." Minnesota Journal of Education 42: 16-17; October 1961.
- Trump, J. L. "Places for Learning." Audiovisual Instruction 7: 516-517; October 1962.
- United States Office of Education. "Trends in Secondary-School Plants." Education Digest 22: 1-5; December 1956.
- Wadzeck, G. B. "Research Report 12; Educational Planning for an Ageless High School." American School and University, 1957-1958. Twenty-ninth edition. New York: Bottenheim Publishing Corp., 1957. pp. 371-376.
- Waechter, H. H. "Translating Children's Needs into Terms of Design." National Elementary Principal 39: 12-19; September 1959.
- Wanamaker, P. A. "Better Schoolhouse Design; Excerpts." Architectural Forum 102: 139; June 1955.
- Webber, R. A. A Study of the Problem of the Allocation of Spaces in New High Schools to Meet the Needs of Various Departments. Doctor's thesis. Seattle: University of Washington, 1955-56.

- Welling, R. E. The Role of the District Employee in Charge of School Planning and Construction. Doctor's thesis. Los Angeles: University of Southern California, 1960. 180 p. Abstract: Dissertation Abstracts 21: 1445-1446; 1960.
- Wenbourne, E. E. Pupil Control Factors to Be Considered In Planning School Plants for the Grossmont Union High School District. Doctor's thesis. Lincoln: University of Nebraska Teachers College, 1962. 176 p. Abstract: Dissertation Abstracts 22: 4249-4250; 1962.
- Werthimer, J. L. "Architects' Dream of a School Shangri-la." Nation's Schools 61: 47-50; January 1958.
- Williams, D. D. "How Oregon Builds Schools." American School Board Journal 131: 43+; September 1955.
- Wilson, R. E. "The Little Things that Make a Better School." Nation's Schools 66: 82-89; November 1960.
- Wilson, R. E., and Hood, J. R. "Equipment for the Elementary School." National Elementary Principal 39: 135-149; September 1959.
- Wynkoop, F. "Catenary Umbrella Shelters Hypothetical School Campus." Architectural Record 122: 234; July 1957.
- Yulo, F. R. General Factors Related to the Educational Specifications for the Physical Facilities of the Small Twelve-Year School (Grades K-12). Doctor's thesis. New York: Columbia University, 1962. 132 p. Abstract: Dissertation Abstracts 23: 4206-4207; 1963.
- Zeidenberg, D. "Electrical Systems for School Buildings." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. C9-C14.

5090 Environmental Considerations

5091 Spatial Environment

- Anderson, E., and Harkness, J. C. "Planned Variability." Nation's Schools 65: 83-91; April 1960.
- Architectural Forum. "Flexible Space for Flexible Teaching." Architectural Forum 115: 158-161; November 1961.
- Audiovisual Instruction. "We Find the Walls Get in the Way: An Experimental Program in a Traditional Building." Audiovisual Instruction 7: 528-533; October 1962.
- Beynon, J. "The Why and Where of Operable Walls." American School Board Journal 147: 27-32; November 1963.
- Brubaker, C. W. "Relation of Learning to Space and Vice Versa." Bulletin of the National Association of Secondary-School Principals 46: 197-200; May 1962.
- Caldwell, L. L. "Alcove Workroom Developed in Three Patterns." Nation's Schools 62: 63-65; September 1958.
- Fitzwater, G. H. "Mother Speaks for Space." Childhood Education 34: 357-358; April 1958.

- Gibson, C. D. "Teaching in Trisectioned Areas." Nation's Schools 62: 44-47; July 1958.
- Koehler, C. L. "Provisions for Space in a Modern Schoolhouse." Proceedings of the Association of School Business Officials of the United States and Canada, 1960. Evanston, Ill.: The Association, 1960. p. 197-207.
- Leggett, S., and Qualls, G. "Walls that Work!" Educational Executives' Overview 4: 31-36; February 1963.
- McLeod, J. W. "And Now the Ultimate in Flexibility: These Walls Change with the Curriculum." Nation's Schools 71: 64-67; January 1963.
- Nation's Schools. "Plan Takes Lockstep and Buries It in Space." Nation's Schools 72: 86-89; October 1963.
- Nation's Schools. "Schoolmen Want to Keep Corners in School Areas; Opinion Poll Findings." Nation's Schools 67: 81; April 1961.
- Robinson, R. E. "Corridors Merge with Classrooms." Nation's Schools 55: 68-71; June 1955.

5092 Thermal Environment

- American School Board Journal. "Central Controls Mean Comfort Plus Economy." American School Board Journal 149: 34-35; August 1964.
- American School Board Journal. "How the Heat Pump Works." American School Board Journal 149: 46; August 1964.
- American School Board Journal. "Lennox Living Laboratory." American School Board Journal 134: 98+; May 1957.
- American School Board Journal. "Single Answer to Multiple Problem--Unit Ventilator." American School Board Journal 149: 24-25; August 1964.
- American School Board Journal. "Two Studies on Thermal Environment and Learning." American School Board Journal 147: 22-24; December 1963.
- Anderson, C. L. "Heating and Ventilating." National Education Association Journal 51: 28-29; October 1962.
- Architectural Forum. "Is Cooling Coming for Schools?" Architectural Forum 105: 124-127; July 1956.
- Architectural Record. "Ceiling Units for School Air Conditioning." Architectural Record 136: 163-164; August 1964.
- Architectural Record. "Characteristics of Classroom Heating and Ventilating Systems." Architectural Record 124: 158-162; December 1958.
- Association of School Business Officials of the United States and Canada Seminar. "Ideas for More Effective School Heating-Air Conditioning." American School Board Journal 146: 33-35; January 1963.
- Barnes, R. E. "Schools Floors Warmed by Electric Heating." Architectural Record 134: 165-166; July 1963.
- Baylon, C. A. "Air in Classrooms." The Instructor 64: 21-22; January 1955.

- Beseke, K. L., and Schutte, L. J. "Continuous Slot Air Delivery under Large Windows Prevents Drafts in New School under Construction." Heating, Piping and Air Conditioning 27: 106-109; November 1955.
- Boyd, R. L. "Heat School Electrically?" Heating, Piping, and Air Conditioning 28: 86-89; December 1956.
- Burkhardt, R. G. "Heat Pumps: Fad or Trend?" Nation's Schools 74: 60-62; October 1964.
- Bush, G. H. "New Trends in Heating Schools." American School Board Journal 134: 59; January 1957.
- Buttenheim, E. M. "Why a Business Air Conditions Its Offices." School Executive 78: 55-56; March 1959.
- Carroll, J. R., and Bareither, H. D. "Comfort Conditioning for Educational Buildings." American School and University, 1961-1962. Thirty-third edition. New York: Buttenheim Publishing Corp., 1961. pp. C1-C8.
- Cox, W. G. "Heat Pump Systems for Schools." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 355-359.
- Daugherty, C. R. "Winter Humidification Key to Greater Comfort." American School Board Journal 149: 44; August 1964.
- Davis, A. Q., and Curtis, N. C., Jr. "Architecture Creates Environment." Nation's Schools 63: 95-100; May 1959.
- Domestic Engineering. "New School Heating System to Be Tested under Classroom Conditions." Domestic Engineering 188: 1454; December 1956.
- Dostal, E. V. "Advantages of Hydronic Heating." Catholic School Journal 62: 100-102; April 1962.
- Dostal, E. V. "Hydronics Shrinks in Size, Stretches in Total Service." American School Board Journal 149: 31-32; August 1964.
- Dostal, E. V. "Providing for the Thermal Environment." American School Board Journal 144: 34-37; January 1962.
- Dubin, F. S. "Forced Warm Air Heats New School." Heating, Piping and Air Conditioning 28: 108-110; June 1956.
- Dubin, F. S. "Heating, Ventilating and Cooling for School and College Buildings; Developments and Trends." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 57-64.
- Dubin, F. S. "How to Choose a Heating-Cooling System." Overview 1: 62-63; October 1960.
- Dubin, F. S. "Slab on Grade Schools Heated by Warm Air Panels and Convection." Heating, Piping and Air Conditioning 27: 140-142; May 1955.
- Evans, R. D. "How to Select the Right Heating Plant for Your New School." School Management 8: 66-68; November 1964.
- Folley, M. D., and Newton, G. P. "All-Air Heating and Ventilating for Schools." Progressive Architecture 40: 172-174; October 1959.

- Fox, W., and Gordon, J. "Thoughts on Electric Heating." American School Board Journal 142: 32-33; May 1961.
- Foxhall, W. B. "Air Conditioning for Schools." Architectural Record 130: 183-194; July 1961.
- Fuller, L. R. "Why Are Many Classrooms Overheated?" Heating Piping and Air Conditioning 28: 137-139; January 1956.
- Garber, M. M. "Heating, Ventilating, Cooling." Educational Executives' Overview 4: 29-34; April 1963.
- Gibson, C. D. "Future Look at Climate Controls." School Executive 78: 56-58; March 1959.
- Gupta, H. C. "How to Select a Mechanical System." Nation's Schools 74: 58-59; October 1964.
- Gustafson, C. A., and Fickett, G. E. "What School Boards Should Know About Temperature Control Systems." American School Board Journal 140: 37-38; January 1960.
- Halmos, E. E., Jr. "A Climate of Your Own." Overview 1: 56-57; May 1960.
- Hamann, R. "Kimberly's Balanced Heat System Also Balances Annual Budget." American School Board Journal 149: 26-27; August 1964.
- Holtz, H. F. "What School Boards Should Know About Packaged Boilers." American School Board Journal 140: 35-37; January 1960.
- Hood, W. K. "Heat in the School Classroom." American School Board Journal 132: 55-57; April 1956.
- Hunter, L. N. "Seal Certifies Claims." American School Board Journal 149: 33; August 1964.
- Jacobs, J. "Trial by Cooling." Architectural Forum 115: 115-121; August 1961.
- Journal of Health, Physical Education, Recreation. "Controlled Environment; McPherson, Kansas, Plans an Air-Conditioned High School with Hexagonal Academic Areas and a Round Gymnasium Unit." Journal of Health, Physical Education, Recreation 33: 36; April 1962.
- Kurth, F. J. "Modern Concept for Heating, Ventilating and Cooling of Schools." School Executive 78: 92-93; October 1958.
- Lewis, S. R. "Heating and Ventilating School Buildings." American School Board Journal 132: 53-55; February 1956.
- L'Hote, J. D. "Coal VS. Gas VS. Oil Heating." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 282-290.
- Manning, W. R., and Olsen, L. R. "Air Conditioning: Keystone of Optimal Thermal Environment." American School Board Journal 149: 22-23; August 1964.
- McGuinness, W. J. "Cost of School Ventilation." Progressive Architecture 44: 146; August 1963.
- McGuinness, W. J. "Electric Heat Proven Favorable for Ohio School." Progressive Architecture 41: 182+; November 1960.
- McGuinness, W. J. "Heating by Light." Progressive Architecture 45: 194; May 1964.

- McGuinness, W. J. "Mechanical Engineering Critique; Decentralized Heating." Progressive Architecture 36: 7; December 1955.
- McGuinness, W. J. "Mechanical Engineering Critique: Methods and Costs of Installing Air Conditioning in Schools." Progressive Architecture 39: 9; October 1958.
- McGuinness, W. J. "Year-Round School Operation." Progressive Architecture 42: 218; September 1961.
- Mincy, H. F., Jr. A Study of Factors Involved in Establishing a Satisfactory Thermal Environment in the Classroom. Doctor's thesis. Knoxville: University of Tennessee, 1961. 405 p. Abstract: Dissertation Abstracts 22: 3069; 1962.
- Nation's Schools. "Design Controls Temperature." Nation's Schools 63: 90-92; May 1959.
- Nation's Schools. "Educational Planning Comes First." Nation's Schools 63: 94; May 1959.
- Nation's Schools. "Insulate for Comfort, and Economy." Nation's Schools 63: 109-110; May 1959.
- Nation's Schools. "Thermal Comfort Affects Learning." Nation's Schools 63: 86-90; May 1959.
- Nesbitt, A. J. "Controlled Ventilation Need Not Be Costly." American School Board Journal 132: 38-40; January 1956.
- Novak, P. M. "Microclimatology and the School's Indoor Climate." Nation's Schools 63: 101-105; May 1959.
- Ohio Schools. "Pioneering in School Heating." Ohio Schools 36: 16-17; February 1958.
- Overview. "Air Conditioning and the Learning Environment." Overview 2: 50-53; October 1961.
- Overview. "Dry Run for a Kansas High School." Overview 3: 56-58; February 1952.
- Overview. "Thermal Comfort and Efficiency." Overview 3: 25; August 1962.
- Overview. "Year-Round Comfort." Overview 1: 58; May 1960.
- Peccolo, C. M. The Effect of Thermal Environment on Learning. Doctor's thesis. Ames: State University of Iowa, 1962. 277 p. Abstract: Dissertation Abstracts 23: 2775; 1963.
- Pena, W. M., and Thomas, J. B. "An Architect Designs with Air Conditioning." School Executive 78: 50-52; March 1959.
- Pena, W. M., and Thomas, J. B. "Myths and Facts about Ventilation." American School and University, 1963-1964. Thirty-fifth edition. New York: Butterheim Publishing Corp., 1963. pp. 41-44.
- Progressive Architecture. "Air Conditioning: Schools." Progressive Architecture 39: 134-137; March 1958.
- Progressive Architecture. "Florida Sees Full-Scale Air-Conditioned School Test." Progressive Architecture 41: 54; August 1960.
- Redding, J. F. "Illinois School Gets Major Panel Heating Installation." Heating, Piping and Air Conditioning 27: 96-98; December 1955.

- Rich, H. M. "Classrooms Can Be Cool." Texas Outlook 41: 14-15; March 1957.
- Rutgers, N. L. "Is Heating Important in our Schools?" Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 354-358.
- Slote, L. "Achieving Thermal Comfort in Educational Buildings." American School and University, 1962-1963. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. C1-C4.
- Smith, N. B. "Electric Heating and School Design." American School Board Journal 138: 48-49; February 1959.
- Spaet, A. L. "Automatic Controls for Heating and Air Conditioning." Architectural Record 127: 182-189; January 1960.
- Stickney, A. J. "Radiant Ceiling / Automatic Anthracite Heat." Progressive Architecture 39: 144-145; August 1958.
- Todd, G. W. "Electric Heat in Schools Can Improve Attendance Record." Electrical West 115: 69-71; October 1955.
- Twomey, M. "Gas Expands...Naturally." American School Board Journal 149: 47; August 1964.
- Whittlesey, R. L. "Choice of Systems, Equipment." Nation's Schools 63: 106-108; May 1959.
- Wright, H. "Air Conditioned Schools." Architectural Record 128: 186-190; November 1960.
- Wright, H. "Air-Conditioning, Architecture and Education." Architectural Record 135: 146-153; February 1964.
- Wright, H. "A Definitive Experiment with Air Conditioning." American School Board Journal 142: 29-32; January 1961.
- Wright, H. "Electric-Resistance Heating for Schools." High School Journal 44: 148-153; January 1961.
- Wright, H. "Has School Air Conditioning Arrived?" Progressive Architecture 40: 159-163; November 1959.
- Wright, H. "Requirements of Air-Conditioning Installations." School Executive 78: 52-55; March 1959.
- Wright, H. "Thermal Comfort Report." Progressive Architecture 37: 142-152; January 1956.
- Wright, H. "What Does School Air Conditioning Cost?" American School Board Journal 136: 33-34+; January 1958.
- Yousoufian, H. H. "Continuous Slot Air Delivery under Large Windows Prevents Drafts in New School under Construction; Reply." Heating, Piping and Air Conditioning 28: 85-86; April 1956.
- Zunker, W. "Packaged Story of Packaged Boilers." American School Board Journal 149: 39-40; August 1964.

5093 Sonic Environment

- Architectural Forum. "Beautiful Buildings and Horrible Sounds." Architectural Forum 105: 152-157; September 1956.
- Brodey, W. "Sound and Space." American Institute of Architects Journal 42: 58-60; July 1964.

- Burk, D. D. "A Primer on Acoustics." Overview 2: 48-49; November 1961.
- Cardinell, R. L. "Acoustics in School Planning." American School Board Journal 138: 37-39; January 1959.
- Cavanaugh, W. J. "How Experts Solve Noise Problems." Nation's Schools 74: 68-69; October 1964.
- Educational Executives' Overview. "Good Planning Produces Good Acoustics." Educational Executives' Overview 4: 50-51; January 1963.
- Farrell, W. R. "Progress in Acoustics for Educational Buildings." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 51-56.
- Goodfriend, L. S. "Acoustical Materials for Schools." American School Board Journal 147: 21-23; November 1963.
- Interiors. "Acoustics for Modern Interiors." Interiors 122: 145-149; October 1962.
- Lane, R. N. "New School Designs Bring Along Noise Problems." Architectural Record 122: 215-218; July 1957.
- McKay, R. L. "How to Keep School Noise at the Right Level." Nation's Schools 74: 64-67; October 1964.
- Nation's Schools. "Acoustics in Building Materials and Equipment." Nation's Schools 67: 116-126; May 1961.
- Newman, R. B. "Some Common Sense for School Acoustics." Architectural Record 132: 154-155; July 1962.
- Pyle, D. "Acoustical Studies in School Design." American School Board Journal 147: 46-47; November 1963.
- Richards, R. L. "Thoughts on School Acoustics." American School Board Journal 145: 25-28; July 1962.
- Richards, R. L., and Krahl, R. B. "Sound Control in Difficult Areas." American School Board Journal 147: 33-35; November 1963.
- Rink, C. N. "Noise Control in Air-Handling Systems." American School Board Journal 147: 27-28; December 1963.
- Sabine, H. J. "Sound Control." Bulletin of the Indiana University School of Education 31: 118-140; September 1955.
- Williams, L. J., Brubaker, C. W., and Wieting, W. S. "How to Design a School for Good Hearing." Nation's Schools 67: 96-115; May 1961.
- Womack, D. W. A Study of Factors Involved in Establishing a Satisfactory Acoustical Environment in the Classroom. Doctor's thesis. Knoxville: University of Tennessee, 1962. 235 p. Abstract: Dissertation Abstracts 23: 3217-3218; 1963.
- Yerges, L. F. "The Role of Glass in Sound Control." American School Board Journal 147: 48-49; November 1963.

5094 Esthetic Environment

- American School Board Journal. "Thoughts on the School Courtyard." American School Board Journal 142: 32-33; February 1961.

- Berry, P. C. "Effect of Color Illumination upon Perceived Temperature." Journal of Applied Psychology 45: 248-250; August 1961.
- Birren, F. "The Psychology of Color for the Schoolroom." Nation's Schools 57: 92-94; April 1956.
- Birren, F. "Ten Tips to Better Color in Classrooms." School Management 8: 112-113; March 1964.
- Draper, E. "The School Plant Coloring Book." Educational Executives' Overview 4: 36-37; June 1963.
- Johnson, B. U. A Study of Color in the Classroom Environment. Doctor's thesis. Knoxville: University of Tennessee, 1963. 132 p. Abstract: Dissertation Abstracts 24: 1903; 1963.
- Ketcham, H. "These Colors Fit Your School Decor." Nation's Schools 74: 61+; November 1962.
- Kling, V. G. "Beauty in Schools." School Executive 78: 21-23; August 1959.
- Manning, W. R., and Olsen, L. R. "Educational Possibilities of Color." American School Board Journal 146: 39-40; August 1963.
- Part, A. "Lesson from England about School Atmosphere." Architectural Forum 105: 132-139; October 1956.
- Pasto, T. A., and Kivisto, P. "Group Differences in Color Choice and Rejection." Journal of Clinical Psychology 12: 379-381; October 1956.
- Perkins, L. "Invitation to Learning." National Education Association Journal 47: 252-253; April 1958.
- Phillips, M. H. "Art in Schools." American Institute of Architects Journal 39: 121-126; April 1963.
- Rudner, M. J. A Study of the Effect of Classroom Color on Student Achievement. Doctor's thesis. New York: New York University, 1962. 124 p. Abstract: Dissertation Abstracts 23: 1989-1990; 1962.
- School Management. "How to Build Glass into a School." School Management 6: 59-63; December 1962.

5095 Visual Environment

- Acuff, W. T. A Study of the Visual Environment in Selected Classrooms. Doctor's thesis. Knoxville: University of Tennessee, 1962. 243 p. Abstract: Dissertation Abstracts 23: 3191; 1963.
- Allen, C. J. "Lighting the Audio-Visual Classroom." Progressive Architecture 36: 115-119; December 1955.
- Allphin, W. "Better Light for Better Learning." American School and University 36: 24-25; June 1964.
- Allphin, W. "Daylight Measurements in Six New England Schools." Illuminating Engineering 50: 462-470; October 1955.
- American School and University. "Cost and Quality in Light." American School and University 36: 32-33; November 1963.
- American School Board Journal. "The Luminous Environment for School Children." American School Board Journal 146: 29-30; March 1963.

- American School Board Journal. "On Sun Control." American School Board Journal 142: 31; March 1961.
- Architectural Record. "Custom Lighting with Standard Equipment." Architectural Record 124: 197-201+; August 1958.
- Arnold, C. J. "Take out the Windows, 1961." Educational Screen and Audiovisual Guide 40: 280+; June 1961.
- Barden, C. R. "Factors of Vision in the School Environment." Sight-Saving Review 30, no. 1: 25-32; Spring 1960.
- Barthelme, D. "Top Lighting Is Here to Stay." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 193-200.
- Bouse, J. "Selecting Lighting Fixtures." American School Board Journal 138: 35-36; January 1959.
- Burnham, R. D. "New Lighting Concepts for New Schools." American School Board Journal 133: 31-32; December 1956.
- Burnham, R. D. "New Lighting Concepts for New Schools." Proceedings of the Association of School Business Officials of the United States and Canada, 1956. Evanston, Ill.: The Association, 1956. pp. 279-282.
- Bursch, C. W., and Noel, F. W. "Light Control in California Classrooms." Educational Screen 34: 72; February 1955.
- Campbell, E. A. "Lighting for Learning and Safety." Industrial Arts and Vocational Education 52: 35-37+; March 1963.
- Chambers, J. A. A Study of Attitudes and Feelings Toward Windowless Classrooms. Doctor's thesis. Knoxville: University of Tennessee, 1963. Abstract: Dissertation Abstracts 24: 4498; 1964.
- Chorlton, J. M. "Research Shows Serious Waste of Light Under Glare Conditions." Nation's Schools 66: 84+; September 1960.
- Chorlton, J. M. "Task Force Interprets Lighting Research." Nation's Schools 66: 85; September 1960.
- Clapp, W. F. "Principles." Nation's Schools 66: 76-78; September 1960.
- Collins, G. J. "Providing Optional Classroom Environments within Fiscal Limitations, or Windowless Schools." Proceedings of the Association of School Business Officials of the United States and Canada, 48: 224-226; 1962.
- Crouch, C. L. "Research Establishes Proper Ratios for Brightness Contrast, and Methods and Materials to Minimize Glare." Nation's Schools 66: 79-83; September 1960.
- Darby, F. C. "Progress in School Lighting." American School Board Journal 142: 33+; January 1961.
- Darby, F. C. "Using Surveys to Improve School Lighting." American School Board Journal 134: 52-54+; January 1957.
- Daum, H. F. "Some Reasons for Opposing the Trend to Windowless Schools." Proceedings of the Association of School Business Officials of the United States and Canada, 48: 224-226; 1962.

- Dillard, P. H. "No Windows, Please...And Put It Underground." Audiovisual Instruction 7: 534-538; October 1962.
- Durr, W. H. "Too Many Windows?" Scholastic 65: 14T+; January 5, 1955.
- Early, D. "Glare Controls in Schools." Progressive Architecture 36: 118-126; March 1955.
- Electrical West. "Dark Glasses on the Building; Lo-Trans." Electrical West 117: 103; August 1956.
- Electrical West. "Luminous Ceiling Brings Sky Indoors." Electrical West 117: 101; August 1956.
- Electrical West. "Luminous Even in Austerity; Laguna Salado School District in San Mateo County, California." Electrical West 117: 101; September 1956.
- Evans, B. H. "Classroom Lighting; Excerpts." Architectural Forum 104: 98; March 1956.
- Frazier, J. B. "Planting for Sun Control." Educational Executives' Overview 3: 34-35; August 1962.
- Frye, R. A., and Standhardt, F. M. "See More, Hear More, Learn More in Windowless Rooms." Educational Screen and Audiovisual Guide 40: 274-277; June 1961.
- Gibson, C. D. "Administration." Nation's Schools 66: 99-101; September 1960.
- Gibson, C. D. "How Gibson's Wheel Measures Light." Nation's Schools 74: 55-57; October 1964.
- Gibson, C. D. "How to Rate Your School Lighting." Nation's Schools 74: 53-54; October 1964.
- Gowin, L. E. "A World of Sunshine in Britain's New Schools." School Executive 77: 74-77; November 1957.
- Greene, B. F. "Plastic Skydomes Pay Daylighting Dividends." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 405-408.
- Gunselman, M. "Light Control." National Educational Association Journal 45: 566-567; December 1956.
- Hammer, R. F., and Johnson, L. E. "Manufactured Light VS. Daylight for School Rooms; With Discussion." Illuminating Engineering 51: 493-503; July 1956.
- Harris, B. M. "Are Modern Classrooms Lighted for Better Learning?" American School Board Journal 131: 49-50+; September 1955.
- Illuminating Engineering. "Daylight Measurements in Six New England Schools, Discussion." Illuminating Engineering 51: 169; February 1956.
- Illuminating Engineering Society. "New Standards for School Lighting." Catholic School Journal 62: 67-69; November 1962.
- Johnson, B. E. "Controlled Light for an Improved Environment." American School and University, 1958-1959. Thirtieth edition. New York: Battenheim Publishing Corp., 1958. pp. 73-78.
- Jones, B. F. "Basic Understanding of School Lighting." Catholic School Journal 61: 111-113; September 1961.

- Knezevich, S. S. "Glass: The Controversial School Building Material." American School Board Journal 141: 23-26; July 1960.
- Logan, F. H. "New Approach to Roof Design for School Daylighting." Illuminating Engineering 50: 483-484; October 1955.
- Linforth, E. M. "Acrylic Louver Wall Panels for Classroom Daylighting." Illuminating Engineering 51: 231-238; March 1956.
- Marschall, J. "Questions on School Lighting." Catholic School Journal 58: 41-42; January 1958.
- McDonald, E. G., and Burts, E. "Opinions Differ on Windowless Classrooms." National Education Association Journal 50: 12-14; October 1961.
- Pawley, E. "School Lighting--From an Architect's Viewpoint." American Institute of Architects Journal 29: 307-309; June 1958.
- Pena, W. M. "Predetermination of Natural Illumination by the Model Testing Method; Research Report 8." American School and University, 1956-1957. Twenty-eighth edition. New York: Battenheim Publishing Corp., 1956. pp. 433-436.
- Peters, J. S. "California Architects Report on Effectiveness of Luminous Ceilings." Nation's Schools 56: 86; July 1955.
- Rawlins, R. E. "Solutions to Million Dollar Glass Problem." American School Board Journal 149: 40-41; December 1964.
- Sampson, F. K. "Effects of Teaching Equipment and Supplies on Visual Environment." American Institute of Architects Journal 34: 86-88; October 1960.
- School Management. "Throw Some Light on the Subject." School Management 8: 163-164; July 1964.
- Seagers, P. W. "Comments on School Lighting." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 351-353.
- Seagers, P. W. "Lighting the Classroom." National Education Association Journal 51: 30-31; October 1962.
- Seagers, P. W. "Visual Environment and Learning." Education Digest 30: 44-46; October 1964.
- Seagers, P. W. "What's New In School Lighting?" American School Board Journal 144: 37-38; January 1962.
- Smolik, R. S. "Selecting and Directing Light with Glass Blocks." Catholic School Journal 55: 252-253; September 1955.
- Spencer, D. E. "Developments in Daylighting Schools Since World War II." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 397-404.
- Tao, W. K. Y. "Evaluation of Classroom Lighting Systems." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 341-355.

- Tschanz, E. "Light for Living and Learning." Practical Home Economist 7: 30; February 1962.
- Turnbaugh, J. "Light Fixtures." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 120-121.
- Waite, L. L. "Renovation." Nation's Schools 66: 92-94+; September 1960.
- Webb, H. V. "Light and Color: Aids to Learning." American School Board Journal 135: 42-44+; August 1957.
- Welch, K. C. "Bright New Relationships In Classrooms." Progressive Architecture 39: 160-163; September 1958.
- Westby, C. O. "The Teacher." Nation's Schools 66: 95-96; September 1960.
- Williams, J. R. "Measurements in Daylighted Classrooms in Arizona; Abstract." Illuminating Engineering 51: 633-634; September 1956.
- Wittich, W. A. "Putting Light Control into the Plans." Nation's Schools 59: 106+; February 1957.
- Wright, H. L., and Sampson, F. K. "Design." Nation's Schools 66: 86-91; September 1960.

5096 General Environment

- American Institute of Architects Journal. "The Educational Environment." American Institute of Architects Journal 41: 47-54; June 1964.
- Asbusy, R. "Environment for Learning." Texas Outlook 46: 26-27; November 1962.
- Audiovisual Instruction. "Current Study Probes Effects of Windowless Teaching." Audiovisual Instruction 7: 539; October 1962.
- Bottomly, F. "Balanced Environment for a School Building." American School and University, 1963-1964. Thirty-fifth edition. New York: Bittenheim Publishing Corp., 1963. pp. 57-59.
- Caudill, W. W. "It's All in the Ceiling! Light, Heat and Ventilation Come Through Roof Structure." Nation's Schools 58: 69-72; November 1956.
- Christo, V. "Let's Make our School Interiors Livable." American School and University, 1962-1963. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. B7-B10.
- Cocking, W. D. "Environment Teaches." School Executive 77: 7; April 1958.
- Cornell, F. G. "How High Should the Doorknob Be?" Nation's Schools 57: 79-81; May 1956.
- DeBernardis, A., and Doherty, V. "Elements of the Functional Classroom Environment." American School Board Journal 143: 32+; November 1961.
- Gibson, C. D. "Improved Environment for New Instructional Programs." American School Board Journal 144: 28-31; January 1962.

- Gores, H. B. "Creating an Environment for Learning." Bulletin of the Indiana University School of Education 39: 17-21; March 1963.
- Hilfiker, L. R. "Environment for Teaching." Wisconsin Journal of Education 94: 10-12; January 1962.
- Hughey, R. H. "Entire Building Is for Living and Learning." Nation's Schools 60: 72-73; November 1957.
- Hulton, L. "Environments Today that Invite Learning." Childhood Education 39: 57-60; October 1962.
- McGuinness, W. J. "Environmental Research." Progressive Architecture 45: 190; April 1964.
- Morse, J. M. "The Challenge of Environment for Schools." American School and University, 1959-1960. Thirty-first edition. New York: Battenheim Publishing Corp., 1959. pp. 11-16.
- Nation's Schools. "Underground Abo School Is the Most--in Air Conditioning and Light Control." Nation's Schools 71: 80-86; January 1963.
- Obata, G. "Mind, Body and Stimuli." American Institute of Architects Journal 38: 27-46; October 1962.
- Obata, G. "Mind, Body, and Stimuli." Bulletin of the National Association of Secondary-School Principals 46: 194-197; May 1962.
- Olsen, L. C. "School Architecture and the Learning Process." American School Board Journal 143: 28-31; October 1961.
- Progressive Architecture. "Auburn, Washburn School Problem." Progressive Architecture 37: 137-152; January 1956.
- Rice, A. H. "Designing the School Plant as a Learning Environment." Nation's Schools 59: 59-63; January 1957.
- School Management. "How Teachers Are Being Taught to Use the New McPherson Senior High School." School Management 6: 63-67+; April 1962.
- Wright, H. "Architects' Census: Air Conditioning: Yes; Windowless Schools: No." Nation's Schools 74: 62-63; October 1964.

5100-5110 Special Purpose Planning--Instruction

5101 Instructional Materials Area and Library

- Architectural Record. "Gymnasiums and Libraries: A Survey of New Equipment." Architectural Record 117: 176-177, 214+; January 1955.
- Architectural Record. "Resource Centers: Educators' New Focal Point: School Libraries." Architectural Record 134: 210-211; October 1963.
- Bottomly, F. "What the Electronic Age Can Mean to Education." American School and University, 1960-1961. Thirty-second edition. New York: Battenheim Publishing Corp., 1960. pp. 37-44.

- Brubaker, C. W., and Perkins, L. B. "Sketch Book: Space for Individual Learning." School Executive 78: 43-58; February 1951.
- Calvin, A. "Programmed Learning and School Design." American School and University, 1962-1963. Thirty-fourth edition. New York: Battenheim Publishing Corp., 1962. pp. E7-E8.
- Church, J. G. "Economical Hints for Building an Instructional Materials Center." American School Board Journal 141: 32; November 1960.
- Corliss, W. S. "On Planning Library Rooms." American School Board Journal 147: 27-28; July 1963.
- Educational Executives' Overview. "Space for Individual Learning." Educational Executives' Overview 4: 29-40; March 1963.
- Ellisworth, R. E. "How to Design--and Use--a Superior Library." School Management 6: 30-34+; December 1962.
- Ford, H. J. "The Instructional Resources Center: an Enabling Facility." Audiovisual Instruction 7: 524-526; October 1962.
- Herman, J. J. "The Instructional Service Center: A New Concept." American School Board Journal 148: 17-19; February 1964.
- Kerr, D. S. "This Library Is the School Center." School Executive 78: 75-77; November 1958.
- Larsen, J. A., and Bindrup, J. "The Library Curriculum Center." Audiovisual Instruction 7: 526-527; October 1962.
- Larson, L. C. "Planning School Buildings for Instructional Materials from the Viewpoint of the Audio-Visual Supervisor." Bulletin of the Indiana University School of Education 31: 77-90; September 1955.
- McPherson, J. M. "Planning Plants and Programs for the New Media." School Life 43: 20-23; January 1961.
- Moldstad, J., and Frye, H. "A Complete Materials Center." Overview 2: 48-49; May 1961.
- Rufsvold, M. I. "Planning the Instructional Materials Center." Bulletin of the Indiana University School of Education 31: 64-76; September 1955.
- Seagers, P. W. "Planning School Buildings for Instructional Materials." Bulletin of the Indiana University School of Education 31: 59-63; September 1955.
- Taylor, K. I. "How to Plan and Equip an Instructional Materials Center." Nation's Schools 67: 53-60; January 1961.
- Wofford, A. "Whither School Libraries?" American School Board Journal 135: 33-34; August 1957.

5102 Shop and Agriculture

- Becker, W. J. "Essential Construction Features of School Shops." American School Board Journal 130: 71-72; January 1955.
- Boyd, R. A. "Light: Its Effect on Teaching and Learning." School Shop 22: 39-40; April 1963.

- Brown, R. D. "Industrial Arts Facilities for Today and Tomorrow." Industrial Arts and Vocational Education 53: 42-43+; March 1964.
- Campbell, E. A. "How to Control Sound in the Industrial Laboratory." Industrial Arts and Vocational Education 53: 41+; March 1964.
- Campbell, E. A. "How to Use Color in the Industrial Laboratory." Industrial Arts and Vocational Education 51: 24-25; December 1962.
- Claude, J. "Junior High School Shops Are in the Spotlight Now." American School Board Journal 132: 50-52; January 1956.
- Claude, J. "Plan Today for Tomorrow's High School Shop." American School Board Journal 134: 77-79; February 1957.
- Cress, H. "It's Done with Mirrors." School Shop 23: 44; March 1964.
- Dunton, W. K. "Planning Industrial Education Facilities." American School Board Journal 141: 34-36; November 1960.
- Dunton, W. K. "Role of the Consultant in Vocational and Industrial Planning." Industrial Arts and Vocational Education 49: 73-74+; March 1960.
- Gilliland, J. W. "Sound: Its Effect on Teaching and Learning." School Shop 22: 41-42; April 1963.
- Hooker, C. P. "Individual and His Environment." School Shop 22: 32-33; April 1963.
- Lytle, R. B. "Color: Its Effect on Teaching and Learning." School Shop 22: 43-44; April 1963.
- MacConnell, J. D., and Others. "Integrating Industrial Education with the Total School Program." School Shop 22: 34-36; April 1963.
- Mickeels, W. J. "Why All This Fuss About Shop Environment?" School Shop 22: 55-56; April 1963.
- Rutgers, N. L. "Heat: Its Effect on Teaching and Learning." School Shop 22: 37-38; April 1963.
- Schmitt, M. L. "Guidelines for Designing Industrial Arts Laboratories." Industrial Arts and Vocational Education 52: 32-34; March 1963.
- School Shop. "Shop Environment: A Setting for Learning." School Shop 22: 31; April 1963.
- Supplee, F. E. "Vocational-Technical and Industrial Arts Education." Industrial Arts and Vocational Education 47: 149-153; May 1958.
- Wooldridge, R. E. "Planning Facilities for Effective Teaching." American School Board Journal 148: 36-37; March 1964.

5103 Gym, Physical Education, and Pool

- Architectural Record. "Geodesic Gym Gives More for Less." Architectural Record 130: 159-161; October 1961.

- Architectural Record. "Gymnasium Structures." Architectural Record 118: 195-198; December 1955.
- Architectural Record. "Play Sheds Offer Lower Cost Possibilities." Architectural Record 130: 148; February 1962.
- Ashworth, R. "Play Sheds Have Many Uses." Nation's Schools 55: 71; February 1955.
- Athletic Journal. "Tips on Saving Money in Gymnasium Construction." Athletic Journal 39: 8+; January 1959.
- Brock, D. E. "The Facilities Needed for Health, Physical Education, and Recreation Programs: The Junior High School Level." Bulletin of the Indiana University School of Education 33: 33-35; November 1957.
- Bulletin of the National Association of Secondary-School Principals. "Guiding Principles for Planning Facilities for Health, Physical Education, and Recreation." Bulletin of the National Association of Secondary-School Principals 44: 188-190; May 1960.
- Bulletin of the National Association of Secondary-School Principals. "Planning Physical Education Facilities." Bulletin of the National Association of Secondary School Principals 44: 62-65; May 1960.
- Carter, J. W. "Gyms for July." Athletic Journal 38: 24+; January 1958.
- Caudill, W. W. "Development of a Glass Gymnasium; Research Report 10." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 443-448.
- Engelhardt, N. L., Jr. "Search for a Solution: Physical Education." Architectural Record 131: 138-145; February 1962.
- Farkas, G. P. "The Facilities Needed for Health, Physical Education, and Research Programs: the High School Level." Bulletin of the Indiana University School of Education 33: 36-38; November 1957.
- Journal of Health, Physical Education, Recreation. "Finding Space: New Gymnasiums Use Balconies for Auxiliary Activity Areas." Journal of Health, Physical Education, Recreation 33: 46; April 1962.
- Journal of Health, Physical Education, Recreation. "State Guides for HPER Facilities and Additional Reading about Facilities." Journal of Health, Physical Education, Recreation 33: 47-48; April 1962.
- Kelliher, M. S. "Basic Structural Types for Gymnasiums." Scholastic Coach 33: 10-11+; January 1964.
- Kelliher, M. S. "Modern Gym Construction Systems." Scholastic Coach 32: 12-14+; January 1963.
- McCooe, D. L., Jr. "The Facilities Needed for Health, Physical Education, and Recreation Programs: The Elementary Level." Bulletin of the Indiana University School of Education 33: 30-33; November 1957.
- Sleeper, H. R. "Dressing Rooms and Lockers; Design Standards and Data." Architectural Forum 102: 162-163; February 1955.

- Stone, H. W. "Health Education Facilities in the School Plant Picture." Proceedings of the Pennsylvania University Schoolmen's Week, 1956. Philadelphia: University of Pennsylvania, 1956. pp. 188-195.
- Sweeney, R. "Consult a Seating Engineer Before the Gym Is Built." Catholic School Journal 59: 90-91; March 1959.
- Taylor, J. L. "Planning the High School Gymnasium: Basic Data for the Planner." American School Board Journal 137: 44-48; October 1958.
- Van Bibber, G. "Facility Frailties." Journal of Health, Physical Education, Recreation 27: 33; February 1956.
- Wetzel, C. H. "Correct Sight-Line for Gymnasium Seating." Progressive Architecture 37: 146-147; November 1956.
- Wetzel, C. H. "Helpful Hints on Planning Gymnasium Seating." American School Board Journal 132: 57-58; May 1956.
- Wetzel, C. H. "Planning Gym Seating for Long-Range Needs." Scholastic Coach 30: 48-49; January 1961.
- Wieting, W. "How to Plan, Maintain Swimming Pools." Nation's Schools 69: 66-75; April 1962.
- Wynkoop, F. "Space Shelter for School Campus." Nation's Schools 59: 66-67; April 1957.

5104 Music

- Carter, E. "Planning High School Music Areas." American School Board Journal 136: 38-40; March 1958.
- Carter, E. "School Building Planning for Music and Drama." Music Educators Journal 45: 37-41; June 1959.
- Jaffe, C. "Coexistence in Musical Acoustics." Music Educators Journal 51: 73-74; September 1964.
- Music Educators Journal. "Music Buildings, Rooms and Equipment." Music Educators Journal 41: 16-18; January 1955.

5105 Business Education

- McGill, E. C. "Business Education Facilities." American School Board Journal 134: 45-46; May 1957.

5107 Multipurpose

- Martin, F. B. Multi-Purpose Units in the Elementary Schools: Appropriate Activities and Required Facilities. Doctor's thesis. Los Angeles: University of Southern California, 1960. 271 p. Abstract: Dissertation Abstracts 21: 1440-1441; 1960.
- McDougall, S. D. The Use and Functions of Multi-Purpose Rooms in Santa Clara County, California. Doctor's thesis. Stanford, Calif.: Stanford University, 1957. 184 p. Abstract: Dissertation Abstracts 17: 1500-1501; 1957.
- Whitmer, D. P., and Haberkorn, C. H. "Multipurpose Room in Every School." Nation's Schools 63: 90-93; March 1959.

5108 Art

Burley, F. J. Planning Facilities for Secondary Art Rooms. Doctor's thesis. New York: Columbia University, 1955-56.

5109 Special Education

- Foote, F. M. "Classrooms for Partially Seeing Child." Exceptional Children 22: 318-320+; May 1956.
- Graham, R., and Barrow, J. M. "Plan a Place for the Exceptional Child; Include Him in the Regular School Program and Equip the Building to Serve Him." Nation's Schools 58: 47-54; July 1956.
- Kahn, C. H. "Larger Classrooms for Mentally Retarded." Nation's Schools 60: 71-72; September 1957.
- Lake, E. G., and Williams, M. W. "Facilities for a Pilot Orthopedic Program." American School Board Journal 141: 15-18; December 1960.
- Tudyman, A. "Public School Buildings for Crippled Children." Exceptional Children 21: 250-252; April 1955.

5111 Language Laboratory

Johnston, M. "How to Plan a Language Laboratory." Nation's Schools 63: 100+; February 1959.

5112 Science Facilities

Munch, T. W. "Secondary School Science Facilities; Recent Construction, How Effective?" Science Teacher 25: 398-400+; November 1958.

5113 Social Studies Facilities

Ovard, G. F. Planning Social Studies Facilities for the Secondary Schools. Doctor's thesis. Stanford, Calif.: Stanford University, 1959. 267 p. Abstract: Dissertation Abstracts 19: 2833-2834; 1959.

5114 Large and Small Group Instruction and Team Teaching

- Anderson, R. H., and Mitchell, D. P. "Team Teaching, New Learning Concepts Demand Changes in School Plant Design." Nation's Schools 65: 75-82; June 1960.
- Architectural Record. "Boulder City, Nevada Builds Its Divisible Instruction Center." Architectural Record 132: 150-151; July 1962.
- Architectural Record. "Team Teaching and School Construction." Architectural Record 134: 18; October 1963.
- Audiovisual Instruction. "From Research to Mock-Up in Three Years." Audiovisual Instruction 8: 206-207; April 1963.

- Educational Executives' Overview. "An Administrator's Guide to Team Teaching." Educational Executives' Overview 4: 54-55; April 1963.
- Green, A. C. "New Spaces for Learning." American Institute of Architects Journal 38: 45-48; September 1962.
- Overview. "Administrator's Guide to Team Teaching." Educational Digest 29: 32-33; September 1963.
- Roemmich, O. Planning, Design, and Use of Large Group Instructional Units. Doctor's thesis. Los Angeles: University of Southern California, 1963. 224 p. Abstract: Dissertation Abstracts 24: 3612-3613; 1964.
- Wilke, H. "Audio-Visual Systems for Large Group Instruction." Architectural Record 132: 171-172; October 1962.
- Woolbridge, J. H., and Mayer, F. E. "Building for Team Teaching." Ohio Schools 40: 15; May 1962.

5120 Special Purpose Planning--Auxiliary to Instruction

5121 Auditorium and Theater

- American School Board Journal. "Divisible Auditorium." American School Board Journal 145: 32; November 1962.
- Architectural Forum. "Man Who Tried to Improve High School Stages." Architectural Forum 105: 140-141+; October 1956.
- Bowman, N. A. "Ideal Theatre: Emerging Tendencies in Its Architecture." Educational Theatre Journal 16: 220-229; October 1964.
- Brubaker, C. W. "Make the Auditorium Work for You." Educational Executives' Overview 4: 40-44; April 1963.
- Brush, M. S. "Theaters in Elementary Schools." American Institute of Architects Journal 39: 83-86; March 1963.
- Colbert, C. R. "Researching an Auditorium-Teaching Center." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. H1-H6.
- Cole, E. C. "Backstage Isn't Backstage Anymore." American Institute of Architects Journal 34: 105-108; November 1960.
- Davis, W. M. "A Hat in the Ring." American Institute of Architects Journal 30: 57-61; October 1958.
- Davis, W. M. "Tonight at Eight Twenty-Nine." American Institute of Architects Journal 35: 87-92; August 1961.
- Green, A. C. "The Auditorium as Instructional Space." Architectural Record 132: 169-171; October 1962.
- Greenberg, A. "Conditioning of Auditorium-Type Building." Architectural Record 135: 205-208; March 1964.
- Miller, J. H. "General Auditorium." American Institute of Architects Journal 34: 73-78; August 1960.

- Miller, J. H. "It's Time to Update the School Auditorium and Stage." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 29-36.
- Pawley, E. "Educational Theatre Architecture." American Institute of Architects Journal 28: 423-428; November 1957.
- Robinson, H. W. "Teaching Facilities for Theatre in Secondary Schools." Educational Theatre Journal 16: 212-219; October 1964.
- Sharp, J. S. "School Auditorium Planning Consideration." Architectural Record 132: 165-168; October 1962.
- Tanzman, J., and Pipher, W. "How to Get Your Money's Worth in an Auditorium; Interview." School Management 7: 70-74+; March 1963.

5122 Cafeteria and Kitchen

- American School and University. "Planning Food Service Centers." American School and University 36: 42-44; October 1963.
- American School Board Journal. "Designs for Today's School Lunchroom." American School Board Journal 134: 74+; January 1957.
- Architectural Record. "Selecting Food Service Equipment." Architectural Record 129: 203-205; April 1961. 129: 205-206; May 1961.
- Bloetjes, M., and Zipfel, G. G. "School Lunch Layouts: Equipment Placement and Use." Practical Home Economics 33: 22-23+; January 1955.
- Botts, A. M. "Facilities to Have, and Have Not, in Food Storage Areas." Nation's Schools 67: 90+; March 1961.
- Brubaker, C. W. "Planning for Student Dining." Architectural Record 124: 208-210; November 1958.
- Clapp, G. C. "Our Cafeterias Are Planned and Equipped Cooperatively." Nation's Schools 60: 82+; August 1957.
- David, C. "How to Plan a School Kitchen." Nation's Schools 59: 96+; January 1957.
- Estes, C. E. "Designing Space for the Lunch Program." School Executive 78: 41-42; December 1958.
- Flambert, R. "Changing Concepts in School Food Service Facilities." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 41-46.
- Flambert, R. "Program Begins with Kitchen Planning." American School Board Journal 149: 38-40; October 1964.
- Flambert, R. "School Plant Studies, Central Kitchens--the Answer?" American Institute of Architects Journal 30: 59-62; December 1958.
- Hart, C. C. "Equipment and Layout Achieve Mobility." Nation's Schools 66: 102+; September 1960.
- Heckler, R. D. "Planning and Equipping a Lunchroom." Nation's Schools 56: 98+; October 1955.

- Hoek, F. G. "Planning the Cafeteria." American School Board Journal 132: 82-83; March 1956.
- Lightcap, E. J., Jr. "Planning Equipment for School Lunch." School Executive 76: 171-172; September 1956.
- Moore, M., and Hutchinson, E. L. "Cafeterias Built to a Standard Design." Nation's Schools 58: 94+; September 1956.
- Nation's Schools. "Planning the Spaces." Nation's Schools 60: 68-71; October 1957.
- Powell, A. T. "Business Manager Looks at the Architect in School Food Service Design." Proceedings of the Association of School Business Officials of the United States and Canada, 1960. Evanston, Ill.: The Association, 1960. pp. 190-196.
- Rothman, H. H. "Basic Guide of School Lunchroom Planning." American School Board Journal 134: 107-108; February 1957.
- Smith, F. A., and Rice, R. L. "Cary Cafeteria--Dining in a Diamond." American School and University 1957-1958. Twenty-ninth edition. New York: Bittenheim Publishing Corp., 1957. pp. 211-216.
- Switzer, W. H. "Lunchroom Designed for Social Activities." School Executive 79: 115-116+; September 1959.
- Webber, O. "How to Write Kitchen Specifications." Nation's Schools 71: 82+; February 1963.

5123 Guidance

- Baker, H. L. "Make Space for Guidance." School Executive 76: 60; October 1956.
- Parker, K. H. Relating Guidance Philosophy to Function: A Study of the Location of Guidance Facilities Within the School Plant. Doctor's thesis. East Lansing: Michigan State University, 1956. 174 p. Abstract: Dissertation Abstracts 17: 798; 1957.

5124 Central Office

- Beatty, W. W., and Others. "What's Needed in Administrative Spaces?" Nation's Schools 56: 62-67; July 1955.
- Childs, F. A., and Smith, W. J. "Administrative Areas for School Buildings." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 149-152.
- Holloway, H. H. Central Office Spaces for Unified School Districts. Doctor's thesis. Los Angeles: University of Southern California, 1959. Abstract: Dissertation Abstracts 20: 572; 1959.
- Kennedy, C. H. Criteria for Planning the Administrative Unit in the Elementary School. Doctor's thesis. Los Angeles: University of Southern California, 1959. 366 p. Abstract: Dissertation Abstracts 20: 574-575; 1959.

Richardson, N. C. Planning Central Office Facilities for Local School Districts. Doctor's thesis. Stanford, Calif.: Stanford University, 1960. 260 p. Abstract: Dissertation Abstracts 21: 2562-2563; 1961.

5130 Special Purpose Planning--Other Considerations

5131 Audiovisual

- Allen, C. J. "Lighting for Audio-Visual Teaching." Illuminating Engineering 51: 629-630; September 1956.
51: 665-674; October 1956.
- Allen, C. J. "Lighting the Audio-Visual Classroom." Bulletin of the Indiana University School of Education 31: 91-117; September 1955.
- Allen, C. J. "Lighting the Audio-visual Classroom." Progressive Architecture 36: 115-119; December 1955.
- Architect and Engineer. "Are Modern Schools Obsolete When Built? Indiana State Conference on School Planning for Audio-Visual Education." Architect and Engineer 203: 8; December 1955.
- Architectural Forum. "Hearing, Seeing and Learning." Architectural Forum 105: 120-123; July 1956.
- Architectural Record. "Planning Schools with Television." Architectural Record 128: 180-184; August 1960.
- Carlson, D. "To Darken a Classroom." The Instructor 73: 59; October 1963.
- Caudill, W. W. "Money and Imagination Can Lick A-V Problems for the Architect." Nation's Schools 55: 74-75; May 1955.
- Cross, A. J. F. "A-V Education Is Here to Stay." American School Board Journal 134: 66+; January 1957.
- DeBernardis, A. "Planning Schools for Use of Audio-Visual Tools." American School Board Journal 134: 61+; March 1957.
- Higgins, E. E. "Rehabilitation of School Buildings for Audio-Visual Use." Bulletin of the Indiana University School of Education 31: 39-50; September 1955.
- Indiana Department of Public Instruction. "Recommendations for Buildings to Facilitate an Audio-Visual Education Program." Educational Screen 35: 56+; February 1956.
- Interiors. "Design for Educational Television." Interiors 120: 140-141; March 1961.
- Lamb, L. F. Planning Closed Circuit Television Systems for Laboratory Schools of Colleges of Teacher Education. Doctor's thesis. Columbia: University of Missouri, 1961. 227 p. Abstract: Dissertation Abstracts 22: 1490; 1961.
- Marsh, Z. A. "Balancing the Thermal Environment for Audio-visual Education." Bulletin of the Indiana University School of Education 31: 141-147; September 1955.

- McPartland, J. F., Jr. "Sound System." Architectural Record 121: 251-254; April 1957.
- Mitchell, R. S., and Erickson, G. O. "Workroom for Teachers Increases Classroom Use of A-V Aids." Nation's Schools 56: 92; June 1955.
- Monberg, L. "Architects Must Work to Create Favorable Conditions for Projection." Nation's Schools 55: 75-76; May 1955.
- Moore, H. A. "Adequate A-V Facilities in Classrooms." Nation's Schools 55: 66-73; May 1955.
- Nation's Schools. "Darkening Skylighted Classrooms." Nation's Schools 59: 68-69; April 1957.
- Nation's Schools. "Facilities Designed for A-V Teaching." Nation's Schools 63: 75-79; February 1959.
- Progressive Architecture. "Planned Audio-Visual Environment." Progressive Architecture 42: 170; November 1961.
- Reed, P. C. "Black Glass and Complacency." Educational Screen 39: 12; January 1960.
- Schuller, C. F. "Schoolhouse Planning." Nation's Schools 67: 97-99; February 1961.
- Sonnenfeld, N. J. "Lighting Layouts for Educational TV." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 279-282.
- Spencer, C. E. "AV Is Basic." Educational Screen 35: 174+; May 1956.
- Washcoe, W. C. "Visual Communication Designed for Rapid Tempo Learning." Audiovisual Instruction 8: 208-213 April 1963.

5132 Safety

- Abercrombie, S. A. "Safety in the School Plant." National Elementary Principal 39: 150-155; September 1959.
- American Institute of Architects Journal. "School; Planning Safe Buildings." American Institute of Architects Journal 28: 320; September 1957.
- Campbell, E. A. Schoolhouse Design for Safe Evacuation in the Event of Fire or Like Emergencies: State Statutes and State Life Safety Codes Compared with the Building Exits Codes 1961. Doctor's thesis. Pittsburgh: University of Pittsburgh, 1963. 196 p. Abstract: Dissertation Abstracts 25: 2307; 1964.
- Giovannini, V. "Hazard Hunting in a Brand New School." Safety Education 43: 15-17; March 1964.
- Hill, R. M. "Los Angeles Schools Commit Arson for Research." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 369-385.
- Hill, R. M. "Operation School Burning." Safety Education 39: 4-8; March 1960.
- Nation's Schools. "Plan Wisely for Loading Zones." Nation's Schools 62: 47-48; August 1958.

- Patterson, R. D., and Motell, J. E. "Are There Hazards in Your Plans?" Safety Education 36: 18-19; December 1956.
- Perkins, L. B. "No Blueprint for Safety." Safety Education 41: 20-23; September 1961.
- Reasons, G. "Los Angeles Commits Arson for Research." Nation's Schools 63: 74-75; June 1959.
- Schlossman, N. J. "How to Plan a School for Maximum Fire Safety." Nation's Schools 71: 66-69; February 1963.
- Szendy, E. J. "A Study of Five Schools Shows What Determines School Fire Insurance Costs." Architectural Record 125: 228-234; February 1959.

5133 Non-Instructional Space

- American School Board Journal. "Providing Storage Space." American School Board Journal 137: 28; August 1958.
- Colby, H. W. Warehousing in Elementary Schools. Doctor's thesis. Los Angeles: University of Southern California, 1961. 219 p. Abstract: Dissertation Abstracts 22: 131-132; 1961.
- Ducker, H. C. "Triple-Duty Commons." School Executive 78: 38-39; July 1959.
- Nation's Schools. "California Elementary School Drops Out Non-Teaching Space." Nation's Schools 72: 52-55; November 1963.
- Wright, J. J. Storage Facilities Needed in a Comprehensive Senior High School in New York State. Doctor's thesis. New York: Columbia University, 1960-1961.

5134 Fallout Shelters

- American School Board Journal. "The Question of Fallout Shelter--Schools." American School Board Journal 144: 26-27+; March 1962.
- Anderson, B. G., and Husted, E. "School Can Be Made Blast Resistant." Architectural Record 117: 209-214; June 1955.
- Bruce, W. C. "Radical Difference of Opinion." American School Board Journal 146: 40; May 1963.
- Caudill - Rowlett - Scott and Associates. "Fallout Protection for a New School." American Institute of Architects Journal 36: 104-110; November 1961.
- Fay, L. C. "Blast Resistant School; Interview with H. P. Smith, Jr." Nation's Schools 50: 73-76; October 1956.
- Mills, V. R., et al. "How Schools Can Have Fallout Shelters." Nation's Schools 69: 62-70+; February 1962.
- Nation's Schools. "Fallout Protection; a Plan for School Shelters." Nation's Schools 64: 63-73; December 1959.
- Rein, W. "School Plant Studies; School Plants in Emergency and Disaster." American Institute of Architects Journal 29: 149-154; March 1958.
- Roembke, J. E. "Fallout Protection in School Construction." Proceedings of the Association of School Business Officials of the United States and Canada 49: 395-417; 1963.

6000 CONSTRUCTION

- Architectural Record. "Balloon-Formed Concrete Bubbles?"
Architectural Record 117: 206-208; February 1955.
- Dombrow, R. T. "How to Meet Your Construction Deadlines."
School Management 7: 99-103; July 1963.
- Foster, W. H. "I'm Flatly Against Flat Roofs." Nation's Schools 73: 82; March.
- Gibson, C. D. "Three Votes for Movable Casework." Nation's Schools 58: 70-73; September 1956.
- Kirkpatrick, K. "Pre-Stressed Concrete Saves." American School Board Journal 141: 31; October 1960.
- Liebeskind, M. "Design and Construction of School Buildings."
Proceedings of the Association of School Business Officials of the United States and Canada 50: 151-166; 1964.
- Martin, H. F. "How CPM Works for a School District." School Management 7: 104-105+; July 1963.
- Miller, G. R., and Armstrong, C. E., Jr. "Getting Buildings Completed on Schedule." Nation's Schools 55: 75-77; June 1955.
- Mitchell, H. S. "Principles of School Construction."
American School Board Journal 139: 35-36+; November 1959.
- Nation's Schools. "How Critical Path Method Is Working Out for Schools." Nation's Schools 73: 12; January 1964.
- Psaty, I. R. "Problems Common to the Contractor." Proceedings of the Association of School Business Officials of the United States and Canada, 1958. Evanston, Ill.: The Association, 1958. pp. 364-370.
- Rudy, F. T. "Roof Construction, an Unsolved Problem." Proceedings of the Association of School Business Officials of the United States and Canada 49: 190-194; 1963.
- Scott, W. E., and Glenwright, W. C. "What Are Recent Developments in the Construction of New School Buildings?" Bulletin of the National Association of Secondary-School Principals 41: 211-215; April 1957.
- Severud, F. N., and Conlin, W. F., Jr. "Technology's Impact on Construction." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. A1-A8.
- Taylor, H. A., and McIsaac, D. N., Jr. "How PERT Works to Speed School Building Programs." Nation's Schools 73: 46-47; June 1964.
- Welch, P. O. "Thar's Gold in Them Thar Schools." American School Board Journal 142: 34-35; June 1961.

7000 EVALUATION

- Architectural Forum. "Crow Island Revisited, the Winnetka Schoolhouse." Architectural Forum 103: 130-137; October 1955.
- Blanchard, B. E. "Some Criteria for Evaluating a School Building." American School Board Journal 130: 38-39; January 1955.
- Bourne, R. "What Makes One School Better?" Architectural Forum 109: 104-107+; November 1958.
- George, N. L. "Facility or Building Item Rating Form." Proceedings of the Association of School Business Officials of the United States and Canada, 1961. Evanston, Ill.: The Association, 1961. pp. 114-120.
- George, N. L. "How to Evaluate Quality." American School Board Journal 138: 29-31; January 1959.
- George, N. L. "Method of Evaluating Quality in School Plants." Proceedings of the Association of School Business Officials of the United States and Canada, 1959. Evanston, Ill.: The Association, 1959. pp. 152-158.
- Glubok, N. "Crow Island, After Fifteen Years." Nation's Schools 56: 64-70; October 1955.
- Jordan, M., and Jackson, D. M. "The Schools We Already Have." National Elementary Principal 39: 170-181; September 1959.
- Juckett, E. A. "Opening a New School." National Elementary Principal 39: 158-163; September 1959.
- Lopez, F. "Prize Winner Revisited." Overview 1: 56-57; October 1960.
- Peninger, J. E. "Think of Your Faculty First." Minnesota Journal of Education 40: 11-12; November 1959.
- Wilson, L. C. "So You Have a New Building!" Texas Outlook 47: 36-37; March 1963.
- Woodruff, R. H. The Development of School District Self-Evaluation Procedures Basic to Long-Range Planning. Doctor's thesis. Pullman: Washington State University, 1962. 215 p. Abstract: Dissertation Abstracts 23: 2779; 1963.

8000 MISCELLANEOUS8010 Remodeling and Additions

- Bostwick, P., and Dible, I. W. "School for Growing." Childhood Education 34: 346-348; April 1958.
- Castaldi, B. "Generalized Mathematical Formula for School Modernization." American School Board Journal 148: 41-43; January 1964.
- Frost, F. G., Jr. "Architectural Survey Tells What's Best: Remodel, Expand or Build." Nation's Schools 74: 30-31; December 1964.
- Glass, K. M. A Comparative Study of Selected Costs That Condition Decisions Leading to Rehabilitation Or Abandonment of School Facilities. Doctor's thesis. East Lansing: Michigan State University, 1963. 155 p. Abstract: Dissertation Abstracts 24: 2571; 1964.
- Hansson, P. "Expanding the High School for the Future." American School Board Journal 145: 30-31; August 1962.
- Kennedy, D. L. "Re-Use of Existing High School Plants: Economy Plus Individuality." American School Board Journal 141: 24-27; October 1960.
- Lienhard, R. H. "When Not to Plan an Addition." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 57-60.
- Nation's Schools. "Thirty-nine Shells Solved School's Expansion Problem; Hyperbolic Paraboloids." Nation's Schools 73: 52-55; February 1964.
- Paul, S. "To Expand Or to Build Anew." American School Board Journal 143: 26-27; September 1961.
- Proceedings of the Association of School Business Officials of the United States and Canada. "Rehabilitation of School Buildings Or New Buildings." Proceedings of the Association of School Business Officials of the United States and Canada 48: 140-161; 1962.
- School Management. "How to Reclaim Waste Space." School Management 6: 79-83; April 1962.
- School Management. "Remodel or Build? How One District Decided." School Management 8: 71-75; October 1964.
- Wegner, F. A. "Modernization and Plan Arrangement." American School Board Journal 148: 52-55; April 1964.

8020 Portable, Demountable and Prefabricated Structures

- American School Board Journal. "Demountable Classrooms." American School Board Journal 149: 18; November 1964.
- Architectural Forum. "Demountable Space Frame." Architectural Forum 103: 140-147; July 1955.
- Architectural Forum. "Prefabrication's Changing Role." Architectural Forum 107: 138-143; November 1957.

- Architectural Record. "Materials, System Differ in Four Deployable Schools; Steel, Concrete, Plastics, Plywood." Architectural Record 133: 182-185; February 1963.
- Architectural Record. "Portable Prefab Classrooms." Architectural Record 122: 253; October 1957.
- Architectural Record. "Prefabricated and Proprietary Concepts Offered for American Schools." Architectural Record 119: 216-219; February 1956.
- Architectural Record. "Structural Components for School Buildings." Architectural Record 120: 161-166; August 1956.
- Carioti, F. "How School Districts Are Using Classrooms That Move." Nation's Schools 73: 63+; May 1964.
- Douglas Fir Plywood Association. "Supplementary Classroom." American School Board Journal 145: 27-50; September 1962.
- Ehrenkrantz, E. D., and Kay, J. D. "Flexibility Through Standardization: The Hertfordshire Prefab Schools and the Modular Number Pattern." Progressive Architecture 38: 105-115; July 1957.
- Ganster, W. A. "Functional Schools, Relative Values of Permanent Versus Temporary or Portable Buildings." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 148-150.
- Gowin, L. E. "Britain Builds Prefab Schools." School Executive 74: 70-73; February 1955.
- Gowin, L. E. Prefabricated Primary School Buildings in Great Britain. Doctor's thesis. Berkeley: University of California.
- Granville, L. V. "Permanent Look with Portable Classrooms." School Executive 78: 54-55; September 1958.
- Hsiao, S. C. "Demountable, Low Cost Elementary School." American School and University, 1957-1958. Twenty-ninth edition. New York: Bittenheim Publishing Corp., 1957. pp. 157-162.
- Largent, F. D. Comparative Cost and Utilization of Permanent and Transportable Classrooms. Doctor's thesis. Stanford, Calif.: Stanford University, 1960. 151 p. Abstract: Dissertation Abstracts 21: 1109-1110; 1960.
- Little, T. C. "Mobile Classroom Units." American School Board Journal 140: 19-20; January 1960.
- Lofgren, R. A. "Functional Schools, Relative Values of Permanent vs. Temporary or Portable Buildings." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 192-194.
- Lopez, F. G. "Prefabs or Proprietary Plans for Schools?" Architectural Record 119: 209; February 1956.
- Mayhall, T. B. "Experiences in the Relative Value of Permanent Versus Portable Buildings." Proceedings of the Association of School Business Officials of the United States and Canada, 1955. Evanston, Ill.: The Association, 1955. pp. 125-131.

- McKeag, F. B. "Portable Classrooms Can Solve Your Housing Problems." School Management 6: 40-42; December 1962.
- Overview. "Portable Classrooms." Overview 1: 82; September 1960.
- Part, A. A. "Prefabricated Schools in Britain." Architectural Record 119: 209-217; February 1956.
- School Management. "How to Build Your Own Portable Classrooms." School Management 8: 88-89; April 1964.
- School Management. "How to Design and Build a Truly Portable Classroom." School Management 6: 50-51; August 1962.
- School Management. "Some Facts About Portable Classrooms." School Management 5: 45-46; May 1961.

9000 PORTFOLIO OF SCHOOLS

- Aaron, N. J. "Fulton County's New Services Building." American School and University, 1962-63. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. K4-K8.
- Adamson, J. W. "Amos Alonzo Stagg Senior High School." American School Board Journal 139: 33-35; December 1959.
- Alee, R. G. "Multiple-use High School Gymnasiums: Hillsdale High School, San Mateo, California." Journal of Health, Physical Education and Recreation 28: 8-9-; January 1957.
- Ambrose, R. A. "The Oxford, Michigan, High School." American School Board Journal 140: 38-40; March 1960.
- American Builder. "In Twenty-one Working Days an Eight Room School." American Builder 77: 198-99; November 1955.
- American Institute of Architects Journal. "Award of Merit: New Sarasota High School, Sarasota; P. Rudolph, Architect." American Institute of Architects Journal 37: 58-59; May 1962.
- American Institute of Architects Journal. "Girls Behind Glass." American Institute of Architects Journal 28: 334; October 1957.
- American Institute of Architects Journal. "1964 School Building Exhibit." American Institute of Architects Journal 41: 35-46; June 1964.
- American Institute of Architects Journal. "1961 A.I.A. First Honor Award: Fernando Rivera Elementary School." American Institute of Architects Journal 35: 72-73; April 1961.
- American Institute of Architects Journal. "Sonoma Elementary School, and Westmoor High School, Daly City; M. J. Ciampi, Architect." American Institute of Architects Journal 30: 34-36; July 1958.
- American School and University. "Case of Room 103." American School and University 36: 25-28; June 1964.
- American School and University. "K-6 School with Neighborhood Appeal." American School and University 38: 41-42; August 1964.
- American School and University. "Master Plan for Bloomington High." American School and University 36: 60-61; February 1964.
- American School and University. "Pearl River High School: Five-part Harmony." American School and University 36: 39-41; September 1963.
- American School and University. "Something Special School." American School and University 37: 32-33; December 1964.
- American School and University. "Two Buildings for Physical Education: Triple-purpose Gymnasium." American School and University, 1962-1963. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. L1-L3.

- American School Board Journal. "All-electric Junior High School." American School Board Journal 146: 19-21; January 1963.
- American School Board Journal. "Alonzo Aldrich Junior High School." American School Board Journal 144: 24-27; February 1962.
- American School Board Journal. "Alpine Elementary School." American School Board Journal 147: 15-17; December 1963.
- American School Board Journal. "An Attractive Budget High School: The Whitefish High School." American School Board Journal 132: 40-42; June 1956.
- American School Board Journal. "Bay City's Million Dollar Baby." American School Board Journal 141: 12-14; December 1960.
- American School Board Journal. "The Belaire Elementary School: Designed for the Future." American School Board Journal 137: 41-43; November 1958.
- American School Board Journal. "Blending the High School Addition." American School Board Journal 143: 25-27; December 1961.
- American School Board Journal. "Bloom Township High School Opens New Freshman-Sophomore Division." American School Board Journal 149: 23-25; November 1964.
- American School Board Journal. "A Building for Teaching Science." American School Board Journal 138: 37-40; April 1959.
- American School Board Journal. "Building Premium Schools on a Rigid Budget." American School Board Journal 134: 49-55; May 1957.
- American School Board Journal. "Canadian School In-the-Round; New Approach to Compact Design." American School Board Journal 149: 63-65; August 1964.
- American School Board Journal. "Candler County Training School." American School Board Journal 133: 49-52; September 1956.
- American School Board Journal. "Carlsbad Cottage Schools Bridge the Gap from Home to School." American School Board Journal 130: 45-47; April 1955.
- American School Board Journal. "Chesapeake High School." American School Board Journal 144: 21-24; April 1962.
- American School Board Journal. "Clinton Elementary School." American School Board Journal 133: 45-48; September 1956.
- American School Board Journal. "Cold Spring Harbor Junior-Senior High School." American School Board Journal 147: 23-26; September 1963.
- American School Board Journal. "Colonial Hills Elementary School." American School Board Journal 144: 25-27; April 1962.
- American School Board Journal. "A Complete Primary School: Clackamas Grade School Addition." American School Board Journal 130: 54+; April 1955.

- American School Board Journal. "Darien High School Auditorium." American School Board Journal 147: 19-21; December 1963.
- American School Board Journal. "DeLand Senior High School." American School Board Journal 145: 23+; November 1962.
- American School Board Journal. "Dwight Township High School." American School Board Journal 135: 49-52; September 1957.
- American School Board Journal. "East Moline's Basic Junior High School." American School Board Journal 146: 13-15; January 1963.
- American School Board Journal. "Economy in Building Program." American School Board Journal 130: 49+; June 1955.
- American School Board Journal. "Educational Facilities for a Growing Community." American School Board Journal 143: 22-23; September 1961.
- American School Board Journal. "The Elroy Schroeder Junior High School." American School Board Journal 144: 23-25; May 1962.
- American School Board Journal. "Emerson Elementary School, Elmhurst, Illinois." American School Board Journal 130: 48-50+; April 1955.
- American School Board Journal. "Emmaus High School." American School Board Journal 133: 45-48; November 1956.
- American School Board Journal. "The Expandable Campus High School." American School Board Journal 138: 41-43; March 1959.
- American School Board Journal. "Expandable for the Explosion." American School Board Journal 149: 57-59; December 1964.
- American School Board Journal. "Findlay High School." American School Board Journal 148: 44-46; January 1964.
- American School Board Journal. "Forest Grove Union High School." American School Board Journal 131: 42-44; August 1955.
- American School Board Journal. "Grand Island's Senior High School." American School Board Journal 132: 49-53; May 1956.
- American School Board Journal. "Green Grove Elementary School Features Activity Rooms." American School Board Journal 148: 37-38; May 1964.
- American School Board Journal. "Gym Has Three Lighting Systems." American School Board Journal 148: 28; January 1964.
- American School Board Journal. "The Gymnasium Building." American School Board Journal 138: 41-42; April 1959.
- American School Board Journal. "Gymnasium-Music Building for Toms River." American School Board Journal 133: 49-50; November 1956.
- American School Board Journal. "Haslett Senior High School." American School Board Journal 140: 21-23; January 1960.
- American School Board Journal. "Hexagonal Classrooms in Clusters." American School Board Journal 139: 38; December 1959.

- American School Board Journal. "The Highlands High School." American School Board Journal 138: 14-16; January 1959.
- American School Board Journal. "The Homewood High School." American School Board Journal 142: 20-23; May 1961.
- American School Board Journal. "An Imaginative Approach to the Cafetorium." American School Board Journal 136: 51; May 1958.
- American School Board Journal. "Janesville Senior High School." American School Board Journal 133: 37-43; August 1956.
- American School Board Journal. "Joliet Township High School." American School Board Journal 148: 29-31; January 1964.
- American School Board Journal. "A High School for the Complete Educational Program." American School Board Journal 146: 16-18; January 1963.
- American School Board Journal. "A K-8 School for an Urban Area." American School Board Journal 138: 40-42; May 1959.
- American School Board Journal. "Kewanee High School." American School Board Journal 136: 45-47; May 1958.
- American School Board Journal. "Lecamas Heights Elementary School." American School Board Journal 149: 17-20; July 1964.
- American School Board Journal. "Lake Street Elementary School." American School Board Journal 144: 29-31; June 1962.
- American School Board Journal. "Lakewood's New High School." American School Board Journal 135: 44; July 1957.
- American School Board Journal. "Lampasas High School." American School Board Journal 134: 52-53; March 1957.
- American School Board Journal. "Littleton Euclid Junior High School." American School Board Journal 140: 41; January 1960.
- American School Board Journal. "Lynnwood Junior High School." American School Board Journal 135: 43-46; November 1957.
- American School Board Journal. "Marcus Community High School." American School Board Journal 146: 21-23; March 1963.
- American School Board Journal. "A Mechanical-Music Arts Building." American School Board Journal 141: 22-23; August 1960.
- American School Board Journal. "Melrose Elementary School." American School Board Journal 144: 28-29; February 1962.
- American School Board Journal. "A Modern Junior High School." American School Board Journal 132: 50-52; April 1956.
- American School Board. "Monterey Senior High School." American School Board Journal 134: 54-56; March 1957.

- American School Board Journal. "The Mt. Everett Regional School." American School Board Journal 136: 36-38; June 1958.
- American School Board Journal. "Music Building for Bossier High School." American School Board Journal 134: 70; April 1957.
- American School Board Journal. "The Narbonne High School: A Unique Variation of the "Finger Plan" School Layout." American School Board Journal 131: 57; October 1955.
- American School Board Journal. "A New School Heating-Air-conditioning Approach." American School Board Journal 146: 31-32; June 1963.
- American School Board Journal. "The Newton High School." American School Board Journal 133: 45-49; October 1956.
- American School Board Journal. "New York State Standard School Plans." American School Board Journal 148: 34; January 1964.
- American School Board Journal. "North Bethesda Junior High School." American School Board Journal 132: 35-37; June 1956.
- American School Board Journal. "Notable New Schoolhouses." American School Board Journal 142: 34-35; May 1961.
- American School Board Journal. "Notable New Schoolhouses; School Building Scrapbook." American School Board Journal 141: 36; October 1960. 141: 26-27; November 1960. 142: 30-31; February 1961. 142: 32-33; March 1961. 143: 30-31; July 1961. 143: 22-23; August 1961. 143: 34-35; September 1961. 143: 26-27; October 1961. 143: 23; November 1961. 143: 28-29; December 1961. 144: 32-33; February 1962. 144: 28-29; April 1962. 144: 26; May 1962. 144: 28; June 1962. 145: 16; July 1962. 145: 22; August 1962. 145: 22; September 1962. 145: 26; October 1962. 145: 28; November 1962. 145: 20; December 1962. 146: 24; March 1963. 146: 30; April 1963. 146: 30; May 1963. 146: 30; June 1963.
- American School Board Journal. "Ogden Elementary School." American School Board Journal 148: 67-70; February 1964.
- American School Board Journal. "The Pacific High School." American School Board Journal 139: 36; December 1959.
- American School Board Journal. "Philadelphia Combination Elementary-Junior High School." American School Board Journal 148: 33-35; May 1964.
- American School Board Journal. "Planning School Buildings in Baltimore." American School Board Journal 135: 59; September 1957.
- American School Board Journal. "Planning a School Fallout Shelter." American School Board Journal 143: 28-29; November 1961.
- American School Board Journal. "Plantation Park Elementary School." American School Board Journal 130: 51-53; May 1955
- American School Board Journal. "Portable Standard Classrooms." American School Board Journal 131: 51-52; September 1955.

- American School Board Journal. "Rapid City's Instruction Center." American School Board Journal 146: 32-33; February 1963.
- American School Board Journal. "The Return to Unity." American School Board Journal 149: 35-36; September 1964.
- American School Board Journal. "Rockford's C. Henry Bloom Elementary School." American School Board Journal 133: 50-52; October 1956.
- American School Board Journal. "Roof Supports Designed to House Lighting Fixtures." American School Board Journal 138: 54; June 1959.
- American School Board Journal. "A Schoolhouse That Grew." American School Board Journal 131: 47-48; October 1955.
- American School Board Journal. "A Science Building on Budget Financing." American School Board Journal 140: 42-43; May 1960.
- American School Board Journal. "Serving as a Community Center." American School Board Journal 135: 41-42; December 1957.
- American School Board Journal. "Shawnee High School." American School Board Journal 135: 51-55; October 1957.
- American School Board Journal. "The Southwest Elementary School." American School Board Journal 134: 58; February 1957.
- American School Board Journal. "The Starr King School." American School Board Journal 137: 46-48; September 1958.
- American School Board Journal. "The Stranahan Elementary School." American School Board Journal 134: 41-43; June 1957.
- American School Board Journal. "Thomas A. Edison Junior-Senior High School." American School Board Journal 134: 63-67; April 1957.
- American School Board Journal. "Trouble-free School." American School Board Journal 135: 39-40; December 1957.
- American School Board Journal. "The Tumwater High School." American School Board Journal 148: 33-35; March 1964.
- American School Board Journal. "University Senior High School." American School Board Journal 147: 19-22; July 1963.
- American School Board Journal. "Village Elementary School." American School Board Journal 148: 21-24; March 1964.
- American School Board Journal. "The Wakefield High School." American School Board Journal 131: 27-31; December 1955.
- American School Board Journal. "Wilbur Elementary and High School." American School Board Journal 145: 17-19; December 1962.
- American School Board Journal. "Willard Elementary School." American School Board Journal 131: 39-41; August 1955.
- American School Board Journal. "Williamsburg Junior High School." American School Board Journal 133: 37-40; July 1956.

- American School Board Journal. "The Willowbrook High School." American School Board Journal 144: 20-23; March 1962.
- American School Board Journal. "The Woodstock Union High School." American School Board Journal 137: 44-45; November 1958.
- Anderson, E. J. "Wayland Leads the Way with Progressive Planning." American School and University, 1957-1958. Twenty-ninth edition. New York: Bottenheim Publishing Corp., 1957. pp. 67-70.
- Anderson, J., and Peterson A. "Multiple-use High School Gymnasiums; Uniondale High School, Uniondale, New York." Journal of Health, Physical Education, Recreation 28: 10-11+; January 1957.
- Anderson, S. A., and Gach J. J. "Niles Township Community High School." American School Board Journal 140: 46-49; February 1960.
- Andree, R. G. "Image of the Future Arises in Olympia Fields." Nation's Schools 66: 56-65; July 1960.
- Angel, H. "Built for Basic Learnings." Illinois Education 43: 302-303; April 1955.
- Anthony, T. V., and Langford, V. W. "Radial Plan Suitable for Small Site: Handicaps Turn into Advantages." Nation's Schools 59: 66-70; May 1957.
- Architect and Engineer. "Inglewood, Morningside High School." Architect and Engineer 202: 30-; September 1955.
- Architect and Engineer. "John McLaren Elementary School, San Francisco." Architect and Engineer 214: 14; July 1958.
- Architect and Engineer. "Ladera Elementary School, Manhattan Beach." Architect and Engineer 215: 12-13; October 1958.
- Architect and Engineer. "Marin Terrace School, a School Atop a Mountain, Mill Valley." Architect and Engineer 217: 19-21; May 1959.
- Architect and Engineer. "Valley High School, Woodland Hills." Architect and Engineer 212: 3; March 1958.
- Architectural Forum. "Articulate School of Glass; Salisbury Central School." Architectural Forum 102: 134-138; February 1955.
- Architectural Forum. "The Big City School." Architectural Forum 102: 138-145; April 1955.
- Architectural Forum. "The Big City School; Discussion." Architectural Forum 103: 84+; August 1955.
- Architectural Forum. "Big School Plant with a Small Child Look." Architectural Forum 103: 124-129; August 1955.
- Architectural Forum. "Bright, Trim Primary School." Architectural Forum 104: 153-155; March 1956.
- Architectural Forum. "Child-size School." Architectural Forum 114: 114-117; April 1961.
- Architectural Forum. "Classroom Cluster for School Expansion." Architectural Forum 103: 143-145; October 1955.
- Architectural Forum. "Classrooms in Fours--For Economy." Architectural Forum 108: 102-104; March 1958.

- Architectural Forum. "Colorful School Scaled for Children--and Cost." Architectural Forum 117: 101-102; November 1962.
- Architectural Forum. "Columbus' Try for Architecture." Architectural Forum 113: 102-104; November 1960.
- Architectural Forum. "Community Buildings Extroverted; Senior High School, East Hartford." Architectural Forum 102: 132-135; June 1955.
- Architectural Forum. "Compactness Comes Back." Architectural Forum 108: 120-125; May 1958.
- Architectural Forum. "Compact Plan in Pennsylvania." Architectural Forum 119: 60-61; August 1963.
- Architectural Forum. "Contractor's Job Was Assembly." Architectural Forum 102: 138-141; May 1955.
- Architectural Forum. "Court Design in Delightful Danish." Architectural Forum 106: 120-123; June 1957.
- Architectural Forum. "Courtyard School." Architectural Forum 113: 110; October 1960.
- Architectural Forum. "Crow Island Revisited, the Winnetka Schoolhouse." Architectural Forum 103: 130-137; October 1955.
- Architectural Forum. "Designed for Air Conditioning." Architectural Forum 107: 168; November 1957.
- Architectural Forum. "Design for Teen-Agers." Architectural Forum 107: 147-159; November 1957.
- Architectural Forum. "Easygoing School in Texas." Architectural Forum 108: 92-93; February 1958.
- Architectural Forum. "Edmonds, School Built out of Light." Architectural Forum 104: 118-121; May 1956.
- Architectural Forum. "Excellence in Indiana." Architectural Forum 117: 120-123; August 1962.
- Architectural Forum. "Finger-plan School Refined." Architectural Forum 103: 138-142; October 1955.
- Architectural Forum. "Flexibility Pays in a Pioneer School." Architectural Forum 117: 134-135; November 1962.
- Architectural Forum. "Four First-rate Schools." Architectural Forum 109: 110-123; November 1958.
- Architectural Forum. "Four Outstanding Schools." Architectural Forum 115: 138-151; November 1961.
- Architectural Forum. "Four-part School." Architectural Forum 114: 122-123; February 1961.
- Architectural Forum. "Friendlier Architecture, Higher Grades." Architectural Forum 111: 116-119; November 1959.
- Architectural Forum. "Friendly School." Architectural Forum 114: 104-105; March 1961.
- Architectural Forum. "Galleria Plan for New Mexico." Architectural Forum 119: 66-67; August 1963.
- Architectural Forum. "Garden School." Architectural Forum 110: 132; April 1959.
- Architectural Forum. "Hagerstown Experiment." Architectural Forum 107: 160-165; November 1957.

- Architectural Forum. "Higher Secondary School at Chandigarh." Architectural Forum 118: 94-96; June 1963.
- Architectural Forum. "High School on a Wooded Campus." Architectural Forum 120: 115-117; May 1964.
- Architectural Forum. "High School Without Doors." Architectural Forum 102: 128-132; April 1955.
- Architectural Forum. "How to Site a School." Architectural Forum 111: 117-121; August 1959.
- Architectural Forum. "Indoor-Outdoor School; Deer Parks Elementary School, Fairfax." Architectural Forum 102: 143-145; January 1955.
- Architectural Forum. "Loft-plan High School." Architectural Forum 104: 134-139; January 1956.
- Architectural Forum. "Low-cost Brick School." Architectural Forum 102: 167; May 1955.
- Architectural Forum. "Midwest Preparatory School in a Monastic Mood." Architectural Forum 119: 108-113; December 1963.
- Architectural Forum. "Modern School, Greek Spirit." Architectural Forum 105: 134-139; August 1956.
- Architectural Forum. "Modest School of Solid Virtues; and, Large School Shaped by Its Site." Architectural Forum 120: 118-121; May 1964.
- Architectural Forum. "New Brutalism, Secondary School at Hunstanton, Norfolk." Architectural Forum 102: 142-145; May 1955.
- Architectural Forum. "New Kind of City School for Providence." Architectural Forum 119: 11; December 1963.
- Architectural Forum. "New Kind of High School: Room A and the Campus Plan Have Gotten Together." Architectural Forum 103: 146-149; October 1955.
- Architectural Forum. "New Orleans Treehouse School Preserves Play Space." Architectural Forum 105: 114-116; July 1956.
- Architectural Forum. "New Shapes for School Meeting Places." Architectural Forum 105: 128-133; July 1956.
- Architectural Forum. "New Talent for the Sixties: School Addition in Florida." Architectural Forum 115: 76-77; August 1961.
- Architectural Forum. "New Talent for the Sixties: School in Louisiana." Architectural Forum 115: 70-71; August 1961.
- Architectural Forum. "North Allegheny Junior-Senior High School." Architectural Forum 103: 150+; October 1955.
- Architectural Forum. "Patio School in Indiana--As Seen by Its Users." Architectural Forum 117: 92-100; November 1962.
- Architectural Forum. "Pavilion Plan for Long Island." Architectural Forum 119: 58-59; August 1963.
- Architectural Forum. "Periscope Classrooms." Architectural Forum 102: 139-141; February 1955.

- Architectural Forum. "Piedmont, Skylight School Fits on Tight City Lot." Architectural Forum 105: 117-119; July 1956.
- Architectural Forum. "Prefab Schools Designed for National Homes." Architectural Forum 102: 133-137; April 1955.
- Architectural Forum. "Private School of Fluid Spaces." Architectural Forum 120: 122-123; May 1964.
- Architectural Forum. "Quality on a Budget." Architectural Forum 111: 120-124; November 1959.
- Architectural Forum. "School in Praise of God." Architectural Forum 107: 122-127; November 1957.
- Architectural Forum. "School in the Park." Architectural Forum 107: 132-133+; November 1957.
- Architectural Forum. "School in the Sun." Architectural Forum 112: 94-101; May 1960.
- Architectural Forum. "Schools, Fresh Design Patterns." Architectural Forum 105: 104-119; July 1956.
- Architectural Forum. "Science for Schoolboys." Architectural Forum 118: 110-113; February 1963.
- Architectural Forum. "Sculptured Campus." Architectural Forum 114: 110-111; May 1961.
- Architectural Forum. "Senior High School at Northport, Long Island." Architectural Forum 103: 151-153; October 1955.
- Architectural Forum. "Six High Schools." Architectural Forum 106: 126-131; February 1957.
- Architectural Forum. "Six Quality Schools at Reasonable Cost." Architectural Forum 105: 142-153; October 1956.
- Architectural Forum. "Space-module School." Architectural Forum 107: 124-127; December 1957.
- Architectural Forum. "Staircase School." Architectural Forum 109: 161; October 1958.
- Architectural Forum. "Steel Frame in the Pines; P. Rudolph's Riverview High School, Sarasota." Architectural Forum 110: 112-117; April 1959.
- Architectural Forum. "Stillwater's Plant for Teaching." Architectural Forum 113: 105-109; November 1960.
- Architectural Forum. "Three Prototypes in One School." Architectural Forum 113: 120-123; July 1960.
- Architectural Forum. "Three Schools from One Mix at Portchester, New York." Architectural Forum 103: 152-157; December 1955.
- Architectural Forum. "Triple-duty Classrooms." Architectural Forum 109: 135; December 1958.
- Architectural Forum. "Twenty-five Prize Buildings for the Community." Architectural Forum 104: 118-139; March 1956.
- Architectural Forum. "Two Ways to Expand a School." Architectural Forum 115: 162-165; November 1961.
- Architectural Forum. "Urban Schools." Architectural Forum 119: 77-99; November 1963.

- Architectural Forum. "Village-like Plan in Michigan and Introverted Plan in Michigan." Architectural Forum 119: 62-65; August 1963.
- Architectural Forum. "Wayland's Lab for Learning." Architectural Forum 113: 96-101; November 1960.
- Architectural Forum. "Windowless Classrooms." Architectural Forum 102: 142-143; February 1955.
- Architectural Record. "Air Conditioning Responds to Flexible Plan." Architectural Record 132: 126-128; December 1962.
- Architectural Record. "Building Types Study: Are the Needs of Public and Private Schools Fundamentally Different?" Architectural Record 122: 195-214; July 1957.
- Architectural Record. "Building Types Study: Elementary Schools." Architectural Record 123: 197-224; February 1958.
- Architectural Record. "Building Types Study: Sarasota's New Schools: A Feat of Economy and Imagination." Architectural Record 125: 203-226; February 1959.
- Architectural Record. "Building Types Study: Schools." Architectural Record 126: 153-176; August 1959.
- Architectural Record. "Building Types Study: Schools." Architectural Record 126: 205-228; November 1959.
- Architectural Record. "Building Types Study: Schools." Architectural Record 127: 195-218; February 1960.
- Architectural Record. "Building Types Study: Schools." Architectural Record 127: 193-216; May 1960.
- Architectural Record. "Building Types Study: Schools." Architectural Record 128: 179-202; August 1960.
- Architectural Record. "Building Types Study: Schools." Architectural Record 129: 125-148; January 1961.
- Architectural Record. "Building Types Study: Schools." Architectural Record 132: 147-155; July 1962.
- Architectural Record. "Building Types Study: Schools." Architectural Record 132: 165-184; October 1962.
- Architectural Record. "Building Types Study: Schools." Architectural Record 133: 159-178; February 1963.
- Architectural Record. "Building Types Study: Schools." Architectural Record 134: 199-222; October 1963.
- Architectural Record. "Building Types Study: Schools." Architectural Record 135: 145-164; February 1964.
- Architectural Record. "Building Types Study: Schools." Architectural Record 136: 225-248; September 1964.
- Architectural Record. "Building Types Study: Schools and Architects Costs and Values." Architectural Record 122: 173-204; October 1957.
- Architectural Record. "Building Types Study: Schools--A Realistic Approach to Economy True." Architectural Record 125: 219-242; May 1959.
- Architectural Record. "Building Types Study: Schools, Cafeteria and Kitchen Facilities." Architectural Record 124: 207-230; November 1958.

- Architectural Record. "Building Types Study: Schools-- Eight Schools with Good Ideas for Achieving Quality with Real Economy." Architectural Record 130: 155-174; October 1961.
- Architectural Record. "Building Types Study: Schools, New Ideas Pose Cost and Efficiency Challenge for Standard Basketball Gym." Architectural Record 131: 135-150; February 1962.
- Architectural Record. "Building Types Study: Secondary Schools." Architectural Record 123: 213-244; May 1958.
- Architectural Record. "Building Types Study: Special Schools." Architectural Record 129: 169-188; April 1961.
- Architectural Record. "Building Types Study: Special Schools." Architectural Record 133: 167-186; May 1963.
- Architectural Record. "Building Types Study: Survey of Developments in the Trend of Air Conditioning." Architectural Record 130: 163-182; July 1961.
- Architectural Record. "Building Types Study: The Cost Problem in Schools." Architectural Record 124: 169-196; August 1958.
- Architectural Record. "Building Types Study: The Importance of Quality in School Building Design." Architectural Record 121: 219-250; April 1957.
- Architectural Record. "Building Types Study: The Individual School." Architectural Record 119: 221-246; April 1956.
- Architectural Record. "Building Types Study: The Individual School and the Community." Architectural Record 120: 221-256; October 1956.
- Architectural Record. "Building Types Study: The Individual School and the Delightful, Never-ending Progress to Perfection." Architectural Record 120: 149-180; July 1956.
- Architectural Record. "Building Types Study: The New High Schools." Architectural Record 118: 205-238; October 1955.
- Architectural Record. "Building Types Study: The Problems of School Sites." Architectural Record 121: 189-218; January 1957.
- Architectural Record. "Campus-planned Private Elementary School Near Philadelphia." Architectural Record 117: 204-205; February 1955.
- Architectural Record. "Defining Teen-age Needs Produces a Different School." Architectural Record 118: 220-227; October 1955.
- Architectural Record. "89 American Schools by 79 Architects Selected to Show in International School Building Exhibition at Geneva." Architectural Record 122: 10-11; July 1957.
- Architectural Record. "Flexibly Designed for Ultimate Development." Architectural Record 118: 228-230; October 1955.
- Architectural Record. "Florida High School Build Sans Wood or Masonry." Architectural Record 122: 248+; July 1957.

- Architectural Record. "For the City: Carter G. Woodson Junior High School." Architectural Record 117: 180-185; February 1955.
- Architectural Record. "Grahamwood School, Memphis, Tennessee." Architectural Record 117: 201; February 1955.
- Architectural Record. "Grouped Small Schools Form Large High School." Architectural Record 118: 173-178; July 1955.
- Architectural Record. "High School Will Occupy 60-acre Site; Provisio West High School; Perkins and Will, Architects." Architectural Record 120: 342; November 1956.
- Architectural Record. "Illinois School Planned for Exceptional Children." Architectural Record 118: 354; November 1955.
- Architectural Record. "Inexpensive School, Salem, Mississippi." Architectural Record 117: 202; February 1955.
- Architectural Record. "Junior High School, Bath, Maine." Architectural Record 118: 236-238; October 1955.
- Architectural Record. "Large High School Is Both Practical and Inspiring." Architectural Record 117: 214-219; May 1955.
- Architectural Record. "Lights, People Heat a Wisconsin School." Architectural Record 134: 194-195; November 1963.
- Architectural Record. "Missouri Gets a Low Cost Campus-plan School." Architectural Record 117: 202-203; February 1955.
- Architectural Record. "Modest Architecture for a Fine New England Campus." Architectural Record 134: 141-156; September 1963.
- Architectural Record. "Nature of the Site and the Nature of the School." Architectural Record 120: 205-210; September 1956.
- Architectural Record. "North Hagerstown High School, Hagerstown, Maryland." Architectural Record 120: 161-172; July 1956.
- Architectural Record. "One Direct Result of the H-Bomb Plant: Senior High School." Architectural Record 117: 194-197; February 1955.
- Architectural Record. "Power and Heat to Suit Campus-plan School." Architectural Record 118: 231-233; November 1955.
- Architectural Record. "Prestressed Folded Plate Roofs a Gym." Architectural Record 129: 172-173; June 1961.
- Architectural Record. "San Jacinto Elementary School, Liberty, Texas." Architectural Record 120: 151-160; July 1956.
- Architectural Record. "Sarasota High School." Architectural Record 125: 189-194; March 1959.
- Architectural Record. "School Executive Names Winners in Annual Competition." Architectural Record 120: 12; August 1956.

- Architectural Record. "School Executive Names Winners in Its Annual Competition." Architectural Record 117: 124; April 1955.
- Architectural Record. "Schools; Building Types Study." Architectural Record 117: 179-208; February 1955.
- Architectural Record. "Similar Educational and Architectural Approaches Produce Three Different Results." Architectural Record 118: 231-235; October 1955.
- Architectural Record. "Six-year High School for a Southern Mill Town Area." Architectural Record 117: 186; February 1955.
- Architectural Record. "Skylighted Washington School." Architectural Record 117: 166-169; March 1955.
- Architectural Record. "TAC Schools: William F. Pollard Junior High; Littleton High School." Architectural Record 125: 155-157; April 1959.
- Architectural Record. "Three Schools for Deaf Children." Architectural Record 122: 151-158; December 1957.
- Architectural Record. "Traditional Form and Contemporary Executive." Architectural Record 118: 145-149; December 1955.
- Architectural Record. "Twelve-year School for a Rural Area in the South." Architectural Record 117: 190-193; February 1955.
- Architectural Record. "Twenty-three Schools Applauded by Schoolmen: The Winners in Three Regional Competitions." Architectural Record 118: 10-11-; July 1955.
- Architectural Record. "Two Similar Elementary Schools for Rural Georgia." Architectural Record 117: 198-200; February 1955.
- Architectural Record. "Urban Elementary School." Architectural Record 118: 140-144; December 1955.
- Architectural Record. "Vocational Training School for Deaf Students." Architectural Record 118: 157-159; August 1955.
- Architectural Record. "West Charlotte Senior High School: Preplanning Produces Results." Architectural Record 117: 178-183; April 1955.
- Architectural Record. "Whiting Lane Elementary School, West Hartford, Connecticut." Architectural Record 120: 173-179; July 1956.
- Architectural Record. "Wilbert Snow Elementary School, Middletown, Connecticut." Architectural Record 120: 173-180; July 1956.
- Armstrong, D. E. "Julian D. Parker Elementary School Outdates Conventions." American School and University, 1962-1963. Thirty-fourth edition. New York: Bittenheim Publishing Corp., 1962. pp. 27-30.
- Arts and Architecture. "City and Country School." Arts and Architecture 78: 14-15; November 1961.
- Arts and Architecture. "Elementary School in Daly City by M. J. Ciampi." Arts and Architecture 77: 16-17; August 1960.

- Arts and Architecture. "Junior High School in Paramount by Killingsworth, Brady and Smith, Architects." Arts and Architecture 78: 10-11+; September 1961.
- Arts and Architecture. "Precast Concrete Auditorium." Arts and Architecture 81: 16-17; May 1964.
- Arts and Architecture. "School." Arts and Architecture 72: 28; October 1955.
- Arts and Architecture. "School By William H. Harrison, Architect." Arts and Architecture 72: 28+; May 1955.
- Arts and Architecture. "Two Schools by Mario Ciampi, Architect." Arts and Architecture 78: 24-25; October 1961.
- Arts and Architecture. "Underground School." Arts and Architecture 78: 18-19+; April 1961.
- Ashenbrenner, N. R. "Laboratory Overhead." Catholic School Journal 64: 73-74; May 1964.
- Ashley, W. H. "A New Type of Junior-Senior High School for Old Saybrook." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 243-248.
- Audiovisual Instruction. "St. Louis Park Schools, Minneapolis, Minnesota." Audiovisual Instruction 7: 457; October 1962.
- Aurand, E. D., et al. "Corridors--A Symposium." Nation's Schools 60: 66-70; September 1957.
- Ballard, W. F. R. "Our Functional Schools Can Be Beautiful!" American School Board Journal 136: 23-24; January 1958.
- Ballinger, R. I., Jr. "Penns Grove Elementary School." American School Board Journal 134: 68-69; April 1957.
- Barkdoll, O. R. "Urbana Shift from Classrooms to Basketball Theater." Athletic Journal 35: 38+; April 1955.
- Baxter, B. "Hamlet Elementary School." American School Board Journal 141: 32-33; October 1960.
- Baylon, C. A. "Tilt-up Construction for the Quinault Lake School." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 201-210.
- Beach, K. and Donald, E. "Let's Take a Walk through New Schools." School Executive 76: 71-85; June 1957.
- Beary, D. H. "Missoula County High School." American School Board Journal 136: 42-46; January 1958.
- Beatty, W. W., and Clark, D. L. "Plan for an Intimate Primary School." School Executive 78: 46-49; June 1959.
- Beaulieu, A. G. "To Save School Construction Dollars, Look to the Foundations." Civil Engineering 26: 357-361; June 1956.
- Beaverson, J. H. "The Complete School." American School Board Journal 142: 22-23; June 1961.
- Berlowe, H. R. "Salpointe High School." Industrial Arts and Vocational Education 47: 73-74; March 1958.
- Bevans, G. J. "Our Lady of Visitation School, Paramus, New Jersey." Catholic School Journal 55: 209-210; June 1955.

- Blackburn, E. P. "New School Goes All-electric." School Executive 75: 67-69; April 1956.
- Blodgett, O. "Welded Cantilevered Trusses Frame Elevated School." Progressive Architecture 39: 138-141; August 1958.
- Bloomgarden, H. "The William E. Grady Vocational High School." American School Board Journal 137: 31+; December 1958.
- Bogner, W. F. "Design in Urban School Complex Chosen by Competition." American School Board Journal 148: 28-31; March 1964.
- Boles, H. "A Campus Plan for a Problem Site." American School Board Journal 135: 36-38; December 1957.
- Boles, H. "Classrooms in Clusters Connected by Walkways." Nation's Schools 64: 65-67; August 1959.
- Boles, H. W., and Baker, J. "How Lancaster's Nine Specifics Were Structurally Realized." Nation's Schools 58: 65-66; September 1956.
- Bonham, S. J. "School in the Woods." Nation's Schools 62: 79-82; October 1958.
- Boone, D. "Texas Builds a \$2-Million Campus School." School Executive 75: 104-107; March 1956.
- Bowden, L. M. "Immaculate Conception School." Catholic School Journal 63: 58-59; May 1963.
- Bower, F. "Two Schools Designed for Common Site." Nation's Schools 60: 51-56; July 1957.
- Bowman, H. L. "Kenwood Elementary School." American School Board Journal 131: 47-48; November 1955.
- Bracken, J. L. "New Clayton High School, Clayton, Missouri." American School Board Journal 130: 40-43+; January 1955.
- Brantley, H. C. "United High School, Laredo, Texas." American School Board Journal 148: 65-68; June 1964.
- Braun, J. C. "Sanford H. Calhoun High School." Industrial Arts and Vocational Education 47: 78-79; March 1958.
- Brender, P. E. "Center Line High School: Symbol of Community Achievement." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 237-242.
- Briggs, C. C. "An Elementary School Designed for Expansion." American School Board Journal 131: 56-58; November 1955.
- Briggs, P. W. "Latest in Educational Requirements: How This School Meets Them." Nation's Schools 70: 104-105; September 1962.
- Bronstein, J. E. "Manchester Memorial High School." American School Board Journal 143: 20-21; August 1961.
- Brotherton, R. S. "A High School for Grades 9 and 10." American School Board Journal 142: 12-15; January 1961.
- Brown, M. E. "The Shelby High School." American School Board Journal 142: 24-25; May 1961.
- Brown, J. E. "Meets Educational Specifications." Nation's Schools 58: 62-65; September 1956.

- Brown, S. "Elementary School for a Small Site." American School and University, 1956-57. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 227-232.
- Browne, R. L. "Union City Elementary School." American School Board Journal 147: 63-64; November 1963.
- Brubaker, C. W. "Physical Education Plant with Four Gyms and a Pool." Scholastic Coach 30: 8-9; January 1961.
- Bryner, J. R. and Burchard, C. "North College Hill Primary School--A Design for Children." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim publishing Corp., 1957. pp. 137-142.
- Buehring, L. E. "For Designers It's Mostly a Dream, But Holland Has It Now." Nation's Schools 70: 60-67; November 1962.
- Buehring, L. E. "North Hagerstown High School Comprises Four Little Schools." Nation's Schools 63: 82-90; April 1959.
- Buehring, L. E. "Schools Born of Experience." Nation's Schools 59: 57-63; March 1957.
- Burbank, N. B. "Folded Plate Roof." Nation's Schools 59: 73-75; June 1957.
- Burbank, N. B. "Ideas for a Junior High School." American School Board Journal 142: 20-23; March 1961.
- Burnett, H. "Shawnee Mission Votes for Quality." Nation's Schools 61: 65-71; April 1958.
- Butterfield, R. D. "Bigness Is Humanized in the Frederick U. Conrad High School Design." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 45-48.
- Butterfield, R. D. "A Five-Unit High School for East Hartford, Connecticut." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 287-292.
- Buzzini, L. "Modern Lunch Facilities." American School Board Journal 138: 46-47; April 1959.
- Cahill, C. "Air-conditioned Schools Come to Hampton." Virginia Journal of Education 58: 26-28; November 1964.
- Caldwell, L. L. "Thomas Jefferson Elementary School." American School Board Journal 135: 39-41; August 1957.
- Callahan, C. E., and Johnson, W. A. "A New District and Its Comprehensive High School." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 293-300.
- Cameron, C. S., and Ollila, C. B. "Partitionless School in Chelsea, Michigan." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 119-122.
- Carlson, C. C. "Maximum Use for Multipurpose Room." Nation's Schools 56: 81-83; November 1955.
- Castle, M. "Twin-balconied Gym-Auditorium." Scholastic Coach 28: 10-11; January 1959.

- Catholic School Journal. "Air-conditioned High School in Iowa." Catholic School Journal 64: 95; September 1964.
- Catholic School Journal. "Aquinas High School and Convent at Forissant, Missouri." Catholic School Journal 57: 170-171; May 1957.
- Catholic School Journal. "Archbishop Hoban High School and Faculty House, Akron, Ohio." Catholic School Journal 55: 321-323; November 1955.
- Catholic School Journal. "Archbishop Ryan Memorial High School, Omaha, Nebraska." Catholic School Journal 57: 242; September 1957.
- Catholic School Journal. "Bergan Catholic High School." Catholic School Journal 64: 94-98; March 1964.
- Catholic School Journal. "Bishop Kenvick High School at Norristown, Pennsylvania." Catholic School Journal 57: 101-102+; March 1957.
- Catholic School Journal. "Calvery High School, Tiffin, Ohio." Catholic School Journal 55: 29-32; January 1955.
- Catholic School Journal. "Catholic High School; Catholic High School for Boys, Little Rock, Arkansas." Catholic School Journal 63: 30-32; June 1963.
- Catholic School Journal. "Catholic Junior High School in Alaska; Anchorage." Catholic School Journal 62: 74-75; November 1962.
- Catholic School Journal. "Creighton University High School Under Construction at Omaha, Nebraska." Catholic School Journal 57: 277-278; October 1957.
- Catholic School Journal. "Cure of Ars Church-School." Catholic School Journal 62: 97-99; September 1962.
- Catholic School Journal. "Divine Word Seminary." Catholic School Journal 62: 94; December 1962.
- Catholic School Journal. "Don Bosco Technical School in Los Angeles County, California." Catholic School Journal 56: 25-28; January 1956.
- Catholic School Journal. "Elizabeth Seton High School." Catholic School Journal 60: 86-89; September 1960.
- Catholic School Journal. "Holy Angels School." Catholic School Journal 61: 108-110; September 1961.
- Catholic School Journal. "Holy Cross High School." Catholic School Journal 62: 65-67; June 1962.
- Catholic School Journal. "Holy Name Parish School at Racine, Wisconsin." Catholic School Journal 56: 265-267; October 1956.
- Catholic School Journal. "Holy Rosary School." Catholic School Journal 59: 62-63; June 1959.
- Catholic School Journal. "Incarnate Word Academy; Corpus Christi, Texas." Catholic School Journal 55: 355-357; December 1955.
- Catholic School Journal. "Lets Look at Mobile Classrooms." Catholic School Journal 63: 62-64; April 1963.
- Catholic School Journal. "Lexington Catholic High School." Catholic School Journal 57: 90-93; December 1957.

- Catholic School Journal. "Light, Air, Space on a Small Site; St. Rose School, Belmar, New Jersey." Catholic School Journal 58: 43-44; May 1958.
- Catholic School Journal. "Maur Hill High School." Catholic School Journal 62: 104-106; September 1962.
- Catholic School Journal. "Nativity School; a New Church-School in Fargo, North Dakota." Catholic School Journal 63: 40-41; June 1963.
- Catholic School Journal. "Nazareth High School." Catholic School Journal 64: 98-101; March 1964.
- Catholic School Journal. "Our Lady of Good Counsel School." Catholic School Journal 60: 77; September 1960.
- Catholic School Journal. "Our Lady of Lourdes in Lewiston, Idaho." Catholic School Journal 58: 102-103; March 1958.
- Catholic School Journal. "Our Lady of Mt. Carmel School and Convent, Bronx, New York City." Catholic School Journal 56: 299-302; November 1956.
- Catholic School Journal. "Our Lady of Ransom Church-School." Catholic School Journal 63: 70-72; November 1963.
- Catholic School Journal. "Pensacola Catholic High School." Catholic School Journal 59: 74-76; September 1959.
- Catholic School Journal. "Regis High School, Eau Claire, Wisconsin." Catholic School Journal 56: 69-72+; February 1956.
- Catholic School Journal. "St. Anthony of Padua School." Catholic School Journal 61: 64-66; November 1961.
- Catholic School Journal. "St. Anthony's Parish School, Linton, North Dakota." Catholic School Journal 57: 241; September 1957.
- Catholic School Journal. "St. Catherine LaBoure School, Sappington, Missouri." Catholic School Journal 57: 133-135; April 1957.
- Catholic School Journal. "St. Francis Cabrini Church-School, West Bend, Wisconsin." Catholic School Journal 58: 92-94; September 1958.
- Catholic School Journal. "St. Francis High School." Catholic School Journal 61: 96-98; February 1961.
- Catholic School Journal. "St. Francis of Assisi Grade School." Catholic School Journal 64: 34-35; April 1964.
- Catholic School Journal. "St. James the Apostle School, Carmel, New York." Catholic School Journal 56: 99-101; March 1956.
- Catholic School Journal. "St. Joan Antida High School, Milwaukee, Wisconsin." Catholic School Journal 55: 139-142; April 1955.
- Catholic School Journal. "St. Kevin's at Springfield, Pennsylvania." Catholic School Journal 58: 100-101; March 1958.
- Catholic School Journal. "St. Louis Plans New High Schools." Catholic School Journal 63: 33-35; April 1963.

- Catholic School Journal. "St. Mary's Parochial School." Catholic School Journal 59: 74-77; November 1959.
- Catholic School Journal. "St. Mary's Parochial School, Willimantic, Connecticut." Catholic School Journal 55: 288-290; October 1955.
- Catholic School Journal. "St. Nicholas Elementary School." Catholic School Journal 57: 84-87; December 1957.
- Catholic School Journal. "St. Patricks High School, North Platte, Nebraska." Catholic School Journal 55: 175-177+; May 1955.
- Catholic School Journal. "St. Pius X School." Catholic School Journal 62: 82-83; November 1962.
- Catholic School Journal. "St. Pius X School, Convent, and Temporary Chapel, Indianapolis." Catholic School Journal 56: 191-193; June 1956.
- Catholic School Journal. "St. Pius X School, Loudonville, New York." Catholic School Journal 55: 249-251; September 1955.
- Catholic School Journal. "St. Therese Chinese Catholic School." Catholic School Journal 63: 66-68; March 1963.
- Catholic School Journal. "St. Therese Church-School." Catholic School Journal 62: 93-95; February 1962.
- Catholic School Journal. "School of St. Rose of Lima, North Wales, Pennsylvania." Catholic School Journal 56: 131; April 1956.
- Catholic School Journal. "Shawe Memorial High School; Madison, Indiana." Catholic School Journal 55: 207-208; June 1955.
- Catholic School Journal. "Small School for a Rural Parish." Catholic School Journal 62: 78; November 1962.
- Catholic School Journal. "South Hills Catholic High School." Catholic School Journal 58: 94-98; March 1958.
- Chaffee, C. E., and Todd, A. M. "The Bethlehem Vocational Annex." American School Board Journal 133: 53-55; September 1956.
- Chase, I. "Economical High School of Lasting Beauty, Westwood, Massachusetts." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 171-180.
- Childs, F. A. "Designing an Orbit High School for our Sputnik Age." Nation's Schools 63: 64-65; January 1959.
- Ciampi, M. J. "Architect's Philosophy of Structure." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 29-36.
- Ciampi, M. J. "Modern High School." Arts and Architecture 72: 28-29-; June 1955.
- Ciampi, M. J. "Mural for Learning at Olympia Primary School." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 127-130.

- Ciampi, M. J., and Martin, A. C. "Elementary School." Arts and Architecture 74: 26-27+; April 1957.
- Claiborne, R. "Blending the Old with the New; The School Addition." American School Board Journal 142: 34-35; March 1961.
- Clark, C. R., and Beatty, W. W. "Niagara-Wheatfield Junior-Senior High School; Product of Centralization." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 73-76.
- Cleland, W. B. "Lake Orion Community High School." American School Board Journal 137: 40-43; October 1958.
- Cleland, W. B. "Wyandotte's New Junior High School Designed for Sociability, Flexibility and Workability." Nation's Schools 57: 87-90; April 1956.
- Cleveland, R. H. "Banyan School." American School Board Journal 149: 37-39; September 1964.
- Clifford, M. "Honolulu's Prettiest School." School Executive 75: 62-66; August 1956.
- Cochran, F. L., and Ingram, E. "Schenectady Builds a Comprehensive High School." School Executive 77: 58-71; September 1957.
- Conger, A. H. "Roosevelt's Cafeteria Addition." American School Board Journal 141: 24-25; August 1960.
- Cook, H. M. "The New McBroom School." American School Board Journal 130: 51-53; April 1955.
- Cornell, F. G., and Bruce, I. E. "New Junior High School Concept; New Building." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 69-72.
- Cox, E. A., and Fowler, D. W. "Frank Scott Bunnell High School." American School Board Journal 144: 18-21; January 1962.
- Cruttenden, E. W. "Compact and Economical." American School Board Journal 134: 49-51; January 1957.
- Cruttenden, E. W. "King's Highway School--A Good Consolidated School." American School Board Journal 132: 54-56; May 1956.
- Dalzell, K. W. "A Sane School Building." American School Board Journal 136: 49-50; February 1958.
- Damos, T. "Gym Plant with 13 Teaching Stations." Scholastic Coach 32: 10-11+; January 1963.
- Davis, E. H. "No Direct Sunlight Enters these Classrooms." Nation's Schools 58: 68-69; August 1956.
- Davis, I. S., and Kingscott, L. C. "Snow Country School." American School Board Journal 141: 32-33; September 1960.
- Delaney, J. F. "Chicago's Complete School for the Physically Handicapped." American School Board Journal 134: 57-58; March 1957.
- Delaney, J. F. "A Pictorial Review: Chicago's Mammoth School Building Program." American School Board Journal 132: 31-35; February 1956.

- Denny, R. R. "The Des Moines Technical High School." American School Board Journal 141: 19-23; December 1960.
- Denny, R. R., and Mastin, V. "A Junior High 'Little School'." American School Board Journal 146: 27-29; June 1963.
- Dessenberger, V. H. W. "Oxford Intermediate School." American School Board Journal 148: 29-32; May 1964.
- Diamond, H. J. "In Niskayuna a 'House' Fits into an Existing School." Nation's Schools 67: 68-69+; June 1961.
- Dietz, R. H. "Olympic View Junior High School." American School Board Journal 136: 47-48+; March 1958.
- Dietz, R. H. "Simplicity of Design in Suburb." Nation's Schools 55: 64-67; February 1955.
- Dietz, R. H. "Woodway Elementary, the See-through School." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 135-138.
- Dix, R. G., Jr. "Sandy Valley High School." American School Board Journal 130: 34-37; January 1955.
- Donehoo, C. A. "North Gadsden School." American School Board Journal 131: 45-46; September 1955.
- Donley, R. "A High School by Increments." American School Board Journal 143: 26-28; August 1961.
- Donley, R. C., and Kingscott, L. C. "Four Small Schools Are Better Than One." School Executive 76: 68-70; August 1957.
- Douma, F. W. "Charles D. Evans Junior High School." American School Board Journal 130: 65-68; January 1955.
- Drage, R. G. "Four Tiers Built at Low Cost." Nation's Schools 63: 67-71; June 1959.
- Dreyfuss, A. M. "Exceptional Children Are No Longer Exceptions." School Executive 75: 59-62; July 1956.
- Dudley, W. A. "Model High School Physical Plant." Scholastic Coach 24: 12-14+; January 1955.
- Dutton, J., and Pearce, R. L. "A Study of a School Fallout Shelter." American School Board Journal 147: 31-33; October 1963.
- Easterbrook, C. E. "Physical Features of the Shops." Industrial Arts and Vocational Education 47: 75-76; March 1958.
- Educational Executive Overview. "Planned for the Jet Age: West Leydan High School." Educational Executive Overview 4: 50-51; May 1963.
- Educational Executive Overview. "Year-long Planning Produces New Junior High School." Educational Executive Overview 3: 58-60; November 1962.
- Eidt, E. "Grade School in Clusters." American School Board Journal 139: 33; August 1959.
- Electrical West. "This School Has Everything." Electrical West 116: 88-89; March 1956.
- Enersen, L. A. "School Design Combines Ventilation, Good Lighting, and Sound Control." Nation's Schools 65: 83-86; June 1960.

- Engelhardt, N. L., and Others. "Herbert Hoover Junior High School." American School and University, 1957-1958. Twenty-ninth edition. New York: Battenheim Publishing Corp., 1957. pp. 163-174.
- Engineering News-Record. "Expandable School Built of Circular Lift-Slab Units." Engineering News-Record 155: 34-36; November 10, 1955.
- Engineering News-Record. "Metal Prefabs Fill Classroom Need." Engineering News-Record 157: 73; October 11, 1956.
- Engineering News-Record. "Space Frames Support Roof for New Flexible School." Engineering News-Record 156: 23; January 12, 1956.
- Erdly, C. V. "The Eisenhower Junior-Senior High School." American School Board Journal 139: 49-52; October 1959.
- Erdly, C. V. "Washington Elementary School." American School Board Journal 147: 19-22; October 1963.
- Ertel, K. "Spokane Technical and Vocational School." Industrial Arts and Vocational Education 47: 69-73; March 1958.
- Farrell, J. P. "Dedham High School." American School Board Journal 140: 11-15; January 1960.
- Faust, J. F. "The Chambersburg Area Senior High School." American School Board Journal 131: 38-44; October 1955.
- Fawcett, N. G. "Beauty Enters the Classroom." Nation's Schools 56: 58-60; December 1955.
- Fay, L. C. "Curriculum and Community Center." Nation's Schools 61: 62-65; February 1958.
- Fay, L. C. "Simplified Structure Lowers School Cost." Nation's Schools 58: 66-68; November 1956.
- Fisher, B. M. "Four Gyms in One!" Scholastic Coach 29: 12-14; January 1960.
- Fisher, R. "Gas-Fired Heating and Ventilating." Overview 3: 47-48; January 1962.
- Flum, R. A. "An Elementary School for a Rapidly Growing District." American School Board Journal 146: 25-26; January 1963.
- Fogg, W. F. "Scarsdale Plan Is Flexible and Relaxed." Nation's Schools 67: 66-68; June 1961.
- Folley, M. D. "Hudson Falls High School--A Low Cost Marble Palace." American School and University, 1956-1957. Twenty-eighth edition. New York: Battenheim Publishing Corp., 1956. pp. 311-316.
- Francis, Brother A. "Archbishop Rummel High School." Catholic School Journal 63: 72-74; March 1963.
- Franzen, C. B., and McKay W. H. "Fort Morgan Builds a School." American School Board Journal 132: 29-31; January 1956.
- Frid, V. A. "New Windsor Gym." Scholastic Coach 24: 16; January 1955.
- Friswold, I. O. "A Community Combination School." American School Board Journal 132: 32-34; January 1956.

- Frizzell, J. S. "How to Light a Gymnasium." American School Board Journal 130: 28-29+; June 1955.
- Funk, C. E. "Pleasant Hill High School." American School Board Journal 147: 21-22; August 1963.
- Gaffney, M. W. "The Sleepy Hollow High School." American School Board Journal 138: 20-24; January 1959.
- Gardner, L. R. "Neighborhood Elementary School for Cedar City, Utah." American School and University 1956-1957. Twenty-eighth edition. New York: Battenheim Publishing Corp., 1956. pp. 221-226.
- Garinger, E. H., and French, J. E. "Solution for New Secondary Schools--The Campus Plan." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 209-214.
- Garland, J. E. "Finger Plan High School." School Executive 74: 66-69; June 1955.
- Garland, J. E. "We Bet on a Ring Theater." School Executive 75: 58-60; June 1956.
- Garrison, J. D. "A High School Designed for the Future." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 205-208.
- Gehorsam, L. A. "Planning the Large Vocational High School." School Executive 77: 59-61; August 1958.
- Geigle, R. C., and Zeugner, L. "Special Education Center." American School Board Journal 143: 18-20; December 1961.
- George, N. L. "Douglass Senior High School." American School Board Journal 131: 31-36+; July 1955.
- George, N. L. "Northwest Classen High School." American School Board Journal 134: 29-34; January 1957.
- George, N. L. "Oklahoma City Builds for Future." American School Board Journal 130: 50-54; January 1955.
- George, N. L. "Round Gymnasium Most Economical." Nation's Schools 58: 68-69; July 1956.
- Giaudrone, A., and Snodgrass, H. R. "School-Within-a-School Offers Pleasant, Uncrowded Learning Atmosphere." Nation's Schools 69: 58-62; June 1962.
- Gill, K. F. "Quality Schools at Budget Prices." American School Board Journal 143: 24-25; August 1961.
- Glatthorn, A. A. "Abington Township Senior High School." American School Board Journal 135: 36-43; July 1957.
- Glazier, R. C. "The Hillcrest High School." American School Board Journal 138: 44-47; February 1959.
- Glazier, R. C. "Parkview High School." American School Board Journal 134: 51-54; February 1957.
- Godshall, W. V. "Curriculum for a Campus Plan." School Executive 78: 70-73; April 1959.
- Gottfried, F. J. "Planning an Intermediate School." American School Board Journal 131: 49-51; November, 1955.
- Gragg, W. L., and Vickrey, W. "Ithaca's Campus Plan Is Flexible, Yet Specific in Function." Nation's Schools 67: 74-80; March 1961.

- Graves, B. E. "Aurora Builds" for Today and Tomorrow." American School Board Journal 139: 28-32; December 1959.
- Gregory, J., and Mack, M. G. "Getting Away from the Rectangular Classroom." School Management 5: 82-86; May 1961.
- Gross, C. E., and Stubbins, H. "New Approach to Planning a New England Elementary School." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 215-220.
- Grossman, S. "A Reading-Study Center for Better Teacher-Learning." American School Board Journal 147: 37-39; October 1963.
- Guedry, P. A. "Constructing Schools in East Baton Rouge." American School Board Journal 139: 42-43; September 1959.
- Guldborg, C. E. "Lincoln High School." American School Board Journal 145: 23-25; October 1962.
- Gunn, B., and Dayton, B. "High School Training Room." Scholastic Coach 25: 10-11; January 1956.
- Haag, G. H. W., and d'Entremont, P. "Carl Sandburg Junior High School." American School and University, 1961-1962. Thirty-third edition. New York: Bittenheim Publishing Corp., 1961. pp. 19-20.
- Haberbosch, J. F. "Isaac Newton Junior High School." American School Board Journal 149: 21-24; July 1964.
- Haeckel, L. C. "Facilities for Elementary Team Teaching." American School Board Journal 146: 27-28; January 1963.
- Hall, E. K. "School and Play Center." Nation's Schools 56: 46-47; August 1955.
- Hammond, J. W., Clay, P. K., and Seron, L. "Glass Pavilion Junior High School." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 97-100.
- Handel, H., and Boenig, R. W. "Schenectady, New York, Plans a New High School." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 215-228.
- Hardman, B. R., and Lones, P. T. "Two-Story Circular Building and Trapezoidal Classrooms Offer Unique Advantages." Nation's Schools 68: 50-56; July 1961.
- Harkness, J. C. "North East Elementary School Blends Building and Site." American School and University, 1957-1958. Twenty-ninth edition. New York: Bittenheim Publishing Corp., 1957. pp. 143-146.
- Harman, H. J. "Kimball Township Elementary School." American School Board Journal 135: 56-58; October 1957.
- Harrison, W. H. "Pioneer High School." American School Board Journal 145: 13-15; July 1962.
- Haskell, E. "Solving a Critical School-Housing Situation." American School Board Journal 132: 54-57; January 1956.
- Hathaway, C., and Holloway, G. "School That Cooperation Built." School Executive 76: 58-60; July 1957.

- Havig, L. T. "The Lewis and Clark Elementary School." American School Board Journal 131: 47-48; September 1955.
- Hawkins, L. "The Comprehensive High School in Pinellas County." American School Board Journal 146: 7-9†; January 1963.
- Hayes, H. F. "Louisiana's Twenty-fifth Area Vocational School." Industrial Arts and Vocational Education 45: 325; December 1956.
- Hein, R. G. "The Waukesha High School." American School Board Journal 138: 17-19; January 1959.
- Heinz, B. T. "Daylighting Plus Incandescent in an Engineering Design." Illuminating Engineering 51: 324-325; April 1956.
- Herman, J. J. "A Low-Cost Elementary School." American School Board Journal 146: 22-24; January 1963.
- Herndon, H. W., and Pena, W. M. "Design for a Flexibly Graded Program." School Executive 76: 82-87; April 1957.
- Hewlett, T. H., and Covert, J. C. "Clarence M. Kimball High School: Six Schoolhouses in One." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 175-178.
- Hiatt, J. R. "A New Approach to School Building: A School in 21 Days." American School Board Journal 131: 52-55; November 1955.
- Hickey, J. M., and Donovan, V. "Technical, Junior High Combined." School Executive 77: 45-48; April 1958.
- Hickey, J. M., and Logan, A. P. "Grover Cleveland Elementary School." American School Board Journal 135: 32-35; December 1957.
- Hill, D. E. "Auditorium Addition." American School Board Journal 143: 28-29; July 1961.
- Hill, L. L. "Arroyo High School." American School Board Journal 140: 28-30; June 1960.
- Hines, C., and Rickards, M. H. "Specialists Can Plan a Better School Plant." American School Board Journal 141: 34-35; September 1960.
- Hitt, H. H. "The Robert E. Lee High School." American School Board Journal 143: 18-22; November 1961.
- Holman, T. L. "Child-Centered, Library-Centered Junior High School." American School Board Journal 144: 33-35; May 1962.
- Holmes, G. W., 3rd., Robbins, C. E., and Manning, W. R. "Modern Ideas in Elementary School Planning." American School Board Journal 142: 26-31; May 1961.
- Horn, A. O. "McKeesport Senior High School." American School Board Journal 141: 29-31; September 1960.
- Horn, B. A. "Rock Island Senior High School Addition." American School Board Journal 144: 30-31; February 1962.
- Horner, A. A. "All-Electric Flameless High School." Progressive Architecture 39: 132-137; August 1958.

- Howe, C. "Chiloquin Elementary School." American School Board Journal 136: 33-35; June 1958.
- Howe, C. B. "Chicago's Mobile Classrooms." American School Board Journal 144: 35-36; June 1962.
- Hughes, D. P. "Liverpool Elementary School." American School Board Journal 147: 23-25; July 1963.
- Hutchason, W. K. "Sheltered Courts Key Semicircular School." American School and University, 1960-1961. Thirty-second edition. New York: Bittenheim Publishing Corp., 1960. pp. 93-96.
- Huxtable, A. L. "Work of Dean L. Gustavson Associates." Progressive Architecture 40: 120-126; August 1959.
- Hypes, F. B. "From a Single Plan Seven Lunchrooms Grew." Nation's Schools 59: 110+; May 1957.
- Ignatius, Brother E. "St. John's High School, Washington, D.C." Catholic School Journal 60: 56-59; June 1960.
- Illuminating Engineering. "Lighting a Low Ceiling Classroom." Illuminating Engineering 51: 203-204; February 1956.
- Illuminating Engineering. "Lighting a Low Ceiling Classroom; Lighting Data Sheet." Illuminating Engineering 51: 275-276; March 1956.
- Illuminating Engineering. "Lighting a School Business Practices Room." Illuminating Engineering 51: 171-172; February 1956.
- Illuminating Engineering. "Lighting a Windowless Classroom; Lighting Data Sheet." Illuminating Engineering 51: 239-240; March 1956.
- Illuminating Engineering. "School Lighting System with a Single Source; New Clayton High School." Illuminating Engineering 51: 374; May 1956.
- Industrial Arts and Vocational Education. "The Industrial Arts Building at Fullerton High School." Industrial Arts and Vocational Education 52: 57; March 1963.
- Ingham, G. E. "Chameleon Auditorium." Audiovisual Instruction. 9: 128; February 1964.
- Ingraham, W. W. "Eleanor Roosevelt Elementary School." American School Board Journal 149: 59-62; August 1964.
- Interiors. "Interiors Contract Series '58: Schools." Interiors 117: 72-89; February 1958.
- Interiors. "Four Dispersed-Plan Schools in Old New Orleans." Interiors 115: 84-87; November 1955.
- Interiors. "Sloane's Goes to a Public High School." Interiors 115: 96-97; May 1956.
- Ireland, D. B. "Color, Courts and Child-Size Scale Make This a Homelike School." Nation's Schools 58: 66-71; October 1956.
- Ireland, D. B., and Gersbach, T. J. "Informality and Function in an Elementary School Design." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 139-144.
- Ireland, R. S. "Student-Centered High School." School Executive 79: 72-74; October 1959.

- Irons, G. E. "Cleveland's Max S. Hayes Trade School." American School Board Journal 132: 55-57; February 1957.
- Ironside, I. C. "The Modern Instructional Materials Center." American School Board Journal 145: 19-21; August 1962.
- Ivie, C. "The West Hills Elementary School." American School Board Journal 145: 29-31; November 1962.
- Jacoby, E. B. "The Great Valley Senior High School." American School Board Journal 146: 23+; February 1963.
- James, A. G. "A Modified Court Plan." American School Board Journal 142: 18-19; January 1961.
- Jefferson, W. L. "The New Kensington Senior High School." American School Board Journal 137: 42-45; September 1958.
- Jenema, P. J. "Planned for Effective Learning." Nation's Schools 57: 82-86; April 1956.
- Johnson, A. A. "Four Schools From a Functional Plan." American School Board Journal 133: 37-38; December 1956.
- Johnson, B. "Case for the Spiral School." School Executive 76: 76; September 1956.
- Johnson, R. H. "Building Schools in Jefferson County." American School Board Journal 133: 51-54; November 1956.
- Johnson, R. H. "A Design for Team Teaching." American School Board Journal 142: 16-17; January 1961.
- Johnson, R. H., and Rioux, J. W. "Involving Citizens in School Planning." American School Board Journal 143: 30-31; December 1961.
- Johnson, W. A., and Silvernail, H. E. "Lynnwood Junior High School in Edmonds, Washington." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 247-252.
- Jones, B. "In Appearance and Usefulness, We Wanted to Surpass Our Existing Schools--and Did." Nation's Schools 59: 70-71; May 1957.
- Journal of Health, Physical Education and Recreation. "More Than a Gymnasium." Journal of Health, Physical Education, Recreation 33: 37; April 1962.
- Journal of Health, Physical Education and Recreation. "School Pools." Journal of Health, Physical Education, Recreation 33: 44-45; April 1962.
- Journal of Health, Physical Education and Recreation. "Systemwide Planning." Journal of Health, Physical Education, Recreation 33: 42-43; April 1962.
- Kane, M. M. "Tools for Teaching." Ohio Schools 38: 20-21+; November 1960.
- Kearney, N. C., Flanders, N., and Flynn, E. G. "St. Paul Builds a Demonstration and Research Classroom." American School Board Journal 134: 57-58; January 1957.
- Keller, W. E. "Adapting Junior High School Planning to a Suburban Community." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 65-68.

- Kellogg, E. G. "The Compact Elementary School." American School Board Journal 142: 28-29; February 1961.
- Kellogg, E. G. "General Mitchell Elementary School." American School Board Journal 136: 41-42; April 1958.
- Kelsey, F. L. "From Unknowns to Tangibles--Colorado Springs' New High School." American School and University, 1959-1960. Thirty-first edition. New York: Battenheim Publishing Corp., 1959. pp. 67-72.
- Kelso, C. M. "An All-Purpose Corridor." School Executive 76: 50-51; March 1957.
- Kidney, J. W., and Stanley, R. J. "An Award Winning School." American School Board Journal 130: 41-44; June 1955.
- Kiefner, C. H. "Spring Woods Junior High School." American School Board Journal 145: 19-21; September 1962.
- Kleb, O. "Does Your School Offer Disaster Protection?" American School Board Journal 147: 29-30; September 1963.
- Kling, V. G. "Indoor-Outdoor Correlation at Kissam Lane Elementary School." American School and University, 1957-1958. Twenty-ninth edition. New York: Battenheim Publishing Corp., 1957. pp. 147-150.
- Koopman, P. U. "Planning the Modern Junior High School." American School and University, 1957-1958. Twenty-ninth edition. New York: Battenheim Publishing Corp., 1957. pp. 71-78.
- Koss, H. A. "Lincoln Junior High School." American School Board Journal 145: 21-22; December 1962.
- Kraker, T. "Building for a K-6 Program." American School Board Journal 142: 24; June 1961.
- Kramer, J. H. "They Believed." American School Board Journal 133: 56; September 1956.
- Krutsinger, L. V. "The Chiddix Junior High School." American School Board Journal 144: 15-17; January 1962.
- Kuhn, E. R. "Highlands Elementary School in Millbrae, California." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 169-172.
- Lake, E. G. "Five Multi-Purpose Rooms." American School Board Journal 130: 45-47; June 1955.
- Lalime, Arthur W. "Elementary Schools Designed for Team Teaching." Audiovisual Instruction 7: 540-541; October 1962.
- Lamers, W. M. "Milwaukee's New Custer High School." American School Board Journal 132: 41-46+; January 1956.
- Landscape Architecture. "Site Planning of a School: Cresskill, New York." Landscape Architecture 52: 260; July 1962.
- Lathrop, C. "Elk Lake's Combination School." American School Board Journal 137: 23-25; August 1958.
- Lawler, W. J., and Edwards, E. "The Instructional Resources Center." Audiovisual Instruction 7: 545-546; October 1962.

- LeCronier, R. "Compact Spaciousness." American School Board Journal 137: 29-32; July 1958.
- Leggett, S. "Junior-Senior High School with Emphasis on Quality." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 163-170.
- Leggett, S. "Planning Two Elementary Schools on a Tight Budget." American School and University, 1958-1959. Thirtieth edition. New York: Bittenheim Publishing Corp., 1958. pp. 153-156.
- Leggett, S. "Small School Designed for a Big Job on Maryland's Eastern Shore." Architectural Record 118: 158-167; July 1955.
- Leggett, S. "Upgrading Existing School Facilities." Architectural Record 133: 163-165; February 1963.
- Lehman, C. E. "York Suburban Junior High School." American School Board Journal 149: 19-22; November 1964.
- Light, J. E., and Smith, D. B. "Enlightened Community Plans a Dream High School." School Executive 77: 49-53; April 1958.
- Llewellyn, J. P. "Chicago's Charles Allen Prosser Vocational High School." Industrial Arts and Vocational Education 51: 38-42; March 1962.
- Lloyd, D. E. "Choosing a School Site by Analysis." Landscape Architecture 54: 276-277; July 1964.
- Lopez, F. G. "Guided Tour of New Schools." School Executive 77: 69-81; June 1958.
- Lopez, F. G. "Individual School; Building Types Study." Architectural Record 119: 221-252; April 1956. 120: 149-150; July 1956.
- Lothrop, J. "Niagara-Wheatfield Junior-Senior High School." American School Board Journal 143: 22-25; October 1961.
- Lundblad, G. E. "Two Northwest Iowa School Buildings." American School Board Journal 148: 63-66; February 1964.
- Lunz, L. M. "How They Built Regina High School." Catholic School Journal 59: 64-68+; June 1959.
- Lutes, D. H. "The Harlow Road Elementary School." American School Board Journal 144: 12-14; January 1962.
- Lynch, J. M., Jr. "A Junior High School With a Built-in Program." American School Board Journal 130: 55-57; January 1955.
- Lyndon, M. "Beaumont Elementary School, Vista, California." American School Board Journal 149: 61-63; December 1964.
- MacDonald, D. M. "The Ordean Junior High School." American School Board Journal 134: 37-40; June 1957.
- MacDonald, D. M. "Woodland Junior High School." American School Board Journal 139: 29+; November 1959.
- MacDonald, K. R. "How Steel Serves at John Muir." American School Board Journal 146: 29; January 1963.
- MacDonald, K. R. "How Wood Saved at Arcata." American School Board Journal 143: 36-37; July 1961.

- MacDonald, K. R. "Huron Elementary School." American School Board Journal 140: 16-18; January 1960.
- MacDonald, K. R. "North Seattle Senior High School." American School Board Journal 142: 18-21; June 1961.
- Maffeo, A. A., and Sellew, F. B. "High School of Many Uses in Natick, Massachusetts." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 253-260.
- Magoun, C. F., and Ashley, W. H. "Unit Planning for Wilbert Snow Elementary School." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 157-160.
- Manla, G. N. "1954 Competition for Better School Design." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 73-112.
- Mann, A. E. "Elementary School with a Sand Dune Site." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 63-64.
- Maria, Mother Letitia. "Modern Cafeteria." Catholic School Journal 55: 217-219; September, 1955.
- Martineson, B. "Stainless Steel and Aluminum Gymnasium." Athletic Journal 36: 8+; April 1956.
- Max, D. P. "New Gymnasium Building for Crystal City." American School Board Journal 130: 24-25; June 1955.
- McAuley, D., and Rafferty, M. L. "An All Metal Mechanic-Arts Building." American School Board Journal 136: 51-52; February 1958.
- McCall, H. R. "Daniel Webster Junior High School." American School Board Journal 136: 19-22; January 1958.
- McCammon, O., and Walton, R. "Planning a School Plant to Meet the Needs of Young Adolescents." California Journal of Elementary Education 25: 89-94; November 1956.
- McCartan, W. M. "Gibson City's New High School." American School Board Journal 132: 59-62; March 1956.
- McClain, J. V. "Permanent Portables in El Rancho." American School Board Journal 149: 75-76; October 1964.
- McCleary, E. J. "W. Tresper Clarke Junior-Senior High School." Industrial Arts and Vocational Education 47: 59-64; March 1958.
- McConnaughey, T. A. "Electric Unit Heaters Cut Cost of School." Heating, Piping and Air Conditioning 27: 111; December 1955.
- McCrae, W. W. "Pendleton's New Elementary School." American School Board Journal 131: 38-39; July 1955.
- McCullough, J. D. "Brainerd High School and Stadium." American School Board Journal 146: 27-29+; April 1963.
- McCullough, J. D. "Chattanooga Builds a Nongraded Junior High School." American School Board Journal 148: 71-74; February 1964.

- McCurry, E. L. "Building for an Idea and a Need." American School Board Journal 148: 59-62; June 1964.
- McFee, W. E. "Steel Dining Hall for Miami." School Executive 74: 162+; April 1955.
- McGuinness, W. J. "Decentralized Gas Heating." Progressive Architecture 42: 180; May 1961.
- McGuinness, W. J. "Mechanical Engineering Critique; Decentralized Heating." Progressive Architecture 36: 7; December 1955.
- McGuinness, W. J. "School Building Isolates Jet Noise." Progressive Architecture 43: 172; July 1962.
- McLeod, J. W. "Campus Plan for a Small School--With Space to Grow." Nation's Schools 66: 57-63; August 1960.
- McQuade, W. "School Board That Dared." Architectural Forum 110: 78-87; February 1959.
- Meathe, P. J. "Fleming Elementary School." American School Board Journal 146: 31-34; April 1963.
- Melendy, R. W. "Citizenship Is a Living Experience in This Intermediate School." Nation's Schools 56: 54-59; August 1955.
- Melnick, B. J. "Auditoriums." Progressive Architecture 41: 158-163; March 1960.
- Melnick, B. J. "Classrooms." Progressive Architecture 40: 183-189; April 1959.
- Melnick, B. J. "Interior Design Data: High School--Acoustical--Design Requirements." Progressive Architecture 40: 211-217; May 1959.
- Milanovich, J. P., and Bontempo, J. F. "Hopewell High School." American School Board Journal 149: 31-34; September 1964.
- Miller, B. "Riverside, California, Plans a New High School." American School and University, 1955-1956. Twenty-seventh edition. New York: Bittenheim Publishing Corp., 1955. pp. 241-246.
- Miller, C. A. "Fieldston's Windowless Gym." Scholastic Coach 26: 24+; January 1957.
- Miller, D. D. "The Watertown High School and Civic Center." American School Board Journal 146: 29-31; February 1963.
- Mills, G. E., and Cleland, W. B., editors. "Edsel Ford Senior High School." Nation's Schools 55: 67-78; March 1955.
- Moran, J. "Blessed Event for Schenectady, New York." American School Board Journal 130: 41-44; March 1955.
- Morhous, F. E. "Case Study of an Air-conditioned High School." School Executive 78: 47-50; March 1959.
- Morris, L. M. "Kindergarden Design." American School Board Journal 138: 28; January 1959.
- Morris, P. "A Zoned Compact Plan for a Basic Academic Program." American School Board Journal 142: 20-23; January 1961.
- Morrison, J. L. "Facilities for a District-Wide Audiovisual Program." Audiovisual Instructions 7: 548-550; October 1962.

- Morrow, R. D. "Every Building Is Air Cooled." Nation's Schools 58: 67-69; September 1956.
- Morrow, R. D. "Portable Classrooms for Tucson." American School Board Journal 145: 31-32; October 1962.
- Moyle, W. D., and Ashley, W. H. "Development of a Small Campus-type High School." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 235-240.
- Mullen, F. A. "Chicago Opens a New School for the Physically Handicapped." Exceptional Children 23: 296-299-; April 1957.
- Mullen, F. A. "Special Needs Dictate Design of School for Physically Handicapped." Nation's Schools 59: 45-48; February 1957.
- Mulroy, R. D. "Our Lady of Premontre High School, Green Bay, Wisconsin." Catholic School Journal 56: 229-233; September 1956.
- Murphy, J. F. "New London Constructs a Home School." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 157-162.
- Murray, D. G. "Separation and Flexibility Keynote Tulsa's Junior High School Design." American School and University, 1960-1961. Thirty-second edition. New York: Buttenheim Publishing Corp., 1960. pp. 101-104.
- Music Educators Journal. "Modern High School Music Building." Music Educators Journal 42: 39-40; November 1955.
- Nation's Schools. "Accent on Color and Light." Nation's Schools 60: 74-75; November 1957.
- Nation's Schools. "Cafeteria Is Hub of School's Traffic Flow." Nation's Schools 66: 94-97; October 1960.
- Nation's Schools. "Chicago School Turned Its Back on a Slum." Nation's Schools 74: 34-35; December 1964.
- Nation's Schools. "Colorado School Sets Stage for New Auditorium Design." Nation's Schools 72: 47-51; December 1963.
- Nation's Schools. "Double Skylight Helps Solve Lighting and Heat Problems." Nation's Schools 60: 61; August 1957.
- Nation's Schools. "Four Classrooms Form This K-1 School." Nation's Schools 73: 50-52; June 1964.
- Nation's Schools. "Garfield School's Architectural Innovations Provide Comfort and Economies." Nation's Schools 56: 60-65; December 1955.
- Nation's Schools. "How a High School Grew Big Gracefully." Nation's Schools 74: 42-46; August 1964.
- Nation's Schools. "How Circle High Got Around Its Money Problems." Nation's Schools 74: 58-60+; November 1964.
- Nation's Schools. "How Parma Built a Space-age School and Saved a Million Dollars." Nation's Schools 70: 102-108; September 1962.
- Nation's Schools. "Idle Space Can Pay Its Way, If Versatility Is Planned." Nation's Schools 69: 63-65; June 1962.

- Nation's Schools. "Junior High Is Ready for Census Climb--or Drop." Nation's Schools 73: 74-77; May 1964.
- Nation's Schools. "K-6 Plan Puts Teachers at Ease." Nation's Schools 74: 38-40; July 1964.
- Nation's Schools. "No Land and Almost No Money, But Cresskill Built this High School." Nation's Schools 71: 54-59; April 1963.
- Nation's Schools. "Oakwood Is a Country School for Commuters' Children." Nation's Schools 71: 54-55; June 1963.
- Nation's Schools. "Our Lady of the Angels Is a Fire-Resistant School." Nation's Schools 67: 62-63; June 1961.
- Nation's Schools. "Pasadena Plan Doesn't Let Its Bigness Show." Nation's Schools 73: 98-101; March 1964.
- Nation's Schools. "Profusion of Light Through Roof, Windows." Nation's Schools 62: 48; July 1958.
- Nation's Schools. "School Looks Inward for Beauty." Nation's Schools 64: 59-61; September 1959.
- Nation's Schools. "Serves Public Housing Area." Nation's Schools 57: 78-81; January 1956.
- Nation's Schools. "Sprawling School Shields Students from Its Bigness." Nation's Schools 74: 70-73; October 1964.
- Nation's Schools. "Standardized Modular Units Provide Expandible Schools." Nation's Schools 57: 82-85; January 1956.
- Nation's Schools. "Ten Elementary Schools Modernize for Quality." Nation's Schools 64: 77-81; November 1959.
- Nation's Schools. "They Designed the School Traditionally, but Conditionally." Nation's Schools 72: 44-47; August 1963.
- Nation's Schools. "This Overcrowded School Kept Its Poise." Nation's Schools 74: 54-56+; September 1964.
- Nation's Schools. "Tri-level Design Solves Site Problem." Nation's Schools 64: 73-76; November 1959.
- Nation's Schools. "Tri-level Plan for a Small Community High School." Nation's Schools 55: 77-81; May 1955.
- Nation's Schools. "Two Section Cafeteria Serves Junior, Senior High Schools." Nation's Schools 64: 94+; September 1959.
- Nation's Schools. "Virginians Stay with Low-Cost School Plan." Nation's Schools 73: 66-68; January 1964.
- Nation's Schools. "Walls and a Plan Divide Illinois High School in Two." Nation's Schools 72: 30-33; July 1963.
- Nation's Schools. "Waverly Junior High Only Looks Expensive." Nation's Schools 72: 44-47; September 1963.
- Neff, W. L. "The Mandan Senior High School." American School Board Journal 136: 37-40; April 1958.

- Neill, M. "British School Used as Prototype; St. Crispin's Secondary School, Wokingham." Nation's Schools 64: 55-57; July 1959.
- Nevin, R. A. "Luminous Element Plus Controlled Daylight Equals Modern Lighting in a New School." Illuminating Engineering 51: 326-328; April 1956.
- Nicol, L. R. "The Mundelein High School." American School Board Journal 144: 22-25; January 1962.
- Noe, S. V. "Louisville Uses Lift-Slab Construction." American School Board Journal 130: 39; January 1955.
- Novak, B. J. "The Bucks County Technical School." American School Board Journal 140: 36-37; April 1960.
- Nunn, H. G. "Sonoma Elementary School." American School Board Journal 145: 23-24; September 1962.
- Nutting, L. J. "Waltham Vocational High School." American School Board Journal 147: 59-62; November 1963.
- Obata, G. "Four Little Schools Plus Special Areas Equals Riverview Gardens High School." American School and University, 1956-1957. Twenty-eighth edition. New York: Bittenheim Publishing Corp., 1956. pp. 249-252.
- Obata, G. "Happy Place: Bristol Primary School." American School and University, 1957-1958. Twenty-ninth edition. New York: Bittenheim Publishing Corp., 1957. pp. 132-136.
- Oliver, H. S. "Light from Every Practical Source." Nation's Schools 59: 72-74; May 1957.
- Oliver, L. A. "The Great Bridge Elementary School." American School Board Journal 144: 9-11, January 1962.
- Opdyke, W. C. "The Devon Elementary School." American School Board Journal 138: 41-43; February 1959.
- Orput, R. A. "Jefferson Junior-Senior High School." American School Board Journal 141: 20-22; July 1960.
- Orthaus, A. F. "School in the Round." American School Journal 141: 24-25; November 1960.
- Ostrander, C. B. "The Moreau Elementary School." American School Board Journal 132: 63-65; March 1956.
- Ostrander, R. H., and Sharp, J. S. "Custom-Fitted for Youngsters." School Executive 75: 64-68; November 1955.
- Overview. "Adding Space According to Plan." Overview 3: 42-45; April 1962.
- Overview. "Big School on the Seaway." Overview 2: 46-47; January 1961.
- Overview. "Built for School-Community Fitness." Overview 1: 58-59; November 1960.
- Overview. "Central Cafeteria; Big Scale High School." Overview 2: 76; May 1961.
- Overview. "Classrooms for the Gifted." Overview 3: 50-51; May 1962.
- Overview. "Hexagonal Clusters." Overview 2: 64; April 1961.
- Overview. "Low Priority Gave This School Skilled Planning." Overview 3: 56-57; January 1962.

- Overview. "Ninth Annual Competition for Better School Design." Overview 1: 49-59; June 1960.
- Overview. "Rippowam: Custom-Designed to Staff Specifications." Overview 3: 52-54; July 1962.
- Overview. "Site Solution that Met an Educational Directive." Overview 3: 56-57; August 1962.
- Owens, J. D. "New School For Navajos." School Executive 76: 61-62; October 1956.
- Palmer, D. W. "Hexagon Schools in Michigan." American School Board Journal 149: 69-71; October 1964.
- Parker, R. C. B., and Hodgins, G. "1200-student High School Counters Bigness with Compactness." School Executive 78: 46-47; August 1959.
- Patterson, P. C. "Four-room Unit Plan in an Elementary School." American School Board Journal 132: 47-48; February 1956.
- Pearce, D. W. "Facilities for Teaching Blind Children." American School Board Journal 143: 16-19; August 1961.
- Perkins, L. B. "The Many Lives of Evanston Township High School." American School Board Journal 141: 24-28+; September 1960.
- Perkins, L. V. "Housing the Speech Education Department." American School Board Journal 134: 53-54; April 1957.
- Phillips, H. "The New Hampton High School Science Laboratory." American School Board Journal 146: 38; April 1963.
- Pillans, W. A. "Elementary School Building Program." American School Board Journal 130: 58-62; May 1955.
- Plutte, W. "Our Gymnasium Will Grow." Athletic Journal 36: 7+; December 1955.
- Polga, B. J. "Look-Alike Schools Reduce Costs." Nation's Schools 66: 98-101; October 1960.
- Porter-Shirley, C. H., et al. "Planning Newport's New Rogers High School." American School and University, 1956-1957. Twenty-eighth edition. New York: Buntenheim Publishing Corp., 1956. pp. 269-280.
- Powell, H. J. "Classrooms with Conference Corners." Nation's Schools 55: 74-79; April 1955.
- Powell, J. "Tomorrow Looks Interesting." American School Board Journal 147: 23-25; August 1963.
- Powell, M. L. "The Raymond S. McLain Senior High School." American School Board Journal 140: 28-31+; April 1960.
- Powell, M. L. "Thomas A. Edison High School." American School Board Journal 136: 45-48; February 1958.
- Powers, W. A. "School Straddles Ravine, But Stays on Level." Nation's Schools 71: 56-57; June 1963.
- Priault, A. W. "Fieldhouse with Cantilevered Roof, San Francisco; Upper Noe Playground Unit; D. B. Kirby and Associates, Architects." Architect and Engineer 211: 8-11+; October 1957.
- Price, R. B. "Building the 'Erector Set' School in Tacoma, Washington." American School and University, 1956-1957. Twenty-eighth edition. New York: Buntenheim Publishing Corp., 1956. pp. 137-142.

- Price, R. B. "Mount Tahoma Senior High School." American School Board Journal 147: 19-22; September 1963.
- Prendergast, F. V., and Prendergast, J. "Multiple-Use High School Gymnasiums; Kelly High School, Chicago." Journal of Health, Physical Education and Recreation 28: 12-13+; January 1957.
- Progressive Architecture. "Amherst--Elementary-School Addition." Progressive Architecture 37: 144-145; September 1956.
- Progressive Architecture. "Architect and His Community: Architects Associated; Vocational High School in Brooklyn." Progressive Architecture 39: 110-115; February 1958.
- Progressive Architecture. "Architect and His Community: Jyring and Whiteman; Two Elementary Schools in Hibbing." Progressive Architecture 40: 156-157; October 1959.
- Progressive Architecture. "Architect and His Community: Stevens and Wilkinson's Schools." Progressive Architecture 40: 148-151; February 1959.
- Progressive Architecture. "Buildings for Education." Progressive Architecture 38: 105-141; February 1957.
- Progressive Architecture. "Camden Plan Goes into Effect; A. Clauss, Architect." Progressive Architecture 45: 52; January 1964.
- Progressive Architecture. "Campus Plan for 2500 Senior High-School Students." Progressive Architecture 39: 126-131; August 1958.
- Progressive Architecture. "Case Histories: Design for Optimum Hearing." Progressive Architecture 40: 196-197; May 1959.
- Progressive Architecture. "Case Histories: General Problems in Acoustics." Progressive Architecture 40: 154-155; May 1959.
- Progressive Architecture. "Case Histories: Special Techniques in Acoustics." Progressive Architecture 40: 172-173; May 1959.
- Progressive Architecture. "Central Multipurpose, Economical Solution for Nursery/Elementary School." Progressive Architecture 39: 116-119; August 1958.
- Progressive Architecture. "Clusters of Hexagons." Progressive Architecture 45: 134-138; February 1964.
- Progressive Architecture. "Comparative Analysis of Two High Schools." Progressive Architecture 40: 152-161, 177; April 1959.
- Progressive Architecture. "Design Awards: Education." Progressive Architecture 36: 85-89; January 1955.
- Progressive Architecture. "Design Awards: Education." Progressive Architecture 37: 104-113; January 1956.
- Progressive Architecture. "Design Awards: Education." Progressive Architecture 38: 94-101; January 1957.
- Progressive Architecture. "Design Awards: Education." Progressive Architecture 39: 108-111; January 1958.
- Progressive Architecture. "Design Awards: Education." Progressive Architecture 40: 158; January 1959.

- Progressive Architecture. "Design Awards: Education."
Progressive Architecture 43: 162-165; January 1962.
- Progressive Architecture. "Design Awards: Education."
Progressive Architecture 44: 114-117; January 1963.
- Progressive Architecture. "Design Awards: Education."
Progressive Architecture 45: 138-141; January 1964.
- Progressive Architecture. "Eight Schools Compared."
Progressive Architecture 41: 131-157; March 1960.
- Progressive Architecture. "85 Classrooms for Year-round Use."
Progressive Architecture 44: 160-161; October 1963.
- Progressive Architecture. "Elementary School." Progressive Architecture 36: 85-117; March 1955.
- Progressive Architecture. "Elementary School." Progressive Architecture 36: 96-101; December 1955.
- Progressive Architecture. "Elementary Schools as Rejuvenative Elements." Progressive Architecture 44: 64-65; April 1963.
- Progressive Architecture. "Fields of Practice: School Design, Nichols and Butterfield, Architects." Progressive Architecture 37: 141-143; September 1956.
- Progressive Architecture. "First Design Award: High School, New Orleans." Progressive Architecture 38: 90-93; January 1957.
- Progressive Architecture. "Four Schools." Progressive Architecture 39: 107; August 1958.
- Progressive Architecture. "Frederick U. Conrad High School." Progressive Architecture 40: 178-181; September 1959.
- Progressive Architecture. "Gridiron of Rectangles." Progressive Architecture 45: 143-147; February 1964.
- Progressive Architecture. "Gymnasium, Thomas Jefferson School for Boys, St. Louis." Progressive Architecture 37: 96-97; December 1956.
- Progressive Architecture. "High School." Progressive Architecture 40: 130-137; June 1959.
- Progressive Architecture. "High-school Gymnasium." Progressive Architecture 39: 94-95; July 1958.
- Progressive Architecture. "High-school Gymnasium Boldly Juxtaposed with Y-shaped Classroom Block." Progressive Architecture 39: 108-115; August 1958.
- Progressive Architecture. "Interior Design Previews a Junior High and an Elementary School." Progressive Architecture 37: 128-130+; January 1956.
- Progressive Architecture. "Interior Design Preview: Elementary Schools." Progressive Architecture 38: 142-144; January 1957.
- Progressive Architecture. "Island Park School." Progressive Architecture 40: 154-158; November 1959.
- Progressive Architecture. "Junior High School." Progressive Architecture 39: 100-104; August 1958.
- Progressive Architecture. "Kindergartens; Interior Design Preview." Progressive Architecture 36: 139-145; March 1955.

- Progressive Architecture. "Lillibridge Elementary School Addition." Progressive Architecture 45: 182-185; September 1964.
- Progressive Architecture. "Logical Pattern of Growth." Progressive Architecture 42: 142-145; July 1961.
- Progressive Architecture. "Main Shapes Arise." Progressive Architecture 42: 146-149; July 1961.
- Progressive Architecture. "Natural Lighting Reconsidered." Progressive Architecture 42: 150-153; July 1961.
- Progressive Architecture. "No-Corridor Plan, Workable Scheme for Elementary School." Progressive Architecture 39: 120-125; August 1958.
- Progressive Architecture. "Penny-Farthing School." Progressive Architecture 42: 168-171; March 1961.
- Progressive Architecture. "Plywood School Roof." Progressive Architecture 41: 166-169; November 1960.
- Progressive Architecture. "Primary-School Design Conditioned by the Factors of Scale and Economics." Progressive Architecture 39: 148-149; October 1958.
- Progressive Architecture. "P/A Design Awards Seminar I; Critique, George Washington Carver Junior-Senior High School, New Orleans." Progressive Architecture 38: 147-150; May 1957.
- Progressive Architecture. "P/A Design Awards Seminar II; Critique, Greenfield Elementary School, Birmingham, Michigan." Progressive Architecture 38: 101-104; July 1957.
- Progressive Architecture. "Rocky Hill, Junior High School; Litchfield, Regional High School." Progressive Architecture 37: 146-153; September 1956.
- Progressive Architecture. "Round-Robin Critique of Elementary School in Needham; Architects Collaborative, Architects." Progressive Architecture 38: 124-129; July 1957.
- Progressive Architecture. "Round-Robin Critique of High School in Contra Costa County, California; John Carl Warnecke, Architect." Progressive Architecture 38: 130-135; July 1957.
- Progressive Architecture. "Round-Robin Critique of Junior-Senior High School, Old Saybrook." Progressive Architecture 38: 118-123; July 1957.
- Progressive Architecture. "Round-Robin Critique: Three Elementary Schools." Progressive Architecture 40: 127-145; April 1959.
- Progressive Architecture. "Rudolph's Sun-shaded School Ends First Semester." Progressive Architecture 41: 75; May 1960.
- Progressive Architecture. "St. Joseph's Academy." Progressive Architecture 41: 114-121; December 1960.
- Progressive Architecture. "School: Concrete Frame, Harlingen; School: Steel Frame, Brownsville." Progressive Architecture 36: 112-115; June 1955.

- Progressive Architecture. "School Environment: One Architect's Approach, Five Schools by Hugh Stubbins." Progressive Architecture 44: 112-131; February 1963.
- Progressive Architecture. "Schools Within Schools." Progressive Architecture 43: 118-125; June 1962.
- Progressive Architecture. "Stress-Skin Plywood Panels Form Folded-Plate Roof." Progressive Architecture 39: 142-143; August 1958.
- Progressive Architecture. "TAC Goes Academic in Andover." Progressive Architecture 42: 57; October 1961.
- Progressive Architecture. "Tricorn for Teaching." Progressive Architecture 43: 126-131; June 1962.
- Progressive Architecture. "Two Elementary Schools." Progressive Architecture 40: 149; November 1959.
- Progressive Architecture. "Two-School Complex for Providence." Progressive Architecture 44: 66; December 1963.
- Progressive Architecture. "Warson Woods School." Progressive Architecture 40: 150-153; November 1959.
- Progressive Architecture. "Workshop-Critique of AISC Awards: Aragon High School." Progressive Architecture 43: 158-159; November 1962.
- Progressive Architecture. "Zigzag Line of Bays." Progressive Architecture 45: 139-142; February 1964.
- Pygman, C. H. "A Multi-Purpose Building." American School Board Journal 134: 44-46; June 1957.
- Pyle, D. K. "Educational Planning in Rapid City." American School Board Journal 145: 33-35; November 1962.
- Ragland, E. H. "Twin Falls Builds a Modern Secondary School." American School Board Journal 130: 51-55; February 1955.
- Reber, D. D. "Claremont High School Library." American School Board Journal 147: 16, 57-58; November 1963.
- Redmond, J. F. "Thomay Lafon--The School on Stilts." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 161-164.
- Reece, I. M. "Notes on Elementary Schools." Progressive Architecture 37: 116-129; March 1956.
- Reeves, W. A. "Auditorium-Bandroom at Woodsboro, Texas." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 239-242.
- Reid, J. L. "Architects Helped Plan the Curriculum." Nation's Schools 56: 60-62; August 1955.
- Reid, J. L. "Generous Indoor Spaces Create Feeling of Openness." Nation's Schools 71: 76-79; January 1963.
- Richard, R. "High School with a Seventy-Acre Campus." Illinois Education 44: 24-26+; September 1955.
- Richards, H. R. "Two-Two Plan at Community High." American School Board Journal 130: 68; March 1955.
- Rickards, M. H., and Hines, C. "Eugene Used a Contractors' Advisory Committee." American School Board Journal 140: 26-27+; January 1960.

- Rickards, M. H., and Hines, C. "A High School Building and the Future." American School Board Journal 138: 32-36; June 1959.
- Rike, Z., and Tunnell, J. W. "Another First for McAllen School." American School Board Journal 148: 67-70; April 1964.
- Ring, C. C. and Tinkham, N. W. "George A. Persell School." American School Board Journal 132: 44-46; February 1956.
- Roach, T. A. "The Loft Plan: Functional, Flexible, Economical." Nation's Schools 71: 68-75; January 1963.
- Roach, T. A. "Split-level Classrooms for Beginners: Interview." Nation's Schools 59: 66-72; June 1957.
- Roach, T. A. "Unenclosed Classrooms Create Atmosphere of Family Living: Interview." Nation's Schools 61: 57-60; May 1958.
- Robinson, W. C. "What Our New High School Means to Manhattan, Kansas." American School and University, 1957-1958. Twenty-ninth edition. New York: Battenheim Publishing Corp., 1957. pp. 179-184.
- Rodda, P. M. "Lafayette Elementary School." American School Board Journal 134: 59-60; February 1957.
- Rogers, E. "A Unit High School for Groton, Connecticut." American School and University, 1955-1956. Twenty-seventh edition. New York: Battenheim Publishing Corp., 1955. pp. 231-234.
- Rooney, W. J., Jr. "A Growing Elementary School in New Orleans." American School and University, 1959-1960. Thirty-first edition. New York: Battenheim Publishing Corp., 1959. pp. 59-62.
- Rothe, W. H., and Mallery, K. P. "Secondary Plant in the Campus Mode." American School Board Journal 134: 43-45; January 1957.
- Ruley, M. J. "A Unique Layout for Industrial Arts Facilities." Industrial Arts and Vocational Education 53: 44-47; March 1964.
- Russell, M. A. "Planning Food Service for the Large High School." American School Board Journal 135: 45-47; July 1957.
- Ruwitch, G. "East Grand Rapids High School." American School Board Journal 148: 75-78; April 1964.
- Salisbury, A., Barrow, J. M., and Graham, J. P. "Building Aids Intregation of Physically Handicapped." Nation's Schools 58: 62-67; August 1956.
- Saunders, C. M. "Only One of Its Kind." American School Board Journal 131: 35-38; August 1955.
- Saunders R. "The West District School." American School Board Journal 144: 24-25; March 1962.
- Schackne, D., Jr. "Latest Elementary School, Columbus, Ohio." American School and University, 1958-1959. Thirtieth edition. New York: Battenheim Publishing Corp., 1958. pp. 131-134.
- Schipper, V. J. "How and Why Holland Built Freedom into This School." Nation's Schools 70: 68-70; November 1962.

- Schnell, H. E. "The West Carrollton Senior High School." American School Board Journal 143: 21-24; December 1961.
- Scholastic Coach. "Best-lit Fieldhouse in the Land!" Scholastic Coach 25: 22+; January 1956.
- Scholastic Coach. "Glenbrooks Domed Gym." Scholastic Coach 33: 8-9+; January 1964.
- Scholastic Coach. "High School Sports Arena Supreme." Scholastic Coach 25: 36; January 1956.
- Scholastic Coach. "Modern Two-Level Gym Plant." Scholastic Coach 29: 7-9+; January 1960.
- Scholastic Coach. "Octagonal Thin-Shell Concrete Gym." Scholastic Coach 30: 10-11+; January 1961.
- Scholastic Coach. "Putting on the Heat." Scholastic Coach 33: 7+; January 1964.
- Scholastic Coach. "Wayland's Domed Fieldhouse." Scholastic Coach 31: 7-9; January 1961.
- School Executive. "Air-Conditioned Elementary School." School Executive 76: 62-67; November 1956.
- School Executive. "Announcing the Winners in the Eighth Annual Competition for Better School Design." School Executive 78: 47-58; May 1959.
- School Executive. "Announcing the Winners in the Seventh Annual Competition for Better School Design." School Executive 77: 53-76; May 1958.
- School Executive. "Environments That Teach." School Executive 77: 68-69; January 1958.
- School Executive. "Fifth Annual Competition for Better School Design." School Executive 75: 46-76; May 1956.
- School Executive. "Fourth Annual Competition." School Executive 74: 50-79; March 1955.
- School Executive. "Oasis in Texas." School Executive 78: 72-77; March 1959.
- School Executive. "School Under an Umbrella." School Executive 76: 56-60; December 1956.
- School Executive. "Winners in the Sixth School Design Competition." School Executive 76: 79-107; May 1957.
- School Management. "Air-Borne Tour of the Best Ideas in New School Design." School Management 6: 69-83; September 1962.
- School Management. "Centerville, Indiana, Plans a School for Community Use." School Management 6: 99-102; March 1962.
- School Management. "How to Have Air Conditioning and Windows, Too." School Management 5: 75-77; June 1961.
- School Management. "How to Plan a School for Expansion." School Management 7: 84-87; September 1963.
- School Management. "New Shapes for New Schools." School Management 7: 41-47; October 1963.
- School Management. "Portfolio of Big Schools on Small Sites." School Management 7: 67-73; October 1963.
- School Management. "Significant Schools You Should See." School Management 8: 45-46+; July 1964.

- Scully, M. F., and Smith, E. M. "Edsel Ford High School's Advance on Education." American School and University, 1956-1957. Twenty-eighth edition. New York: Bottenheim Publishing Corp., 1956. pp. 261-268.
- Selby, R. V. "Unit Ventilators in the Classroom." Catholic School Journal 60: 65-68; November 1960.
- Shankweiler, J. F. "The Conrad Weiser High School." American School Board Journal 143: 22-25; July 1961.
- Sharp, J. S. "The Addition as an Improvement to the Old School." American School Board Journal 145: 23-24; December 1962.
- Shaver, J. A. "Build the School to Fit the Program." Audiovisual Instruction 7: 518-521; October 1962.
- Shaver, J. A. "Each Building Is Distinctive." Nation's Schools 57: 83-84; February 1956.
- Shaver, S. B. "Semicircular Campus Plan Offers Several Advantages." Nation's Schools 58: 64-68; December 1956.
- Sherwood, T. "High School with a Student Commons Core." American School and University, 1956-1957. Twenty-eighth edition. New York: Bottenheim Publishing Corp., 1956. pp. 327-330.
- Sherwood, T. "Westport's Campus High School." American School Board Journal 139: 23+; August 1959.
- Shonfeld, R. B. "Monument to Reawakened Pride." Nation's Schools 59: 66-73; February 1957.
- Short, R. R. "Pleasant Working Atmosphere at Hastings." Nation's Schools 65: 87; June 1960.
- Sidells, A. F. "The Mines Elementary School." American School Board Journal 145: 27-28; October 1962.
- Silcott, G. R. "World's Largest High School Gym." Athletic Journal 35: 6-7+; January 1955.
- Silvernail, H. E. "Economical School of Concrete." American School Board Journal 132: 58-60; January 1956.
- Silvernail, H. E., and MacDonald, K. R. "Mountlake Terrace Senior High School." American School Board Journal 142: 22-27; April 1961.
- Singel, R. J. "Arranging Built-in Flexibility in a Grade School." American School and University 37: 36-37; September 1964.
- Slade, W., and Kane, M. M. "Shaker Heights' Byron Junior High School." American School Board Journal 140: 33-35; May 1960.
- Sloane, L. "Interior Design Data: Multipurpose Schoolrooms." Progressive Architecture 37: 147-154; March 1956.
- Smith, A. "We Put a Round Theater in a Square Gym." Texas Outlook 43: 18-19; September 1959.
- Smith, B. L. "The Greensboro Senior High School Gymnasium." American School Board Journal 131: 45-46; October 1955.
- Smith, E. M. "Beverly School Fulfills Three E's of Function." Nation's Schools 58: 71-72; October 1956.

- Smith, E. M. "Dearborn, Michigan's Transportable Classroom Units." American School and University, 1956-1957. Twenty-eighth edition. New York: Battenheim Publishing Corp., 1956. pp. 143-148.
- Smith, H. "New St. Paul's School, Worthington, Iowa." Catholic School Journal 57: 64-71; February 1957.
- Smith, H. P., Jr. "The Kreuger Junior High School." American School Board Journal 147: 15-17; August 1963.
- Smith, H. P., Jr. "Corridors that Light a School." Nation's Schools 55: 68-70; February 1955.
- Smith, L. D. "Purposeful Economies in School Building." American School Board Journal 132: 63-64; January 1956.
- Smith, R. J. "Little Schools and the Quadrangular Plan." Architectural Record 118: 208-214; October 1955.
- Snyder, R. D. "Flexibility Imperative in School Design." Minnesota Journal of Education 44: 10-11; May 1964.
- Solheim, S. A. "Elementary School in the Round." School Executive 77: 34-35; July 1958.
- Sorgatz, G. F., Jr. "The Bassett Intermediate School." American School Board Journal 145: 23-24; August 1962.
- Spain, C. R., and Hesselden, C. R. "Hayes Junior High--Embudo Elementary School." American School Board Journal 148: 13-16; January 1964.
- Sparks, C. "New Facilities for Industrial Education at Woodstock Community High School." Industrial Arts and Vocational Education 47: 65-68; March 1958.
- Staerkel, W. M. "Eight Old for Four New." Nation's Schools 57: 80-82; February 1956.
- Standhardt, F. M. "Below Ground School and Community Shelter for 2,400 Persons." Proceedings of the Association of School Business Officials of the United States and Canada, 1962. Evanston, Ill.: The Association, 1962. pp. 380-387.
- Steinke, E. L. "Citizens Blueprint a Program." School Executive 75: 58; July 1956.
- Stephen, D. H. "North Kirkwood Junior High School." American School Board Journal 140: 25-27; June 1960.
- Stephens, R. H. "Trent Park: Elementary School Designed for Expansion." American School and University, 1956-1957. Twenty-eighth edition. New York: Battenheim Publishing Corp., 1956. pp. 233-236.
- Stetson, G. A. "Pie-shaped Kitchen Serves Cafetorium-in-the-Round." Nation's Schools 65: 88-92; March 1960.
- Stetson, G. A., and Harrison, J. P. "A Junior High School Designed for Team Teaching." American School Board Journal 140: 39-42; May 1960.
- Stevens, P. C. "Cluster Plan Fits Rapid City's Needs; Interview." Nation's Schools 65: 114-116; February 1960.
- Stork, N. N. "The Clarence Olson School." American School Board Journal 131: 53-55; September 1955.
- Strattan, J. M. "Conestoga Senior High School." American School Board Journal 132: 46-49; April 1956.

- Strattan, J. M. "General Wayne Junior High School." American School Board Journal 139: 48-50; September 1959.
- Strattan, J. M. "Valley Forge School." American School Board Journal 140: 50-51; February 1960.
- Strumpfer, R. "Design for an Irregular Site." American School Board Journal 143: 26-27; July 1961.
- Stuhr, W. "The Thomas Jefferson Elementary School." American School Board Journal 146: 25-27; May 1963.
- Taylor, J. M., Jr., and Others. "Hiawatha Elementary School --Product of the Northwest." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 151-156.
- Thomas, E. B., and Williams, M. M. "Coldwater, Michigan's Expansible High School." American School and University, 1958-1959. Thirtieth edition. New York: Buttenheim Publishing Corp., 1958. pp. 187-194.
- Thomsen, E. M. "Building in Circles." Minnesota Journal of Education 44: 6-7; May 1964.
- Thomsen, E. M., and Haarstick, D. S. "White Bear Lake Senior High School." American School Board Journal 148: 37-40; January 1964.
- Thorn, R. E. "Rec Building Supreme." Scholastic Coach 24: 8-9+; January 1955.
- Thorp, J. H., and MacMaster, G. "Cheshire's Economical School." American School Board Journal 135: 47-48; November 1957.
- Thurston, E. W. "Co-operation Helped Westwood Face Its School Crisis." American School Board Journal 133: 53-55; October 1956.
- Tink, E. L., and Hamilton, N. R. "The New Franklin Elementary-Junior School." American School Board Journal 141: 28-30; October 1960.
- Towne, E. F. "Have You Converted?" American School Board Journal 130: 76; March 1955.
- Traver, E. A. "When Does it Pay to Remodel?" American School Board Journal 140: 41+; February 1960.
- Tule, J. O. "Facilities for Expanding Industrial Education Programs." Industrial Arts and Vocational Education 50: 34-37; March 1961.
- Turnbaugh, R. C. "Berwyn's Comprehensive High School." American School Board Journal 139: 26-30; July 1959.
- Turner, M. C. "Elementary School for Normal and Handicapped." School Executive 77: 72-75; March 1958.
- Twitty, L. "What Makes a Good Small High School." Nation's Schools 71: 68-73; March 1963.
- Van Bourg, M. "Redwood and Stucco." School Executive 78: 58-59; December 1958.
- Van Gundy, G. "Phoenix Building Superior Schools at Costs Far Below National Average." American School Board Journal 148: 26-27; January 1964.

- Van Nuys, J. C., and Godshall, W. V. "Hanover Park Regional High School." American School and University, 1957-1958. Twenty-ninth edition. New York: Battenheim Publishing Corp., 1957. pp. 185-192.
- Van Nuys, J. C., and Hayes, D. K. "High School Commons." School Executive 74: 68-75; May 1955.
- Van Ryn, E. D. "Five-Station Gym Plant." Scholastic Coach 31: 10-11+; January 1962.
- Virginia Journal of Education. "Tuckahoe, Virginia, Junior High Is Example of New Campus-type School." Virginia Journal of Education 52: 28-30; May 1959.
- Virginia Journal of Education. "Washington County Completes \$5,000,000 School Building Program." Virginia Journal of Education 54: 31; April 1961.
- Waechter, H. H. "Pearl Buck School." American School Board Journal 149: 72-74; October 1964.
- Waits, F. "Thomas Jefferson High School." American School Board Journal 133: 33-36; December 1956.
- Wakely, R. C., and Campbell, T. "Elementary School for Academic and Social Education." American School and University, 1960-1961. Thirty-second edition. New York: Battenheim Publishing Corp., 1960. pp. 89-92.
- Walker, A. E. "The Warren Central High School; Warren Township; Marion County, Indiana." American School Board Journal 144: 25-27; June 1962.
- Walsh, F. D. "Modernization Versus Replacement." American School Board Journal 143: 32-35; July 1961.
- Wartenberg, M. "A Comprehensive Service Center For Randolph High School." Audiovisual Instruction 7: 542-543; October 1962.
- Weir, B., and Pearce D. W. "Going Back to Face the Music... Teacher." American School Board Journal 146: 35-37; April 1963.
- Weir, W. G. "Budget School, With No Budget on Ideas!" Catholic School Journal 64: 86-88; January 1964.
- Wells, R. "The New School Administration Building in Memphis." American School Board Journal 147: 23-30; October 1963.
- White, R. H. "Planning a Combination Rural School Building." American School and University, 1958-1959. Thirtieth edition. New York: Battenheim Publishing Corp., 1958. pp. 61-64.
- Whitehead, J. A. "A Problem in Site Adaptation." American School Board Journal 143: 24-25; September 1961.
- Whitney, F. "Gym-Pool Plant for the Junior High." Scholastic Coach 27: 10-11+; January 1958.
- Wiedersum, F. G. "West Islip High School." American School Board Journal 136: 35-38; January 1958.
- Wiese, W., 2nd. "How to Design a Regional High School." Nation's Schools 70: 78-80; October 1962.
- Wiese, W., 2nd. "Old Blends with New in Form, Color." Nation's Schools 64: 58-59; July 1959.

- Wilcox, E. D., and Moore, H. A. "Difficult Site Becomes an Advantage." School Executive 77: 90-95; September 1957.
- Wilcox, E. D. "Elementary School for Indoor-Outdoor Education at Tyler, Texas." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 57-58.
- Wilde, C. F. "The Burnt Hills High School." American School Board Journal 133: 41-44; July 1956.
- Williams, E. D. "Alexander Ramsey High School in Minnesota." American School Board Journal 130: 35-41; March 1955.
- Williams, E. D. "Alexander Ramsey High School--Simplicity, Function and Beauty." American School and University, 1956-1957. Twenty-eighth edition. New York: Buttenheim Publishing Corp., 1956. pp. 301-310.
- Williams, G. D. "Worthington's Model Gymnasium." Athletic Journal 36: 15-16+; May 1956.
- Williams, H. C. "New Junior High School Aids Urban Redevelopment." American School and University, 1959-1960. Thirty-first edition. New York: Buttenheim Publishing Corp., 1959. pp. 65-66.
- Williams, J. H. "Woodrow Wilson Junior High School." American School Board Journal 135: 35-38; August 1957.
- Williammee, J. T., Jr. "Canton Junior-Senior High School." American School Board Journal 130: 54-57+; May 1955.
- Wilson, C. H. "Superintendent Builds a Building." American School Board Journal 130: 56-59; February 1955.
- Wilson, G. A. "Old Shell Houses New High School." Nation's Schools 64: 71-75; October 1959.
- Wingate, H. J. "St. Mary's Parochial School, Derby, Connecticut." Catholic School Journal 55: 105-106+; March 1955.
- Wire, H. R., and Rockwell, B. L. "San Lorenzo Valley High School Meets its Measure." American School and University, 1957-1958. Twenty-ninth edition. New York: Buttenheim Publishing Corp., 1957. pp. 193-198.
- Woehrl, C. A. "Parkside Heights Junior High School." American School Board Journal 147: 13-15; November 1963.
- Wolbach, C. A., and Van Nuys, J. C. "For Rumson, New Jersey --A Three-fold School." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 165-168.
- Woods, A. M. "Cafeteria as New as Tomorrow." Nation's Schools 63: 106+; April 1959.
- Wredling, J. H. "The Campus Plan at St. Charles." American School Board Journal 146: 10-12; January 1963.
- Wright, H. L. "Closer Communication; Pleasant Environment." Nation's Schools 58: 68; December 1956.
- Wright, J. C. "Keokuk, Senior High School, Junior College and Community Building." American School and University, 1955-1956. Twenty-seventh edition. New York: Buttenheim Publishing Corp., 1955. pp. 225-230.
- Wright, S. W. "Planning a Versatile Auditorium." School Executive 78: 58-59; September 1958.

- Wright, S. W. "Three Gyms in One!" Scholastic Coach 26: 8-9; January 1957.
- Wright, S. W. "West Springfield Senior High School." American School Board Journal 135: 53-57; September, 1957.
- Wynkoop, F. "\$1,000,000 Saved in School Building Costs." School Executive 76: 88-91; February 1957.