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By-Theodores, James L.; And Others

Crisis in Planning. An Analysis of Some Factors that Influence the Kinds of Schools We Have, How They Got That Way, and What We Must Do About Changing Them.

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In this, the author's interpretation of the current status of educational facility planning practices throughout the nation, the deficiency in proper planning is lamented. The point is made that two basic causes underlie these conditions--(1) irrational school organization that divides people, resources, and energies into mutually exclusive but impotent camps, and (2) reliance upon folkways rather than technical proficiency and upon folklore rather than research in the design of school facilities. Some short term recommendations include an increasing look to technology and research for better answers to design problems, while the long term exhortation prescribes new kinds of leadership from state education agencies, professional associations, and universities. Several steps that the Council of Educational Facility Planners can take in these directions are also outlined. (NI)

CRISIS IN PLANNING

A FIRST HAND LOOK AT WHY THE NATION'S SCHOOLS BECOME OBSOLETE

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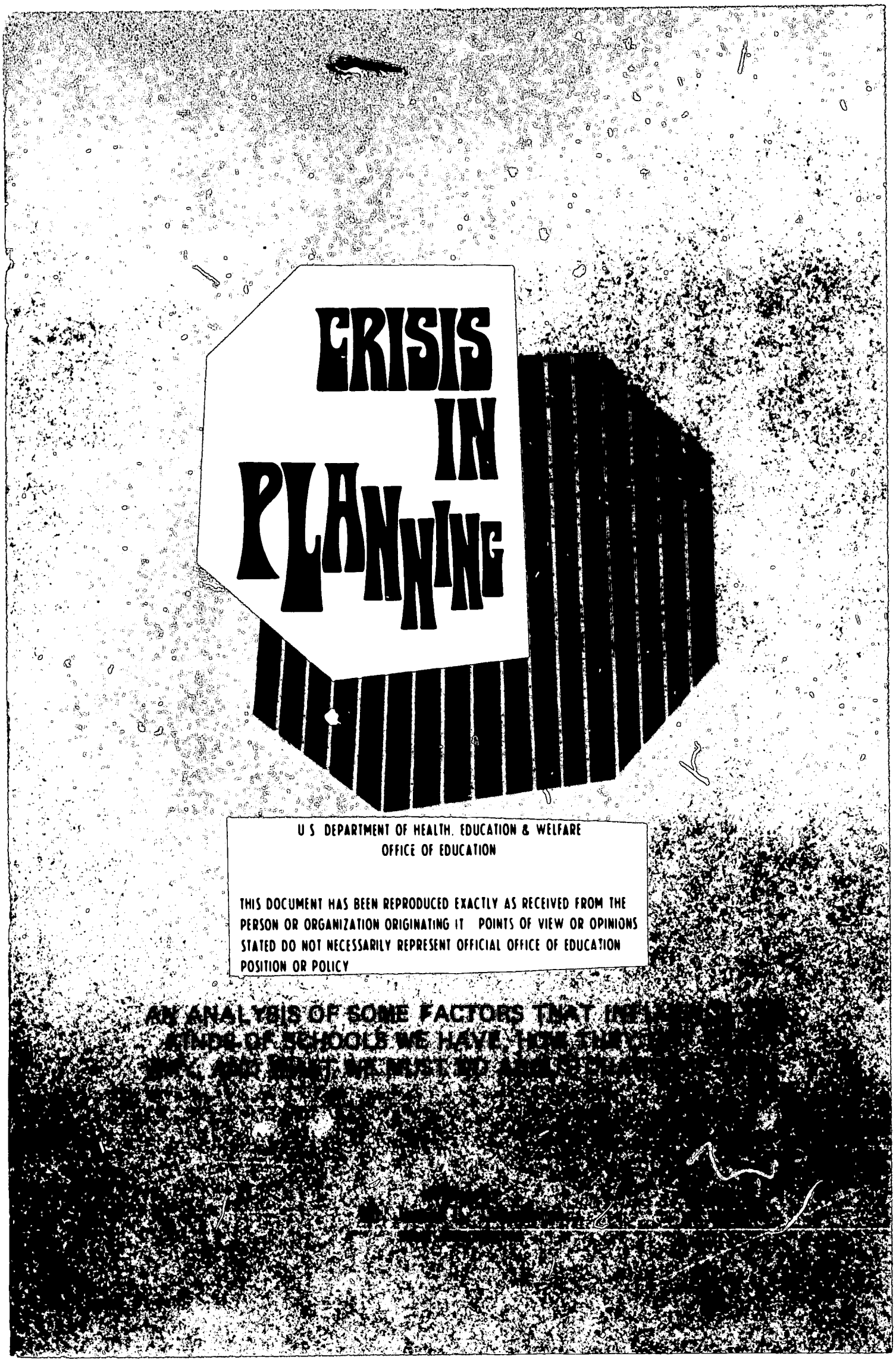

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FOREWORD

The Council of Educational Facility Planners commissioned Mr. James Theodores to develop an interpretation of his two-year study into the educational facility planning practices throughout the nation. This publication is the result of his research and investigation into that area.

Along with his associates, he has drawn a revealing picture of the present problems, the character of their development, and the frustration of finding solutions to them.

It would be easy to draw the conclusion from this report that there is very little right and very much wrong. This is not the case. There are many good things being done in the field of facility planning by many people. It is the intent, however, of Mr. Theodores, his associates, and the Council, to isolate the extent and nature of the problems and bring them into a focus that will permit those who can bring about the needed changes to better understand the extent of the challenge we face.

We wish to express our appreciation to Mr. Theodores and his associates for their penetrating authorship, to Mr. A. M. Markson for graphic design, and to others who contributed time and effort to make this publication possible.

Dwayne E. Gardner
Executive Secretary
Council of Educational Facility Planners

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PLANNING THE NATION'S SCHOOLS

Our national investment in school facilities is immense, and this investment continues to increase rapidly. New construction, or a plan for new construction, is a response to several population factors. In addition to the fact that our nation's total population is increasing, within the school age group, a larger and larger proportion remains in school for more years than was typical in the past. This trend can only increase as school programs are improved in order to hold the one in four pupils who now leaves school between the fifth and twelfth grades. For these several reasons, total school enrollment is growing, and the demand for new school facilities therefore grows accordingly. Furthermore, national trends of population movement add to the demand, as more and more people become residents of urban centers and their metropolitan areas.

There is little doubt that schools will continue to be built. The questions at issue, therefore, do not deal so much with "whether" but "where, when, why, what, how, and by whom," and the problem of cost.

Depending upon its design characteristics, a school building will tend to encourage or to inhibit certain instructional programs, instructional methods, patterns of student and staff interaction, patterns of neighborhood organization, and patterns of cost for operation as well as for construction. Depending upon its design characteristics, a school building will unquestionably influence school organization and staffing.

Design characteristics affect the physical environment of the school in matters of health and personal safety. Fire hazards, traffic hazards, accident hazards, and sanitation practice are all involved in the development of physical environment. The fire marshal, the police, the health department, and other agencies therefore are involved, either directly or indirectly, with schoolhouse planning. With respect to site selection, which also affects the physical environment, most city, county, regional, and state planning bodies also have a legitimate interest in schoolhouse planning.

School administrators, teachers, and parents have other reasons for their interest in the physical characteristics of the school. Their concern is with the social and psychological environment which those physical characteristics will tend to create and their impact upon the practice of education.

Planning a physical facility for educational use, therefore, is a complex process; it requires attention to political, social, fiscal, and technical/professional components. Attention to all these components is not likely to be provided by any one of the interested parties. These various parties include: the local school board and its superintendent and staff; local voters and taxpayers; the architect; the State Education Agency; planning bodies, police, fire, civil defense and disaster agencies; manpower agencies, and others.

For example, it is quite clear that schools, their locations, and their operation are significant factors in contemporary efforts to reduce segregation, to equalize access to educational opportunity, and to improve the quality of urban living. The board of a local school district can scarcely pretend to resolve all such questions by its decisions on site selection and schoolhouse design. On the other hand, neither can the board ignore these problems.

In this summary document, there are discussions of many questions and of many considerations that may help resolve those questions. As a preface to those solutions, however, we are going to present an outline of present typical practices to indicate just what confronts the planners of educational facilities. This is not to suggest that the state of the art remains as backward as typical practice, but to emphasize that most current practice operates without benefit of the present state of the art.

THE AMERICAN FOLKWAY: DOING WHAT COMES NATURALLY

School construction in the United States largely is a suburban activity. It isn't that construction is needed more in the suburbs than in the central cities or isolated rural areas; but that in the suburbs the several factors needed to mount and sustain construction programs combine for the best effort. The demand is there. The money is there. The organizational and political capacity is there to get the job done.

By contrast, central cities are deficient in several basic ways. Present school buildings are largely obsolete while pupil population continues to rise. Costs to deliver public services exceed capacity. Schools compete unfavorably for the local tax dollar. State and Federal funds do not combine to equalize educational expenditures between cities and suburbs. Also, the technical problems inherent to school planning in the city are staggering. School plant decisions must be coordinated closely with various plans for business, industrial, and commercial development (the *raison d'etre* for the city itself), as well as with plans for parking and streets, rapid transit, and urban redevelopment. Each such decision, moreover, is laden with racial, social, and economic overtones, factors which the suburban planner rarely encounters, or can "safely" ignore.

Also, there are major problems of leadership in the city. The voluntary organizational strength that characterizes the suburb is largely missing. Where it does exist, it often is alienated from the structure of decision making. The established school government–preoccupied with its own administrative concerns–is not always, or sufficiently, responsive to the needs and demands of its clientele. Moreover, the city is fed upon by the suburbs. Suburbanites enter and leave the city in a steady stream: to work, to be entertained, and to deplore the deteriorating conditions. Yet the suburbanite can make little if any contribution to the alleviation of the city's problems. Indeed, his attention is largely focused on developments in his own small, two or three school community. Moreover, he is usually politically unable to be involved in or with the city's problems, his residence determining his vote and his voice.

These contrasting aspects of social and political organization differentiate the city from the suburb and they determine to a large extent the planning processes and procedures each employs.

As a balance, the technical capacity of city school systems probably exceeds that of most suburban districts. Yet the broad social, political, and financial problems that confront the city school planner make his technical prowess largely irrelevant. Suburban districts–as they increase in size–are only now beginning to introduce technical planning staffs. Educational planning is not yet characteristic of suburban decision making. When the typical Localville undertakes a major school construction activity, it tends to move from problem to problem, decision to decision, crisis to crisis, relying largely on its great reservoir of *ad hoc* groups and committees. Success results not so much from able management as from the momentum generated by the suburb's tremendous capacity for self-serving social and political action, and from the muscle of its money.

LOCALVILLE PLANS A SCHOOL

Using a fictitious example of an atypical community, we can trace the repetitive pattern of occurrences within many suburban districts as they move from point zero to completed building.

1. **Population Begins To Change:**
   Localville gets more and more young families, hence more children. The schools are the first to feel the pressure. Parents begin to complain, fearful of the prospect of double sessions.

2. **Board of Education Vacillates:**
   Citizen board airs problem, sees the need to add more classroom space. The Board gets bound up prematurely in dispute between advocates for new building and advocates for addition to old but still serviceable building. Finally, the Board orders a "survey of need" and calls on State university for help from a specialist.

3. **Help Comes From Capital City:**
   The school plant specialist advises the board to organize a citizens' study committee to conduct the survey of need. Board figures that this requires too much time but reluctantly goes along. Three hundred local citizens are assigned to various sub-committees. After nine months of study, they conclude that the number of pupils exceeds the number of available classrooms and something ought to be done about it.

4. **Board Takes Action:**
   Meantime, the Board assigns its own subcommittee–comprised of a banker and a realtor–to conduct a site survey. It also retains an architect to draw up the preliminary building design. Board members are impressed by the rendering he prepares and they face up to the chore of "selling" a bond issue for new construction.

5. **Referendum:**
   The Board "succumbs" to the demands from citizens committee to submit the building program to a referendum for new taxes. The Board encounters tax limitation and other interesting anachronisms in State tax structure and system of public financing.

6. **Issue Fails:**
   Citizen committee learns–to its chagrin–that the majority of taxpayers are either unaware of the need for a new facility or are in disagreement with the way Board proposes to solve problem. The issue goes down to defeat, 3–2.

7. **Re-Referendum:**
   Now the "hard sell" begins. All voluntary and civic organizations are charged up. New taxes are finally voted, but six months have been lost.

Regrettably, the energy needed for the creative planning of the facility has been dissipated in the bond drive.

8. **Instant Planning:**
Under pressure now to build, the Citizen's Board resists the architect's request for "educational specifications." Indeed, several Board members now wonder if the architect is competent if he can't begin to design a school without a lot of detailed input from school people. Hastily assembled faculty groups submit their several "requirements." Both the Board and the architect find these largely irrelevant and all agree that they are extravagant.

9. **Prolonged Decision:**
The Board nit-picks the proposed plan and plays a "learn-as-you-go" game about building codes and the particular biases of the fire marshal, State education agency, and other regulatory bodies. Cost begins to loom large in everyone's thinking. Innovations in design are systematically eliminated. The architect is now disenchanted. He plays it safe; developing a supermarket choice of 40 alternate proposals with the hope of saving money. He ends up imitating conventional design with sufficient little goodies to please the key Board members.

10. **Authorization:**
On a split vote, the Board approves a plan along with 22 alternates, and authorizes construction. They fail to provide adequate on-site supervision and after construction begins, make a long list of minor changes that inevitably run cost over the original estimate. Those mythical savings largely go down the drain.

11. **Oversights:**
The Board, forgetting that a new building must be staffed, hastily seeks new millage for operation. Taxpayers are dismayed, having been sold on the notion that the new millage for construction would take care of the problem. Operational millage referundum barely passes. Everyone by now is very sick with the whole exercise and they resist Superintendent's plea for continued "planning." If this is planning, they say, let's have no more of it.

12. **Hindsights:**
The State education agency laments the lack of local planning yet sees no way to change things since school construction is a local matter. The Civil Defense Officer laments the failure of local Board to buy his proposal for a shelter in the new school. The State education officer tells him, "That's a Federal problem." Now the superintendent advises the Board that the new building won't be adequate in another three years. Unbelieving, the Board presides at the dedication ceremony, where the citizens confidently take pride in their latest accomplishment.

WHY GET EXCITED?

What's so important about a school building? Why should we be concerned about the quality of planning that goes into (or fails to go into) school construction? In short, what real difference does it make if Localville is a little untidy in this regard so long as buildings actually get built? Perhaps these are blunt and obvious questions, but they are fair questions; and the educational facility planner at local, State, and Federal agencies should provide straight answers. Doing so won't be easy.

A School Building Is a Modern-day Pyramid

Modern technology and architecture can produce school buildings that will last 300 years. While most present schools will not last that long, most buildings constructed in 1968 will still be in use in 2008. Some will endure—and have to be endured—even beyond that forty year span. A school building is important, therefore, first of all because it lasts. Since it intrudes upon our landscape for so many years, we owe it to ourselves and our children to exercise some care in what goes into it. Specifically, we would like to insure that the building won't fall victim to early obsolescence due either to location, use, or aesthetics.

A School Building Cost Money

At a cost of $25,000 or more per classroom, the level of investment required to build schools cannot be taken lightly. A business or industrial firm that intends to expand a physical plant by $5,000,000 (the typical cost of a new high school) would not hesitate to invest 10 percent of this amount in the functional and architectural design of the plant. Local school boards, however, typically decline to invest in the substantive educational planning of school plant. Their planning is reserved largely for architectural and engineering fees.

The asumption is commonly made that the architect somehow knows or divines what makes a good school. If he can be instructed in the Board's wishes regarding the number of classrooms, size of gymnasium and olympic pool, and the type and location of lockers, it is assumed that he has sufficient educational information to support his architectural solutions. The concept of the "classroom" itself is rarely questioned. Indeed, were the architect to question it, the local Board would tend to believe him an idle dreamer, or suspect that he is up to something.

Yet it is only during the educational or functional planning of facilities that such concepts can be questioned; after the concrete and mortar have hardened, it is too late to consider innovative concepts. It is from the planning-stage questions that the ideas flow; it is the serious consideration of ideas that guards against premature obsolescence of expensive school buildings; it is in reducing the probability of premature obsolescence that we protect our enormous financial investment in school buildings.

A School Building Affects People

More important than permanence or money is a school building's potential effect on human beings. Winston Churchill is attributed with saying that 85 per cent of human behavior is dictated by the space that one occupies. Research into the subject of school buildings has not been adequately addressed to this possibility. Yet a careful observation of teachers and pupils at work in schools bears out this contention: a building largely delimits the nature and character of the activities of those who use the building.

What does this mean? It means that a building can be the cause of recurrent discipline problems, for example.

Observe the high school corridor at any change of class period. Myriad doors open simultaneously on narrow passageways; clumps of pupils rush to lockers; doors bang; noise levels increase; people bump into and against each other; tempers sometimes flare; teachers or student monitors posted at each classroom door expect trouble, and all too often get it.

Or consider the modern elementary school with its little cells strung together by covered passageways. Thirty pupils live six hours each day in each of these cells, each such group with its own adult monitor. Education for these children is circumscribed by the four walls of the classroom; when one wall is glass, perhaps, there is an evident awareness of a larger world outside. But the real world for these children is the classroom. When walls confine space in units that provide somewhat fewer than 25 square feet per child, the children must sit in neat rows (even though their seats are movable), because the size and shape of the space actually determines the flexibility of the space.

More subtly, a school building is a work of art and a form of communication. It can express a genuine regard for its human occupants; and it can speak of that regard through its scale, texture, and art forms. Unlike the modern airport that is designed to accommodate machines, the modern school building can and sometimes does grace the human values of its users. Not only can it be a pleasant place in which to work, it also can add positively to the quality of good relationships among its occupants. For good or ill, it speaks forcefully for what is expected of its occupants. Pupils and teachers alike tend to live up to those expectations.

However, when a building is designed and rendered as a protected, impersonal enclosure, pupils tend to regard it as just that. Instead of developing pride and dignity, it can symbolize continuing humiliation. As often occurs in slum schools, one places protective mesh over the windows and thereby invites broken panes, or installs hard finish wainscoting in corridors and restrooms and invites a flow of expletives.

These factors—permanence, cost, and physical constriction—tend to combine to prevent or even to preclude change in pupil-teacher behavior through the years. Yet the character of education, if it is to be valid at all, is one of change.

Programs change. Instructional styles change. Technology advances. Only the physical shells of the schools tend to remain the same. Hence, a school building's human occupants constantly must scratch and claw at the fixed physical structure in order to introduce the least program innovations. This is not to say that human beings cannot overcome environment; it is to observe that most of us tend to conform to the limitations of our physical environment. Flexibility alone in design of space is not an answer. Witness the failure of teachers to adjust blinds, employ folding "walls," or reset thermostats. And where flexibility is not built in, any physical change requires time, money, and the psychic energy that "scratching and clawing" burn up.

A School Building Site Affects Social Organization

The location of a school, to a large degree, is a policy decision rather than a technical one. Technical factors of site limitations, safety, access, and surrounding environment are important, to be sure. Increasingly, however, it is easy to observe that neighborhood organization and reorganization is affected markedly when a school is built.

The social cost resulting from faulty location of school buildings may far exceed the monetary expenditure involved. It means that site selection is a social problem and a policy question, as well as a technical task. A technique-oriented planner simply is not equipped to make this kind of social decision, nor is it appropriate for him to do so. It is a policy issue of the first magnitude. When technicians do decide where to locate schools, whether or not as a part of an overall land use plan, their judgment has the effect of a policy decision. That is, their judgment concerning factors of access, safety, traffic, etc., effectively preempt or take precedence over the broader social concerns.

The decision, then, on where to locate school facilities, is an integral part of a broader decision: whether to desegregate minority peoples and to integrate white, middle class suburbs.

It is in this policy-making area that the concept and practice of local school district control breaks down. Advocates of the concept believe that the local school district is, and by right ought to remain, free to act, without constraints of external control or influences. Practices now express that concept. The results are not entirely acceptable or desirable. Segregated suburban districts "take care of their own." Racially and economically segregated cities may try, but very likely are incapable of equalizing educational opportunity for all within the city limits.

Massive new financial assistance for school construction might be a mixed blessing under these circumstances. It may alleviate immediate pressures for increased schoolhouse capacity in cities and suburbs; but, in so doing, it may also freeze and preserve the present patterns of segregated areas.

New alternatives to unhampered local district control are badly needed in the continuing efforts to resolve the perplexing problems of city-suburb relationships. A strong case might be built for a resurgence of State initiative in this educational policy area. A comparably strong case might be built in favor of cross-jurisdictional mechanisms for viewing the policy questions in full perspective, crossing city limits and state boundaries as required, so that each metropolitan area may come to grips with area-wide problems. Clearly, in matters of site selection and building construction, as well as at other points, the management of school systems now impinges upon broader aspects of politics, public administration, and the management of public affairs and public services.

What a School Can Do

We have observed that school buildings are important contributors to the educative process; also that they affect patterns of social and neighborhood organization. Because they endure, they can prevent desirable future change in patterns of pupil interaction and in patterns of instruction. Because they are expensive, and because they must be constructed in large numbers, they have an immense impact on our economy.

A superior building, therefore, should have these four characteristics:

- It would positively promote (or at lease permit and encourage) installation of new instructional or educative systems; it would readily lend itself to physical alteration in order to accommodate changing technology.
- It would grace the human values of its occupants; as an art form it would dignify the relationships among pupils and between pupils and adults who use the facility.
- It would be so located and designed as to foster appropriate inter-race and interclass relationships, thereby contributing positively to the equalization of educational opportunity for all pupils.
- It would represent an appropriate balance between initial cost and long range remodeling or replacement costs, hence contribute positively to the economic use of available resources.

Purpose of Planning

Planning is the key to good school design; good design leads to good facilities. Good design costs no more than poor design; indeed, poor design is the costliest ingredient in school construction. It guarantees an obsolete structure.

To plan is to predetermine what a building should accomplish in a given environment, and then to array space, form, and texture, in relation to site and within the limitations of resources, in ways designed precisely to accomplish these objectives.

If a school building serves four basic functions, then the planning of school facilities necessarily treats those four functions. These are:

- Education: what we are trying to accomplish with our young, and the arrangements we make for them to learn.
- Environment: the array of space, service systems, form, and texture which we have evidence to believe will foster that learning.
- Economy: the conservation of financial resources.
- Equalization of educational opportunity: the same means we employ to promote desired personal interaction among our pupils.

The challenge to planners is to define and relate these factors to produce one or more valid alternatives for final decision by the Board of Education or other sponsoring body. If one or another of these functions is neglected or poorly treated in planning, the resulting design is unbalanced; the school building is guaranteed early obsolescence.

THE STATE OF THE ART AND CURRENT PRACTICE

The state of the art in architecture and engineering now has advanced to a point where almost any desired environment can be created, usually within the limitations of resources. In most cases, sufficient funds are available to construct this environment. The state of current practice, however, as confirmed in this most recent survey, falls far short of the state of the art.

Indeed, the evidence is compelling. With marked exceptions, most school buildings now in use are destined for early obsolescence. Many were obsolete while still in the design stage. The fault lies not so much in the failure of the architectural and engineering professions–although there is a widespread and enduring tendency to imitate current styles in architecture–but in the inability of educators to define precisely the functions to be accomplished in the architecture. One is struck today by his inability to distinguish among buildings designed ostensibly for different functions, as for example: hotels, motels, libraries, schools, and factories.

Moreover, it is difficult to distinguish newly constructed elementary and secondary schools from their counterpart structures of 1890, 1920, 1936, or 1958. The trappings and external appearances differ, to be sure. Service systems have been improved. Creature comforts have been advanced. Glass and movable partitions have replaced bearing walls. Roof lines and structural systems have been altered. Aside from the external and obvious, however, the basic design of educational facilities largely remains unchanged. This follows, perhaps, from the fact that the nature of instruction has largely followed the same pattern through all the years. Contemporary school buildings tend to perpetuate these outdated instructional systems; moreover, they do not lend themselves readily to the introduction of newer instructional systems.

The current state of school building practice reflects upon the planning–or lack of it–that produces it. If there are to be substantive changes in school architecture, there first must be substantive changes in educational ideas and plans. School buildings reflect gross imbalances in the planning process; planners seem preoccupied by questions of shelter, savings, and accommodations for existing instructional programs. At the moment, we seem to know better how to enclose space than people. Very few people view planning as a blending of advanced ideas about education, environment, economy, and equalization of educational opportunity.

Planning School Facilities: The Local Picture

Planning of school facilities is largely–if not exclusively–viewed as a local responsibility. This conforms nicely with our folkways in government. But there are nearly 25,000 local school districts. They vary in size from 100 pupils or less to over 1,000,000. In 1968, the median number of pupils in a district was 1,580; the median number of school buildings in a district still is only 3.5.

For the small suburban or rural district, planning of school facilities is usually a once-in-a-generation occurrence. Some districts may avoid the problem for two or even three generations. In the urban centers and surrounding suburban school districts, however, to plan new school facilities is an annual and recurring responsibility. It is in these districts that the larger proportion of children are now enrolled, and where, by 1980, the great majority of pupils will be enrolled. Here, then, is where planning becomes crucial; here is where mistakes or lapses in planning have their greatest and most enduring effects.

It certainly is not fair to allege that local school district planning is universally bad. It is fair, however, to observe that planning is based largely on folklore, and that it is carried out by persons largely unprepared for the task. Judging from the results produced and from observations by interested outsiders, local planning is generally undisciplined, non-professional, haphazard, and largely non-creative. There are wonderful exceptions, to be sure. Major breakthroughs in planning and design have been made as early as the 1930's in Winnetka, in post-war Scarsdale, and more recently in San Mateo and in Seattle, to cite very few examples.

For most districts, however, planning is underdeveloped and grossly unbalanced. Shelter, not environment, is a prime consideration. Accommodation for existing instructional programs, not for the educative process, is the principal design element. Fewest dollars, not genuine economy, is the prevailing condition for construction.

Some superintendents of schools have taken the initiative to correct this condition. When their duties have permitted, several have personally conducted the planning of new facilities. When they themselves were extraordinary educators, with a genuine feel for the complexity and challenge of the design problems, the results have been superb. When—as so many attempt to do—they play architect, the results have been mediocre.

As the size of a district increases, facility planning all too often becomes part of the political structure. The sheer magnitude of the problem tends to be overwhelming. Quite naturally, the planning staff is constrained to look for the types of solutions that can be replicated and mass produced.

Planning, then, for different reasons is deficient in local districts of differing size and location. In the absence of relevant and thoughtful educational requirements, architects—by default—design not only the buildings but the school programs as well. Since the architect is influenced largely by cost considerations—being monitored constantly in this respect by the Board of Education—he tends to emerge essentially with unbalanced planning. In other words, planning in which cost shapes environment, environment shapes education, and education limits the scope and character of opportunities for pupils. Consequently, there is a curious fragmentation among potentially valuable services

to local school planners. There is an evident need both for coordination in this area, and for substantive improvement.

Regulatory Agencies

Several regulatory agencies have their effect on local school planning. These include: fire marshals, safety commissions, bonding authorities, plan review sections of State education agencies, and school building authorities. Each of these—either through legislation or administrative law—establishes regulations, guidelines, and specifications that in some way must be recognized and met by local School Boards. These are established, for example, as building codes. They specify the fire and safety standards that must be met in public buildings. Some may specify construction requirements that must be satisfied in the engineering designs. All of these are well intended. They are conceived to protect children and others from potentially unsafe and unsanitary environments.

Increasingly, however, school plant planners and architects find that building codes and safety regulations inhibit good design, particularly when codes and regulations have not been updated. The difficulty, of course, is not peculiar to schoolhouse design. It inhibits good design of homes, factories, or office facilities in the same way. Changes in technology and construction practices sometimes may not be introduced because they are not provided for in the building code. When codes do not permit systematic change in the approach to the design or construction of school facilities, the result is both uneconomical and educationally unsound.

Planning School Facilities: The Larger Picture

Since local districts are responsible for the planning and construction of school facilities, it is all too easy to criticize the results of their efforts. The forces that have created the indifferent situation at the local level are understandable. Regrettably, understanding does not necessarily lead to improvement of local planning. Indeed, the situation appears to be self-reinforcing and irreversible. There are not now sufficient outside forces at work that can introduce both technical and political improvements in the local planning process. The agencies and institutions best situated to alter the character of local school planning are themselves ill-equipped for the task.

Several agencies and institutions interact with local planning units. However, none of these—severally or collectively—affect local planning in desirable ways. Let us examine some.

University Programs

If the folklore that now substitutes for content in educational planning is to be displaced, substantial commitments of university resources must be made to research in the environmental and educational fields. Moreover, universities must devote substantial resources to identify the behavioral and environmental

requirements, particularly for personnel responsible for planning and development units in local school districts. University preparation programs for such personnel need to be altered drastically to support those behavioral requirements.

Regrettably, the great universities have not given appropriate leadership in this field. Most of them offer a course in school plant planning, often taught by a retired superintendent who learned his speciality on the job in a rural or small suburban school district. Rarely does one find a coordinated staff of behavioral scientists, management specialists, and architectural and engineering design experts that would be required for systematic study and personnel development in this field. All too often, professors themselves are involved in consulting with local districts on a per diem or contract basis. Consulting, however, is no substitute for research; and surveys of need are no substitute for accurate determination of educational requirements for school construction. The consulting professor, one may observe, is often engaged in advising districts on the obvious and thereby legitimatizing questionable conventional wisdom and conventional practice.

In short, educational facility planning presently is not an object of research study, nor does most local planning make reference to educational research.

Professional Associations

Several professional associations do have an impact on some local school planning. These include organizations that represent different personnel interests, e.g., teachers, principals, superintendents, and educational facility planners. Also, they include organizations that represent different vested interests, e.g., audio-visual equipment, libraries, fallout shelters, lighting and ventilating equipment.

Each lobbies constantly for its client's or product's interests. Each tends to adopt the view that a good building—whatever else it might be—is one that satisfies its own organization's particular interests. Each may propose "standards" consistent with its own welfare. Each, to some degree, must be fended off or absorbed in the local planning of school facilities.

To date, no nationwide professional organization has seriously and systematically addressed itself to the overall problem of improving the quality of educational facility planning. No organization—in the style of consumer's organizations—has concerned itself principally with the educational consumer's (i.e., the pupils') interest.

The State Education Agency

Of all agencies and institutions that impinge upon local district planning, the State education agency is best situated to make a constructive contribution. It could order the research that is needed to displace folklore as a basis of school design. It could marshal the technical information and research assistance needed

for good planning by local districts. It could propose or influence constructive legislation designed to strengthen statewide planning through reorganization of inadequate local districts and through more appropriate patterns of financial support for school construction. It could alter—or influence other State regulatory agencies to alter—inhibiting codes and regulations. It could bring the resources of professional organizations and associations to bear coordinately on the problem of local plant planning.

State education agencies could perform, indeed should perform, these functions if the planning of the nation's schools is to be improved. However, with but a few exceptions, the nationwide survey reveals that, within State education agencies, there is an alarming lack of either the capacity or the intention to do so.

STATE LEADERSHIP: PROMISE UNFULFILLED

For seventy years, State education agencies have struggled to become leadership enterprises. Initially, they were clerical organizations, designed to keep track of necessary enrollment and fiscal records. Through the years, they took on regulatory functions as well: the licensing or certification of teachers, the accreditation of schools, and the management of State financial assistance programs. Some have assumed responsibility to review, approve, and certify local plans for new school construction. Some have developed stock plans for use by the occasional local district that preferred to abrogate its responsibility for planning.

Every State education agency employs at least one functionary who, upon request, is designated to assist local districts in their planning. Usually, this person holds a degree in education, although a few are non-practicing architects or engineers.

There are broad differences among State education agencies in other areas, but in the school plant planning field their perspective is, with a few outstanding exceptions, unwholesomely similar. Too many see plant planning to be essentially, if not exclusively, a local responsibility. They lament poor planning at the local level, but believe it may be improving. They are happy to advise the local district when asked; but they see no constructive role for the State agency or State government in this regard. Although several aspire to a higher or more aggressive role, most refer consistently to "lack of legislated authority" or "lack of funds."

In short, the typical State education agency is not responsive and not serious in the plant planning field. It therefore is both understaffed and undercommitted in this field.

Not Responsive

There is a curious lack of information about school plant needs, practices, or requirements among State education agencies. Indeed, the recent nationwide survey could not compile a fully credible set of hard data and reliable statistics. Most respondents simply did not know answers to questions such as: How many school buildings are there in the State? What is their capital worth? How many pupils are enrolled by districts of different size? What proportion of the buildings are physically obsolete or educationally unsound?

Perhaps this reflects disadvantageously on the adequacy of data systems in State agencies, or upon the availability of collected data to school plant consultants within State agencies. Certainly, it reflects upon the responsiveness of State agency personnel to the problems of plant planning in their states.

State agencies repeatedly disassociate themselves from responsibility to improve local planning. Local districts pay most costs for school construction, hence they, and they alone, determine the nature and extent of school construction to be provided the nation's children and youth. This seems to characterize the attitude reported by most State agencies. It is an understandable point of

view, but it seems remarkably parochial in 1968. Indeed, if confronted with a problem of the magnitude of that encountered in school plant planning, a responsive State education agency would endeavor to lead. If it cannot lead from the strength of legislated authority, it would endeavor to lead through professional influence.

Not Serious

If the majority of State education agencies are not responsive, they also are not serious in their treatment of school plant planning problems. The survey was particularly revealing in this regard. Two examples will suffice to illustrate:

The use of portable classrooms is almost unanimously deplored among State education agency personnel. Fifty states and one territory reported the use of portables in an average of 32 per cent of local districts. Eighteen states reported that the use of portables would increase substantially. Each State stipulated, however, that portable classrooms are acceptable for educational use *only as temporary structures,* and only 10 State agencies believed portables provide an acceptable educational environment. Yet, surprisingly, in view of their near unanimity regarding the merely "temporary" propriety of portable units, 35 State education agencies report that they have no effective policy restricting the continued use of a "temporary" structure for school housing. This is strange behavior, certainly, for a State agency that wishes to become a "leadership" enterprise. For a regulatory agency, however, a brief willingness to allow "temporary" solutions for persistent and compelling problems is quite proper; but the willingness to tolerate a "temporary" solution indefinitely and passively is a clear mark of a non-serious enterprise. This kind of "leadership" is positively harmful. It adds to the difficulty of improving schoolhouse planning. It cannot be begged away by references to "lack of funds" or needs for economy. It is bad management, which becomes part of the problem rather than part of a solution to problems.

TO DIAGNOSE A COMPLEX PROBLEM

The inadequacy of local school district planning is a symptom of what now appears to be two primary underlying causes.

First, it would appear that the nation is confronted not so much with a school building problem as with a school organization problem.

Certainly organization is a central problem in the urban-suburban arena. The central city and the surrounding ring of white, segregated neighborhoods are interdependent: socially, economically, and culturally. In terms of school government and local government, however, they are independent; moreover, they are fragmented. Each strives to solve its problems largely independent of the other. Each, unfortunately, is doomed to fail. The failure will be evident first in the central city, where relatively powerless minority group citizens can summon neither the resources nor the consensus necessary to improve their lot.

With the deterioration of the central city, the economy and social structure of the suburb will ultimately be altered as well. Already many of the suburbs are an unplanned and potentially offensive hodgepodge of residential clusters, commercial honky tonk, and rising congestion. Their residences and schools, by and large, are the suburbanites' prize monuments. They have no governmental capacity to accept a decentralized industry, were this to occur. They have little impetus to build and support permanent cultural institutions.

Second, it would appear that the nature of decisions affecting school plant development must be altered.

Here, the underlying patterns of decision-making are increasingly inappropriate to the magnitude of the problems involved. Local folkways—as depicted in the earlier narrative of Localville—dominate decisions affecting the design and construction of school buildings. These folkways have a certain value in the continuing practice of citizenship, but they certainly are not calculated to bring about the serious revision of practices in school plant planning. This means that the decision-making process at the local level must rest upon the work of a technically and professionally proficient planning component if it is to address itself meaningfully to complex school plant problems. In politics, it is not harmful to campaign with axehandle or dimpled chin. In planning facilities that directly and continuously affect the quality of education for children, one could hope for—and increasingly should expect—a more refined and technically more sophisticated approach.

Companion to our traditional approach to the planning process is a propensity to apply folklore to the design of facilities themselves. It often is taken for granted that the classroom is the standard unit of instruction, for example, although professionals in education know better. Similarly, it is assumed that the teacher will continue to be the principal source of information in the classroom. Only a few voices are raised questioning the sanctity of a gymnasium as the one proper response to the concerns voiced by the President's Commission on

Physical Fitness. Few planners question the educational value of assembling large numbers of children under one roof.

Each of these assumptions tends to be taken for granted when a new facility is to be designed. Yet these are precisely the kinds of assumptions–derived from 300 years of European and American folklore–that warrant the most continuous and serious challenges today. These may be false and unwarranted assumptions, but now they are a primary basis for the design of school facilities. Once committed to hard brick and mortar, of course, they are perpetuated further.

In the year 3000, when archaeologists pore over the artifacts of our present civilization, they well may wonder about the rather unsophisticated ways we educated our children. At the same time, they may shake their heads in dismay at our failure to employ–in the design and conduct of our schools–the same imagination and sophistication that is evident in our space explorations and biological laboratories.

Folklore aside, many questions remain wide open regarding the valid assumptions on which to base defensible specifications to cover the basic structural, spatial, textural and other characteristics of a proper "schoolhouse." For example, on the assumption that the "classroom" is inevitable and essential, many schools resemble "egg-crates" built of classrooms in rows or stacks. That underlying assumption is, in 1968, at least shaken if not demolished. School building design has been guided by the number of such dubious assumptions. Until and unless these are examined fully, they remain neither sustained nor shattered, and some basic policy items remain unanswerable. A sample policy item is that regarding the school as a shelter against disaster and as a structure to be relied upon for emergency use. In order to design a policy on this, with reference to schools of the future, it seems clear one must know whether the future school will be housed in a building at all, and–if it will–whether that building will be a solid, sturdy, substantial structure. If it is a major public building, those who plan its design might consider its anticipated role in case of disaster. But if the "schoolhouse" of the future will be a quite different sort of facility, those who must plan for public emergencies might have to look elsewhere. The underlying assumptions have to be proven before "policy" on such questions can be developed sensibly, without resort to polemics or to folklore.

CAN TREATMENTS BE DEVISED?

We have observed that the status of school building construction in the nation falls short of the state of the art. Also, we have observed that planning of school facilities has not been established as either art or technology. The agencies best situated to help in this regard are themselves either impotent, as in the case of State education agencies, or self-serving, as in the instance of many professional or product-oriented associations. We are fearful that the situation is not self-correcting.

We have hypothesized, however, that two basic causes underlie these conditions. We propose that the causes rather than the symptoms should be treated. The causes are:

- Irrational local school organization that divides our people, our resources, and our energies into mutually exclusive but impotent camps.
- Reliance upon folkways rather than technical proficiency in school plant planning and upon folklore rather than research in the design of school facilities.

By their nature, these are social and cultural problems deeply imbedded in our fabric of living. They will not be overcome readily, nor will they give an easy solution. For the short term, we must look increasingly to technology and research for better answers to immediate design problems. For the long term, we must look to new kinds of leadership—particularly among State education agencies, professional associations, and universities—to wear away at the structural, social, and cultural problems.

Specifically, the short-term tasks are these:

- To ascertain through research the precise behavioral requirements of pupils and adults that are engaged in the educative process.
- To ascertain through research the precise environmental conditions that positively foster those behaviors.
- To invent, test, and install environmental systems and products that, within limitations of financial resources, can be arranged and rearranged flexibly by local Boards of Education to meet present as well as unanticipated future requirements.

We would see an industry-wide involvement as the most feasible approach to the short-term problems. Industry has the resources to mount and sustain research, not only in the study of environment but in the behavioral sciences as well. It is not clear that universities have either the interest or the motivation to do so.

The longer range tasks, however, will require new initiatives from the education community, particularly from universities, State education agencies, and key professional associations.

Specifically, the long range tasks are these:

- Make aggressive efforts to reduce the number of school districts still further, so that each surviving district will serve an appropriate territory in fully comprehensive fashion.
- Conduct systematic research into the behavioral requirements for local and State planners, making careful translation of these requirements into pre-service and in-service personnel preparation programs.
- Delineate carefully the technical and policy issues in plant planning.
- Aggressively coordinate the presently fragmented agency and organization programs to achieve maximum effect at the local level.

For the State education agency, the most promising and useful role would be in resolving the basic problem of school district organization. Its role as plan reviewer and consultant in the school plant field cannot be discounted, but other agencies and institutions can perform many of these services as well as the State agency. The State education agency is uniquely situated, however, to bring its influence and technical ability to bear on the fundamental problem of local district organization. It therefore cannot avoid the challenge of district reorganization, but it can relinquish other tasks.

For the university, two roles are envisioned. Each is consistent with the primary responsibilities assumed by the university community but neither is at present performed well.

First, the university community should address itself to the broad policy planning questions that impinge upon the school plant field. These include the identification of alternative futures: segregated versus integrated society, centralized versus decentralized educational government, shared versus independent financing of schools. Agencies of government might attempt such broad policy planning but the university community, however, is precisely designed to accomplish it. It therefore should be vigorously encouraged to do so.

Individual institutions or consortia of universities should conduct the appropriate research into behaviors and then design and mount preparation programs for school and school system planners. Not every university should be supported in this endeavor. Support should be limited only to those who are both willing to invest their own multidisciplinary resources in the necessary research and development, and able to do so seriously.

To give impetus to these endeavors, and to coordinate the efforts of the myriad organizations and individuals involved, the Council of Educational Facility Planners now should rethink its role in the improvement of educational planning. The Council cannot attack the fundamental problems directly. Through its professional activities, however, it can influence the appropriate agencies and institutions. It should organize itself to do so without delay.

Specifically, the Council can undertake the following:

- Establish and nurture lines of communication with local and State planners of school planning and related matters.
- Design and disseminate information materials that are calculated both to point up deficiencies in present practice and to describe promising new practices as they evolve. To achieve maximum effectiveness, they need to relate directly with the whole field of educational communications.
- Promote development and tests of new practices, relating with the architectural-engineering professions for this purpose.
- Engage foundations systematically in the support of needed research in planning; stimulate the authorities of the university community to implement such research.
- Develop and mount a systematic approach to State and Federal legislative bodies to encourage and support statewide study of organizational and planning problems, and to alter patterns of State and Federal financing that obstructs needed organizational and substantive change.

For the serious and concerned reader, this statement of the status of planning for the nation's schools must seem overwhelming in some ways. Recommendations for corrective actions are at best tentative. Indeed, they may seem to be inexplicit and inadequate. Yet the capacity to resolve these problems lies in our institutions: notably the State agencies, the universities, and the local school districts.

Indeed, if any one of these institutions seriously undertook to deal with the problem, others would follow. This pattern of development is repeatedly experienced in this country. Medicine brought itself—largely through its professional associations—out of the age of mythology and witchcraft. The engineering sciences moved beyond the plumb bob and the wheel.

Education can do no less.

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COUNCIL of EDUCATIONAL FACILITY PLANNERS

29 West Woodruff Avenue Columbus, Ohio 43210