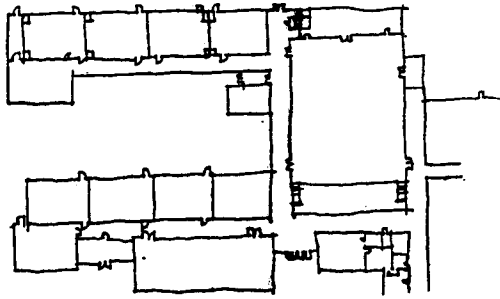


**CURRENT EDUCATIONAL FACILITY PLANNING MODELS:
A CRITIQUE AND RECONCEPTUALIZATION**

"...state legislatures, regulatory agencies and product manufacturers have had more effect on school design and equipment than educators themselves."
Harold Hawkins, *The Interface Project*, 1990.

This chapter argues that current educational facility planning models in the architectural and educational literature are at most, partially successful in their aim of guiding educational planners through the facility planning process. In addition, they fail to provide a comprehensive accounting of the social, economic and political realities of either the circumstances surrounding the planning effort or the nature of the educational system. By not completely representing these realities, planning models leave educational administrators acting on the basis of simplified and incorrect assumptions about the nature of the process. As a result, administrative decisionmakers are ill-prepared to deal with the inevitable political conflicts and miscommunication. As a result, facilities are often under-funded; projects are inefficiently designed, not taking user needs into full consideration; and once facilities are occupied, they are often haphazardly and hastily staffed, allowing problems to fester throughout the life of the building. Given the increasing pace of current school reform and change in the educational system, new conceptualizations of the facility planning process are greatly needed in order to successfully guide educational organizations in their efforts to accommodate this change.

The focus directs itself to the earlier stages of the facility development process⁶, that of feasibility and planning. Issues covered during these phases in the process have the greatest impact and influence on the nature and quality of the subsequent stages in the process and therefore, deserve special attention. An existing model of the educational facility planning process will be reviewed followed by a critique of the model. A reconceptualization of the planning model is then developed which addresses the issues raised in the critique, and finally, some conclusions are offered.

**5.1 THE EDUCATIONAL FACILITY PLANNING PROCESS:
CURRENT MODELS**

Current models of the educational facility planning process are based on the practical experiences of educational planning and design professionals and on their notions of how the process should be structured and organized (Graves, 1993; Vasilakis, 1990; Ingalls, 1986) (See Figure 5.1). Educational facilities master planning has been defined as "a process to determine the educational needs of a school district and the facilities needed to support those educational needs, both now and in the future" (Vasilakis, 1990; 26). The process allows a school district to examine its educational

⁶The educational facility development process as defined here includes the sub-processes of feasibility, planning, programming, design, construction, occupancy, facility management (operations & maintenance), post-occupancy evaluation, and redesign.

goals and philosophies, educational teaching methods and its facility resources and needs, as well as allowing the district to explore alternative solutions.

It is generally agreed that planning of school facilities should be done within the framework of a well-developed, long-range construction and educational program plan. This is determined by a thorough study of, among other factors, community services; financial ability and economic base of the community; construction priorities; enrollment and population trends and projections; and the nature of the educational programs to be housed. Such advanced planning, it is argued, can eliminate costly errors in construction and minimize the intervals between the need for and acquisition of necessary physical facilities (Ingalls, 1986).

The most complete and current descriptive model of the educational facility process has been documented by Ben Graves (1993; 183-210), a former project director at Educational Facilities Laboratories (EFL). He describes the process in terms of the roles and responsibilities of the architect and school administrator in planning and designing the school. The model offers a cogent summary of acceptable educational facility planning practice conducted over the last 30 years in school districts across the country.

Graves first reviews the Educational Facilities Laboratory's seven stages needed to plan a building project: (1) *get started*: defining goals and planning to plan; (2) *gather information*: enrollment projections, capacity and utilization analysis of existing facilities; (3) *identify priority needs*: review the information-base and involving the community; (4) *define program requirements*: attention to physical needs and preparation of educational specifications; (5) *explore options*: be consistent with the community's educational goals; (6) *refine the plan*: determine feasibility, cost and phasing; and (7) *follow through*: presentation of plan by experts to the community for approval.

Special emphasis is given to the effective uses of the educational consultant, writing of comprehensive educational specifications, selection of the architect, working with school boards, learning the community perspective and understanding the child's perspective. In addition, Graves stresses the importance of the effects of technology on school design, as well as furniture and equipment, modernization, specialized spaces and security issues.

Graves also presents the stages of the conventional architectural design process that follow the educational planning process: pre-design planning or programming, schematic design, design development, construction document preparation, bidding and construction. He completes his description of the educational facility planning process by outlining seven characteristics which successful planning processes have in common: (1) they have a clearly stated program, (2) there is a give and take from participant "experts" in the process, (3) plenty of time is taken for planning, (4) involvement of community in the planning process is promoted to gain acceptance and support for the project, (5) training sessions on the use of the building are implemented, (6) post-occupancy evaluations are conducted, and (7) maintenance and repair of facilities are regularly completed as part of a long-term maintenance program.

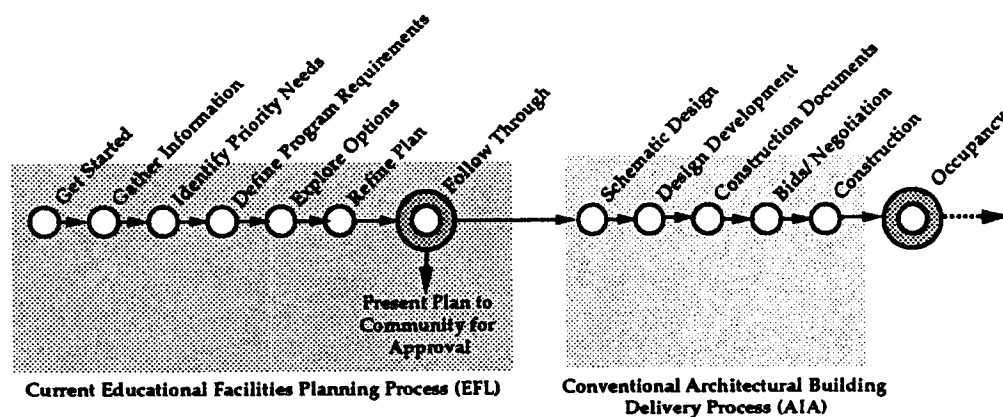


Figure 5.1 Educational Facilities Planning Model
(Adopted from Graves, 1993)

In general, the purpose of this model is to represent the most critical elements or components of the facility planning process. The argument presented in the following pages is that the current educational facility planning model summarized above, does not fully capture the reality of the planning process, and thereby is not as effective as it could be in guiding educational administrators and planning consultants through the process.

5.2 THE CURRENT MODEL: A CRITIQUE

The current planning model as described by Graves (1993) is by its very nature normative, and espouses the rationalistic tradition in planning theory. The model is normative in that it presents how the planning process *should be*, not *how it is*. It is a rational model in that it views people as a utility and defines human relations in instrumental terms, and it assumes a sequential, observable cycle that includes setting goals, determining objectives, making plans, implementing the plans, and reviewing the results (Adams, 1991; 7). Admittedly, proponents of the current model might agree that the model describes what should happen in the planning process and that if the procedures set forth are not followed the process could fail. However, if in fact the goal of this model is to guide administrators through a complex process, why has the current model failed, in many cases, to guide? By not fully accounting for the social, political and economic realities inherent in the planning process, administrative decisionmakers often abandon and/or ignore the important guidelines in favor of ad hoc planning.

Status of Existing School Infrastructure

One approach to evaluating a process is to analyze the products produced by that process. While everything which has gone wrong in the design and management of educational facilities over the past 30 years cannot be faulted solely on the initial planning process, or the model that it is based on, historical evidence can highlight aspects of the process which could warrant improvement or reconceptualization.

In 1989, the Education Writers' Association released a study of the condition of school buildings which found that 49% of all schools nationwide were built in the 1950 and 1960s, primarily to meet the increasing demand for schools for baby-boom children (as reported by Walker, 1993). Many of these buildings were constructed of cheaper building materials, with flat roofs, and built to last no more than 20 years without some form of major repair. In addition, these buildings have not provided flexible space as claimed by their designers. The study also found that 21% of buildings nationally are more than 50 years old and are located primarily in the inner-cities. These buildings have been neglected and are in need of major repair and renovation due to short-sighted maintenance and repair policies. The most alarming finding of the study was the fact that over 25% of the buildings were considered inadequate for educational use by state facility directors due to serious maintenance and repair needs, environmental hazards, and overcrowding. Close to another 33% of these buildings will be at capacity due to population growth and other educational demands in the near future.

According to the study conducted by the Education Writers' Association, the U.S. school infrastructure has been virtually ignored for the past two decades due to high, ongoing investment costs, a declining tax base and declining enrollments. Ironically, school districts over the past several years have been experiencing new growth in enrollments, and in new programs and services such as the year-round school programs, extended school hours of operation, daycare, and provisions for new program requirements in math and science.

The current model of the educational facility planning process may adequately address immediate needs of users, but it clearly has not accounted for such long-term building life-cycle issues as repair and maintenance policies and changes in use of facilities due to educational program changes. The plans which called for flexible space planning and design have not proven to be as effective in addressing these program changes as was once assumed.

Collaboration and School Reform

The current model of the educational facility process was originally developed during the dramatic educational system reforms of the 1960s in which state involvement in school finance and governance expanded to include the planning of facilities. Many educators believe that "state legislatures, regulatory agencies and product manufacturers have had more effect on school design and equipment than educators themselves".⁷ Contrary to the current model's call for participation by educators in the planning and design process, few educators have traditionally been involved in a process that has been consistently controlled by architects and by educational administrators and planners, both state and local.

The case of the planning of three new middle schools in the Milwaukee Public Schools (MPS) provides an example of the manner in which "collaboration" is realized in the current facility planning model. As a result of an offer of a development package by a local developer, MPS initiated the planning of two new middle schools to be housed in existing abandoned structures in the city. A relatively comprehensive collaborative planning and design process had been previously completed in the creation of another new middle school. The middle school was

⁷Harold Hawkins, The Interface Project, Texas A&M University, quoted in *Education Week*, February 21, 1990.

considered to be a model implementation of MPS's middle school policy established in 1979. The two new middle schools included in the development package were to be based on the planning concepts derived from this earlier model school. The collaborative planning process was drastically shortened, involving the school board, central administration, affected business community representatives, the architect and the developer. Neither schools' design involved educators or children in the process. In fact, the staff for each school had not even been selected until well into the process. MPS facility planners and architects assumed that planning decisions previously established in an earlier project had universal applicability and that the new school designs required only minimal adaptation even though the siting and configuration of both existing structures were completely different.

Now, with yet another new wave of school reform promising to "restructure" the educational system, the possibility arises of restructuring the conventional planning process to embrace a more collaborative process advocated by the current model. However, according to Goldberg and Bee (1991) little has changed in the process even with the advent of school-based management and shared decision-making.

Politics and the Acquisition of Fiscal Resources

The most severe critique against the current planning model is that it does not take into account the complexities and paramount importance connected with the acquisition of fiscal resources without which the building program can never become a reality. Marshall, Mitchell, & Wirt (1985) found that of seven major policy mechanisms, school finance dominates policy-making while building and facility policy ranks last. State political culture, informal processes, partisan politics, state fiscal environment, and history and tradition seem to be more powerful determinants of facility design and planning decisions than organizational factors.

The findings of Marshall and associates (1985) are consistent with the position taken by Borman and Spring (1984) who argue that educational policies, established by competing self-interests of the public, capitalists, administrators, and teacher unions, are not always in the best interests of the schools or school children. Describing politics at the local level, Borman and Spring maintain that school boards are run by the civic elite, superintendents have little control, and central administrations are bureaucratic and reluctant to facilitate change.

The current model of educational facility planning does not consider the devastating impact of inequities in the system of school financing for poor schools, especially urban districts. Even with massive changes in state involvement in school finance and governance since the 1960s, decision-making and leadership in school building and planning remains a local matter (Walker, 1993). The state has traditionally provided minimal assistance for debt service or building authorities. Even with the increased burden on districts due to age, population growth, and inadequate construction, few states today help equalize the burden.

In a study of decisionmaking in the planning and design of Illinois public school facilities, Westbrook (1988) found that strategies employed by educational administrators to acquire resources were designed to operate successfully within a tacit, assumptive, policymaking world. This knowledge was used to circumvent an established, highly formalized system, substituting a more operative system for the improved anticipation, planning, and provision of adequate educational facilities.

As a result, educational administrators are often more concerned with securing funds for school facilities than making sure the needs of educational programs are met in the building design. Westbrook (1988) found that the articulation between educational goals, objective needs and facility design was more of a concern for architects than it was for superintendents or principals, who seemed to feel their options are highly constrained in this area, possibly due to limited resources and state bureaucratic structures.

The example from the Puyallup (Wash.) School District illustrates the necessity of campaigning for community support when attempting to raise the resources required to implement the facility plan. Puyallup S.D. had twice failed to pass bond issues, but were nevertheless faced with the quandary of looking for solutions to their explosive enrollment growth projections (Berg & Apostle, 1992). The district planned to develop a prototype that would replicate the basic plan of a set of previously successful elementary schools for future elementary school construction. The prototype strategy allowed the school district to reduce planning time, obtain agency approval ahead of time, and demonstrate to the public the district's ability to make prudent use of taxpayer dollars. After two failed bond issues, they created a community partnership, called the Facilities Crisis Task Force, which included representatives from all geographical areas and political groups. In addition, the district set up the Citizen's Committee for Education to collect and disburse campaign funds. As the task force studied the situation, they came to the realization that the crisis was real and urged the district to resubmit and increase the bond issue to twice the original sum. Serendipitously, a teacher union strike a month before the election became a catalyst for directing community attention to the facilities crisis. Along with a massive marketing campaign utilizing all forms of media, solid school board support, and over 900 volunteers organized and trained to elicit support from their families and friends, voters returned to the polls and voted in favor of the bond issue.

The current planning model accounts only for organizational factors such as the composition of the planning team, determining the goals of the school district and the immediate needs of the school. The model does not explicitly address what is the most critical aspect of the planning process: the preeminent position of fiscal and political issues over programmatic issues.

It is clear from these criticisms that the current educational planning model needs to factor more comprehensively in the political realities of fiscal resource acquisition, reconsider the impact of a truly collaborative process which extends school reforms such as shared decisionmaking to the educational facility planning process and also integrate all aspects of the facility development process, such as planning, design, and management into one continuously on-going process.

5.3 RECONCEPTUALIZING THE EDUCATIONAL FACILITY PLANNING PROCESS

"Despite the general acknowledgment that educational systems are soft, which suggests that interactive models would be more efficient, rational models continue to be the planning processes of choice for many educational planners" (Adams, 1991; 15).

The current model of facility planning can be characterized as a rational model in that it assumes the sufficiency and neutrality of objective expert knowledge, is sequential in nature, and that its planning methods have universal applicability requiring only minimal situational adaptation (see Figure 5.1). However, it is clear that educational policy decisionmaking is decidedly political and consensual, both characteristics of what Adams (1991) calls interactive models: models which do not bow to the demands of objectivity and quantification and are characterized by value, belief, power, collaboration, consensus building, conflict and negotiation.

The educational facility planning process can be reconceptualized as containing aspects of both rational and interactive models (see Figure 5.2). Due to the highly value driven aspect of 'what is a good educational environment', a wide base of support, participation and consensus is required to effectively create a facility which meets as many needs as possible within the community and the school.

In addition, obtaining financial resources to secure a building project, requires the support of not only the tax paying community, but the local politicians and the state legislators as well. These processes are political and interactive in nature, not rational.

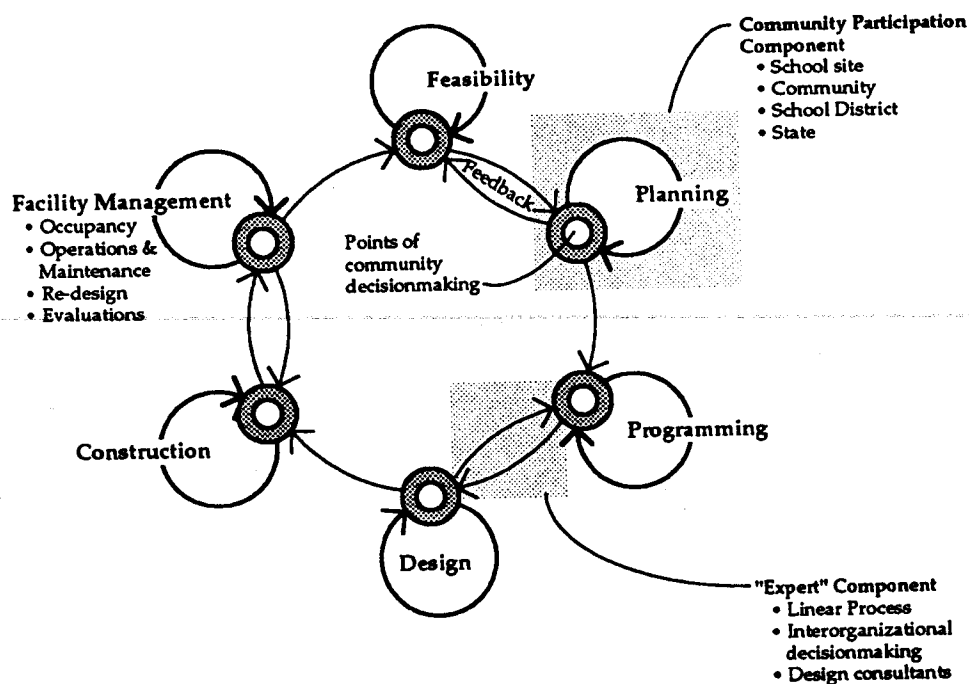


Figure 5.2 Integrated Educational Facilities Development Model

However, once the mission and goals of the school district are established, there are a series of linear, rational steps which must be followed in order to build the actual school building. Within each process -- feasibility, planning, programming, design, construction and on-going facility management -- there are interactive and rational aspects. Each aspect must be recognized as such and integrated.

The integrated educational facilities development model emphasizes the equal importance of the feasibility/planning process, the programming/design/construction process and the facility management process (which includes occupancy, operations and maintenance, evaluation and re-design). The model attempts to indicate the need for on-going management of educational facilities in order to creatively anticipate educational program changes in addition to the traditional repair and maintenance issues. Educational facilities will continue to experience major changes well beyond initial design and construction and this fact must be recognized by school districts nationwide. Decisionmaking can be utilized in all points of the cycle of facility development.

5.4 CONCLUSIONS

It is difficult to know how pervasive the use of the current educational facility planning model is across the country, or what the impact of a more integrated model would be. According to the Education Writers' Association study mentioned above, as of 1989, only 12 states had a statewide facilities plan, and 31 states had only an inventory of buildings. Many states had only one staff member assigned to school facilities planning, while only 17 states provided training for school district staff (Walker, 1993). Facilities have been almost completely ignored by state legislatures with less and less of the budget going towards repair and maintenance, let alone new construction. It is clear that more attention must be placed on facilities, given the enormous problems in the school infrastructure.

Faced with the prospects of a growing educational system, and the prospect of a continued lack of financial resources to modernize the school infrastructure for the next century, the need to reconceptualize the current model of facility planning will be critical to the success of the planning effort. A more interactive model such as the one presented offers to make accessible to a wider audience, the tools for finding more creative, reform-minded solutions to the problems of district growth, and to gain the support of the school board, the community and the taxpaying public.

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