Decisions and Decision-Makers in Planning Educational Facilities

Abstract

Originally, the purpose of the manuscript was to help members of a National Research Council Committee understand the process of planning school buildings in the public sector. It was intended to help members become familiar with the decisions that must be made and who was involved in that process. The content of the manuscript, however, is also suited to educators and non-educators. Too often educators believe once the architect is employed, their responsibility for decisions regarding the school building has been properly discharged. As a result many of the important decisions regarding the building are left to non-educators – not the users of the facility. In an effort to simplify the very complex processes involved in planning, designing, and constructing an educational facility, these processes are reduced to the essentials and explained in clear fashion so that educators, school authorities, and community members may have a better insight into the decisions that need to be made.

The planning of a school building is a very complicated and involved process involving many individuals and groups both inside and outside of the local school system. The process is very long and arduous for those involved, as well as for the potential users of the structure. Many separate decisions must be made in the process and approvals from various sources must be secured before the final product is completed.

The decisions surrounding the planning and implementing of any capital improvement project should involve many individuals and groups. From the actual users of the facility to the stakeholders’ meaningful involvement is important to the successful completion of the project (Kowalski, 2010). Within the scheme of participant involvement, however, there is a leadership responsibility that must be exercised by the superintendent and staff of the local school system.

Educational administrators have a unique role in the planning process for new schools and any capital improvement project. They are the individuals who bear the responsibility for ensuring that the final product, which is the school building, is what the students and teachers need for a successful educational program. The responsibility of administering the planning process for any capital improvement project demands considerable leadership on the part of the educational authorities of the local school system (Ray, Hack, & Candoli, 2001). In the absence of such leadership action to make decisions, a leadership vacuum occurs and others, beside educators, often times step in to make the decisions. This is not necessarily in the best interest of the users of the school building. In order to ensure that the decision-making during the entire process is completed in a satisfactory manner, educational leaders must exercise their authority and responsibility to let the architect and builder know the needs of the school system.

Planning, designing, and constructing a capital project can be thought of as a rather complex process composed of many steps. These steps or processes have certain requirements, such as legal requirements, that must be met. For instance, the selection of a site for a school is a process to be completed by the school staff. Once the staff have decided upon a site and made their recommendation, the school board goes through a process of actually purchasing the site. In both processes, there are decisions to be made by both the staff and school board that have legal implications for the school system.
If one were able to diagrammatically identify all of the processes involved in the completion of a capital project, it might look like a string of events governed by decisions. Beginning with the determination by the school board that a new school building is needed or an existing school needs renovation to the time several years later when the project is ready for use, one would find a line of innumerable decisions directing persons and events toward a single product, the school building.

Each process in the planning activity may be conceived of as a separate series of decisions or activates that certain actors must complete in order for the larger project to move forward. Some of the larger processes a school system must go through to produce a new school building are the following:

- Determine the size of the student population
- Develop a set of educational specifications detailing the educational program
- Develop a funding package
- Select and acquire an adequate site for the building
- Select and employ an architect
- Monitor the designing of the building
- Advertise and bid the project
- Monitor the construction phase of the project to completion
- Orient the staff to the building
- Evaluate the planning process and the completed building (Earthman, 2009, p. 22)

These are the usual processes a school system has to go through to complete a project for a new school building. For other capital improvement projects such as renovations or additions to existing buildings, some of the processes are obviously not necessary to go through. Normally these processes follow in sequential order, however, that may not always be the case.

Within each of these major processes, there are activities that need to be completed that constitute a sub-process or a process within a process. Planning for a new school building or any major capital improvement can be viewed as “a series of separate or discrete steps or processes that comprise a whole process” (Earthman, 2009, p. 21).

Communication Channels

Throughout the entire process of planning, designing, and constructing a building, there is an on-going two-way communication system in which the needs and wishes of the school organization is conveyed to the design and construction professionals. At the same time communication from the design and construction professionals proceeds to the appropriate individuals and groups within the school system (CEFPI, 2004). In very large school systems there is one point of communication between the school system staff and the design and construction professionals. This is necessary because the size of the school staff mandates one point of contact rather than multiple sources of information.

The individual points of communication, however, are through both written and verbal contact. The first point of communication from the school system to the design professionals is through the document called the educational specifications (Clark, 2007). Through this document the school system details the kind of educational program the new structure is to support. This document serves as the basis for all decisions relative to the design of the building. Questions as to implementation of the educational program and subsequent space and building needs may come from the architect and should be explicaded by the educators so that the
architects can design for the needs of the program (Vickery, 1998). This back-and-forth explanatory communication continues throughout the design phase of the project by means of meetings, electronic communication, and individual conversations. Such points of contact are essential for the design professionals to obtain a complete understanding of the needs of the school system and the school staff to gain an understanding and confidence that their needs are indeed incorporated into the final design of the structure.

Once the design of the building has been approved by the school board and the project put out to bid, the main two-way communication system is expanded to include the professionals in the industry responsible for constructing the building (Earthman & Lemasters, 2004). Many decisions must be made during the construction phase of the project because of problems in obtaining materials, site conditions, or even labor problems. In these situations the communication lines must include members of the construction firm, the architect, and of course the school system staff. During the course of the construction phase, job site meetings of the representatives from the three organizations normally occur weekly to solve problems and discuss the progress of the project.

Even in the final stage of the construction process when the school board has taken control of the building following substantial completion, the two-way communication system works to resolve any final problems or conditions. The tool used to facilitate communication between the three parties in this phase is usually the punch-list. This is a listing of all the things to be finalized before the building is considered entirely completed. The punch-list items serve as a reminder to the construction firm to complete the building in a timely fashion and in this manner helps the school system to communicate effectively with the builder.

**Decisions Regarding the Educational Program for a New School**

Some of the first decisions that are required in the planning process deal with a determination of what kind of an educational program will be housed in the new facility. This also applies when an existing building is renovated or additions are put on existing building. The determination of the educational program should be a self-examination exercise of what the school system is trying to teach the students who will be attending the new or renovated building (Earthman & Lemasters, 2004). The responsibility for directing this study of educational program is placed upon the superintendent of schools. In large school systems the responsibility is delegated to a department within the school system. Wherever the responsibility is lodged, the school systems must produce a document that details the kind of educational program that will be carried on in the new or renovated facility. This procedure results in a set of educational specifications that detail what the educational needs are in the new or renovated building (Chan & Richardson, 2005). These educational needs are translated into spatial and relational needs of members of the school staff. In addition to the number of instructional and support spaces needed, the number and kinds of equipment, furniture, and technology needs are stipulated. This document is delivered to the architect to serve as the guide for the architectural expression that will result in working drawings and plans for the building. The school system staff is responsible for completing this document and the document represents their collective decisions regarding the curriculum and teaching methodology that will be employed. Completion of this document by the school system educators is very important to the successful design of the building. To have anyone
other than school staff to compile the educational specifications is an abrogation of responsibility. The set of educational specifications are then communicated to the architect by means of a written document that has been approved by the school board.

**Decisions on Debt**

The decision to go into debt to construct a new building or improve existing buildings rests ultimately with the school board (Alexander & Alexander, 2008). That decision, however, is based upon a recommendation of the superintendent and staff. The school board does not independently resolve to go into debt without a recommendation of the superintendent based upon an approved capital improvement program or plan.

The superintendent of schools bases a recommendation to the school board for capital funds upon the recommendation of the school staff. This staff can be comprised of one or two individuals or perhaps hundreds of individuals, depending upon the size of the local school district. The recommendation the staff makes to the superintendent is based upon the collection and analysis of various components of data that the staff have in its possession. The data obtained and analyzed deal with the numbers of students to be educated and where they live, the condition of the existing buildings, and the kind of educational program that will be offered in the schools (Garcia-Diaz & MacGregor-Smith, 2008). These three elements are the most important in making a decision relative to capital improvements and/or new construction. Changes in any of these elements demands an evaluation of the other two elements to determine the extent of capital improvement needed.

In medium or large school systems, the staff is usually large enough to make evaluations of the three elements above. Local school districts often times have the capability to project the student population for the next 10 years. Likewise, these school systems have the staff to complete the necessary evaluation of existing buildings to determine need for improvements or new buildings. Normally, the local school system has sufficient staff to evaluate the curriculum to determine what changes will be made in the future and how these will impact the physical facilities. As a result of these evaluations and analyses, the school staff makes recommendations for improvement of facilities which in turn become recommendations for needed funds. These are the recommendations the superintendent of schools makes to the school board for action.

Small school districts, and in many cases medium sized school districts, do not have sufficient staff to complete the studies enumerated above, which are necessary in order to make recommendations to the superintendent. In these cases, external educational consultants are needed to assist the staff in gathering data and processing those data in the form of a report. Outside educational consultants are employed to project the student population into the future and then evaluate the buildings to determine if the existing structures can accommodate the projected future population. Likewise, external educational consultants can be employed to evaluate the curriculum to determine what changes might be warranted for the future and if these changes will impact the facilities.

In gathering data and evaluating facilities, the school staff or outside educational consultants interact with other school system personnel besides the central administration. Principals, teachers, and staff members in the local school buildings may well be contacted or interacted with to provide information to the school staff or
consultants. In this manner school personnel in the local school buildings are involved in the process of gathering and reporting data on the needs of the school district. These individuals are normally not involved in the actual final decision-making process, but are involved in providing information or reaction to suggestions. Yet the staff of a school district makes decisions regarding the need for new facilities or improvement of existing facilities so that a recommendation to the superintendent can be presented (Earthman, 2009).

**Capital Improvement Program**

The staff recommendations for capital improvements such as new buildings and improvements to existing buildings are usually incorporated into a document called the capital improvement program. The capital improvement program is a listing of all the capital needs of the school district for a period of years, usually 5 to 7 years in advance (Kowalski, 2002). The estimated cost of each capital project is determined and that project is given a priority as to when it will be funded. The staff members usually decide the priority of each project based upon data such as where the school district is growing or declining, the condition of neighboring schools, and the type of curricular offerings that are needed. Even the estimated cost of the project enters into the decision of when it will be funded in the program. Based upon these data, all of the projects listed in the capital improvement program are then assigned their priority in the school system (Earthman, 2009).

The capital improvement program is reviewed by many different levels of administration and interest groups (Kowalski, 2002). Normally school system personnel conduct public hearings on the program throughout the school district to receive community input into the document. Changes to the program can be made based upon the community input. The document is also reviewed within the school system administrative staff and changes to the document can emanate from this review. In some instances, school system personnel can ask local politicians and officeholders to review the document and subsequent changes can occur (Holt, 2002). When this review process is completed, the capital improvement program is sent to the superintendent who then recommends it to the school board. Usually the school board approves the capital improvement program and as a result that document becomes the official program of capital improvement projects.

**Capital Improvement Budget**

Each project in the capital improvement program is assigned a priority rating that determines when it will be funded. Normally, projects with the highest priority are funded the first year of the capital improvement program. These projects and their associated costs then become the capital improvement budget of the school district. The budget document is then subject to legal hearings in the community (Holt, 2002). From these hearings, changes can occur with the number and kinds of projects completed the first year of the budget. If such action is needed, the school board has the authority to make such changes to the budget. Very seldom is this done as a result of the hearings of the budget. The school board, however, can modify the budget throughout the year, if
needed, because of limitation of funds, delays in developing a project, or any other logical and legal reason.

Following the legally mandated public hearings, the school board officially adopts the capital improvement budget. This action gives the superintendent and schools staff the authority to implement the budget. Implementation of the budget results when architects and planners are contracted with to provide services such as site planning and design work. The decision of who to employ starts with a staff recommendation to the superintendent. The staff recommendation is based upon a series of complicated and in-depth reviews and evaluations of architects and planners. Upon completion of these evaluative procedures, the staff recommendation goes to the school board for approval.

Architectural Review Decisions

The architect is responsible for designing the capital project based upon the set of educational specifications delivered by the school district staff. During the work of the architect, the school staff is responsible for continually monitoring the project to make certain the design will meet the needs expressed in the educational specifications. The process of monitoring the project can often time result in changes to the drawings. The architect works to conceptualize the whole project and then refines that concept into a set of schematic drawings (Vickery, 1998). The schematic drawings are winnowed through the review process so that they represent the best thinking of both the architect and the school staff. The schematic drawings represent a very important milestone in the design of the building. The set of schematics are then presented to the school board for their approval. During this period of time, there is considerable two-way verbal and written communication between the school staff and the architects.

Once the school board has approved the schematic drawings, changes to the subsequent drawings can happen only on the inside of the building as the extent of the building exterior has been approved. The size of the building can be enlarged, but only upon the request of the school staff and with an increase in the overall cost of the building which must be approved by the school board.

What follows is the development of the design by the architect until a set of detailed drawings result (Chan & Richardson, 2005). During this time, however, many changes to the internal portion of the building can be made as a result of requests by the school staff. All through this process the architect must keep track of the total cost of the project by projecting costs to the bidding date. As a result there may be times when the architect must refuse requested changes to the drawings by the school staff because of increased costs. These decisions the architect must make in order to keep the project within budget. The only alternative would be to ask the school board to increase the budget for the building. In most cases this is not a serious possibility.

Although few school boards like to approve any increase in the cost of a project, such action can be a possibility when changes are requested by the school staff. The school staff has to make the request for increases in the project budget, but the decision of granting that request rests with the school board. The alternative to increased funding is a reduction in the size of the school building or the use of less expensive materials in the structure. Neither of these alternatives is in the best interest of the school system and the students who will be attending the school.
In some states the architectural plans for a new school building or improvements and additions to existing buildings must be submitted to the state department of education for review (Clark, 2007). This review is to determine if the plans meet certain state adopted standards, such as fire and building codes. In some cases, the plans are subject to review for certain educational standards, such as the number of students in a classroom, the size of the library, or circulation patterns.

During this review state department of education staff members make decisions as to how well the plans meet the state codes and educational standards. Changes to the plans can be enforced by the department of education based upon their review. These changes must stand in order for the school district to receive funding from the state or at least approval to put the project out for bidding purposes.

Of course, the architectural drawings for any public building must stand inspection and approval by local authorities. Such governmental units as the fire marshal and the zoning board are usually mandated. In some large cities, such agencies as the art commission may have to approve the architectural plans for the school. All of these approvals must be obtained by the architects in collaboration with the school district.

Deciding to Bid the Project

Following the completion and approval of the architectural drawings, the decision is made to put the project out for open bid. The process of bidding a school capital project is detailed in state law and school board regulations, but normally the project is placed on the open market for competitive bidding. This advertisement takes place in various venues such as professional journals and even in the legal publication of the school system (Earthman, 2009).

When this process is used, bids are received from interested contractors who wish to complete the project. The decision as to which bidder to choose ultimately rests with the school board, but the architect advises the school staff and board as to which bid is the most satisfactory for the school system to accept. When that determination is made, the superintendent recommends a bid be accepted and the school board usually acts positively to that recommendation. A contract is then drawn up by the legal counsel of the school system and offered to the successful bidder with the order to proceed with the work of the project (Earthman, 1994).

Sometimes the bid offered by a contractor may be higher than what the school board budgeted. When this happens, the board may decide on one of three alternatives. If there are reserve funds in the capital budget that can be diverted to the current project, the school board may decide to increase the project budget and thereby fund the project at the higher price. The school board can also reject all bids and re-define the project so that the project can be sent out for bid at a future date in the hope that the market may be friendlier to the bid proposal.

The third alternative for the school board is to attempt to reduce the size of the project. This can be done by reducing the capacity of the school and thereby reducing the number of classrooms. Alternatively, certain parts of the total project such as the stadium, play fields, or even the auxiliary gymnasium can be eliminated. Decisions at this stage of development must in some way reduce the total size of the building to bring the project within the square foot price of the bids that have been offered by contractors.
Decisions made in this phase of the total project can be very detrimental to the educational program of the school system, depending upon what decisions are made. These decisions may be last minute decisions in which there is very little participation or input by the users of the building. Situations in which such decisions are made should be avoided at all cost. This can be done by better preparation of the capital budget initially and a better estimation of the cost of the project during its development. Early decisions about the budget and the cost of the project are far better decisions than those made at the last minute.

**Decisions during the Construction Project**

During the construction phase, there are many opportunities to make decisions regarding how the work is to be done and the material to be used. The set of technical specifications for the project is prepared by the architect. These specifications detail every type and kind of material to be used in the project, even to the number and kinds of nails. Occasionally, a certain material is either not available or the contractor determines a different material is better, or the school staff wants a different type of material. Such circumstances require a change in the contract under which the contractor is working and then must result in a change order (Kowalski, 2002).

Change orders are requests for changing the contract to remedy a situation where materials are not available, may be inferior, or where school staff determine a change is needed. The decision to make a change order begins with either the contractor or school staff and must be approved by the architect. Following this the change order is presented to the school board for approval. Most change orders result in increased cost of the project and the school board must consider this aspect before approving the change order. Once the change order is approved the contractor implements the requested change.

**Deciding to Accept the Building**

When the contractor determines the building to be substantially complete, the school board is notified of this. Substantial completion does not mean that everything in the building is complete, but rather that the building is complete enough to be used (Clark, 2007). The school board and staff then make an inspection of the building to determine if it is acceptable. If the school board and staff are satisfied that the building is sufficiently complete to use, a decision is made to accept the building as substantially complete. A formal resolution is approved accepting the building as built. This decision is based upon recommendations from the architect and school staff. When this resolution is approved the responsibility for the building is transferred to the school board along with the costs of any utilities to the site.

**Orientation Decisions**

Once the building is accepted for occupancy by the school board; the faculty, staff, and students need to be oriented to how the building operates, what new features it has, and where the different parts of the building are located. Decisions regarding who to include and when to have the orientation must be made by the school administration.
Because the construction of a new building or the completion of a renovation to an existing building is a very important occurrence to the community, the orientation should be a grand affair that includes everyone who is interested (Kowalski, 2010). Decisions regarding the orientation are important because of the public relations aspect of the large investment made by the community in the education of children. Inclusive decisions are needed when deciding who should do the planning and who should be included in the event.

**Deciding to Evaluate**

Once the building has been accepted by the school board, an evaluation of both the process of planning and the product of the planning process should take place. The purpose of such evaluations is to determine how successful the planning process was and whether or not the product of the planning process, the building, is useful (Earthman, 2009). This aspect of the planning process is so often neglected by school authorities because of several reasons. One reason is not knowing that both the planning process and the building itself should be evaluated whenever a building project is completed. In many instances the new building is the first that has been completed in years and even decades and in the excitement of the completed building, evaluation is often times forgotten. In school systems that frequently construct buildings, the evaluation process is completed for each project. Data from the evaluations should be useful to personnel in the future. Therefore, decisions relating to evaluation of the planning process and the building are important and are the responsibility of the superintendent.

**Deciding Building Utilization**

How the building is used after acceptance is left up to the principal and staff assigned to the building. For the most part, the staff and faculty are oriented as to how the building functions according to the educational specifications and the design of the structure, but actually how the building is used on a daily basis is left to the faculty, principal, and staff. Utilization decisions from there on out are the responsibility of the principal and faculty.

Normally, the local principal decides upon how the building is actually utilized based upon the student population and the educational program to be implemented. This results in a well-utilized building. Community influences beyond the control of the principal, such as student growth, can cause the building to become overcrowded. The usual way to cease overcrowding is to change the school attendance zone to reduce the student population being served by that school building.

Because of political concerns, many times school attendance zones are not changed and the principal is compelled to resort to such measures as large class sizes or double sessions (Earthman, 2009). These unfortunate practices are a result of administrative decisions, not the result of the building itself. Many people, when overcrowding occurs, blame the building, thinking that it should have been built for a larger student population. This is patently wrong thinking because a building cannot accommodate unexpected growth of students. School buildings are planned and
constructed with a limit on the number of students the building can accommodate based upon the number of students projected to be in the attendance area.

When this number is exceeded and the school becomes overcrowded, it is a result of administrative inaction or indecision. Rapid growth of the student population within an attendance area should be expected in a growing community. Appropriate measures need to be taken well in advance of overcrowding to accommodate the increase in student population. These measures can be either change of boundary lines or alternative facilities. Alternative facilities might be another school building or an addition to the existing school if that is structurally possible. Many schools are constructed with the provision that additions to the school can easily be made.

If the research arm of the school system has an accurate set of student projections for each school building, changes in student populations can be monitored each year to prevent problems of possible overcrowding. The problem of overcrowding must be addressed by the superintendent and school board by either re-drawing school attendance zones or by constructing new facilities. These decisions can only be made or not made by the superintendent and school board. But criticism of the capacity of a school building to accommodate a growing student population is neither productive nor accurate.

Summary

Planning, designing, and constructing a new school building require many decisions to complete the project. These decisions are made by educators, school board members, architects, and construction personnel. To be a successful building project, the individuals and bodies that have the proper expertise and legal authority need to make certain decisions. It is only when there is confusion as to who should make a decision that the decisions are not properly made. In some situations and certain cases, a vacuum of leadership has resulted in decisions being made by groups or individuals who should not be making the decisions. This has happened when decisions must be made, but were not made by educators. The above succinct discussion adequately delineates the decision-making process so that there should be no confusion as to who has the responsibility and expertise to make decisions.

References


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