ARCHITECTURAL PARTICIPATORY DESIGN METHODS

by

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ABSTRACT

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A comprehensive review of literature was done to research various participatory architectural design methods. Secondly, research was conducted in form of a pilot study to test some of the participatory design methods. The pilot study uses a group of church workers to aid in the design of a church's educational facility. The participants were members of the church who work in the church's existing educational facility as well as some teenage students who are pupils in this facility.

The literature review revealed techniques that seemed to be successful. The researcher used these techniques in the pilot study. The participants were taken through a series of workshops and interviews to see how effective the participatory design concepts worked.

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Chapter I

INTRODUCTION

Architects have been hired to design buildings since the beginning of civilization. Architects have drawn plans for the construction of building types ranging from residential homes to skyscrapers. The traditional architectural services are: 1) Schematic Design, 2) Design Development, 3) Construction Document, 4) Bidding and Negotiation, and 5) Construction Observation.

Schematic Design

Initially, the architect meets with the client (or client's representative) to discuss the building program put together by the client. The program includes information such as what spaces are needed within this structure, how many square feet, site cost and adjacencies (what spaces need to be near each other). As an additional service, the architect will put the program together for the client. This information allows the architect to get a preliminary evaluation of what is to be included in the building.

Once the architect understands what the client would like to have in their structure, preliminary drawings of floor plans and elevation are produced. Construction schedules and budgets are also considered in this phase. Other professional disciplines such as structural, mechanical, electrical and civil engineers who form the project team

are also involved in the schematic design phase. Once the owner approves the preliminary drawings, it is time to move to the next phase.

Design Development

The design development drawings are developed based on the owner's approval of the schematic design drawings. These more developed drawings describe in more detail the size and character of the project. Information on these drawings includes building materials, more exact room sizes, circulation, etc. The building code is applied at this time, to assure that all life safety issues are considered. Throughout this phase, the written program document is evaluated and changed as necessary. The other team members are more involved in this phase.

The owner's involvement throughout this phase consists of approving all major decisions. At the completion of this phase, a set of design drawings is produced.

Construction Documents

The set of documents produced from this phase contains all the information necessary for the contractor to construct the building. There are two parts to this phase: 1) drawings and 2) specification.

The construction drawings show the building design location, relationships and sizes (of spaces). Drawings included are site and building plans, elevations, sections, details, schedules and diagrams (American Institute of Architects [AIA],1987).

The *specification* is a written document "…outlining the levels of quality and the standards to be met in the construction of the project" (AIA, 1978). An example of information you may see in the specification is the choice of doors, i.e. wood, metal, size thickness, fire rating, etc.

Bidding and Negotiating

At this point, the construction drawings and specifications are complete. The construction documents are then either sent to several contractors for a competitive bid or an owner-chosen contractor for negotiation. The architect's job is to assist the owner in choosing a good contractor whose bid comes within the budget and schedule constraints.

Construction Administration

This last phase of the architect's duties begins with the award of the contract for construction. During this phase, the architect is a representative of the owner and is there to advise and consult with the owner during construction until final payment of the contract is due. The architect visits the construction site at appropriate intervals to assure that the work is being completed in accordance with the construction documents. The architect is not responsible for construction means, methods or techniques (AIA, 1987). During this phase, the architect reviews and certifies the amount due the

contractor for each invoice based on the architects evaluation and observation.

The traditional professional services of the architect only involves the client to the extent that they are approving each project phase, but the end-user is not actively involved in the design process.

Participatory design is the active involvement of the end-users in the design process.

Involving end-users in the design process can be very complex. Although there have been many case studies and techniques published on this topic, there is no universal model for how to involve participants in the design process.

It is important to have user participation for several reasons:

- Participation allows users to feel as though they are a meaningful part of the design process instead of having a building design imposed on them (Sanoff, 2000).
- Through user participation, designers can learn more directly about how people feel about design issues and how they use space.
- Participation instructs users in important issues about the building processes and the economics behind making a building project happen.
- Lastly, user participation positively affects the end product.

According to Henry Sanoff's (a community design specialist) experience in involving participants in the design process, the most

satisfaction for the users is not so much the degree to which their needs have been met, but "…the feeling of having influenced the decisions" (Sanoff, 1990). Sanoff feels that one of the important aspects of participatory design is that it "…increases people's awareness of the consequences of the decisions that are taken" (Sanoff, 1990).

As a designer, it is important to not just create an illusion of user participation but to truly involve the users in the design process. When looking at the role of the architect in a traditional project, the phases where participation would greatly impact the project are programming, schematic design and design development.

The architect's role in the participatory design process is to be a facilitator. As a facilitator the architect's role is to:

1) Listen
2) Educate on the architectural process
3) Create an ambiance of group listening
4) Include all voices
5) Balance conflicting points of view
6) Deal with potentially loud or disruptive voices

Problem Statement

In traditional architectural practices, the end-user is typically not involved in the design process. In order for the end-users to feel as

though they are a part of the building process and to help them adapt to change easier, it is important to have their involvement.

Purpose of the Study

1. To aid architects in techniques that can be used for participatory design.
2. To educate architects and clients as to why participatory design methods may be more beneficial than traditional design.

Objectives

1. Identify methods of participatory design implemented by other architects.
2. Identify the shortcomings of using participatory design.
3. Recommend guidelines for a participatory design process.

Significance of the Study

1. This study will improve the overall practice of architecture. The largest impact of this study will be for those architects whose clients have multiple end-users, i.e. churches, public structures, government buildings, etc. The information from this study will help architects to not only see the value of participatory design, but to help them to impress upon others the importance of using participatory design methods.

2. This study will add to the present state of knowledge related to participatory design. The information found in this study will give a different viewpoint on the effectiveness of participatory design through the case study done for this research.

Limitation of the Study

1. Heavy reliance on secondary data information. A large portion of the information being discussed in this study will be taken from books. The researcher will have to rely on this information as fact in solving the problem.
2. Limited time available to compile the research. Because the researcher has limited time, the case study will be limited to a church organization in St. Paul, Minnesota, one building type with one set of end-users.
3. Because the information gained from this case study does not result in a new structure, the participation was not as high.

Assumptions

1. The majority of architects do not use the participatory design method.
2. Most clients or end-users are not familiar with the architectural design process.

3. Most clients or end-users are not familiar with the participatory design methods.

Definition of Terms

- **Bid -** "An offer to perform the work described in a contract at a specified cost" (Harris, 2000).
- **Building code -** "A collection of rules and regulations adopted by authorities by authorities having appropriate jurisdiction to control the design and construction of buildings, alterations, repair, quality of materials, use and occupancy, and related factors of building within their jurisdiction; contains minimum architectural, structural, and mechanical standards for sanitation, public health welfare, safety, and the provision of light and air" (Harris, 2000). i.e. Uniform Building Code.
- **Civil engineer -** "An engineer trained in the design of static structures such as buildings, roads, tunnels, and bridges and the control of water and its containments" (Harris, 2000).
- **Clearstory windows -** "An upper zone of wall pierced with windows that admit light to the center of a lofty room" (Harris, 2000).
- **Client -** "One for whom professional services are rendered…" (DeVinne, 1985).
- **Concept -** "A general idea or understanding" (DeVinne, 1985).
- **Contractor -** "One who undertakes responsibility for the performance of construction work, including the provision of labor and materials in accordance with plans and specifications and under a contract specifying cost and schedule for completion of the work; the person or organization responsible for performing the work" (Harris, 2000).
- **Details** - "A minor section of an architectural design concept" (Harris, 2000).
- **Diagram** - "A plan, sketch, drawing, or outline designed to demonstrate or explain how something works or to clarify the relationship between the parts of a whole" (DeVinne, 1985).

- **Dimensions -** "A geometric element in design such as length, angle, or the magnitude of a quantity" (Harris, 2000).

- **Elevations -** "A drawing showing the vertical elements of a building, either exterior or interior, as a direct projection to a vertical plane" (Harris, 2000).

- **End-user -** The ultimate occupant of the building.

- **Floor Plan -** "A drawing; a horizontal section taken above a floor to show, diagrammatically, the enclosing walls of a building, its doors and windows, and the arrangement of its interior space" (Harris, 2000).

- **Plan -** "A two dimensional graphic representation of the design, horizontal dimensions of a building and location, as seen in a horizontal plane viewed from above, in contrast to a graphical representation representing a vertical plane" (Harris, 2000).

- **Program -** "A statement prepared for an owner, with or without an architect's assistance, setting forth the conditions and objectives for a building project including its general purpose and detailed requirements, such as a complete listing of the rooms required, their sizes, special facilities, etc." (Harris, 2000).

- **Rendering -** "A perspective or elevation drawing of a project or portion thereof with artistic delineation of materials, shades and shadows" (Harris, 2000).

- **Schedules -** "A detailed tabulation of components, items, or parts to be furnished" (Harris, 2000). i.e. a door schedule.

- **Sections -** "A representation of an object as it would appear if cut by an imaginary plane, showing the internal structure" (Harris, 2000).

- **Specification -** "A written document describing in detail the scope of work, materials to b used, methods of installation, and quality of workmanship for a parcel of work to be placed under contract; usually utilized in conjunction with working (contract) drawings in building construction" (Harris, 2000).

- **Structural engineering -** "That branch of engineering concerned with the design and construction of structures to withstand physical forces or displacements without danger of collapse or without loss of serviceability or function" (Harris, 2000).

Methodology

In order to add to the present knowledge of participatory design, it is necessary to first research the written literature on this topic. Next, an actual testing of a participatory design process will be conducted with the end result being a church educational facility. A pilot study will be done implementing some of the techniques found in the literature review.

Chapter II

REVIEW OF LITERATURE

Introduction

Participatory design is the involvement of "people affected by design decisions in the process" (Sanoff, 1990). Henry Sanoff describes participation as "the collaboration of people pursuing objectives that they themselves have defined" (Sanoff, 2000). This definition of participation is the core objective for architects as they design the participatory design process.

Although many architects and organizations have used participatory design techniques, there is still no "cookie cutter" process that can fit all situations.

In the Review of Literature chapter, various types of participatory design methods that have been implemented will be discussed. The design of a new library and a new educational facility will be summarized. Also, Christopher Alexander's method of involving participants will be discussed.

Boulder Creek Library

The Boulder Creek community in Santa Cruz, California, involved their community in the design of a 4600 square foot library. The architectural consultants hired by this community began designing the

participation process by first developing a list of the 'given' items. These items included:

"1) a sophisticated summary of functional areas and square footage requirements, which had already been prepared;

2) staffing requirements and book volume requirements that had already been prepared;

3) site constraints such as slope, location of significant redwood trees, solar orientation, and other elements that limited site planning options" (Sanoff, 1990).

The issues the workshop participants were to address are as follows:

"1) the location and arrangement of spaces within the Library;

2) site plan relationships such as building orientation, user entry and arrival, parking location, and the character of exterior space;

3) the feeling, or ambiance, of the library and surrounding site" (Sanoff, 1990).

The consulting team chose a 'hands-on' graphic approach as the primary method of user participation. Small groups of 5-7 worked together at a table in a process called "consensus decision-making". The working groups were supplied with the necessary materials. The one rule for this process was "each person in their group must agree on a consensus decision developed collaboratively by the working group" (Sanoff, 1990).

There were three workshops that took place to systematically develop the design of their library. The workshops were outlined as follows:

- *Workshop 1:*
  - establish goals for the Library
  - write down and/or draw illustration of 'patterns' that describe the 'feeling' that the Library should have

- *Workshop 2:*
  - develop preliminary site plan drawings
  - develop preliminary floor plan drawings

- *Workshop 3:*
  - select the most appropriate floor plan/site plan options for final development

Workshop 1 Summary

They began the workshop with introductions and a description of the proposed format for the 3 workshops. Next, there was an open group discussion about their goals for the project. The consultants intended for these goals to be broad descriptions of the Library, i.e. 'the Library should be a home away from home'. These goals were recorded on large sheets of paper in front of the meeting room. A total of 43 goals were discussed (see appendix A). The goals were purposely not prioritized or ranked so that everyone's idea can be fairly evaluated.

Following this 'brainstorming' session, there was a break and then small groups of four to six people were formed around large tables. Each group was supplied with large blank sheets of paper, colored markers and pencils. Each group was to draw or write down

'concepts' or 'patterns' they thought were critical for the library buildings success. The term 'pattern' as defined by Christopher Alexander's book A Pattern Language, "describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over without ever doing it the same way twice" (Alexander, 1977). Although the participants developed the patterns, there were some similarities between the patterns the participants came up with and those in Alexander's book. Participants were encouraged to suggest building elements, images, diagrams or words that represented critical components of a successful branch library (see appendix B).

At the completion of this portion, the entire group went from table to table discussing each group's findings. **No criticism was allowed in order to facilitate open dialogue and exchange of ideas** (see Appendix C for summary of 'concepts' and 'patterns').

Following this workshop, a summary of goals and patterns was prepared and mailed to each workshop participant with a reminder of the time and date of workshop 2.

Workshop 2 Summary

The workshop began with a slide presentation of the drawings produced by participants in Workshop 1 and the solar opportunities of the library site. Several people who lived adjacent to the new library

site (who had not attended workshop 1), expressed their concerns about the impact the Library may have on their residential neighborhood. These concerns included:

- "noise from cars arriving at the library
- parking on their quiet streets
- teenagers 'hanging out'
- impacts of general noise and litter" (Sanoff, 1990).

These issues were to be addressed in the working groups that would take place in this workshop.

The participants divided into eight working groups and were asked to develop consensus plans for library interior spaces and for site development. The first portion was to be focused on site planning. Participants were asked to address the following:

- "location of the library on the site
- location of access roads and parking
- pedestrian paths and library entry
- specific concerns raised by neighbors" (Sanoff, 1990).

The participants were expected to produce free-hand sketch plans. They were not expected to calculate building spaces or parking requirements. This would allow them to focus their efforts on conceptual site plan and freely express ideas.

The facilitators again encouraged consensus decision-making. This encouraged the groups to make trade-offs and decisions amongst themselves.

It was planned to work on the site planning the first half and building space design the second half, but most groups did these two exercise at the same time.

The architects had planned to analyze the drawings after the meeting and come up with two to three options for Workshop 3. Instead, they developed one consensus plan because of the similarities.

Workshop 3 Summary

The plan for this workshop was to present the design options generated from Workshop 2 and the architects would give their opinions about the advantages and disadvantages of each. Participants would then form small groups and by consensus, prioritize the designs presented and then report back to the entire workshop. Potentially, none of the plans would work, or there would be revisions proposed to them.

After break, groups would be formed again to select the best floor plan/site plan option. This would be refined by architects and approved by various boards involved.

As stated in Workshop 2 summary, only one plan was presented at this Workshop (3). The meeting started out with a slide show that simulated the library building on the site and illustrated how the patterns developed by participants in Workshop 1 had been integrated into the design. (Only one pattern was unable to be

incorporated). A conceptual scale model of the library was presented.

In closing, the architects answered questions. Six participants volunteered to continue meeting with the architects and the Library Advisory Committee.

This summary is from a case study, written by Jeff Oberdorfer, taken from Henry Sanoff's book entitled Participatory Design Theory & Techniques.

Educational Facility

The Adams Group, an architectural firm experienced in working with community groups, was commissioned to design a school for 600 children grades K-5. This school is to be located in the Charlotte-Mecklenburg area of North Carolina. The site for the new school contained an existing school building.

The clients perceived community involvement to be "...instrumental in achieving any changes in the traditional school delivery process, which normally bypasses the teacher's expertise and results in a building produced by formula" (Sanoff, 2000). The gymnasium for this new school building is to be funded by the community.

To begin this process, the architects first met with the principal to outline a strategy to involve the parents, teachers and students in the design process. The architects interviewed the entire teaching staff (30 teachers) at all grade levels to review the educational specifications provided by the Division of School Planning. Items in the specification

include quantity of spaces and list of classroom equipment. The results of the interviews showed that there were discrepancies between the educational specifications and the teacher' requirements, i.e. location of teachers' workrooms and counselor's office. Teachers preferred several small workrooms adjacent to classrooms for parent tutoring and idea sharing with other teachers as opposed to having one work area for a cluster of classrooms. Teachers also began discussing ideas of teaming and collaborating more effectively.

After completing all 30 interviews, the architects conducted a walk-through evaluation with the teachers of the existing two-story structure. Some of the negative features discovered in this process include noisy corridors, desk in corridors for tutoring and the separation of play areas with parking. Valued features of this existing structure were also revealed.

The next phase of this project was a parent-staff-teacher workshop. The intents of this workshop were:

- "dialogue between teacher and their educational objectives,
- The variety of teaching methods generated from those objectives and
- Types of places or physical setting that would be supportive" (Sanoff, 2000).

The second phase involved the site design of their new school building. Through observation and interviewing students and staff, it was decided that the basis for the design involves three key items.

1. "the relationship between the activities students engage in,
2. the places that accommodate those activities, and
3. their relationship to the objective" (Sanoff, 2000).

The objectives found in the educational literature are:

1. "personalization of the learning environment,
2. student control of movement,
3. provision of adequate meeting and social gathering places,
4. environmental flexibility to accommodate different student activities,
5. ability for students to facilitate projects and studies in their area of interest" (Sanoff, 2000).

Educators agree that these objectives are important in the development of elementary students, but they cannot agree on where the functions of these objectives should take place within the facility.

The next step is to address the physical environment. This process is called "relating objectives for learning to education" (Sanoff, 2000). For this session, the parents and teachers started out in one big group to establish agreed upon objectives. Next, the teachers divided into six groups of five based on their teaching expertise. Each group had an objective statement taken from the educational literature. Through

consensus decision making, they clarified their ideas and intents about education.

Traditional and non-traditional photographs of physical settings were discussed as to how these spaces may accommodate various teaching methods. The photos depicting outdoor settings triggered the teachers' sensitivity to the need for a more integrated indoor-outdoor learning environment. The teachers realized they frequently used outdoors for activities such as reading, art, eating and gardening. Because of these realizations, the new school building will have outdoor areas adjacent to each classroom, covered porches and several courtyard spaces.

The use of photographs allowed the teachers to broaden their way of thinking and see the classroom space as a setting that would accommodate lots of teaching methods. In the past, teachers were used to adapting their teaching methods to the existing constraints of the classroom as opposed to being able to adapt the physical environment to their teaching methods and objectives.

The children gave their ideas through art and poetry. The office staff of the architects and the art teacher met with the students for two days at their school. The students were asked to draw a picture of their ideal dream school. Some of the pictures produced included towers, clocks and clearstory windows. One of the ideas from the students

used in the new school building is the media center opening to the outdoors. The students also felt the need for plenty of daylight.

Teachers, parents and students were asked to write a wish poem about what they wanted in the new school. The poem was to begin with the phrase "I Wish My School…" (Sanoff, 2000). The responses were summarized on large sheets of paper. Some of the ideas from this exercise were exploring different teaching method, putting in an atrium, using bright colors and using an outdoor learning environment.

The final workshop focused on the building images and site planning. This workshop included 35 teachers, parents and school planning officials. The architects began with a slide show of ten different buildings with different regional characteristics. An overall priority list was established before each building was to be rated by the participants. The purpose of this exercise was to the increase the participants' awareness of various characteristics of school buildings. The participants were asked to evaluate each building and list the three best features and worst features. Next they were asked to do an overall ranking of each building (see appendix C).

Some of the solutions the group came up with are:

- To have a more deliberate use of courtyards and open space.
- To group grades K-2 separately from grades 3-5.

The group was not completely satisfied with their solutions, but they gained a better understanding of the complexity of architectural design. The participants were more than willing to leave the resolution of the problem to the architects.

After this last workshop, the design team compiled all of the information from interviews and workshops, and came up with one design scheme. This scheme was drawn on large sheets of paper, and posted in a central area of the school so teachers could write their comments on the drawings. The comments written were found to be very minor in detail. The teachers mostly identified their ideas found in the design.

The new school design had features not traditional to schools in the area. Some of the design features include clustered classrooms, corridors with classrooms on the south side and outdoor somewhat private play areas for each classroom.

The North Carolina State Department of Public Instruction raised questions about the unique design features. They felt that some of these features may increase the building operating cost. Even though they had these concerns, they decided to allow the community to make the final decision.

The teachers, principal and superintendents office were all supportive of the new school building design. They believed it would enhance the curriculum goals. The community was also supportive.

The architects believe that "if the teachers and administrators had not been involved in this process, it is pretty clear that the state and county plan reviewers would have been very forceful to have the architects change the plan" (Sanoff, 2000).

By participating in the design process, the teachers, administrator, parents and students felt a sense of ownership.

This summary is from a case study, written by Henry Sanoff taken from his book entitled <u>Community Participation Methods in Design and Planning.</u>

Alexander's Participatory Design Technique

Christopher Alexander proposes using a special design language called "A Pattern Language" when designing (Alexander, 1977). Alexander and his associates developed this language from their own building and planning efforts over an eight-year period.

This language is broken down into various patterns. "Each pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over without ever doing it the same way twice" (Alexander, 1977).

Each pattern is set up using the same format. First, a picture is shown as an archetypal example of that pattern. Next, there is an introductory paragraph that explains how this pattern helps to complete a larger pattern. The introduction follows the picture. There are three diamonds with headlines in bold type to mark the problem.

After the headline, the body of the problem describes “the pattern, the evidence for its validity, the range of different ways the pattern can be manifested in a building…” etc. (Alexander, 1977). The solution to the problem is stated in bold print. The solution is stated in instruction form, enabling you to know exactly how to build the pattern. A diagram is show to also demonstrate the solution. The pattern is ended by a paragraph that ties this pattern to all the smaller patterns in the language to complete this pattern (see Figure 2.1).

There are 253 patterns in Alexander’s study. The patterns are ordered general to detailed, region and towns, neighborhoods to buildings to rooms to construction details. The language is based on connections between the patterns. The patterns are organized in a linear sequence, connecting larger patterns and smaller patterns to complete a sequence.

No pattern can be used in an isolated situation. Each pattern in a sequence supports the other.

When Christopher Alexander invented pattern languages, he theorized that “each solution is stated in such a way that it gives the essential field of relationships needed to solve the problem, but in a very general and abstract way - so that you can solve the problem for yourself, in your way, by adapting it to your preferences, and the local

Figure 2.1 *Pattern examples taken from Henry Alexander's A Pattern Language.*

condition at the place where you are making it" (Alexander, 1977). Alexander envisioned that each solution would be written in a way in which nothing is imposed on the user.

Alexander anticipated that those who use this language will try to improve these patterns. These patterns can be looked at as hypotheses, or a road map for developing your own unique pattern.

This summary is from the book A Pattern Language, written by Christopher Alexander, Sara Ishikawa, Murray Silverstein, Max Jacobson, Ingrid Fiksdahl-King and Shlomo Angel.

Chapter III

METHODS AND PROCEDURES

The methods and procedures used in this study of Participatory Architectural Design are explained in this chapter under the headings of (1) method of study, (2) sample selection, (3) instrumentation, (4) procedures followed, and (5) method of analysis.

Method of Study

A comprehensive review of literature was done to research various participatory architectural design methods. Secondly, research was conducted in form of a pilot study to test some of the participatory design methods. The pilot study uses a group of church workers to aid in the design of a church's educational facility. The participants were members of the church who work in the church's existing educational facility as well as some of the teenage students who are pupils in this facility.

The literature review revealed techniques that seemed to be successful. The researcher used these techniques in the pilot study. The participants were taken through a series of workshops and interviews to see how effective the participatory design concepts worked.

Sample Selection

To get participation in this process, the researcher acquired a list of all of the volunteers that work in the education facility of the church along with a list of all of the children 12-18 years old. I mailed out 50 postcards to all of the potential participants and also called them to see if they were willing and able to participate in this process. At each session, 5 to 10 people attended. There was some consistency with the attendees throughout each workshop.

The ages of the participants ranged from 14 years old to 50 years old. The majority of the participants were female. The researchers goal was to have a minimum of 15 participants. This would allow for 3 groups of 5 when it was necessary to do group work.

Instrumentation

A pilot study was used to examine the participatory design process. The format for the workshops was based on a variety of techniques that other architects have found to be successful. The pilot study allowed the researcher to see first hand if the techniques found in the literature review were successful or unsuccessful. This allowed the researcher to recommend guidelines that can be used for the design of a structure using participatory design methods. The layout of the workshops is described in more detail in the next section.

Method of Analysis

The primary objectives of this study were to identify participatory design methods implemented by other architects, identify the shortcomings of using participatory design methods and to recommend guidelines for a participatory design process. The researcher observed each workshop and the following questions were answered by the researcher in an effort to analyze the effectiveness of the session.

- Do the participants understand the information presented to them?
- Do the participants understand the goals of each workshop?
- Do the participants feel as though they are participating in the design process through this workshop?
- Do the participants have a better understanding of the design process?

Procedure Followed

There were a series of five workshop sessions and an interview with the participants. Each workshop was designed so that you could build on the information from one workshop to the next. The interviews ended the participatory design series.

Workshop I

The goals of this workshop were to: 1) establish goals for the new education facility and 2) establish patterns for the new education facility that describe the feel of the facility.

The workshop began with a review of the agenda and a description of the proposed format for the next few meetings. The only rule for the group discussions was that consensus decisions were to be developed collaboratively by the group. This process required each group to debate issues amongst themselves and then decide upon a solution to the given problem (Sanoff, 1990).

First, the definition of 'goal' was given to the participants. Henry Sanoff describes goals as "... generalized statements about the overall purpose of the program" (Sanoff, 1981). They were also given examples of goals that were listed in a case study on participatory design for Boulder Creek Library in California (see Appendix B).

The participants were then asked to come up with a list of goals for the church's new educational facility. Because of the small number of participants in this session (6 people) there was only one group. The group came up with a sizable list of goals (see Appendix B for final goal list).

Next, the participants were given a definition for patterns (or concepts). Christopher Alexander defines a pattern as "...a problem

which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice" (Alexander, 1977). Examples from the Boulder Creek Library were given for Patterns (see Appendix B). The participants came up with several patterns and even illustrated some of the patterns (see Appendix E for final pattern list).

At the end of both exercises, there was discussion on some of the terminology that was used throughout the workshop and what these terms meant to this working group. A list of terms and definitions were recorded (see Appendix F for final terms list and Appendix G for Workshop summaries).

Workshop II

The goal of Workshop II was to develop a preliminary plan for the new education facility. This session began with a review of the goals and patterns (or concepts) defined in Workshop I. The participants were given the opportunity to add to the list of goals and patterns previously defined (see Appendix D and E). The terminology was also reviewed and altered per the participants' comments (see Appendix F).

Next, the ten workshop participants were divided into two groups of five. Each team played a game that had a goal of helping them

define adjacencies of various spaces that could be included in the new facility. The game piece ideas were taken from the discussions in Workshop I. The participants were instructed to place the game pieces with images of various patterns and activity images on a grid according to what functions need to be near to or apart from each other. After this exercise, the two groups reconvened and shared their results (see Figure 3.1).

At the end of this session, two participants volunteered to take disposable cameras supplied by the facilitator and photograph spaces they liked (indoors or outdoors) and spaces they may have liked to see in the new facility. Workshops I and II were summarized and the participants were dismissed.

Workshop III

In preparation for this Workshop, two diagrams were drawn based on the results from the game played in Workshop II.

Workshop III began by reviewing the information from workshop I and II. New words were added to the terms list. The photos taken by the two volunteers from Workshop II were presented to the group. Two smaller groups of four were formed. Each group was given a diagram and a set of the photos the volunteers took as well as photos taken from magazines. The magazine photos depicted spaces you may see in a school/daycare or a church setting. The groups were instructed to

place the pictures where they imagined these spaces to be on the diagrams. After each group completed this exercise, they presented their results to the entire workshop group. After viewing both layouts, the participants decided they liked portions of both diagrams and decided they wanted to combine the two diagrams (see Figure 3.2).

Workshop IV

In preparation for this workshop, two volunteers along with the workshop facilitator took pictures of the activities in the existing education facility of the church. These photos were taken during the busiest times in the education facility, Sunday morning and Wednesday night. The spaces photographed included all of the classrooms, storage, shared spaces, kitchen, vending space, circulation, copier and computer room.

At this session, the group looked at the photos and evaluated the existing spaces by analyzing the activities that take place in these spaces. The facilitator, helped the dialogue by asking probing questions such as:

1) Would this activity be done at a table? On the floor? In a circle?

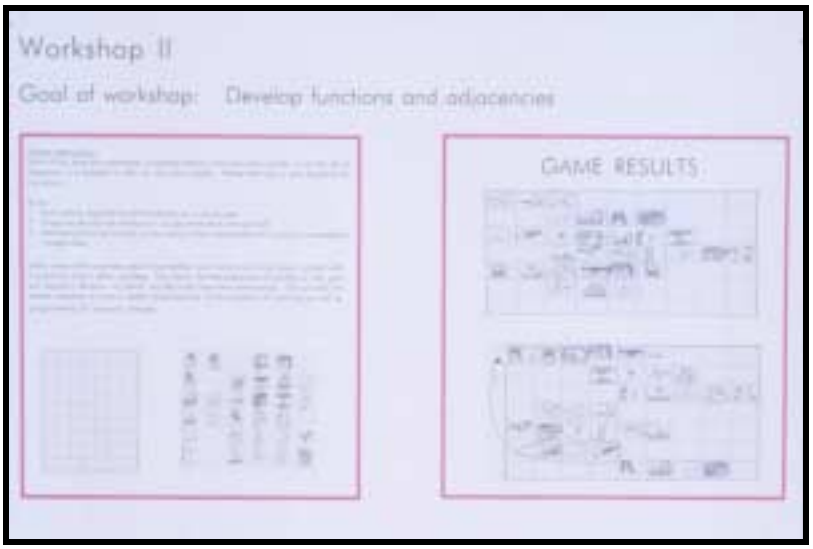


Figure 3.1 *Workshop II Game Results*

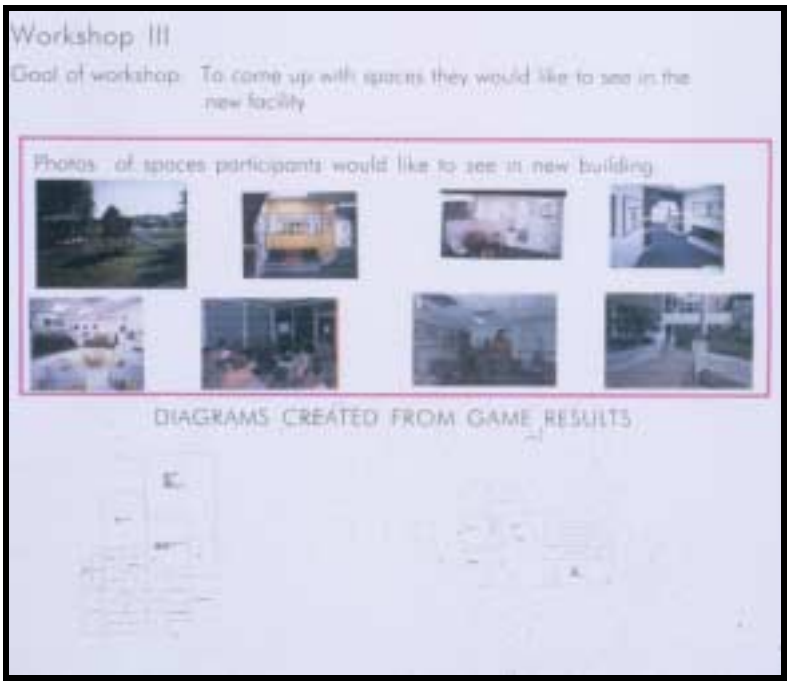


Figure 3.2 *Workshop III Results*

2) Should this area have soft floor surfaces or hard floor surfaces?

3) Should this activity take place in this area?

The results of this discussion are as follows:

Little Lambs Area (ages 6 ½ months to 2 years old)

- This area needs to be close to an outside door because diapers need to be taken straight to a dumpster.
- Mostly soft flooring in this area. A portion with hard flooring for eating.
- A coat rack or coat area.
- The room needs to be sectioned off according to areas:
  - toy area
  - eating/art area (need tables)
  - video area
  - (changing area will be in bathroom)
- They need cushions for reading time.
- This room needs its own bathroom (can share with Juniors for Jesus)
- They need an area for sleeping, with cribs and cots or mats.
- Television and VCR that is permanently mounted.
- New "cubbies". Existing cubbies have shelves that are too small.
- They need a water fountain near their area that is low enough for this age group.
- A larger sign-in area.
- Hard walls

Juniors for Jesus (ages 3-5 years old)

- They need a brighter, decorated space, i.e. poster on walls, bulletin boards.
- Soft flooring or carpet in play area. Hard floor surfaces in eating area.
- Arts and craft area.
- Area for stereo/video/television.
- Cubbies for coats and shoes.
- Larger sign-in area.
- They will share toilets with Little Lambs.
- Hard wall area
- Separate area for play equipment.

Power Company (ages 6-11 years old)

- They currently have the most ideal space.
- They typically face forward in chairs. Occasionally sit in a circle for discussion.
- This class structures itself is similar to the adult church service.
- A designated sign-in area.

Brothers and Sisters in Christ- BASIC (ages 12-19 years old)

- They need a larger space - some tables and some open space.
- Television/VCR/stereo.
- They need soundproof walls.
- Carpet in entire area.
- Chairs with desk connected.
- Built-in projection screen with projector.
- A separate game room to accommodate this age group.

Main Entry

- Need double doors with lobby/vestibule space.

- Signage in this area to direct people through the space.

Director's Office

- There is currently no director's office, but need one with staff space and a copier.

Computer/Office Area

- More shelf space
- Needs to be more organized
- Now used as a storage area.
- Needs to be locked.

Other Notes

- There needs to be a vending area/canteen area.
- Corridor on upper level now has coat racks. Coats need their own space.
- There needs to be an area for lockers.
- The classroom spaces are not to be shared with other groups, i.e. the Little Lambs space will only be used for the Little Lambs on Sunday and Wednesday.
- Juniors for Jesus need a dance room.
- This building can have conference rooms for other events.
- They will continue their numbering system.

(See Appendix G for Workshop Summaries)

Workshop V

The purpose of this workshop is: 1) to continue defining adjacencies of spaces and 2) to begin looking at building materials and how they relate to the interior of the building.

There was a review of the previous workshops before the first exercise began. For this exercise, there were rectangles developed to

represent the various spaces needed for each age group (see Figure 3.3). The ideas for these spaces were taken from the previous workshop discussion. The participants' job was to organize these pieces based on necessary adjacencies. After organizing the pieces, the participants were then asked to use the props to define area separations and entry points (see Figure 3.4). The results from this exercise can be seen in Figure 3.5.

The goal of the next exercise is to help participants have a better understanding of building materials and how they relate to the buildings interior. The group viewed a variety of different church buildings' interior and exterior. There was discussion on the likes and dislikes of each building and why. The structures varied in style from traditional to modern. The results from this exercise can be seen in Figure 3.6.

The researcher is now ready to put together schematic design drawings for the new facility (see Appendix H). Once these drawings were complete, individual interviews were done with all of the workshop participants to get feedback on the new design. The open-ended questions asked are as follows:

1) Does this design meet your expectations?

2) Are there any features in this design that you would change?

3) Would you like to see this building built?

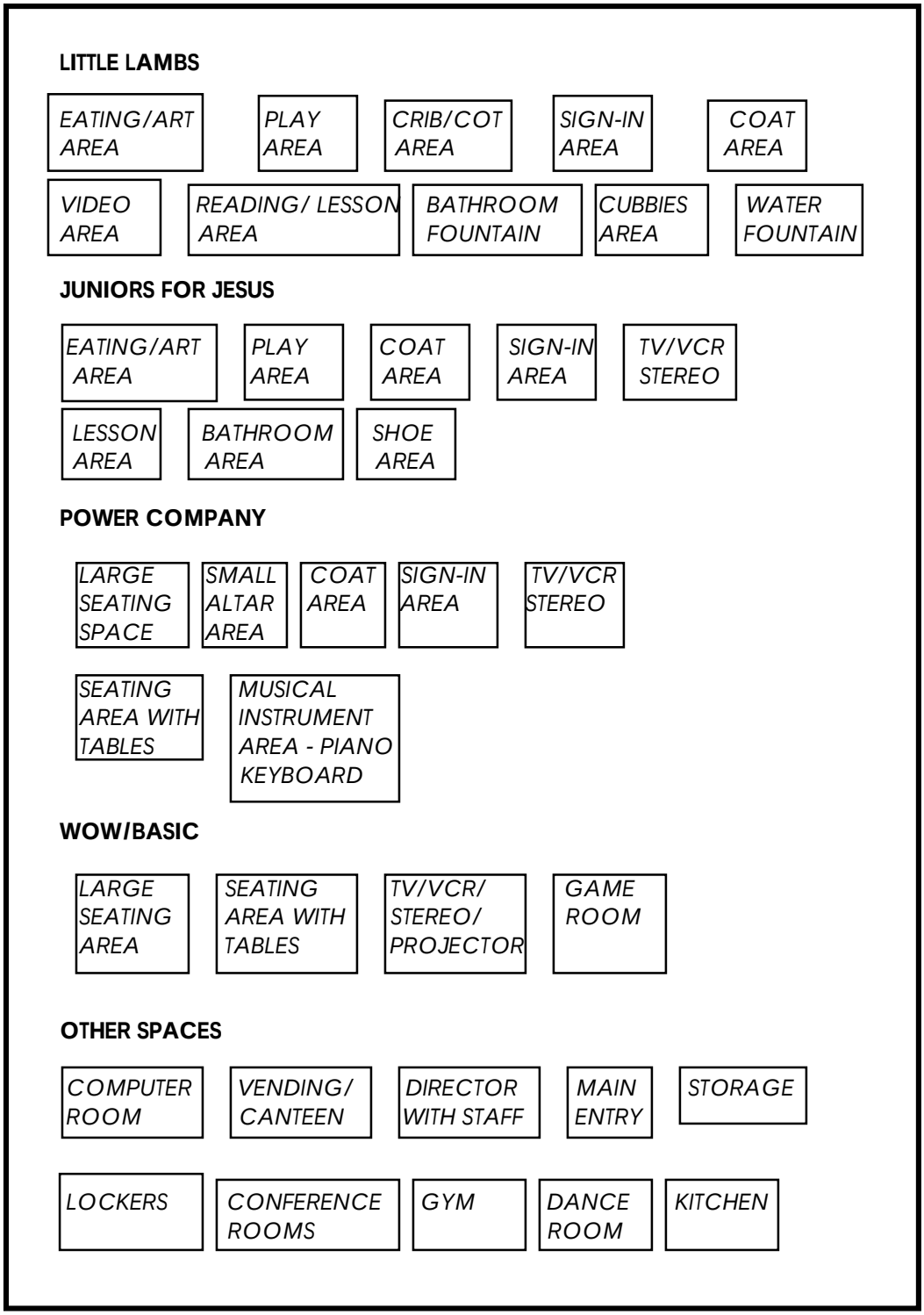


Figure 3.3 *Spaces needed for Workshop V exercise*

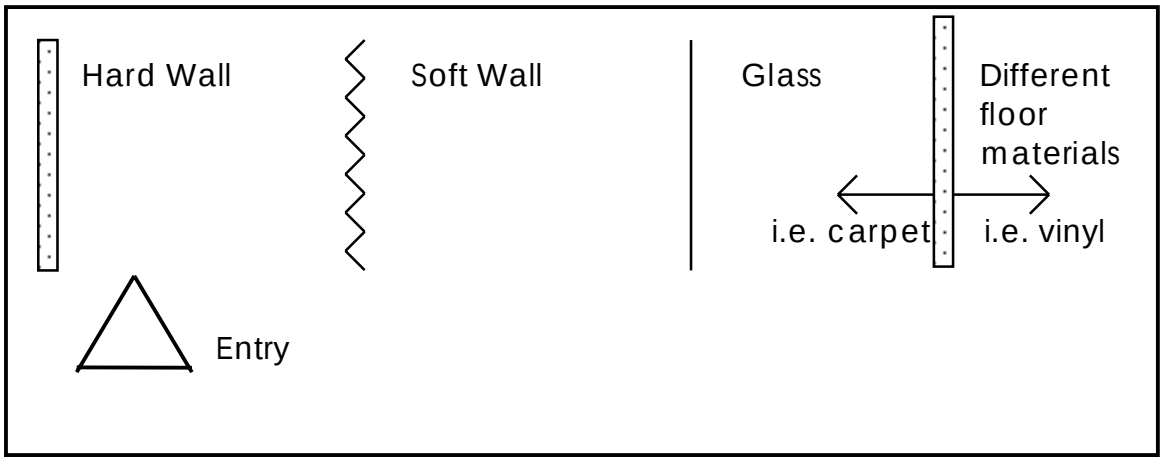


Figure 3.4 *Props to define separation needed for Workshop V exercise*

Overall, they were happy with the outcome of the design. Some participants were interested in having more slopes on the roofs.

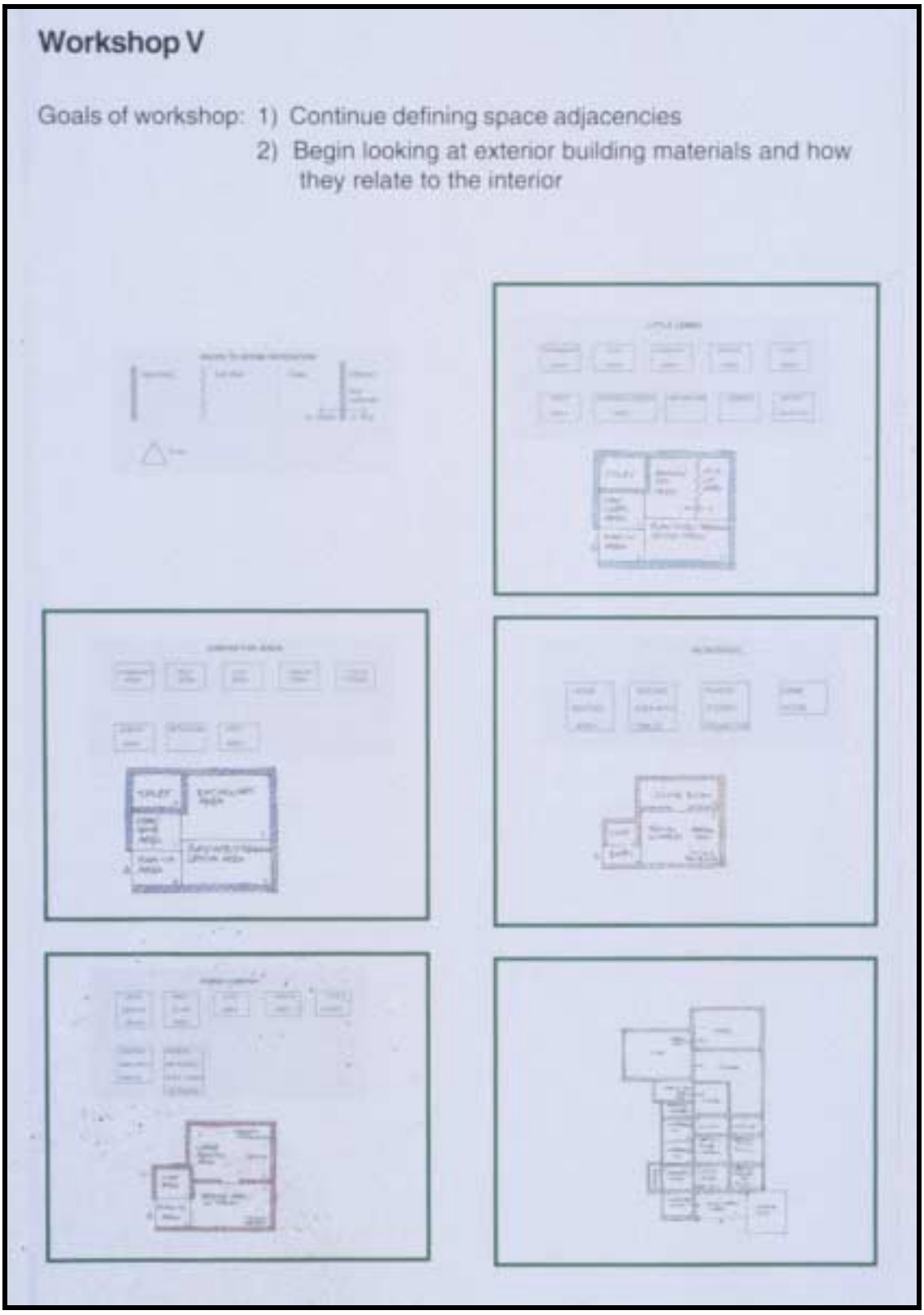


Figure 3.5 *Results from the first exercise in Workshop V*

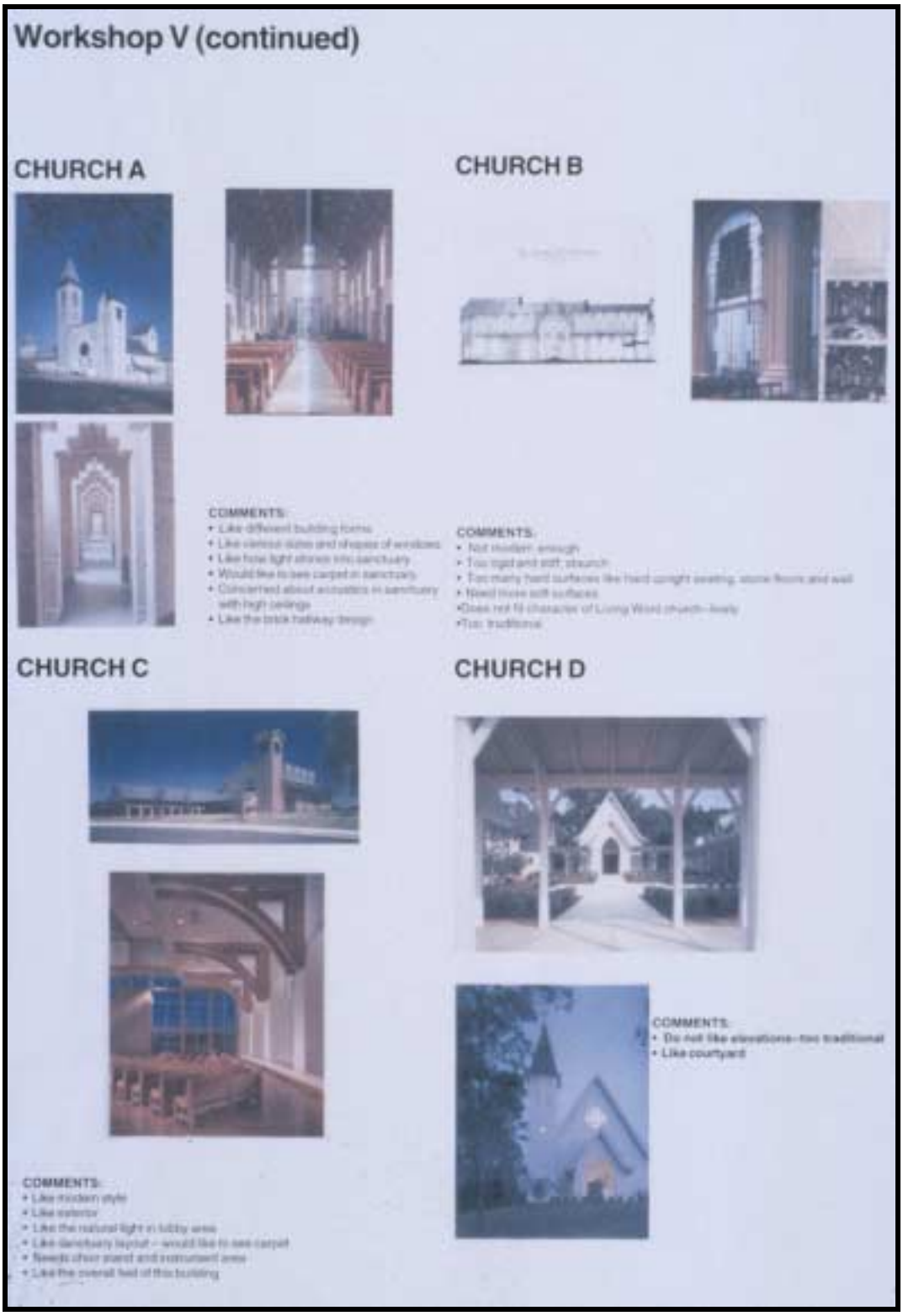


Figure 3.6 *Results from the second exercise in Workshop V (Crosbie, 1999)*

Chapter IV

RESULTS AND DISCUSSION

Initially, a thorough review of literature was done to research participatory architectural design methods. Next, a pilot study was done to test some of the participatory design method. The participants were taken through a series of workshops and interviews to test the effectiveness of the participatory design concepts.

Results

There were five workshops performed with each having specific goals to produce the necessary output needed for the design of the new educational facility. The results of each workshop are described below.

Workshop I

The goals of Workshop I were: 1) to establish goals for the new education facility and 2) to establish patterns for the new education facility that describe the feel of the new facility. At the end of this workshop, the participants came up with a sizeable list of goals and patterns for the new building and illustrated some of the patterns.

Workshop II

The goal of this Workshop was to develop a preliminary floor plan for the new education facility. Through a game played to define adjacencies, the participants put together the information necessary for the researcher to begin formulating a floor plan.

Workshop III

The intent of this workshop was for the participants to begin defining the feel or ambience of the interior environment they wanted for their new building. The results of this meeting was a diagram (in form of a floor plan) with photos of various spaces placed on it, representing the 'feel' the participants would like to have in each space.

Workshop IV

This workshop had a purpose of evaluating the spaces of the existing educational facility. Through the analysis of photos depicting activities that take place in the existing education facility, the participants were able to list their likes, dislikes and needs for the existing facility. This discussion triggered ideas for the new facility including additional spaces needed.

Workshop V

The goals of this workshop were: 1) to continue defining adjacencies of spaces and 2) to begin looking at building materials and how they relate to the interior of the building. The results of this workshop allowed the participants to:

- express what spaces needed to be near/far from each other and how each classroom was to be set up (see Figure 3.5).

- express what type of building materials they like and style of buildings they see affiliated with their church's educational facility (see Figure 3.6).

Interviewing

Once a schematic design of the new educational facility (see appendix H) was complete, a series of interviews, asking open-ended questions, were done one-on-one with the all of the participants to find out if the design met their expectations. The participants were overall happy with the building design. Two participants felt that the roof structure needed to have more slopes.

Discussion

The participants agreed that they preferred the non-traditional, modern style of architecture. It was important to the participants to have plenty of natural light in the church's new educational facility. The placement of the classrooms to the supporting areas and the entry seemed to be very important. The participants all agreed that they would like to see a variety of building materials in the new structure as oppose just using one building material.

Chapter V

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

The summary includes the restatement of problem, methods and procedures, and major findings.

Restatement of Problem

In traditional architectural practices, the end-user it typically not involved in the design process. In order for the end-users to feel as though they are a part of the building process and to help them adapt to change easier, it is important to have their involvement.

Methods and Procedures

A comprehensive review of literature was done to research various participatory architectural design methods. Secondly, research was conducted in form of a pilot study to test some of the participatory design methods. The pilot study used a group of people to aid in the design of a church's educational facility. The participants were members of the church who work in the churches existing educational facility as well as some of the teenage students who are pupils in this facility.

The literature review revealed techniques that seemed to be successful. The researcher used these techniques in the pilot study. The participants were taken through a series of five workshops and interviews to see how effective the participatory design concepts worked.

The first Workshop was intended to establish goals and patterns for the church's new educational facility. Workshop II helped the participants become more familiar with adjacencies of building spaces through a game. The participants put together the information necessary for the researcher to begin formulating a floor plan.

The purpose of Workshop III was to aid the participants in defining what type of feel or ambience they would like to have in their new building. Workshop IV focused on evaluating the spaces of the existing educational facility through the analysis of photos. These photos depicted activities that take place in their existing facility during their busiest times.

Workshop V had the goals of continuing to help the participants define spaces as well as beginning to look at building materials.

Upon the completion of the Workshops, a series of one-on-one interviews were done with the participants to evaluate how they felt the design met their expectation.

Major Findings

As a result of the Workshops, there were several design principles that were brought to the forefront by the participants. These ideas are listed as follows:

1) They preferred the non-traditional, modern style of architecture.

2) They wanted plenty of light in their facility.

3) The space adjacencies were very important.

4) They wanted to use a variety of building materials.

Conclusions

In traditional architecture, the end-user is not typically a part of the design process. The architect usually meets with the new building owner or owner's representative to get a description of what they would like to see in the building and what functions they may need and then the architect designs the building. Once the building is designed, the end-user moves in and they are left to accept what has been built. Often times, this process causes a lot of uneasiness and discomfort. Change can be hard for a lot of people. Through the participatory design techniques used in this pilot study, the participants were able to help with the design of the new educational facility and gain a better understanding of what it takes to design such a structure. The participants actually felt a sense of ownership and were proud of what they had contributed to the design.

In observing Workshop I, it seemed as though the participants were having a difficult time understanding the definition of patterns and how to describe patterns for the new education facility. They also had a hard time differentiating between goals and patterns. The group had to constantly refer to the examples they were given for patterns. It was

obvious the group was getting frustrated. More visuals would have helped the group to understand these concepts and become more interested in the design process.

The remaining Workshops used more visuals and games that made it more interesting for the participants. By the end of this process, the participants were able to understand how their input fit into the building design.

The objectives for this research on architectural participatory design methods are as follows:

1. Identify methods of participatory design implemented by other architects.
2. Identify the shortcomings of using participatory design.
3. Recommend guidelines for a participatory design process.

The review of literature section reviews various studies done on participatory design methods by other architects. These cases helped the researcher understand what has been done on this topic. By implementing some of these methods on a pilot group, the researcher was able to see how well these methods actually worked and how they could be improved upon. The following section will speak to objective number three – recommendations.

Recommendations

After doing a thorough review of previous participatory design techniques used and conducting a pilot study testing some of these methods, the researcher found that there is no one good way to conduct a participatory design project, but there are a core set of guidelines that should be taken into consideration when embarking upon such a process. There are also other topics related to participatory design that should be researched further.

Recommendation Related to This Study

When designing a participatory design process, it is necessary to:

1. **Know your audience**. Some groups may be more sophisticated than others and may have a better understanding of the architectural process and construction.
2. **Test your techniques on family and/or friends.** This will enable you to get some feedback on the techniques you plan to use.
3. **Include lots of visuals.** The researcher found that those Workshops that used visuals and activities were the most successful.

Recommendations for Further Study

The problem statement of this study addresses participatory design as it relates to the buildings end-user, enabling them to feel as though they are a part of the building process and helping them adapt to change easier. Further research needs to be done on how participatory design affects the following: 1) the quality of the building design, 2) the architects ability to produce a good design, and 3) the building cost

REFERENCES

Alexander, C., et al. (1977). A Pattern Language. New York: Oxford University Press.

American Institute of Architects. (1987). Standard Form of Agreement Between Owner and Architect (14th ed.). New York: Author.

American Psychological Association. (1994). Publication Manual of the American Psychological Association (fourth ed.). Washington, D.C.: Author.

Crosbie, M. J. (1999). Architecture for the Gods. Mulgrave, Victoria 3170, Australia: The Images Publishing Group Pty Ltd.

DeVinne, P. B. (Ed). (1985). The American Heritage Dictionary. (second ed.). Boston: Houghton Mifflin Company.

Harris, C.M. (Ed.). (2000). Dictionary of Architecture & Construction. New York: McGraw-Hill.

Sanoff, H. (2000). Community Participation Methods in Design and Planning. New York: John Wiley & Sons, Inc.

Sanoff, H. (1990). Participatory Design Theory & Technique. Raleigh, NC: Author.

Sanoff, H. (1979). Design Games. Los Altos, CA: William Kaufmann, Inc.

Sanoff, H. & Sanoff, J. (1981). Learning Environments for Children. Atlanta, GA: Humanics Publishing Group.

APPENDIX A - Summary of Goals

Case Study from Henry Sanoff's book entitled

Participatory Design Theory & Techniques

- The Library should invite and be accessible to children.
- Shelves and materials shall be low and scaled for use by kids.
- The Library should accommodate teenage social activities, but these should be acoustically screened from other areas.
- An entire school class should be comfortable while using Library spaces, as this is a common school activity and the Elementary School is within walking distances.
- Provide visually attended space for youngsters who are dropped off at the Library after school in lieu of childcare.
- Separate children's areas from adult section with adequate sound insulation.
- Provide children's bathrooms and infants changing areas.
- Crate a strong interrelationship between inside and outside; provide tall windows so we can see the trees.
- There shall be ample exhibit space both for the arts and traveling exhibits both freestanding and especially on the walls.
- Outdoor decks and/or plazas should be provided for reading, and be screened from traffic and noise.
- Provide visual recognition that there is a Library 'back there'.
- The Library building itself should be a learning experience; energy efficient features shall be visible learning experiences in themselves.
- The Library should provide f a media-facilities center and the future use of videocassettes, satellite reception and other media.
- Provide outdoor music, theater, performance areas and facilities.
- Provide facilities for oral history (taping) and the Boulder Creek Historic Society.
- The Library should have a large, open entry-inviting to everyone.
- Provide adequate individual and group study spaces.
- The Library should be a home away from home and always be open.
- Provide pedestrian access without the 'suburban' look of sidewalks.
- Consider the Library a Community Center.
- The Library should be a home for local arts, both on display as well as integrated into the building
- NO FLOURESCENT LIGHTING.
- Save on-site redwoods, palm trees and existing fruit trees.
- Provide safe access from Highway 9/Downtown for pedestrians.
- Generate 'real giving' from the Community in terms of the arts, sweat equity and volunteerism, and incorporate into the Building.

- Utilize existing native vegetation.
- Develop a courtyard with varying level changes.
- Encourage the creative, comfortable use of floor areas for sitting, lounging and reading.
- Can WE build the Library? We have the skills and tolls right here in Boulder Creek.
- The Library should be energy-efficient with ample natural light; should conserve water/energy and utilize wood heat (wood stoves and fireplaces).
- The Library should provide a 'stand by' Center in case of Community emergencies, re: self reliance and the storm of 1982

APPENDIX B - Summary of 'Concepts' and 'Patterns'

Case Study from Henry Sanoff's book entitled
Participatory Design Theory & Techniques

- Provide a mudroom/changing area adjacent to the entry.
- Provide private read/study carrolls as well as window seats in Bay Windows.
- The Library should be connected to the ground, not just stuck on, the building should step up gradually.
- Provide a variety of spaces in terms of size and height.
- Activities should fan out from the circulation desk in a circular manner.
- Windows should have lots of lites 'so it feels good' and should be set back deep to soften the light.
- Columns should do things and not just provide structural support.
- Steps should be designed so that we can sit on them for reading and conversation.
- The Library shall have a big front door to invite everyone in.
- Provide clerestories and natural light from above.
- 'Show off our wood', consider using donated local woods for beams, etc.
- Utilize real or created tree house outdoor structures for children's play and theater.
- Consider a cluster of separate building structures, linked via covered pathways and creating an open air courtyard.
- Utilize wall areas for displays.
- Use big, comfortable chairs and lots of pillows.
- Consider loft spaces for kids, with shoe storage below, use lots of pillows in the kid's areas.
- Investigate on-site wastewater treatment.
- Provide water saver toilets and plumbing.
- Integrate on-site streams into the site plan.

APPENDIX C – Building Ranking Example

FIGURE 3.7 Rating school building images. *(Reprinted, by permission, from Henry Sanoff, School Design, p. 60. Copyright 1994 by John Wiley & Sons, Inc.)*

(Sanoff, 2000)

APPENDIX D - Summary of Goals for New Educational Facility

GOALS

- The education area shall have an environment that lends itself to lots of communication.
- This space should feel like a home-base.
- All inclusive, community space.
- This area should be set-up so that it is comparable to the adult church.
- Provide facilities for music development.
- Provide facilities for dance development.
- Provide nursing area (for mothers).
- Provide a warm environment.
- Provide an area for children to play indoors and outdoors.
- Provide an atmosphere that will feel like an open house for the community.
- Provide an area for computer development.
- Provide a space for a theater.
- Provide a multi-media space.
- Provide a game/recreation room.
- Provide a refreshment area.
- The building shall be friendly and inviting to all.
- There shall be ample space for educating families on how to help their children (or referral center.
- Nurturing
- There shall be bright colors to enhance creativity.
- Provide a large space for nursery care – ample separate spaces for each age group.
- Provide an area for musical instruments comparable to main church facility (an area for musical lessons).
- Provide choir loft - choir /practice room.
- Provide a large kitchen with full size appliances.
- Provide current expressive art work.
- Electronic surveillance
- Accessibility to building
- Provide space for gym
- Provide lounge
- Add Swimming pool

APPENDIX E - Summary of Patterns

- Provide storage cabinets that do not protrude out into the space.
- Provide excellent sound for video/film – surround sound.
- Screens shall be accessible.
- The equipment shall be user-friendly.
- Monitors (television screens) shall be visually accessible to inform members of events/functions.
- The entry shall be inviting.
- There shall be a user-friendly sign-in area.
- The transition from the big church to the junior church shall have a nature/outdoor feel. Lots of natural daylight with built-in seating. (See photos).
- There shall be games imprinted on the carpeted area, i.e. hop scotch, tic-tac-toe.
- There shall be some type of soft flooring
- Signs shall be colorful and easy to read.
- Monitor will show classes in action.
- Toy storage accessible to children with photo to show where toys are located.
- Level changes inside and outside to help with muscle development, eye/hand coordination, problem solving, motor skill and social skills.
- Sound-proof nursery with two-way mirror.

APPENDIX F – Terminology

- Main Church - The area where the adults worship.
- Youth Church - The area where the youth worship.
- Little Lambs - This space is for ages 6 ½ months - 2 years old.
- Juniors for Jesus - This space is for ages 3 -5 year olds.
- Power Company - This space is for ages 6-11 year olds.
- WOW - This space is for ages 12 - 14 year olds.
- BASIC - This space is for ages 15 - 19 year olds.
- Communication - To exchange information by speech or writing.
- Home-base - An environment that has a family-oriented, cozy atmosphere.
- Inclusive - Making everyone feel like they are a part.
- Community Space - An area that is open for everyone to meet for activities for any specific task.
- Warm Environment - When the surroundings feel friendly and inviting.
- Nurturing - To help grow and develop.

APPENDIX G – Workshop Summaries

Workshop I

Goals of workshop: 1) Develop goals for building design
2) Develop patterns for building design

Goal Definition

"...generalized statements about overall purpose of the program"

Henry Sanoff

Participant s Goals

- All inclusive community space
- Provide dance facilities
- The building shall be friendly and inviting
- Provide an area for children to play indoors and outdoors

Patterns Definition

"...pattern describes a problem which occurs over and over again in our environment, and then describes the core of the solution to that problem, in such a way that you can use this solution a million times over, without ever doing it the same way twice."

Christopher Alexander

Participant s Goals

- Lots of natural light
- The entry shold be inviting
- There shall be a user-friendly sign-in area

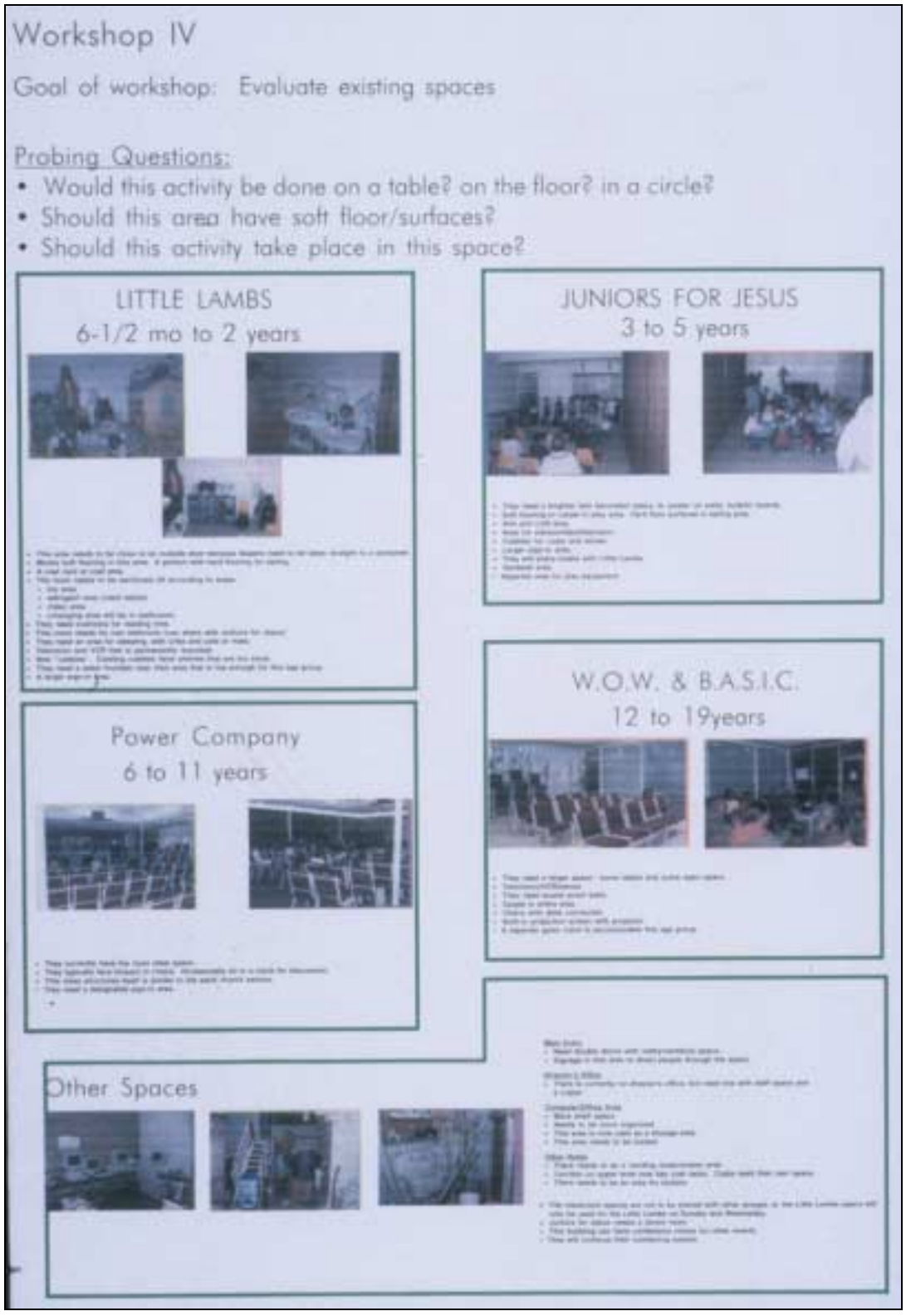
Workshop II

Goal of workshop: Develop functions and adjacencies

Workshop III

Goal of workshop: To come up with spaces they would like to see in the new facility

DIAGRAMS CREATED FROM GAME RESULTS


Workshop IV
Goal of workshop: Evaluate existing spaces
Probing Questions:
• Would this activity be done on a table? on the floor? in a circle?
• Should this area have soft floor/surfaces?
• Should this activity take place in this space?
LITTLE LAMBS
6-1/2 mo to 2 years
JUNIORS FOR JESUS
3 to 5 years
Power Company
6 to 11 years
W.O.W. & B.A.S.I.C.
12 to 19years
Other Spaces

Workshop V

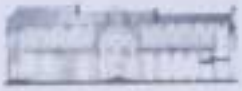
Goals of workshop: 1) Continue defining space adjacencies
2) Begin looking at exterior building materials and how they relate to the interior

Workshop V (continued)

CHURCH A

COMMENTS:
- Like different building forms
- Like various sizes and shapes of windows
- Like how light shines into sanctuary
- Would like to see carpet in sanctuary
- Concerned about acoustics in sanctuary with high ceilings
- Like the brick hallway design

CHURCH B



COMMENTS:
- Not modern enough
- Too rigid and stiff, staunch
- Too many hard surfaces like hard upright seating, stone floors and wall
- Need more soft surfaces
- Does not fit character of Living Word church--lively
- Too traditional

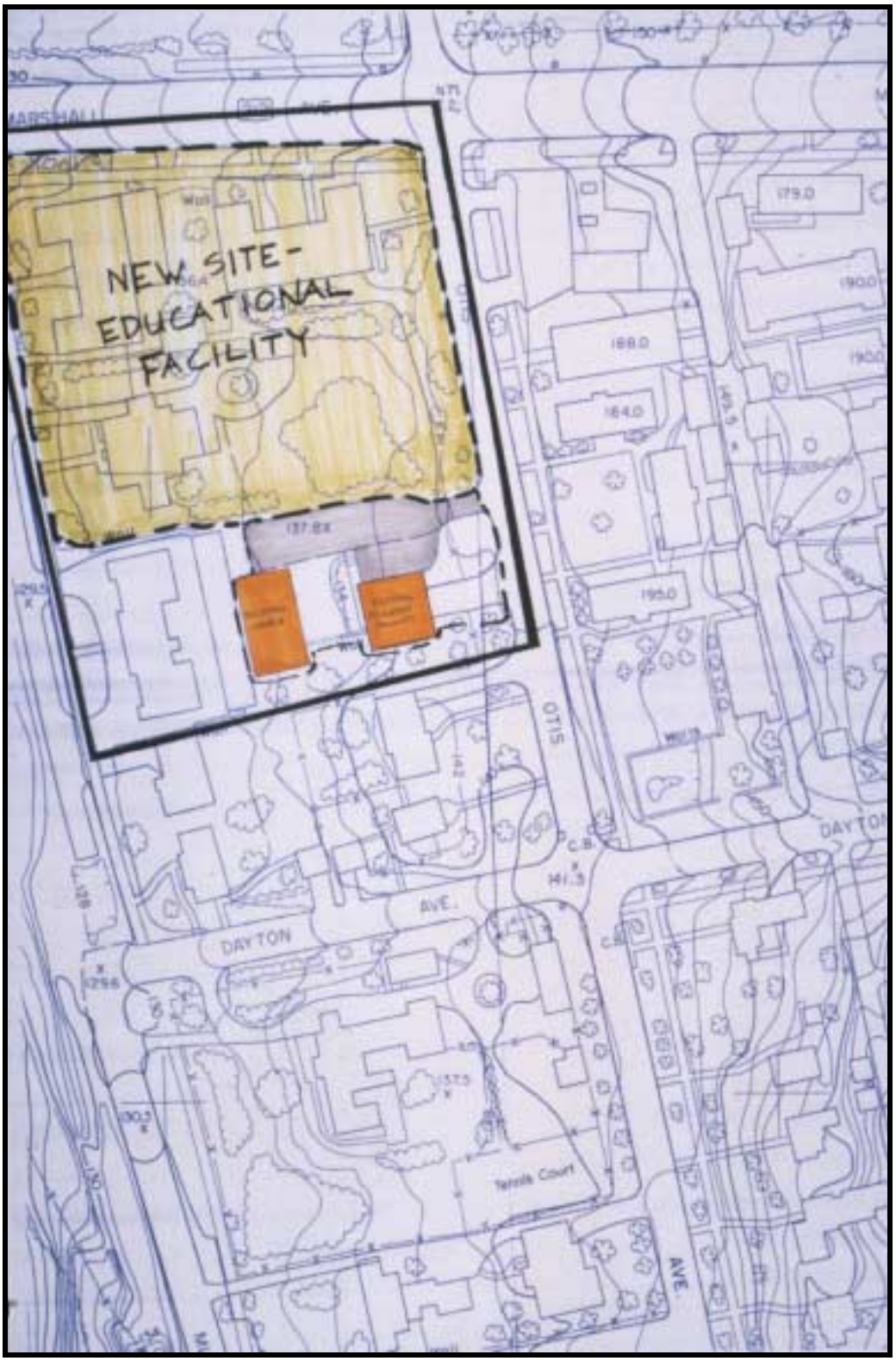
CHURCH C

COMMENTS:
- Like modern style
- Like exterior
- Like the natural light in lobby area
- Like sanctuary layout – would like to see carpet
- Needs choir stand and instrument area
- Like the overall feel of this building

CHURCH D

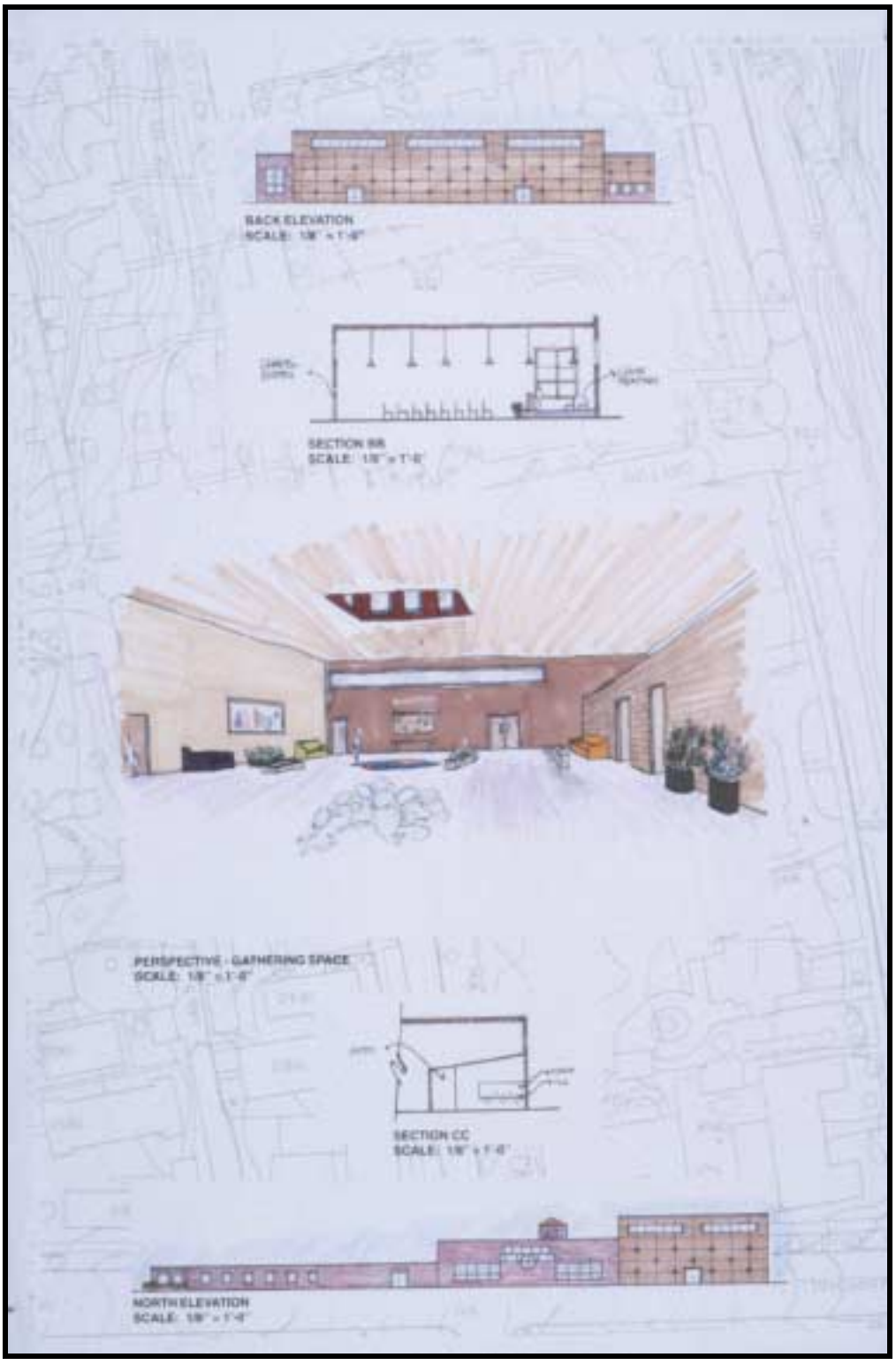
COMMENTS:
- Do not like elevations--too traditional
- Like courtyard

APPENDIX H – Final Schematic Design

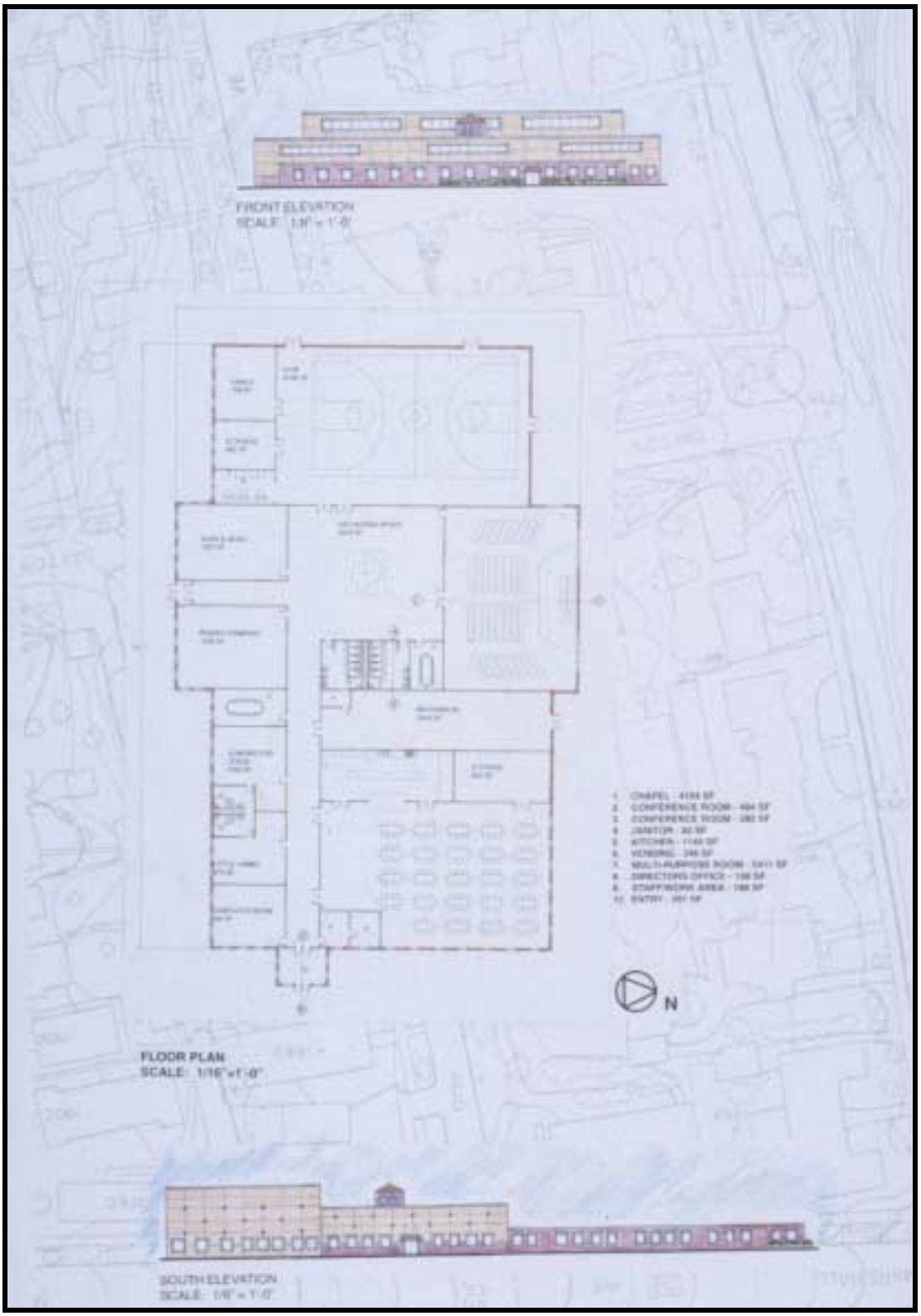


APPENDIX H – Final Schematic Design (continued)

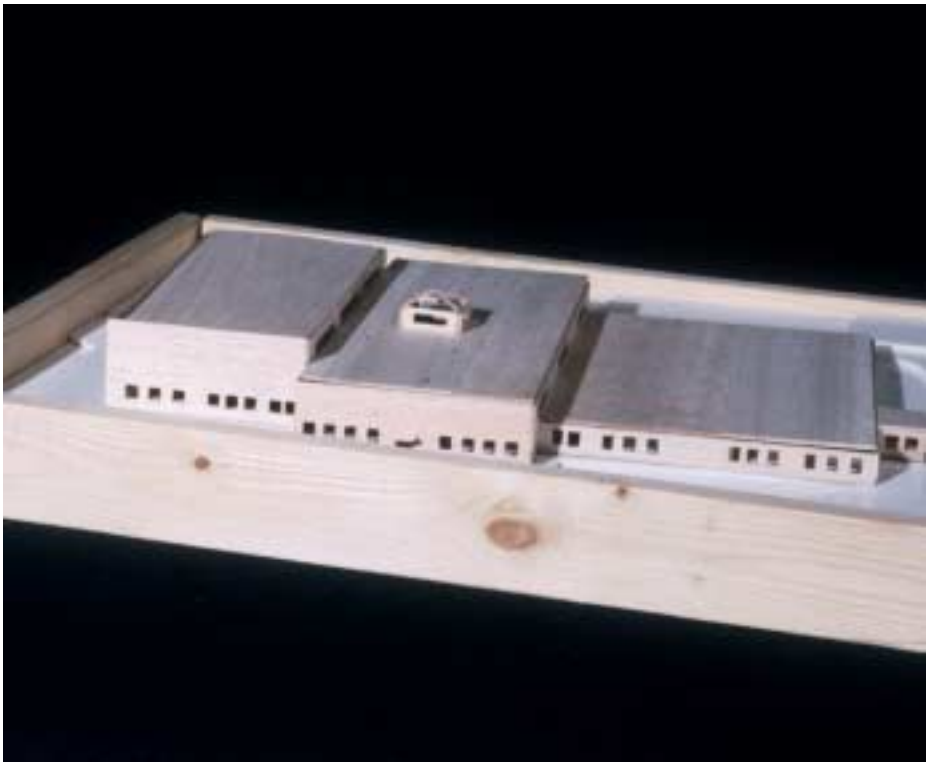
APPENDIX H – Final Schematic Design (continued)

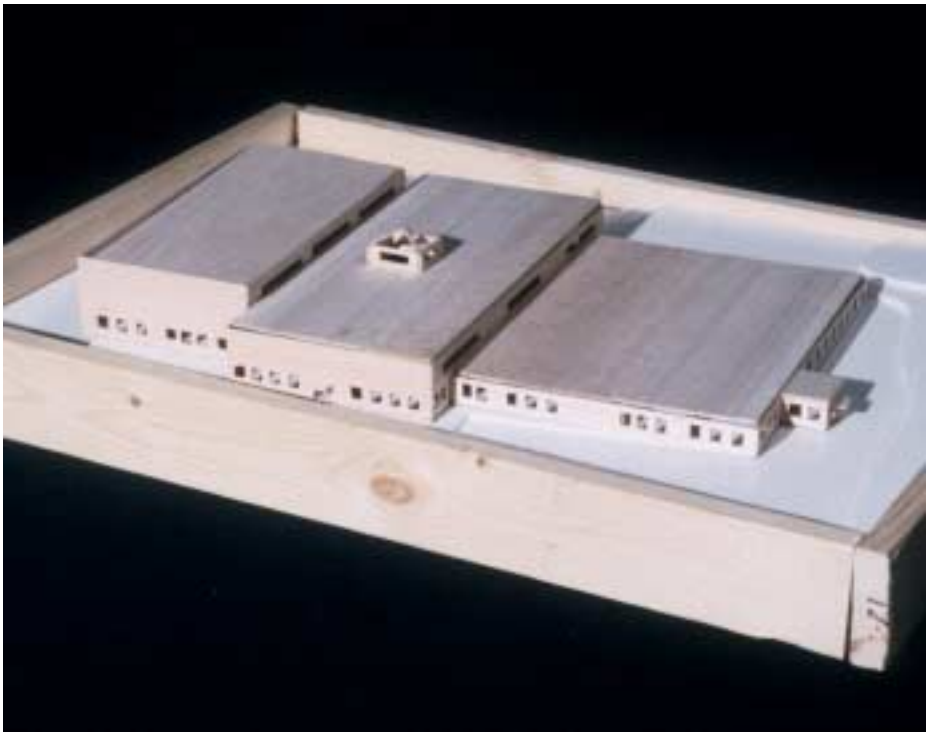


APPENDIX H – Final Schematic Design (continued)



APPENDIX H – Final Schematic Design (continued)





APPENDIX H – Final Schematic Design (continued)