The Riverside Exploratorium
"an exploration into self-education"
The RIVERSIDE EXPLORATORIUM
"an exploration into self-education"

Indianapolis, Indiana

dale harkins 1980

C. D. Woodfin, professor
HOW TO READ THIS BOOK

This book is laid out so that it may be read and understood in great detail or at a great speed. Each chapter is arranged so that a person can read the titles and large print to get an overview of the material, a more detailed understanding can be achieved by reading on.
contents

preface

INTRODUCTION 1

CONCEPT 3

PROCESS 7
  exhibition
  self-centered
  market

PRODUCT 26
  site plan
  plan
  floor plans
  sketches
  construction

APPENDIX 44
  acknowledgements
  education?
  program
  calculations
  bibliography
A lot goes into a thesis project, or any project. Not only a lot of long hours and hard work but also, a lot of a person's background and experience. I think in order to better understand this project, you must understand, at least some, of who I am.

I have, for as long as I can remember, enjoyed creating. It doesn't matter what I create, whether it's a building, a drawing, or just a smile on someone's face, they all give me infinite satisfaction.

I came to school five years ago thinking that architecture would best satisfy that need. At the same time I was very scared of architecture, I'm not one that looks good in a three piece suit with a pipe, telling everyone how great they are and how good my designs are. I had always thought of this education as a means to an end, when I reached that end I could practice architecture in a way that was comfortable to me. But, I had become a part of the system, I was no longer an individual, I was just part of the system.
and heading for an end that would have been very uncomfortable for me.

Many things have happened over the past few years that have helped me to believe in my own ideas. Probably the most influential has been my association over the past two years with Jim Lowry and his architectural firm in Indianapolis. I found that "real life" architecture can be fun and rewarding without being cold and arrogant. I was allowed to get close to design, construction, and restoration. I have developed a real love for creating threedimensional workable environment with my own hands as well as on paper and in my mind.

Also, my past nine months association with Dan Woodfin, as thesis professor, and the Pattern Language studio have been very influential. The studio was set-up to explore the use of a process outlined by Christopher Alexander in The Timeless Way of Building and A Pattern Language. Dan and the studio have helped me further develop and explore my own ideas. These and other experiences have helped me create my own ideas about architecture I can be comfortable with.
INTRODUCTION

This book is the documentation of my thoughts concerning this project and its subsequent activities.
I had many preconceptions of what a thesis could or should be, and many high hopes. Many of those ideas have come true, many became nightmares. With this book I hope to document those ideas.

My thesis has been a very interesting year of study. Many very interesting and sometimes disturbing things have happened. I feel that because of the process I have gone through, I have evolved and grown tremendously. This book is more the documentation of that growth, my discoveries, and my failures, than a display of my project.

I have tried to design this book to be easily and quickly read and understood. The book is broken down into chapters that seemed very natural to the process, allowing it to be quickly read. For the same reason, I have tried to keep the book short and concise.

I do feel I have to apologize for the grammar and writing of the book. I have written it in a way that was easy for me. I don’t feel a grammatically perfect sentence or a hernia packed volume of adventure are my style or even appropriate. This is my view of my project expressed in my own words. I hope you enjoy the book and are able to take away at least a brief understanding of my experience – exploration.
CONCEPT

To create a facility that helps to adequately supplement our traditional educational system.
The Riverside Exploratorium is envisioned as the realization of a relatively "new" concept for education - learning. People presently learn little from the environment around them. They are led to believe that everything worth learning is only available through formal schooling. The purpose of the Exploratorium is to promote the environment (people and resources) as tools for learning.

I began and have continued with the basic concept of creating a facility to supplement today's educational system. I strongly believe that education does not stop when a person leaves the classroom. Even though much of what I have learned has come from classroom situations, more and possibly the most important part of my education has come from outside the classroom. It is fine for a person to be "intellecually smart" but, it takes much more to survive in this world, things you can only learn from your environment. I hope that this facility can help guide people to learn from their environment.

The basic concept has remained relatively unchanged, but some modifications have occurred. Most of the changes are in my own attitude towards the present educational system and the best possible supplement and/or alternative.

As I researched education, I found that many people did not side with the traditional or conservitive educational system I had grown up with. There are many very different views of how and what people should be taught. The major difference seems to be between the "conservative" and "liberal" positions on education. An overview of both positions can be found in the appendix. I tend to believe that a more liberal approach to education may be more effective. I have based this on my own experiences and ideals. Everyone is different in how they learn, how fast they learn, and what they would like to learn, an
educational system should reflect that. In the present educational system, many students do just enough to get by or find other means to satisfy a teacher's requirements and spend little time actually learning. I do not see many changes in the educational system of the future, and have therefore decided a supplement to the present educational system is the answer, with the qualification that it may grow into an excepted replacement for the present educational system.

Over the year I also developed a more detailed idea of what "an exploratorium" should be. Most of this development in the concept can be found and best understood within the development of the project or process part of this book.

Most of the concept development came by working with A Pattern Language. Christopher Alexander advocates the ideas of Ivan Illich in his book Deschooling Society. Illich suggests an alternative education which greatly differs from traditional education.

"The alternative to social control through the schools is the voluntary participation in society through networks which provide access to all it's resources for learning."

(from Deschooling Society by Ivan Illich, Harper and Row: New York, 1971.)

The idea of a "network of learning" institutions seemed very appealing. It allows people to learn from the specific environment in which they carry on everyday life's activities. The better you understand your environment the better prepared you are to deal with issues involving it.

The idea of a network of learning and Alexander's notion of the "university as a market place" further modified the concept.
This concept creates within the network a central "crossroads". This center is fashioned in "the image of a traditional marketplace, where hundreds of tiny stalls, each one developing some specialty and unique flavor which can attract people by its genuine quality, are so arranged that a potential buyer can circulate freely and examine the wares before he buys". (from A Pattern Language by Christopher Alexander, Oxford Press; New York, 1977.)
I explored three very different processes and schemes during the course of this project:

- exhibition
- self-entered
- market

This part of the book is devoted to them.
This was the first alternative I explored. I began my thesis believing that the best solution to the problem was a large exhibit museum. The scheme proved to have many disadvantages and be a compromise of the concept.

I had the preconception that creating a museum that featured exhibition with educational benefits would be the best solution to the problem of supplementing the traditional educational system. Part of this was because this seemed to be the only accepted form of a supplement to the system, and even then it is not well accepted.

I began by looking at different educational ideas and the great variety of forms for museums. I decided that a liberal approach to education within a museum that emphasized participation would be appropriate. This decision was primarily a gut reaction to education. After spending the past seventeen years in school, I felt that this would work best. The research information for this decision can be found in the appendix. With this information I
developed a solution in an eight hour sketch problem. The following are selected parts from that study.
I understand that this solution would have many problems due to the amount of time spent on it. Even understanding this, many problems seemed to go beyond the eight hour design. I eliminated this scheme soon after starting my thesis due to the following factors:

The project did not fit well into the environment.
The project would need a large base to draw its visitors, having less of a neighborhood draw.

The center would become, at best, a once-a-year event, not ideally suited to the concept.

I was exposed to other conceptual alternatives, primarily through working with Pattern Language.
The second process I used is outlined by Christopher Alexander in *The Timeless Way of Building*. I find it very difficult to explain Alexander's ideas to others, especially when people are very set in their way of designing. But, I also feel the process can be applied in many ways with many interpretations - and as with all ideas, if a person has an open mind, he can take something worthwhile from it. open mind, he can take something worthwhile from it.

I think that was the biggest problem with our Pattern Language studio is that no one, including the members of the studio, had an open enough mind. Alexander's ideas seemed so radical from what we had been taught that they were very hard to accept.

Our class adjusted to Pattern Language - everyone in a different way. The only people who didn't adjust were other students and professors. Sometimes the atmosphere was not the best environment in which to work.
Causing some problems were the variety of interpretations of the process outlined by Pattern Language even within the class. I interpreted the language by looking at one pattern at a time and reacting to its impact on the project.

Pattern Language is set up as a progression (from large scale to small) of 253 patterns that alert the designer to issues important in obtaining a quality environment. Alexander suggests the designer begin with the larger patterns and proceed one pattern at a time to the smallest pattern. I excepted this process and proceeded to investigate each pattern I felt may have any significant impact on the design of the project.

Some examples of this process are as follows:

![Diagram](image)

**15 Subculture Boundary**

- The site is within a subcultural boundary.
- The project will contain facilities for meetings and gathering of the various subcultures.
- Note the facilities must be diverse to serve the variety of subcultures (image 15)
A IDENTIFIABLE NEIGHBORHOOD

- The site is not within an identifiable neighborhood
- The project should respond to the surrounding neighborhoods (e.g., cities, towns)
- A group of houses south of the site are not within an identifiable neighborhood
- Remove the homes south of the site to be used as infill into existing neighborhoods and the land as part of the suburban boundary

A WEB OF PUBLIC TRANSPORTATION

- The site is part of or within close proximity to feasible major transportation systems and interchanges
- The site and buildings must respond to these systems

A NETWORK OF LEARNING

- The site is within the midst of many potential educational opportunities
- The site and buildings should enliven and enhance the educational area
- Note: The site has little potential to be used for its educational opportunities - lack of opportunities
- The site should become a "base" from which its visitors explore the educational site in the area

- University
- Library
- Museum
- Park
- Cemetery
- Hospital
MASTER AND APPRENTICES

- This concept is very important to the function of this facility.
- All functions within the facility should be set up for an apprentice/master setting.

APPRENTICES CLUSTERED AROUND THE MASTER.

BUILDING COMPLEX

- This facility should be a human environment.
- Allow each organization and social group to have their own facility to represent them and for them to be recognizable.
- Group these spaces along a path and/or square.

Sample courtyard arrangement:

Sample flora space complex:

Classrooms

Reception Exhibit

Work

Shops

Sports and athletic space

Shopping street
Later patterns were also expressed graphically in groups.
later patterns were also expressed graphically in groups:
The system worked very well and proved successful for bringing up many issues I would not even have considered addressing. But, the design did not work, at least as well as it should have at this point.

*A Pattern Language* breaks a design down into 253 issues to be carefully analyzed and designed. These patterns were extremely helpful to me. This gave me a totally different set of issues from which to base decisions. Alexander brings out many excellent points about the designed and undesigned environment. I will continue to use these books and ideas as a reference during my professional career.

Using this process and the subsequent product did have some drawbacks. I overlooked some very important issues that were "status quo" for designers from this institution to address, and rightfully so.

I felt at this point in quite a dilemma, I didn't know what process was right or where to turn next. I did have the satisfaction of knowing I had learned something - new issues I should be addressing as a designer and a process that for me at this time, in this form, didn't work. I felt at this point that I was attempting to find the right solution to the problem by eliminating all the wrong solutions.
At this point, I felt in quite a dilemma. Seeing that my biggest problem was that I had too much of a conviction to one process or the other - I next tried a process which combined my four years of "traditional" architecture with the experience I had with Pattern Language. I probably should have tried this kind of process to begin with but ... 

I began this modified process with quite an understanding of Pattern Language and quite an understanding of the traditional design process. This may sound strange but, after working with both processes, I had found a base upon which to judge them. Both processes had good and bad points with regard to the type of architecture I feel most comfortable with. I tried to take the good points of both processes and combine them into one workable process.

I began by objectively looking at the project to determin
goals and objectives I wished to achieve.

The goals I felt most strongly about were already outlined in my concept. I wanted to supplement the education of the people of the Riverside area — to create a center for people of all ages to come and learn. The center would be an "information center" of sorts. A person would come to this center to gain information about a particular topic he/she may be interested. That person may obtain the information two ways (1) be sent to someone within the community who may be able to answer their question or (2) be sent to one of the facilities within the center. The facilities within the center would be created to supplement activities not readily accessible to the residents of the community.

The next step was to look at patterns from A Pattern language. The following are those patterns and the ideas derived from them.

**entry**

"Mark every boundary in the city which has important human meaning—the boundary of a building cluster, a neighborhood, a precinct—by great gateways where the major entering paths cross the boundary."
organization

Never build large monolithic buildings. Whenever possible translate your building program into a building complex, whose parts manifest the actual social facts of the situation. At low densities, a building complex may take the form of a collection of small buildings connected by arcades, paths, bridges, shared gardens, and walls.

At higher densities, a single building can be treated as a building complex, if its important parts are picked out and made identifiable while still part of one three-dimensional fabric.

Even a small building, a house for example, can be conceived as a "building complex"—perhaps part of it is higher than the rest with wings and an adjoining cottage.

circulation realms

Lay out very large buildings and collections of small buildings so that one reaches a given point inside by passing through a sequence of realms, each marked by a gateway and becoming smaller and smaller, as one passes from each one, through a gateway, to the next. Choose the realms so that each one can be easily named, so that you can tell a person where to go, simply by telling him which realms to go through.
- sacred

On no account place buildings in the places which are most beautiful. In fact, do the opposite. Consider the site and its buildings as a single living eco-system. Leave those areas that are the most precious, beautiful, comfortable, and healthy as they are, and build new structures in those parts of the site which are least pleasant now.

- site repair

Whether the sacred sites are large or small, whether they are at the center of the towns, in neighborhoods, or in the deepest countryside, establish ordinances which will protect them absolutely—so that our roots in the visible surroundings cannot be violated.

- water access

When natural bodies of water occur near human settlements, treat them with great respect. Always preserve a belt of common land, immediately beside the water. And allow dense settlements to come right down to the water only at infrequent intervals along the water's edge.
positive space

"Make all the outdoor spaces which surround and lie between your buildings positive. Give each one some degree of enclosure; surround each space with wings of buildings, trees, hedges, fences, arcades, and trellised walks, until it becomes an entity with a positive quality and does not spill out indefinitely around corners."  

light

"Arrange each building so that it breaks down into wings which correspond, approximately, to the most important natural social groups within the building. Make each wing long and as narrow as you can—never more than 25 feet wide."

The final patterns I looked at were for the construction of the building. This unit was developed not according to atten language but, still with the language in mind.

construction unit

POST AND BEAM CONSTRUCTION
The building upon and modification of the patterns created a final product that I feel it to be a good solution to the problem. But, most important to me is the fact that I learned something by doing it. My goal throughout my education has been to learn about a variety of things, not become an expert at any one. I feel I have learned a wealth of information, maybe not all I could have learned but, more than I would have learned by executing the traditional process.
SHE RIVERSIDE EXPLORATORYMUM

"an exploration into self-education"

CONCEPTUAL ALTERNATIVES

PROCESS

PRODUCT

SITE PLAN

FLOOR PLAN

SEQUENCE SKETCHES
CLASSROOMS

The classrooms provide space for conventional classrooms and adjoining offices.
CREATIVE SKILLS

The creative skills area provides indoor and an outdoor courtyard space for artists. The interior space is divided primarily into painting, drawing, and ceramic studios.
MAIN BUILDING

The main building is the focus of the complex. It is the central place for all information. The building houses the main offices, library, reception, and group waiting areas. These spaces contain the resources from which a visitor may obtain or may be assisted in obtaining information on a variety of topics.
INDUSTRIAL SKILLS

The industrial skills provide a training ground for community residents in auto repair, wood and metal crafts.

INDUSTRIAL SKILLS

VIEW TO INDUSTRIAL SKILLS
COMMUNITY SERVICES

The community services provide counseling, home and child care for people of the community.
sketches
ENTRY DOWN PROMENADE
TYPICAL INTERIORS
TYPICAL SECTION

WINDOW LOCATION

summer

winter
CONCLUSION

This is the most important part.
I felt this is the most important part of this book or of any project - to go back and seriously and objectively look at what has been done and how next time it may be improved. I've learned a lot from this project - a lot that has helped me to a road I will be comfortable riding.

I've tried through the book to tell you what I've concluded or how I feel about a particular subject. About the whole project - I feel pretty good. The objective for me has been to learn something, preferably about something I have not been exposed to. I feel college is an excellent opportunity to be exposed to many different ideas. I don't feel that using my thesis to repeat or perfect past ideas is appropriate - learning new ideas is. And I've learned a lot from my thesis - not just about Pattern Language but about a whole new attitude towards the environment and a variety of ways to deal with problems and most importantly an attitude towards my work as an architect that I can live with.

I guess what I'm trying to say is that the experience has been very good for me. Even though many people won't understand my thesis or won't think its content meets their standards.
APPENDIX

This is some of the material that helped make the decisions.
I would like to specially thank the people who participated in the Pattern Language studio:

C. Dan Woodfin, professor
Steve Alexander
Lynn Petrie
Sherry Petersen
Dave Wellman
Dan Breivogel
Tony Costello, critic
Rod Underwood, critic
Uwe Koehler, critic

and I'd like to thank Deb Wetzel for her moral support.
## WHAT SHOULD EDUCATION BE?

<table>
<thead>
<tr>
<th>Premises on Which the Educational Positions Are Based</th>
<th>The &quot;Conservative&quot; Position</th>
<th>The &quot;Liberal&quot; Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mind is purely intellectual and cognitive, separate from the physical and emotional self. The mind, reason, is developed by application to purely intellectual and cognitive subject matter—especially to books written and ideas generated by the greatest minds of the human race has produced. Learning &quot;activity&quot; should be purely mental. One's ability to think can be developed by systematic exposure to examples of disciplined thinking. Subject matter is used to train the mind and cultivate the faculty of reason. Emphasis is on the quantitative mastery of certain basic content. Curriculum is subject-centered.</td>
<td>Mind, body, and emotions are a unity, each affecting the others. Mind—thinking or intelligence—is not born readymade but is created through firsthand experience. The initial stages of learning must involve the &quot;whole child&quot; in the physical, emotional, and social experience of carrying out an activity that has immediate meaning and purpose for him. Formulated, abstract bodies of knowledge that represent the result of adult mental processes stifle the development of thinking in the beginning learner. Subject matter acquires its value as a means of fostering thought and inquiry that are aroused by firsthand experience. Subject matter is used to extend and enrich immediate firsthand experience, and firsthand experience now makes the subject matter vivid and meaningful to the learner. Emphasis is on the quality of the learner's mental processes. Curriculum is child- and society-centered.</td>
<td></td>
</tr>
<tr>
<td>The &quot;Conservative&quot; Position</td>
<td>The &quot;Liberal&quot; Position</td>
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<td>----------------------------</td>
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<tr>
<td><strong>Why Teach?</strong></td>
<td></td>
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<tr>
<td>To train the mind and cultivate men's high intellectual powers. To transmit the classical tradition and heritage to all who are capable of absorbing it. For those with little or no ability to absorb it, to transmit practical skills in reading, writing, arithmetic and mechanical techniques as needed to make a living.</td>
<td>To develop human potential; to serve the needs, purposes, and interests of the &quot;whole child&quot; and every child. To bring about desirable, observable changes in the individual and collective behavior. To develop individuals who will bring about desirable changes necessary in a healthy society.</td>
<td></td>
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<tr>
<td><strong>What Should Be Taught?</strong></td>
<td></td>
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<tr>
<td>for the less intellectually able, a thorough grounding in the three &quot;R's&quot; and manual training. For the most intellectually able, the content of man's intellectual heritage, which includes the most valuable discoveries, inventions, philosophies, history, arts, politics, mathematics, and economics.</td>
<td>Content is determined by the needs and interests of the developing child. A general curriculum may be followed, but no specific sequence or content is determined. Through the process of working with the &quot;whole child,&quot; the teacher is able to develop the subject matter to the child's immediate needs and purposes, and to orient his social and cultural problems is stressed.</td>
<td></td>
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<tr>
<td><strong>What Teaching Methods Should Be Used?</strong></td>
<td></td>
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<tr>
<td>Methods are designed to encourage the growth of formulated bodies of knowledge.</td>
<td>Methods are intended to develop the potentialities of the &quot;whole child.&quot;</td>
<td></td>
</tr>
<tr>
<td>Emphasis is on answer-seeking based on lecture, drill, memorization, and repetition.</td>
<td>Emphasis is on answer-seeking. Activities carefully chosen to stimulate individual development through processes of inquiry and discovery.</td>
<td></td>
</tr>
<tr>
<td>Motivation for learning is supplied by inspiration from the teacher and success and promotions such as grades.</td>
<td>Child is evaluated in terms of the opening of his own potentialities rather than examinations alone.</td>
<td></td>
</tr>
<tr>
<td>Amount of knowledge acquired is evaluated by examinations.</td>
<td>Motivation comes from within the child as he engages in a purposeful learning activity; comparative grades reported by progress reports.</td>
<td></td>
</tr>
<tr>
<td><strong>The “Conservative” Position</strong></td>
<td><strong>The “Liberal” Position</strong></td>
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<td>--------------------------------</td>
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<tr>
<td>The teacher is a figure of authority—the source of knowledge and of discipline. Physical activity and expression of feelings are considered an interference to learning and are discouraged. Heavy emphasis is on books and programmed instructional materials designed to facilitate academic performance.</td>
<td>The teacher is a guide. Physical activity and expression of emotion are encouraged as indispensable parts of education of the “whole child” and as contributing factors in development of his ability to inquire and think. Heavy emphasis is on varied firsthand experience and, increasingly, on varied teaching aids such as films and recordings.</td>
<td></td>
</tr>
<tr>
<td><strong>Who Should Teach?</strong></td>
<td>Professionally educated teachers who are thoroughly familiar with the subject matter and the best methods of organizing and presenting it. Those who know how to inspire interest in learning and maintain discipline.</td>
<td>Professionally educated teachers thoroughly familiar with the subject matter, human development, and educational theory and methods. Paraprofessionals, interested adults, and other pupils are also considered qualified to contribute to the process of education.</td>
</tr>
<tr>
<td><strong>What Is the Best Setting for Learning?</strong></td>
<td>Schools built to house graded groups and equipped for instruction in special fields such as science. The setting should be conducive to lecture and recitation; desks formally arranged in rows facing teacher’s desk and chalkboard.</td>
<td>Schools built for flexible use of space to encourage brace group, small group, and individual instruction. Carrels for individual study; areas designed for team teaching and for use of teaching aids. Schools with even more flexible use of space—open schools—and provision for more advanced teaching aids such as computers.</td>
</tr>
<tr>
<td><strong>How Long Should Schooling Continue?</strong></td>
<td>Should be determined predominantly by the learner’s tested and proven ability to master academic subject matter and meet established standards of intellectual excellence.</td>
<td>Should be determined by the individual’s desire to extend and enrich his learning experience. University enrollment should be “open” to permit persons whose academic records do not meet the highest standards of intellectual excellence to begin post-secondary education. Possibility has been suggested for publicly supported lifelong schooling conceived as a “seamless curriculum” from which, and back into which, the learner can move as his needs and desires to learn carry him.</td>
</tr>
</tbody>
</table>
RECEPTION
Contains on large desk
View of entry required
Task Lighting

WORKSHOPS
OFFICE SPACE (2)
Two spaces @ 176 sq. ft. each
Needs drafting space
Task Lighting

WORKSPACE
Equipment required: band saw, drill press,
lathe, circular saw, work tables (2)

STORAGE (tools)

STORAGE (supplies)
Special 4 hour fire rating

BUILDING SPACE
Outdoor space adjacent req'd @ 500 sq. ft.
Electrical outlets 120v and 240v @ 6' o.c.

PRINT ROOM
Vent required

program

100 s.f.
356 s.f.
500 s.f.
150 s.f.
150 s.f.
500 s.f.
200 s.f.
<table>
<thead>
<tr>
<th>Space Type</th>
<th>Area (sq ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHOTOGRAPHY ROOM</td>
<td>200</td>
</tr>
<tr>
<td>STAFF OFFICES (For teachers and guides (30))</td>
<td>4160</td>
</tr>
<tr>
<td>Thirty spaces @ 130 sq. ft. each</td>
<td></td>
</tr>
<tr>
<td>Quiet spaces required</td>
<td></td>
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<tr>
<td>LIBRARY OFFICES (2)</td>
<td>300</td>
</tr>
<tr>
<td>Two spaces @ 150 sq. ft. each</td>
<td></td>
</tr>
<tr>
<td>Quiet spaces required</td>
<td></td>
</tr>
<tr>
<td>CONFERENCE SPACE</td>
<td>200</td>
</tr>
<tr>
<td>Sound proofing required</td>
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<tr>
<td>CLASSROOMS</td>
<td></td>
</tr>
<tr>
<td>SMALL CRAFTS (4)</td>
<td>2024</td>
</tr>
<tr>
<td>Four spaces req'd @ 506 sq. ft. each</td>
<td></td>
</tr>
<tr>
<td>Seating and desks for 20 students</td>
<td></td>
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<tr>
<td>Storage space req'd</td>
<td></td>
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<tr>
<td>Sink and counter space req'd</td>
<td></td>
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<tr>
<td>SMALL LECTURE (2)</td>
<td>1092</td>
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<tr>
<td>Two spaces @ 546 sq. ft. each</td>
<td></td>
</tr>
<tr>
<td>Seating and desks for 30 students each</td>
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<tr>
<td>LARGE LECTURE</td>
<td>4500</td>
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<tr>
<td>Seating for 250 students</td>
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<tr>
<td>Sound proofing required</td>
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<tr>
<td>Small stage and prep area required</td>
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<tr>
<td>LIBRARY (10,000 volumes)</td>
<td>1400</td>
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<tr>
<td>Storage for 1,300 lin. ft.</td>
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<tr>
<td>Reading space for 12 people min. @ 30 sq. ft. each</td>
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<tr>
<td>Sound proofing required</td>
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<tr>
<td>TOTAL SPACE REQUIRED</td>
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<tr>
<td>FOR EDUCATION</td>
<td>13,776</td>
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<td>FOR WORKSHOPS</td>
<td>2,056</td>
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calculations
**DIAGRAM**

- **Option One**
  
  - 1.0%  
  - 0.95  
  - 2.00  
  - 6.59 R

- **Option Two**
  
  - 1.0%  
  - 1.49  
  - 2.00  
  - 3.55 R
CONCEPT


"Education", Compton's Encyclopedia, Volume 8, pp. 76-78.


_____, "Ontario's Participatory Museum", (Indianapolis Children's Museum Publication).


DESIGN


CONSTRUCTION


