THE EXPLORATION OF A DESIGN METHODOLOGY

NORTHWEST ELEVATION

NORTH ELEVATION

NORTHEAST ELEVATION

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BALL STATE UNIVERSITY
COLLEGE OF ARCHITECTURE AND PLANNING
This thesis document is submitted in partial fulfillment of the course requirements for Architectural Thesis ARCH 406 and the requirements for the degree: Bachelor of Architecture.

Building Types: Residential, Civic, and Commercial.
Projects Located in Indianapolis, IN; Gaston, IN; and Louisville, KY.

Thesis Committee Chairman-Prof. C. Daniel Woodfin
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67 pages.

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I would like to thank my wife Amy for her loving support, and constant revisions of my writings; Dan Woodfin for introducing me to and teaching me a timeless way of building; and my parents Dan and Pam Nall for their generous moral and financial support through these 23 years and especially these last five years of college. Without these people this thesis would not be possible.
ABSTRACT

Development as a creative designer is a life-long pursuit which must be based upon critical, personal evaluation of the relation between one's design process and results.

My thesis is essentially an evaluation of my design process through the use of a design methodology. The use of a design methodology will allow me a common ground for evaluation of design projects. The thesis is that by the critical evaluation of my design process I can improve what I produce as an architectural designer.

The explorations that I used to look at my design process are a series of architectural design projects based on the design method set forth by Christopher Alexander in his books *A Timeless Way Of Building* and *A Pattern Language*. The first project of the series was a residence for my wife and me on Geist Reservoir near Indianapolis, Indiana. The second project of the series was a volunteer fire station for the town of Gaston, Indiana. The third project of the series was a speculative bar and grill located in Louisville, Kentucky.
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My thesis is about a search, a search for a way to make and understand good buildings. This idea about how one goes about making and understanding good buildings was first sparked upon my return from a field study tour to Europe and the Middle East, called Golden Crescent. The countries visited included England, Greece, Egypt, Israel, and Italy. The field study was significant in that for three months I did nothing much else but look at and experience architecture.
Some of the most memorable places were Mt. Athos and Santorini in Greece; The Nile valley, Luxor temple, and the mosques in Egypt; Akko and Jerusalem in Israel; and Venice in Italy. Upon my return from Golden Crescent, I was searching for a way to create buildings like I had seen. I wanted to make buildings as beautiful as the vernacular architecture of Santorini, Jerusalem, or Venice. But, I did not feel that I had that capacity after four years of design school. The design classes I had after coming back from Golden Crescent made me even more uncomfortable about the way I was designing buildings. So, I started looking back at the way I had designed things in my four years at Ball State. I realized that I had tried to do projects by doing exactly as the professor wanted them, according to his particular bias. I had done projects which were literally copies of revered professional’s work from books and magazines.
(not intentionally): I did create my own original schemes by using a design parti or a geometric system to organize and unify the design scheme, and I also used philosophical statements as a starting point for various schemes. But, all of these methods seemed to be so arbitrary to me. I wanted to be able to look at what I was doing as a designer, and be able to evaluate it. I was not happy with blindly accepting sheer luck and intuition as a design solution. I feel that architecture is much too complex to approach it that way. I know now that I was looking for a way to design that had its foundation in the built environment. In my last fourth-year design studio I signed up for Dan Woodfin’s section. The project was a monastery and the design method we used for the studio was based on two books by Christopher Alexander entitled The Timeless Way Of Building, and A Pattern Language. I had heard of the books and had read part of The Timeless Way Of Building but had never really tried to apply what I had read. I agreed with Alexander's theories, (what I knew of them), and wanted to try them. While designing the monastery I kept a design notebook, which related directly my experience in the built environment to what I was doing in studio. The design notebook was essentially used in a four-step design process outlined in chapter 20 entitled One Pattern At A Time of Christopher Alexander's The Timeless Way of building. The example Alexander gives is for the design of a window place.

The first step explained by Alexander is to remember all the examples of the pattern that you have known and experienced, especially the best examples. And remember the aspects of the window place which make it beautiful, the light, the way the seat is, etc. (Alexander TWOB p.390)

The next step is to "Ask yourself how this pattern would look if it were already in place where you are wanting it."

(Alexander TWOB p. 391)

The next important aspect of the process is " To keep the pattern strong, it is essential that you don't put in any other details."

(Alexander TWOB p. 391)

In the final step Alexander states that "The most important thing is that you take the pattern seriously. There is no point at all in using the pattern if you only give lip service to it."

(Alexander TWOB p. 392)

The following is an example of one of the pages out of the design notebook which I first started using in ARCH 403 with Prof. Woodfin.
My first thoughts about using patterns and keeping a design notebook this way were ones of wondering why I had not learned this earlier in my schooling. I really felt that using this design method helped my design have a foundation in building, and the built environment. Using this method was also a revelation in design process for me. I was now able, with this method, to check the issues I had considered and decide how well I had responded to them. I could also be sure that by using *Pattern Language*, my design could be built, and contribute to the well being of the environment.
At the onset of thesis, I started to question my acceptance of Christopher Alexander's theories as my way of doing design. I did not feel as though it was right to blindly accept what Alexander proposed as a design methodology. I wanted to discover the origin of Christopher Alexander's work, and in finding the origin of his writings, I could better understand my acceptance or denial of the design methodology. So, I started reading about aesthetics, thinking that Alexander's work was possibly based on some specific philosophy of aesthetics. In my research, I read a paper written by Dr. Shumacher, in the English Department at Ball State, entitled "A Sense Of Art And Beauty". The article essentially stated the Existentialist view of art and beauty. This seemed to me to be a similar, if not the same, philosophy used by Christopher Alexander in his book The Timeless Way Of Building. At that point the goal of my thesis was to prove that doing architecture according to The Timeless Way of Building, and A Pattern Language was in fact doing art from the Existentialist point of view.

The thesis was to prove that this relationship existed by doing a series of three houses according to The Timeless Way Of Building and A Pattern Language, and evaluating them from an Existentialist point of view, using philosophy faculty as consultants in the process. Half-way through my first quarter of this endeavour, I realized that this was purely an academic exercise, and I really did not see how it would benefit me as a designer. I already believed that The Timeless Way Of Building was written from an Existentialist viewpoint, so the proof of what I already believed was seemingly useless. My thesis changed directions at that point. I decided to go back to an idea that I had had earlier in my career, the idea to use A Pattern Language as a foundation for my designs, and at that point in my thesis, I wanted to evaluate and observe my design process. I wanted to observe the way I designed so that I could improve it. I wanted to come out of the thesis year with insights that I could use after I'd graduated. By using a Pattern Language as a basis for doing architectural projects each building would have a base level similarity. This would be a great benefit in doing projects for evaluation. The idea was to do three projects as I had originally intended, but not to prove any profound point about architecture, rather to explore my own design process and give myself a foundation for doing buildings once I'd graduated from Ball State.

There are many reasons for choosing to do three projects other than that my initial thesis proposal stated that I would be doing so. The first reason was to choose a number that I could manage in the time I had to do them, approximately four months for the design portion of my thesis. The next reason was in doing three, I had a series of projects to compare, not just two which would create an either or situation. I also wanted to explore the ways Pattern Language could be used in several areas of architecture. The projects dealt with residential, civic, and commercial buildings.
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The first step in my design explorations involved the testing and understanding of what Patterns were exactly. Christopher Alexander explains the nature of patterns the best.

"The elements of this language are called 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 pattern, in such a way that you can use the solution millions of times over without ever doing it the same way twice."(Alexander APL P.X)

The testing and evaluation of a representative pattern was conducted through actual field observation. The method used is also outlined by Alexander in The Timeless Way Of Building.

"We may then gradually improve these patterns which we share, by testing them against our experience: we can determine very simply, whether these patterns make our surroundings live, or not, by recognizing how they make us feel."(p.277)

This evaluation of patterns in terms of the way they make us feel seems like a very un-scientific approach towards research, but that is actually an accurate description of what is going on in the environment. Buildings which work on an empirical level can also be dead buildings. This complex idea is best explained by Alexander in The Timeless Way Of Building Chapter 15.

"One test says that a pattern is alive if its individual statements are empirically true."
(p.282)

"But a pattern is not alive just because its component statements are true, one by one."
(p.283)

"Even the fact that a pattern seems sensible, and has clear reasoning behind it, does not mean at all that the pattern is necessarily capable of generating life."(p. 284)

"A pattern works, fully, when it deals with all the forces that are actually present in the situation."(p. 285)

"The difficulty is that we have no reliable way of knowing just exactly what the forces in a situation are."(p. 285)

"What we need is a way of understanding the forces which cut through this intellectual difficulty and goes closer to the empirical core."(p.286)

"To do this, we must rely on feelings more than intellect."(p. 286)

The field observations used to test a pattern from A Pattern Language were conducted in Louisville, Ky in a rich context known as Cherokee Triangle. The Pattern selected for testing was #112 Entrance Transition. The reason for choosing this pattern was mainly because I thought it would be easy to find examples of the pattern. The observations were done by my wife (a non-architect) and me. One of the reasons for having my wife evaluate the patterns as well as myself was that I had a bias towards how the built environment works due to my four years of architecture schooling, and she had had no architectural schooling. I felt that if the patterns were really alive she could sense them better than I because she could only evaluate the examples in terms of the way she felt about them, and I would perhaps sometimes think the environment felt right due to my liking a
particular building's detailing, etc. The results were a design criteria for an entrance transition, which contained a contextual bias due to the research being done in a single neighborhood. But, the research supported the findings of Alexander and his definition of #112. Entrance Transition. (See ARCH 451 Research Paper for a more in depth explanation of the research on #112 Entrance Transition) The following is an example of the type of data sheet used in recording the field observations, and a copy of the definition of #112. Entrance Transition can be found in A Pattern Language.

(Sample Field notebook page)
The next step in the thesis exploration was to start the architectural projects. In order to make the final evaluation of the architectural projects accurate and easier to evaluate, I tried to approach each problem in a similar manner. The first step in the process for each design was to be the collection of site data, then the establishment of a program, then the deciding of a Pattern Language for use. The process involving the use of the patterns would be the same as my ARCH 403 monastery, through the use of a design notebook, directly using my experience and contextual examples for the design of the building. The following is an example of an entry page from the fire station design notebook, the notebooks for the residence and bar and grill are similar.
The first project was a residence for my wife and me on Geist Reservoir near Indianapolis, IN. The site is located on the north side of the lake, near the Indianapolis Sailing Club. The following maps show the location of Geist Reservoir in relation to the city of Indianapolis, the location of the site in relation to the lake, and the location of the site within the Masthead subdivision.
The following photographs show the context and site used for the residence.

(Residence, homes to the north)

(Residence, site looking at north edge)

(Residence, site looking southeast)
The problem was to design the residence incorporating the 25% south-facing slope. Other criteria included the focus of the residence on to the lake and easy access and views to the lake. The residence was to meet the present and future needs of my wife and me.

The program, as follows, was developed from conversations with my wife, Amy. The building type research was in the form of looking through periodicals and studying the houses we liked.

**RESIDENCE PROGRAM**

**KITCHEN/DINING ROOM**
*island with cooktop
*dining room table, china cabinet
*breakfast nook for approx. 5 people.
*provision for later addition of formal dining room.
*appliances: cooktop, convection oven, microwave oven, dishwasher, refrigerator.

250s.f.

**LAUNDRY ROOM**
*place for woman of the house to get away
*desk, comfortable chair, view to the lake
*fold down ironing board in wall, five linear feet of closet space, including soap storage, etc.
*location conducive to laundry chute, possibly unnecessary, (depending upon location of room)
*appliances: washer and dryer.
*double sinks
*office can be adjoining a laundry "closet"

200s.f.

**OFFICE/LIBRARY**
*50 l.f. of bookshelves
*drafting table, layoff table, four 4-drawer file cabinets,
*two comfortable chairs, library table and chairs.
*view to lake.

200s.f.

**UTILITY ROOM**
*water heater, furnace

20s.f.

**HALF BATH**
*possibly located underneath stairway
*provide restroom facilities to guests.(w.c. & lav.)

100s.f.

**MASTER BEDROOM**
*fireplace, sitting area with two comfortable chairs and a table.
*kingsize bed, two large dressers, etc.
*walk-in closet approx. 25 l.f. of hanging space
*make-up area, possible balcony, and bay window.

250s.f.
MASTER BATHROOM .......................................................................................... 150s.f.
  *hot tub, shower, sink, clothes hamper.
  *linen and cleaning supplies closet.

CHILDREN’S ROOM ...................................................................................... 400s.f.
  *2@200s.f. ea .................................................
  *play area, desk, 30 l.f. of bookshelves, adequate area for two beds and two desks.

CHILDREN’S BATHROOM ............................................................................ 120s.f.
  *bath/shower, sink, linen closet
  *clothes hamper

FOYER ........................................................................................................... 150s.f.
  *10 linear feet of coat closets
  *staircase
  *focal element of the house.
  *possibly gallery type space.

STORAGE ....................................................................................................... 200s.f.
  *approx. 200s.f.

FAMILY ROOM ............................................................................................ 250s.f.
  *conversation area with two chairs and a couch.
  *television placed so that it is not the central focus of the room.
  *game cabinet, and game nook.
  *game and breakfast nook could be the space.
  *fireplace as a central focus.
  *possibly a bay window.
  *stereo with concealed speakers.

2-CAR GARAGE AND CARPORT .................................................................. 600s.f.
  *workshop with approx 10 l.f. of work space.
  *boat trailer storage.
The *Pattern Language* used for the project was primarily decided upon by me with some discussion of patterns with Amy, and is as follows.

**RESIDENCE**

**PATTERN LANGUAGE**

The pattern language for this project is to be dependent upon the present and future needs of my wife and me.

25. Access To Water

This applies to views of the lake within the house, and also the lake front development of the property.

76. House For A Small Family

This applies to the functional zoning of the house, and allows each member of the family to have his or her own area of the house.

95. Building Complex

This deals with the articulation of the various domains of the house.

104. Site Repair

This deals with the siting of the building on the property so that it improves the area.

105. South Facing Outdoors

This applies primarily to the lake side of the house.

106. Positive Outdoor Space

This comes into play when looking at the lake side of the house, where the majority of the open space will be.

107. Wings Of Light

This is important when considering the various zones of the house, and the articulation of the building forms.

116. Cascade Of Roofs

This comes into play when dealing with the expression of the various elements of the building.

117. Sheltering Roof

This applies especially to the use of the space underneath the roof of the house, and the dominance of the roof structure. This is an important consideration in this design because the building will be downhill from the road or entry point.

111. Half-Hidden Garden

This deals with the notion of garden as a place not just the extension of the outdoors.

110. Main Entrance

This must be carefully considered along with the zoning of the house, so as not to be inconvenient.
113. Car Connection

Car entrance is the main entrance, this comes into play in the relationship of the garage to the house.

112. Entrance Transition

This I have researched on my own, and I will definitely consider when looking at the entry of the house.

114. Hierarchy Of Open Space

This also deals with the identity of the open space especially on the lake side of the house.

127. Intimacy Gradient

This pattern comes into play primarily in the consideration of interior zoning.

128. Indoor Sunlight

This deals with placing the rooms in proper relationship to the sun.

131. The Flow Through Rooms

This deals with the amount of circulation in the house, and also the organization of rooms.

129. Common Areas At The Heart

This is the family room in the program.

130. Entrance Room

This is the foyer in the program.

138. Sleeping To The East

This is also an important consideration in the zoning of spaces.

136. Couple's Realm

This should be considered in the design of the sitting space of the master bedroom.

137. Children's Realm

This is an important zoning consideration in the house, and also in the design of the children's room(s).

139. Farmhouse Kitchen

This is important in considering the living room-kitchen connection, and also in the physical configuration of the kitchen.

141. A Room Of One's Own

This should be considered when placing the laundry room, and the office in the program.

142. Sequence Of Sitting Spaces

This applies when considering practically every room of the house.

145. Bulk Storage

This could possibly be incorporated in a basement area.
The residence was, at first, a very frustrating endeavor for me as a designer. I had a great deal of trouble integrating patterns the first time I went through the process, as was very evident by the disjointed nature of my first scheme. Here are some of the sketches I did leading up to the first design solution.
I also ran into problems in the plan and facade arrangement. I found myself copying elements from my favorite designs out of the periodicals. At my first review of the project, I wasn't very happy with the solution I had come up with, so I decided to start over. I re-thought the order in which I wanted to consider each pattern and tried harder to integrate the patterns as I went. It took me quite a while completing the process the second time; I considered four to five patterns at a time, and tried to have a completed design after each set. One of the biggest hindrances on a quick solution was my indecision on how to deal with the garage. The following solution is a result of the second time through the design process.
After going through the process a second time I still was not satisfied with the end product. So, I decided to deal with the patterns in sketch form and not writing. I filled up an entire sketch book with manipulations of the existing designs, and finally, just as an act of desperation, I asked Amy to show me what she thought the plan of the house should be like. This is her sketch.

I don't know what happened after that, but I was able to come up with a fresh design which is essentially what you see in these photos and drawings. Using this design process took seven weeks to produce the design solution you see on these next pages.
FIRE STATION
The second exploration was a Volunteer Fire Station for the town of Gaston, IN. The following maps show the location of Gaston and the location of the proposed site within the city.
The following photographs show the site and context used for the volunteer fire station.

(Fire Station, site looking southeast)

(Fire Station, existing structure)

(Fire Station, buildings to the east)
(Fire Station, site looking southwest)

(Fire Station, buildings to the west)

(Fire Station, IGA to the north)
The problem was to improve the quality of the volunteer fire station and to relocate the fire station's facilities to a more public site within the town of Gaston. Another goal of the fire station project was the creation of a piece of civic architecture for the town. Urban design issues, that were also determining factors in the design, included the strengthening of the downtown, street edge and reinforcement of the town's existing activity areas.

The program, as follows, was essentially the same as their existing facility, with the inclusion of a foyer for the meeting room, and an office for the newly-hired ambulance driver. The office would also serve the fire station as a records room.

**VOLUNTEER FIRE STATION PROGRAM**

**CONSTRUCTION MATERIALS** Brick veneer and concrete masonry.

**FUNCTION** Volunteer fire department / Ambulance service.

**TYPE** Enough bays to hold seven vehicles.
- 2 tanker trucks.
- 2 pumper trucks.
- 1 ambulance.
- 1 emergency truck.
- 1 grass rig.

**APPARATUS ROOM** 4525 s.f.
- to hold rescue vehicles, fire fighting gear, (this space also serves as a polling station for elections)

**RESTROOMS** 35 s.f. each 55 s.f.
- one men's and one women's (stool and sink)

**FOYER** 185 s.f.
- immediate adjacency to the restrooms, kitchen and meeting areas.

**RECREATION/MEETING ROOM** 355 s.f.
- to be used for fire fighters, civil defense, conservation club, kitchen included (22 fire fighters on the force)

**DAY OFFICE** 170 s.f.
- for ambulance personnel and fire department records.

**MECHANICAL ROOMS** 20 s.f.
- water heater and hvac.
The Pattern Language used for the volunteer fire station was decided upon before visiting the town of Gaston and is as follows.

**VOLUNTEER FIRE STATION PATTERNS LANGUAGE**

The pattern language for this project is to be dependent upon the present and future needs of the volunteer fire department of Gaston, Indiana.

28. Eccentric Nucleus  
This essentially is what will determine the location of the building site within the city.

72. Local Sports  
This will be necessary when placing the basketball goal.

95. Building Complex  
This deals with the articulation of the various programmatic requirements in the program.

97. Shielded Parking  
This asks for a natural wall to hide the cars, and make a gateway that serves the parking lot.

99. Main Building  
This asks for me to determine the main building of the town, and not to interfere with its expression.

100. Pedestrian Street  
This asks that I look at the pedestrian aspect of the downtown in which the project is proposed.

103. Small ParkingLots  
This asks that the number of cars per lot be restricted to 5-7.

104. Site Repair  
This deals with the siting of the building so that I build on the worst part of the land and save the best parts as they are.

105. South Facing Outdoors  
This asks me to deal with the southern facade and outdoor space adjacent to the building to the south.

106. Positive Outdoor Space  
This asks me to enhance the outdoor space of the city with my design scheme, creating room-like exterior spaces.

108. Connected Buildings  
This asks me to deal with the context of the adjacent buildings, by connecting them together.

110. Main Entrance  
This must be carefully considered along with the zoning of the fire station, so as not to be inconvenient. This asks for expression of the main entrance of the building.
112. Entrance Transition

This I have researched on my own, and I will definitely consider when looking at the entry of the fire station as I did in the house.

114. Hierarchy Of Open Space

This pattern is important to consider when designing the open space around the building.

128. Indoor Sunlight

This asks that the habitable spaces be oriented toward the south.

130. Entrance Room

This is the foyer in the program.

139. Farmhouse Kitchen

This is the kitchen of the fire station.

140. Private Terrace On The Street

This is the public plaza to the southeast of the site, which would be used during the festival.

149. Reception Welcomes You

This is the entrance lobby of the fire station.

150. A Place To Wait

This is included in the entrance room.

152. Half-Private Office

This should be considered when designing the office.

159. Light On Two Sides Of Every Room

This is especially a consideration when laying out the plan of the building.
The fire station was started similar to the residence, but I did not do any collection of site data at the beginning of the process. I started by researching the building type and going through the patterns. I did all of this before I had visited the site, taken photographs, or visited the existing facility. I started the problem with a Pattern Language in mind, a program determined, and an understanding of how typical fire stations are arranged programatically.

One of the hardest problems to deal with physically was the need for the larger trucks to have at least a 30 foot apron in front of the doors. This was a problem because the building had to be pulled right up to the street on the north facade to reinforce the urban corridor formed by the buildings of downtown. I dealt with this by allowing the larger trucks to exit the building on the west side.

Also to keep the presence of the apparatus room doors on the main street of the town, I placed three smaller truck bays facing onto Elm Street, the main street of Gaston. Another problem I had in the fire station design was in trying to reinforce the activity area present in the entry of the IGA across the street from the fire station. The people spaces of the fire station needed to be on the corner to reinforce the activity at the IGA, but I also wanted to keep the cornice line of the two-story structures to the west, in the downtown. The solution was the retention of the street edge and the activity areas, and the second story cornice line was picked up by the facade of the apparatus room facing onto Elm Street.

Another real problem with the fire station was the facade design. The problem I was faced with was how to make it a contextual building without its being a copy of the existing buildings, or its being the most dominant building in the downtown. The solution is an abstraction of the elements found around the fire station; the wall construction is red brick veneer, to fit in with the red brick buildings in the fire station’s context.

One of the most fascinating aspects of the fire station design is that since the first scheme I developed, I have come up with basically three alternate designs, based on the criticisms I had received in subsequent reviews. The final design is almost exactly the same as the initial design when I first had completed the design process involving the consideration of the Pattern Language. As it turns out, the scheme that grew directly from the Pattern Language is the best with only minor revisions. The revised schemes all fall short in meeting the criteria in one way or another. The following diagrams represent the various schemes I have come up with for the fire station.
The design process for the finished fire station design took approximately five weeks, two weeks less than the residence. And the final result is the drawings and model you see on these next pages.
(Firestation, model looking east)

(Firestation, model looking north)

(Firestation, model entry and rear terrace)
BAR AND GRILL
The third project of the thesis exploration was a speculative bar and grill located in the city of Louisville, KY. The following maps show the location of Louisville and an aerial photograph of the site.
The problem was to find a site to build on which would enhance the character of Bardstown Road, the main road passing directly in front of the site. The site chosen is an existing parking lot that has one large tree on the corner and a gradual slope to the west. One of the reasons behind the selection of the project and the selection of the site was the rich and varied context of Bardstown Road. The following photos show the site chosen and the immediate context of the project.

(Bar and Grill, site looking west)

(Bar and Grill, buildings to the southeast)

(Bar and Grill, buildings to the northwest)
Extensive research was done on the site and building type before starting the actual design process. I went to the Jefferson County Zoning Commission and researched the requirements put on the site by its C-2 zoning classification. I also read the information in the Jefferson County Comprehensive Development Plan, which pertains to all commercial development. Additional research also included going into similar type facilities in the area and studying the interior arrangements, the relative ratio of kitchen to eating areas, and taking notes on the type of physical facilities each similar establishment had. For this project, I also took a great number of photos before beginning the design process. These photos proved to be an invaluable reference when working out the design of specific elements.

The next step following the research and familiarization phase, was the development of a program for the bar and grill, which is as follows.

**BAR AND GRILL PROGRAM**

The following program is for a speculative bar and grill on the corner of Deerpark and Bardstown Roads in Louisville, KY. The bar is to be similar in size and scale to the existing bars up and down Bardstown Road.

**BAR** .......................................................... 1393 s.f.
To include bar, back bar, television, 2-waitress sections, 2-cash registers, under counter refrigerator, hand sink, glass washing sink, 2-cobra-head soft drink dispensers, 2-ice bins, blender shelf, bottle and glass racks, 2-two-tap beer taps, 2-four person tables, 2-two person tables, 24 bar stools, and 55 l.f. of bar area, this area will be served by three bartenders at peak demand.

**DANCE FLOOR** ............................................. 693 s.f.
To include stage area for D.J. or band.

**DINING ROOM** ........................................... 1274 s.f.
To include seating for 70 people (@18 s.f. per person), possible fireplace or focus, 3-service stations (24"x36" ea.).
KITCHEN AREA ........................................... 882 s.f.
To include 3-hot food wells, 3-hot soup wells, sandwich unit, microwave oven, rotary toaster, coffee maker, hand sink, pot sink, 2-deep fat fryers, fry dump station, 12 l.f. of work counter, 2-freezers, griddle, exhaust ventilator, range, 2-refrigerators, single tank dishwasher.

STORAGE .................................................. 240 s.f.
To include dry and cool storage areas.

DOCK .................................................................. 90 s.f.

RESTROOMS .................................................. 130 s.f.
2-Women’s restrooms to include 2-stools, and a sink. 2-Men’s restrooms to include a stool, a urinal, and a sink. One set of restrooms for public and one set for employees.

JANITOR'S CLOSET .......................................... 40 s.f.
To include a slop sink, mops, brooms, and cleaning supplies.

MECHANICAL SPACE ......................................... 42 s.f.

STAIRS (3 SETS) ............................................. 590 s.f.

5370 n.s.f.
6100 g.s.f.
The next step was a bit different than the previous project; this time I did an intensive review of the patterns, where as on the previous projects the pattern review process took the bulk of the design time. The patterns considered are found in this listing of the Pattern Language used for the project.

BAR AND GRILL
PATTERN LANGUAGE

The following is a tentative pattern language for a bar and grill on the corner of Deerpark and Bardstown Roads in Louisville, KY.

30. Activity Nodes.
   This deals with the notion of strengthening the activity that already takes place at this intersection.

32. Shopping Street.
   This deals with the orientation of the building in relationship to the street.

33. Night Life.
   This deals with the enhancement of the night life along Bardstown Road, and the concentration of night-time oriented establishments in one area.

48. Housing in between.
   This applies to the possibility of the bar owner living above the establishment or perhaps apartments.

63. Dancing In The Street.
   This deals with the outside areas of the bar especially along Bardstown Road.

88. Street Cafe.
   This deals with the atmosphere of the bar and grill during the day and especially during the summer time.

90. Beer Hall.
   This is the bar and grill, and its siting should enhance this notion as a place.

95. Building Complex.
   This asks for articulation and identification of various elements of the building.

97. Shielded Parking.
   This asks that the cars not be seen from the pedestrian street.
98. Circulation Realms.
This is to be considered when organizing the plan of the building as well as the site.

100. Pedestrian Street.
The pedestrian street is Bardstown Road and this should be reinforced by the design. On this site the corner of Bardstown and Deerpark should be an activity area.

102. Family Of Entrances.
This deals with the familiarity and clear identity of entrances within the "building complex".

104. Site Repair.
This asks me to build on the unhealthy parts of the site, and not build on the best parts of the site.

105. South Facing Outdoors.
This deals with peoples’ preference for the sunny spaces. Primarily along Deerpark Road. This should be considered in designing a beer garden.

106. Positive Outdoor Space.
This asks me to deal with the outdoor spaces in a room-like way.

110. Main Entrance.
This asks that the primary point of entry be visible and obvious from the street as well as the parking area.

112. Entrance transition.
This calls for a transitory area before one enters the building.

114. Hierarchy Of Open Space.
This would come in to play in dealing with the outdoor portions of the building.

This asks that the roof be the highest in the middle, and have other lower roofs that cascade down from it.

117. Sheltering Roof.
This will be an important consideration when deciding what functions should take place in the upper stories of the building, and asks that the space underneath the roof be occupied looking at the "cascade of roofs".

125. Stair Seats.
This will become a link from the restaurant to the street, especially since the site is elevated off of the street.
127. Intimacy Gradient. This comes into play when considering the placement of various spaces within the building.

128. Indoor Sunlight. This is especially important in the daytime function of the dining room.

130. Entrance Room. This would be the hostess area of the restaurant.

131. The Flow Through Rooms. This asks for the elimination of hallways and encourages a more open plan.

133. Staircase As A Stage. This is included as a consideration for people to see and be seen by other people.

144. Reception Welcomes You. This is important mainly in the entrance of the restaurant part of the building.

150. A Place To Wait. This is important in the restaurant portion of the building.

159. Light On Two Sides Of Every Room. This is probably not as crucial because the main activity occurs at night, but should be considered.

161. Sunny Place. This could be incorporated in an outdoor area of the bar.

164. Street Windows. This is especially a concern for the daytime portion of the building, and its orientation to Bardstown Road.

171. Tree Places. This is important when dealing with the one existing tree on the corner of the site.

179. Alcoves. This can be an important concept in the intimacy gradient of the restaurant and bar.

180. Window Places. This is an important part of alcoves.

182. Eating Atmosphere. This deals with the configuration and lighting of the dining room.

190. Ceiling Height Variety. This deals with the breaking up of the ceiling plane so as not to create monotony and to encourage the intimacy gradient.

244. Canvas Roofs

This might be important when dealing with the restaurant or bar area seating.

These could be incorporated in the southeast terrace of the restaurant portion of the bar and grill.
I spent a total of four days working on the patterns in my design notebook, as opposed to some four weeks or more on the residence and fire station. The number of patterns I tried to deal with in the bar and grill was greatly increased so as to gain experience with and understand some of the more detailed patterns found in *A Pattern Language*. I worked on the patterns for approximately four to five hours per day during the four days I worked on them. The following sketches represent preliminary drawings before the scheme was hardlined.
The finished scheme you see is the only one. Admittedly, the scheme is not completely refined, but it is a good solution for the issues I was dealing with. The bar and grill took only three weeks to design and has not been revised, except for some minor adjustments. I believe I need to be removed from the design for a little while longer to realize any inconsistencies or problems with it. The following photos and drawings are the finished design.
Throughout my search and exploration I encountered a considerable amount of doubt and even some adversity pertaining to the use of Christopher Alexander's *Pattern Language*. Many thought that patterns were formulas for design, but I argue that they are actually principles for design. By formulas I mean set solutions; by principles I mean guidelines, considerations for design. Nevertheless, despite any opposition my search was one of personal exploration and discovery. Thus, I discovered that my awareness of and my response to design and the built environment was much more acute. Using the patterns as a guide not only aided me in the consideration of certain issues in design, but acted as a means by which to check to see if I had appropriately responded to them. More importantly, using patterns in my designs helped me to develop more keenly my own ideas of good architecture.

Good architecture incorporates many criteria, and design is a very complex thing, but I clearly came out of this thesis year with a good handle on making architecture when I exit school and continue my career in the real world. I also came out of these three projects with a deeper understanding and respect for contextual architecture--architecture which responds to its surroundings, fits in the context of its own needs.

I challenged my abilities this year by choosing to do not only three projects, but three projects which each represented a different area of building within the profession--residential, civic, and commercial architecture. Thus, I found that my task in dealing with the designs required an extensive amount of research before beginning the design phase of a project, including zoning, code and building type research. I also found that by using *A Pattern Language* my designs were very contextual solutions, and by using *The Timeless Way Of Building* design methodology, my designs were very resolved with the first completed solution. I also realized that one of the most difficult things about using the design methods outlined by Alexander is the integration of patterns, the evolution of one resolved pattern into a complete coherent design. In using this method I also discovered that with each project I did using *Pattern Language*, the process got easier, and I created patterns automatically because I had developed a sort of value system for design. This quote from *The Timeless Way Of Building* I think sums up my conclusions about the discoveries I've made by using *Pattern Language*.

"Indeed this ageless character has nothing, in the end, to do with languages. The language, and the processes which stem from it, merely release the fundamental order which is native to us. They do not teach us, they only remind us of what we shall discover time and time again, when we give up our ideas and opinions, and do exactly what emerges from ourselves." (p. 531)

In this subjective world of architectural design, not even a purely pragmatic building can be looked at objectively. And so in my thesis I've not attempted in any way to reduce the art of architectural design to a mere science or fine art for the intellectually elite. I have only attempted to observe and evaluate my own design process so that my random solution-seeking methods might be refined into a process which is consistent and responsive to the many needs of the many different buildings.
BIBLIOGRAPHY


