

Sample Masters' Theses in Graduate Design Option-Design Research Concentration

Brodie Ann Bain

An Approach to Buildings: The Entry Sequence M.Arch 1989

The entry sequence to a building includes the approach to the building, the opening and the arrival space beyond the opening. It has been important to designers throughout the centuries. Surprisingly little has been documented specifically on the entry, however. A literature review investigating the different elements that make up this sequence gave insight onto issues that may contribute to its success. A conceptual model of issues related to the provision of a successful entry was then developed.

A field study examined components of this model from the literature. It set out to: 1) examine the major concepts thought to contribute to a successful entry in order to determine whether they each actually contribute, and how strongly they contribute, to the presence of a successful entry; 2) study one of the five concepts, legibility, more in depth; 3) examine the difference between designer and non-designer perceptions of entry.

Twelve entry sequences in Columbus, Indiana were videotaped and presented to designers and non-designers. After viewing the tape twice, respondents were asked to rate the sequences in terms of issues in the model. Designers (used as a "panel of experts") were also asked to rate each sequence for the general concepts in the model.

The results show several things. In general, designers were more extreme in their answers. Four of the twelve entries were rated significantly different between groups. Several variables were also often rated differently.

The model testing revealed that legibility and sense of place are significant predictors of a successful entry; mystery, however, is not a significant predictor. Further analysis showed that mystery and legibility are significant predictors of sense of place. Legibility is a significant predictor of mystery.

Thus, sense of place appears to be an important characteristic of a successful entry. Legibility is also important. Both legibility and mystery contribute to a sense of place. It appears that the experiential opportunities afforded by the entry sequence are important. The designer ought to give the entry sequence adequate attention. Additional research should attempt to further understand the specific components that contribute to a successful entry including sense of place and legibility.

Two papers based on Ms. Bain's masters' thesis research were published in the Environmental Design Research Association's (EDRA) national conference proceedings (1989 and 1990). Ms. Bain received the First Prize for the EDRA Student Research Award as well as the Association of Collegiate Schools of Architecture (ACSA) Student Research Award, both in 1990.

Altaf Engineer

BRIGHT IDEAS: The Increasing Importance of Daylight in Museum Settings

M. Arch 2005

The introduction of daylight in museums has been a topic of controversy ever since its damaging effects on artwork were discovered early this century. Museums were also becoming places for entertainment in addition to containers for art. The evolving nature of the museum program made it even more difficult to introduce daylight in it. Many architects eliminated it completely from the museum program. Philip Johnson led the way by introducing the neutral "white box" galleries in the Museum of Modern Art, New York in 1951. However, in 1972, Louis Kahn introduced daylight in the Kimbell Art Museum in Fort Worth, Texas. In addition to receiving positive acclaim, this museum also started a new wave of museum designs which incorporated daylight not only in their lobby spaces, but also in their art galleries.

In this study, seven world-renowned museums in Texas were observed, documented and critically analyzed in terms of the spatial quality as well as daylighting techniques used. These museums included: Nasher Sculpture Center, (Dallas); Kimbell Art Museum, Museum of Modern Art, (Fort Worth); Beck Building: Museum of Fine Arts, The Menil Collection, Cy Twombly Gallery and Rothko Chapel, (Houston). An environmental behavior study was done using two methods: (a) A short questionnaire was given to staff officials at each of these museums and (b) A literature review of newspaper articles and environment behavior journals which voiced public opinion about these museums was also conducted.

These studies lead to a detailed understanding of how daylight could be used effectively in museums and particularly, in museum gallery spaces. It was found important to control daylight in order to achieve three conditions: (a) eliminate UV rays so as to prevent damage to artwork (b) eliminate glare and keep light intensity to the recommended levels within conservation standards (c) create optimal viewing conditions for the people. In all the galleries, it was observed that daylight was brought in from the ceiling and not the side walls in order to eliminate glare on vertical surfaces. Certain techniques were used to control light intensity and eliminate UV rays. This involved the use of louvers, screening materials and filters or reflectors which bounced light off different surfaces.

Questionnaires revealed that museum staff members felt that the space was livelier and more interesting due to the introduction of daylight. Some staff kept returning to these museums with their families even after leaving their jobs. They felt that daylight created ever-changing and unpredictable conditions inside as opposed to the monotony of walking through a series of artificially lit galleries. According to journalistic accounts, most visitors felt

that while walking through these museums they were always in touch with the 'outside'. This feeling was reinforced by the presence of the sky above. Previous studies conducted have also shown that daylight makes people keep in touch with their biological rhythms and outer atmosphere which has a positive effect on their psyche, as a result of which they become more cheerful and lively. Daylight induces social activity and human interaction in spaces. This fact is illuminated by the many daylighting studies already conducted in office spaces.

These results have shown that use of daylight is increasing in museum spaces and gaining fast acceptance. The question is not whether daylight can or cannot be used in museums. It is when, where and how. Research results were used to inform the design of a 'Museum of Light', a Master's thesis project.

Jill Amy Eyres

Shelter From the Storm: Designing Domestic Violence Shelters ***M.Arch 1994***

Because of the crucial role they play in the lives of many battered women, shelters for victims of domestic violence have been identified as a unique building type requiring attention from the design professions. As of this writing, only a small amount of research has examined the specific architectural needs of battered women in shelters, and almost none has been conducted on the needs of shelter staff and volunteers. This exploratory study set out to identify issues specific to shelter buildings, present general guidelines for design and suggest topics for further environmental research on domestic violence shelters.

Literature from many fields of study, including architecture, environment-behavior, landscape architecture, psychology, social work, sociology and women's studies were reviewed. Information was gathered for a better understanding of stress on both battered women and shelter staff as well as for implications for shelter design. Questionnaires from 54 staff members of 15 shelter programs in Indiana also were examined for common issues about the needs of staff and clients in shelters.

The most common topics for discussion amongst respondents were: the benefits of a home-like image; the lack of space for activities, housing and storage; the need for security; and the need for more privacy for shelter residents and staff alike. Preliminary procedures for designing shelters and for working with staff as clients are outlined. General design guidelines developed from the research also were presented. Because shelters can make the difference between life and death for many battered women, it is imperative that more research be conducted and applied to the design of shelters for victims of domestic violence.

Valerie Jalouneix

***The Homes of Today's Greeks: A Look at the Greek System M.Arch
1989***

This study looks into the idea of "home" in the Greek system (i.e., fraternities and sororities on a university campus). Three major questions are examined: 1) What elements, both physical and non-physical, are important in a student's decision to join a house? 2) what characteristics make the sorority or fraternity house a home for some students, and do students perceive these houses as a home? 3) How satisfied are students with their fraternity or sorority homes?

The literature which was reviewed covers a variety of subjects, including the history of Greek-letter organizations, and concepts of "home," including the personal home, the social home, and the physical home. Other issues include the concept of territoriality within the home, the atmosphere in the home, and some issues important to quality housing, such as privacy, as well as physical characteristics. Finally, needs and wants of students in terms of housing are reviewed.

Greek houses here at the University of Illinois were selected on the basis of their architectural style and sizes (physical and membership sizes). An attempt was made to have variety among those selected. Twenty houses were invited to participate in the study, of which 13 agreed to do so. The 13 participating houses are Beta Sigma Psi, Phi Kappa Theta, Sigma Nu, Sigma Tau Gamma, Theta Xi, Triangle (the fraternities); Alpha Sigma Alpha, Alpha Xi Delta, Delta Phi Epsilon, Delta Zeta, 4-H, Kappa Alpha Theta, and Zeta Tau Alpha (the sororities). Surveys were given to all the members of these houses who had moved into the house during August 1988.

The sample consists of 61 percent 19- and 20-year-olds and 68 percent sophomores and juniors. A third (34 percent) of the sample is in a business major. Most have one roommate (79 percent). Also, half (50 percent) of the residents lived in the dormitories last year. Finally, 78 percent say that they will be living in the house again next year.

The residents' top three reasons for joining their houses are the family atmosphere (79 percent), the social events (73 percent), and the reputation of the house (56 percent). The architectural style was the least important for the group as a whole. However, the interior appearance is ranked fourth and the physical size of the house is eighth out of the 13 items, in order of importance. The physical characteristics are indeed important in students' decisions to join a particular house. It also appears that the physical elements are more important to the women.

When asked about their image of their house, 86 percent agree that it is a home and a home away from home. The most home-like room is their own room, with the highest percentage of agreement (75 percent). Also, the most essential factor needed to make a place feel like home to them is "feeling like

I belong." On the issue of territoriality, of the six items measured, the one with the highest percentage of agreement (81 percent) is having a favorite shower stall. Women seem to engage in more territorial behavior than men.

Results also show that 93 percent of these residents are satisfied with their home environment and 89 percent think of the house as home.

Correlations show their happiness with the house is related to their feeling at home ($r = .59$, $p = .0001$). Also, the physical characteristics which showed the highest correlations with happiness are the exterior being perceived as inviting ($r = .24$, $p = .008$) and the interior as being interesting ($r = .26$, $p = .004$). Those factors which are most highly correlated to a sense of home are the image of the house as home ($r = .56$, $p = .0001$), the living room as being home-like ($r = .23$, $p = .01$), and joining because of the house's family atmosphere ($r = .19$, $p = .043$).

The results of this study certainly show that the residents' main reason for joining is the family atmosphere, and that there is a sense of home in these settings. We can also conclude that the residents are indeed happy with their housing environments.

Anne McDermott

Looking Through the Glass Ceiling in Architecture M.Arch 1993

The profession of architecture is cloaked in mystery; it has its own language and customs that are never explained but always followed. A sense of guru-worship and an atmosphere of fierce competition pervades this profession. Architects are often expected to be super humans: working long hours both during the week and weekends, receiving relatively low pay, and assuming great responsibilities on the job. Unquestioned dedication and the sacrifice of one's personal life are as familiar to an architect as a T-square and triangle. Women have an especially hard time in this difficult work environment and their careers in architecture are often curtailed because of gender discrimination.

This thesis investigates this discrimination, focusing on the "glass ceiling." The "glass ceiling" can be defined as an artificial obstacle that prevents women from advancing in the workplace. The "glass ceiling" is investigated by the following methods: an extensive literature review, a survey mailed to the Chicago Women in Architecture (CWA), a letter from University alumni, and telephone interviews with these alumni.

The literature review examines the profession of architecture, the issue of the "glass ceiling," and the career paths of women in architecture and related fields. This review examined the profession of architecture and compared it to other professions.

A survey was mailed to 182 CWA members; 54 responded. This survey asked for information regarding job responsibilities, age, years of experience,

size of firm, salary, and benefits. The survey was analyzed using the SSPS statistical package.

An open-ended letter was mailed to 132 alumni of two schools of architecture and one school of landscape architecture. The letter asked the alumni to write about their experiences in their career especially any that dealt with gender and career paths. Twenty-four alumni responded. The issues discussed in their responses ranged from discrimination at the office, at the construction site, and from clients; differences in job responsibilities; the wage gap between men and women, comparisons of working in architecture and in landscape architecture; comparisons in working in the public sector and in the private sector; and problems of integrating work and family.

Ten of these alumni agreed to a short phone interview. Four questions were asked. What was the best experience in your career? What was the worst experience in your career? Would you choose the same career path if you had a second chance? Can you give any advice to students considering your career? The alumni's responses were transcribed and a content analysis was performed.

These four methods yielded astounding results. The literature review provided information about women's positions in the workplace. Whether the field is medicine, banking, or urban planning, a woman can expect discrimination: a wage gap in comparison to men, a lower starting salary compared to men, or unequal treatment at the office.

The CWA survey provided an in-depth look at women in architecture. The typical CWA member is 34 years old, Caucasian, with 9 years of experience. She works independently on different job tasks relating to the design process for a firm of twenty people or less. She earns \$32,000 or less a year and the most likely benefits she can expect are health insurance and bonuses.

Those working in small firms usually have a greater opportunity to do a wider variety of work. Their job responsibilities may include drafting, field administration, and marketing. Years of experience rather than age seemed to be the more significant factor in determining both job responsibilities and salaries.

The alumni letters centered on issues of discrimination. Alumni reported incidents of discrimination in the office, at client meetings, and on construction sites. Several reported that a woman employee was often thought to be the firm's receptionist and that some clients were uncomfortable dealing with a woman project manager. Landscape architects reported that architecture was a harsher field than landscape architecture. Both architects and landscape architects reported that integrating work and family was difficult. Some female alumni quit their jobs and freelanced from home in order to raise their families.

The alumni interviews voiced similar concerns. While most of the alumni would choose architecture again as a career, they were unhappy with the

long working hours and low salary. Creativity in their jobs, however, seemed to override these concerns.

Based on these results, recommendations are made for women students, for architecture schools, for architecture firms, and for professional architectural organizations. Women students in architecture should conduct research about women architects and establish contacts early with women professors and architects. Architecture schools should provide a comfortable environment for women students and should open lines of communications in case of problems of discrimination or harassment. Architecture firms should take advantage of the research done by Fortune 500 companies and establish programs that track women's progress in their firms. Professional architectural organizations should conduct studies that examine these issues and publish the results.

The "glass ceiling" does not only affect women. This problem encompasses the entire profession. When any segment of the workforce is treated unfairly, the profession as a whole suffers. While women architects do encounter the "glass ceiling," all participants in the profession of architecture inevitably confront the "glass box." Men and women become trapped in this "glass box" which is constructed by fierce competition, guru-worship, and unethical treatment of employees in the field of architecture. If the profession of architecture wants to stay in step with others in the workplace, it must dismantle both the "glass ceiling" and the "glass box." The profession of architecture must place a higher value on its participants and temper strict dedication with compassion. "Glass ceiling" and diversity programs have shown that by investing in a little respect for employees, companies can clearly make the workplace more profitable, healthier, and productive. Architects can learn by the mistakes and successes of other professions; the time is now for a change.

Ripal Ambalal Patel

Temporary Home: Designing Domestic Violence Shelters M.Arch 1994

The built environment has great potential to influence the lives of its users, both in their daily activities and in their long-term well being. The strength of this potential varies with the environment and the people involved. Domestic violence shelters, for instance, are occupied by people under deep emotional stress who can be greatly affected by their environment. The staff is under unusual job stress in dealing with families in emergency situations; the clients, whose lives are in upheaval, find themselves in a new environment, living with people they do not know. Community spaces within the shelter need to enhance interaction between clients and staff, and among clients. Furthermore, private spaces must provide women and children with appropriate places to spend time alone. A good combination of community and privacy can encourage a woman's healing process and help her move towards independence.

Frightening statistics show that domestic violence is a major societal problem, and indicate that there is an intense need for shelters and other services to provide aid to affected women and children. At present, over 2000 shelter and service programs exist in the United States, but they are not enough; too many families are turned away due to inadequate space and funding. Another inadequacy of shelters is that very few specifically address the needs of ethnic populations. An effort must be made to understand the architectural needs of all domestic violence victims in this diverse country. This study attempts to answer some general questions about architectural concerns in domestic violence shelters, as well as some questions about the needs of women from different cultures.

A review of current literature in the fields of women's studies, sociology, social work, psychology, architecture, and environment-behavior was conducted. First-hand material was gathered through observations of four shelters and interviews with four groups of clients (ranging from two to nine women) in Illinois. A questionnaire was then developed and sent to 12 shelters in Illinois; the survey data from 16 clients and 38 staff members were analyzed.

The information gathered shows that shelters generally lack space, which contributes to related problems of inadequate privacy, crowding, and overlapping functions. Clients seem to feel watched and tend to want less overlap of staff office areas and resident living space. They need more privacy from staff and other clients than they presently have. More analysis shows that both staff and clients like the homey atmosphere of adapted private residences, though these shelters suffer from significantly greater lack of space than other building types. Finally, staff members discussed child rearing techniques, lighting preferences, clothing styles, temperature comfort range, eating habits, noise level preferences, amount of privacy needs, degrees of personal space needs, and spirituality as possible differences between women of various cultures that could affect the design of shelters.

The main issues discussed in the conclusion deal with site, shelter building, arrangement of interior spaces, offices, community areas, and private spaces. Some basic guidelines were developed that designers and shelter advocates can use to improve existing shelter environments and create new ones that are sensitive to the needs of staff and clients. Shelters that are responsive to the clients they serve can be more effective in empowering abused women to reject the violence in their lives.

Until the problem of domestic violence in our society is solved, shelters must exist to provide desperately needed services to the families affected. Our priorities as individuals, governments, and society must change, if violence is ever to be eliminated from our lives.

Anshuman Prasad

Beyond Mise-En-Scene: Narrative Through Architecture in Main Stream Cinema (1980-2002) M.Arch 2003

Ever since the first films at the turn of the 20th century, architecture has been an inseparable part of cinema and often used effectively by the director—both in an active role and as passive storytelling component. In a short period of time cinema has a unique ability to involve the audience, with the environment depicted in the film. Viewers perceive themselves in that environment and create an imaginary world around what is visible on screen. After more than 100 years since the inception of this art form and its involvement with architecture, it is time to study the intricate and complex relationship in more detail.

This thesis focuses primarily on architectural representation, elements, features, planning, layout, design and appearance in cinema; studying both created sets and the use of existing built environment. Emphasis was also placed on the use of architecture as an effective storytelling tool, architecture as a character in itself and architecture as a tool for enhancement of both character and context. Elements of design, design rationales, character interaction, interdependence of architecture and the motion picture, technical details and the use of technology and its possibilities were also addressed. The research adopted an in-depth study of 15 movies, which involved several viewings, image captures and graphic and descriptive analysis of each movie. A total of approximately 450 hours were viewing and analyzing the films. Literature review and interviews with prominent designers also formed an essential part of the research.

The final analysis revealed concepts of continuum and progression in architecture's involvement with the narrative, from a passive to an active role. Some key issues along that progression were:

Architecture as a Backdrop or Setting

Use of Architecture to Enhance Mood and Context

Metaphorical Representations Through Architecture

Direct Representation of Narrative Elements Through Architecture

Architecture as an Active Character

Architecture is currently undergoing significant transformation in its approach to design of the built environment with a growing recognition of cultural issues. As a cultural medium, cinema often represents architecture and built environment. With its growing popularity as well as its recognition as an art form and its ability to impact thousands of viewers worldwide, cinema plays an important role in the field of architecture as a cultural signifier.

Sharmila Subramaniam

WOMB WITH A VIEW: Design of Childbirth Settings

M.Arch 2003

Childbirth: The physical process remains the same; the settings change. New medical technologies, changes in attitudes toward the childbirth process, the institutionalization of the medical profession, advances in health care, consumer-based health movements—all have influenced the social and physical structure of the setting where childbirth occurs. Birth is a normal, natural and healthy process that profoundly affects women and their families. The woman's inner wisdom guides her through birth. Her confidence and ability to give birth is either enhanced or diminished by the care provider and place of birth.

This research aims to analyze the concept of "natural childbirth," the physical and social "birth center," and the benefits that these provide in the form of low technology care to birthing women. Its goals are to analyze a growing need for the design of a birth space that incorporates the needs of women adopting the natural childbirth model, to analyze existing birthing spaces both in a hospital and in an independent facility, and to learn from their positive and negative features in designing a new facility.

The research has been conducted in three ways:

1. Through a historical analysis to understand the transition of birthing spaces from "Birthing" rooms to birthing centers in the 21st century in the United States.
2. By distributing questionnaires among a group of women in and around Illinois who have adopted or plan to adopt the natural method of childbirth and birth centers. The survey focused mainly on what a woman would want in the physical space of a birthing center. It also addressed issues such as how and where you would want your child delivered and reasons for these choices. This survey was conducted by:

Distribution of survey questionnaires among mothers, nurse-midwives, doulas and other women who favored natural childbirth and the midwife model at the monthly meeting of "Birthlink," a natural childbirth education organization, and by uploading it on their website for online responses.

Mailed surveys to midwives, doulas and mothers who were enrolled in birth center programs and organizations like "Birthlink" and "Options in Birth." The survey was also mailed out to birth-related service organizations and support groups.

3. By studying existing birth centers, both hospital and freestanding, analyzing the space usage in each, and identifying their positive and negative attributes. This was conducted by visiting two hospital birth centers and one

freestanding birth center and carrying out an informal post-occupancy evaluation of the space.

A total of 35 responses to the survey was analyzed and these results, along with the analysis of the case studies and literature review, were used to formulate design guidelines for a freestanding birth center. The research shows how alternative birthing centers and birthing movements of recent decades in the United States reflect changes in social values towards childbirth just as the birth environments of the past years reflected past technological conditions and social attitudes.

The design and organization of birth settings have significance for the delivery itself, as well as the safety, perceived and actual, of the mother and child, the mother's posture and freedom of movement, her confidence and psychological well being, medical intervention and architecture.

This research led to the design of a freestanding birth center at Davenport, Iowa. This design project satisfied the capstone requirement of the School of Architecture. Presented here is the entire research, the materials covered and presented at the two interim design reviews as well as at the final design presentation.

Marcy Lynn Townsend

Aging in America: A Critical Look Into Housing for the Elderly

M.Arch 2004

This thesis is centered on exploring three main questions in regard to life as an elderly person in the United States:

Can more innovative and conscientious architectural design of housing facilities for the aged act as a reaffirmation of life within our elderly population?

How can we design a housing facility attractive to all socioeconomic classes?

How does one design an elderly housing with the greatest probability of success, not only financially, but more importantly for user and community satisfaction?

The old are in a way, an ironic example of the progress made in medical technology creating a huge group of people for whom survival (or avoiding death) is possible, but satisfaction in living elusive. Death is a dramatic, one-time crisis while old age is a day-by-day and year-by-year confrontation with powerful external and internal forces, a bittersweet coming to terms with one's own personality and one's life.

Given the anticipated explosion of the 65+ population in the next three

decades, demand for diverse and high-quality housing options will prove a necessity. Issues of personal control and choice will be improved by doing so. Nursing homes and assisted living facilities no longer fulfill America's needs. The aged are now a cohort of varied experiences, economic status, and health expenditures, and the housing appropriated for them needs to respond to this.

Through an extensive literature review, visiting local elderly housing facilities, distributing and analyzing a self-formulated questionnaire, and speaking with local experts in the field, I conducted research focused upon the environmental psychology of the aged and its most recent applications in the designed residential environment. From this, I developed an architectural design for a new housing facility based upon my findings.

I hope that this document will dismiss some of the stereotypes while also clearing up some misunderstandings American society has towards the 65 and over population. These often get in the way of providing the most effective services in today's client-oriented elderly housing environment, which in turn affects our quality of life during our later years.

This research led to the design of a universally designed mixed-use facility in Champaign, IL consisting of approximately fifty residential units with supplementary commercial entities. The design component of the project satisfied the capstone requirement of the School of Architecture. Presented here is the entire research, as well as the design and its process.

Melissa Jo Worden

The Critical Link: Architecture Critics, The Popular Press, and the Public M.Arch 1998

This thesis is an investigation of the current state of architectural criticism in the United States. After gathering and evaluating 1122 articles—10 years' worth—of the five Pulitzer Prize winners (Ada Louise Huxtable of The New York Times, Robert Campbell of The Boston Globe, Paul Gapp of the Chicago Tribune, Allan Temko of the San Francisco Chronicle, and Paul Goldberger of The New York Times) and the comments and writings of current critics, I analyzed the method, style, volume, and placement of criticism. I also received anecdotal information and writing clips from 15 of the 26 practicing critics across the nation. Of those 15, seven shared their experiences in more detail in phone interviews. The research I conducted supports my thesis that architecture critics have yet to reach their greatest potential of impacting society, perhaps even profoundly, due to their work in daily newspapers. I also evaluated the benefits and pitfalls of criticism to suggest how architectural criticism can be best implemented.

I chose this thesis because it is a topic that has not been given the coverage it deserves. In addition to the small amount of attention given to architecture in the daily newspapers, very little information on this subject has been researched and evaluated. However, it is a mistake for researchers and

editors to underestimate the value of the link between architects and the public. That link is the architecture critic.

Architectural criticism has the ability to influence existing and proposed architecture projects. The insights that critics can share with their readers about the adequacy or deficiency of a project, such as the principles of the urban context, accessibility, and ethnicity, as well as the functional, esthetic, structural, and programmatic designs of a building, can promote different designs of future and existing projects. These insights need to be incorporated into daily newspaper coverage beyond the weekly feigned nod they receive in the arts and entertainment sections, if they are even there at all. By altering the perception of architecture in newspapers to be of a more newsworthy role, criticism will undoubtedly have an impact on designs, particularly public projects. Private projects, however, are not immune. The power of the people to sway the opinions of developers has proven that when people have a vested interest in their environment, they can make a difference.

Architectural criticism has just begun to realize its potential to impact society and the built environment, but more needs to be done, including educating journalism and architecture students about each other's career fields and implementing a new section of the newspaper to help change the way people think about how the environment affects them. This thesis assesses these issues in depth, questions the current state of architectural criticism, and proposes methods of improvement.