BEHAVIOR AND DESIGN: THE ARCHITECTURE OF EWING H. MILLER II

A THESIS

SUBMITTED TO THE GRADUATE SCHOOL

IN PARTIAL FULLMENT OF THE REQUIREMENTS

FOR THE DEGREE

MASTER OF SCIENCE

BY

MICHAEL FLOWERS

DR. MARY ANN HEIDEMANN - ADVISOR

BALL STATE UNIVERSITY

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MICHAEL L. FLOWERS

Committee Approval:

______________________________ Date
Dr. Mary Ann Heidemann, Committee Chairperson

______________________________ Date
Susan M. Lankford, Committee Member

______________________________ Date
Carol A. Street, Committee Member

Departmental Approval:

______________________________ Date
Dr. Mahesh Daas, Chair, Department of Architecture

______________________________ Date
Dean of Graduate School

BALL STATE UNIVERSITY
MUNCIE, INDIANA
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Acknowledgements

I first became aware of Ewing H. Miller's architecture through working in the Drawings + Documents Archive at Ball State University. The archivist, Carol Street, told me stories that Miller had told her through conversation. I became interested in his architecture and decided to do further research. I met Miller during the summer of 2014 while waiting to work an internship. He had traveled from Washington D.C. to Muncie, Indiana to help organize a collection he had donated to the Drawings + Documents Archive. Miller had an amazingly sharp mind and many interesting stories to go with it. After meeting him and being exposed to drawings and pictures of his work, I knew I had found a great topic to write about. This thesis project opened my eyes to a design theory that I had previously not researched. Prior to researching this thesis, I did not know that behavioral research could influence architectural design. The research conducted on this thesis has been fulfilling and a great learning experience. I could not have asked for a better topic to write about. I hope this thesis does Miller's great architecture justice and can enlighten others unaware of his great work.

I would like to first acknowledge Ewing H. Miller for his help in writing this thesis. I am thankful for the time he spent talking with me in person and on the phone. Miller was able to tell me facts and information about his architecture that was not accessible elsewhere. His involvement in this thesis was truly invaluable. I have come to admire Miller's architecture greatly, and without his great design work, I would not have had such a great topic to write my thesis about.

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Chapter 1: Introduction

Ewing H. Miller II (b. 1923) was a prolific designer and architect who operated a firm under various names in Terre Haute, Indiana, and Indianapolis. Miller practiced architecture from the time of his graduation from the University of Pennsylvania in 1948 to the early 2000s when he worked in semi-retirement in Washington D.C. During his long career, Miller designed a variety of architecture including civic, educational, institutional, medical, and office buildings. He was involved in the master planning of universities, city areas, and civic complexes. His architecture reflected strong Modern forms but Miller had a unique design philosophy. Early in his career, he began to develop distaste for the cult of the individual designer and he also began to reject monumentality. Monumentality often involved designing buildings as works of art with unique design aesthetics. This type of design was seen in many practitioners of the Modern movement. Examples of these practitioners include Philip Johnson, Louis Kahn, and Paul Rudolph amongst many others. Miller aimed at incorporating a team based approach into design that included psychologists, engineers, sociologists, geographers, and interior designers. The idea was that the architect was not an expert in every subject that should influence design. Project leaders, generally an architect in the firm, incorporated ideas and input from all team members. Miller was well known for his incorporation of the behavioral sciences into design.

Miller and a psychologist, Lawrence Wheeler, collaborated on a number of projects from 1958 to 1974. These projects incorporated behavioral research directly into the design schemes of industrial buildings, campus architecture, and campus master planning. The majority of Miller and Wheeler’s research was completed through surveys administered to campus residents. The designs incorporated student reactions to campus architecture, thoughts, desires, and needs to create architecture that was functional and pleasant for its users. Behavioral research represented
a unique approach to the design of Modern architecture. In 1958, when Miller and Wheeler started their collaboration, they were pioneers of an emerging field sometimes referred to as environmental psychology. The field started to gain momentum in the 1960s and 1970s.

Miller and Wheeler were right at the forefront of this emerging design theory, designing the built environment around behavioral studies at Indiana State University in Terre Haute, Indiana. Miller fully committed to this design approach by creating a behavioral research division in his firm, Ewing Miller Associates. It was rare in the 1950s and 1960s for architect to collaborate directly with a psychologist. Miller's commitment to the field and early use of behavioral research is significant in the history of Modern architecture. His work represents some of the earliest examples in Indiana, if not the country of psychology directly influencing architectural design. Miller was a heavy promoter of the use of behavioral research for design. He spoke at numerous conferences, universities, and associations, and also wrote about the subject. His articles were published in the *American Institute of Architects Journal*, publications focused on universities, and other scholarly journals. His promotion of the design approach may have been a factor in the popularity environmental psychology gained in the 1960s and 1970s.

This thesis explores the early career of Ewing H. Miller II and the incorporation of behavioral research as an aspect of design primarily in campus architecture. The aspect of behavioral research in design is often left out of architectural history books and publications on the Modern movement. This work will attempt to provide information on how an architectural firm practiced environmental psychology and incorporated it into the built environment.

**Chapter Descriptions**

The second chapter focuses on the early history of the firm Miller's uncle, Warren Miller, started in 1912 in Brazil, Indiana. Warren Miller partnered with an established architect and
engineer, Macmillan Johnson. Johnson and Miller moved to Terre Haute in 1915 to start a firm that produced thousands of designs over an 89-year period. Miller joined the firm in 1955 as Miller, Vrydagh and Miller and the firm ended as the Archonics Division of HNTB. ¹ This chapter also explores the educational experience of Miller at the University of Pennsylvania and his early career. It is to provide information on his early designs, background, and influences prior to the incorporation of behavioral research. The chapter also includes information on his earliest collaboration with Wheeler regarding a series of trucking terminals. The focus is to provide a basis for how his design philosophy developed to incorporate behavioral research. This information is included into this thesis because there are not any published comprehensive secondary sources on Miller. The chapter functions as a reference point for the history of Miller's firm and includes biographical information for the same reason.

Chapter three focuses heavily on the start of the behavioral research program established at the firm Miller, Vrydagh and Miller. This program involved the design of residence halls at Indiana State University in Terre Haute. Miller and Wheeler collaborated on this design program that primarily included surveys and observational studies. Research of residence halls started with an orthodox design by Miller with the Burford Hall Complex. Miller and Wheeler conducted research and surveys on the inhabitants after the residence halls were built. The designs and research program progressed and built upon each other. The research conducted on Burford Hall influence the design of Sycamore Towers. Further research on Sycamore Towers altered the designs for Hines Hall, Jones Hall, and Statesman Towers. Research on the residence hall designs culminated with the Lincoln Quadrangle apartment complex. The chapter discusses each individual building and the associated research to show how the designs improved with continued research.

¹ Reference Appendix A of this thesis for a complete firm chronology and list of projects by year.
Chapter four discusses the expansion of the behavioral research program to incorporate campus master planning. From 1968 to 1974, the firm worked on two university master plans at the University of Evansville and the Indiana State University satellite campus in Evansville. These two plans differed because the University of Evansville was an established university while Indiana State University Evansville was a brand new campus. The approach to behavioral research remained similar but produced unique aspects at each campus. The Indiana State University Evansville section explains the concepts of the master planning and the resulting building projects. The University of Evansville section refers to how behavioral research influenced the master plan, but much of the proposed new construction was never completed. In both master plans, concepts learned from the Indiana State University research were incorporated along with new discoveries. The expansion of the behavioral research program displayed how behavioral research was able to influence an entire campus plan.

The conclusion, chapter five, provides a brief history of the firm after Miller's collaboration with Wheeler ended in 1974. The conclusion discusses Miller's place in Modern architecture and the impact he had on the profession. Miller's architecture was significant for representing an early comprehensive design program for behavioral research. Their studies were constructed in the built environment and display the effect behavioral research can have on architectural design. Miller's buildings are not the only example, but they represent a change in architectural thought. His architecture marks a clear advancement in architectural theory.

Research Collections

The research for this project was primarily conducted on a large collection donated to the Drawings + Documents Archive at Ball State University during the spring and summer of 2014. Miller donated slides, pictures, drawings, and written documents to the university to be

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2 Indiana State University Evansville was renamed to the University of Southern Indiana in 1985.
The generosity of Miller’s donation and the work of the archivist, Carol Street, made this thesis possible. Miller also donated funds to supply the archives with additional equipment to house his collection and future collections at the archives. The Drawings + Documents Archive provided many of the scans and figures that are featured in this thesis for visual aid. The archivist's help in finding materials and allowing the author to spend countless hours in the archives contributed heavily to the completion of the project.

The vast collection provides a nearly comprehensive history of Miller's architecture. Miller's donation was added to the established collection, the Miller Family Architectural Records. The Miller Family Architectural Records collection was started by an earlier donation by Miller. The earlier donation included designs by the firm prior to Miller's arrival.\(^3\) The collection contains a large amount of written material from the various firms. The written material includes promotional booklets, presentations, project files, research studies, surveys, both published and unpublished articles, and hand written notes. The manuscript part of the collection provided a large majority of the research conducted for the thesis. The written works by Miller, presentation typescripts, and firm documents detailing projects were invaluable in understanding his designs. A portion of the written material regarded behavioral research. The behavioral research material is cited heavily in this work to explain design aspects affected by it.

The project files and drawings portion of the collection was also incorporated into the research. Drawings were used to discuss materials, design aspects, and illustrate behavioral research influence on these designs. A number of drawings were digitized by the Drawings + Documents Archive and are available online via the Ball State University Libraries’ Digital 3 Miller Family Architectural Records, Drawings + Documents Archive, Ball State University, Muncie, Indiana. (Hereafter cited as Drawings + Documents Archive).
Media Repository. The project files included notes on the buildings, drawings, pictures and numerous slides. The slides, which had been used for presentations by the firm, contained valuable information. Material contained on the slides varied. The material ranged from renderings, floor plans, some written material, master planning documents, and pictures. The collection contains nearly 481 individual entries. The material available covers many more projects and aspects of Miller's career than discussed in this thesis. The Drawings + Documents Archive holds the largest collection of material on Miller's architecture.

The University Archives at Indiana State University was also helpful in providing access to information. Their archive contains a large collection of photographs and articles on campus buildings. Several floor plans and drawings that were not available in the Miller Family Architectural Records at Ball State University are located there. Some historic photographs featured in the thesis came either from requested scans at the archive or from the Indiana State University Wabash Valley Visions & Voices Digital Memory Project. The archives website has a featured exhibit on campus architecture. This resource was invaluable for quick fact checking and putting the campus architecture of Indiana State University into a timeline. The on-line exhibit noted renovations and changes to buildings which were researched further.

Two interviews on Miller contributed heavily to the information on the residence halls and his early career. The first interview was part of an oral history project for the Vigo County Historical Society. Jane Hazeldine conducted the interview on April 13, 1981. The author conducted the second interview. The author interviewed Miller over the phone on February 17,
2015. The interview focuses on Millers’ early career and architecture at Indiana State University. It is included as appendix B at the end of the thesis. The author also had a conversation with Miller on May 22 and 23 of 2014 in person. These conversation notes are referenced but not included with the thesis. These sources provide quotes, design insight, and information that cannot be found elsewhere. A unique aspect of this thesis is the heavy reliance on primary sources, often spoken or written by Miller himself. Miller’s generosity in spending time to talk with the author is another factor that made this work possible.

**Methodology**

The methodology for this thesis comprised heavily of primary research and site visits. The collection at the Drawings + Documents Archive was researched almost entirely. This was done to identify significant architecture, buildings, and the scope of the thesis. Behavioral research was identified as a significant focus of Miller’s architecture. The buildings on Indiana State University and the master plans completed for the campuses in Evansville were identified as prime examples of Miller’s use of behavioral research in design. After research in the archives concluded, on-line research was conducted to figure out the state of Miller’s projects. It was discovered that many of them had been altered, but the majority of the residence hall designs are still extant.

The author surveyed the exteriors of these buildings to provide images of their current state. The interiors were not surveyed because all of them but the Lincoln Quadrangles have been renovated over the years. A secondary aspect of research included a brief research on the history of Modern architecture and several sources on environmental psychology in design. It was discovered by the author that volumes on architectural history often leave environmental psychology of a design aspect out. This research was conducted to give a brief discussion to
Miller's impact and place in the history of Modern architecture. Various on-line sources were also utilized including university websites, Google Maps, Bing Maps, on-line articles, and on-line journals. The research was compiled and written to represent Miller's work with Wheeler in using behavioral research in design.
Chapter 2: Brief Early History of the Firm, Miller's Education, and Early Career 1912-1960

The legacy of the Ewing Miller II's architecture starts in the early 20th century with his great uncle Mathew C. Miller. Mathew was born in Terre Haute along with his brother Henry C. Miller, a furniture dealer in the city. Mathew C. Miller was the first architect in the family and by 1900 had established a private practice in Buffalo, New York. Mathew visited Terre Haute and designed a number of buildings in his hometown. A few notable commissions included The Elks Club (1907) and the Knights of Pythias Lodge (1909). The Elks Building eventually came under the ownership of Indiana State University before it was demolished. Mathew had a major impact on the career choice of his nephews, Warren Miller and Ewing Miller I. Warren Miller was Ewing Miller II's uncle and Ewing Miller I was his father. Warren and Ewing both chose to follow Mathew's example and became architects.

Warren enrolled in the University of Pennsylvania's architectural program in 1907 and his brother followed a year later. Mathew visited Terre Haute from 1909 to 1911, during his nephew's summer breaks, and took architectural commissions. His main architectural practice remained in Buffalo, where he returned after summer ended. Warren and Ewing received internships in drafting to help Mathew design residential commissions. Terre Haute's Farrington Grove Neighborhood, a historic district, is home to the majority of these commissions. Mathew's influence and teaching set the stage for a long legacy of high quality architecture from the Miller family. Warren Miller graduated from University of Pennsylvania in 1911. He worked with Mathew and Ewing one last summer in Terre Haute before seeking employment elsewhere. Warren was employed in the offices of Macmillan Johnson located in Brazil, Indiana. Mack Johnson was a graduate of the Massachusetts Institute of Technology, and had designed a

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number of jobs from his office in Brazil. The addition of Warren allowed him to accept more jobs. In these early years, Warren was an associate of the firm, but they worked on a number of projects together in Brazil and several in Terre Haute. In 1914, Warren Miller became a partner of the firm, and the firm's commissions went under the name Johnson & Miller.\(^8\) The success of the partnership allowed them to relocate to Terre Haute in 1915. The firm chose to move to the larger city of Terre Haute to be hired for more architectural commissions.

Ewing graduated from University of Pennsylvania in 1913 with a Bachelor's degree in Architecture, while Johnson and Warren were establishing their architectural practice. Ewing did not return to Indiana and accepted a position with a firm in Toledo, Ohio. Ewing took the job without pay to learn the skills and practical side of the trade over a two-year period. Ewing met his future wife, Esther, in Toledo during his apprenticeship. The First World War interrupted Ewing's work in 1917, when he enlisted in the army. Ewing served as an Army-Air force Lieutenant for two years in France before returning to Toledo in 1919.\(^9\) He and Esther married upon his return home from the war. The same year Ewing received an offer from Warren and Johnson to become a partner in the firm in Terre Haute. Ewing and Esther relocated to Terre Haute when he accepted the offer.

The firm was re-established as Johnson, Miller, and Miller. This partnership designed several notable buildings. These buildings include the public gym for Wiley High School (1922) and the Woodrow Wilson High School (1927). In the partnership, Ewing was more of a designer

while his brother, Warren, handled the business side of the firm. Two- and three-story Renaissance and Neo-Renaissance schools became a trademark of the firm in this period.\textsuperscript{10}

The firm of Johnson, Miller, and Miller continued to be successful and received numerous commissions. In 1920, due to a heavy workload, the partners decided to hire another designer on par with their experience. Ralph Yeager was chosen to join the team.\textsuperscript{11} Yeager was a former classmate and friend of Ewing's at the University of Pennsylvania. Yeager briefly left the firm in 1921 to work in Madison, Wisconsin and later Chicago.\textsuperscript{12} Despite their ongoing success during the intervening years, 1923 proved to be a tough year for the firm. Ewing died of complications from a duodenal ulcer. Macmillan Johnson died of heart failure later that year. Warren was without two partners and left with numerous commissions. The same year in 1923, Ewing Miller II was born in Toledo, Ohio, after his mother Esther moved back to her hometown to be with her parents after her husband's death. Miller II grew up in Toledo for this reason, and never knew his father. Miller II said of his father's architecture that the "Woodrow Wilson Junior High school was his finest work."\textsuperscript{13} Warren told Miller II that his father had died the night he finished the project.\textsuperscript{14} The high school was eventually constructed and operational in 1927.

Ralph Yeager returned to the firm to become a partner and help alleviate Warren's workload. The firm operated under the name Miller, Johnson, Miller, and Yeager for a number of years. Eventually the firm became, Miller and Yeager, and continued under the name until 1946. The firm financially survived the early years of the Great Depression by selling insurance. Their building commissions were often civic projects designed in the popular art deco style.

\textsuperscript{13} Miller, interview by Jane Hazledine, 4.
\textsuperscript{14} Miller, interview by Jane Hazledine, 4.
Notable projects were the Terre Haute Post Office and Terre Haute City Hall. Around 1930 the firm hired Allison Vrydagh as a draftsman. Vrydagh was not trained at a university and had come to work for Warren right out of high school. Vrydagh gained a reputation as a skilled designer for the firm. He had an influence on a young Miller II, who will be referred to as Miller throughout the rest of the text of this thesis. Miller explained that Vrydagh "taught him detail" and was a major influence on his proportion and style.\textsuperscript{15} Miller grew up in Toledo, but frequently visited Terre Haute during the summer to visit with his uncle after the age of seven. Warren and Yeager exposed Miller to their design work during these visits. Miller continued visit regularly over the summer until his high school years when visits became less frequent. Miller's summer visits influenced his future career. Miller noted, "I knew everyone in Terre Haute, almost like having grown up there."\textsuperscript{16} Miller was familiar with the city from the time spent there and later continued the architectural practice started by Warren.

\textbf{Education at the University of Pennsylvania and Early Career}

Miller started at the University of Pennsylvania in 1941, the alma mater of his father, Uncle Warren, and great uncle Mathew. Miller's first year as an architecture student was under the classical style of architecture. Architect Paul Cret taught at the university. Cret became famous for bridging the gap between eclectic classical styles and the art deco style. He had also been a professor and critic for Warren, Ewing Miller I, and Mathew. Miller described him as a "mentor for several generations of my family that way."\textsuperscript{17} Cret did not critique Miller's work when he was a freshman in 1941 because he only worked with upper classmen.\textsuperscript{18}

\textsuperscript{15} Ewing H. Miller, conversation with author, Muncie, Indiana, May 22, 2014.
\textsuperscript{16} Miller, interview by Jane Hazledine, 4.
\textsuperscript{17} Miller, Interview by Jane Hazledine, 14.
\textsuperscript{18} Ewing H. Miller, phone interview with author, February 17, 2015.
As a freshman Miller met his future colleague Lawrence Wheeler. Wheeler later became the head of the behavioral research division of Miller's firm Ewing Miller Associates. Miller and Wheeler's collaboration had a major impact on Miller's design philosophy and included the use of behavioral research. Miller and Wheeler befriended each other but their education and friendship were interrupted as both men signed up for service in the Second World War.

Miller served as a pilot in the war, and flew everything from "A30s to B-24s" during his service.\textsuperscript{19} Miller was shot down in Austria during the war and captured as a prisoner by the Germans. Miller survived his harrowing experience as a prisoner of war and returned to the University of Pennsylvania to finish his education as an architect in 1945. Wheeler took a different path, and went back to school to earn a Bachelor's of Fine Arts at the University of Indiana. Miller recalled thinking that Wheeler had been lost to the war after their separation.\textsuperscript{20} They were reunited years later when their paths crossed in Bloomington, Indiana, and started a professional relationship where both men became pioneers in the use of behavioral research in architectural design.

Upon Miller's return to University of Pennsylvania, the style of architectural teaching was changing. The curriculum changed in 1945 when Arthur Deam from the University of Illinois was hired as the dean of design. The focus of the school's architectural program transitioned from the classical style to teach the design philosophy of the Modern movement.\textsuperscript{21} His education became concerned with architecture and styles created after the year 1900. The new curriculum focused on works by Frank Lloyd Wright, the Bauhaus movement, and the Chicago School. Deam came heavily influenced from the work of Mies van der Rohe at the Illinois Institute of Technology and the campus he designed from 1939 to 1958. These factors drastically changed

\textsuperscript{19} Miller, interview by Jane Hazledine, 14.  
\textsuperscript{20} Miller, conversation with author.  
\textsuperscript{21} Miller, phone interview with author.
the educational experience at the University of Pennsylvania. Modernist architect Louis Kahn became a visiting critic of student work at the University of Pennsylvania during this switch to the Modern style of design. Kahn and his architectural designs inspired Miller and many of his classmates with their Modernist principles. Miller initially met him from volunteering with the Philadelphia Chapter of the American Institute of Architects (AIA). Miller recalled, "...that's really where I met several of the Modernist practicing architects, Lou Kahn being one, Charles Hough being one...I worked with them so that I knew them."  

Miller also recalled a story where Louis Kahn defended his design for a number of buildings around a swimming pool. Miller explained, "He [Kahn] thought I had the best design solution to the problem." Miller explained Kahn's direct influence on him as "oblique." Kahn's designs, particularly in concrete, influenced Miller and other architects of his generation.

Miller received his Bachelor's Degree in Architecture in 1948 and his Master's Degree in Architecture with a focus on urban planning in 1949. The Master degree later had a profound impact on the direction of his career that included campus master planning, civic complex master planning, and some urban planning designs. Miller was hired to design Air Force bases in England partly due to his education in planning.

Miller's education may have changed from the classical to the Modern style, but the University of Pennsylvania still taught that architects were the sole solution to design problems. Miller discussed in a talk given in Santiago, Chile in November of 1968 when he served as a Ford Foundation consultant, "We were taught to respond to [architecture] as an individual."

Miller and his firms became known for their team-based design. Their design teams incorporated those outside of the architecture field including psychologists, sociologists, geographers, and

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22 Miller Phone interview with the author, February 17, 2015.
23 Miller, phone interview with author, February 17, 2015.
24 Miller, phone interview with author, February 17, 2015.
engineers. A recollection by Miller on his early design describes his opinion on the design philosophy:

"When I graduated from the University of Pennsylvania, in 1948, we were still oriented toward the art master concept of architecture where the designer was king and anyone of less ability emasculated himself by accepting a non-design position. Wright's star was descending. Louis Kahn was ascending. We felt a new era of design greatness was upon us. In 1951, I had the misfortune of winning a national design award in housing. It took me years of hard lumps to get over this design orientation. As I practiced, I saw many things wrong with the entire design-build industry, but the architect can only correct a few. " 25

Miller's philosophy radically changed to incorporate behavioral psychology. He remained a critic of the "architect as an individual" design philosophy throughout his career.

Miller's career as an architect officially started after his graduation in 1949. The same year he also married Gladys Good, who he met while attending the University of Pennsylvania. Gladys graduated with a Bachelor's in Architecture in 1949 and worked in the city of Philadelphia. The first firm Miller worked for was Harbeson, Hough, Livingston, & Larson, now known as H2L2. This firm was formerly known as The Offices of Paul Philippe Cret. John Hough, a partner in the firm, may have hired Miller through their association in the Philadelphia chapter of the AIA. Miller's tenure at Harbeson, Hough, Livingston & Larson did not allow for him to participate in meaningful design work. Miller arranged letters for monuments the firm designed in Washington D.C. After a complaint about arranging letters, Miller worked on stairs and railings for six months. This first job was meant to be an introductory experience to the field of architecture. Miller explained that it was "good training," but he sought employment in a smaller firm to gain more design experience. 26

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26 Miller, interview by Jane Hazledine, 15.
Nolen and Swinburne, a firm in Philadelphia, hired Miller in 1950. Architects James A. Nolen Jr. and Herbet Swinburne, created the firm.\textsuperscript{27} At Nolen and Swinburne, Miller received more design experience participating in working drawings for small architectural projects. In 1951, during what Miller described as a "bad economic" cycle his future in Philadelphia was uncertain.\textsuperscript{28} The brief economic downturn made Miller's job security questionable in Philadelphia. Miller and Gladys relocated to Terre Haute briefly to see if he had a future there. The details of Miller's arrival in Terre Haute are not entirely clear. Miller recalled it was around 1952 or 1953.\textsuperscript{29} He worked as a draftsman for his uncle's firm Miller and Vrydagh. Around 1947, Yeager left to create an independent firm with his son, Ralph Jr., in Terre Haute. Vrydagh was made a partner in 1946 prior to Yeager's departure. Either before or after his arrival in Terre Haute, Miller submitted a design for 1951 Indianapolis Home Show design competition for the centerpiece home. Miller's design won and was selected from a jury of peers in the architectural field. The Indianapolis Home Show is an annual competition held in Indianapolis that showcases contemporary residential design. The home show featured built scale model homes of the winning designs. His Indianapolis Home Show house is the first known design of Miller's built where he functioned as the primary designer.

\textbf{1951 Indianapolis Home Show Design}

Miller did not design many single-family homes in his career. The home show house may be one of the only ones built. The name of the project was the Midwest Town and Country House (Fig. 1). The house was 1850 square feet and featured partial walls, beamed sloping

\textsuperscript{27} Miller, conversation with author.
\textsuperscript{28} Miller, interview by Jane Hazledine, 15.; Miller, conversation with author.
\textsuperscript{29} Ewing H. Miller, interview by Jane Hazledine, 15-16. The only source that mentions Miller’s stay in Terre Haute in the early 1950s is this oral history interview. Ewing H. Miller did not give decisive dates.
ceilings, and prominent features of glass around the living and dining rooms. Architecturally the house was a well-designed contemporary home. It featured a low pitched roof, limestone veneer for part of the front facade and wood siding. The design incorporated an attached garage and a sloping shed roof. According to a detailed description from the Indianapolis Home Show program, the interior design of similar colors to the exterior materials of Limestone, redwood, and brick, "visualized all the rooms practically as one." The house featured a mainstay of many mid-century modern homes, which was a connection to nature. The design achieved this philosophy with large-paned windows, earth-toned materials, and a screened porch to the rear. The built-in porch had large paneled windows that separated it from the conjoined living and dining room. The windows allowed natural light to reach the interior and created a view to the backyard (Fig. 2). Miller designed the floor plan with an open concept. Doorways did not divide the central entrance of the vestibule, kitchen, living room, and dining room. This another feature designed into the home often seen in Modern residential design.

The Midwest Town and Country Home does not represent the designs of Miller's later career. Many of the features including the use of wood siding did not appear in his later designs. The home displayed a young Miller's talent as a designer. In a previous quote mentioned, Miller considered the first prize award "misfortunate." The quote refers to the concept utilized to design the home. This design was oriented toward designing as an individual. The Home Show design was one approached by an individual using Modernist principles, aesthetics, and a basic floor plan which the architect interpreted as desirable. Miller did not see the architect as the sole solution to design problems. These needs ranged from technological innovations and

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31 Official 1951 Indianapolis Home Show Program (Indianapolis: 1951), 4, box 27, folder 1, Miller Family Architectural Records, Drawings + Documents Archive.
requirements to the effect that the architecture might have on human behavior. The singular
design approach of an individual could not properly incorporate everything that was needed in a
modern campus building. Miller's designs at Indiana State University and University of Southern
Indiana provide examples of building designs incorporating behavioral research.

Figure 1. The Front Elevation of the Midwest Town and Country Home.

source: 1951 Indianapolis Home Show house design, 1951, photograph, box 27, folder 5, Miller Family
Architectural Records, Drawings + Documents Archive.
Work in England and European Tour

After the home shown design while working in Terre Haute for his uncle, several of Miller's classmates were designing air bases in England. His classmates sent correspondence to Miller about the experience. Miller mentioned, "I thought they were very fortunate to be able to see so much of the history that we all studied at somebody else's expense really." A trip to Europe provided an opportunity to see both classical and Modern architecture he had learned about in college. The work mentioned in England comprised of building U.S. Strategic Air Command (SAC) bases in the allied country during the "build up of the cold war." Erman Mitchell, a former classmate of Miller's at the University of Pennsylvania, worked in England on

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32 Miller, interview by Jane Hazledine, 15.
33 Miller, interview by Jane Hazledine, 15.
the air bases. Miller described a telegram from Mitchell relaying the information, "If you can be in England in four weeks, we have 20 some odd air bases that have to be planned and you're the only one I know that can actually fly with the pilots and determine the characteristics of what was then evolving jet aircraft."

Miller's experience as a pilot and his education in urban planning made him a perfect candidate for the job. The job not only offered an exciting opportunity but also in 1953 Terre Haute did not provide an appealing location for an architectural career. The Indiana State Teacher's College had yet to start expanding, and Miller did not see a future for himself in Terre Haute. Miller accepted the offer. In 1953, Miller arrived in England by plane and Gladys joined him later by boat.

In England, Miller designed SAC bases intended to accommodate approximately 15,000 people. The bases included schools, hospitals, industries, and housing because the English economy was not able to support the incoming American military personnel, workers, and families. The United States government funded the bases and their construction. Key American personnel headed the design office and employed British draftsmen. This is where he met David J. Field, who later came to work with him in Terre Haute. In Europe, Miller and several architects conducted surveys on buildings in England. The surveys were a learning opportunity to view and sketch the built environment in England. The observance of architecture in Europe only strengthened both the classical and Modernist lessons learned at the University of Pennsylvania. After work on the air bases completed, Miller and Gladys decided to take a trip around Europe.

Miller's trip around Europe allowed him to experience design in several different countries. The experience abroad influenced designs in his early career after he returned to the United States. The trip included visits France, Germany, Italy, Norway, Sweden, and Finland.

34 Miller, interview by Jane Hazledine, 16.
Miller admired "The thin birch furniture and the very sparse minimalist kind of architecture," from Scandinavia, which were designed by whom he described as "leaders of architecture at that time." Miller was unable to recall any specific buildings or designs that may have influenced him from the region. Regardless of any specific projects, the experience influenced the aesthetic nature of his early designs. Miller returned from Europe in 1955 after he received an offer from Warren Miller to work in his firm as a partner in Terre Haute.

The climate of design in Terre Haute was changing while Miller traveled abroad in Europe. Designs were moving to a more contemporary design scheme. Ralph Yeager completed two contemporary designs for Indiana State Teachers College, later known as Indiana State University in Terre Haute, Indiana. Yeager designed the Health and Administration building, and Dreiser Hall, both completed in 1950, which set the stage for modern design on Indiana State University's campus. The university commissioned Vrydagh and Miller to design a new Home Economics Building on the campus. Vrydagh had become the main designer in the firm while Warren handled the business side. Miller stated that, "I think he was a little less comfortable with the very modern kind of things coming out after World War II," in regards to Vrydagh. Modern architecture was not new in the 1950s, but Terre Haute had not experienced an influx of Modernism as major cities had. The Indiana State Teachers College under the leadership of its president, Dr. Raleigh Holmstedt, wanted a more contemporary look than previous architecture on the campus.

Miller received the offer of partnership from Vrydagh and Warren because of his education in modern design. Gladys also worked briefly in the firm as a designer until 1957.

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35 Miller, interview by Jane Hazledine, 17.
36 Miller, interview by Jane Hazledine, 19.
37 Miller, interview by Jane Hazledine, 21.
when she established her own practice in Terre Haute focusing on residential architecture.\textsuperscript{38} Vrydagh and Warren wanted him to design the Home Economics Building. Miller accepted the offer in 1955 and returned to Terre Haute. The firm became Miller, Vrydagh, and Miller to reflect the new addition to the partnership. Warren gave Miller "free rein" on the project to create a Modern design.\textsuperscript{39}

**Home Economics Buildings, 1955-1956**

Miller began designing the Home Economics Building with Gladys upon his return to Terre Haute. The building was constructed in 1956 (Fig 3). One of the major reasons was that Dr. Anne Lee, head of the Home Economics department, "wanted a functional building that...reflected a contemporary approach...because home economics at that time was going from the standard food and housekeeping that previous generations had into interior design and house planning."\textsuperscript{40} The design reflected the modern curriculum. The board of trustees at Indiana State Teacher's College enthusiastically approved the design. Modern designs became exactly the type of architecture they desired for new buildings. The 1950s and the Home Economics Building represented a distinct change in architecture to a contemporary style for Indiana State. The board wanted a statement for the expanding campus. Miller achieved this statement through Modern design. The board of trustees for the university also wanted architecture that looked urban, and Modern designs lent themselves to dense planning. A difficult problem presented itself in the form of high land prices. Modern designs were a solution to that problem.

\textsuperscript{39} Miller, interview by Jane Hazledine, 21.
\textsuperscript{40} Miller, phone interview with author.
The Home Economics Building's design exhibited several design features not often utilized by Miller. One feature was a glass curtain wall on the northern elevation of the building. The curtain wall was constructed of blue metal porcelain, and glass inserted into an aluminum frame, which was installed in sections during the construction. In the architectural drawings, the porcelain-enamelled panels that are in between the rows are glass are clearly illustrated and labeled. Miller commented, "It was an experimental thing, technologically really, because it was one of the first pane wall installations in this community, if not in Indiana." Miller's experiment with the materials ended at the Home Economics Building. The porcelain enamel panels never appeared in another design on the campus by Miller. Miller later explained, "I don't think it was a mistake... I think I used it once or twice after that and decided it [the panels] was one of those trashy kinds of things that I shouldn't have been involved with..."

A major design element is also the differing story heights of the north and south wings. The south wing of the building is one-story and the main part of the building is two stories tall. The design function of the one story to two story ratio was to give an impression of informality and character to the building without incorporating decorative elements. Miller likened the proportion to Eliel Saarinen's Cranbook Academy, though the styles are much different. Red brick covered most of the building's exterior except on the northern curtain wall. Red brick whether it was interacting with glass or concrete became a mainstay of Miller's Indiana State University architecture. Miller incorporated the red brick in the majority of his designs for the campus to have context with the campus's historic buildings.

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42 Miller, interview by Jane Hazledine, 22.
43 Miller, interview by Jane Hazledine, 41.
A feature taken directly from Miller's experience in Sweden was the front window adjacent to the main entrance just south of the Home Economics sign. Directly in view of the large window is a two-story metal staircase with a single globular light fixture hanging down from the ceiling (Fig. 4). The building also included an open-ended concept. Designed directly into the building was the intention to expand it from the south from the one story wing or from the western edge on the two-story wing. Miller included expansion into the design incase the university required it in the future. Expandability and flexibility of his buildings became a prominent feature in many of his non-residential designs for the campus. Miller was conscientious of future possibilities, needs, and changes that might have occurred to his buildings over time.

The first floor featured a food lab, study lounges, a living room, a family living lab, and various offices for the faculty (Fig. 5). There was also a ground level terrace included off the southwestern edge of the building. The second floor, comprising only of the north wing, featured a textile lab, clothing lab, storage space, a laundry room, a related arts room, and a general classroom (Fig. 6). The functions of the interior designs themselves reflected on the needs and desires of the changing curriculum for the Home Economics department.

In 2012, the building underwent an extensive $3 million renovation that altered the character of the structure. The building's function also changed. The Home Economics department, later referred to as the Family and Consumer Science department, moved out of the building. Indiana State University renamed the building the John W. Moore Welcome Center. The building functions as an invitational and interactive building to prospective students to educate them on the campus. The building houses the office of admission, new student transitions program, university testing, scholarship office and the veterans services officer. The

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Miller, interview by Jane Hazledine, 21-22.
main area of the first floor, which was formerly the family living lab, has been changed to a "living room," that features interactive transparent touch screens that teach users about the university and its history.\(^4^5\)

A major loss of architectural character to the building is the north curtain wall. The original aluminum, glass, and porcelain panel wall was removed. A more contemporary glass wall replaced it. A new main entrance was constructed in the middle of the wall. Not only does this change the appearance of the north wall, but it renders the original entrance next to the staircase and window secondary. At the time of Miller II's design, a pedestrian plaza, known as Dede Plaza, did not exist, and the north wall faced Chestnut Street. The new entrance opens up directly on the plaza, and helps to facilitate the building as an invitation to new students and visitors alike. Changes to Miller's architecture on the Indiana State University campus have occurred frequently over the years as buildings changed functions or needed to update. The changes or expansions to Miller's building agree with Miller's design philosophies of creating functional and user receptive architecture.

Figure 3. A general view of the Home Economics Building showing the east and north elevations.


Figure 4. An up close view of the staircase and window on the East elevation of the Home Economics Building.

Figure 5. The Home Economics Building First Floor Plan from the offices of Miller, Vrydagh, and Miller.

Miller and Wheeler reunite

At the time that Ewing Miller returned to Indiana to design the Home Economics Building, a chance meeting with an old friend, Lawrence Wheeler, altered his design philosophy. This meeting was important to Miller's architecture because re-uniting with Wheeler is what began an important collaboration that lead to some of the earliest use of behavioral research to influence architectural design. Miller stated numerous times of the benefits of this friendship and professional collaboration, but is best summed up with the following quote, "Lawrence Wheeler
has had a great effect on the philosophy I have evolved in design projects." Miller embarked on years of behavioral research with Wheeler, and it changed Miller's philosophy as an architect. It opened his eyes to collaboration outside the field of architecture. His collaboration with Wheeler caused him to think of how architecture affected human behavior. Miller provided a description of his relationship with "Lon," Wheeler's nickname, in 1978, "We are close personal friends, brought together by our work and our long history of knowing one another, but also because we found that we were similarly natured in our love for people and our enjoyment of life." 

Wheeler was born in Indianapolis in 1923. He attended the University of Pennsylvania from 1941 to 1942 before entering military service. In the Second World War he served as a photograph interpreter and received an honorable discharge as a staff sergeant in 1945. Upon his return to the United States from the army, he enrolled in Indiana University. Wheeler received a Bachelor's of Fine Arts from Indiana University in 1948, and a Master's in Arts in experimental psychology in 1950. He continued his education at Indiana University to receive a doctoral degree in 1962 also in experimental psychology. Wheeler was working on his doctoral degree when he was re-united with Miller.

Miller and Wheeler met by chance in 1955. They had lost contact after initially becoming friends in 1941 at the University of Pennsylvania and then were separated by the war. They met while at a concert at the Indiana University Auditorium in Bloomington, Indiana. This meeting started a dialogue between the two. After discussing their respective fields, Miller and Wheeler

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48 Lawrence Wheeler, resume, box 9, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
decided there was potential to enhance architectural design with behavioral research. Their desire was to create better architecture for people who used it.

At the time that they met, Miller had just become the partner at Miller, Vrydagh, and Miller while Wheeler was working for Sarkes Tarzian Inc. in Bloomington. From the years of 1953 to 1958, Wheeler worked with problems associated with industrial engineering, photography, photoengraving, personnel testing, and the editing of company educational materials. This included work with Sarkes Tarzian Inc., a manufacturer of radio and television equipment.49

Wheeler's experience in the industrial field proved valuable on his first collaboration with Miller. Eastern Express Inc. a trucking company with a terminal in Terre Haute hired Miller, Vrydagh, and Miller to design a series of trucking terminals. After constructing several terminals, Miller requested to the company to allow Wheeler to conduct behavioral research on the employees to improve future terminal designs. Eastern Express Inc. agreed and funded the research. Wheeler was brought in for the project to conduct behavioral research though he was not a full time employee of Miller, Vrydagh, and Miller. The funding provided by Eastern Express Inc. was a major factor in facilitating this first collaboration.

**Eastern Express Trucking Terminal Research, 1958-1960**

The basis for the behavioral research that evolved at Indiana State University started with Wheeler and Miller's collaboration on trucking terminals for Eastern Express, Inc. The terminal buildings did not yield significant architecture, but the project was important for two factors. One is that it established the working relationship between Miller and Wheeler, and two it has been cited as the first collaboration between an architect and a psychologist. Gary T. Moore, an environmental psychologist wrote in a chapter of the *Environmental Psychology Handbook*,

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49 Wheeler, resume.
"Miller, an architect, and Wheeler, a psychologist, began what may be the first collaboration of an architect with a social scientist in 1958." The field of what is referred to as by many scholars as "environmental psychology," was a young field at the time. Wheeler was not the first psychologist to conduct behavioral research, but working closely with an architect was rare.

The company commissioned the firm to design terminals all over the country. According to a job's list, these commissions started in 1957 with a terminal in Indianapolis, and continued until 1969 with 25 commissions of varying scale. A promotional booklet for Ewing Miller, Associates published around 1966 displayed a rendering of a terminal in Maspeth, New York, and the following description of the work:

"The planning of a series of trucking terminals for Eastern Express Inc. is a case in point. Through a study with the firm's consulting behavioral psychologist, who is skilled in human engineering, our architects were able to analyze thoroughly accurately and in an orderly manner the design factors that related to the people at work in these particular sites. The result was a total design that not only identified the need for particular features, but also considered the psychological reaction of employees to such design elements."

Wheeler's study on the terminals became concerned with how the design of offices and the layout of the entire terminal affected behavior in the workplace.

The data collected was done in three steps; data collection, analysis of information, and the evaluations of the analysis. Wheeler collected from interviews and questionnaires of employees to determine where employees received and sent their operating information. The data collection included random time observational sampling. Random time observation

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51 Job's List, box 2, folder 5, Miller Family Architectural Records, Drawings + Documents Archive. Though the firm continued to receive commissions until 1969 only two commissions are listed after 1964.
sampling was a method in watching the employees work to eliminate bias that appeared in the interviews. The thought behind the method was that some employees may have said one thing but did another while working. Any inconsistencies had potential to skew the data.

The third technique that Wheeler utilized was motion picture observation, which was used for the observation of the complex moving systems within the trucking terminals. They took the data and developed link values, or "quantitative statements showing the frequency and importance of information as it moved among work groups." A process called vector analysis was utilized to analyze the data. Wheeler described this process as, "a mathematical procedure that gives a geometric layout in which job groups are shown as related points on a plane surface." Vector analysis was the final step. This data was applied to the layout and organization of the trucking terminal designs. The firm also carried out complex traffic analyses from city manifests for the terminals. Wheeler later described this as studying the "behavior of trucks." This process involved tracking frequency of the trucks on various roads and the amount of weight in goods transported. It than produced what would be an ideal location to build new terminals.

It is unclear exactly how much the behavioral research and studies affected terminal design. Only a plan for a 1958 Terre Haute terminal was found in the Miller Family Architectural Records, but this was designed prior to Wheeler’s research results. Wheeler conducted the research program but their proposed designs did not receive much acceptance from the trucking company. Information on the actual terminals is sparse, but regardless of the

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54 Wheeler, "Comprehensive Architectural Practice: Human Factors Analysis," 44.
55 Wheeler, "Comprehensive Architectural Practice: Human Factors Analysis," 44.
56 Wheeler, "Comprehensive Architectural Practice: Human Factors Analysis," 44.
57 Miller, phone interview with author. Miller stated this in 2015, and writings by Wheeler only reinforce that the researched designs were not received well by Eastern Express, Inc. It is unknown though if any were tried out in a constructed design.
actual implications of the research on designed terminals, the project served as an important benchmark in both Miller's and Wheeler's careers. Despite the expensive studies conducted, it ultimately became the terminal manager's choice for the layout of the terminal. Their research came up with a consistent location for the manager's office. Wheeler and Miller proposed to keep the manager's office central. The manager was able look in on all the operations, but without an entire department backing him up. The terminal managers were not receptive to this layout. Wheeler described the major issue in 1969 when he spoke to the East Bay Chapter of the American Institute of Architects, "Several terminals were to be built, and the different managers, having different backgrounds in the trucking industry, each wanted a considerably different type of office arrangement." Despite the lack of acceptance by terminal managers, the research garnered interest.

Miller received numerous requests via mail for the research from other trucking companies and architects. The results were published in the December 1963 issue of the American Institute of Architects Journal. The article written by Wheeler thoroughly explained the process of using human factor analysis for industrial projects. The committee of the 1963 Miami Carriers Conference invited Miller and Wheeler to discuss their research with them. Despite this interest and mild success for their behavioral research on terminals, both later downplayed the success of the research. After 1964, the architectural firm received only two commissions from eastern Eastern Express, Inc. Eastern Express, Inc. ran into financial difficulties and largely ended their building projects. The end of the commissions from Eastern Express contributed to the architectural firm's financial struggles.

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60 Miller, phone interview with author.
Express did not signal the end of behavioral research on architecture for Miller and Wheeler. In 1958, Indiana State University hired Miller, Vrydagh, and Miller to design a residence hall complex. Miller and Wheeler decided to conduct behavioral research on this complex after completion, and Indiana State University was willing to fund the research.

**Chapter 3: Indiana State University: The Evolution of Residence Hall Design 1958-1969**

Miller, Vrydagh, and Miller continued to receive a large amount of commissions in and out of the state. In 1960, Allison Vrydagh left the partnership retiring to California to spend time with his family. The firm became Miller and Miller, Architects and Engineers. Indiana State continued to commission projects from Miller and Miller. Notably the first set of Residence Halls commissioned in 1958, the Burford Hall Complex, which served as a basis for a program of behavioral research conducted on residence halls by Miller and Wheeler. The results of the Burford Hall research influenced the design of Sycamore Towers. Research conducted on Sycamore Towers influenced designs for Hines Hall, Jones Hall, and Statesman Towers. The behavioral research program on residence halls ended with the Lincoln Quadrangle Apartments in 1969.

In 1965 after the construction of Sycamore Towers, Warren Miller retired after a long architectural career spanning nearly fifty-five years. Ewing Miller Associates, the firm's name after Warren's departure, became the main architect for Indiana State University during a period of expansion. Although his office did a variety of other commissions in Terre Haute and outside of the city, Indiana State University supported some of his best architecture. Not only was behavioral design carried out on campus residence halls, but Miller also utilized a number of innovative technological systems. The design of the Physical Education Building constructed in 1962 included a folded concrete roof designed by engineer, Homer Howe, an employee of the

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61 Miller, interview by Jane Hazledine.
firm. The roof was the longest of its kind without interior supports at the time of construction. 62

The Cunningham Memorial Library constructed in 1972 featured removable exterior pre-cast concrete panels. The removable panels were able to be re-arranged to accommodate for interior change. These examples only represent a few of Miller's buildings on the Indiana State campus that featured unique design solutions to various problems.

Indiana State University was a major reason Miller stayed in Terre Haute, despite other major projects such as the factory for the CBS records company. His return to Terre Haute and subsequent projects as Ewing Miller Associates coincided with a national trend in college enrollment. Nationally college attendance rose by 49 percent in the 1950s and in the 1960s about 35 percent of the 18 to 24 year old population attended.63 Indiana State University was no different. Indiana State University in the 1960s was one of the fastest growing universities in Indiana. The student population roughly rose from 4,000 students to approximately 14,000 students.64 The Indiana State Teachers College changed its name to Indiana State University in 1965 to represent growth and the expansion of academic programs. The expansion of the student population and academic programs led to the building of residence halls and academic buildings. Two presidents, Dr. Holmstedt and Dr. Alan Rankin, presided over the university during this period of expansion. Miller often noted that these presidents were very receptive to his design ideas and supported behavioral research. In this climate of expansion and support that Miller and Wheeler collaborated on residence hall design.

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64 Miller, phone interview with author.
Miller fully developed his design philosophy while designing architecture for Indiana State University. The first step in the change of his philosophy was discussion and collaboration with Wheeler. Miller's architecture became increasingly concerned with the user experience of his buildings. His design program began to incorporate all the functional needs of his clients, and behavioral research was a prime example. Miller also believed that design programs included a multi-disciplinary approach. He began to form multi-disciplinary design teams. Ewing Miller Associates became known for a team-based approach to design problems.

The team based approach included professionals from a variety of different fields that all had equal input and judgment on the information that went into the design program. Design solutions were than drawn up based on the multi-disciplinary input, practicality, and cost control analysis. This design philosophy contrasted to a single architect making design decisions based upon intuition. Miller's design teams included input from architect, psychologists, sociologists, planners, engineers, and geographers. Not every project included a member from each discipline, and funding was a factor in what type of consultants were hired for various projects. The primary examples of multi-discipline design are the residence halls at Indiana State University that utilized input from Wheeler and his research to improve designs. Miller and Wheeler's work on residence halls is one of the earliest known examples of behavioral research influencing architectural design.

1958-1963, Burford Hall Complex

The Burford Hall Complex consisted of three L-shaped dormitory buildings grouped around a one story dining facility. These dormitories were originally designed for women students. The first building constructed from 1958 to 1959 was Burford Hall (fig. 7). Erickson Hall finished construction in 1962 and Pickerl in 1963. The three residence halls had similar
interior and exterior designs. Their designs only varied in their orientation around the central dining facility.

The exterior design featured rows of windows where the rooms were located on both wings. Glazed ceramic tile divided the rows of windows (Fig. 8). A set of low-income apartments that Miller observed in London inspired the tiles. The tiles were chosen to make the exterior "bright and cheery." Ceramic tiles were unique to these set of dormitories. Miller did not use these tiles on any other buildings at Indiana State University. The main entrance was right at the inside corner of the ell and was covered by a concrete overhead roof with brick columns for support. Directly near the right angle of the ell was a brick patterned wall on the longer wing, this wall contained small windows in concrete frames. The same ceramic tiles dividing the windows covered the area at far end of the longer wing. This area was dotted by small windows in an irregular pattern providing light for the stair cases located there. A veneer of red brick covered the ends of each wing.

The interior design featured an L-shaped floor plan and double-loaded corridors. The double-loaded corridor design had dormitory rooms directly across from each other with a small corridor in between (Fig. 9). The toilet facilities and laundry facilities were located in at the center where the two wings connected, essentially at the right angle of the L-shaped plan. Floors two through six featured the same floor plan. The first floor differed, and contained a lounge, recreation room, and a connecting area to the central dining facility for all three buildings.

Miller described his design as an, "... orthodox plan that had been established following World War II." The Burford Hall Complex was not architecturally significant, however, the buildings produced the basis for behavioral research on residence halls. No behavioral research

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65 Miller, phone interview with author.
was conducted prior to their design. Wheeler carried out a survey in 1962 on the effect of the architecture on the residents.

The 1962 survey carried out for the dormitories was titled "Survey of Occupant Reactions to Burford Hall, for use in the Planning of New Residence Hall." The survey asked a number of preference-based questions where students ranked options. Students were able to express their own thoughts in a write-in section. Compiled survey results showed that residents initially enjoyed the dormitories. Wheeler concluded to Miller, "Your present residence hall is thoroughly appreciated by those who have lived in it." Survey data also indicated several issues with the design despite the positive reaction by residents.

The L-shaped floor plan caused major issues pertaining to the social lives of students. Miller explained, "We did a lot of investigating particularly on floor plan...we found in Burford, Pickerl, and Erickson the corridors were so long they didn't make friends around the corner." This issue presented a problem in the social lives of the students since the architecture prevented some students from expanding their social interaction to those down the hall. The discovery only proved the importance of behavioral research in architectural design. The floor plan in the Burford design also generated noise complaints from students.

The issue of noise came from the double-loaded corridor design. The rooms of the students across the hall were too close together. Some of the students utilized the closeness to communicate to students in other rooms by yelling across the hallways. Noise presented a major problem, because the survey results discovered that students spent most of their study time

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69 Miller, phone interview with author.
70 Miller, "The Student Quarters That Teamwork Created," 25.
in their room.\textsuperscript{71} This preference was directly contradictory to the administration's thoughts that lounges or study halls were preferred for studying. Several of the thoughts and desires of the administration contradicted student preference. The administration wanted easily supervised large formal lounges. Wheeler's research also found student dislike for this type of design.

The survey showed that the large lounge room was enjoyed in terms of its size initially and Wheeler concluded in the survey that the "ground-floor lounge area is often spoke of with pride and pleasure as being colorful, lively, and pleasant to have dates in, and well lit."\textsuperscript{72} However, despite the general pleasure of the lounge there were some complaints that surfaced in further research. Students later complained that it did not offer the desired privacy often describing it as having "fishbowl characteristics."\textsuperscript{73} The characteristics made the lounge undesirable to entertain guests. This may have been an opinion developed over time since the first survey interviewed the residence hall's first residents.

Other major complaints identified by the inhabitants of Burford were the small size of the windows, the incinerator associated with trash removal, the location of the elevators in the corner of the ell, and heat. The building originally did not contain air conditioning, which was important to the comfort of the inhabitants during the summer time. Wheeler conducted the initial survey during the summer months of 1962. The survey identified many complaints but also one very positive feature regarding furniture.

The Burford Hall design contained no built-in furniture. Students specified pleasure at being able to re-arrange the furniture of the room.\textsuperscript{74} Miller eliminated built-in furniture at first as

\textsuperscript{73} Ewing H. Miller, "Put a Behavioral Scientist on a Dormitory Design Team," \textit{College & University Business}, 3, reprint, box 6, folder 5, Miller Family Architectural Records, Drawings + Documents Archive.
\textsuperscript{74} Miller, "The Student Quarters That Teamwork Created," 25.
an economic measure. Miller explained, "Economics dictated that very little be built-in." The closets were the only piece of furniture built into the rooms. The desks, beds, and chairs were free standing. The ability to re-arrange the furniture gave students a feeling of personal freedom and allowed for personalization. Having the freedom to move the furniture into a student's preferred arrangement became a mainstay in Miller's residence hall designs. All of the survey results, both the positive and negative, were considered and influenced the design of the next set of residence halls on the campus, Sycamore Towers.

All three buildings in the Burford complex have received interior and exterior renovations. In 2006, Burford Hall's interior design was changed to give every double-room a private bathroom. An insulated building skin, and new windows were installed altering the exterior character of the building. David R. Snapp and Associates designed the renovation. David R. Snapp Associates, in 2010, designed a similar renovation for Pickerl hall in 2010. Pickerl received the same interior and exterior treatment except for the entrance. The main entrance was moved from inside the ell to the outside corner. Glass replaced portions of the brick in the creation of the new entrance. In 2013, Erickson Hall received a series of renovations. The renovations included a new white exterior skin and entrance. The interior layout was reconstructed to create a communal bathroom to serve five to six residential rooms. All three of the buildings look drastically different from their historic appearance.

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75 Miller, "The Student Quarters That Teamwork Created," 25.
79 See Appendix C for current photographs of the Burford Hall Complex.
Figure 8. An exterior view of Burford Hall showing the front elevation in 1960.

The need for dormitories continued to arise as student enrollment steadily increased in the 1960s. Indiana State University commissioned Miller and Miller to design a set of four residence halls. The residence halls were intended for women, which made the survey results of the Burford Hall study optimal. Both sexes were moved into the complex shortly after their construction, but the intention for use as women's dormitories influenced the design. The design

Figure 9. The second through sixth floor plan design of the Burford Complex buildings.


Sycamore Towers, 1962-1965

The need for dormitories continued to arise as student enrollment steadily increased in the 1960s. Indiana State University commissioned Miller and Miller to design a set of four residence halls. The residence halls were intended for women, which made the survey results of the Burford Hall study optimal. Both sexes were moved into the complex shortly after their construction, but the intention for use as women's dormitories influenced the design. The design
was also influenced by the decision to create high-rise dormitories. These dormitories became the first high-rise structures on the campus.

Miller chose a high-rise design for several reasons and the availability of land and land prices heavily contributed to the decision. The university was attempting to expand but land was not always available. Another reason for the high rise was simply student density. The dormitories had to accommodate for a certain amount of residents on the available land. Earlier surveys, carried out on Burford Hall, showed that students were receptive to the idea of high-rise dormitory structures. Miller used this to convince the board of trustees to commit to a high-rise structure. A high-rise appeared to be the optimal solution. Students were open to the idea and it solved the design problem of land density issues. The board of trustees also indicated that they wanted an iconic building for the campus that served as a focal point. The height of a high-rise structure lent to the board's desire. These factors all contributed to the decisions to design high-rise dormitory structures.

The 12-story dormitory complex contained four separate buildings. A one-story central dining facility connected the four residence hall buildings. The four buildings were made into two units. The first unit consisted of Blumberg Hall and Cromwell Hall constructed and dedicated in 1964. The second unit consisted of Mills and Rhoads Halls constructed and dedicated in 1965. Indiana State University named the entire complex Sycamore Towers. Miller utilized the same design for all four buildings with only one difference. The floor plans of Blumberg and Rhoads Halls were inverted versions of Cromwell and Mills. The exterior design was the same for all four buildings.

The buildings marked Miller's first experiment with the use of pre-cast concrete panels on the campus. The Sycamore Towers design featured pre-cast panels prominently. Miller enjoyed
the plasticity of concrete and the sculptural forms he was able to create with the material. Sycamore towers displayed the ability of this technology in its exterior aesthetic design.

Sycamore Towers has a noticeable white exterior of precast concrete on the long sides of the buildings (Fig. 10). The white concrete panels contrasted against the gray concrete, limestone, and brick of the other campus buildings. This aesthetic treatment followed the instructions from Indiana State University to create a focal point. The university wanted architecture that was visible from a distance and an example of how contemporary the university was. To achieve this goal, Miller, used white quartz aggregate in the concrete. Previous designs with concrete including Burford used a limestone aggregate to match the limestone of the campus's historic architecture.

The pre-cast panels featured a thin airy look (Fig. 11). The original intention of this was to create a flowing plasticity, elegant, and light look to appear more feminine. The thin vertical emphasis on the panels dividing the windows expressed the load bearing capacity of the material. The load bearing pre-cast walls were attached to an in-situ spine by the flooring system that was also made of pre-stressed and pre-cast concrete. The engineers at Ewing Miller Associates developed the system to cut construction costs. Miller divided the pre-cast walls into a grid pattern to show the residential nature of the structure. Miller had an interest in the way shadows played off the facade of buildings, and the sectioned nature of panels allowed for this. He described the walls as an "Interesting pattern of flowing light, shade, and shadow to eliminate the monotony of flat surfaces and punched holes of conventional construction..."

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80 Miller, Phone interview with author, February 17, 2015.
81 Miller, Phone interview with author, February 17, 2015.
elements to the grid are slanted downward to create shade and shadows. The gridded pattern was consistent on all the residential floors varying with the first and seventh floor.

Taller windows and a larger vertical gap in the gridded pattern visually distinguished the seventh floor. The windows were set back from the concrete, creating space in between the vertical panels and the wall. The space created an exterior viewing deck. This was done because the seventh floor featured a variety of common areas, not residential, to accommodate for the upper floors (Fig. 12). These rooms included study rooms, lounge rooms, areas for vending machines, and an administrative apartment. They were visually different to express the difference in function. The first floor was also visually distinguishable from the residential floors. The first floor contained lounges, offices, and recreational space. The columns provided a visual base for the building. The white concrete columns were spaced evenly apart on the long sides of the rectangular buildings with large four by four-paned windows set between them. Each of the columns contained a thin vertical window. The columns and different appearance of the first floor gave the appearance of support to the rest of the building. Behavioral research only influenced the exterior in the rectangular shape, because of the floor plan, and partially in building height due to the research that helped convince the board to approve a high-rise design.

The Burford Hall research influence the design of Sycamore Towers. Miller altered the floor plan because of the behavioral research on Burford. A rectangular floor plan eliminated the problem of the long and narrow corridors in the L-shaped plan of Burford. A rectangular floor plan allowed single-loaded corridors to replace double-loaded corridors (Fig. 13). The single-loaded corridor plan was achieved by putting facilities such as laundry, bathrooms, and mechanical equipment in the center of the floor plan. The student rooms in single rows flanked this central area on both sides in an attempt to eliminate the noise generated by the double-loaded
corridor design. However, there were some issues with placing a long mechanical corridor at the center of the floor plan. Surveys conducted on Sycamore discovered that this created both a physical and psychological barrier. Students on one side of the central corridor did not interact with students on the other side as often, presenting a similar problem as the long L-shaped plan. Floor plan was a major design element changed by behavioral research but research changed other parts of the design.

The Sycamore Towers surveys confirmed that students spent most of their study time in their rooms. The rooms at Sycamore were bigger in size than the previous residence hall design, to create a better atmosphere for studying. The rooms contained no built-in furniture and the surveys conducted confirmed this was desirable for students. Another design change due to behavioral research was the first floor lounge. The main lounge on the first floor of this design was divided into separate units. The recreational area was raised up on a mezzanine and the formal lounge was on the lower level (Fig. 14). Students were able to enjoy the informal recreational area without being directly connected to the formal lounge downstairs. It was a means of dividing the space to provide privacy and eliminate the complaints of the "fishbowl characteristics" that Burford had created. A central chimney and stairwell also divided the formal lounge into four areas (Fig. 15). Miller explained, "...while the social area is spacious, a general sense of privacy has been achieved."

The first floor was successful according to the surveys conducted after construction. Wheeler wrote, "Nearly everyone preferred the lounge area divided for privacy as in the Sycamore towers, but the women liked this arrangement even better than the men did." The surveys conducted on Sycamore Towers, because it allowed for both men and women, offered

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83 Miller, "Put a Behavioral Scientist on a Dormitory Design Team," 3.
interesting insight to gender preferences. Gender preferences influenced the design of Hines and Jones, the next two residence halls. They found in this survey that women had a higher preference and need for large formal lounges. This discovery also explained why women enjoyed the large lounge in Burford Hall at first. Another interesting discovery in the survey was on floor heights. Nearly 32% of students preferred the 2nd to 4th floor over the next highest which was 25% on the 11th and 12th floor. Preference of many to live on the lower floor alluded to the fact that in years to come students began to prefer low-rise structures to high-rise.

In 1968, Ewing Miller Associates received an honor award for the building design by the American Institute of Architects. Sycamore Towers showed an improvement on the former designed residence halls in the Burford complex, though there were still some issues and complaints. The process of behavioral research was improving on each design and evaluating them through continued research. This program continued to produce the Hines and Jones residence halls. The Sycamore Towers complex has remained a residence hall since its construction. Indiana State University is currently renovating the structures to update them. Ratio Architects, a firm from Indianapolis, is designing the renovation. The exact details of the renovation are unknown to the author.

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Figure 10. A general view of the four Sycamore Tower units with the central dining facility.

source: Sycamore Towers, Terre Haute Indiana, 1968, 35 mm color slide, box 26 folder 5 Johnson and Miller Architectural Records, Drawings + Documents Archive.

Figure 11. View of Mills Hall from the ground, showing details of the first floor and architectural character of the panels.

Figure 12. 7th floor plan of Cromwell and Mills Halls from the Indiana State University Physical Plant in 1988, Blumberg and Rhoads Hall are inverted versions of this floor plan.

Source: Indiana State University Physical Plant, Cromwell and Mills Floor Plans, 1988, 107, University Archives.

Figure 13. Residential Floor plans from Cromwell and Mills Halls, Blumberg and Rhoads Halls are inverted versions of this plan.

Source: Indiana State University Physical Plant, Cromwell and Mills Floor Plans, 1988, 107, University Archives.
Figure 14. The first floor formal lounge in one of the Sycamore Tower units, with the recreational mezzanine visible at the top right hand corner.

source: Formal Lounge with Mezzanine, 1960s, photograph, box 7930, Sycamore Towers folder University Archives.

Figure 15. A view of a first floor lounge and central chimney divider in one of the Sycamore Towers units.

source: Sycamore Towers, Terre Haute Indiana, 1968, 35 mm color slide, box 26, folder 5 Johnson and Miller Architectural Records, Drawings + Documents Archive.
**Hines and Jones Halls, 1966-1967**

Hines and Jones Halls were the third set of dormitories that Miller designed for Indiana State University (Fig. 16). The design benefitted from previous surveys on Burford and Sycamore Towers. The design featured in these two high-rise structures provided a basis for the design of Statesman Towers, completed a year later. Miller considered Hines and Jones an addition because they were constructed as part of the existing residence halls of the Sandison Complex (fig. 17). Yeager designed the first two buildings of the Sandison Complex. Sandison and Gillum Hall, designed by Yeager, were constructed in 1962. Ralph Yeager’s design featured a nine-story residence hall with a rectilinear floor plan, constructed of brick and concrete. Hines and Jones featured a square floor plan and contrasted with the shape of the previous two residence halls. According to Miller, "...there were supposed to be four that were done just like Sandison and Gillum...we changed that because of our research..."86 The behavioral research on Sycamore Towers led to a square floor plan design, instead of a rectangular one. Hines and Jones tie into the central dining facilities at the center of the Sandison Complex, which includes the two Yeager buildings. The central facility is an octagonal shaped 1-story building that is located between the four buildings.

Hines and Jones featured pre-cast concrete walls supplemented by brick construction similar to Sycamore. The pre-cast concrete panels of Hines and Jones created a grid around the residential units to show the character of the building. There was a distinct difference though as they were designed to be more rigid and the elements were thicker presenting a less flowing appearance. Male students were the intended residents of Hines and Jones. Miller wanted them to appear more masculine than the Sycamore Towers. The concrete at Hines and Jones contained pea-gravel for an aggregate instead of white quartz. The difference in aggregate gave the

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86 Miller, phone interview with author.
concrete a dark gray color instead of the vibrant white concrete seen in Sycamore Towers. Miller did not want these high-rise dormitories competing for attention with Sycamore Towers. He was a firm believer that not every building on the campus needed to vie for attention. The square buildings took a seat behind Sycamore Towers. This philosophy was included in their building height. Hines and Jones were only ten stories high so they did not compete with the height of Sycamore Towers.

The pre-cast panels created a gridded pattern to show the residential units. The pattern consisted of windows placed within concrete panels. In between the windows, dividing the floors, were alternating square and rectangular panels. The horizontal elements of the rectangular panels protruded from the wall surface further. The varying elements of the pre-cast concrete broke up the surface to create an effect with light and shadows. Miller's load bearing pre-cast concrete residence halls came with this aesthetic design intention.

The first floor was aesthetically different from the residential floors on the exterior. The first floor of each unit was set back from the edge of the building's second floor. The mass of the building created an overhang supported by square concrete columns (Fig. 18). Main entrances were placed underneath the overhang of the second floor. This design element was unique specifically to Hines and Jones and did not appear in other residence hall designs. Large paned windows, brick, and concrete columns comprised the rest of the first floor design. Hines and Jones also each had an attached tower that rose above the roof height. The towers were made of brick sidewalls with a concrete center, and contained stair access to all ten floors and the roof. The designs of both buildings were nearly similar. The only difference as in the other residence halls was orientation. Jones was on a north to south access with its exterior tower on the north
wall, and Hines was on an east to west axis with its tower on the west side. The interior floor plans reflect this difference in orientation, with minor differences in room arrangement (Fig. 19).

The behavioral research conducted on Sycamore is what led to the square floor plan of Hines and Jones (Fig. 20). The intention was to eliminate the double corridors once again from the Burford design, but also eliminate the central mechanical corridor in the Sycamore Towers design. Miller explained, "...students are placed on a floor around a poured concrete core containing mechanical, service equipment, and limited lounge space." Miller wrote in an article on the floor plan for *College Business & University Business*, "The noise problem is solved, and friend-making appears to be more effective..."87 The successfulness of the square floor plan and concrete core design carried over into the final set of high-rise dormitories designed for the campus, Statesman Towers.

Gender differences found in the survey data influenced the first floor lounges and basement recreational space. The original intention of Hines and Jones to be men's residence halls reflected gender differences found in the survey data. Instead of large formal lounges as in the Burford and Sycamore designs, Hines and Jones featured small lounges on the first floor. Wheeler discovered that men had less of a need to entertain guests in large formal lounges and were often at the women's dormitories. The surveys also concluded that men spent more of their recreational time in the form of "ping pong and shuffle board."88 The basement of these two halls featured a large recreational space in the basement divided by a folding door partition. The partition was designed to be removable incase a larger space was needed for formal events.89

Several design elements, included the lounge arrangement, were carried over into the next design for Statesman Towers.

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87 Miller, "Put a Behavioral Scientist on a Dormitory Design Team," 3.
88 Miller, "Put a Behavioral Scientist on a Dormitory Design Team," 4.
89 Miller, "Put a Behavioral Scientist on a Dormitory Design Team," 4.
Hines and Jones have undergone at least one renovation since construction. A renovation in 1997 altered the plan marginally regarding residential rooms.\textsuperscript{90} The renovation eliminated some residential rooms to provide a bathroom for every two rooms, instead of central toilet facilities. The exterior of the buildings was slightly altered. Concrete panels replaced the windows of the rooms converted into bathrooms for privacy. The renovation did not alter any other exterior architectural characteristics.\textsuperscript{91}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{joneshall1960s.png}
\caption{A perspective view of Jones Hall taken in the 1960s.}
\end{figure}

\begin{flushright}
source: Statesman Towers and Sandison Complex, 35 mm color slide, box 26 folder 3, Drawings + Documents Archive.
\end{flushright}


\textsuperscript{91} See Appendix C for current photographs of Hines and Jones Halls.
Figure 17. A rendering from the offices of Miller and Miller, Associates of Hines and Jones with a view of Sandison Hall in the background.

source: Statesman Towers and Sandison Complex, 35 mm color slide, box 26, folder 3, Drawings + Documents Archive.

Figure 18. A picture of Hines Hall showing the overhang feature and main entrance in 2015.

Photograph by author
Figure 19. The first floor plan of Hines and Jones Hall, illustrating minor differences from the Indiana State University Physical Plant.

source: Indiana State Physical Plant, Hines and Jones First Floor Plan, 1988, 147, University Archives.

Figure 20. The second floor plan of Jones Hall, illustrating the details of the residential floors.

source: Jones First Floor Plan, Indiana State Physical Plant, 1988, 148, University Archives.

The university commissioned another set of residence halls in anticipating further growth for their student enrollment. The original design of the complex included four separate units connected to a central dining facility, much like the Sycamore Towers design. A rendering from the offices of Ewing Miller Associates illustrated the original concept (Fig. 21). Indiana State University only built two of the buildings. After 1967, student enrollment at the university never significantly increased as it did earlier in the decade. Slowing student enrollment and land prices contributed to cancellation of the third and fourth buildings.

Construction finished on the towers in 1968 and opened to residents the same year. The Statesman Towers continued to exhibit examples of the behavioral research shown in previous designs. Miller borrowed many design elements from Hines and Jones Halls. Statesman Towers featured a similar floor plan, lounges, and a poured concrete core. The two designs differed in building height and exterior aesthetics. Each tower was constructed to be sixteen stories high, exceeding even the Sycamore Towers in height. One reason for the increased height of the buildings was a density issue. The needed land was not available and the university required a certain number of students per building. The student enrollment projections were not accurate, but they affected the design. They were therefore two dormitories stacked on top of each other.

The appearance of the pre-cast concrete used for Statesman Towers differed from previous design too. The buildings continued the pattern of expressive pre-cast panels, but the building’s architecture was bolder than Hines and Jones (Fig. 22). The majority of the building was pre-cast panels with the exception of the 11th and 12th floor where poured in place concrete was utilized to create a "vierendeel truss arrangement to augment stability in the structure for the

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upper portions of the tower." Vierendeel trusses "are framed beam structures having vertical web members rigidly connected to parallel top and bottom chords." Miller used this truss system in Statesman Towers and not the other dormitories because of the height of the towers. Pre-cast concrete columns at the first to third story level supported the rest of the pre-cast panels.

Similar to that of Hines and Jones, the Statesmen Towers in their first conception were to house men. This changed quickly because a 1967 project description discusses the housing of both men and women. The original intention of these designs to be men's halls affected the architecture. The building design was intended to be "bulky, geometric, masculine, and designed to house men not women." The design affect was achieved, as the square buildings give a hulking impression even compared to Hines and Jones. The concrete utilized in Statesman Towers did not use the pea gravel aggregate or the white quartz. It was described as "sandblasted gray concrete," in a project description given by Miller. Statesman featured exterior tower projections, like Hines and Jones, but two were attached to the Statesman Towers.

The residential units were delineated in the pre-cast panels similar to the other high rises, but it lacked the light appearance in the white exterior of Sycamore Towers. In between the floors and windows was the same alternating square and rectangular pattern seen in the Hines and Jones designs. However, the double windows included in the panels were different. Each set of windows had a taller unit and a shorter unit. Concrete was placed above the shorter window. This marked a similar appearance to the concrete in Hines and Jones, but gave a distinctly different appearance.

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95 Miller, "East Residence Halls #1."
96 Miller, "East Residence Halls #1."
The pattern of the pre-cast panels on the residential floors was done for the same reasons in the other high-rise designs. The pattern broke up the exterior surface and allowed for a play in light and shadow. The exterior also expressed the use of the structural materials. The vertical elementals architecturally showed the load bearing capacity of the pre-cast concrete walls. The alternating pattern on the facade was also to show the plasticity and sculptural attributes of the material. Miller intended for Statesman to appear different but have continuity with the architecture of the other high-rise dormitories. Similar treatment in the pre-cast panels achieved this design intention. The difference in appearance to the other dormitories was achieved through the lack of brick on the exterior, the towers, and the building's height.

Three floors on Statesman's exterior were visually different from the residential floors. The change in exterior is also because these first floor two floors were communal areas, and therefore the exterior reflected the difference in use. The first floor was to be used as dining facilities, and the second floor contained an "entrance foyer, reception, administration offices, administration apartment, and formal lounge" to serve the lower half of the dormitory. On the exterior of the first two floors the supports for the concrete panels flair out providing what looks like a base for the massive structure (Fig. 23). Larger windows were placed in between the vertical elements that rise up to the top of the structure. This was repeated on the eleventh floors to serve the upper dormitory. The eleventh floor of both buildings contained an administration area. The exterior noted this change in use from residential to administrative by larger windows and less concrete detailing to form a gap in the otherwise uniform facade pattern.

The main entrances to each building were visually expressed by a small 1-story pavilion structure composed of concrete and glass. The various exterior design elements borrowed from

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98 Miller, "East Residence Halls #1."
previous designs but incorporated different elements for visual distinction. The interior design 
exhibited similar traits.

A similar square floor plan that was discovered in research on Sycamore Towers and 
utilized at Hines and Jones was present on the interior (Fig. 24). The square plan featured four 
rows of single-loaded corridors centered around an interior core. The interior of the core held a 
small lounge, bathrooms, and mechanical equipment. The core was described as a 44’ x 44’ 
center core of poured-in-place reinforced concrete from foundation to roof elevator penthouse. 
This core held the mechanical and facility-based functions of the building allowing for the square 
plan to have residential rooms on the exterior. Statesman Towers, following the discovery of 

male preference in Hines and Jones, had small formal lounges on the first floor and eleventh 
floor. The basement contained a larger area to function as both a lounge and recreational space. 
These design elements were rooted in the behavioral research conducted on the previous designs.

Statesman Towers was regarded well by members of the field of architecture upon its 
completion. In 1968, both Statesman and Sycamore Towers won the honor award from the 
Indiana Society of Architects. However, students did not appreciate the dormitory quite as much. 
The residence hall complex was unpopular amongst its inhabitants. Students requested Statesman 
Tower less than the other dormitories on the campus.99 Two things contributed to the dislike of 
the building by students. The students did not like the concept of two dormitories stacked on top 
of each other.100 The second was that popularity of traditional dormitories was dropping 
dramatically. Students were unhappy with the supervision and rules associated with high-rise 
dormitories. As a result, students began to search for off-campus housing to gain more freedom 
in their living arrangements.

99 Paul McAuliffe, "Statesman Towers May Close," Indiana Statesman 80, no. 57 (January 16, 1974): 1, box 7929, 
Statesman Tower folder, University Archives. 
100 Miller, phone interview with author.
The unpopular Statesman Towers were not used as dormitories for long. By 1975, both towers were closed as dormitories. Indiana State University chose to close them for economical reasons. An article published in the Statesman, student newspaper, claimed the decision was because "...it was the furthest dorm from the other dorms, less economical to operate, and requested by fewer students." Statesman Towers was constructed on the east side of the campus. The rest of the dormitories were located on the west and north side. The site for Statesman was chosen because of land availability, but they were isolated from other residence halls. Student enrollment was slowing down, and the sheer size of the building made the cost to operate it much higher than other residence halls. Both buildings of the complex received renovations to convert them to office and academic buildings.

The western tower was converted to the School of Education in 1977, while the east tower was converted to the School of Business in 1981. The architectural firm, Daggett, Naegelle, and Associates renovated the west tower in 1976. The interior was heavily affected by this change. The student rooms were converted into offices, seminar rooms, or classrooms. The designs by Daggett, Naegelle, and Associates illustrate that many interior partitions were removed to create classrooms of suitable size. The eastern tower was renovated by 1981 though the exact details of this renovation were not available. The renovation most likely followed a similar a pattern of altering the interior to suit the needs of an academic space.

The College of Education left the complex in 2009 and the School of Business followed in 2012, leaving the buildings vacant. After some discussion of selling the buildings to a private developer, the university decided to raze the buildings. A news article published in January 2015 explained, "The total demolition project including putting the site back together will be complete

102 Dagget, Naegelle, & Associates, Remodeling of Statesman Tower West, 1976, University Archives.
next fall." With the process of demolition underway, the university will lose these great architectural statements that were once the fruit of behavioral research. The space is expected to be converted to green space, and there are no published plans for a new building on the site.

The trends that lead to Statesman's unpopularity ultimately made Miller reconsider the design program of residence halls. Behavioral research was still conducted on Statesman Towers in 1968. The trend of students moving out of residence halls and dislike for high-rise dormitories was noted. These factors contributed heavily to a design of low-rise apartments, the Lincoln Quadrangles.

Figure 21. A rendering of Statesman Towers showing three buildings with a intended fourth hidden in the back.

source: Statesman Towers and Sandison Complex, 35 mm color slide, box 26, folder 3, Miller Family Architectural Records, Drawings + Documents Archive.

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Figure 22. A street level view of the two Statesman Tower buildings constructed in the late 1960s.

source: Statesman Towers and Sandison Complex, 35 mm color slide, box 26 folder 3, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 23. An up close view of the concrete panel details featured in the Statesman Tower designs.

source: Statesman Towers and Sandison Complex, 35 mm color slide, box 26, folder 3, Miller Family Architectural Records, Drawings + Documents Archive.
Lincoln Quadrangle Apartments, 1969

The Lincoln Quadrangle Apartments, also known as the North Residence Halls, were constructed in 1969 (Fig. 22). The "Quads" as they would be nicknamed represent the culmination of residence hall research conducted by Miller and Wheeler. The Lincoln Quadrangle Apartments were the last set of residence halls designed by Miller for Indiana State University. The design utilized the benefit of behavioral research but also an observation in student trends regarding living situations. Students were leaving campus residence halls to seek living arrangements in the city of Terre Haute. Surveys conducted by Wheeler and Miller confirmed the observation.

Figure 24. The third floor plan of the West Tower with proposed renovations in 1976, the drawing shows original room partitions in dotted lines.

Source: Dagget, Naegelle, & Associates, Remodeling of Statesman Tower West, 1976, University Archives.
The 1969 survey conducted for the planning of the Indiana State University satellite campus in Evansville found that "a private apartment, off campus, is by far the first choice among the students." There was also growing disdain for grouped toilet facilities and lack of privacy provided by the traditional residence hall arrangement. The Lincoln Quadrangles design acknowledged this trend creating a more private version of the residence hall. The four story apartments drastically changed in building height compared to the previously constructed Statesman Towers. Changes in the buildings height compared to previous designs also represented a trend of student dislike for high-rise structures that developed in the late 1960s.

Factors regarding land acquisition made the Lincoln Quadrangle Apartment complex possible. In a supplemental paper provided with the 1968 publication on behavioral research by Ewing Miller Associates, Architectural Planning and Design, provided an explanation of this situation. In regards to land acquisition the document explains, "More and cheaper land became available to the University because of the merger of a large railroad whose tracks bounded the University on the north." This freed up land for purchase. Cheap and available land eliminated the need for high-rise dormitory structures.

Compared to the previous residence hall designs the low-rise apartments are spread out in a sprawling fashion. The complex was comprised of ten buildings arranged around a common building. The complex is divided into a north and south quad, both arranged in a similar pattern albeit opposite of each other. The buildings of each quad are arranged in a rectilinear shape with

105 Lawrence Wheeler and Ewing H. Miller, "Supplement to 1968 Monograph," in Architectural Planning and Design (Terre Haute, Indiana: Ewing Miller Associates, 1968), box 13, folder 5, Miller Family Architectural Records, Drawings + Documents Archive. This monograph is included in the collection in several locations, the one with the supplementary document is located with the Nomination for the American Institute of Architects Medal for Lawrence Wheeler.
one building occupying space in the courtyard. In between the buildings is a landscaped courtyard with pedestrian paths that connect the buildings (Fig 23).

Architecturally the buildings were scaled back from the design of Statesman Towers. The Lincoln Quadrangle design was brought back to human scale with reduction in building height. The red brick featured in many of Miller's design returned to dominate the facade. The street facing sides of the building contained three rows of ribbon windows. Horizontal concrete bands divided the windows. The top story windows of the street facing elevations featured thin vertical designs. The massing of the building was broken up into three distinct bays by indentations set back from the plane of the building. The indentations included a tower element that rose above the roofline and provided a door for stair access.

The rear elevations that face the courtyard were designed with a different appearance. The back of the towers were entrances into the building, inset from this side too. The rear of the building also featured terraced balconies that look onto the courtyard. The balconies were included on the third and fourth floor with a concrete bar for a railing. Sliding glass doors open from the apartments onto the balconies. There were also design intentions for the courtyard, which is a communal space of the facility. The courtyard was topographically altered to include mounds and landscape with the intention to prevent "spontaneous activities, so that noise control could be managed without disciplinary measure." Miller did not want these residence halls to be like the others where faculty were always monitoring activities, but he also realized the importance of a quiet atmosphere for campus living.

The aesthetic look of the building moved away from the design of high-rise precast panels. The brick and ribbon windows gave the building a more residential look, and it represented smaller group living. There is however, architectural character displayed in the

\[106\] Wheeler and Miller, "Supplement to 1968 Monograph."
ribbon windows, terraced balconies, and horizontal bands of concrete. The tower like structures and inlets also break up the surface of the building plane. The center dining facility in between the two quads is a two-story brick design, but the main entrance facing sixth Street, has large glass windows. In addition, a concrete gateway functions as an aesthetic treatment in front of the glass entrance windows (Fig. 24). The steps near the common building are sloped downward to provide access to the first story of the building. The exterior aesthetics were only indirectly influenced by behavioral research by the building height and the more residential appearance. The interior benefitted more from the research Miller and Wheeler carried out.

The interior design was the unique feature compared to the other residence halls. The apartment units contained four bedrooms, a living room, a bathroom, and storage space for each room. Three of the bedrooms were single bedrooms, and one was a double bedroom to house five students within a suite (Fig. 25). The suite style of living was intended to compete with off-campus housing. Surveys continued to indicate that students spent a great deal of time both studying and socializing in their rooms. The traditional dorm room did not allow for entertaining friends or members of the opposite sex without disturbing a studying roommate. The Lincoln quadrangle design eliminated that issue. The suite style units allowed one roommate to entertain friends while still allowing a space for privacy within the apartment for another roommate to study. It also eliminated problems of privacy with central toilet facilities while occupants entertained friends, members of the opposite sex, or family. Miller felt the design "fulfilled the behavior requirements of upperclassmen and students who wanted small group living within a large campus environment."107

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The design still allowed for the campus experience of group living within a residence hall. The central dining facility in the center of the quads and courtyard still enforced that social dynamic, and students lived with other students. The Lincoln Quadrangles are often described as apartments but they still operate much like a residence halls. Students do not have a kitchen in their rooms as an apartment would. The design was also meant to give students a sense of responsibility, as they were responsible for what happened within their apartment. The units were not public spaces as lounges and group toilet facilities were. There was also a student responsibility to clean the units. At the same time university employed custodians to clean communal spaces and there were still university faculty and resident assistants associated with the building. Therefore, the student was not entirely on his or her own, though a greater sense of independence was achieved compared to traditional residence hall design.

The buildings have proved successful amongst students. Miller commented, "They have always been full." The American Institute of Architects of Indiana honored the design with a 1971 Merit Award. The award acknowledges well designed new construction. The Lincoln Quadrangle Apartments differed greatly from the high-rise structures that Miller designed, but the design represented not only a change in the attitude of students but an evolution of design based upon behavioral research. As of 2015, they have not undergone any extensive renovations like the other residence halls.

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108 Miller, phone interview with author.
Figure 25. A rear elevation view of the Lincoln Quadrangle apartments from the courtyard space showing terraced balconies and landscaping.

source: North Dormitory Project, 35 mm color slide, box 25, folder 23, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 26. An aerial view of the Lincoln Quadrangles from the 1970s.

source: "Lincoln Quadrangles 1969," Campus Architecture, online exhibit,

Figure 27. A view of the steps and the common building with units of the Lincoln Quadrangle apartments in the background.

source: North Residence Hall, 1970s, photograph, box 25, folder 17, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 28. An interior rendering of the basic floor plan of the five person suites featured in the Lincoln Quadrangles from Ewing Miller Associates.

source: North Dormitory Project, 35 mm color slide, box 25, folder 23, Miller Family Architectural Records, Drawings + Documents Archive.
Chapter 4: Behavioral Research in Planning a New and Existing Campus, 1968-1975

In the mid-1960s, the Indiana State University administration made the decision to expand the university further south into Evansville, Indiana with a regional satellite campus. The first record of this related to the firm was in 1964 on a works list for Miller and Miller Associates. The list had an entry named "ISU Evansville Campus." This may have been the start of the master planning, or the firm may have done some renovation work on the original building for the regional campus. In 1965, the campus opened in a previously abandoned elementary school. The regional campus operated out of this building until 1969 when it was moved to a new location. The new location was a 300-acre plot of land on the southwestern edge of the city.

The Ewing Miller Design Partnership, as the firm's name at that time, designed the master planning and the initial five buildings for the campus. The first buildings, the classroom-building complex and the boiler plant, were commissioned in 1967. The commissions coincided with the same year that funding became available to purchase the land. Ground breaking for the campus was held on June 22, 1968. Miller described this project as "...one of the most marvelous things that I had happen to me in the architectural world was to take 300 acres and really come up with a total concept and set the whole tone and the style of the buildings down there." The project differed in many ways from the previous master planning done for Indiana State University, which was an urban campus. Prior to Indiana State University Evansville, there was nothing present at the space. This meant no existing buildings and no urban

109 Job's list, box 2, folder 3, Miller Family Architectural Records, Drawings + Documents Archive.
111 Work's list, Miller Family Architectural Records.
113 Miller, interview with Jane Hazledine.
fabric to contend with, that had been a challenge with the Indiana State University Terre Haute campus. The master plans were designed for Indiana State University, but the institution is now a separate entity named the University of Southern Indiana.

The University of Evansville commissioned the Ewing Miller Design Partnership at the same time the firm was designing buildings for Indiana State University Evansville. The University of Evansville was an existing private college on the eastern side of Evansville. In 1969, Miller was commissioned to design a plan for the universities expansion and designed several buildings for the campus. This project took a different approach than the plan for Indiana State University Evansville. The existing buildings and architectural history on the campus warranted a different approach, and Miller was conscientious of those factors. Both of these university master plans benefitted from behavioral research.

Miller and Wheeler collaborated on a series of surveys between the years 1967 and 1972 on total campus environment. The survey questions comprised of a series of pictured architectural styles, and questions based on campus preferences. These preferences included landscaping, building characteristics, building uses, and building locations. The survey also included a number of questions relating to campus issues such as the preference of one main library compared to a series of branches. The campus surveys represented an expansion on the previous behavioral research because they no longer pertained to one campus building.

Surveys were conducted at the Indiana State University campus in Terre Haute, the students of Indiana State University Evansville, the students at the University of Evansville. Wheeler conducted an additional survey on schools across the nation. The latter survey included Bowling Green State University, California University at Hayward, Ball State University, University of Arizona, University of New Hampshire, and the University of Evansville. The
experience with the Indiana State University residence halls was able to provide a basis for the surveys and they followed a similar format.

A few key points discovered were that students were concerned with campus architecture and did not want monotonous styles. Miller and Wheeler also found that students were concerned with landscaping details and having relaxed environments on campus. The surveys conducted from 1967 to 1969 confirmed these preferences. They also found out that students preferred a variety in campus architecture. Students enjoyed a mixture of high and low rise structures. Another preference that came to affect the campus planning including a preference for buildings situated around a pedestrian mall or large courtyard. Parking became a major concern as well. Students and faculty were open to the idea of the automobile on campus but they highly preferred parking to be unobtrusive and for traffic to be limited within the core of the campus. Above are only a few of the key findings in the surveys, other discoveries and key findings will be discussed with the master plans.

**Indiana State University Evansville (University of Southern Indiana) Master plan and Buildings, 1968-1975**

The 300-acre site featured a rural setting with hills and wooded surroundings. In a 1969 survey, Wheeler found that students preferred a rural campus near a small town. Though Evansville is not a small town, this campus catered to that preference. The master planning was careful to preserve the rural character of the site, keeping the wooded areas and adding elements such as a manmade lake on the western portion of the site. Miller described the campus plan as being derivative of a western hill town. The plan approached construction in a circular

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114 Lawrence Wheeler, "Student Reactions to Campus Planning Options: A Regional Comparison," (research presented at Third Environmental Research Association Conference, University of California Los Angeles, Los Angeles, California, January 1972), 2-4, box 6, folder 6, Miller Family Architectural Records, Drawings + Documents Archive.

arrangement and utilized the topography of the site, which included various hills. The plan also included the preservation of open lawns and the trees surrounding the campus. Miller described it as a "park wilderness effect." Behavioral research found that "patios, benches, fountains, and paths take first place among students, while the faculty placed their greatest emphasis on trees, but these two concepts jointly, take first or second place in each group." The master plan featured pedestrian paths, inclusion of trees, and the water feature of the lake. Lawn areas were preferred highly amongst both men and women. These components were incorporated into the plan. An early sketch from circa 1969 shows a rendition of what the campus may have looked like (Fig. 29). The buildings were not constructed in this arrangement, but it shows the emphasis on preserving ample lawn space and landscaping details.

The master planning for the buildings changed in several concepts and drawings over time. The concept of constructing a modern campus in a rural area did not. The concept to have ample spacing between buildings, as shown in the sketch below, also prevailed in most renditions. Miller included ample space in between buildings because the research discovered that students preferred short walking times, but did not want buildings too close together.

Students and faculty indicated that adequate parking was a major concern. Later behavioral research surveys also indicated that students preferred that parking was unobtrusive to the campus. In the Indiana State University Evansville design, the parking was located on the periphery of the main campus core with only the physical education building located between two main parking areas (Fig. 30). The 1969 survey identified that students did not want

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excessive vehicular traffic on campus.\textsuperscript{121} The original master plan featured two main roads. One road provided access to the western part of the campus for service access. The second major road was set up on the eastern part of campus and provided access to buildings on this side of the campus and to the parking areas. With parking on the periphery, it was crucial to provide ample access to the parking areas. Parking was a major concern for the plan because it was designed as a commuter campus. The focus on commuters made ample parking and road access to these areas important. The initial survey on the Indiana State University Evansville students confirmed that a majority of them planned to travel to the new campus via car.\textsuperscript{122} There was a major dependency on cars for the initial campus. Residential units were not included in the early phases of the master planning either. Planning for future residential units in later phases of the plan were in the northern part of the campuses in the wooded area. Cars affected the design as well as student preferences on roads and parking. The main concept in the master plan was to have an academic core of buildings centralized on the site. The core was surrounded by green space, trees, and parking on the eastern side. Despite various sketches and concepts, that theme remained a constant factor. Behavioral research found in surveys conducted by Miller and Wheeler provided the basis for that theme.

One concept of the master plan, which was featured in the September 1970 issue of College Management, indicated that construction was to take place in three phases (Fig. 31).\textsuperscript{123} The first phase included science labs, a classroom building, and parking. The second phase included a library, technology shops, additional classrooms, and a gym facility. The third phase allotted for the construction of a service center, additional classroom spaces, and a student union.

\textsuperscript{121} Wheeler, "Survey of Evansville Campus," 3-4.
\textsuperscript{122} Wheeler, "Behavioral Research ISU Evansville Campus," 3.
\textsuperscript{123} "Evansville: Circling a Piazza," College Management (September 1970), reprint, box 26, folder 6, Miller Family Architectural Records, Drawings + Documents Archive.
There were also a number of unscheduled projects included in this plan, including faculty offices, a performing arts center, additional parking, additional classroom space, and student labs. The university implemented elements of the first two phases based on the photographs and information provided. The power plant, classroom building, first phase parking, and the science labs closely resemble the spatial component of this plan. A majority of the phases two and three buildings were constructed but in a different spatial arrangement than this plan indicated. These projects included the library, union or university center, the technology labs, and a gym building. The unscheduled projects were never implemented.

Miller and his design team for this plan also developed the concept of the learning module. The learning modules were designed to be square structures that were fifty feet by fifty feet and three to five stories in height.\footnote{Ewing H. Miller, \textit{Master Planning the Educational Environment} (Terre Haute, Indiana 1969: Ewing Miller Design Partnership, 1969): 10, box 6, folder 9, Miller Family Architectural Records, Drawings + Documents Archive.} Learning modules had complete interior flexibility to accommodate future needs of the campus. Elements of flexibility ranged from changing classroom size or creating labs by means of easily removable partitions. The learning modules were planned around the library and other academic buildings on the campus. The modules were represented in the \textit{College Management} diagram by the additional classroom space in phases two and three. Another design feature of these proposed buildings was connectivity to main academic spaces, such as the library, via covered walkways. Connected walkways made them "semi-autonomous" buildings of a larger mega structure.\footnote{Miller, \textit{Master Planning the Educational Environment}. 8} The learning modules were not constructed on the campus, and the only attempt at implementing this idea was the pedestrian bridge between the library and the University Center.
Figure 29. A 1969 sketch of the Master Plan for Indiana State University Evansville

source: Indiana State University Evansville Master Plan, 1969, 35 mm color slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
Figure 30. A map of the master plan that displays potential building arrangements in orange and tan, land contours and parking areas in gray.
source: Indiana State University Evansville Master Plan, 1969, 35 mm color slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 31. The master plan that was featured in *College Management* displaying development by phases.
Science and Classroom Complex 1967-1969

The first academic buildings on the campus designed according to the original master plan were the science building and classroom building (Fig. 32). This complex housed classroom space, and administrative offices. The complex opened in 1969 to 1,617 students. Miller designed the science building as a closed set of spaces without the concept for expansion featured in many of his academic designs. The building served all of the science curriculum needs for the satellite campus at the time of construction. In a description of the buildings produced by the firm it was stated that, "separate and distinct buildings could be planned if more space was needed to keep the sciences grouped." The idea of keeping buildings grouped by subject became a concept in the master plan. The survey results identified that students highly preferred buildings grouped by subject. It is odd that that the design of the science building did not include flexibility and expansion. This recurring concept was included in various buildings at Indiana State University starting with the Home Economics Building and ending with the Cunningham Memorial Library in 1974. None of the written documents in the plan provided an explanation for the closed space concept. A 1995 Health Professions Center was constructed to the north of the building, and in 2003 an Education and Science Center was constructed to the south. The buildings are separate and distinct buildings, but feature connected indoor walkways with the original science building. Miller did not design these buildings, though they incorporate into the master plan's concepts.

127 "Description of Four Buildings on ISU-E Campus," 1, unpublished manuscript, box 26 folder, 6, Miller Family Architectural Records, Drawings + Documents Archive.
The classroom building functioned as a multi-purpose building holding administrative offices, classrooms and the temporary library. The floor plans of the complex indicate the library was in the southern portion of the building. Internal flexibility was a major design element of the classroom building. The first floor plan indicates large lecture halls (Fig. 33). These areas had the potential to be converted into tiered classrooms, or large group learning centers configured around multimedia. The areas originally occupied by the business affairs and administrative offices had the potential to be configured into small group learning spaces. The concept of flexibility configured into the building was based around its temporary uses. The library moved in 1971 after the construction of the David L. Rice Library. The building currently operates as the Byron C. Wright Administration building. The northern half is administrative offices. And the southern portion contains some office space and three lecture rooms.

The science building featured a rectangular floor plan. The building displayed steel paneling above brick on the first floor. Steel paneling covered the entire second story, which was tiered back from the first. The building featured narrowed vertically oriented rectilinear windows on the north and south sides. On the east and west edges of the buildings were rectangular tapered towers. These towers contained staircases, and became a recurring architectural feature in other buildings constructed on the campus. The classroom building and science building were connected through a glass walkway (Fig. 34). The classroom building was a one-story concrete building with a cross-shaped floor plan. It featured small narrow windows on the north part of the building. The north wing exhibited very lightly colored brick on the exterior. The southern half displayed similar steel paneling as seen on the science building. Architecturally the buildings fit together while distinguishable as separate entities by their height. A small plaza was
designed on the northern edge of the complex, another feature frequently incorporated with the designs at Indiana State University Evansville.

Figure 32. The classroom building(left) and the science building(right) viewed from the east campus road.

source: Indiana State University Evansville Master Plan, 1969, slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive, Ball State University.
Figure 33. First Floor Plan of the classroom building and science building.

source: Indiana State University Evansville Master Plan, slide, Johnson and Miller Architectural Records, Drawings and Documents Archives, Architecture Building, Ball State University, Muncie, Indiana.

Figure 34. A view glass hallway that connects the science building (right) to the classroom building (left).

source: Indiana State University Evansville Master Plan, 1969, slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
David L. Rice Library, 1969-1971

The library completed construction in 1971 (Fig. 35). The three-story building was constructed partially into the side of a hill on the southern and eastern side. This provided second story entrances into the building, which were convenient for students. The second story served as the main floor of the library because the bottom floor was additional classroom and office space. The lower floor was eventually converted into library space in 1983 to accommodate an archives, technical center, and learning resource center. The library design introduced a major architectural feature included in the master plan. The feature was the use of cantilevered forms and balconies (Fig. 36). The balconies necessitated the use of pre-cast concrete for economical and practical reasons instead of brick. The same colored brick featured in the previous two buildings make up the walls in between the roofline, third story balconies, and a horizontal band of concrete above the first story and on the foundation. This catered to the students' desire to have places to relax as well as the intention of the plan to retain the rural wilderness effect. The wrap-around third story balcony provided a view of the campus from every side of the building. Relating to the science building, the library featured two concrete towers with a tapered roof jutting out the side of the building. The windows were constructed of the same dark glass as the previous designs.

Miller designed the building with expansion in mind. The original design intended for expansion to occur north toward the science building or to the east toward the road. The design of the columns and cantilevered balcony lent to this idea. According to a description on the building these design elements "provide a natural condition for half bay spacing which will allow

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for an expansion joint for future additions.” The pre-cast balcony rails were able to be removed and put on future additions if desired.

The top of the embankment on the east side contained a designed plaza area (Fig. 37). The area was landscaped and featured benches, and steps leading up to the library entrance. Student desire to have more patios, benches, and landscaped trees influenced the design of the plaza area. The library has since been converted into the University Center East, with the construction of the new David L. Rice library in 2006 by Hafer Associates, P.C. The University Center complex underwent an extensive renovation from 2008 to 2009. The interior was re-designed, and the building received a new exterior of limestone, clay block, and glass from the south side. It hardly resembles the original design of the library by Miller. The north side of the building retains some of the architectural character of the original design. A theatre was also designed as an addition to the east, where the building had been designed to be expanded. However, this addition covers more of the original exterior of the library.

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131 “Description of the Four Buildings designed for I.S.U.E. Campus,” 2.
Figure 35. The original David L. Rice Library on the Indiana State University Evansville campus.

source: Indiana State University Evansville Master Plan, 1969, slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
Figure 36. A view of one of the library balconies, the University Center terrace is seen in the background.

source: Indiana State University Evansville Master Plan, 1969, slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 37. A view of the original David L. Rice Library and the plaza before construction of the University Center bridge.

source: Indiana State University Evansville Master Plan, 1969, slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
The University Center and Bridge, 1972-1974

The University Center was the next building constructed on the campus in 1974. It was a two-story building with a basement level. The building was constructed against a hill to the north of the building. Entrance to this side the building was through stairs from the plaza designed with the library. The building functioned as an activity area and student union. The University Center provided amenities previously lacking on the campus. These amenities included student government offices, dining facilities, lounges, a bookstore, and recreational areas. The lower floor featured student government offices, recreational area, mechanical equipment, food storage, and a service tunnel connected to the library in the lower level underground. The first floor, or ground level, provided offices, an entrance lobby, a grill, a bookstore and a lounge (Fig. 38). The top story had dining facilities, a terrace, a multi-purpose room, and a kitchen to accommodate the dining facilities (Fig. 39).

The original design of the building was an odd trapezoidal shape. None of the other designs on the campus featured this type of floor plan. It was aligned at an angle to provide better views of the lake from the second story dining facilities. A tower was located on the south side, though it was not tapered as in previous designs. This building incorporated cantilevered elements similar to the library. On the second story of the south side, a terrace hung over the first story. The roof was set back from the terrace creating a more open space than the library balconies (Fig. 40). The north side of the building had a balcony that connected in a continuous pattern with the pedestrian bridge and library. Miller designed the University Center to expand vertically. The structural system could accommodate an additional three stories.133 This expansion never happened. The pre-cast elements and brick of the building closely resemble the

133 “Description of Four Buildings on ISU-E Campus," 2.
design of the library. The different shape of the building, lower height, and angle provide distinction despite similar materials used.

Another major feature of this construction was a raised pedestrian bridge between the University Center and the library (Fig. 41). The bridge mimicked the pattern of the cantilevered balconies on the library, extending from the library's second story. This would have been the main floor of the library and provided easy access to the University Center. Expansions and renovations have altered the University Center. Now called University West it received an addition to the south. The addition wraps around the exterior of the original building covering the designed terraces and tower. The bridge that connected the original University Center and library was also demolished in 2009 as part of the renovation project for University Center East (old library). A glass structure and conical tower have taken its place bridging the two University Center buildings.

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Figure 38. The ground level floor plan of the University Center.

source: Indiana State University Evansville Master Plan, 1969, 35mm color slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 39. The upper level floor plan of the University Center.

source: Indiana State University Evansville Master Plan, 1969, 35 mm color slide, box 26, folder 7, Johnson and Miller Architectural Records, Drawings + Documents Archive.
Figure 40. A view of the University Center Terrace from the east.
source: Indiana State University Evansville Master Plan, 1969, 35 mm color slide, box 26, folder 7, Johnson and Miller Architectural Records, Drawings + Documents Archive.

Figure 41. A view from the main campus road showing the David L. Rice Library(left), pedestrian bridge(center), and the University Center(Right).
source: Indiana State University Evansville Master Plan, 35 mm color slide, Johnson and Miller Architectural Records, Drawings and Documents Archive.
Technology Building, 1974-1975

The last Miller designed building on the campus was the technology building in 1975 (Fig. 42). The building was built into the side of the hill with a split-level design incorporating the site topography. The eastern portion, which held academic classrooms and faculty offices, was a two-story design. The top story rose above the hill while the lower story was built into it. This portion of the building had a cantilevered concrete roof, and two towers resembling the designs of the previously discussed buildings.

The roof was cantilevered to a greater extent than the library or University Center, but did not contain balcony space. The technology building constructed of white concrete with dark glass windows remained visually similar to other buildings on the campus. The split-level design made it visually distinguishable from any other building. Miller included expansion into its design. The academic section of the building constructed of reinforced concrete was designed to expand vertically like the University Center. The structure was able to accommodate two additional floors.135 Built below the sloping hill, the one-story west wing contained shops. Dark steel paneling covered the exterior of the lower wing. The western wing was designed with a forty-eight foot clear span to accommodate for the shop space equipment.136 Miller designed this wing for continual expansion to the west as needed. Expansions could utilize the concrete pad that served as the floor.

The interior of both wings of the building were designed to be completely changeable to adapt for future needs. The flexibility was made possible by the stairs pulled to the exterior in the towers, as well as mechanical shafts in both wings. The technology center remains the least changed building of Miller's on the University of Southern Indiana campus. The Technology Building has received no major renovations to date.

135 “Description of Four Buildings on ISU-E Campus,” 2.
136 “Description of Four Buildings on ISU-E Campus,” 2.
Campus Development

An aerial photograph taken in 1975 shows these buildings constructed to Miller's designs and original master planning (Fig. 43). This photograph includes the science building, classroom building, technology center, library, and University Center prior to any alterations. A color aerial from the 1970s shows the road system and a better view of the science and classroom complex (Fig. 44). In 1980, a Physical Activity Center was designed in the designated spot between two parking lots as conceived in Miller's master plan. The author does not know the architect of the
Physical Activities Center, and it is unclear if Miller was involved in the project.\textsuperscript{137} 1975, the campus has undergone major changes (Fig. 45). Buildings by other architects have been constructed, and it is unclear how closely his master plan design was followed. Miller allotted for more construction, as well as expansion to his own buildings. Architecturally many of the buildings feature contemporary design and the original architectural character was lost. Residential units were constructed to the northeast and northwest portions of the site in the wooded areas. Residential construction was planned in this area by Miller's master plan, but it is unknown to the author if Miller had a hand in these designs. It is evident that trees were cut down for this construction, but many trees remain in the forested area. Parking has expanded but remained out of the academic core and on the periphery.

Despite these changes, the original campus plan represented an expanded behavioral research program for Miller's architectural firm. The surveys expanded past questions on residence halls, and the results helped format an entire campus design. Behavioral research influenced the original master planning design of the campus. This ranged from the preservation of green space and trees to increased pedestrian paths. The desire of students to experience a well-landscaped rural campus also affected the building design. The cantilevered forms, terraces, and balconies displayed in the architecture were a result of that preference. These design elements were incorporated to allow users to experience views of the campus. The design of the road system and parking was directly influenced from student designs to have automobiles minimized on campus. Cars were not incorporated into the academic core as on some urban campuses, and parking was moved to the periphery. Behavioral research did not affect every

\textsuperscript{137} There is no written material included in Miller's collection on the Physical Activities Center for the Indiana State University Evansville. There is not a complete works list for Miller either, but the building does not appear on any of the available work's lists. The only reference to the building in the collection is a series of photograph slides in the Indiana State University Evansville project file, but there is nothing included about the design as with other buildings.
design decision. The designer's thoughts and interpretations still influenced elements, but the campus design attempted to incorporate both the desires and the needs of its users.

Figure 43. A 1975 aerial of the Indiana State University Evansville Campus. The Science and Classroom Complex is center, the library and university center are on the right, and the Technology Building is furthest away.


Figure 44 An aerial taken in the 1970s of the Indiana State University Evansville Campus.

source: Indiana State University Evansville Master Plan, 1969, 35 mm color slide, box 26, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.
Figure 44. A recent aerial of the University of Southern Indiana campus, that illustrates changes. 
University of Evansville Master Plan Concept, 1969-1974

Miller and the Ewing Miller Design Partnership also designed a master plan for the University of Evansville. The University of Evansville master plan was based in behavioral research, but it took a different approach than the one for the Indiana State satellite campus. The master plan was for an existing campus and that factor influenced the plan heavily. The main intent of the plan was not to diminish the established buildings and the tradition at the campus. New buildings designed were not to exceed the height of the historic buildings and designed with materials that would not draw focus away. The existing administration building on the campus, at the head of a U shaped drive, remained a focal point for the campus. Miller described this as "inside building" design, which was essentially placing new construction in between the historic construction.  

Miller and Wheeler found in their research conducted on the campus that there was a strong preference for traditional styles at the University of Evansville. The design was based around that discovery (Fig. 45). The master plan was intended to accommodate development on the campus up until 1980 and featured factors influenced by behavioral research. A notable feature of the plan was the design of an "academic mall." The mall is labeled 13, 13 A, 13B and 7A on the previously referenced plan map featured below. The mall was intended to be a complex that started at the location of the old library, and continued north to Walnut Street. The complex's design included the Arts and Science Building, School of Nursing, School of Business, and the library addition. Miller's firm produced a design for the Arts and Science Building (Fig. 47). All of the buildings were designed to be connected with a central covered walkway. This complex was a variation on the learning module concept. Each building

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138 "New Concepts on Campus."
139 Ewing H. Miller, "Nomination - for the American Institute of Architects Medal for Research Jury on Institute Honors, presenting Lawrence Wheeler." section on environment research, 1, box 13, folder 5, Miller Family Architectural Records, Drawings + Documents Archive.
was a semi-autonomous building but part of a mega structure. A concept of expansion was designed into the complex to handle growth in enrollment if necessary. The mall included an arts court, outside the planned Arts and Science Building. Strong student preference for short walking times, grouped buildings, and patio designs influenced this area of the plan. Research also showed that students preferred buildings grouped around a courtyard or mall. The design of the mall accommodated that type of preferred arrangement for new construction on campus.  

Behavioral research influenced the proposed location of both the library addition and the mall. Miller commissioned a study on the library, which appears in the firm's works list. The details of this study were not available, but Miller discussed the results in numerous presentations and writings. At first, the design team wanted to place a library in the grassy lawn, the area in front of the administration building. The area was central to the original campus quadrangle, and was a prime space for new campus focal point. The administration wanted a library in this area to serve as a new focal point for the campus. Miller and Wheeler were able to convince the administration with their research to leave the space untouched. The students had a high preference for traditional architecture on the campus. Miller and his design team decided not to replace the focal point of the neo-gothic administration building with a contemporary designed library. Another factor found in their research was that lawns and trees as environmental symbols were important. This finding caused the design team to want to preserve the green space in front of the administration building. The academic mall and library designs were moved to an area behind the original library that contained a parking lot. The behavior research allowed Miller to convince the administration of University of Evansville to accept this change in location for the master plan.

140 Lawrence Wheeler, "Survey of Evansville Campus," 1969, box 6, folder 6, Miller Family Architectural Records, Drawings + Documents Archive. Same as other one, pg 6
141 Miller, "Nomination - Lawrence Wheeler for the AIA Research Jury Award," section environment, 1.
This new location put new construction second stage to the administration building, preserved the grassy lawn area, which at one point the design team proposed to landscape, and add more pedestrian paths too (Fig. 48). The area was never developed according to this plan. The lawn area has remained untouched by construction and does contain pedestrian paths. The University of Evansville never implemented the majority of master plan designs. The academic mall was never constructed and neither was the arts the court. Lack of funding delayed the proposed design of the mall, including the Arts and Science Building and library.\textsuperscript{142} Funding either never came through or the university decided to not go with Miller's proposed design. The only new construction that Miller's firm designed on the campus was the School of Nursing, known as Graves Hall (Fig. 49). The building is in the same area proposed on in the master plan thought it is not connected to any buildings as in the original design.

In 1986, the Bower-Suhrheinrich Library was constructed behind the original library similar to the location Miller proposed. The firm Jack R. Kinkel and Sons, a local firm, designed the library.\textsuperscript{143} It is unclear if it resembled Miller's original ideas for the library. It appears once funding became available that the administration of the campus deviated from Miller's plan. Though the plan follows a rough sentiment of the concepts put forth in this campus design. The main part of the campus between Lincoln Street and Walnut Street has remained a pedestrian area. The university landscaped the area in front of the administration building. A parking lot at the center of campus, the proposed location for the mall no longer exists. The Bower-Suhrheinrich library and a designed courtyard behind Graves Hall occupy the area where the mall was proposed.

\textsuperscript{142} Miller, "Behavior and Design: A Memoir Part II."
The University of Evansville plan may have not been realized, but it provides another example of how the behavioral research conducted by Wheeler had an impact on design. It also showed how students entering a new university have similar tastes yet slightly different from those on an established campus. Students surveyed for the Indiana State University campus had yet to experience their campus. The students surveyed at University of Evansville had already experienced the campus. This represented a few notable changes in the desire to preserve the current character of the buildings. It also proposed design problems in not designing new buildings to compete with older ones. Behavioral research was able to show that students would not react well to buildings ruining the tradition and established feeling of their campus. Research influenced both of these master plans to create environments students would truly enjoy.
Figure 45. The development Plan to 1980 designed by the Ewing Miller Design Partnership for the University of Evansville.


Figure 46. Key for the development plan to 1980 designed by the Ewing Miller Design Partnership.

1. President's Residence
2. McCurdy Alumni Memorial Union (Student Union)
3. Book Store
3A. Addition to Book Store
4. Krannert Hall of Fine Arts and Wheeler Concert Hall
5. Hyde Hall
6. Administration Building
7. Clifford Memorial Library
8. Engineering-Science Building
8A. Addition to Engineering-Science Building
9. Neu Chapel
10. Women's Residence Halls
10A. Additional Women's Residence Halls
11. Harper Residence Dining Center
12. Central Heating and Cooling Plant
13. Academic Mall (Arts-Science Complex)
13A. School of Business
13B. School of Nursing
14. Men's Residence Halls
15. Carson Center for Health and Physical Education
16. Arts-Science Plaza
17. Fine Arts Plaza.
Figure 47. A rendering from Archonics Corporation of the design for the Arts and Science Building at the University of Evansville.

source: University of Evansville, slide, box 31, folder 1, Miller Family Architectural Records, Drawings + Documents Archive.

Figure 48. A concept in the master plan for the University of Evansville that shows the lawn area in front of the administration building.

source: University of Evansville, 35 mm color slide, box 31, folder 1, Miller Family Architectural Records, Drawings + Documents Archive.
Chapter 5: Conclusion, Ewing Miller Design Partnership to Archonics, 1969-2003

During the process of the campus planning projects and the work on the residence halls at Indiana State University the firm underwent a name change. In 1968, the name changed from Ewing Miller Associates to the Ewing Miller Design Partnership. The firm, however, was not a partnership. Miller explained that no one had the necessary funds to enter a partnership. The name change may have been to express Miller's team based approach to design problems. Miller also desired to have a partner. In 1968, discussion started on what was called the Architectural Consortium. The idea of the consortium was for architectural offices in smaller communities to support each other. A document written by Miller in 1968 stated that it was "...a joint venture of three architectural, planning, and engineer firms, all based in Indiana, Fort Wayne, Lafayette,

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144 Miller, phone interview with author.
The major idea being smaller firms could band together to share in design ideas, philosophies, and technology to yield higher profits. This was originally spurred by the gap that Indiana State University left in Miller's workload after its period of expansion had ended. Miller often referred to his architectural firm as small, and architectural firms in small cities did not always have enough work to support an independent firm. A mild recession was also occurring between the years 1969-1970 that may have furthered economic hardship of smaller firms. The firms involved did not follow through with the architectural consortium.

Instead, Miller approached Carl Bradley from Bradley Associates in Fort Wayne to form a partnership under the name Archonics Corporation. Archonics was formed in 1971, and though Miller could not remember the first project, a project from both Bradley Associates and the Ewing Miller Design partnership was put into the fledgling partnership. At first, Bradley Associates and the Ewing Miller Design Partnership still operated separately while also putting designs into Archonics.

Wheeler officially left the firm in 1973. This year was cited by Wheeler in "Behavior and Design: A Memoir," published in Environment and Behavior. Miller provided an explanation in a letter to Paul D. Cherulnik, a psychologist and author, in which he stated, "All of our research stopped in 1973 with the collapse of the university market." The private market projects Miller was commissioned for were not willing to pay for behavioral studies. Miller and Wheeler had attempted to expand their behavioral research studies prior to the end of their professional relationship. In 1970, the firm designed the Katherine Hamilton Mental Health

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145 Ewing H. Miller, "What is the Architectural Consortium?" 1968, 1, unpublished manuscript, box 6, folder 1, Miller Family Architectural Records, Drawings + Documents Archive.
147 Ewing H. Miller to Paul D. Cherulnik, March 6, 1986, box 9, folder 4, Miller Family Architectural Records, Drawings + Documents Archive.
Center in Terre Haute, Indiana. Wheeler wrote a grant proposal to the National Institute of Mental Health to receive funding. The research was intended to conduct studies on the interior, especially colors, of mental health centers to benefit future design. The main goal was to create mental health centers that improved behavioral reactions from patients. According to Miller, the grant was nearing approval before the federal government restricted funds. Without university work or grants to fund behavioral research studies, Miller and Wheeler parted ways professionally. Miller and Wheeler remained close personal friends. Wheeler went on to teach at the University of Arizona, where he started in 1969. It is unknown what happened to Wheeler after his tenure as a professor at the University of Arizona.

The College of Fellows of the American Institute of Architects elevated Miller to a fellow in the institution in 1973. The fellowship is a prestigious honor awarded to architects who make outstanding contributions to the field of architecture. The College of Fellows press release from the American Institute of Architects specifically cited his work in behavioral research. The press release mentioned, "Miller is widely known throughout the profession for his research in behavioral science and its application to architecture space and living environments." This honor bestowed upon him marks his achievements in architecture and the significance of his behavioral research program. Miller continued to promote behavioral research after his collaboration with Wheeler ended. He gave a considerable amount of presentations, speeches, and continued to write about the benefits of behavioral research. Miller was also chairman of the AIA committee on design, where he promoted the use of behavioral research to influence design. In 1979, he spoke of the need for architects to utilize this type of research in design to the

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148 Ewing H. Miller to Dr. James C. Griffin, November 16, 1972, box 9, folder 4, Miller Family Architectural Records, Drawings + Documents Archive.
149 American Institute of Architects, "Terre Haute Architect Elected to AIA College of Fellows."
committee. He urged architects to become familiar with this aspect of design theory so decisions could be made pre-construction instead of studied post-construction.

This type of promotion of the behavioral sciences continued in Archonics as well. Miller urged his employees toward theories created by psychologists to educate them for better decisions early in design programs. Miller's work on behavioral research continued to influence design decisions in Archonics even if new studies were not conducted in-house.

A major goal of Archonics for both Miller and Bradley had been to open an office in Indianapolis. Their opportunity came in 1974 with the Indiana Government Capitol Complex master plan. They won the contract and Miller cited this job as the catalyst for the move to Indianapolis. Their office in Indianapolis was small at first, and Miller commuted from Terre Haute to the larger city. Wheeler also mentioned in an article titled "Behavioral Research: A Memoir" that he worked remotely with Miller on behavioral research surveys for this plan. This master plan was not implemented, but the contract allowed Archonics to gain a foothold in Indianapolis.

Archonics functioned with two major offices one in Fort Wayne under Bradley and one in Indianapolis under Miller. The firm worked on several major projects when downtown Indianapolis experienced an increase in building projects. Miller noted that Archonics was instrumental in the wave that brought downtown Indianapolis back. The 1980s and 1970s also saw a boom in historic preservation and adaptive re-use projects in the city. Archonics was at the forefront of that boom. Archonics converted the manufacturing building of the Lockerbie

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150 Ewing H. Miller, “The Committee on Design: American Institute of Architects, the effect upon architectural design and environment design of the research don by the behavioral and social sciences thru 1979,” unpublished manuscript, box 7, folder 7, Miller Family Architectural Records, Drawings + Documents Archive.


152 Miller, phone interview with author.

Glove Company into residential units in 1982. This conversion of an old industrial building to housing was the first of its kind in Indianapolis.\textsuperscript{154} The project included new construction with the Lockerbie Town Homes the same year. Archonics designed the renovation of the Circle Theatre in Monument Circle in 1984. The project adapted the historic theatre for orchestra performances. Archonics also reconstructed the original box seat balconies and restored the terracotta facade.\textsuperscript{155} These are just two examples of the adaptive re-use and historic renovation projects the firm designed in Indianapolis. Archonics was also responsible for significant new construction in the city. A few of these projects were the Metro Bus Facility (1985), the St. Vincent Family Life Center (1985), and Backbay at Geist condominiums (1984). This is only a brief sample of new construction projects designed by Archonics in Indianapolis.

Archonics merged with Howard, Needles, Tammen and Bergendoff (HNTB) in 1985. The details of the merger are unknown to the author. HNTB is a national architecture firm originally based in Kansas City, Missouri. Archonics operated as the Indianapolis office and division of the larger firm. As a division of HNTB, Archonics, designed the Humane Society, and buildings for the Castle Creek Corporate Park (1985). Castle Creek IV was one of the first speculative offices buildings in Indianapolis to include a multi-story glass atrium.\textsuperscript{156} Miller and the Archonics division also worked on the Indiana Government Center master plan and the Indiana Government Center South building constructed in 1993. The master plan incorporated the South Building, North Building designed by CSO Architects in 1993, and the Indiana Capitol Building that had been renovated in 1988.\textsuperscript{157} This marked one of Miller's last projects in Indianapolis. In 1993, he moved to Washington D.C. and worked in semi-retirement. The

\textsuperscript{155}Gadski, \textit{Indianapolis Architecture: Transformations Since 1975}, 55.
\textsuperscript{156}Gadski, \textit{Indianapolis Architecture: Transformations Since 1975}, 191.
\textsuperscript{157}Gadski, \textit{Indianapolis Architecture: Transformations Since 1975}, 72-75.
Archonics division of HNTB was closed in 2003, ending a 90-year old firm that impacted Indiana's built environment so greatly.

Miller currently resides in Washington D.C. The American Institute of Architects Indiana has continued to recognize Miller's influence on architecture since his retirement. In 2003, Miller was awarded the American Institute of Architects Indiana President's Award for "contribution and impact on the quality of architecture in Indiana."158 This award was also posthumously awarded to other members of the Miller family including Matthew Miller, Warren D. Miller, and Ewing H. Miller I. In 2013, the American Institute of Architects Indiana awarded Miller the Gold Medal Award, its highest honor. This award is given to an individual architect in recognition of significant accomplishments and advancing the field of architecture. His behavioral research studies were mentioned in the nomination for this award.159 The American Institute of Architects acknowledged Miller's commitment to the field of architecture and advancement of architectural theory. He truly designed buildings with the thought of how they affected human behavior in mind.

**Miller's Place in Modern Architecture**

Miller contributed a great deal to the Modern movement and to the field of architecture. The primary focus of this thesis was his work with behavioral research and design. In this category, Miller advanced architectural theory and put it into practice with built examples. Several authors have cited Miller and Wheeler as the first known collaboration between an architect and a psychologist. Bechtel mentions this in his book *Environment and Behavior* and

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Moore in the *Handbook of Environmental Psychology*. Miller was truly a pioneer in the field of environmental psychology in regards to architecture. His work with behavioral research also created a unique design philosophy. All of his building designs, whether research was conducted on them or not, took into account their affect on human behavior. This statement is only reinforced by the fact that he continued to advocate behavioral research in his own firm and to others.

Behavioral research became a popular subject of study in the 1960s and 1970s. Miller was not the only architect thinking of its application in design during this time. The AIA worked with the National Science Foundation to hold a conference on the "relationship of the physical, biological, and social sciences to the problems of optimum created environments for human activities." The University of Michigan hosted the conference in 1959. The AIA also had a seminar concerning research for design at the 1958 convention in Cleveland. It was clear that at the time that Wheeler and Miller started their professional relationship that interest in applying behavioral research to design was discussed in the field of architecture.

Miller's work represents the application of these ideas. The Eastern Express projects represent an early collaboration of a firm conducting in-house behavioral research for design. Sycamore Towers may represent one of the earliest, if not the earliest, example of behavioral researching affecting design to be constructed. Other studies conducted by psychologists at the time that Miller was designing buildings based on behavioral research may have not directly affected a design. It is impossible to know all the early buildings constructed by this type of

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architectural theory. A comprehensive history on environmental psychology in design does not exist, and often times histories on environmental psychology do not mention building projects. Much of this literature tends to discuss studies and findings by psychologists not built examples by architects.

Miller represented an early change in this architectural theory, but to suggest he was the only architect utilizing behavioral research in design is incorrect. Other architecture firms were clearly interested in this type of theory, around the same time that Miller started to use behavioral research in residence hall designs. In 1966, the architectural firm Deasy and Bolling published literature from their firm, *Social Psychological Considerations in Architectural Planning* detailing the benefits of behavioral research in design. Deasy and Bolling are another early example of an architectural firm using behavioral research in design. This firm, based out of Los Angeles, California collaborated with psychologist Thomas E. Lasswell from the University of Southern California. This collaboration created two known designs, which are the headquarters for the Lincoln Savings and Bank in 1966, and the student union for California State College in 1970, both in Los Angeles. Miller's work with Wheeler was earlier, but D.M. Deasy, a partner in the firm, noted in *Social Psychological Considerations* that they found no precedents for establishing behavioral objectives in a building program. Deasy and Bolling appeared unaware of the work Miller was doing, but their work in California represents another early example of behavioral researching influencing design. Other early examples may exist but are unknown to the author.

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162 Deasy and Bolling, *Social Psychological Considerations in Architectural Planning* (Los Angeles: Deasy and Bolling, 1966), box 9, folder 8, Miller Family Architectural Records, Drawings + Documents Archive.
164 Deasy and Bolling, *Social Psychological Considerations in Architectural Planning*, 1.
Research suggests that regardless of other projects that may have utilized behavioral research in design, Miller was an early supporter and pioneer in this type of design theory. The field of environmental psychology is also vast and incorporates numerous studies on numerous building types. Miller's work at Indiana State University represents only a small fraction of the field on university residence halls.

The residence hall program developed by Miller and Wheeler offered an opportunity to continually build upon research done on previous residence halls. The situation of Indiana State University committing to Miller as their main architect in the 1960s, and funding the research made the opportunity possible. A majority of architects interested in this type of design theory were probably not given such an opportunity. In "The Influence of Dormitory Architecture on Resident Behavior," by Martin Heilweil published in *Environment and Behavior*, the Indiana State University dormitory projects were discussed.\(^{165}\) Heilweil mentions that Wheeler's research was "neither accessible nor recommended for all dormitory research."\(^{166}\) Heilweil was addressing the fact that Wheeler conducted studies on the dormitories as they were built.

This article references Wheeler's research several times, but the Indiana State University residence halls are the only building program mentioned. The other numerous reports mentioned in the journal article were conducted on buildings and findings after construction. Heilweil did not mention any of them directly affecting a design program. This suggests that as of 1973, Miller and Wheeler's residence halls may have been one of the only examples of this type of research conducted on residence halls that influenced the design program prior to construction. Their research appears to have been a unique prospect in the field of environmental psychology.

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A number of architects, psychologists, and students also requested Miller and Wheeler's research. This is evident by the numerous letters requesting their research reports in the collection at Ball State University. Among these letters is one from Wolfgang Presier, research architect in the Department of the Army in 1973. Preiser requested a copy of their research published in 1968. Miller also mentioned in a different letter "others have copied the methodology of Wheeler's research but did not understand it, doing a quick and dirty study, but citing Wheeler's name." These examples show their research was noticed in the field of design. Their work at the Indiana State University residence halls and subsequent work in Evansville had an impact on the design field. However, it is impossible to gauge the exact impact of projects affected by their published works.

Despite his behavioral research, Miller's buildings were not universally appreciated by their occupants. This was evident in the dislike of Statesman Towers by students. Notably, the fact that it was two dormitories stacked on top of each other proved unpopular. Not every aspect of that design had been directly influenced by the behavioral research studies. The design for two stacked dormitories was necessitated by land costs and student enrollment projections that did not materialize. His behavioral research designs also became outdated. Many renovations on his buildings have occurred to update his designs to accommodate contemporary changes in student behavior. Large dormitory living arrangements with small double rooms and group toilet facilities have proved unpopular compared to suites and apartment style living. Student desires and behavior changes over time. Miller and Wheeler were well aware of student attitude changes as they occurred during their behavioral research program with the dislike for high-rise structures.

167 Miller to Preiser.
168 Ewing H. Miller to David G. Peterson, February 12, 1974, box 9, folder 4, Miller Family Architectural Records, Drawings + Documents Archive.
Miller's advancement in the theory of architecture is not his only notable accomplishment in the field of architecture. His architecture represents trends in the Modern movement as well. It is worthy to note that Miller did not invent a new aesthetic or promote one, as some Modern architects did. Miller's architecture did not achieve the aesthetic significance of Louis Kahn, Mies van der Rohe, Paul Rudolph, or Philip Johnson. Miller did not prescribe to or promote one aesthetic sub style of Modernism at any point. The difference in aesthetics between the buildings at the Indiana State University campus and the University of Southern Indiana campus are evidence of that. They shared similarities, but were not part of a visually distinguishable sub style of the Modern movement.

Miller's architecture loosely followed the aesthetic trends of architects like Rudolph and Kahn in regards to building material. His emphasis on masonry over glass curtain walls and followers of Mies is evident. The use of concrete as a primary building material became popular with Le Corbusier's Unite D' Habitation in Marseilles, France, and was promoted by Kahn and Rudolph in the 1960s. Miller's architecture did not reinvent the aesthetics of architecture, but they did not attempt too. Miller's design philosophy rejected the grand designer concept necessary to do this. Instead, Miller designed great buildings within the current accepted aesthetics of Modern architecture. Miller's buildings, though, are aesthetically pleasing and show a high amount of skill in design.

Miller's architecture also represented a number of technological innovations. This was not unique to Miller as other Modern architects practiced this too. Miller's Physical Education Building (1962) on the Indiana State University campus featured a folded concrete roof with the longest span of its kind when constructed. The concrete roof was noted in the American Institute of Architects press release, in 1973, when Miller was elevated to the status of fellow.

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169 American Institute of Architects, "Terre Haute Architect Elected to AIA College of Fellows."
The press release also mentioned that the load-bearing precast panels of Sycamore Towers and Statesman towers were one of the tallest of their kind.\(^\text{170}\) Miller's Cunningham Memorial Library featured removable exterior panels to accommodate for interior change. These are just a few examples of how Miller produced thoughtful and innovative architecture even when a behavioral research program did not affect the design.

Another distinct trend that the behavioral research and student observations influenced was ending high-rise construction on the Indiana State University campus. This parallels a similar trend in high-rise design in the Modern movement of architecture. High-rise structures were touted as solutions to urban density problems, and were featured in many urban renewal projects in the 1950s. The most infamous high-rise project was the Pruitt-Igoe low-income housing complex in St. Louis, Missouri. Pruitt-Igoe was constructed in 1954 and demolished by 1972. The Pruitt-Igoe's reputation included vacancies, lack of maintenance, and crime.\(^\text{171}\) The complex was not well liked by inhabitants and it was demolished only eighteen years after construction. The Modern movement began to move away from high-rise structures as housing solutions. Miller's construction of the Lincoln Quadrangles in 1969 echoes this sentiment in the movement, in which students started to prefer low-rise housing to high-rise towers. Behavioral research played a role in convincing the administration at Indiana State University to build low-rise apartments.

Miller's architecture discussed in this thesis represents a change in architectural thinking and design theory. Regardless of other architects conducting behavioral research at the time, available evidence suggests this was not a popular practice until the late 1960s. Miller was an early practitioner of the change in architectural theory to utilize social sciences such as

\(^{170}\) American Institute of Architects, "Terre Haute Architect Elected to AIA College of Fellows."

environmental psychology. The architecture he designed represents this change in theory and is significant for that reason. Miller's team based design approach also proved unique when it was first started with the behavioral research division at Ewing Miller Associates. Miller's desire to design truly usable architecture was not an approach solely unique to him. Most architects desired to create beloved architecture, but Miller created designs based upon research. The distaste for some Modern structures has been well noted. Rudolph's Art and Architecture building, constructed on Yale's campus in 1963, is just one prime example where the intentions of the building designed to benefit its users fell flat. Miller's approach attempted to avoid this. Based upon the surveys conducted by Wheeler, students initially liked the majority Miller's residence hall designs. Behavioral research did offer insights to improve architectural design. Changes in student attitude may have led to renovations but Miller was designing for students in the 1960s. Miller's architecture at Indiana State University and in the Evansville master plans was a truly unique attempt at the forefront of an emerging field to design buildings that positively affected human behavior.
Appendix A


This appendix is a typed version of the work's list referenced throughout the thesis. The titles are typed as they appeared in the work's list with a few exceptions. Some acronyms were spelled out for clarity. The location of the project was included if the author knew it or it was included on the list. Some projects listed do not include locations. The work's list covers projects that occurred while Ewing H. Miller II was present at the firm, and covers from Miller, Vrydagh, and Miller to early Archonics projects. A complete work's list covering later Archonics projects was not obtained, though an incomplete list is available at the Drawings + Documents Archive at Ball State University. These were not included in this appendix due to the scope of the thesis that covered Miller's work from 1955 to 1974 influenced by behavioral research. The designs included on this list may not have directly involved Miller or been built.

Firm Chronology After 1955

Miller, Vrydagh and Miller, 1955 - 1960
Miller, Miller and Associates, 1961-1965
Ewing Miller Partnership, 1971-1973
Archonics Corporation 1971-1984
Archonics, HNTB 1985-2003

Projects by Year

1955

Deming Hotel - General Remodeling
Deming Hotel Parking Lot
John Goers Residence Remodeling
Twigg Industries, Inc.
Twigg Industries, Inc. Loading Dock
Citizens Indiana Telephone Company sub-station in Honey Creek
Garfield High School - Gymnasium Floors
Goodie Shop Remodeling
B.P.O.E. Paris, Illinois
Smith- Alsop P. and V. Co. Additions and Remodeling
St. Stephen's Episcopal Church
Veliscol Chemical Corporation, Marshal, Illinois
Hardman Engineers, Norris City Water Works, Norris City, Illinois
Mrs. Marguerite Raper, Brazil, Indiana
East Side Elementary School, Terre Haute, Indiana
Tribune Building, new front for public service

1956

T.H. National Bank, Branch, 543 Wabash Avenue
Terre Haute Boy's Club, Inc.
Crawford F. Failey, kitchen remodeling
Marshall T. Hubarrd, residence remodeling
Cunningham Drug Stores, Inc.
White Rafert Company # 2
Citizens Indiana Telephone Company Milroy Station
Citizens Indiana Telephone Company Glenwood Station
C.G. Mayrose Co. (presentations)
Dr. L.M. Mason - Residence Remodeling
L. Wheeler Residence, Bloomington, Indiana
Victory P. Tolbert, residence remodeling
Union Hospital, 4th floor on new wing
Smith and Decker, new building at 25 & Poplar
World Gospel Church
Merchants National Bank - 12 Points
R.P.I. Dr. Wilkinson Residence
Westrup, Robert, Residence
Hulman & Company Appraisal
I.S.T.C. Women's Dormitories (Burford Hall Complex)
Thomson Symon Co., additions

1957

Commercial Solvents Corporation, control building
Brown Funeral Home, Montezuma, Indiana
Shelby A. Price, residence, Paris, Illinois
Robert S. Ratcliffe, residence
General Telephone Company of Indiana, Inc.
Chas. Pfizer & Co. Inc.
Zorah Shrine Temple
Chas. Hickman Building
Edward I Jams, residence remodeling
Chanticleer Building, remodeling
Fayette Township School Shop Building
I.S.T.C. New Science Building (Indiana State University)
Eastern Express, Inc. Indianapolis Terminal, office building, and garage
Eastern Express, Inc. Columbus, Ohio office and terminal Building
Bruce Failey Sherman (David's Store)
R.E.M.C. Williamsport, Indiana
Louise's Restaurant (J.D. Campbell) 1849 S. 3rd St.
Fayette Township Schools, architectural survey for future development
Bloomfield School, addition
Goodie Shop, additions

1958

Elk's Club, pool, etc.
Woodgate Subdivision
Chamber of Commerce, remodeling
Deming Hotel, ball room
I.S.T.C. Physical Education Building (Indiana State University)
Eastern Express, Inc. (Miller-Parrot Baking Co. Building remodeling)
Clinton Elementary School, Clinton, Indiana
Terre Haute Day Nursery
Willis Gas and Appliance (R. Boyer)

1959

Wabash Federal S. & L. Association Remodeling
Foster Miles, residence remodeling
Wiandt's Jewelers
Fayette Gymnasium, remodeling
Eastern Express, Inc. Philadelphia, Pennsylvania
I.S.T.C. Women's Dormitory, walks, drive etc.
Shanks Motor Company
Woodrow Wilson Jr. High Class Rooms
I.S.T.C. Bookstore (Indiana State University)
Crawford School, fire escapes, etc.
Fairbanks Estate
Woodgate Cooperative Apartments
Medical Office Building
Chanticleer Building, remodeling
Pfizer Research, perspective, etc.
1960

I.S.T.C. Campus Model (Indiana State University)
Women's Dormitory Unit No. 2 I.S.T.C. (Indiana State University, Burford Hall Complex)
Sycamore Manufacturing Co. Inc.
General Telephone Co. Clay City, Indiana
Anton Hulman Lodge Remodeling
Edward I Jams, Allendale, Indiana
Ward S. Hubbard
Terre Haute First National Bank, 643 Wabash, basement remodeling
Thos J. Hoga, 1810 N. 7
James Wolf Co. 622 Wabash Ave, Terre Haute, Indiana, third floor remodeling
Associated Physicians and Surgeons
The Fiar Furniture Store, 9th & Wabash Terre Haute, Indiana
Eastern Express, Inc., Brooklyn, New York
Woodrow Wilson Jr. High School, additional classroom units
St. Stephens Episcopal Church
Eastern Express, Inc., terminal surveys
R.P.I. Moon Watch Project
Vincennes University, Vincennes, Indiana
Charles H. Ray Residence, W.T.H.
T.H. First National Bank branch, roof remodeling
Sears Building, remodeling (Bruce Sherman) air conditioning
Indiana Association of Workers for the Blind
Hermine Cox, residence development
I.S.T.C. Campus Development (Indiana State University)
Sears Building, wiring for A.C. and miscellaneous electrical work

1961-1962
Columbia Records, Inc. A division of Columbia Broadcasting System, Inc.
Charles H. Ray Cabin
General Telephone Company, plant department building
Montrose School, remodeling
Sears, Roebuck & Company No. 3
Swope Art Gallery, remodeling
Mayer Subdivision
Bloomfield Gymnasium, additions and remodeling
Demolition, 5th and Wabash Avenue
Osco Drug Co.
Fairbanks Block, parking
Woodrow Wilson Jr. High School, 2 class room remodels and basement project # 2
Eastern Express, Inc. Akron, Ohio, preliminaries
Sears Service Station
L.S. Heath & Sons, Robison, Illinois Pepsi Cola Plant
Best Ways, Inc.
I.S.C. Women's Dormitory, Unit. No. 3 (Indiana State University Burford Hall Complex)
Hendren Residence, Bloomfield, Indiana
Wabash College, gymnasium remodeling and additions
Han Shoe Store, remodeling
U.S. Army Engineers, fallout survey
Eastern Express, Inc. Chicago, Illinois
Downtown Merchants Association, Wabash Avenue development
Hillman Remodeling, Office
Evansville Projects
Deming Hotel 3rd to 8th Floors
Bloomington Apartments (Blue Ridge)
Offices, 7th and Wabash
Eastern Express, Inc. I.B.M.
Union Hospital, toilet rooms remodeling, etc.
U.S. Penitentiary, vocational training shops building
Jame-Wolfe, Inc., first floor remodeling
Wabash College, fraternity Sigma Chi
Wabash College, present gymnasium, roof truss strengthening
Wabash College, campus study
Wabash Valley Chapter, A.R.C. chapter house
Wabash College, new physical education building
Columbia Broadcasting System, miscellaneous
I.S.C. Women's Residence Hall (Indiana State University, Sycamore Towers)
U.S. Army Engineers, fallout survey phase 2
U.S. Army Engineers, Eng. case study
Walter Scholar & Associates, Ball State fallout shelter
Brazil Public Library, entrance steps
Plaza - North (Newlin-Johnson)
Sycamore Manufacturing Company, additions
CBS E.D.P., office addition
Eastern Express, Inc. Air Condition - 1450 Wabash Avenue
Tribune Building, Inc., 2nd and 3rd floor remodel
T.H. First National Bank branch, Plaza North
Unitarian Church, Bloomington, Indiana

1963

Schultz Department Store, remodeling
Weston Paper and Manufacturing Co.
Stanley Cooper Building Brazil, Indiana
Fairbanks Block, fire damage
C.L. Lucket, M.D. & Marion L. Connerley remodeling
Home for the Aging (Virgin Islands)
Columbia Broadcasting System, additions
Terre Haute Boys Club, coal room revision
Fayette Elementary School remodeling
Hillman's Jewelers, Inc., new building
Newlin-Johnson Development Co.
Union Hospital, renovation of Nurses' Home and kitchen cafeteria
Coca Cola Bottling Co. additions, Terre Haute, Indiana
Terre Haute First National Bank Branch, exterior, Terre Haute, Indiana
Columbia Broadcasting System Structural Steel, Etc.
Mercantile and Office Building (Progressive Development - Robert Boyer)
Puller Apartments (Fairbanks Block Site)
Delta Upsilon Fraternity, Purdue University - West Lafayette, Indiana
Union Hospital Development
I.S.C. West Residence Halls Unit # 2 (Indiana State University, Sycamore Towers)
Walker Electric Supply Company

1964

Demolition f Home Packing Co. Buildings for Chamber of Commerce Terre haute
Alpha Omicron Pi Sorority House Purdue University Lafayette, Indiana
Recreation Development, North Vernon, Indiana
Greenwood Manor, 25th and Wallace Avenue, Terre Haute, Indiana
I.S.C. Physical Education Building, locker and shower additions (Indiana State University)
University of Indiana, Chi Omega sorority
T.H. Mutual Savings Association
Smith-Alsop P. & V. Co. Office Remodeling
Wabash P.E. Building, Eric Gugler and Richard A. Kimball Associates
I.S.C. Science Building, additions (Indiana State University)
Cross Town Shopping Center, Indiana University, additions and remodeling
Student Health Services Building (Indiana State University)
I.S.C. Miscellaneous (Indiana State University)
I.S.C. Hulman Center, remodeling and additions
I.S.C. basement alterations in the Student Union Building
Indiana University, Delta Zeta sorority
Pillsbury Company, remodeling
I.S.C. Men's Dormitories Units 3 and 4 (Indiana State University Hines and Jones Halls)
Wabash College P.E., building remodeling # 2
Eastern Express, Inc. terminal building, New Haven, Connecticut
Eastern Express, Inc. Miscellaneous
Gambill, Cox, Zwerner, Gambill, & Sullivan
Indiana State University Campus, Evansville, Indiana
Eastern Express, Inc. Chicago, Illinois
Wabash College, Master Plan, services tunnel
Wabash College Relocation, Hovey and Forrest Residences
Eastern Express, Inc. Bridgeport, Connecticut
Eastern Express, Inc. Akron, Ohio
Eastern Express, Inc. Columbus, Ohio
Eastern Express, Inc. Fort Wayne, Indiana
Wabash College, grandstand
Constructors Investment Corporation
General Telephone Company, Inc.

1965

Indiana State University Campus Landscaping
Rankin Residence
U.S. Corps of Engineers, fallout Shelter
Motor Freight Corporation, additions
Indiana State University Dormitories East Residence Halls (Statesman Towers)
T.H. First National bank building - W.T.H.
South Shopping Center, Honey Creek Square Inc.
Urban Renewal Model, civic center
Southwest Housing Project
Illinois Cereal Mills, Inc., addition to office

1966

Columbia Records, Inc. (New Industrial Complex) schematics and model
Wabash College, storm sewer
Eastern Express, Inc. Harrisburg, Pennsylvania
Indiana State University Boiler Plant, additions and remodeling existing plant
Gateway Development Corporation
Bloomfield Elementary School, additions
Indiana State University Nurses Education Building (Part of Union Hospital remodeling)
Montrose-Otterbein United Church
Gateway Development Corporation Office Building
Wabash PE Building phase II
Commercial Solvents Corporation, office building
Woodgate, master plan second section
Union Hospital, storage facility

1967

Nurses Education Building, phase II
Community Service Center
General Telephone Company CDO Building New Goshen, Indiana
Indiana State University Evansville Classroom Building Complex
Indiana State University, civic center
Crane Laboratory Addition
Union Hospital, power plant
Rose Polytechnic Institute
Meadows School, addition, Vigo County School Corporation
Wabash Valley Technical Institute, Region Seven
Callahan Building
Indiana State University Physical Education Building, remodeling
Interior Space Design
Indiana State University Library (Cunningham Memorial Library)
The Country Club of Terre Haute
Cardinal Nursing Home, Inc. South Bend, Indiana
Indiana State University North Residence Halls (Lincoln Quadrangle Apartments)
Vigo County, Board of County Commissioners 120 S. 7 Street
Indiana State University Evansville, boiler plant and utilities distribution system

1968

Root's Store of Honey Greek Square, Inc.
Chrysler Reality Corporation
Moore-Langen Printing and Publishing Co.
Otter Creek Recreation Area, Vigo County park and recreation board
Evansville Country Club, Evansville, Indiana
The Sanborn Electric Company, warehouse additions
The Great Atlantic and Pacific Tea Co. warehouse and manufacturing plant
Indiana State University North Residence Halls Unit 1A (Lincoln Quadrangle Apartments)
The Smith-Alsop Paint and Varnish Co.
Indiana State University Science Building, remodeling
Indiana State University Driver and Traffic Safety Instructional Center
C.B.S. Tape Plant, tape production facility
Indiana State University, mechanical services tunnel
Indiana State University School of Business, remodeling
Indiana State University, remodeling board room, administration building
1969-1970

Murphy Medical Center
Eastern Express, miscellaneous
University of Evansville, master plan
University of Evansville Arts and Science Building
University of Evansville, peripheral campus
Hazeldine Co.
Columbus High School
Shanks Volkswagon
Katherine Hamilton Mental Health Center
Rubeck & Company, Bloomington, Indiana
Grant-Blackford Mental Health Center Marion, Indiana
Greenwood Manor II
Indiana State University Memorial Stadium; joint venture with Sverdrup & Parcel
Fort Wayne Community Mental Health Center (Designed by Carl Bradley)
Indiana State University School of Nursing II, revisions
Operational Breakthrough
Behavioral Research, not assigned to specific project
Indiana State University Evansville Library (David L. Rice Library)
Ivy Tech II
Ivy Tech, master plan
Union Hospital, phase II remodeling
Casey Medical Center
Marshall Medical Center
Union Hospital demolition of boiler plant
Kumler Project
Indiana State University Services, tunnel phase II
Indiana State University Student Union, remodeling and addition
Union Hospital Development
Sherer, remodeling
University of Evansville, model
University of Evansville, library
Indiana State University Northwest Campus Development
University of San Diego, master plan
University of Evansville Administration Building Study
Rose Polytechnic Institute Learning Center
Indiana State University Campus Model
Pre-School Learning Center
Proposed Office Building
Union Hospital, vaporizer building
Grant-Blackford Mental Retardation Center, Marion, Indiana
Union Hospital Northeast, parking facility
University of Evansville School of Nursing
St. James Church Fort Wayne, Indiana (Designed by Carl Bradley)
Terre Haute Mutual Savings and Loan
Murphy Medical Center Administration Building Additions
Grant-Blackford M.R.C. Site Selection
University of San Diego Seminary
Terre Haute House Analysis
Indiana State University Stadium Restrooms

1971

Kerman Grotto Club House
University of Evansville, power plant
Parkview Hospital Fort Wayne, Indiana
Laborer's Residence Training Center
AP & S Clinic
Packard Shirt manufacturing plant
CBS Cassette manufacturing plant
Photo room, expense
Terre Haute Fire House
Housing Facility Scottsburg, Indiana
Portland, Indiana Library, addition
Low Rent Housing, Fort Wayne, Indiana
Grisson Air Force Base Officers' Recreation Hall
Indiana State University, parking and traffic
University of Evansville, Library College
Operation Breakthrough, Fort Wayne, Indiana
Katherine Hamilton, signage
Swope Art Gallery
Vigo County Elementary School
Vigo County Junior High School
Medina Low Income Housing
Public Service Indiana Competition
CBS Warehouse
Indiana State University Evansville, University Center
Turnkey Housing, Angola, Indiana
Turkey Housing Sullivan, Indiana
Terre Haute Fire House No. 2
Parkview Hospital, emergency drive, Fort Wayne, Indiana
Twin Maple Sanitarium
Lake Avenue Office Building
Rose-Hulman, campus Model
University of San Diego, miscellaneous studies
Delaware District, modular classroom
Turnkey Housing, Kendallville, Indiana
Hilton Homes
Cinecom Theater
Belair Airport Center
Evansville Shopping Center
Fort Wayne Housing Authority, low income housing
Gordon College, housing and master planning
CBS Press Room for E.T. Hanaan
South Side Day Nursery, Terre Haute, Indiana
Stipp Housing Project Monroe County, Indiana
First Assembly of God Gym Fort Wayne, Indiana
Parkview Patient Services Area, Fort Wayne, Indiana
Indiana State Evansville Model
B.O.C.A. Quality Control
Operation Breakthrough Terre Haute, Indiana
Hall's Georgetown Restaurant
Gibault P.E. Building
The Barn Restaurant
Waco Beach
Y.W.C.A Terre Haute, Indiana
Indiana State University Art and Commerce Building
Parkview Hospital Parking, survey
Parkview Hospital, south unit
Parkview Hospital, ongoing plans
Jones Tool and Die Tunnel
Shelburn Community Building
P.D. Antibus Co.
Village School, addition
University of San Diego, renovations
University of Evansville, 3rd floor, School of Nursing
Litchen Residence
Indiana Laborer Training Center, interiors
Indiana State University Evansville University Center, interiors
Litchen Office Building
Commercial Solvents Corporation Office Building

1972

National Guard Facility, power, sewer, linktrainer simulator, NDI, test stand
E.T. Hanaan, chiller room
Indiana State University Technology Building
Williamsburg Apartments, John Mutchner
Girl Scout Headquarters
Malooly Office Building
Holly's Restaurant
Laborer's Welfare Building
Bridge Crane Design
Parkview Hospital, parking lot, Fort Wayne, Indiana
Terre Haute House Study
Muncie Public Library (not built)
CBD Mall
Parkview Hospital, interiors service
Indiana State University Science, building remodeling
Berne Bank
Lincoln National Bank, planning
C.B.S. Mezzanine, Terre Haute, Indiana
Terre Haute Housing Authority

1973

Holly's State Street Restaurant
Fort Wayne Housing Authority Inspection
C.B.S. 925, warehouse
Deci-ma corp., office interiors
University of Evansville Science Building, study
University of Evansville Existing Library, study
K.H.M.H.C. Recreation Center
Williamsburg Apartment # 2
Gold-Dine Building
Hilton Project
Parkview Hospital, drive connection
Indiana State University Evansville, classroom
Haller Project
Peadbody Drilling Rig
University of Evansville Science Building
Parkview, zoning study
Lahrman Office Building
Parkview Hospital, linear accelerator
Heffley Recreation Center
Branch County Office Facility
Goldsmith-Hinshaw Development
Biagi Office Building
Packard Shirt Plant
Parkview Hospital, code update
American Federal Building
Sheldon Residence
Office Building
F.C. Tucker Development
Prince Frederick Office Building
Parkview Hospital Dietary Area
Parkview Hospital Storeroom Area
Irene Byron Hospital
Prudue Parking Garage
Vigo tire Remodeling
License Bureau Remodeling for Indiana State Bank
Coney Island Downtown
Automotive Maintenance Indiana National Guard
1974

Meier Building
Fire house no. 11 Fort Wayne, Indiana
Fire Tower Fort Wayne, Indiana
Rescue Mission
Parkview Hospital, bed and ancillary services, Fort Wayne, Indiana
Coney Island North
Carl Wilson Trailer Park
Pettigrew Facility
Belmont High School, renovation
Doctor's Parking Lot
Wawasee Development
Shopping Center
Dr. Mann Office Building
Correction Center
Auto Auction Garage
Heffley Complex Planning
Parkview Woodhaven Renovation
Snider Farm
Terre Haute Housing Authority, design for furnishings
Parkview Hospital, radiation oncology Fort Wayne, Indiana
Parkview Hospital, parking garage Fort Wayne, Indiana
Parkview Hospital Intensive Care Nursery Fort Wayne, Indiana
Parkview Hospital ICU/CCU Fort Wayne, Indiana
Low Rise Housing
Glenwood Office Building
Parkview Memorial Hospital Surgical Center Fort Wayne, Indiana
Indiana State Government Complex Master Plan Indianapolis, Indiana
State of Indiana, parking garage
Comprehensive Mental Health Center, interiors
Parkview Memorial Hospital, neonatal intensive care unit, Fort Wayne, Indiana
Union Hospital Remodeling
Parkview Memorial Hospital, surgical elevator, Fort Wayne, Indiana
State Capitol, elevators
Ivy Hill Remodeling Study
Parkview, site plan, Fort Wayne, Indiana
Firehouse no. 7
Terre Haute Air National Guard
Parkview Bed and Ancillary Planning, Fort Wayne, Indiana
Dobbs Park Building
Wayne Township Firehouse
Appendix B

Ewing H. Miller Phone Interview by Michael Flowers

February 17, 2015

Appendix B is the phone interview of Ewing Miller conducted by the author. The phone interview was conducted on February 17, 2015. The interview was recorded with the permission of Ewing Miller. The author transcribed the interview and edited the transcript. The primary topics covered were Miller's early career, education, Indiana State University architecture and the formation of Archonics. This interview is referenced throughout the thesis primarily in chapters two and three.
Ewing: Hello.

Michael: Hi, How are you doing? This is Mike Flowers.

Ewing: Yes, Oh Yes.

Michael: How are you doing?

Ewing: Well I am sort of a little snow in, but not too badly I think we had 4 inches last night, but for Washington why that close the schools,(laughs) and the government and everyone else. Why there is hardly anyone moving downtown.

Michael: Oh yeah? We have had some snow but not that much

Ewing: How are you doing?

Michael: I am doing well just looking over thesis information. Are you comfortable with me recording the interview?

Ewing: Yeah, sure

Michael: I just want to make sure I can get all the details, all right well are you ready to start.

Ewing: I am, yeah.

Michael: All right, I am kind of in the process of researching a little bit and I have done a lot of research on your earlier work and career, especially at Indiana State but I'd like to ask some questions about your career before Indiana State. I know that in a lot of writings you talked about
being taught in the classical education or classical form at the University of Pennsylvania. Was this also in the aesthetics, the classical aesthetics, like historical styles?

**Ewing:** Well, when I started out my education was in '41, Paul Cret was still alive, and I never had him as a critic, he only worked with the upper classman. Nevertheless it concerned itself with the classical style of architecture. When I returned to school in '45 things were changing. It was still for the first year it was somewhat in the classic style, than the dean of design changed and a man by the name of Arthur Deam, D-E-A-M, I believe, came from the University of Illinois to be the dean of design. And we became Modernists. So we studied from Wright and maybe the generation before him, trying to think of the Chicago architects, name won't come. That era of around 1900 on up to the time of the present day architects. At that time right after the war there was an influx of men that came from the Bauhaus movement so that became more the focus. So, it was Harvard and the technical institute in Chicago and places like that sort of led the way, Saarinen and...dear...sometimes it takes things so long to come to my memory. Sometimes I have to let them go back. Mies Van Der Rohe from IIT in Chicago, and Deam came with that in mind. So we switched to the Modernist movement, '46 '47 '48, why that's the kind of work we produced.

**Michael:** That is interesting, so you were pretty much right there when the educational experience was changing from classic to Modern?

**Ewing:** That's right, my first year was in the classics, and by 45 that changed to the Modernist, study of the Modernist. There was still some historical architecture that was studied but it was more a case of combining it with history and sketching ability and things like that rather than, well I can't say exactly, there were parts of the historic architecture that were always important
about the massing of the building. The sun, and the shadow and the fact that voids were just as important as solids. All of those came out of classical architecture. And much of what was in the history class for which we had to do sketches along with our notes that we turned in, but the design elements in the drafting room; the response to problems that were given you to solve architecturally had turned to the Modernist

Michael: So then was that the factor that influenced your career to become a more Modern architect?

Ewing: Oh yes, exactly.

Michael: I know Louis Kahn was kind of a critic when you were student. Did he have any impact on your future career?

Ewing: He did in an oblique sort of way. First of all, I frequently volunteered to do menial kind of jobs with the Philadelphia Chapter of the American Institute of Architects. My uncle was a fellow and my father and he helped establish the Indiana Society of Architects in 1923. So I looked them up and that's really were I met several of the Modernist practicing architects, Lou Kahn being one, Charles Huff being on, [Dagget being one], and I worked with them so that I knew them. Now, Kahn was a visiting critic at Penn. He was not on faculty. Because of the size of Philadelphia and the size of the population of architects unlike Ball State that doesn't have this concentration of numbers. When you finished a problem when it was due it was hung in a big hall way space, everybody's solution, the critics then came from the practicing architects. They would invite critics for certain problems, and this one in my senior year, Kahn defended one of my submissions. It was a swimming pool set of buildings, dressing rooms and things like that that surrounded a community swimming pool. And, he defended it and gave me an
honorable mention, he thought that it was the best solution there. When I graduated, having, had contact with him at the AIA, I had a job offer from Harberson, Huff, Livingston and Larson, Livingston, John Livingston, oh no John Harberson, had been a class mate of my father's. So he knew my name and they made me an offer, 35 dollars a week [laughs], and I went over to Lou Kahn's office and I said, "Lou I'd much rather work for you, I am getting married and my wife has a job and she's earning 35 dollars a week, and if I do that why we can get married, Lou can you pay me 35 dollars a week?" Lou looked at me and said "Ewing, you just don't seem to understand. In my office you pay me 35 dollars a week" [laughs.]

Michael: Wow

Ewing: And that was a holdover from a time when, I know when my father graduated, he went to Toledo Ohio, that's where he met my mother, he went to Toledo Ohio to a firm that accepted them and he had to pay them, that indenturing of a period of time, whether it was one or two years, but either that or he wasn't paid at all. I have not found any reference in his diaries or books that he paid out any money. But, I don't believe they were paid at all. They were expected to learn the practical side of architecture, just the experience in the office. I don't know when states started requiring architects to have licenses. That's a thing that maybe you can find out somewhere along the line. I think that when you indentured yourself to an architect to learn the trade more or less, while not being paid you actually may have been able in a period of time be able to set yourself up saying I have graduated from university with 2 years experience and these recommendations. There might not have been an exam license I'm really not familiar with that history. All right, that's a long way around answering your question on Lou Kahn.

Michael: It was very interesting.
Ewing: That's the only contact I had with Kahn other than we all admired what he was doing and looked at his work. Like any architect there were some buildings that weren't quite as good as others. He did one he did a science laboratory building for the University of Pennsylvania that the inhabitants of it disliked so much. Because of the windows and the light that streamed in, and interrupted a lot of the kind of research projects they were doing. And, it had some physical problems as well and it was disappointing because it was a great chance for Kahn it was before he started getting major kind of things. It got the University of Pennsylvania to where they would never employ him again. Then he went onto Yale and did a very fine library when he became the dean up there. His work was very enlightening to us, he was one of the few practitioners, another piece of work that was very influential, was a bank building in Philadelphia known as the PSFS, Philadelphia savings and I don't know, I can't remember what all the initials stood for, anyway it was the PSFS building, it's still standing. It's a very fine piece of Modern architecture.

Michael: So with the Louis Kahn laboratory, you were talking about problems with that, was that an inspiration for you to have the automatic shades on the science building that you did for Indiana State?

Ewing: It was, it was one of the things that I learned, that you had to control in an academic situation. You often had to control those things. And, because all of those major classrooms where using electronic projecting, slides and projectors they had to be closed off. So, I said well we will just put them in automatic so that during the day if the sun comes beaming through and interferes with the heating and air condition controls why the shades will automatically close and open as the sun goes around. I think that building, that side of the building...south...north...it faced west, and so [pause] I am trying to, no I'm sorry, it faced east. So, it got sun in the morning more than it did in the afternoon. And, that's one of things I learned earlier I don't know
specifically if it was from the experiment, that or the building designed by Kahn at Penn. But it certainly was a thing that stuck in my mind when the criticism came out. I tried to solve it that way. I think they have since done away with it because it became too much of a maintenance problem. Well they probably went to shades on the instead.

**Michael**: Well it's a neat idea and it saw some historic photos of it and it looked pretty cool.

**Ewing**: Yeah

**Michael**: Well, back to some of the earlier stuff, I know that I had talked with you over the summer about the air bases, but did this experience impact your later campus master planning work?

**Ewing**: Oh dear, [pause] I've never thought about it really. The air bases in England were small towns, a bomber base was 15,000 people, and a fighter base was 5,000, and the English housing right after the war just couldn't absorb Americans like that. So they provided for the housing and the stores and the church and the schools and things like that were all on the airbase. I don't think it would have affected the master planning I did for universities. What it did was it gave me an insight to the problems of the planning in terms of traffic and utilities and parking and things of that nature that are applicable when you start for example Indiana State was, why I took it from 4,000 to 14,000 students. It's the same basic set of problems. You've got a concentration of people and you have to provide all the facilities for them, living and entertainment, and food supplies and things of that nature. In that sense, it was good experience for me as a background. It wasn't very applicable in terms of style of building or the permanency of building or the anything of that nature.
**Michael:** All right, so when you were working in England, you met David Field, when you were designing the air bases?

**Ewing:** David Field was one of the British employees, the Americans were all sort of head of a division and what we had to do was employ draftsmen, and David was a draftsmen. He became a friend, and he had promise, he was not a trained architect. The British have a learning thing for a schooling, it's probably two years, for being just a draftsmen, but he was very neat and he had promise. And that's one of the reason I sponsored him to come to this country. We were having a hard time after the war, when we had to expand the office because of the volume of work from Indiana State, we were having a terrible time getting draftsmen. Actually, I forget what the project was it may have been [pause] Well I can't remember the project. One project we had to make arrangements with a company in Canada to use their draftsmen. They had a surplus and I couldn't bring them into the country. We wouldn't give green cards out that way so I had to take the whole project and send one, I think I sent Ron Lake up to Canada to be over the project. And, we used all Canadian draftsmen. So, we brought David field here to be a draftsmen, and as he gained more experience why he became sort of a project manager and had a few draftsmen under him, went from design into working drawings. He would be sort of head of the project at that point.

**Michael:** I think you mentioned this before, you had an issue getting quality draftsmen, at times to move to Terre Haute?

**Ewing:** I'm sorry, I didn't understand.

**Michael:** Did you have an issue getting quality draftsmen to like move out to Terre Huate, is that why you had to go to Canada and bring in David Field?
Ewing: Yeah, there were not enough draftsmen in the country. I mean, it was a real problem getting them to come to a small town like Terre Haute. I don't think you could find them in Indianapolis, if you had been there. Every architect in the 50s worth a salt at all after the war and the economy picked up, he had more work than he could handle. Does that make sense?

Michael: Oh yeah, and you guys were getting a lot of work from Indiana State at the time?

Ewing: I had a lot of work from Indiana State, I think its certainly the reason I stayed in Terre Haute was the board and I just seemed to agree on how the school should expand and how it should be an urban school rather than a country side school. You know, it and the reason for the dormitories all going up into middle rise buildings. They wanted an Indiana State; the board wanted an expression, that was different from all the other colleges. Muncie was low rise, Indiana University was collegiate gothic and over rolling hillsides and low rise buildings. Purdue was more classic and condensed but it didn't have much in the way of high rise. So Indiana State wanted its expression for itself.

Michael: So did it, did the home economics building, which I think was the first building you designed for the campus.

Ewing: Right,

Michael: Did that convince them that was the type of architecture they wanted?

Ewing: That's the type, I don't know if they said the type of architecture they wanted. But that's the design I came up with Anne Lee, who was chairman of that department, Dr. Anne Lee, who was a marvelous client. She wanted a functional building that kind of reflected a contemporary approach to things because the home economics at that time was going from the standard food and housekeeping kind of thing that previous generations had, into interior design and house
planning and things of that nature. It was becoming a more modern curriculum; extending itself. So that's what we came up with. When we presented it to the board, they said, absolutely this is what we want we not only want a statement where people know where we are but we want to be Modernist, contemporary, as it was called at that time. Modernist came about at a later time defining that period but they wanted a contemporary architecture that was urban, that looked urban, and where the buildings were going to be more dense and less space in between them, because land was hard to come by and land was expensive. Expanding and buying up houses to expand was an expensive proposition. So the contemporary design lent itself to all of these things and the board recognized that and said that's what they wanted. We had a great board. And two very good presidents that went along with it.

**Michael:** So regarding the Home Economics building was your trip Europe, did this influence your design?

**Ewing:** Not so much in the Home Economics building, it did in the first set of dormitories I did. They were, taller but you couldn't quite call them medium rise. This was Erickson, Pickerl and Burford, the use of glazed tile in the spandrels of those buildings was right from the [Pimenckel] apartments done in London that was housing for lower income families. But, it was to give color and bring out a sense of contemporary architecture to the housing of England and make it bright of cheery instead of following the more traditional style. I thought it was an interesting solution so I used the same materials there although the buildings were very different than the [Pimenckel] which was 10 stories high; something that it was in the middle of London.

**Michael:** And these were the first dormitories that you designed, right?

**Ewing:** I'm sorry?
Michael: These were the first dormitories that you designed for Indiana State?

Ewing: Those three were the first. What we didn't know there were fences that went up and there were sort of gates, I think they were basically women's dorms to begin with...

Michael: Yep.

Ewing: They were freshman dorms, I know that, later on because of the way they wanted kids to make friends and so they were the last ones with large gang toilets at the end of the hallways that everybody used and made everybody sort of bump into one another, you know?

Michael: Yeah.

Ewing: Nevertheless, that was the style at that time. Indiana state was also very conscience of the fact that there students came from often times first generation of farm families that had been in Indiana for a long time, but they were first generation college students. You know that Indiana State started out as Indiana Normal. That's what they called teacher's colleges in those days and it was primarily to turn out teachers, as the population started going to college and particularly with the GI bill of rights why the demography changed tremendously. But they were always very conscience of the fact that things shouldn't, interior finishes particularly shouldn't be too grand, less it would look too sophisticated in comparison to the housing they came from. So that was a battle that I always had, it was to keep pushing them to make them realize that we had to begin to think differently because the population, after the war, the family income became much greater and houses became larger and better finish so the kids weren't growing up in some local farm house. They were coming from more sophisticated circumstances and so each one graduated upward as they developed. I heard, they are renovating those dorms. And every other room is being made into two bathrooms. One for a bedroom on each side, and although you still have
two students to a bedroom, those two students, will have a private bath, and that room is big enough, where if you have three rooms in a row, the middle room is large enough to make it into two bathrooms. So times changed more and more [laughs]. They do this.

**Michael:** Right and that was a major design philosophy, accommodating for the future, current generation and continuing to build on that research and what students desired.

**Ewing:** That's right, yeah, we surveyed each building, sets of buildings as they were finished to find out what was like and what wasn't and I remember one for the things each student wanted was the ability to paint the room what color they wanted and they were willing to do it themselves. And that didn't go very far [laughs] I never won that battle [laughs].

**Michael:** [laughs] Was that an economic thing, they didn't want to pay for the paint?

**Ewing:** It wasn't so much that. I just think they thought that it would be a mess, a group of amateur kids throwing paint around the wall [laughs]. And god knows what you'd come up with, with what they felt was that some people would paint it black and orange.

**Michael:** Right.

**Ewing:** It would be different if nothing else, so that got shot down. We did a lot of investigating particularly on floor plan, as students grew older, how did they make their friends, we found out that in Burford, Pickerl, and Erickson the corridors were so long that they didn't make friends around the corner. That's when we came into Sycamore Towers, which were next. Not only did they instruct at that point to come up with a real focal points of towers that you could see from a distance and they would stand out as being the examples of how contemporary Indiana State University was. So we did the white surface towers. And they still to this day, they are strong,
statements of Identity. The other thing was that we found that the smaller floor plan for the tower gave us a much better way of people making friends on their floor and then we found, that they started going up a floor or down a floor. They wouldn't go a whole building but they expanded their friendships up and down a floor and certainly on the floor itself which was smaller, and didn't have a big angle that like Pickerl and Erickson did, that sort of precluded them from going all the way down to one of the building to the other.

**Michael**: That's very interesting that floor plan had that much effect on their social lives

**Ewing**: The floor plan had an effect on what?

**Michael**: Their social lives.

**Ewing**: Their social lives, yeah

**Michael**: I was just saying that it was interesting

**Ewing**: Absolutely, and from that we came to a more square plan that we tried up at Jones and Hines and it was that plan which worked very well. They would move all the way around, in a square and all the utilities were in the center, and that became the basis for the ones over on the east side, Statesman towers. And then it was our research on statesman towers that made us...we were fortunate to have umm...oh dear...what was Jones last name, I'm getting to old for name search...It will come to me in a minute.

**Michael**: Who's name?

**Ewing**: The director of students

**Michael**: Oh.
Ewing: He was a fellow that really thought that our research was valuable to him, and when we got done with Statesman, we said that the feedback was that more and more students were becoming absolutely, particularly in the upper class, the juniors and seniors, didn't want all of the rules and regulations that went with living in a tower situation. Where there was an desk by the door, and it wasn't that, I don't think they had hours control, maybe on the women they still had that, I don't know, but that was the reason to do the apartments up on the north side.

Michael: That's the Lincoln Quadrangle apartments?

Ewing: The Lincoln Quadrangle, yeah, that was in response to this very strong thing, and actually the Lincoln Quad came online just in time because students were starting to go out into apartments outside and kind of decrepit situations often times, rental places because they wanted to get away from the policing. And girls wanted to live with boys and it was a revolution, I know it was very upsetting to Alan Rankin who was president at that time, and probably brought about his resignation as much as anything. They were tired of what was called a local parentis, in other words, that what universities did after World War Two was sort of assure parents that the university became the parent and would look after their children. You know in 1941 when I went off to the University of Pennsylvania, Penn didn't think they had any responsibility for you except to give as you freshman, you had to have one meal a day in the commons. And that was dinner, and your parents had to buy that and after that they didn't see a responsibility. That responsibility of the local parentis came about after World War Two, and the kids rebelled about it, against it, so the Lincoln Quadrangle was a great success, it's always been full.

Michael: And would you say that the Lincoln Quadrangle was really the culmination of the residence hall research?
**Ewing:** It was culmination of our research, yes, very much so. That and you know they started I think with Sycamore Towers, they did start opening those up to both men and women rooming on the same floor. I'm not quite sure how they dealt with the toilet facilities. I don't remember that. I think they did the same with Statesman Towers, but Statesman Towers never became very popular. It was one dorm on top of another with elevators for the men going up to their recreational floor and their dorm was above that, and the women were on the ground floor recreation with elevators up to their floors. And they turned that into an office building for a long time because the student population went out on the town. If we had more Lincoln Quadrangles or had noticed how strong this trend was in our research, we probably wouldn't have done the Lincoln Towers (Statesman Towers) although architecturally I think they were one of the better, stronger, building forms that we did. They were very strong architectural flavor, although they weren't as dramatic as the, because of the White Marble outside of Sycamore, why they are quite dramatic looking. They are more of a symbol. I don't know what happened with the Sycamore tower.

**Michael:** They are still being used as dorms but the last that I know, Ratio, from Indianapolis is renovating the interior.

**Ewing:** Oh are they.

**Michael:** Yes, I mean to talk with them soon and try see if they will talk with me about their plans, but I don't what is going on exactly, but I know they have been hired to do it.

**Ewing:** Well for goodness sakes, to re-do Statesman I thought they were thinking, the last I heard, they were thinking of selling them to a developer, to do project apartments.

**Michael:** Ratio, they are redoing Sycamore Towers.
Ewing: Oh they are re-doing Sycamore

Michael: Yes, and as far as I know, I've been trying to keep up with Statesman, I think they are planning on demolishing them from the last news article I was able to find.

Ewing: What I heard, that they were going to take them down. Then I heard there was a developer in town that was providing that he could get preservation rights, things like that, to supplement the amount of money, he wanted to turn them into apartments. I thought that the other architect from Indianapolis, did the post office...

Michael: I don't know too many contemporary architects in Indianapolis.

Ewing: Oh yeah, it was, I don't know the actuals, oh god it's right out there in my memory. Wayne Schmidt, I thought had been contacted to redo those buildings into apartments.

Michael: I will have to look into that more. It would be great if they found another use for them.

Ewing: Yeah, oh yeah, they are very handsome buildings in many ways.

Michael: I just had a quick question, you said that they were dormitories on top of each other? The Statesman towers, was that an original design function to have the dormitories stacked on each other or was that because of land density?

Ewing: As I remember, and I'd almost have to look at the plans, men and the women were still separated. And therefore, had to be, because, the land was so small, but the cost of the land, it seemed to me, they had to build sufficient number of rooms on that land. The only solution we could come too was two separate dormitories at different heights. Have you seen the plans on those recently?
Michael: I don't think the plans were included in the collection, I haven't found them yet, I've looked at plans...

Ewing: I don't know...they are in...who has those plans is Indiana State University.

Michael: Okay

Ewing: I think I gave all my planning, to them when I dissolved the office in Terre Haute.

Michael: Well I'll have to see. I plan on eventually going soon to Terre Haute to see your buildings in person. So I'll have to contact...you gave them to the University?

Ewing: Say that again?

Michael: Did you give them to the university?

Ewing: I gave them to the university and they are in the architect's office.

Michael: All right, I'll have to contact them and see if I can't look at them or maybe get some scans.

Ewing: Yeah, they're in the process of digitizing them, I don't know how far they've gone. The drawings I gave them were getting worn and I think they decided they better digitize before they started to disintegrate. You might be looking at them on a screen, but they're there. They have them all. I'm looking through this book, to umm, that I did for the 100th anniversary, the sentential decade development plan, and Tirey memorial. Got all of that, but I don't think they have the plans in here for the university housing. There's sycamore towers but they're just pictures they're not plans. They have a picture of Statesman towers but there are no plans.

Michael: Well I will look into that and see if I can't get access from the university then.
**Ewing:** Okay, what else are we going to chat about?

**Michael:** I had a lot of questions on the buildings specifically, so I'm willing to ask more questions if you want to continue to talk about them.

**Ewing:** Oh, sure.

**Michael:** I had some initial question too about the trucking terminals, that you did for..

**Ewing:** Oh Eastern Express?

**Michael:** Yeah, I did get a chance to look through some of the survey data you included in the collection. I guess one of my main questions is how influential was this initial research done with Wheeler on the trucking terminals? How influential was that on your later behavior research?

**Ewing:** Unfortunately, it didn't produce much acceptance from Eastern Express. As I remember, they paid us to do this, but, it ran into [laughs] As Wheeler pointed out he said, when you design a trucking terminal, the manager of that trucking terminal is going to put himself at the center of things. If he came up through bookkeeping he thinks that's the most important thing and that's where the money is made and he will put the book keeping in the center. If he came up through the docks, then the docks got the major emphasis, if he came up through something else why it was the prerogative of the manager. Two things I think in that research, we did the terminal relationship that should have been true. Wheeler did I'd say, Wheeler determined a relationship that ought to be constant in every one of them. Of which the manager, and the manager's office was central so that he could look in on all of these things but not a whole department behind backing him up, the managers weren't too receptive. When Wheeler's work was finished if my memory serves me well, Eastern Express was no longer expanding, and they got into some
financial difficulties following that and were curtailing any new buildings. So most of the work we did for them was without Wheeler, and then Wheeler went back and did his research on the things we had done, we were looking to the future, and the future just didn't materialize, and if there was one or two after wheeler's works, the managers said no I don't want it that way. They were allowed that privilege.

**Michael:** All right, did you do, I think, Best of Way Terminals as well? Did you build any for them or did you just do a research survey for them?

**Ewing:** What was the name again?

**Michael:** Best of Way terminals?

**Ewing:** Best of Way...I can't remember doing any terminals for them.

**Michael:** There was a traffic analysis included that I had read through.

**Ewing:** Yeah, that one escapes me. I can't remember it even.

**Michael:** Well I didn't find any evidence that anything had been built, I just saw the survey.

**Ewing:** Yeah.

**Michael:** That's interesting, so then after you did them Wheeler conducted the research for the trucking terminals, he then did the survey on the Burford Hall dormitory?

**Ewing:** He did the survey on what?

**Michael:** Burford Hall, the L-shaped dormitories.

**Ewing:** Yeah, sure.
Michael: So did you design those dormitories with future research in mind, or was that an afterthought; after they were constructed?

Ewing: Umm, [pause] I'm looking for my little map again, hold on a second.

Michael: All right

Ewing: There it is...let's see Burford was Hines Jones?

Michael: No, Burford was the women's dormitories that were L-shaped

Ewing: Oh yes, I see it, yeah, Burford, Erickson, and Pickerl

Michael: Well I was just wondering if when you did the surveys on these halls; were they designed with that intention in mind?

Ewing: No they weren't, we did that design before we did any research. He went back in, or I think he started his research after we finished those but the design was set between....the dean's name of students was John Pruitt.

Michael: Pruitt?

Ewing: And he had a director of housing under him whose name I think was Christopher but I can't remember his last name. Who was really good as well, and so we did our research for Sycamore Towers and I actually started this research with him. He had a summer where he and his family were sort of in limbo. He was in his doctorate's program but he wasn't studying that summer. So he moved to Terre Haute, and I got him an apartment down in the married student quarters, I didn't have anything to do with those. I think Yeager did them before I got there, they were down south of town a little ways. And they weren't close by the university. He lived there
and did his first set of surveys of Erickson and they were the basis for us getting to experiment with the floor plan situation in the Sycamore Towers, the shorter corridors, the double loaded corridors, so people were more friendly and didn't have such long distances to go. And the research on the Sycamore Towers, Gillum and Sandison had been done earlier by Yeager and I did the additions of Hines Jones and that's where the square plan developed out of research on Sycamore Towers. And the research on Hines and Jones gave us Statesman, and finding all of this rebellion in Statesman is what gave us Lincoln.

**Michael:** Right, for the Hines and Jones you mentioned they were additions, did you design them to work with the Sandison Complex?

**Ewing:** We designed it to work with the common areas of the Sandison Complex, they were supposed to be four that were done just like Sandison and Gillum, there was supposed to be two more on there so they sort of formed a little semi-circle, we changed that because of our research. They are in the same position as Sandison and Gillum, but they are a different concept of floor plan.

**Michael:** Right because I think that Sandison and Gillum, those were designed by Yeager?

**Ewing:** Pardon?

**Michael:** Those were designed by Ralph Yeager, right?

**Ewing:** Gillum and Sandison were. And then we tied into the common area and redeveloped the common area for the larger complex of buildings. I did.

**Michael:** All right, there isn't as much information on the Hines and Jones as there is the other residence halls.
Ewing: Yeah

Michael: They are, oh, I guess that brings me to a design question I had, so for the Statesman you did all concrete design exterior...

Ewing: Pardon?

Michael: It was an all concrete design exterior for Statesman, and the other residences halls have a lot of brick, was there a design reason for this or was it purely aesthetic?

Ewing: It was purely...you mean Hines and Jones, the change in materials?

Michael: Well from Hines and Jones that had brick to Statesman which was just concrete.

Ewing: Oh, well Statesman is, the Sycamore Towers is also pre-cast concrete, the white is. We were so please with that because it's a design decision to use the pre-cast concrete on Statesman as well because it was load bearing we could span them between the center poured core and the flooring systems came out and tied the pre-cast concrete forms together it became a structural, quite innovative structural system as well as the aesthetic design of the exterior. Also it was more difficult to take brick up in the air that way then, although, I believe the sides on Sycamore Towers are brick aren't they?

Michael: Yeah..

Ewing: It's a lower, it was an aesthetic decision on Statesman, we wanted a very strong form and it went higher...up in the air further...and we wanted it to be a structural, it was a structural aesthetic that lent itself to a very sculptured exterior. We wanted to break up the exterior which in brick is a little harder to do.
Michael: Right, because concrete is such a plastic material and you can really mold it that way.

Ewing: Yeah it is, I found what I needed to do with buildings because of their height and their prominence I need to start to break up the surface more with shadow and sunlight then we had done previously, although Statesman has a lot of molding on the front of it because those panels are all semi-curved panels. They're spherical in that sense. So they have a play of light and shadow over them, they face south, and well they face both south and north, but the south side particularly has a play over the surface as the sun turns around. And, I wanted to keep emphasizing that to break up surfaces to make the buildings more interesting and still incorporate all the structural benefits that came from the pre-cast concrete.

Michael: Now you said in the Statesman Towers as well there was a poured concrete core? That took out the stress of the building?

Ewing: I'm sure I'm right on that, I need to go back and look at the drawings, it seems to me that on both those and maybe on Hines Jones there was poured core. I think there was on Statesman towers as well, I think all the utilities were in the center and that was the poured core. The flooring systems were precast and they were, I believe welded to the outside wall and the outside wall was load bearing as well so the precast floors went across than bore on the poured core and the outside wall.

Michael: Was that kind of a technical innovation at the time or technological innovation or was that a common practice amongst high-rise type structures?

Ewing: It wasn’t so much as a common practice, I think, it was one that was being made available because of the quality of precast concrete it was a system known as shock baton, and it was made in Chicago. All those things had to be trucked from Chicago down. But they were a
very dense form of concrete with no gaps in it that sometimes occurs in poured concrete. You get air holes that don't get out because they're not vibrated correctly. But shock baton, the forms were made on a platform that then was shaken. The platform in shaking got rid of all of the air holes, it was a very dense material, so it was innovative in its time but I won't say it was unique. We had a very good structural engineer by the name of Homer Howe that was instrumental in a lot of these things including that folded plate roof that was at that time the longest in the world I think that we did across the Physical Education building.

Michael: Yeah, I read a bit about that. That's a very interesting project, so his name was Homer...

Ewing: Homer Howe, H-O-W-E, he was an older man, but he was one of these that was up on all of the newest theories for doing things. I think his leisure reading was experimental engineering, structural engineering things [both laugh].

Michael: Sounds dedicated.

Ewing: Yeah he was a very quiet very intellectual fellow who smoked a pipe and kind of talked to you with his pipe in his mouth [laughs].

Michael: Oh another building I was very interested in was the library.

Ewing: Oh yes, yeah.

Michael: I was kind of curious, how did you guys develop the idea to do the removable exterior panels?

Ewing: You're going to have to say that again. The library developed the idea of doing?
Michael: Those removable exterior panels.

Ewing: The removable panels.

Michael: Yes

Ewing: I think that's one of the better buildings that I've done in my life. It's very flexible. You know a funny thing happened to me. I was on a flight out west one time and I was sitting next to a fellow who identified himself as a librarian that said he had been building a new library, well you know one of the best libraries I've seen recently is up at a small college by the name of Indiana State [both laugh]. I said oh my lord that's the library I did. We did the removable panels because of the sun...the stacks...needed light but not to the extent that there would be burning of the books by the sunlight and I remember there was deterioration. So we put the long slit window into the structural panel and built that in so that if the interior of the library moved around and they re-arranged the stacks they could take those panels off and move them so they were in the aisle ways that people used and gave light to the aisle ways but didn't get over on the books on either side. I don't know whether they've done that or whether they've changed interior. would be interesting in knowing whether they shifted things around.

Michael: Yeah I might ask them about it, but I don't know if they have either. From the historic photographs I've seen and the present ones it looks pretty similar as far as the exterior shape goes.

Ewing: There were two things about that library that I thought were innovative. One was the panel, the removable panels system, and giving the interior the complete freedom to change itself if it had to in the future for different modes of learning that were coming along. It was just in the beginning that we began to recognize that there were electronic systems in the making out there
that might, that changed the concept of the interior. So that was one of the reasons for the panel. The other was the covered walkway that was to be the beginning of a walkway that would go all the way over to the old campus, with the idea that, Terre Haute has enough inclement weather, both of rain and snow and things of that nature that this walkway would begin to tie the campuses together. But there was a street then in between that the city and the manufacturing people out to the east of the campus insisted be open. I believe that was sixth street as I recall it and this would give us a raised canopy over the street but it would began to tie the two separate city blocks together so that you thought of them as a campus. In the mean time, they closed Sixth Street and they never did come up with the money to extend that walkway that was a design feature. You think sometimes that you are doing the right the thing but it doesn't pan out in the long run.

Michael: Yeah, so that's the main reason why there is that walkway outside the front of the library?

Ewing: The walkway outside the library, yeah, that's what I'm talking about.

Michael: As far as buildings go...Oh I had a question about the science building again, I had read a bit about it but it was talking about exhibit space in the hallways?

Ewing: What kind of space in the hallways?

Michael: Museum Exhibit space?

Ewing: Oh yeah, that may have been covered up since it's design, but we had glass block along the elevation along what is the name of that street? [pause] It's probably on this map, but I can't see it for lack of my magnifying glass. I guess it's State Street, oh sixth, along sixth street. That
elevation where the entry is. That elevation along there, that corridor along back was glass block, and there was glass cabinets in front of that glass block so that stones and little skeletons and all the things that went with the science departments in there could have exhibits that the students could see. They were not meant to be permanent exhibits but they were meant to be long-term exhibits. And they were used for that for a long time; I don't know whether those have been covered up. The science building has been changed dramatically by additions to it as well as all sides it looks to me, I could hardly recognize it the last time I saw it.

Michael: Was that exhibit space, was there an original design intention and it was moved to the hallways?

Ewing: Yes.

Michael: Because of budget problems?

Ewing: It was one of the things that the professors we met with in writing the program for the building, the professors wanted exhibit space for stone collections and skeletons and various chemicals and things of that nature. Each department wanted a chance to have an exhibit of their material.

Michael: And then did your firm also design the cases that went with it?

Ewing: Yeah, we designed the cases as I remember and I remember they were made by a cabinet company but they were brought in. They had all glass fronts on them sort of sliding doors or doors that opened on hinges but they were glass doors that locked. So that no one could get into the exhibit except the professor.

Michael: Right, and then you said the glass blocks were removed in a paper I had read?
Ewing: They what?

Michael: The glass blocks were removed eventually?

Ewing: I don't know whether they were removed or they were, I don't know what's happened, I didn't go inside the building when I was there last. Next time I come out there, I should do that.

Michael: Yeah it would be interesting because it's a pretty neat design feature of the building.

Ewing: Yeah.

Michael: Another building that I had looked at that I had a question about was the book store?

Ewing: Oh yes, that's been torn down.

Michael: Yeah, I figured that out recently, I was reading something that you had written talking about baas relief sculptures that had been included with it.

Ewing: Yes.

Michael: I guess my biggest question was what was the motivation behind including that with the design?

Ewing: It was to bring art. We purchased art for the Science Building that was the piece of sculpturing that Laska did for the patio at the entry. I don't know whether it's still there. Anyway he did an eight foot high piece of sculpture which was Prometheus and the sun from the Greek odyssey or the Greek sciences. When we got over to the bookstore, I decided that I wanted to incorporate this into the form of the building rather than purchasing it as a piece on the outside. So John Laska did a sculpture in brick design and actually went over to Terre Haute Brick and worked with them to make bricks of various depths and it was quite an abstract design. I have a
series of pictures here that I haven't sent out, I'm just about to send them out a matter of fact, they
were done by Heidrich Blessing, and they illustrate that wall. There are one or two pictures that
illustrate that wall. I don't know whether it was appreciated as much, I never heard anybody talk
about it a great deal. But it was an interesting concept because we had an entirely long flat block
wall that didn't want any windows in it whatsoever for the book store, they wanted the interior to
be flexible that it was highly lit interior space and it had a glass front on it. That was the only
glass they wanted, the glass front, the front was on Chestnut Street and the side was along sixth
street where the sculpturing was. So the front was all glass, and this was a box building that I
don't whether you have seen a picture of it, but it was wrapped around like a box with two open
ends. The two open ends were for service on end and entry on the other end, north and south and
then the two side walls were long black walls that we utilized the arts to give them interest. That
was the reason for it, it was a delicious little building it's a shame that it had to be torn down to
but I guess it's space was taken by the whole new student union building isn't that over that.

Michael: Yeah it's an informational or visitor's center I believe as well, I was able to look at a
picture of the new building that they put there and I saw some old and historic photos of the book
store too, and it was a rather neat building. I thought it was very cool. I noticed too on the book
store that the front facade was primarily glass.

Ewing: That's right, yes.

Michael: Do you know why that was included in the building, I know a lot of your buildings
have more masonry based walls? It was kind of like a curtain wall wasn't it?

Ewing: Yeah it was sort of like a curtain wall, it was to give the entry way maximum light, it
faced north, and it was because it was so brilliantly lit on the interior we thought it would be
more sparkly to open that up to glass in the entry way. And I wanted the masonry to wrap around that building almost like a piece of cardboard that would be bent and it sort of sat on a foundation and anyway it was a very contemporary form for its day.

**Michael:** Yeah it was kind of T-shaped in a way, wasn't it?

**Ewing:** Yeah.

**Michael:** It was a very neat design. Another building that I'd like some for information on is the link building between the Elks building and the Tirey memorial student union building?

**Ewing:** Yeah.

**Michael:** I guess one of my main questions was how did you go about designing this building between two historic structures one by Mathew Miller and one by Miller and Yeager, how did that influence the design?

**Ewing:** Well Warren and Ralph Yeager did the initial building and the Elks building was done by my great uncle and so to unite these two and to begin form gateways into the campus which we hadn't had before, and didn't think about in the campus planning. We began to see that the formation of the things between third street and fourth street and seventh was such that we could began to say this was a campus, we could began to put gateways on, and I think there's one down at, I think I designed one down at Sixth Street and third. I'm sorry third and...

**Michael:** You are talking about another gateway structure?

**Ewing:** Yeah I think I did a gateway down at Third and Chestnut, isn't there a gateway down there?

**Michael:** I'm not entirely sure,
Ewing: I think it's an automobile gateway; anyway, we wanted to begin to form gateways and the one on Seventh Street that was obvious. Also the extensions that they were asking for and the quantity of space to the Tirey memorial building to make it a functioning student union building for the way the population had grown. Would have, Reeve Hall, was still in position and they had just purchased or been given that Elks building and it they didn't know how they were going to use it. And it just seemed that we, that I had to do something there, that had a tie back to Tirey but I couldn't unify those two styles together, one was sort of you know a French Empire, the Tirey memorial with its roof structure and all. The more we played around with the more we realized that I had to put the whole thing underground. All of the big spaces for eating primarily, had to go underground, and I could do the gateway and put a building on top for all of the meeting rooms and those kind of things. I think that that worked well, and the circular form sort of gave a lightness to the building particularly with the walkway underneath that didn't dominate the Tirey or the Elks building, didn't relate to them but nevertheless by scale sort of tied them together. When they tore down the Elks building, whoever put the addition on I thought put on a very sensitive addition because it ties into the gateway building and that in turn relates very well in terms of material and scale and detail to the Tirey Memorial building.

Michael: Yeah, I am looking at a picture of the addition right now and I'd have to agree with that

Ewing: I don't know who did that but I thought it was sensitively done and deserved commendation because it doesn't try to upstate the gateway.

Michael: No, the gateway is very prominent. Was there a design decision in the windows, it has the very narrow slotted windows?
**Ewing:** The Link building? I can't remember but I think it was just a design decision that it worked best that way, there were meeting rooms and you didn't want everybody on view sitting around tables. The idea of a glass facade wasn't desirable, each room needed to have a window into it but it wasn't one in which you didn't want to display who was using it and why. Plus the fact I thought the proportion of it went better with the panel itself, the panel being sort of a vertical panel that was attached to the building.

**Michael:** These panels were made of limestone weren't they?

**Ewing:** I can't remember whether those were limestone or they were, but they weren't pre-cast were they?

**Michael:** I think that I had read that you switched to limestone because pre-cast was becoming more expensive at the time.

**Ewing:** You know that very well could be, that has sort of gone out of my memory bank. I haven't thought about that building for a long time. Plus the fact that I think the limestone related better to what was then the Elks building, and to the trim on the Tirey windows? Isn't that Limestone? The Sills?

**Michael:** I'm not entirely sure of the material; I haven't seen it in person.

**Ewing:** It was the fact that we wanted to use materials that were reminiscent of the original Tirey Memorial, but as I remember the front of the elks building that was entirely of a limestone front.

**Michael:** A very general question about the campus, I know you used a lot of brick and some limestone aggregate in the concrete was this to relate to the former architecture at Indiana State?
**Ewing:** That's right, to bring a contextual element to the other buildings. We were going into buildings of different form and larger buildings than had been there before. So the context was to try and keep the materials somewhat similar, the variation that we did in that, was on Statesman, or Sycamore towers were we went to a marble on the white, marble tipped on the front, because they actually wanted something that could be seen from a distance. They wanted something that was symbolic of ISU as a growing urban campus. And the center city has come back a bit, but it's been through a terrible period, at the time we were doing all of this the downtown was very much alive. Seventh was a major artery of commercial as was Ohio.

**Michael:** So then, the economy of Terre Haute at the time was also affecting your design decisions in that matter?

**Ewing:** No I don't think so, I think that it was seen that the campus was growing and was part of the urban framework of the town. And the town was vital and our offices were in the opera house building when some of this work first started, which was torn down right on the corner of Sixth and Cherry. Everything of prominence happened there, I don't know when the first big shopping center came out and I can't remember if it was out east of where we did the elementary school, that was one of the first buildings I did out there as well. I really think the first building I did was for Callahan's funeral home on Seventh Street. Well anyway, that's reminiscent. To answer your question, I just thought the only thing we felt was that we had to replace it with a very, and by we I mean the university and my planning, was expanding into derelict housing, and I think that the town was very glad that that housing was being pushed out of there. All of the brothels were along Third Street where the athletic field, I don't know what's over there now. I thought it was, finally became a big athletic over there, but it was very bad housing where all of the towers went and the arena, and certainly the Lincoln, all of that was pushing out housing that deserved to be
urban renewed. Everybody felt that was going to be one of the saviors of the downtown. It didn't turn out to be the shopping center. It became light on commerce in the time I was there, and it pulled the downtown out little by little and it has allowed Indiana State to go over and pick up the post office and a few things like that, you know, but they wouldn't have been able to do that if the town had been more vital. But the changes that came about the town has allowed them to expand that way and go all the way to the railroad tracks. And so it was an interesting time, it really was. And what we tried to do was produce a very good quality of contemporary architecture that would give them a style. I tried to bring them a different kind of campus, and certainly it was demanded by the cost of land and the way it had to be done, inch by inch almost. You picked up just enough land to do the next building, and I tried to be contextual with the materials that were there, I went to pre-stressed, pre-cast concrete because, I might have used poured in place concrete for some of the lower buildings anyway, had there been decent cement finishers in town but there just wasn't. It was a very inbred union and the guys were just sloppy, you couldn't count on them. So the pre-stressed pre-cast material was a godsend when it came along because it gave us structural forms and things we could take buildings up with. And give it a dominance of a new sense of materials and we could face sides with bricks like we did in the Sycamore. The materials actually by the way, the pre-casting was done was very reminiscent of the materials already on the campus.

**Michael:** You mentioned that the land costs were an issue and you would barely just get land to get a project, how did that impact the campus planning? Was it difficult to plan a campus not knowing whether they were going to acquire more land or when it was going to happen?

**Ewing:** No it didn't once we began to, once we did the first set of dorms, Sandison and Gillum had been done pre-war or during the war I forget which, maybe pre-war, and I think Yeager did
those, and Yeager did Dreiser Hall and the Administration building; that complex. And he did that when he was solo I believe, those buildings, just either right after the war or possibly previous in '41, though I don't think the partnership had split up at that time. I think the partnership split up about '48 when young Ralph Yeager came back out of the Navy and he had already graduated as an architect. And I had to go back to school still, but I think Yeager broke off and formed Yeager and sons or something like that. Anyway, the dorms were on that side when land became available, on that side for Burford, Erickson, Pickerl, it very well set that was going to be the side for housing over there. Well that broke up a little bit because well the Science Building reinforced the academic side of the street, and it followed the plan that I had set up where the academics would go north out of the quadrangle they were in and go across Sixth Street and go on up that way. The arena, came along because there was room for an athletic field over on the other side, it was decided to interrupt that side of the street and that was a bit of an anomaly. We had to go back and re-think the master plan at that time and that's when the north side, Statesman towers came in, and there were to be four of those. The next two were never built because although Indiana State crested out at 14,000, they are back down to around 10, and that seems the advent, I think, of Southern Indiana University stole a large portion of people that came to Indiana State, and so the need for more dormitories of that nature or to have dormitories over on the north side sort of diminished. Also on my map, I don't have shown the Nurse Education Building cause that hadn't come along as yet. That broke out of the framework of the academics because they were having a hard time going further north at that time up toward the railroad. And I think in the blocks between Third Street and Sixth.

Michael: You are talking about the nurse's college?

Ewing: Yes, the Nurse's Education Building, I think it was known as when we did it.
**Michael:** The idea was to originally have most of the academic buildings group in an area, and have the Residence Halls surrounding them?

**Ewing:** Yeah, that was the original idea, then the new, which is not on my map either because it hadn't been down at that time, the new indoor sports arena came...

**Michael:** Was that north of Chestnut street?

**Ewing:** Yeah, well it came up, it's up near the Hulman Complex, and it's north of Seventh and east of Cherry. That's a big sports dome arena, I think it's known as the Hulman Arena, I think they named it after Tony and he gave a lot of the money toward it. Between Cherry and Chestnut, and between Third and Seventh, why we were thinking of keeping the academics as close in that corridor as possible, so that the Science building and Homlstead Hall moved to the north up there, and the idea was that it would continue in that direction. The dormitories or the living would be primarily located between Sixth and Third, but the north area broke out because they could get that land, and at that time they couldn't get land further north than Jones and Hines. In the mean time the land became available, so we were able to carry the Lincoln Quad up into that north living area on that side of things. And Statesman towers were sort of isolated over there as a kind of a happenstance that you kind of need to take into consideration when master planning in an urban area. The city kind of becomes the dominant feature in how you move, but it formulated itself pretty well. And I think its followed through that way, as they have moved out toward Seventh Street to pick up that post office. I think was remodeled, Miller and Yeager did that in the ’30s and it was a wonderful Beaux Arts building, and Schmidt did a wonderful job on that because he kept much of the decor on the inside built his classroom things around keeping most of the detail of the interior corridor.
**Michael:** That's really need that they were willing to keep the details like that. I guess kind of concludes most of the questions I had on Indiana State. If you still have some time I have some questions about the firm in general, when I was reading some of the letter there was something about the Architectural Consortium, was this a precursor to Archonics?

**Ewing:** It was a precursor of Archonics, well let's back up just a little bit. Miller, Vrydagh, and Miller was a partnership, my uncle was a firm believer in old time ways of doing things. When you brought in a new partner, you closed the old partnership and opened a new partnership. The old partnership distributed whatever monies were available. The new partnership, everybody put into the pot, so I had to come up ten thousand dollars to enter the new partnership of Miller, Vrydagh, and Miller. When Al left, we closed the partnership, distributed the money and then Miller and Miller opened. When Warren Miller left the firm, we closed the partnership but we distributed the money, and I opened as a solo proprietor at that time. That continued, and I tried to make that into a partnership and we actually at one point had assumed that name without it ever being a partnership. It was a corporation that allowed you to use the name partner, but I never had any partners because we couldn't ever find a way of them buying in, and none of them had enough money to close the partnership and enter into a new one. And they didn't want to give up their bonuses to buy stock in the corporation. So it never worked out, well in the early 70s when I could see abdication coming, it was a golden era time when it was expanding rapidly and it was going to stop. The end of the Vietnam War actually stopped it, because 15% of the male population had been going to college to get out of being in the draft and they left. It left a big hole, there was panic in the academic community at that time, and that along with the social revolution that was occurring, there were a group of us in smaller communities that said we would form a consortium and support one another, and we never quite found a way of doing that.
Then I approached Carl Bradley and we formed Archonics Corporation with the idea at the first opportunity we got we would try to establish an office in Indianapolis to get in to a bigger growing area. Terre Haute wasn't growing, CBS was beginning to flounder a little bit, the record business out there, and we could see a lot of the food industry had left Terre Haute and we couldn't see anything replacing Indiana State, so we got the opportunity with the master plan for the State Office Building in '72. We started Archonics back in 1970, and we both put work that was coming into our offices, we both put one project into Archonics that hadn't been started in the partnership.

**Michael:** So the Ewing Miller Partnership was separate from Archonics originally?

**Ewing:** Yes, oh yes, Archonics was a separate corporation, and that was made up of Card Bradley and his office in Fort Wayne, which was Bradley Associates, and my office in Terre Haute which was called the Ewing Miller Partnership, which really wasn't a partnership. I owned all the stock, and I couldn't get anyone to be stockholders because we couldn't find a way for them to pay for it. Carl and I both put money into Archonics, and we didn't have any stock holders in that other than Carl and myself, and we put two projects into that were coming into the office, and I don't remember right now, one might have been the Mental Health Center in Terre Haute, I can't remember what mine was or his. That's what we did, and we were producing both of these in our individual offices, when were applied for and interviewed for the master planning of the state office building, and my master planning experience on the air bases plus what I had done for Evansville, USI, and ISU we won the contract to do that. It was a very small contract, but we said "now's our chance" and we opened an office in Indianapolis with just a couple of people. It was very small, for the first year I think I commuted by automobile every day. We did have a small office there, and I think our first office might have been in the downtown in the
Columbia Club, and that was sort of the first, we rented a space from them and I stayed there often times. Then we got several other small projects and by the fact that we'd opened the office and were beginning to do promotional work and we slowly grew and Tom Dwyer came on half-time, and somebody else, Jim Kienle came, and Anne Wilson had really been part of Archonics from the time it started. She was really an employee of Ewing Miller back in 1970 she was interior design.

**Michael:** Did she work on the Katherine Hamilton Mental Health Center?

**Ewing:** I don't think she did, she worked on the master plan and the first buildings for what was then ISU E, Indiana State Evansville, and she worked on those. Let's see what else did she work up....well she worked on the master plan doing some of the interior space calculations for the state office building in '73, she worked on the North Residence Hall, Lincoln, yes I think she did. I think she did the interiors for the common areas, the commissaries and the dining rooms and the kitchens, things like that. I can't remember her working on something else. She didn't work on any of the other dorms.

**Michael:** Just the Lincoln?

**Ewing:** She hadn't moved to Indianapolis at that time. And I realized that I needed an interior designer that was not an interior decorator but someone who would pick up and work with the architecture of the space. She became recommended to me by an architect in Columbus, Ohio, that I know, and said that this girl is moving to Indianapolis and if you've got room for her she is excellent, and she turned out to be but I realized I needed someone like that in there. The commissary for the dining room in the complex the Burford, Erickson, Pickerl space, I think it was, we ended up with such bad lighting fixtures in that dining hall, so out of scale, I had to have
them taken down and I had to purchase new lighting fixtures myself [laughs] and put them up. It was something I didn't want to have to do. Since then it's been redesigned again, maybe twice, since my original design, but I was so embarrassed by what the architect picked, and what I allowed to be put in. I looked at those and thought they were delightful design, I didn't realize they were so small, that they looked like little pins on a head [laugh] but they got in there, so I had them taken down and had new ones brought in. Anyway, Archonics then grew exponentially everywhere. We located downtown when Indianapolis was just starting to come back. It hadn't really, it was so vacant downtown. Three of us were having dinner in a restaurant that was above the arena that has been brought down and we were looking down Washington and there wasn't a car, it was 6:30, and there wasn't a car moving. There wasn't even a mosquito out there that we could see [laughs] Indianapolis would vacate and everybody would go to the suburbs and there was just nothing downtown. Well we got there at the beginning of the wave that brought it back, and very instrumental in doing that, and the glove factory and all the town houses over in Lockerbie and things that we were partners with a contractor and actually part of being the developers. So we were very experimentally but the whole town of Indianapolis came alive about that time. The symphony hall moved downtown and the circle theatre, and we did that, and it was another golden age, another development, I was very lucky to get the master planning for the State Office Building that allowed me to open because we didn't know how big that wave was going to, and it turned out to be very big indeed.

Ewing: I think I am going to have to break off.

Michael: Yea it's been awhile, I do really appreciate you spending the time
Ewing: Sure, there is one other thing you should know, I did experiment a little bit with curtain wall in the Home Economics building, and in the school out east of town, that elementary school, I don't know maybe it's known as East Side Elementary, and I didn't care for it. I was much more comfortable with masonry and I thought it had, particularly for the university, I thought it had a stability, and looked like it would weather the ages, and it was more particularly in pre-cast and it was more pliable, and you could build in more shadow and light playing across a surface.

Outside the Home Economics I never used that again, it was always brick or pre-cast or limestone, things that fitted together and kept the campus in a context of form that would keep it unified, because it was all broken up by streets when I was doing this. Since then all those streets have disappeared and the campus has been unified by a marvelous landscape plan, I don't know who did that landscape plan but they are too be commended. It's very comfortable with the buildings and it unifies the whole thing and the streets are gone, and the streets if they are there serve parking lots, they are not through streets, so it's all worked out well in the end game even though some of those changes couldn't be foreseen exactly as they happened. All right, I'll say goodbye.

Michael: Have a good day and once again thank you, and I appreciate you taking the time to talk to me.

Ewing: Yeah, bye bye.

Michael: Bye.
Appendix C

Survey of Ewing H. Miller Designed Residence Halls at the Indiana State University Campus

Appendix C is a brief survey conducted on the residence halls that Miller designed for the Indiana State University campus. The survey was conducted on March 13, 2015. The survey consists of exterior photographs to note changes in the architectural character of Miller's residence halls and their current status. The interiors were not accessed for the purpose of this survey.
Burford Hall Complex

<table>
<thead>
<tr>
<th>Building Names</th>
<th>Burford Hall, Pickerl Hall, Erickson Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Dates</td>
<td>Burford Hall, 1959; Pickerl Hall, 1962; Erickson Hall, 1963</td>
</tr>
<tr>
<td>Architectural Firm</td>
<td>Miller, Vrydagh, and Miller</td>
</tr>
<tr>
<td>Notable Changes</td>
<td>Burford Hall, interior and exterior renovation in 2006; Pickerl Hall interior and exterior renovation in 2010, Erickson Hall interior and exterior renovation in 2011</td>
</tr>
<tr>
<td>Current Status</td>
<td>Burford, Pickerl, and Erickson Hall are currently being used as dormitories.</td>
</tr>
</tbody>
</table>

Figure 50. A current view of Erickson Hall  
photograph by the author

Figure 51. A current view of Burford Hall  
photograph by the author

Figure 52. A current view of Pickerl Hall  
photograph by the Author
Sycamore Towers Complex

<table>
<thead>
<tr>
<th>Building Names</th>
<th>Cromwell, Mills, Rhoads, and Blumberg Halls</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Firm</td>
<td>Miller and Miller, Associates</td>
</tr>
<tr>
<td>Notable Changes</td>
<td>All four buildings are currently under interior renovation in 2015, and the viewing decks on all four units are the under process of being closed in.</td>
</tr>
<tr>
<td>Current Status</td>
<td>Cromwell and Rhoads Hall are currently occupied as dormitories, Blumberg and Mills are vacant for the renovation process to be occupied after renovations.</td>
</tr>
</tbody>
</table>

Figure 53. A current view of Cromwell Hall (left) and Blumberg Hall (right).

photograph by the author

Figure 54. A current view of Mills Hall (left) and Rhoads Hall (right).

photograph by the author

Figure 55. Up close view of the seventh story of Mills Hall illustrating the viewing deck closure.

Photograph by the author
Hines and Jones Halls, part of the Sandison Complex

<table>
<thead>
<tr>
<th>Building Names</th>
<th>Hines Hall and Jones Hall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Dates</td>
<td>Hines Hall, 1967; Jones Hall, 1967</td>
</tr>
<tr>
<td>Architectural Firm</td>
<td>Ewing Miller, Associates</td>
</tr>
<tr>
<td>Notable Changes</td>
<td>Both Hines and Jones Halls received an interior renovation in 1997, some of the windows were replaced with concrete panels where new bathrooms were located</td>
</tr>
<tr>
<td>Current Status</td>
<td>Both Hines and Jones Halls are currently occupied as dormitories</td>
</tr>
</tbody>
</table>

Figure 56. Current view of Hines Hall photograph by the author

Figure 57. Current view of Jones Hall photograph by the author

Figure 58. An up close view of the concrete panels that replaced some windows on the exterior of Jones Hall. photograph by the author
Statesman Towers Complex

<table>
<thead>
<tr>
<th>Building Names</th>
<th>Statesman Tower West and Statesman Tower East</th>
</tr>
</thead>
<tbody>
<tr>
<td>Architectural Firm</td>
<td>Ewing Miller, Associates</td>
</tr>
<tr>
<td>Notable Changes</td>
<td>Statesman Tower West was remodeled in 1977 for use as an academic building. Statesman Tower East was remodeled for use as an academic building in 1981.</td>
</tr>
<tr>
<td>Current Status</td>
<td>Statesman Towers, West and East are currently vacant and slated to be demolished by 2016.</td>
</tr>
</tbody>
</table>
Lincoln Quadrangle Apartments (North Residence Halls)

<table>
<thead>
<tr>
<th>Building Names</th>
<th>Lincoln North Quad and Lincoln South Quad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Dates</td>
<td>Lincoln North Quad, 1969; Lincoln South Quad, 1970</td>
</tr>
<tr>
<td>Architectural Firm</td>
<td>Ewing Miller, Associates</td>
</tr>
<tr>
<td>Notable Changes</td>
<td>There have been no notable renovations at the Lincoln Quadrangle apartments.</td>
</tr>
<tr>
<td>Current Status</td>
<td>The Lincoln Quadrangles are currently being used as student apartments.</td>
</tr>
</tbody>
</table>

Figure 63. A current view of the Lincoln North Quad courtyard. Photograph by the author

Figure 64. A current view of the common building in between the North and South Quad. Photograph by the author

Figure 64. A current view of the southernmost units of the Lincoln Quad South building. Photograph by the author
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