KELLY MULDER

BARNITECTURE
ADAPTIVE REUSE OF AN AMISH BUILT BARN IN A DESIGN BUILD THESIS STUDIO

THE SHIDELER RESIDENCE
ALBANY IN.

MAY 1995.
Department of Architecture
College of Architecture and Planning
Ball State University

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ADAPTIVE REUSE OF AN AMISH BUILT BARN BY A DESIGN BUILD THESIS STUDIO

Bachelor of Architecture Degree Program
Thesis Design

Thesis Design Committee

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Rod Underwood  •  Professor of Architecture  •  Thesis Critic

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INTRODUCTION

In the fall of 1994, a fifth year architectural studio at Ball State University, under the direction of Bruce Meyer, decided to implement a radical new approach to the thesis year. This studio composed of 14 students would work as a group to design and construct a home for a private client, ultimately creating the first design build studio at the college. This project would allow for the first time students to experience the entire process that architects undergo.

In addition, the project would focus on the issue of adaptive reuse which in this case was the transformation of an Amish built barn constructed in the 1800’s to a house. This project addresses the issue of combining the hands on approach to design build with the issue of adaptive reuse which in this country is still in it’s infancy. Combining a design build project with adaptive reuse allowed our studio of architects a vast amount of challenges and design decisions along the way. By being on the site every day new ways to use what might have been thrown away, found their way into the design, often adding an architectural richness to the design that might have been lost.

The project began with client architect meetings in order to develop a program to design from. Each individual then completed their own designs followed by the creation of small groups to complete the second designs. Each group proposal was then reviewed by the client and returned with a list of their responses. The final design phase consisted of an integration of the ideas the client liked, thus creating the master set of plans for the project. There was no obligation for the client to go through construction if they didn’t like the design and the only cost to the client was for materials, our time and labor were free.

The entire project required a lot of interaction between the studio members and the client. In addition the studio was challenged with real details of how construction comes together. Material research and ordering, along with a set cost factor all played a major role in what we could and could not design, unlike the freedom of previous design problems.

On November 2, 1994 the client approved the beginning of construction. The following pages illustrate the process and design solutions from my point of view as I participated in this unique studio.
ACKNOWLEDGEMENTS

This project was made possible by the cooperation of many people. Because of this being the first time Ball State University attempted a project such as this credit needs to be given to both the university and the architecture department head for allowing the project to happen. Thanks to Sarah Marshall and Tim Macy who originally wrote the proposal giving the project initiative to become a possibility. Bruce Meyer, our studio professor, needs to be recognized for the challenge he took on to lead 14 architecture students in the actual building of this project. Rod Underwood, Michele Chiuiini, and Pam Harwood served as faculty advisors in structures and historic preservation.

Beyond Ball States control, special credit goes to the Shidelers family for accepting and financing the project. Larry, the Shidelers neighbor also needs to be recognized for the time and effort he put into excavating. Finally, the 14 students who participated in the design and construction of the house are as follows in alphabetical order,

Jeff Bogle. Tim Macy.
Amanda Fritz. Philip Matton.
Jennifer Gilmer. Troy Miller.
Aaron Haschel. Roland Resurreccion.
Jeannie Kemble. Matt Woodruff.

A special thanks to my parents for providing the opportunity to learn about architecture and participate in projects such as this one.
THESIS PREMISE

As buildings age their uses ultimately change to fit the societies needs. This is best illustrated throughout Europe were for centuries they have adapted their buildings to fit their changing needs. Instead of tearing down the existing structure and starting from scratch the building is retrofitted to accommodate its new purpose. Through centuries of adaptive reuse in Italy they have preserved the essence of their history and maintained each town and cities distinct origin. In America do to the vast amount of land and our relatively young age as a country, adaptive reuse has not been a big percent of architects work. However, more and more opportunities are being discovered. Old land marks and factories with in towns and cities have outlived there intended uses but through adaptive reuse the structure can regain usefulness and serve as a reminder of its history. Therefore, adaptive reuse provides the architect with a unique opportunity to blend the old with the new. This can lead to some exciting design solutions creating dynamic spaces that reflect the buildings history and yet function in a new way.

Adaptive reuse coupled with design build leads to a unique opportunity for the architect. Design build allows architects to discover throughout the construction new possibilities for design. As things are torn out or discovered, in an adaptive reuse situation, there is a constant challenge to the architect to create something unique with what is being discarded. Thus, design build in an adaptive reuse situation creates a vast amount of opportunities for design ultimately challenging the architect to utilize his skills in both construction and design.
THESIS PROGRAM

HISTORY AND BACKGROUND
In the fall of 1993 an electrical fire caused by a faulty freezer led to a devastating fire that took the home of the Mr. and Mrs. Shideler. The home had been originally constructed back in the 1800's and was a great loss. The Shideler family along with their son Tj were left to reside in a trailer on the site until they could rebuild. Still remaining on the site was an old Amish built barn, also done in the 1800's, and a grain storage barn.

Bruce Meyer, our studio professor new the Shideler family and had talked to them before about rebuilding not in the traditional sense from scratch rather, renovating the old Amish built barn. The combination of adaptive reuse and design build would provide many challenges for our studio to face. There would be vast opportunities to design features with in the barn as construction progressed and what better for a group of architecture students who thrive on solving problems.

THE SCOPE OF THE PROJECT
This project will include the complete renovation of the barn down to it's original structure. This will entail the removal of the existing wood siding, the metal roof, asphalt shingles, wood shingles, floor, and basement slab.

Phase two would be to begin the new construction. First a new floor slab would be poured, along with additional footings as needed. Next, a new roof, floor and walls would be erected. This would all be done according to the plans that we created as a group and had approved by the Shideles. This will be a year long project completed by our studio before graduation at the end of the year.

BUILDING CRITERIA
The primary concern with building is that it is with materials that our studio could work with and do ourselves and not contract out. Our labor is for free so the more we can build ourselves the more money we can spend on higher quality materials. It is also important that we can get the materials on time as we need them. More than likely this will dictate standard wood frame construction because of the availability and knowledge of construction.
THE PROJECT

Our proposal to the Shideler's is that we would work with them to establish a program and then develop a set of plans that with there approval would be built by our studio. Our labor would be free, the only cost would be in the materials. At that time our studio was already broke into groups such as interior finishes, exterior finishes, lighting, mechanical, and structural, working on product research and materials pricing. Therefore, we would be able to give the Shideilers a materials pricing list and an accurate cost analysis in order to predict the cost of constructing our design. The Shideler's had given us a budget of $80,000 to work with.

Mr. and Mrs. Shideler entered into the agreement with no obligation to go through with the built structure if they did not like the design. On September 7, 1994 we met with Tony Shideler for the first time to learn about his family including his likes, dislikes, and their expectations. This would be the first of the series of client architect meetings we would sit through in order to learn about Tony, Susan and T.J. Shideler and begin to form a program. The following pages are filled with the program developed by our studio and after the series of interviews with the Shideler's. This program was used to influence the individual designs through the group designs. A schedule along with the letters of interaction between our studio and the Shideler's are also printed on the following pages.

| ARCH 403 TESIIS FALL 1994 MEYER SHIDELER RESIDENCE DRAFT SCHEDULE |
|-------------------------|-------------------------|-------------------------|-------------------------|
| **SEP 5 - 9**            | **SEP 12 - 16**            | **SEP 19 - 23**            | **SEP 26 - 30**            |
| Interview client, begin program | Program review with client | Complete preliminary designs | Final design responsibilities identification |
| Complete conceptual design, AIA, Indiana City Review | Begin preliminary design | Preliminary design review with client | Design modifications, presentation change |
| Technology all's bidding | Complete site survey, verify through client's primary framing, utility survey | Identify design element strengths | Client design review |
| Complete structural analysis consultation | Complete CAD prime frame input | Provide tech briefs to class | Preliminary subcontractor meeting |
|                         |                         |                         | Begin supplier space outline |

| **OCT 3 - 7** | **OCT 10 - 14** | **OCT 17 - 24** | **OCT 24 - 28** |
| Final design review with client | Complete design development including draft specifications, | Complete | Final bidding, pricing |
| Design development decisions primary, finish materials, equipment, cabinetry, lighting, HVAC, plumbing, electrical | Site Code verification | Construction documents, specifications, | Preparation of final client presentation |
|                         |                         | Complete Code verification | Construction management schedule |
|                         |                         | Construction inspection schedule | Contract preparation |
|                         |                         | Test acquisition plan | Tool acquisition plan |
|                         |                         | Primary material order, prep | Final utility connections plan |

| **OCT 21 - NOV 4** | **Client project review** | | |
| Client decision | | | |
September 7, 1994

Mr. and Mrs. Anthony Shideler
Albany, Indiana 47300

Dear Mr. and Mrs. Shideler,

Following a long tradition of community service here at the College of Architecture and Planning, my students and I are pleased to be able to meet with you and discuss the design of your new residence in Albany. As faculty critic for the architectural thesis studio involved with your project, I would like to review our understanding of the terms and conditions under which we will be working. These relationships may be modified and refined at your request during our preliminary discussions.

While the premise of this relationship is that this thesis studio intends to design and build your new residence according to your specifications during the academic year 1994-95, you are under no obligation to actually initiate construction, whether with our group or anyone else. We do ask that you commit to meetings with the class on a regular basis (perhaps weekly) through the programming, design and design development phases of the project. These meetings are planned as reviews of proposals made by the class during which you will be asked to give your frank opinions, suggestions, and criticisms. The meetings will be conducted professionally, as the real-world architect-client relationship they are.

Our group will provide the following pre-construction services:

- Measurement and analysis of the existing heavy-timber frame barn, including structural assessment by a licensed civil engineer, and analysis by an expert in historic preservation and restoration; preparation of scaled orthogonal drawings of the existing barn on the site.
- Basic site survey including topographic elevations and production of contour map, location of utilities, drainage and climate analysis.
- Development of the building program, including your requirements, standards and budget for your residence.
- Preparation of design concepts, both spatial and technical.
- Development of preliminary designs for the house, presented with drawings and models which will allow you to easily visualize what the designs will look like.
- Revised designs, based on your reviews and criticisms.
- Design development drawings and preliminary specifications which show final selections of materials, equipment and systems to be used in the house, revisions made based on your reviews.

Construction documentation which would control the actual bidding and construction processes:

- Material, construction and system specifications;
- Material quantity surveys (take-offs) show amount of specific materials to be used;
- Bidding of selected subcontractor services (not general contracting) determined jointly with you;
- Determination of allowances for identified finishes, cabinetry, lighting, appliances or other items you select;
- Detailed and summarized price listings for all phases of construction, including special tool and insurance costs;
- Alternative plans for coordinating student construction services with fixed professional subcontractors.

Your obligations during this process will be to meet with the group and provide information, opinions and criticism which corresponds to the work described above, the related soul searching and review of examples that you need to make decisions, and access to the barn and site as needed to conduct the work. No actual cash expenses are anticipated through these phases, unless you wish to make additional copies of any documents produced.

Beyond this point, the class will also have prepared a number of plans and documents which will allow actual construction to begin, including documents needed for building permits, “fast-track” scheduling and so forth. You will make the final decision about whether and/or how to continue.

While this initial letter of intent may seem a bit detailed, there will no doubt be a number of issues not addressed here and other which may be seriously changed as a result of our discussions. Please feel free at any time to contact me with your concerns or suggestions. We are all enthusiastic about working with you.

Cordially,

Dr. Bruce F. Meyer
Professor of Architecture

317 285-1900 Muncie, Indiana 47306 FAX 317 285-3726
October 28, 1994

Mr. and Mrs. Anthony Shideler
Albany, IN

Dear Tony and Suzanne,

We have completed the preliminary material take-off and costing phase of work on your new house project and feel very positive about the results. While numerous issues of substitution and supplier negotiation are still ahead of us, what we present to you here is essentially a worst-case scenario. Most prices have been calculated at retail and some quantity estimates were made deliberately high. While shortfalls and omissions are a part of any project, I believe the total contains sufficient contingency to account for such additional costs. The basic house has been calculated with quality materials but there may naturally be areas where you wish to add additional budget to include certain luxury or specialty items.

There are a number of issues you will want to consider which I’ll attempt to summarize below:

Costs. Attached are spreadsheets of building materials and costs which we will review with you at our meeting. The two-page summary outline of specifications may help you better follow what was actually priced. There are, of course, a number of final selections to be made by you in specialty areas, but we have tried to list options whenever possible. Please feel free to contact me with any questions.

Liability. As I mentioned on the phone, Larry Cistrelli, who deals with insurance and risk management for Ball State sees no problem with the project as students work within the design studio course. His letter to me on the subject is attached. Medical insurance, if needed, will be decided directly with you.

Tools and equipment. In general, we will supply all basic hand and hand-held power tools and building equipment. Some specialty equipment, like scaffolding, should be able to borrow at no cost, while other pieces may have to be rented for short periods. I am assuming that these costs will also fall within your budget unless you decide otherwise. For example, if we rent the scaffolding to save on the enormous cost of these materials, we would expect that special cutter blades and other router would be provided by you. Even equipment like a small backhoe may be able to borrow at no cost to do the simple foundation and septic excavations. These decisions would make together, but always with an eye on total costs. I would ask you to consider allowing us the use of your existing travel trailer on site for some time during the winter for water, toilet, and possible phone and computer set-up.

Subcontractors. To date we are assuming most phases of construction would be completed by us, with the following exceptions:
- electrical connections to meter base and wiring of breaker box (by Tony)
- removal of existing roof material (At Tuscano?)
- construction of new roof (At Tuscano said with a couple of helpers, a conventional roof could be completed in a weekend)
- installation of furnace, water heater, water softener, and new well head connections and ballast tank (even though we believe I can have donated)
- new and repair masonry

Concrete finishing will be donated by professional finishers.
I also believe I will have donated specific training or technical demonstrations by other professionals as required, including plumbing, heating ductwork, drywall finishing, etc.

Methods and Schedules. If you decide to pursue the work with us, I will provide a complete schedule of events on a calendar basis with a full description of construction methods to be followed. This will allow you to know exactly what step is next at each phase of work and also when you need to make final special selections or design changes. I will also provide you with a copy of our “shop” rules governing safe work habits and our standard work schedules. In general, all students will average twenty hours per week on the project for approximately 20 weeks.

Estimated completion date for the house will be the second week of April 1995. I believe this to be reasonable and to adequately account for slow-downs due to weather, material or service delivery, and errors and omissions.

Agreement. If you decide to commit to the project with us, we will discuss with you what specifics beyond those described here you would like to see in writing. At our meeting we will decide the time needed for you to make your final decision. Again, please feel free to call me with any questions as you review these materials.

We are excited and committed to building you the very best house. We look forward to a long and mutually satisfying professional relationship. Thanks for the interest and encouragement all through this Fall.

Cordially,

Dr. Bruce F. Meyer
Professor of Architecture
and the Bamillects
This chart is an example of the construction cost analysis that we completed for the Shideilers.
THE PROGRAM, FOR THE SHIDELER RESIDENCE.

LIVING ROOM

spacial description
  The living space should be very open and airy, framing spectacular views of the outdoors. It will have the sense of grandeur with its height and networking of authentic barn structure that fills the space overhead. The room will at the same time be comfortable to sit, stand, read and interact with others in. This space will be the hub of many activities and therefore must be easily accessible from areas such as the entry, kitchen, and dining room.

SPACIAL RELATIONSHIP
  - should be close to the front door for easy access by guests.
  - wants to be close to the kitchen for interaction between guests and the Shidelers as they gourmet cook.
  - should be close to the dining room for easy access by guests.
  - wants to have a good view of the pond and outdoors.
  - needs to have direct access to the deck.

ACTIVITIES
  - interact with family.
  - enjoy reading.
  - take in the views of the outdoors.
  - enjoy sitting by a fire.
  - watch TV/listen to music.

USERS
  - Mr. and Mrs. Shideler and son Tj.
  - extended family
  - guests.

CIRCULATION
  - defined by the furniture in the space.

APPROXIMATE SQUARE FOOTAGE, 456.
KITCHEN

spacial description
The kitchen will be a place of excitement and enjoyment for the family and guest. Here the Shidelers will create gourmet meals as the extended family participates in conversation while watching the art of food preparation. The kitchen itself will have large counters to put food on and will be well lit with natural light, artificial light and accent lighting around the counters and under the cabinets. The kitchen will be open to the other rooms such as the living room, dinning room and entry to allow the Shidelers to interact with these areas while remaining in the kitchen. A pantry will also be close by for easy access.

spacial relationship
- must be near the dinning room.
- wants to be close to the living room.
- needs to be by the entry for easy access with groceries.
- needs to be adjacent to pantry.
- close access to laundry room.
- near breakfast nook.
- desires a good view.

activities
- preparing gourmet meals.
- fixing quick snacks.
- eating small meals in the kitchen.
- entertaining guests as they cook.

users
- the Shideler family.
- guests.

circulation
- There should not be any direct circulation through the work area of the kitchen. Circulation within the space should be defined by the work triangle established by the sink, refrigerator and stove.

approximate square footage, 224.
DINNING ROOM

spacial description
The dining room will have a sense of formal order dictated by the structure of the barn. The space should be open and yet provide a sense of intimacy if desired. Flexibility is a big factor, including the capability to expand for a large number of people while remaining small enough for normal use. A good relationship with other rooms like the living room and entry are important but especially with the kitchen.

SPACIAL RELATIONSHIP
-should be close to the kitchen
-wants to be near the living room for easy access by guest
-desires a good view

ACTIVITIES
-family meals
-dining with guests
-having extended family visit

USERS
-the Shideler family
-extend family
-guests

CIRCULATION
-Defined by the table with in the space

APPROXIMATE SQUARE FOOTAGE, 195.
Entry

spacial description
The entry space should be visible from the exterior indicating to new comers where to go. Once inside, the entry should take you on a magical, spacial experience leading you through a light filled space to the spine of circulation both horizontally and vertically. The stair should dance upward through a naturally lit space adjacent to the entry.

SPACIAL RELATIONSHIP
TWO ENTRIES DESIRED TO FULFILL THE NEEDS OF A MAIN LEVEL ENTRY AND A DRAMATIC ENTRY FROM THE SOUTH EAST.

MAIN LEVEL ENTRY
- must be near the kitchen.
- should be next to a closet.
- close to a pantry.
- should be near vertical circulation.
- close to mud room.
- near living room.
- near dining room.

LOWER LEVEL ENTRY
- close to guest parking.
- by coat closet.
- close to vertical circulation providing access to living room.
- kitchen.
- den/study.
- mud room.
- provide a good view outside.

ACTIVITIES
- formal entry to home.
- receive coats from guests.
- stand and talk to people coming or going.
- informally enter or exit the home.
- bring items such as groceries etc. into the home.

USERS
- the Shledor family.
- guests.
- anyone coming to the home.

CIRCULATION
- There should be a formal progression from the lower entry leading to the dramatic stair up into the home for groceries and other items.

APPROXIMATE SQUARE FOOTAGE, 200.
STUDY/DEN

spacial description
The den should be a quiet, cozy place with excellent views outside. It should be a room that is comfortable to sit in and conducive to working in a private setting. The study will also house a collection of books on shelves and pictures on the walls. When additional people visit the den couch will pull open into a bed, transitioning the study into an extra bedroom on the main level.

SPACIAL RELATIONSHIP
- should be close to the entry
- wants to be near the master bedroom
- needs to maintain that private sector with the master suite
- desires a good view
- close to a bathroom

ACTIVITIES
- work on computer
- meet with clients
- do engineering work
- read
- record keeping
- filing
- used as another bedroom

USERS
- the Shideler family, primarily Mr.
- guest staying on sleeper/bed

CIRCULATION
- Defined with in the space

APPROXIMATE SQUARE FOOTAGE, 120.
MASTER BEDROOM

spacial description
The master bedroom should be a private getaway for the Shidelers from the rest of the house complete with their own bath, closets and outside deck. The room should feel warm and comfortable with a nice spot to read and enjoy an outdoor view. In the mornings warm sunlight should penetrate into the bedroom space greeting the Shidelers as they awaken.

SPACIAL RELATIONSHIP
- close to the master bathroom
- near walk in closet
- adjacent to private deck
- not directly adjacent to living area
- receive morning light
- desires a good view

ACTIVITIES
- sleeping
- reading
- relaxing

USERS
- Mr. and Mrs. Shideler

CIRCULATION
- Defined by the bed and sitting area

APPROXIMATE SQUARE FOOTAGE, 300.
MASTER BATHROOM/CLOSET

spacial description

The master bathroom, which is part of the master suite, should have an open airy feeling of elegance that provides the essential elements with a touch of class. At the heart of this bathroom will sit a jacuzzi tub, framed with marble, allowing a place for relaxation while enjoying a view outside into a private garden.

The master dressing room, also part of the master suite, will provide a comfortable space to change clothing while coming or going from the bathroom. This space will also contain wood shelves and drawers to house their clothes.

SPACIAL RELATIONSHIP
-should be close to the master bedroom.
-adjacent with walk in closet.
-next to private outdoor garden.

ACTIVITIES
- enjoy the Jacuzzi tub.
- take showers.
- take care of personal hygiene.
- get dressed or undressed.

USERS
-Mr. and Mrs. Shideler

CIRCULATION
-The circulation is defined by the process of walking from the master bedroom, through the dressing/closet area, to the master bathroom.

APPROXIMATE SQUARE FOOTAGE, 192 FOR BATHROOM AND 120 FOR CLOSET.
LOFT SPACE

spacial description
The dramatic loft space should hover above by the ridge of the roof providing a commanding view down into the living room. On the other side is a spectacular view of the intricate stairs descending down through the naturally lit entry space. The loft provides a kind of tree house getaway that allows for reading or simply relaxing while enjoying a new perspective of their home.

SPACIAL RELATIONSHIP
- on second level
- near upper bedrooms and bath
- overlooking into the living area
- overlooking down into the grand entry space
- receive some natural light

ACTIVITIES
- read
- relax
- enjoy the view into other rooms

USERS
- the Shideler family
- guests

CIRCULATION
- Circulation through the space will be defined by it's placement and the furniture.

APPROXIMATE SQUARE FOOTAGE, 144.
UPPER BEDROOMS AND BATH

spacial description
The upper bedrooms and bath will be located on the second floor, one to be occupied by Tj and the other acting as a guest bedroom. These bedrooms will be close to the vertical circulation and close to the loft space. Each room will be fairly private blocked from the view down below by the loft or a landing space. Inside each room they will have vaulted wood ceilings, well lit by natural light flooding in from the windows. A great view outside from these bedrooms is also desired. The upper bathroom will have a vaulted wood ceiling and windows for natural light and ventilation.

SPACIAL RELATIONSHIP
- on the second level
- adjacent to each other and close to the bathroom
- private from the rest of the house
- good views
- close to vertical circulation
- by upper loft

ACTIVITIES
- room for Tj
- sleeping
- homework
- recreation
- games
- reading
- guest room
- used by visitors

USERS
- Tj
- guests

CIRCULATION
- The circulation should lead directly from the vertical circulation to the bedrooms and bath. Inside the rooms circulation will be defined by the placement of furniture.

APPROXIMATE SQUARE FOOTAGE, 384.
CRAFT ROOM

spacial description
The craft room will be a small, private space with ample counter room to work on. There should be a good view from this space providing a connection with the outdoors when working on crafts for long periods of time. This space will be on the second floor easily accessible from the vertical circulation.

spacial relationship
-on the second floor.
-near the vertical circulation.
-semi-private space.
-view outside, preferably of pond.

activities
-working on crafts.
-sewing.
-any work by Tj requiring large counter space.

users
-the Shidelier family.

circulation
-The circulation will lead into the room which will be a relatively small, open space.

approximate square footage, 100.
RECREATION ROOM

spacial description
The recreation room is a place to enjoy a game of pool or darts while taking in a view of the nearby pond. Next to the pool table is snack bar lit from above with small halogen lights. Easy access is available to the outdoor patio and indoor vertical circulation.

SPACIAL RELATIONSHIP
- in the basement
- must be the South side
- wants to be close to the pond
- should have good view and easy access outside
- near the vertical circulation

ACTIVITIES
- relaxing
- playing games, pool, etc.
- watching TV
- preparing snacks or drinks at a small bar

USERS
- the Shodeier family
- guests

CIRCULATION
- The circulation path should lead from the vertical circulation into an open space with circulation then being defined by the elements from with in such as the pool table and bar.

APPROXIMATE SQUARE FOOTAGE, 320.
WORK SHOP

spacial description
The work shop should provide for maximum flexibility and openness to allow for a variety of projects, big and small to be worked on with in the space. An adequate connection between the garage and work station is critical in order to get projects of all sizes into and out of the space. In general, this room will house many power tools and be used by Mr. Shidler a great deal.

spacial relationship
- should be close to the garage.
- wants to be near the mud room.
- close to the vertical circulation.
- near a bathroom.

activities
-work on a variety of projects.
- fix items.
- house tools.

users
-the Shidler family, mainly Mr.

circulation
-The circulation is defined by the organization of working tools within the space.

approximate square footage, 300.
MUD ROOM

spacial description
The mud room should be a space that is used coming and going from the outside. This space will house equipment, clothing and shoes in a locker room fashion complete with a tile floor and drain. Small benches will be there to put on and take off dirty shoes or snowy cross country ski boots. This room will be easily accessible from the garage and the entry.

SPACIAL RELATIONSHIP
- should be close to the entry.
- near the garage.
- wants to be by a bathroom.
- close to the vertical circulation.

ACTIVITIES
- clean up after working outside.
- use after working in the workshop.
- store sporting equipment such as cross country skies and ice skates (floor drains allow water to run off).

USERS
- the Shideler family.

CIRCULATION
- The mud room should have easy access into and out of the space.

APPROXIMATE SQUARE FOOTAGE, 168.
UTILITIES/STORAGE

spacial description
The utilities/storage room provides a space for all the necessary equipment needed in a house. The key to success is that there is enough room to move around such items as the furnace and hot water heater. Another room or separate space away from the equipment will be used for storage.

SPACIAL RELATIONSHIP
- in basement
- close to garage

EQUIPMENT
- furnace
- electric box
- geo-thermal equipment
- freezer
- hot water heater
- water pump

CIRCULATION
- The circulation of the space should be adequate enough to get around all of the equipment if they need to be worked on.

APPROXIMATE SQUARE FOOTAGE, 80.
GARAGE

spacial description
The garage should adequately house two cars, and allow for access in the house near the vertical circulation and work space. The garage should be located on the East side of the barn to coordinate with the driveway location.

SPACIAL RELATIONSHIP
-should be located on the East side near the drive.
-wants to be near the workshop.
-close to the mud room.
-near a bathroom.
-close to the vertical circulation.

ACTIVITIES
-house the cars.
-be used in conjunction with the work shop.

USERS
-the Shideiers.

CIRCULATION
-The garage doors will be facing the East drive.

APPROXIMATE SQUARE FOOTAGE, 484.
DRIVEWAY

spacial description
The driveway provides the first opportunity to manipulate views at the barn as people approach it. It shall be well marked at the entry with small limestone walls, like the original barn foundations, and include the address. Lights will then line the drive to guide the drivers in while providing glimpses of the barn between tree openings. The drive will bypass the old entry and arrive on the East side of the barn.

SPACIAL RELATIONSHIP
- close to existing drive.
- approach the garage from the East.
- drop off by entry.
- guest parking.

ACTIVITIES
- drive to and from house.
- parking for guests.
- provide the beginning of entry sequence for house.

USERS
- anyone coming to house.

CIRCULATION
- The circulation path leads people to the house including the garage and the entry. This is the first step to the entry sequence granting views at the house as one approaches.
EXTERIOR RECREATION

spacial description
The exterior recreation space provides a chance for the Shideles to enjoy the outdoors around the pond. It consists if a formal walk, generated from an angle within the barn, and ends at a patio projecting half way out into the pond. There, a cookout center is provided along with enough space to sit and relax next to the pond. At night this space can also be enjoyed as low exterior lights line the path and patio creating sparkling reflections off of the water.

SPACIAL RELATIONSHIP
-close to the pond
-easy access from the living room and kitchen.
-near the recreation room.
-by the outside deck.

ACTIVITIES
-relaxing.
-reading.
-outdoor cooking by the pond.
-sun bathing.

USERS
-the Shidele family and guests.

CIRCULATION
-The circulation path should lead to the recreation area directly from such areas as the deck, living room, kitchen, and recreation room.
PHYSICAL AND CULTURAL CONTEXT

The Shideler barn is located in Albany Indiana, 20 minutes from Muncie.

CONTEXT CRITERIA

To the South side of the barn is a large pond that provides opportunities for visual connections and physical interaction. The pond, about 50' from the barn, is home to wild life such as turtles, fish and ducks. In the winters the pond completely freezes over enough to walk and skate on. Just South of the pond is the main road that accesses the home. To the North of the barn a small river runs through a wooded area directly adjacent to a corn field. The drive comes from the road, passes by the old burned down house and terminates on the East side of the barn. Also on the East side of the barn there is an old grain storage shed. The West side is wooded with a corn field behind.
DESIGN OBJECTIVES AND METHODOLOGY

One of the first objectives was that the barn maintain its vernacular appearance. The project did not want to appear as a barn wrapped in a ranch house skin including the front yard fad of wood cut outs of old woman bent over pulling weeds. It was our objective to use vernacular materials used on farms in Indiana, to create a new dynamic essence that spoke architecturally of what this structure was. It should not look like the simple barn that it was or like an ordinary house rather the cross breed that it is.

On the inside as much of the original structure should be exposed as possible to show the age of the wood along with the care and detailing in the structure. The existing structure should dance through the open spaces maintaining its original elegance and splendor that it had previously as a barn. Spaces with in should flow into one another without confined areas. The structure itself should define spaces without a lot of extra walls.

Finally, there should be a new impact given to the building. This is no longer an ordinary dilapidating barn instead it has been reclaimed and praised for its mastery in joints. The new should celebrate this revival and create an exciting duality between its self and the original structure. Both exterior and interior, should boast of the barns new presence as a home with a rich history.
DESIGN PHASE ONE

PROCESS

With the program in hand listing the desires of the Shidekers and the essence of each room created by the group and myself, I began design phase one. A bubble diagram illustrating the relationships of the spaces was first created to establish a feel for what I had to work with.

I began the design process by carefully studying the existing structure of the barn in order to determine what kind of spaces already existed. The existing spaces could then be occupied by rooms without the need for additional walls.

Passive solar gain was another opportunity I wanted to design for because of the amount of direct sunlight that hits the barn all year. There are no adjacent trees therefore, sunlight reaches the barn from the early morning until late evening.

Most of the beginning sketches were concerned with room relationships and the spaces defined by the structure. Due to the large amount of square footage on the first floor the sketches explored the idea of cutting back part of the barns exterior to create outdoor decks. The structure would remain exposed to the outside, treated for weather.
Preserving the original North entry of the barn, the next sketches explored the idea of recreating the entry in the old location. This entry void would be glazed with a smaller door opening thus, capturing the original essence of the barn entry.

Simple angles started to appear in the plans to add a level of complexity and contrast to the grid of the barn.
The passive solar sketches reveal a new idea to pull back the first floor thereby, creating a large atrium area to catch the sun's heat.

In these sketches the angle begins to take over creating a distinct separation from the new and the old. The entry has been shifted to the corner, North-East, and thus, began to dictate the angle with in the barn. Finally, instead of every space being rotated onto the angle, a single line was drawn simulating the movement from entry to living room. This began to be the only angle in the barn with the rest of the spaces orientated on the original grid. The hatched areas on the South side reverted back to the passive solar idea of pulling back the floor to collect heat in the basement floor.
Continuing with the idea of cutting the floor back for passive solar gain in the basement, the angle rotated down into the first horizontal bay, creating a long narrow atrium to collect heat. This atrium area would then lead people in from the East by the garage, up a flight of stairs to the first floor.
DESIGN PHASE ONE CONCEPT

The main concept is to maintain the barns integrity by exposing the structure on the inside of the barn as much as possible while integrating the houses functions. The inside of the house wants to be as open and airy as possible, like it was when it was a barn. Special attention will be given to the structure and careful details will be worked around preserving and enhancing the natural barn motif.

The secondary concept is to bring a new dynamic force into the structure, in this case in the form of an angle slicing through the building. This angle, based on the South side, would pull back the main level floor leaving a two story open space that becomes an atrium for passive solar gain. This angle can then also be used to define an entry space from the South-East corner which is easily visible to guests. The angled atrium would provide a dramatic entry space that would move people from the ground level to the main level with a sense of awe and excitement. The angle would then further define the site by taking the form of an exterior wall supporting a corner of the deck. This angle would then be picked up again by another small wall that terminates in the pond, defining a patio half on land and half in the pond.
DESIGN PHASE ONE SOLUTION

After entering on the ground level and ascending the stairs one arrives in the South-West corner of the barn, with a fantastic view out at the pond. The biggest bay on the West side is occupied by the living room while the dinning room fills the smaller, North-West bay. The kitchen is in the middle bay near the stairs for easy access from the garage. The East side of the barn is dedicated to the master suite including the bedroom, bathroom and closet. The Shidelers, who are morning people, can then enjoy the sun as it rises. The angle is reinforced inside the barn by the kitchen counter and interior wall that houses an art collection.

Upstairs, a loft above the kitchen allows for a view down into the living room, dinning room and entry atrium. Two bedrooms and a bathroom are also located on this level. The angle is reinforced by the loft and a hallway that is cut back at the angle, to allow for natural light to penetrate down to the lower circulation and art collection.
THE SHIDELER RESIDENCE, ALBANY INDIANA. THESIS DESIGN PROJECT #1
BY: KELLY MULDER. PROF. BRUCE MEYER.
THE SHIDELER RESIDENCE,
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PROF. BRUCE MEYER.
DESIGN PHASE TWO

After each individual completed their first designs we reviewed each others work and shared our ideas. Next, we created five groups according to similarities in our designs in order to create a final design to be reviewed by the Shidelers.

Matt Douhan, Troy Miller, Matt Woodruff, and I formed into a group and began collaborating on our group design. We talked about our individual designs and found elements that we appreciated in all of them. With this premise we began to create a new plan high bred from all of our ideas. My idea of the angle slicing through the structure creating a large, passive solar atrium was liked by the group and maintained as an element in the design. However, the angle was rotated and instead of the stair ascending next to the angled wall it weaved in and out of it. The entry also carried over from the first design, remaining on the lower level which entered into the atrium containing the stair. The idea of having this lower level entry on the South-East corner is one of the elements that drew our group together. Other similarities we had was in the placement of the living room, and ideas about the master suite.
DESIGN PHASE TWO CONCEPT

Our concept was to create a new dynamic with in the barn driving the design of elements both in and out while maintaining the original openness and structural elegance it had as a barn. An angled line cut through the barn and into the pond, deriving a new geometry to interact with the existing grid. The new geometry let exterior decks and flooring materials take off in new directions adding revitalized energy to the structure. The angled opening for the atrium also created an exciting space for the stairs while serving as a storage room for passive solar energy. Inside and out, the atrium angle takes the form of a wall that spaces interact with. The stairs weave in and out of the light washed wall eventually arriving at the loft. Outside the angled wall carries into the site supporting a corner of the deck and reappearing as a wall jetting out into the pond doubling as a backdrop for a cook out patio.
DESIGN PHASE TWO SOLUTION

As one approaches the barn, the South-East corner of the exterior steps back exposing the barn's structure and calling attention to the entry. Above the entry doors is an angled private deck serving the master bedroom. Upon entering the home into a low space with an angled wall, visitors are pulled along towards a sun filled atrium space that soars up to the rafters. With in this space a set of stairs lightly dances upward weaving in and out of the angled atrium wall. While on the stairs or in the atrium space, the angle is understood and realized as an element carried through the house and into the site.

On the first floor the vertical stair lets off into the living room in the South-West corner, which provides a commanding view of the pond. The dining room is located beyond the living room in the North-West corner, off from the kitchen. An airlock North entry opens up into the kitchen for quick access with groceries. The laundry room and pantry are also directly behind the kitchen creating a serviceable area easy to work in and clean.

The East side of the house is dedicated to the master bedroom. A bridge first crosses the atrium space that leads into the master bedroom and private study. The master bathroom and dressing room are designed with in the master suite as a sequence, creating a flow of motion from one to the other.
On the second floor there is a loft overlooking the living room and dinning room. This space is reached by a stair overhanging in the atrium on the angle. The loft is a great space to enjoy a new perspective of the house or simply relax. Just off of the loft is Tj's bedroom, a spare bedroom and a bath.

The lower level has the entry and passive solar atrium space just off of the garage. A recreation room is located underneath the living room and next to the atrium. A bathroom, mud room and work space are also housed on this level.

The following packet is the project drawings that my group presented and submitted to the Shidelers illustrating our ideas. A model with removable spaces was also built in order to better communicate the spaces of our design.