Ball State University
College of Architecture and Planning
Muncie, Indiana

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Bachelor of Architecture Thesis Design
Conversion of an 1840’s Barn into a Residence for Tony, Suzanne, and T.J. Shideler

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Bar\textit{architecture}
Design Build Thesis Studio

Individual Programme
Barn Architecture
Design Build Thesis Studio
Ball State University
College of Architecture and Planning
Muncie, Indiana 47306

SHIDELER BARN
ALBANY, INDIANA

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Project Summary

The most valuable experiences in life are The Doing. Nothing prepares a person better for anything than actually doing whatever it is they are going to do. The idea of an Architect as the master builder has gotten lost somewhere in time. It was a standard during the Roman Era, but gradually disappeared through time. Today, in a world of liability and lawyers, impossible deadlines, and the need to provide a large quantity of product to stay alive in business, this concept of design/build is all but forgotten.

When there was an opportunity for a design build thesis studio, it was assumed that the building would be done with grant money and that the building would be a home for a needy family in the Muncie community. When Dr. Bruce Meyer notified the studio that there may be an opportunity to convert an 1840's, mortised and pinned construction barn into a new residence for a family of three, the studio was excited.

In the spring/summer of 1994, the Shideler family of Albany, Indiana lost their home in an electrical fire. The two-story house was part of an 1840's farm complex. Other buildings on site, which were unaffected by the fire, were a barn and granary. Besides the buildings, the complex consists of 24 partially wooded acres rolling to a river and ample-sized pond.

With Dr. Meyer's persuasion, Tony, Suzanne, and T.J. Shideler were convinced to allow a group of fourteen students not only to design but also build their new residence.

After client meetings, programme writing, an individual design, and a small group design, everyone in the class participated in a final meeting to decide upon a final design for the residence. At this stage of the project, the clients are making final finish material selections, the demolition of the unusable portion of the barn is complete and construction has begun.
Introduction

First and foremost, this programme is written as a whole by the "BarNitect" studio. Each member contributed something to the final programme used to design the 3500 sq. ft. residence. Many of the "BarNitects" had the same feelings and ideals of what the spaces should express and what other spaces they should relate to. This is not a programme from one person, but a programme written from one person's point of view with other people's ideals and feelings incorporated into his own.

The first step in writing this programme was to research. Topics looked into were: what makes a home a home? barn construction, historic preservation and historic preservation techniques, adaptive reuse, modern technology (new foundation construction, new building materials and methods, etc.), other barn to house conversions.

Secondly, two client meetings played the most important role in the formation of a programme. In these two meetings the clients desires as to, quantity, size, and general to specific information about any spaces were recorded and reviewed by the programmers.

During this time, the existing structure was surveyed and general size constraints were noted.

Finally, a rough draft of a programme, spaces, approximate sizes, materials, general use, primary relationships, was handed to the clients for their final input. This client modified programme was the programme used to set the criteria for the design of their residence.

The programme which follows is a programme which is written with all of the preceding included. The following programme will list the Design Criteria of the project, Space Requirements (Characteristics, Relationships, Users, Activities, Materials, Ambient conditions, Technical Utilities, and Special Equipment) for the 20 major spaces of the un-designed residence, a Space Summary for the entire residence, and an Approximate Budget for the structure.

As mentioned earlier, the entire BarNitect studio is responsible in some manner for this programme, whether it be additional research on a particular aspect of a house or an input on a feeling of a space. Others who have contributed are facility and staff of the College of Architecture and Planning at Ball State University. The students, facility, and clients who have contributed are: Dr. Bruce Meyer, Jeff Bogle, Matt Douhan, Amanda Fritz, Jennifer Gilmer, Bob Harmeyer, Pamela Harwood, Jeannie Kemble, Tim Macy, Ann McKee, Sarah Marshall, Phil Matton, Troy Miller, Kelly Muldner, Roland Resurrection, The Shideler Family, Prof. Rod Underwood, and Matt Woodruff.
Design Criteria

Existing Site Conditions
The site is located just outside of Albany, Indiana, 15 miles northeast of Muncie, Indiana. The site, approximately 24 acres, is owned by Mr. and Mrs. Tony Shideler. Its basic features are: 1) An entrance, from the south, from an east-west county road; 2) A pond on near the county road on the southwest corner of the site; 3) The existing barn and grainary just north of the pond; 4) The remains of the house directly east of the grainary and; 5) A rolling topography beyond the barn through a woods to a river. The only aspects that this programme will cover in regards to the site are views and interaction with the area immediately surrounding the barn (i.e. the pond and driveway).

Suggestions for a site development are as follows: 1) An interaction area on the pond accessible from the new residence; 2) An southeast entry drive from the country road into the eastern side of the lower level of the new residence; 3) A general “picking-up” of the site and; 4) Removal of dead and dying plant material directly north of the new residence. It is advised against constructing a new entry drive due to the topography and the pond location.

Existing Site Conditions
The existing barn is in adequate shape for adaptive re-use. All heavy timbers seem to be white oak and in safe condition, although not level and square. Some knee-bracing needs to be replaced, along with some secondary timbers. The foundations appear to be below frost line and above the water table. The concrete wall in the lower level on the north side of the barn in showing signs of stress and precautions should be taken to prevent the wall from further fracture. The three field stone columns are leaning and are in need of repair before any new construction can take place. Some column footings will also need to be replaced.

Design Concepts
Everything possible should be done to preserve as much of the original structure in its original position as possible. This idea cannot be stressed enough. ALL heavy timbers should remain intact and in their original position. Life in this residence should feel as though the clients are living in a structure which used to be a barn. This beautiful old construction should be celebrated whenever possible. It could not be considered a hinderance, but an opportunity.

Contrasting materials, multi-story spaces, differentiation in floor and ceiling heights, manipulated openness, should all be used to implement dynamism and excitement into the space. There should be a clear definition between Public and Private zones of the residence.

Interaction with the pond and Visual links to the entire site should be used to open the barn to the exterior.

Function comes first. Everything the clients need is to be designed and built into the structure. It should be as maintenance free as possible and use the best equipment in terms of value and efficiency.

Each space should be designed around (a) particular user(s). This is not to be a design for a family, but a design for The Shideler’s. Their needs and wants could come first. The Shideler’s are simple people with simple needs. Some major concerns which they have expressed are: artwork display (both public and private), gourmet cooking facility, cooking as entertainment, lots of book storage and variety of reading spaces (they do not own a television), the center of the living area to be a ceramic stove, approach to dealing with fire hazards, and interplay with the outdoors.
### Garage

**Defining Characteristics**  
Main Ground Level entry for the family from the East—Easily accommodate 2 cars

**Relationships**  
- **Physical**  
  Storage Space—Workshop—Mechanical room  
- **Visual**  
  Storage Space—Workshop

**Users**  
Family

**Activities**  
Covered Car Storage—Expansion space for Workshop

**Materials**  
- **Floor**  
  Concrete w/Entry stoop—Sloped to drain  
- **Walls**  
  Fire Rated Painted G.W.B.  
- **Ceiling**  
  Fire Rated Painted G.W.B.—2 hr separation from living areas  
- **Windows**  
  Small in Size—Within overhead garage door(s)  
- **Furnishings**  
  Bench on Entry Stoop for Exterior "Mud Room"  
- **Special**  
  Storage Shelves and Hooks on Walls

**Ambient Condition**  
- **Thermal**  
  Unheated—Insulated from rest of Living areas  
- **Acoustical**  
  Acoustical Batt insulation and Horizontal steel channels  
- **Lighting**  
  Flourescent—Work oriented—Single circuit

**Technical Utilities**  
- **Electrical**  
  Standard 110V—2 circuit  
- **Telephone**  
  One standard voice jack  
- **Plumbing**  
  None Necessary  
  Built-In Storage Cabinets

### Workshop

**Defining Characteristics**  
Adequate for a wood working hobbieist, not a professional wood worker—Lower Level Location

**Relationships**  
- **Physical**  
  Garage  
- **Visual**  
  Garage

**Users**  
Tony—Sometimes T.J.

**Activities**  
Small-Scale Wood Working and Construction

**Materials**  
- **Floor**  
  Concrete  
- **Walls**  
  Fire Rated G.W.B.—Washable wall covering—Pegboard  
- **Ceiling**  
  Fire Rated Painted G.W.B.—2 hr separtaion from Living area  
- **Windows**  
  1-2 approx. 12 sq. ft. ea.—Operable and Filterable  
- **Furnishings**  
  Shelves and Cabinets for Storage—Workbench  
- **Special**  
  Separate Ventilation system—Dust control—Tool Storage

**Ambient Condition**  
- **Thermal**  
  Separated from Living Area—Heated  
- **Acoustical**  
  Acoustical batt—Double wall w/offset studs—Acoustical Felt  
- **Lighting**  
  Standard Work Intensity @ Top of Workbench

**Technical Utilities**  
- **Electrical**  
  Multi Circuit 110V single phase—220V triple phase—Shut-off  
- **Telephone**  
  One standard voice jack  
- **Plumbing**  
  Utility sink

**Equipment**  
Table saw, Router Table, Jig Saw, Drill Press, Bench  
Sander, Various Hand Tools
Garage

Storage

Workshop

Site

Workshop

Garage

Workshop

Site
### Storage Space

**Defining Characteristics**
All purpose storage area for garden and other outdoor equipment--Lower Level Location

**Relationships**
- Physical: Garage--Exterior--Workshop--Mechanical Room
- Visual: Garage

**Users**
Entire Family

**Activities**
Long and short term storage of outdoor supplies

**Materials**
- Floor: Concrete
- Walls: Fire Rated Painted G.W.B.--2 hr separation from living area
- Ceiling: Fire Rated Painted G.W.B.--2 hr separation from living area
- Windows: None Preferred
- Furnishings: Storage shelves, hooks, and cabinets
- Special: Built-in versatile storage system

**Ambient Condition**
- Thermal: Insulated from house--Not Heated
- Acoustical: Standard
- Lighting: Standard Overhead--Door Switch

**Technical Utilities**
- Electrical: One duplex outlet
- Telephone: None Necessary
- Plumbing: None Necessary

**Equipment**
Built-In versatile storage system

### Mechanical Room

**Defining Characteristics**
Ample size room to house all Mechanical Systems and Equipment needed for the house--Centrally located

**Relationships**
- Physical: Circulation--Storage--Garage--Exterior
- Visual: None Necessary

**Users**
Service Technitions--Tony

**Activities**
Provede necessities of Ventilation, Plumbing, and Electrical

**Materials**
- Floor: Concrete
- Walls: Fire Rated Painted G.W.B.
- Ceiling: Fire Rated Painted G.W.B.
- Windows: None Preferred
- Furnishings: None Required
- Special: Sump Pit and Pump

**Ambient Condition**
- Thermal: No Heat necessary
- Acoustical: Acoustical batt--Double wall w OFFSET studs--Acoustical felt
- Lighting: Standard Overhead--Door Switch

**Technical Utilities**
- Electrical: Dedicated Multi-circuit 110V.--220V. as required
- Telephone: None Necessary
- Plumbing: Water Heater and Softener, Ballist Tank, Water Pump, etc.

**Equipment**
A.H.U.--Water supply and disposal--Main Panel Box
Storage Space

Mechanical Room
Winter Garden
Defining Characteristics
Interior garden space adequate for starting seedlings during winter months--Sitting space--Interior/Exterior space

Relationships
--Physical
Living/Dining--Vertical Circulation
--Visual
Entry--Living/Dining--Exterior (Pond)

Users
Family--Suzanne--Guests

Activities
Sitting--Minor Gardening--Reading--Entertaining

Materials
--Floor
Brick (re-used from the old house)
--Walls
Painted G.W.B. and Wood Siding
--Ceiling
Painted G.W.B.--Multiple Storie
--Windows
Many Large Operable--South Exposure--External Shading
--Furnishings
Planters--Built-in Benches
--Special
Seedling Starter Lamps

Ambient Condition
--Thermal
Control Heat and Humidity
--Acoustical
Standard
--Lighting
Natural Light when possible--Soft, consistent artificial above

Technical Utilities
--Electrical
Single circuit 110V
--Telephone
None Necessary
--Plumbing
None Necessary

Equipment
Small garden tool storage cabinet

Vertical Circulation
Defining Characteristics
Single Dynamic Feature of the Living Area--Provide excitement during vertical movement--Create Tension

Relationships
--Physical
Entry--Living/Dining--Winter Garden--Loft Spaces
--Visual
Entry--Living/Dining

Users
Family--T.J.--Occupant of the Guest Bedroom

Activities
Vertical Transition

Materials
--Floor
Laminated wood treads
--Walls
Combination of parpit walls and railings
--Ceiling
Open to Above
--Windows
None (of its own)
--Furnishings
None Necessary
--Special
Closed Risers

Ambient Condition
--Thermal
Open Space
--Acoustical
Open Space
--Lighting
Connect entire Circulation area with Light--One Light Core

Technical Utilities
--Electrical
None Necessary
--Telephone
None Necessary
--Plumbing
None Necessary

Equipment
Landings @ View Points
Winter Garden

Vertical Circulation

Loft Bedrooms
**Pantry**

**Defining Characteristics**
Provide Space for long-term storage of frozen and canned foods--Storage for Canning supplies and similar equipment

**Relationships**
---Physical
  Kitchen--Garage
---Visual
  Kitchen

**Users**
Mostly Suzanne--Also Tony

**Activities**
Storage of food and equipment not used from day-to-day

**Materials**
---Floor
  Concrete or Tile (Vinyl, Ceramic, Quarry)
---Walls
  Painted G.W.B.
---Ceiling
  Painted G.W.B.
---Windows
  None Preferred
---Furnishings
  Many different shelves of different depths
---Special
  Arranged so that everything can be seen from one side

**Ambient Condition**
---Thermal
  Insulated and kept slightly cooler than the living area
---Acoustical
  Standard
---Lighting
  Door operated switch

**Technical Utilities**
---Electrical
  None Necessary
---Telephone
  None Necessary
---Plumbing
  None Necessary

**Equipment**
Long built-in shelves/cubicales--Deep Freezer

---

**Laundry Room**

**Defining Characteristics**
Ample space to Gather, Wash, Dry, Fold, Iron, and Prepare to Distribute Laundry

**Relationships**
---Physical
  Exterior--Living area
---Visual
  Exterior

**Users**
Suzanne

**Activities**
Gather, Wash, Dry, Fold, Iron, and Distribution of Laundry

**Materials**
---Floor
  Tile (Vinyl, Quarry, or Ceramic)
---Walls
  Painted G.W.B. and Tile (Ceramic or Quarry)
---Ceiling
  Painted G.W.B.
---Windows
  1-2 approx. 12 sq. ft. ea.--View from folding table
---Furnishings
  Storage for detergent and iron
---Special
  Large, deep-welled stainless steel sink

**Ambient Condition**
---Thermal
  Ventilation for Clothes Dryer
---Acoustical
  Acoustical Batt and Felt
---Lighting
  Standard work @ top of folding counter

**Technical Utilities**
---Electrical
  GFI breaker--Dedicated circuits for both Washer and Dryer
---Telephone
  None Necessary
---Plumbing
  H & C Water to Washing Machine and Sink

**Equipment**
Table for ironing and Folding Clothes--Rack to Hang Clothes
Pantry

Kitchen

Pantry

Garage

Laundry Room

Living/Dining

Site

Laundry Room
### Family Mud Room
**Defining Characteristics**
Easily accessed and cleaned area for changing clothes, showering, and "general cleaning-up after being outside"

<table>
<thead>
<tr>
<th>Relationships</th>
<th>--Physical</th>
<th>Exterior--Garage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Visual</td>
<td>Exterior--Garage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users</th>
<th>Mostly Family--Private</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>Showering--Short-Term Dirty Clothes Storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials</th>
<th>--Floor</th>
<th>Concrete or Tile (Vinyl, Ceramic, Quarry)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Walls</td>
<td>Painted G.W.B. and Tile (Ceramic, Quarry)</td>
</tr>
<tr>
<td></td>
<td>--Ceiling</td>
<td>Painted G.W.B.</td>
</tr>
<tr>
<td></td>
<td>--Windows</td>
<td>None Necessary</td>
</tr>
<tr>
<td></td>
<td>--Furnishings</td>
<td>Shower, Water Closet, Deep-Welled Sink, Counter space</td>
</tr>
<tr>
<td></td>
<td>--Special</td>
<td>Dirty clothes storage and clean linen/cleaning supply storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ambient Condition</th>
<th>--Thermal</th>
<th>Ventilation Fan to remove excess humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Acoustical</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>--Lighting</td>
<td>Standard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical Utilities</th>
<th>--Electrical</th>
<th>Single GFI breaker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Telephone</td>
<td>None Necessary</td>
</tr>
<tr>
<td></td>
<td>--Plumbing</td>
<td>H &amp; C Water to sink and Tub/Shower--C Water to W.C.</td>
</tr>
</tbody>
</table>

| Equipment | Cleaning Supplies Storage Cabinet |

### Public 1/2 Bath
**Defining Characteristics**
Public Bathroom off of Living/Dining spaces--Should not be visually accessible from Living/Dining, but easily found

<table>
<thead>
<tr>
<th>Relationships</th>
<th>--Physical</th>
<th>Living/Dining area--Kitchen area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Visual</td>
<td>None Necessary</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Users</th>
<th>Guests and Family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Activities</td>
<td>Guest Relie and Freshining Up</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Materials</th>
<th>--Floor</th>
<th>Tile (Ceramic or Quarry)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Walls</td>
<td>Tile (Ceramic or Quarry) and Painted G.W.B. and Wood</td>
</tr>
<tr>
<td></td>
<td>--Ceiling</td>
<td>Painted G.W.B. and Wood</td>
</tr>
<tr>
<td></td>
<td>--Windows</td>
<td>None Necessary</td>
</tr>
<tr>
<td></td>
<td>--Furnishings</td>
<td>Waste Recepticle--Counter--Cabinet</td>
</tr>
<tr>
<td></td>
<td>--Special</td>
<td>Linen and cleaning supplies storage</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ambient Condition</th>
<th>--Thermal</th>
<th>Ventilation Fan to remove Excess Humidity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Acoustical</td>
<td>Standard</td>
</tr>
<tr>
<td></td>
<td>--Lighting</td>
<td>Standard</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Technical Utilities</th>
<th>--Electrical</th>
<th>Single GFI Breaker</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>--Telephone</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td>--Plumbing</td>
<td>H &amp; C Water to Vanity Sink--C Water to Water Closet</td>
</tr>
</tbody>
</table>

| Equipment | Large Mirror, Toilet Paper Dispenser |
Family Mud Room

Public 1/2 Bath
**Kitchen**

**Defining Characteristics**
Counterspace to accommodate Multiple Simultaneous Users—Manipulated openness to other areas, but allowing for some segregation

**Relationships**
--- Physical
Living/Dining--Family Dining--Pantry--Garage

--- Visual
Living/Dining--Family Dining--Possibly View of Pond

**Users**
Tony and Suzanne

**Activities**
Daily Meal Preparation—Gourmet Meal Preparation—Entertaining

**Materials**
--- Floor
Tile (Ceramic or Quarry)

--- Walls
Painted G.W.B. and cabinetry

--- Ceiling
Painted G.W.B. with Soffit—Varied Heights

--- Windows
Many Operable—Possibly above Counter and Under Wall cabinet

--- Furnishings
Marble Chopping Block—(See Diagram for additional)

--- Special
Easy to Entertain from—Interaction w/ Living/Dining

**Ambient Condition**
--- Thermal
Easily accessible and easily operable diffusers

--- Acoustical
Standard

--- Lighting
Recessed work lighting under cabinet—Central General light

**Technical Utilities**
--- Electrical
Multi-circuit G.F.I. 110V--220V—Dedicated Refg and Micro

--- Telephone
One standard voice jack

--- Plumbing
H & C water to Sink/Disposal—H Water to Dishwasher

**Equipment**
Sink Center—Refrigerator Center—Range Center—See Diagram

--- Breakfast Family Dining---

**Defining Characteristics**
Breakfast area for Morning People--Everyday Family
Dining Area--Overflow for Formal Dining area
Kitchen--Living/Dining area
Kitchen--Living/Dining--Exterior (Eastern View)

**Relationships**
--- Physical

--- Visual

**Users**
Family--Sometimes overflow guests

**Activities**
Consuming of Breakfast and other Family Meals

**Materials**
--- Floor
Tile (Quarry or Ceramic)

--- Walls
Painted G.W.B. and wood

--- Ceiling
Painted G.W.B.

--- Windows
Large--Display Shelves incorporated into them

--- Furnishings
Intimate table and chairs for three—Food serving table

--- Special
Lower ceiling—A feeling of intimancy, not vulnerability

**Ambient Condition**
--- Thermal
Feeling of Morning Sunlight warming the space

--- Acoustical
Standard

--- Lighting
Lots of Natural--Artificial centered over the table—Intimate

**Technical Utilities**
--- Electrical
Standard

--- Telephone
None Necessary

--- Plumbing
None Necessary

**Equipment**
Coffee Maker and Warmer
**Kitchen**

- Refrigerator Center
  - Receiving and Preparation
  - Mixer
  - Chop Block
  - Mixing Bowls
  - Utensils
  - Cake and Pie Tins
  - Occasional Dishes
  - Condiments
  - "Daily Food" Storage
  - Wine Storage
  - Radio

- Living/Dining

- Family Dining

- Refrigerator Center
  - Preparation and Clean-Up
  - Everyday Dishes
  - Glassware
  - Vegetable Bins
  - Cutlery and Silverware
  - Towel Rack and Linnens
  - Wastebasket
  - Blender and Juicer
  - Cleaning Utensils
  - Mixer and Can Opener

- Range Center
  - Cooking and Serving
    - Pots, Pans and Potholders
    - Roaster
    - Cooking Utensils
    - Serving Trays
  - Seasoning and Spices
  - Microwave Oven
  - Stove and Oven
  - Grease Containers

- Sink Center

- Pantry

- Breakfast Family Dining
Living Space
Defining Characteristics
Open (Both Plan and Above)--Provide for socialization and isolation--Intimacy--Heating Center

Relationships
--Physical Dining--Vertical Circulation--Pond
--Visual Dining--Kitchen--Exterior (View of Pond)--Winter Garden

Users
Family and Guests

Activities
Reading--Socializing--Entertaining

Materials
--Floor Hardwood
--Walls Painted G.W.B.--Exposed Barn Structure--Wood accents
--Ceiling Wood Car Siding/Existing Rafters--Multiple Stories
--Windows Many Operable to the South
--Furnishings Sofas--Chairs--Coffee and End Tables--Piano
--Special Ceramic Stove or Fireplace

Ambient Condition
--Thermal Warmth of the House
--Acoustical Sound like a "Great Hall"
--Lighting Flexible Reading Lamps--Upward General--Emphasize existing

Technical Utilities
--Electrical Standard--Floor Outlets
--Telephone 2-3 Standard voice jacks--2-3 Data jacks
--Plumbing None Necessary

Equipment
Return Air Duct/Ventilation Duct near Ridge

Dining Area
Defining Characteristics
Open to Kitchen and Living--Gathering of friends and family to consume a special meal or celebrate a special event

Relationships
--Physical Living--Kitchen--Exterior Dining/Food Preparation area
--Visual Family Dining--Exterior (Pond)--Winter Garden

Users
Guests and Family

Activities
Large Scale Food Consumption

Materials
--Floor Hardwood
--Walls Painted G.W.B.--Exposed Barn Structure--Wood accents
--Ceiling Different height than Living but Open--Wood Car Siding
--Windows Many--View to Pond
--Furnishings Dining Table and Chairs for 8 Adults--Existing China Cabinet
--Special Serving Table

Ambient Condition
--Thermal Near the Warmth of the House
--Acoustical Standard
--Lighting Centrally Overhead

Technical Utilities
--Electrical Standard
--Telephone None Necessary
--Plumbing None Necessary

Equipment
Overhead Trellis
**Living Space**

**Dining Area**

**Site**
T.I's and Guest's Bedrooms

Defining Characteristics
Second Floor Space--Visual separation of areas within the room--True Feeling of living in a Barn

Relationships
--Physical
Bathroom--Sitting Area--Close to Vertical Circulation

--Visual
Public Areas Below--Exterior (Pond)

Users
T.J.--Overnight Guest

Activities
Sleeping--Studying--Reading--Most Daily Routines

Materials
--Floor
Carpet

--Walls
Lots of Exposed Structure w/ Painted G.W.B. infill

--Ceiling
Wood Car Siding--Possibly Exposed Rafters

--Windows
Many Operable--Roof Window over Bed

--Furnishings
Dressers--Desk and Chair--Comfortable Chair

--Special
Bed and Closet Built-In around the existing structure

 Ambient Condition
--Thermal
Standard

--Acoustical
Standard

--Lighting
Overhead General--Reading Lamp--Separate Closet Light

Technical Utilities
--Electrical
2 Standard voice jacks--1 Data jack for T.J.

--Telephone
None Necessary

--Plumbing
Book Storage

Upstairs Bathroom

Defining Characteristics
Common Space for T.J and Overnight Guests--Accessible from either room

Relationships
--Physical
T.J.'s Bedroom--Guest Bedroom

--Visual
Perferably None

Users
T.J--Occasional Overnight Guest

Activities
Typical

Materials
--Floor
Tile (Vinyl, Quarry, or Ceramic)

--Walls
Painted G.W.B. and Tile (Quarry or Ceramic)

--Ceiling
Painted G.W.B.

--Windows
None necessary

--Furnishings
Counter

--Special
Storage for linen and Dirty Clothes

 Ambient Condition
--Thermal
Ventilation Fan to remove Excess Humidity

--Acoustical
Standard

--Lighting
General Overhead--Intense wall lighting over Mirror

 Technical Utilities
--Electrical
GFI breaker

--Telephone
None

--Plumbing
H & C Water to Sink and Tub/Shower--C Water to Water Closet

Equipment
Toilet Paper Dispenser--Full Size Mirror
T.J.'s and Guest's Bedrooms

- Site
- Loft Sitting
- Vertical Circulation
- T.J.'s Bedroom
- Loft Bedrooms
- Guest Bedroom
- Private Bath

Upstairs Bathroom

- Loft Bedrooms
- Private Bath
**Study/Den**

**Defining Characteristics**
- Quiet, Cozy Space--Private--Place to do Daily Business--Also serve as a Private Art Display area

**Relationships**
- --Physical: Master Suite--Entry
- --Visual: Exterior (Pond)

**Users**
- Tony

**Activities**
- Reading--Hobbies--Personal Business

**Materials**
- --Floor: Carpet or Hardwood with Area Rug
- --Walls: Painted G.W.B.--Exposed Barn Structure
- --Ceiling: Painted G.W.B.
- --Windows: 1-2 w/ View of Pond
- --Furnishings: Large Desk w/Comfortable Chair--Filing Cabinets--Sofabed
- --Special: Space to Double as an Extra Guest Bedroom

**Ambient Condition**
- --Thermal: Standard
- --Acoustical: Standard
- --Lighting: Overhead General lighting--Desk Lamp--Moveable Reading Lamp

**Technical Utilities**
- --Electrical: One Standard voice jack--One Data jack
- --Telephone: None Necessary
- --Plumbing: Art Lighting--Bookshelves--Art Display

**Entry**

**Defining Characteristics**
- Indoor-Outdoor Space--Easily Accomodate 4 Adults--Give a Hint of What is on the Inside, But not Reval Completely

**Relationships**
- --Physical: Living/Dining--Kitchen--Vertical Circulation
- --Visual: Living/Dining--Vertical Circulation--Exterior (Pond)

**Users**
- Mostly Guests

**Activities**
- Greeting upon Arrival--Preparation for Change in Climates

**Materials**
- --Floor: Tile (Quarry, Vinyl, or Ceramic)
- --Walls: Painted G.W.B.
- --Ceiling: Wood Car Siding--High Ceiling
- --Windows: Skylights--Sidelights--Lots of Glass on Entry Door
- --Furnishings: Coat Rack--Umbrella Stand--Built-In Bench w/ Storage Below
- --Special: Accomodate storage of some Winter Clothes and Ski's

**Ambient Condition**
- --Thermal: UnInsulated--Transition Space
- --Acoustical: Standard
- --Lighting: Standard

**Technical Utilities**
- --Electrical: Standard
- --Telephone: None Necessary
- --Plumbing: None Necessary

**Equipment**
- Decorative Glass to Interior
Study/Den

Entry

Winter Garden

Vertical Circulation

Kitchen

Living/Dining

Site

Entry

Site

Master Suite
**Master Bedroom**

**Defining Characteristics**
- Morning People--East Orientation--Access to Private Sitting Space and Exterior--Intimate and Personal, But not Small

**Relationships**
- **Physical**
  - Exterior (Pond)--Living/Dining--Master Bathroom
- **Visual**
  - Exterior (Pond and Morning Light)--Private Garden

**Users**
- Tony and Suzanne

**Activities**
- Sleeping, Reading, and Daily Routines

**Materials**
- **Floor**
  - Hardwood w/Area Rugs
- **Walls**
  - Exposed Barn Structure infilled with Painted G.W.B. and wood
- **Ceiling**
  - Different height over Sitting and Sleeping--Painted G.W.B.
- **Windows**
  - Many Operable w/East and South Exposure
- **Furnishings**
  - Bed--Comfy Chairs--Side Tables--Coffee Table--Loveseat
- **Special**
  - Book Storage--Reading Lamps

**Ambient Condition**
- **Thermal**
  - Standard
- **Acoustical**
  - Standard
- **Lighting**
  - Moveable Track Lighting--Moveable Reading Lamps

**Technical Utilities**
- **Electrical**
  - Standard
- **Telephone**
  - 2 Standard voice jacks
- **Plumbing**
  - None

**Master Bathroom**

**Defining Characteristics**
- Exposure to Morning Light--Clean in Appearance--A Place for Everything--Separate, But Together "Get Ready" areas

**Relationships**
- **Physical**
  - Master Bedroom
- **Visual**
  - Private Garden

**Users**
- Tony and Suzanne

**Activities**
- Bathing--Dressing--Storage--General "Getting Ready"

**Materials**
- **Floor**
  - Tile (Ceramic or Quarry)
- **Walls**
  - Tile (Ceramic or Quarry)--Painted G.W.B.
- **Ceiling**
  - Painted G.W.B
- **Windows**
  - Frosted Glass--Glass Block--Eastern Exposure
- **Furnishings**
  - Counters--Closets--Linen and Dirty Clothes Storage--Vanity
- **Special**
  - Built-in's for Clothes Storage--Built-in Make-Up Area

**Ambient Condition**
- **Thermal**
  - Ventilation Fan to remove Excess Humidity
- **Acoustical**
  - Standard
- **Lighting**
  - General Overhead--Wall Mounted Work Lighting

**Technical Utilities**
- **Electrical**
  - Multi-circuit GFI breaker
- **Telephone**
  - None
- **Plumbing**
  - H & C Water to Sink, Tub, Shower--C Water to Water Closet
  - Spa Tub

**Equipment**
Master Bedroom

Living/Dining

Master Suite
- Sleeping
- Library
- Sitting

Site

Master Bathroom

Dressing
- Master Bathroom
- Bathing

Private Garden

Site
## Lower Level

<table>
<thead>
<tr>
<th>Room</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garage</td>
<td>500 sq. ft.</td>
</tr>
<tr>
<td>Workshop</td>
<td>300 sq. ft.</td>
</tr>
<tr>
<td>Storage Space</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Mechanical Room</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Winter Garden</td>
<td>150 sq. ft.</td>
</tr>
<tr>
<td>Vertical Circulation</td>
<td>125 sq. ft.</td>
</tr>
<tr>
<td>Horizontal Circulation</td>
<td>200 sq. ft.</td>
</tr>
<tr>
<td>Pantry</td>
<td>20 sq. ft.</td>
</tr>
<tr>
<td>Family Mud Room</td>
<td>60 sq. ft.</td>
</tr>
<tr>
<td>Unfinished Space</td>
<td>445 sq. ft.</td>
</tr>
</tbody>
</table>

Lower Level Total: 2000 sq. ft.
Lower Level Unfinished: 445 sq. ft.
Lower Level Liveable: 210 sq. ft.

## Main Level

<table>
<thead>
<tr>
<th>Room</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Winter Garden</td>
<td>150 sq. ft.</td>
</tr>
<tr>
<td>Vertical Circulation</td>
<td>125 sq. ft.</td>
</tr>
<tr>
<td>Horizontal Circulation/Storage</td>
<td>395 sq. ft.</td>
</tr>
<tr>
<td>Laundry Room</td>
<td>70 sq. ft.</td>
</tr>
<tr>
<td>Public 1/2 Bath</td>
<td>30 sq. ft.</td>
</tr>
<tr>
<td>Kitchen</td>
<td>220 sq. ft.</td>
</tr>
<tr>
<td>Breakfast Family Dining</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Living Space</td>
<td>300 sq. ft.</td>
</tr>
<tr>
<td>Dining Area</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Entry</td>
<td>90 sq. ft.</td>
</tr>
<tr>
<td>Study/Den</td>
<td>120 sq. ft.</td>
</tr>
<tr>
<td>Master Suite</td>
<td>300 sq. ft.</td>
</tr>
</tbody>
</table>

Main Level Total: 2000 sq. ft.
Main Level Liveable: 1240 sq. ft.

## Loft Level

<table>
<thead>
<tr>
<th>Room</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>T.J.'s Bedroom</td>
<td>150 sq. ft.</td>
</tr>
<tr>
<td>Guest Bedroom</td>
<td>150 sq. ft.</td>
</tr>
<tr>
<td>Bathroom</td>
<td>60 sq. ft.</td>
</tr>
<tr>
<td>Sitting Area</td>
<td>100 sq. ft.</td>
</tr>
<tr>
<td>Vertical Circulation</td>
<td>125 sq. ft.</td>
</tr>
<tr>
<td>Horizontal Circulation</td>
<td>120 sq. ft.</td>
</tr>
<tr>
<td>Unused/Attic</td>
<td>495 sq. ft.</td>
</tr>
<tr>
<td>Open to Below</td>
<td>800 sq. ft.</td>
</tr>
</tbody>
</table>

Loft Level Total: 705 sq. ft.
Loft Level Liveable: 460 sq. ft.
Cost Analysis

The Shidelers have a budget of $80,000 to complete this new residence. A cost of $77,000 was estimated to complete the new residence. This figure includes materials only since the labor was free from the studio. These materials include:

General Rough-in

- Floors
  -- 2X8 Leveling Joists for Main Level
  -- 2X10 Floor Joists for Loft Level
  -- 3/4" T&G OSB Floor Sheathing for Loft and Main Levels
  -- Concrete Floor for Lower Level
  -- Brick for Lower Level Winter Garden

- Exterior Walls
  -- 2X4 Studs
  -- High Density Batt Insulation
  -- 2" Rigid Insulation
  -- Vertical Vinyl Siding
  -- 1/2" G.W.B.

- Interior Walls
  -- 2X4 Studs
  -- 1/2" G.W.B. ea. side

- Roof
  -- 1/2" O.S.B. ea. side
  -- High Density Batt Insulation
  -- 2" Rigid Insulation

All Windows and Doors

All Electrical, Mechanical, and Plumbing fixtures, equipment, and rough-ins
  -- Exception--New Well (If Needed)
    -- Including Fireplace or Ceramic Stove

New Sewage Leach Field

Carpet and Vinyl Tile floor coverings

Foundation Insulation and Waterproofing

Demolition of Existing Structure which is Not Used

Anything wanted by the clients above what was budgeted by the class will be paid for by the clients.
ARCHITECTURE
Design Build Thesis Studio

Individual Conceptual Design
After each of us in the studio had completed individual research and after Tony Shideler, the owner, agreed for us to actually start the project, each person received a time to work on an individual conceptual design.

What follows is my early view of what the barn should be transformed into.

My design was arrived at by keeping in consideration all the ideas presented in my individual programme. These Main Ideas are:

- Keeping as much of the existing heavy timber construction as possible.

- Leaving the timbers exposed to the interior and expressed on the exterior.

- Creating an open environment which can accommodate many users at a time but still feel like a home.

What follows are conceptual, computer generated images which I feel meet all of my requirements of what the house should be.