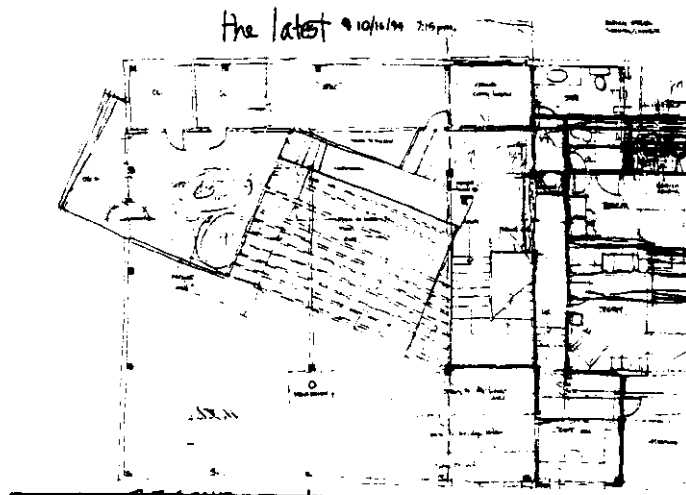
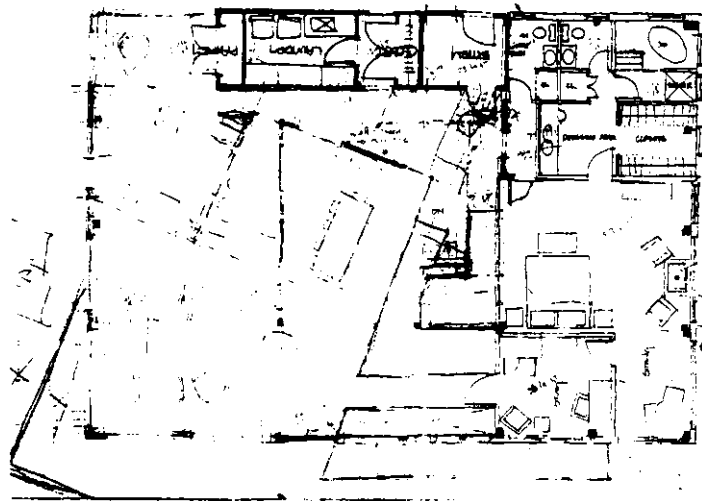
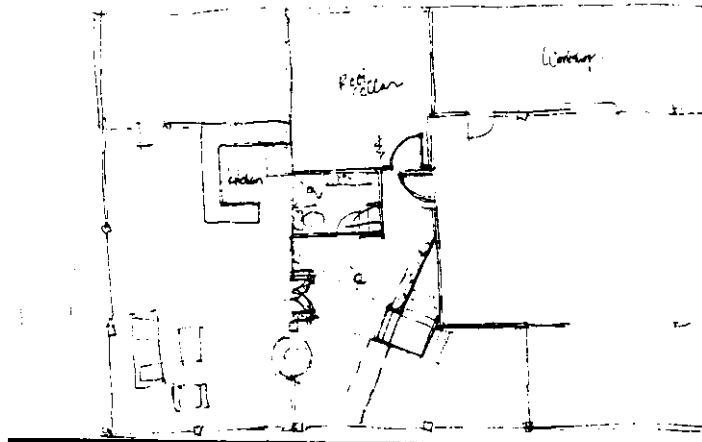
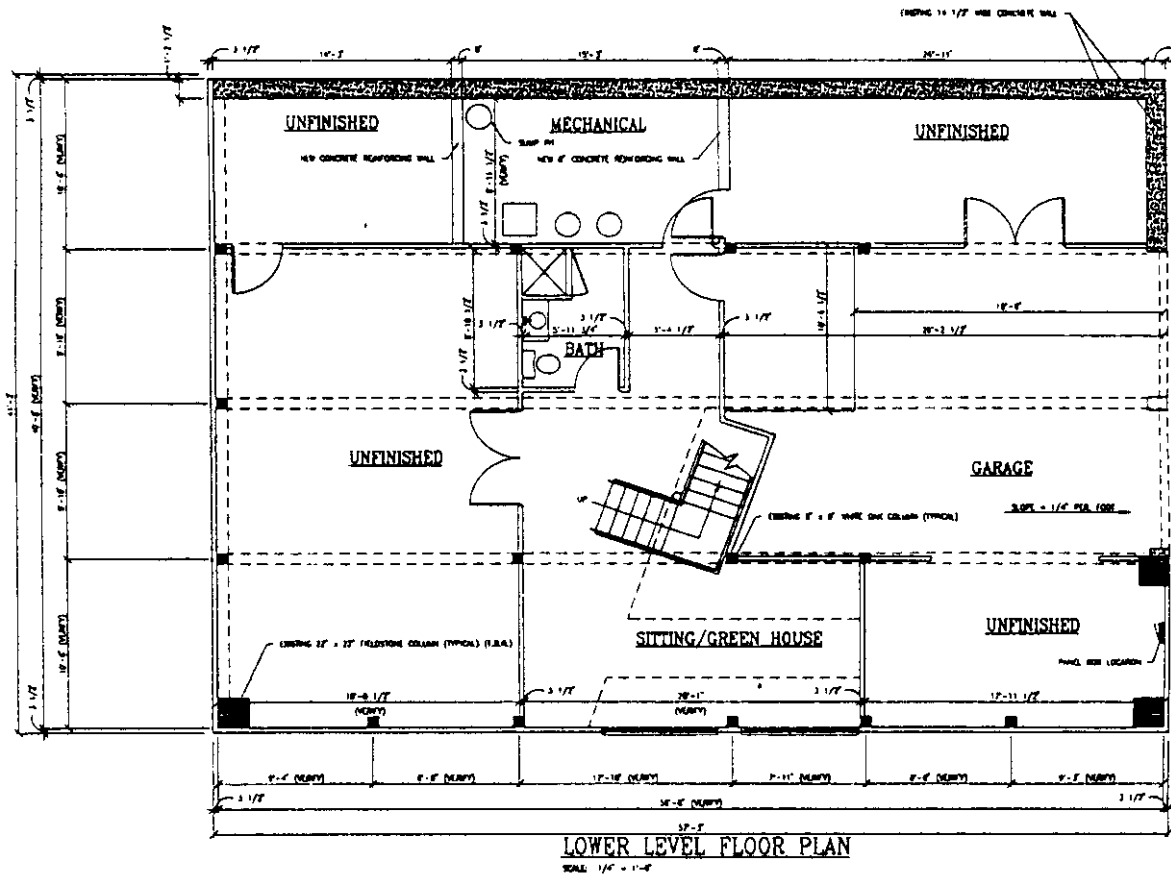
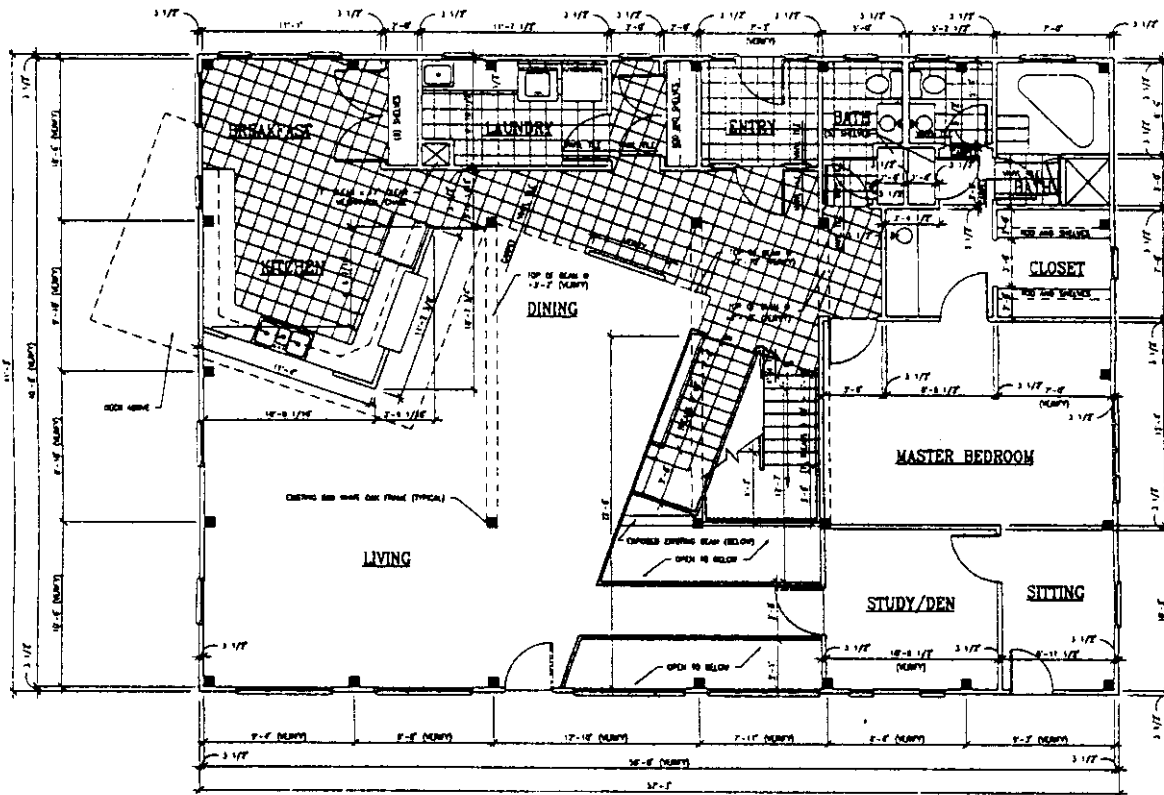


In process solutions of lower level(top), main level(middle), and upper level(bottom) plans.



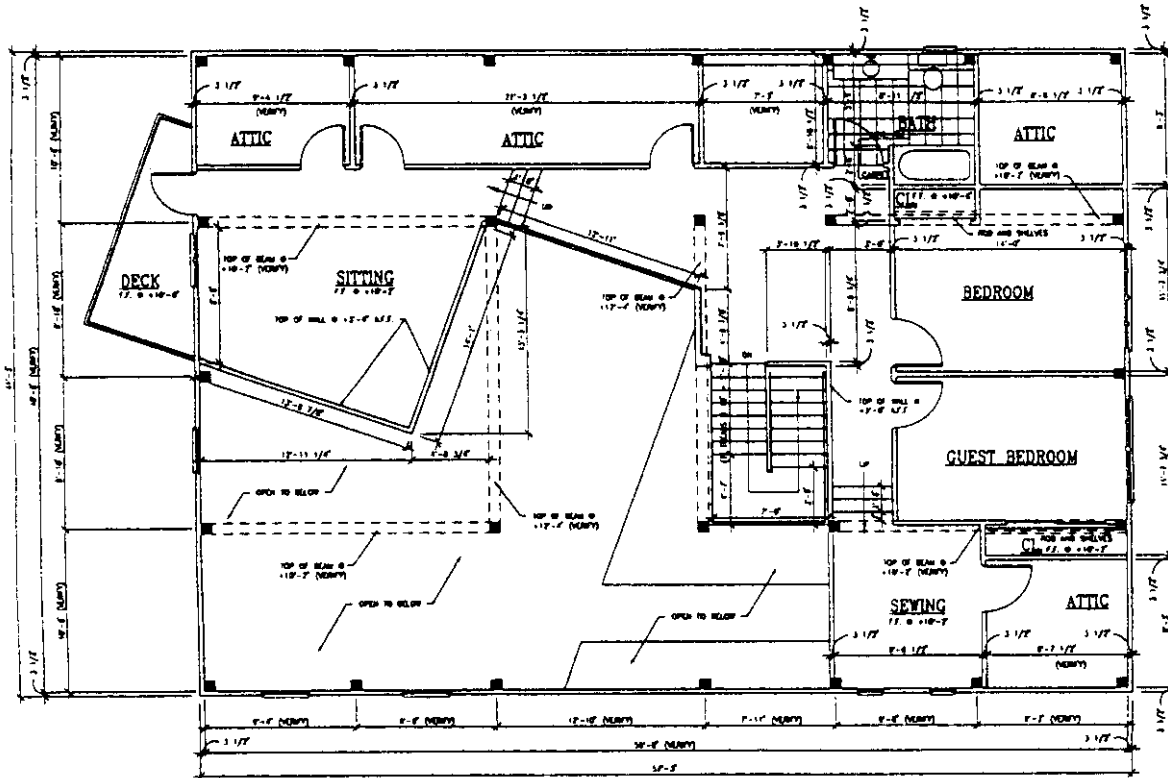
Floor Plans.





MAIN FLOOR PLAN
 SCALE 1/8" = 1'-0"





LOFT FLOOR PLAN

SCALE: 1/8" = 1'-0"



RESEARCH

Simultaneous to the design phases, research regarding the technical aspects of materials and environmental systems was continually compiled. This information led to a thorough understanding of pricing and alternative construction techniques that might be used in the final solution. These tasks were divided among teams as well to insure an in-depth study of the specific areas. All information was maintained in a studio file for immediate access. This research was then utilized in calculating the cost estimates as well as in making design decisions.

Additional research involved the analysis of case precedents regarding housing. Each studio member presented unique topics to the studio for efficiency in increasing the general knowledge base. Topics presented on August 29, 1994 and their presenters included the following:

- Dual Usage Possibilities *presented by Troy Miller*
- The Compact House *presented by Matt Woodruff*
- Affordable Housing *presented by Kelly Mulder*
- Pattern Language *presented by Jen Gilmer*
- The Work of Steve Badanes *presented by Tim Macy*
- The Work of Frank Gehry (more specifically his use of non-traditional materials) *presented by Sarah Marshall*
- The Work of David Sellers (designing while building) *presented by Jeannie Kemble*
- Charles Moore's House (free-standing interior separated from the shell) *presented by Bob Harmeyer*
- Flexibility in Use *presented by Jeff Bogle*
- Flexibility *presented by Aaron Haschell*

- Brever's Binuclear Housing *presented by Rolland Resurrection*
- The Usonian Concept (free flowing space) *presented by Phil Matton*
- The Work of Hugh Newell Jacobsen (the use of icons and the chimney as a hearth) *presented by Matt Douhan*
- Dutch Housing *presented by Amanda Fritz*

Additional research included consultation with several university related parties.

On September 16th, the studio met with historic preservationist Ann McKee to discuss the topic of cleaning the existing barn structure. Since it would be integrated with the new design, it needed to be cleaned to eliminate dirt and rodents. The option of sandblasting was ruled out due to the fact that the force may damage the aged wood. The alternative of a low pressure walnut shell wash was suggested to achieve the desired effect. She advised that the process should be kept to natural materials. Regarding the issue of exposing the structure in any way to the exterior, McKee advised against doing so. She felt that though it would be alright to expose the sides of the barn in areas out of the line of incoming harsh weather, the walnut rafters need to be covered.

The College of Architecture and Planning's Housing Futures, another consultant in our research quest, proved helpful as well. Michele Chuini spoke with us here on September 2nd about alternative materials. These included various types of foam core panels, cement board, and other types of exterior finish options.

The information obtained through these various stages of research served as a strong guide in our decision-making process.



COST TAKE-OFFS

At this point, the studio was divided into groups in order to distribute the task of research and compiling data for cost take-offs. Groups were assigned to the following areas:

- interior finishes including cabinetry and millwork
- mechanical, electrical, communications, foundations and foundation walls
- technical alternatives to structure
- exterior finishes

The targeted budget: \$80,000.00

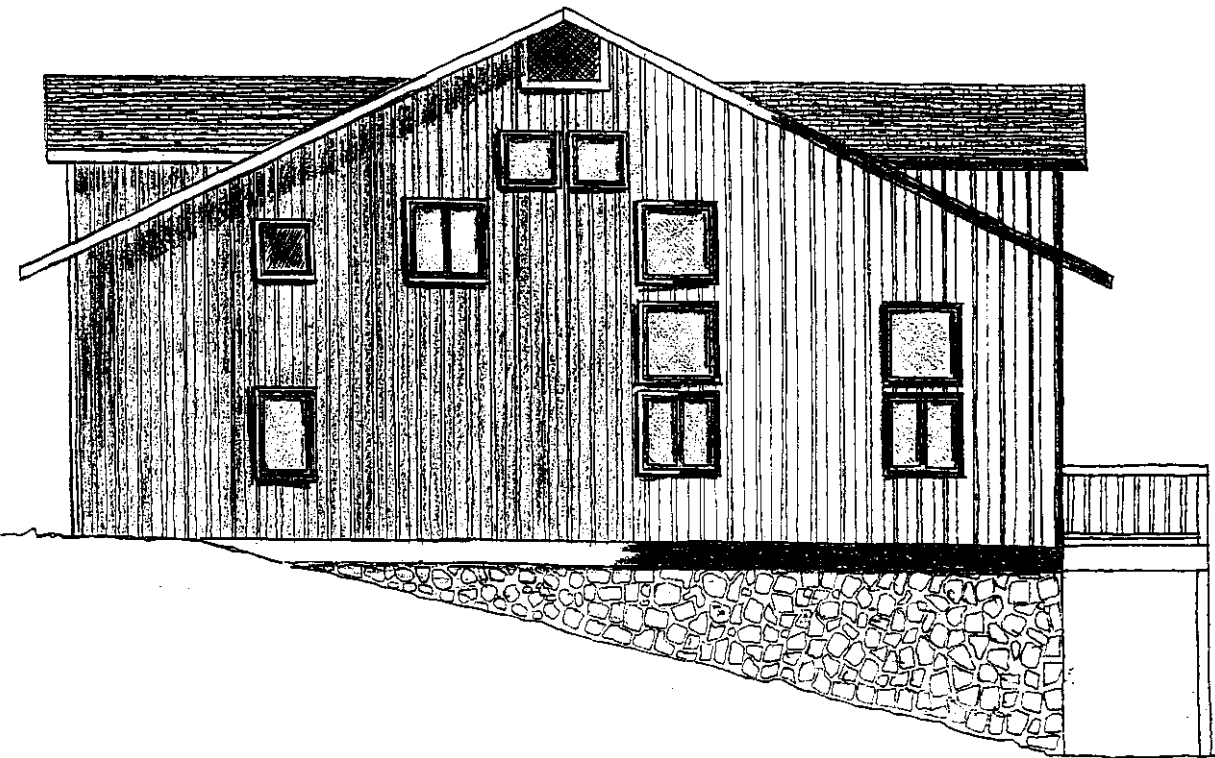
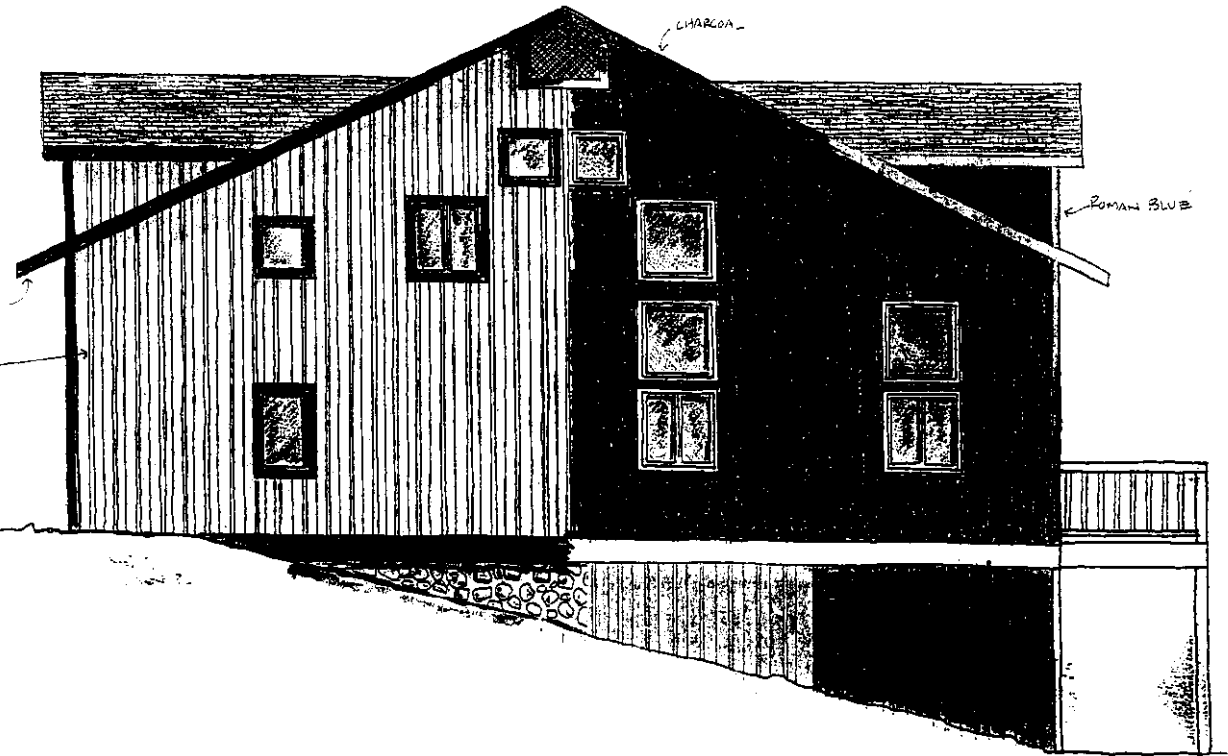
This author was a member of the interior finishes crew along with the fine personalities of Matt Douhan, Jeannie Kemble, and Sarah Marshall. The results of this particular research compilation may be found in Appendix B.

Again, these estimates were calculated to provide the clients with a realistic breakdown of the funds and to assure the ability to complete the said task within their desired amount. The materials included in the estimates are not necessarily those which were actually utilized. Rather, they are representative as a base price option.

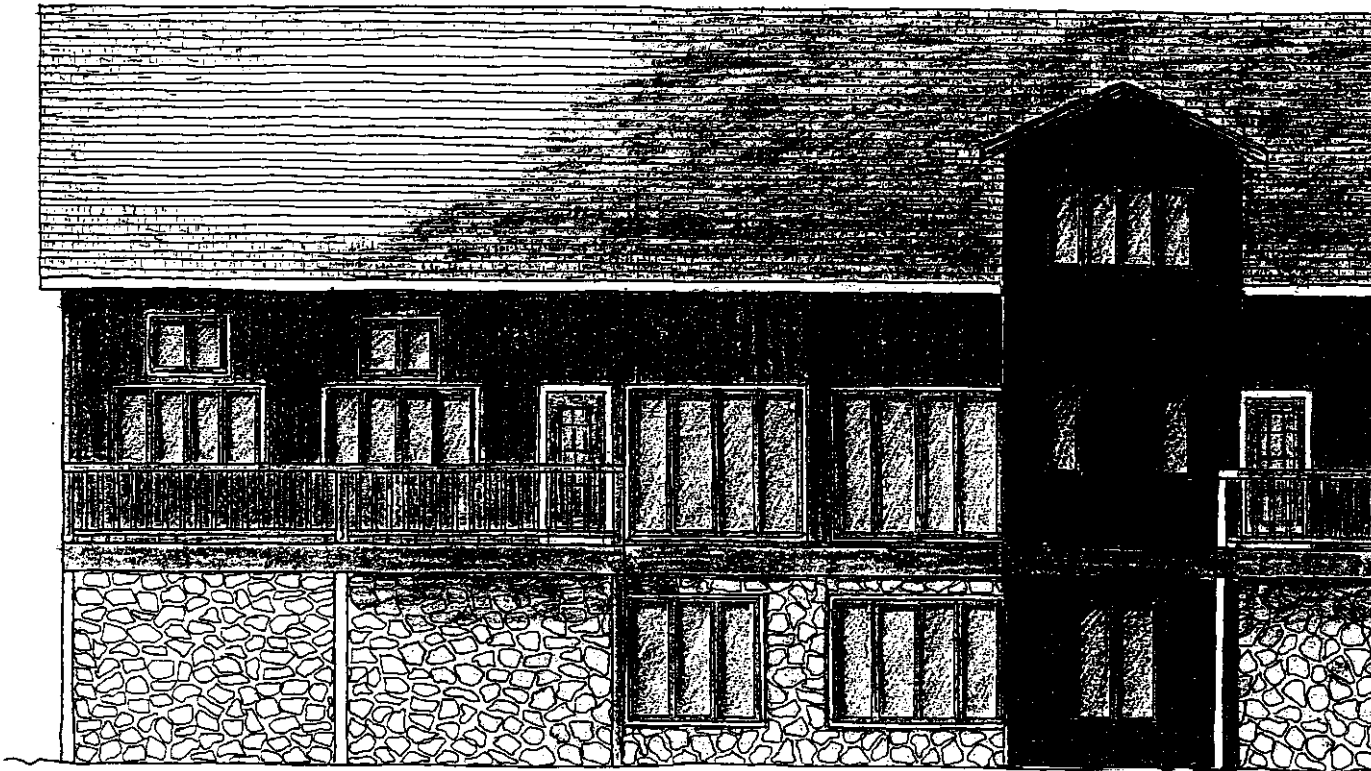
COLOR STUDIES

The following studies were compiled by Jen Gilmer, Tim Macy, and Sarah Marshall with the input of other studio members as a tool to aid the clients in choosing a siding color and base material. These were actually completed during the construction process. The color/material schemes approved of by the majority of studio members included beige metal siding with the axis from the dormer to the ground on both the north and the south sides in red. The base material most favored was the fieldstone option.

Color Studies.



Preferred Solutions.

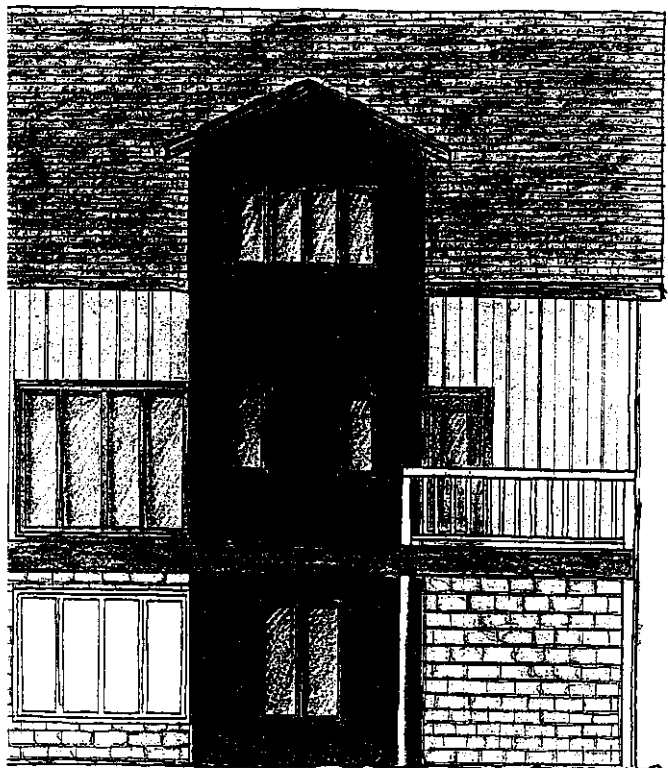


SOUTH



NORTH





SOUTH



THE CONSTRUCTION PROCESS

The following is a documentation of the actual conversion from demolition to creation. The notes are excerpts from this author's journal kept during this time period.

11-4-94 (Friday)

First actual workday at the barn.

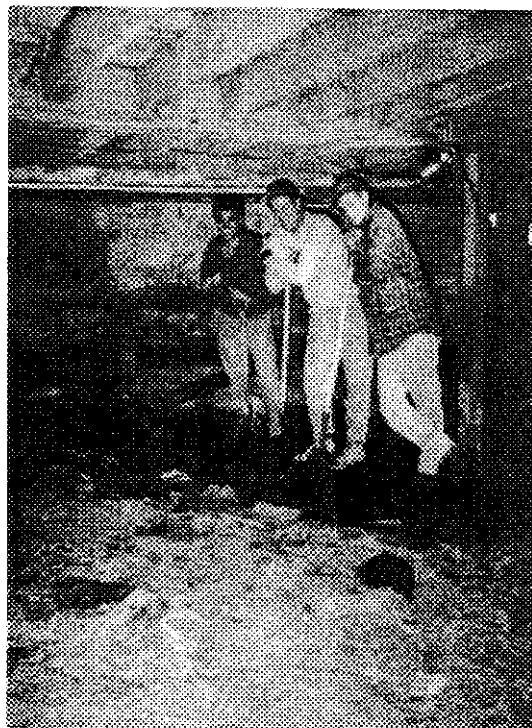
Activities:

Cleaned out lower level

Sorted, salvaged, & hauled off material

Started cleaning floor to uncover slab

Got lots done!



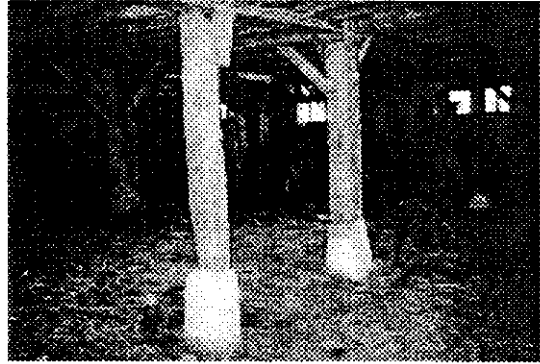
Above (left to right): Rolland Resurrection, Troy Miller, and Aaron Haschell taking a break from cleaning the lower level



Above (foreground): The barn viewed from the northwest after the first day of cleanup.



Above: the four sheep that initially occupied the lower level of the barn now don't know where to go.



Above: View of lower level looking Northwest.

11-7-94 (Monday)

Activities:

Jackhammered slab in lower level

Cleared debris off of lower level with backhoe

Excavated soil on East side (where garage doors will be) with backhoe

Began cleaning out main level (sorting scraps, etc.)

Knocked out Southeast corner stone column -- braced temporarily -- the stone has no existing concrete foundation (only stones) -- we won't reposition the stone column since our design will be covering it over with new exterior finishes -- Use it for an entry gate?



Above: Troy miller excavates away from the west side of the barn.

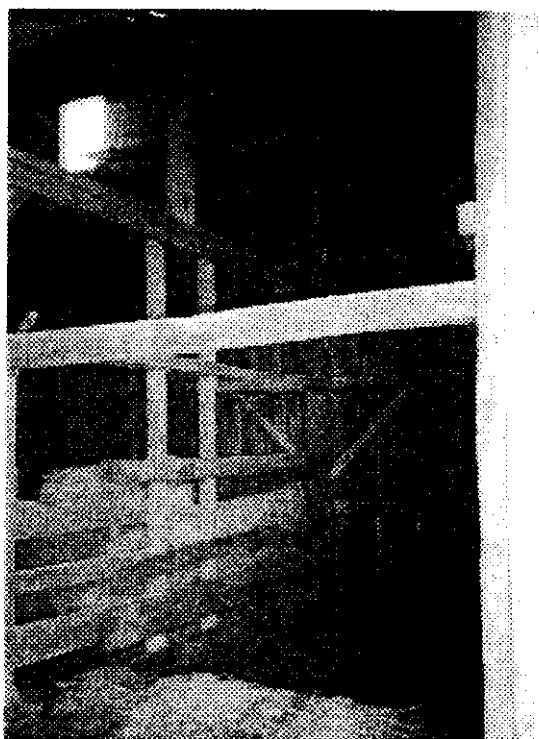


View looking through the lower level out towards the pond on the southwest.



View of the barn from the southeast.





Northwest corner of the main level.



Above: Students clean removing furniture that had been stored in the main level.

11-11-94 (Friday)

Activities:

Lumber arrived on site.

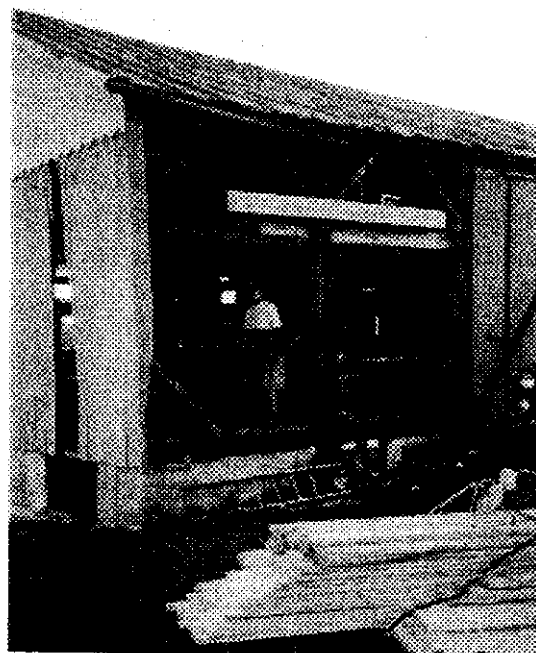
Continued excavating dirt from lower level -- still have at least 8" deeper to go (probably more). The backhoe is working again. Hopefully we'll get a second one on Monday.

Cleaned out more of the main level -- knocking out partition walls and sweeping, shoveling, and dumping hay.

Muncie Mission still has not picked up the furniture that was stored in the barn. It is in our way, but with what we've cleaned the place is really looking opened up.

Began framing a second floor area to stand on in order to frame in the dormers (used 2x12s for joists) -- had to knock off siding first

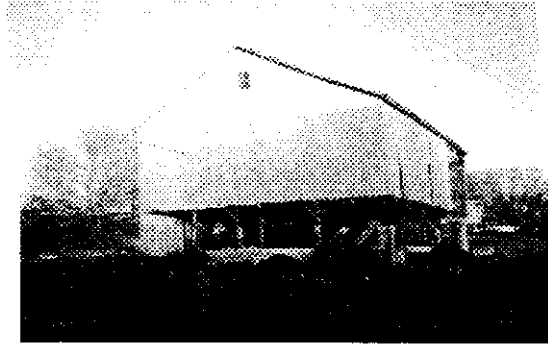
Hope to get new roof on by next Friday.



East end of the barn's North side. Siding has been torn away, and the lighter colored members attached to the structure are support for a new upper level.



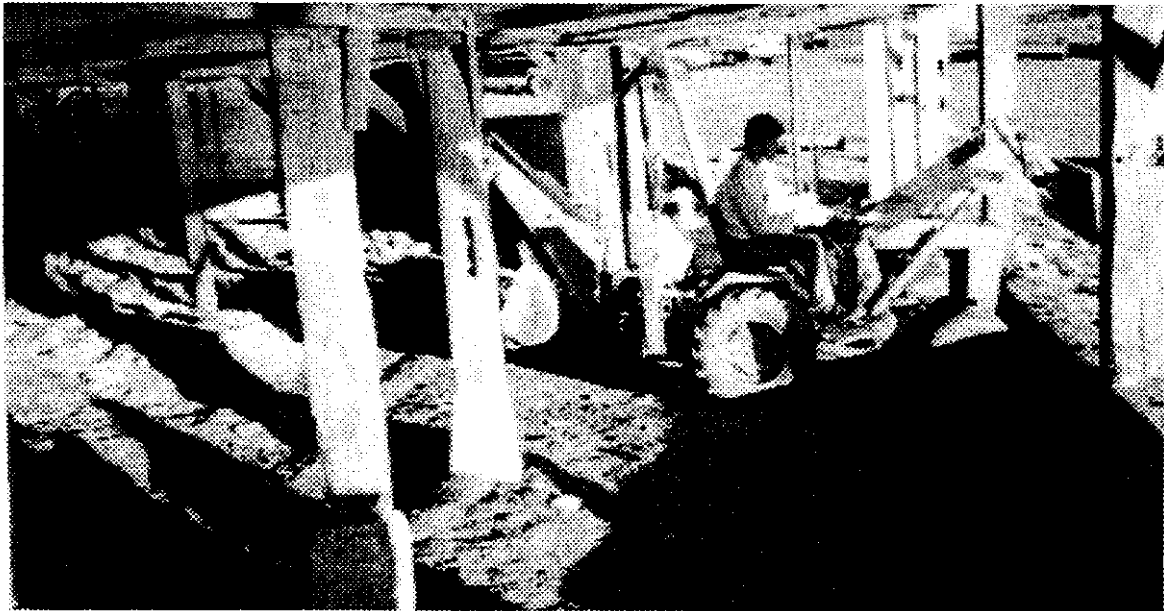
Above: Bob Harmeyer is helping position floor joists and beams for a portion of the upper level.



Above: View of barn from the southwest.

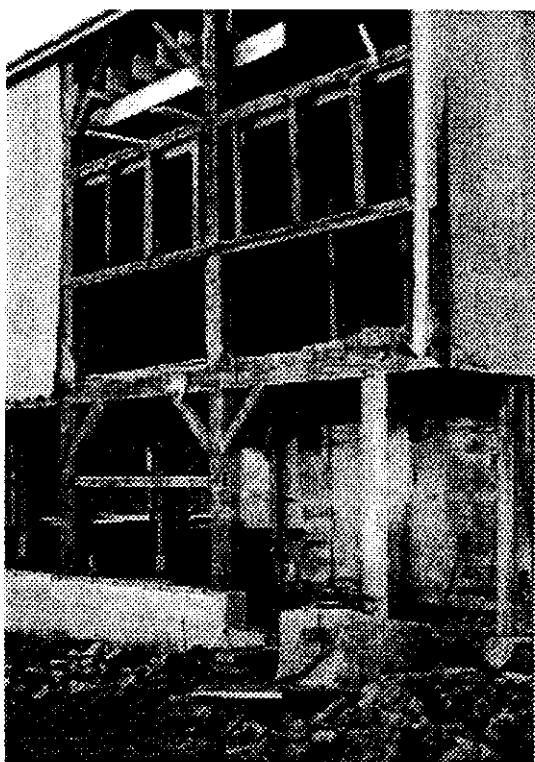


Above: View of barn from the northwest. Towards the far corner of the barn, one can see the beginnings of an upper level.



Matt Woodruff excavates dirt from the lower level. It must be lowered at least eighteen inches to allow for the pouring of a new slab and still provide 8'-0" clearance at the points where existing beams run overhead.

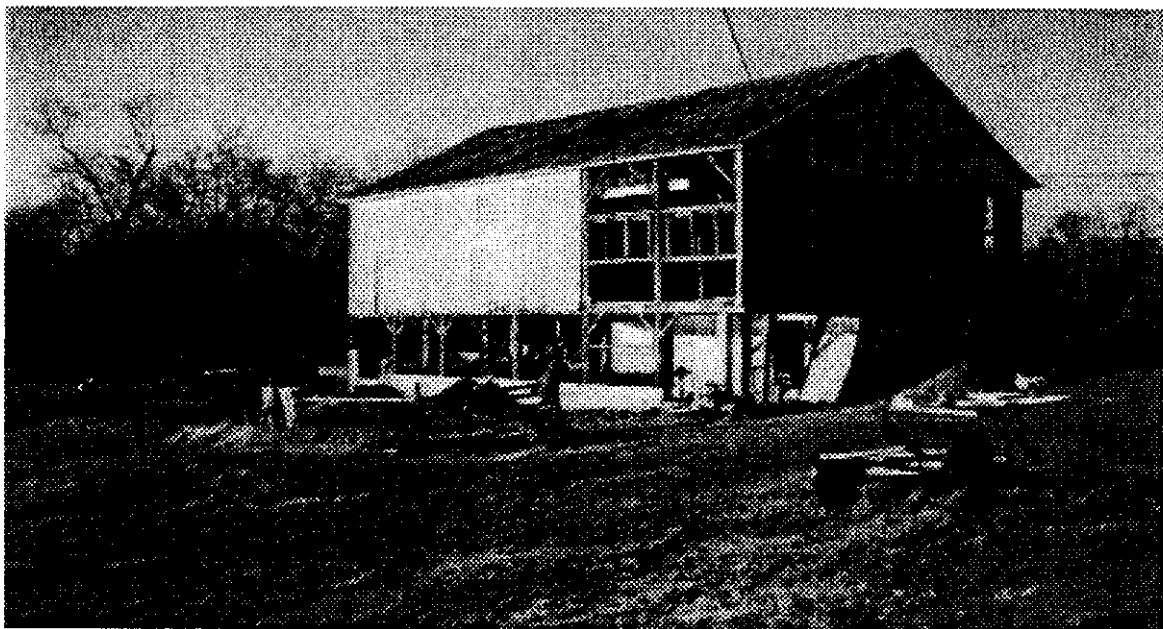




Above: View of the southeast corner of the barn. In the foreground one can see the portion of stone column that has been knocked out and behind it the temporary column that replaced it.



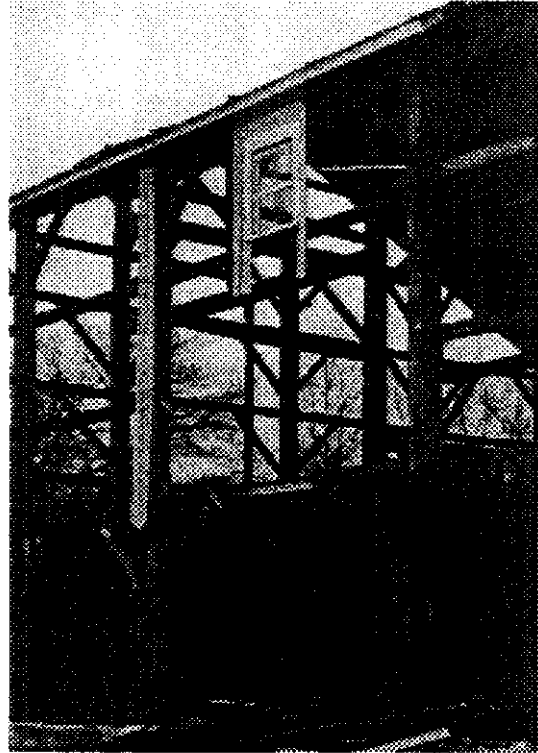
Above: In the beginning much had to be cleared out of the main level in preparation for the new construction.



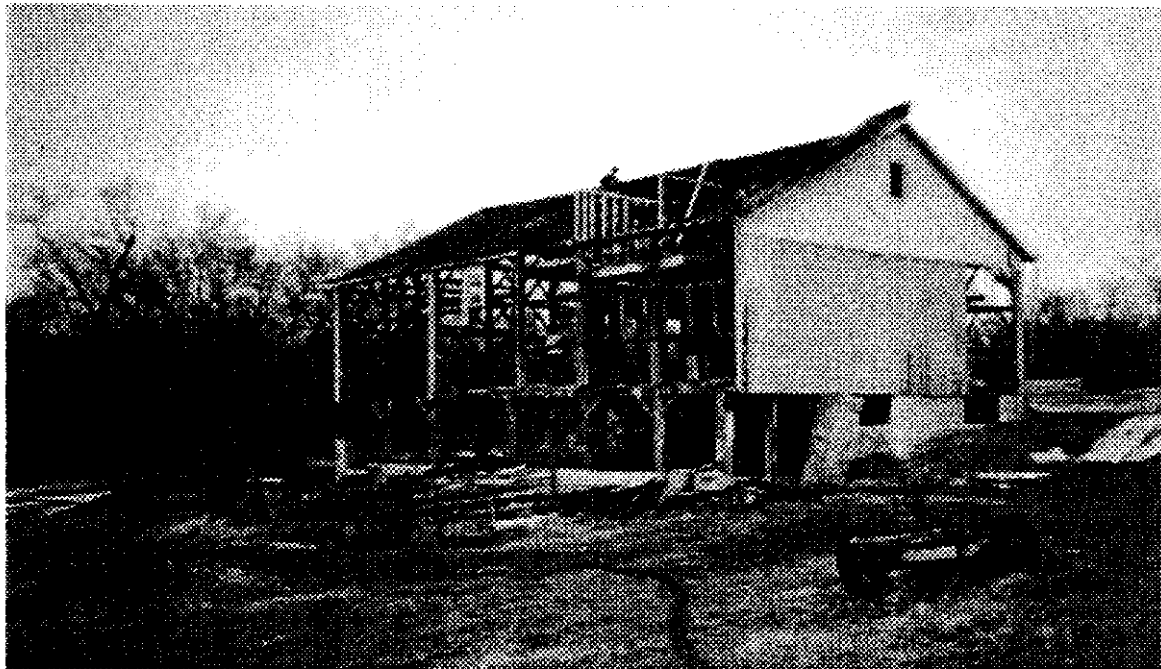
View of the barn from the southeast. Siding has been removed, and the structure begins to be exposed to the exterior.



Above: the southern dormer being framed in.



Above: Though most of the siding has been pulled away revealing the web of existing structure, one window still clings to the timbers.



View of the barn from the southeast in mid-November. One can see the beginnings of the walls of the dormer coming out of the roof. More siding has been removed and the roof pulled off.



11-16-94 (Wednesday)

Knocked off existing roofing and siding. Existing roof is made up of perlins, cedar shakes, asphalt shingles, and tin on the exterior.

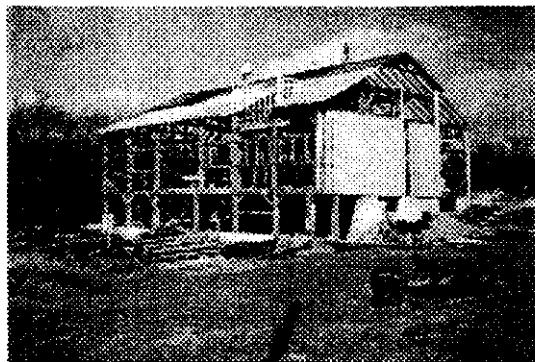
Had to build temporary platforms to stand on in order to reach the underside of the roof.

We still have no backhoe for the lower level.

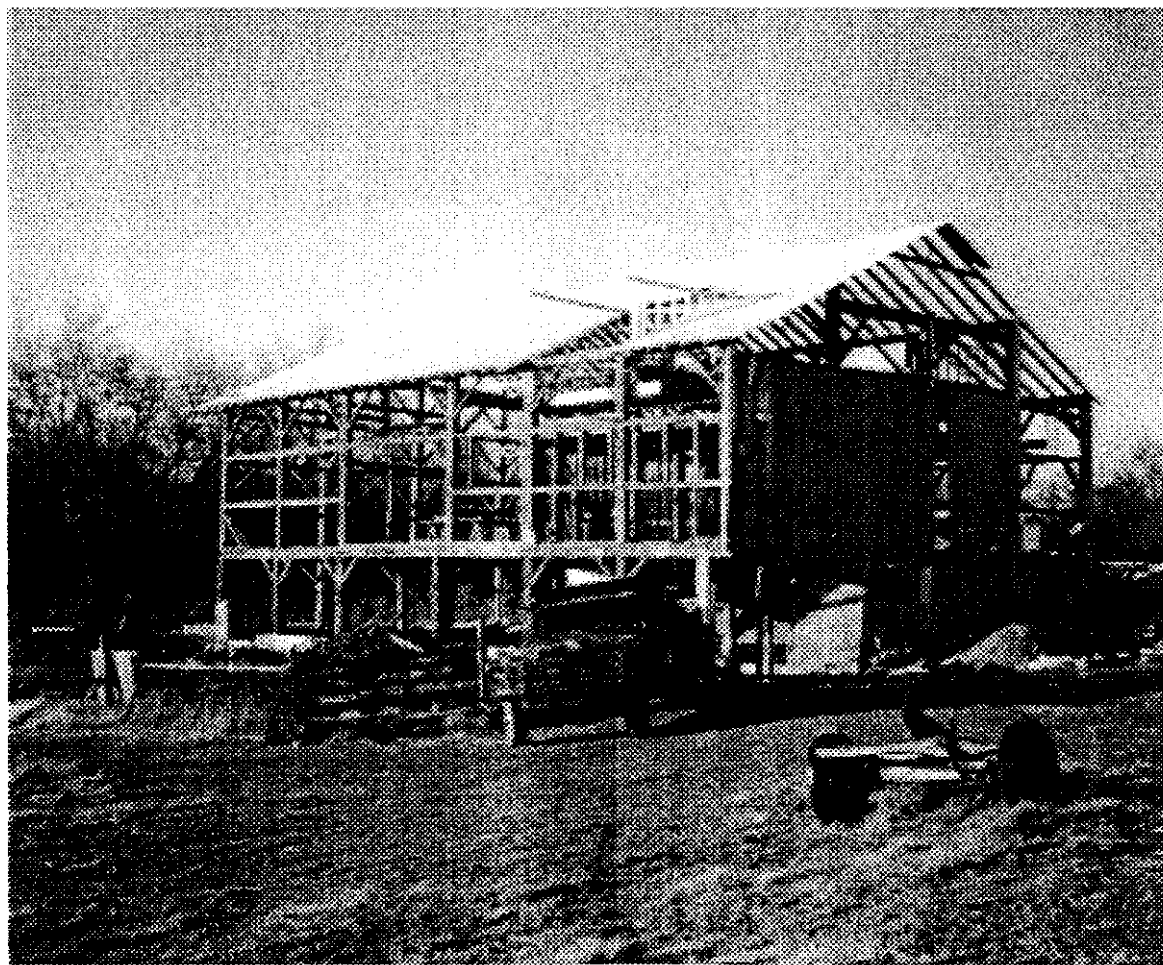
11-21-94 (Friday)

Got all of the roofing removed.

Half of the new roof decking is in place (South side of the ridge)



Above: View of the barn from the southeast. The roof is in transition between old and new --on the far edge of the roof, near the ridge, are portions of the old roof that have yet to be removed.



View from the southeast. The entire southern half of the roof is adorned with new decking.

11-21-94 (Monday)

Cold and windy day!

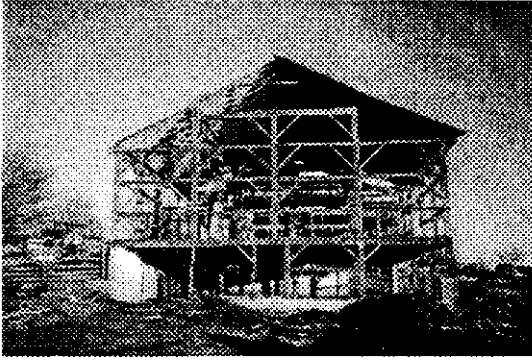
More of the roof decking is in place (almost all) but it was too windy to complete the job.

Western quarter of the main level existing flooring is removed (as well as the northeast corner).

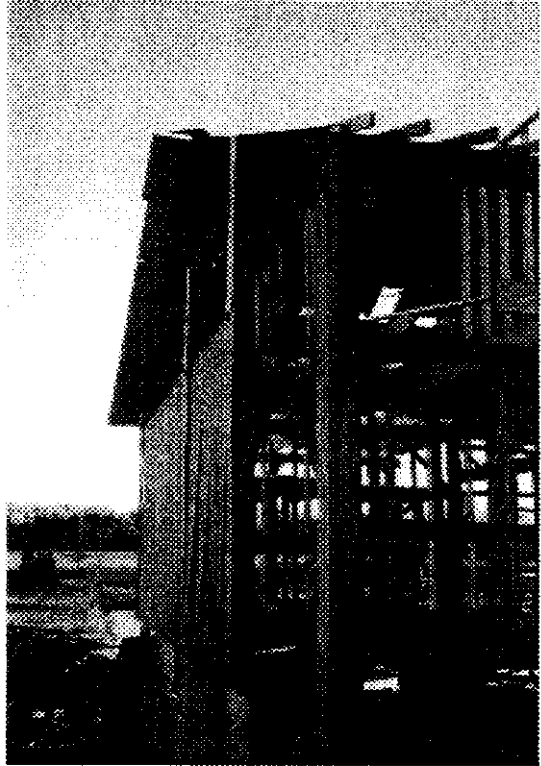
Began shimming for the new floor. It will be raised six inches at the lowest point.

The existing flooring is in two layers in some areas (black walnut). This is a pain to remove!

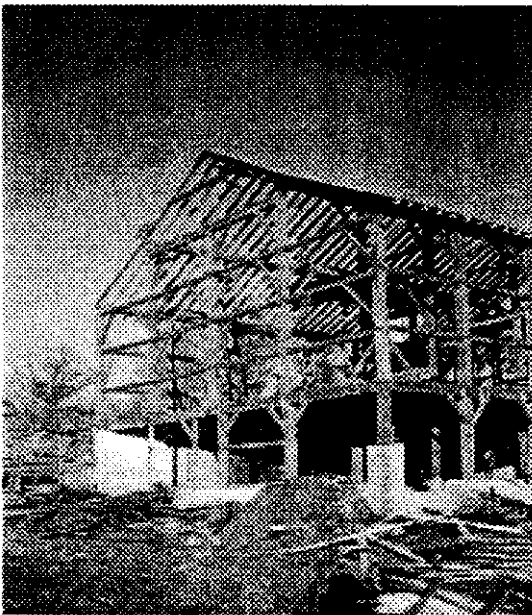
Still no backhoe!



Above: The western elevation of the barn with the existing structure exposed.



Above: View of the northeast corner. Removal of the siding is underway.



Southwestern view of the exposed structure.

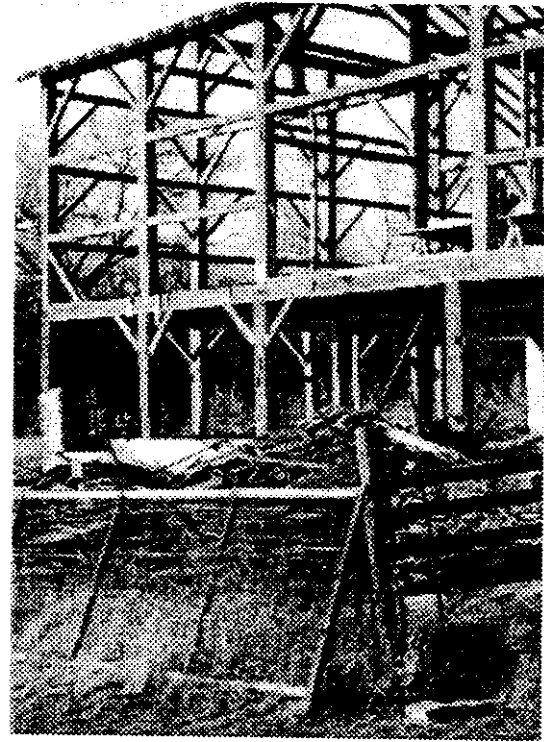


Demolition at its finest.

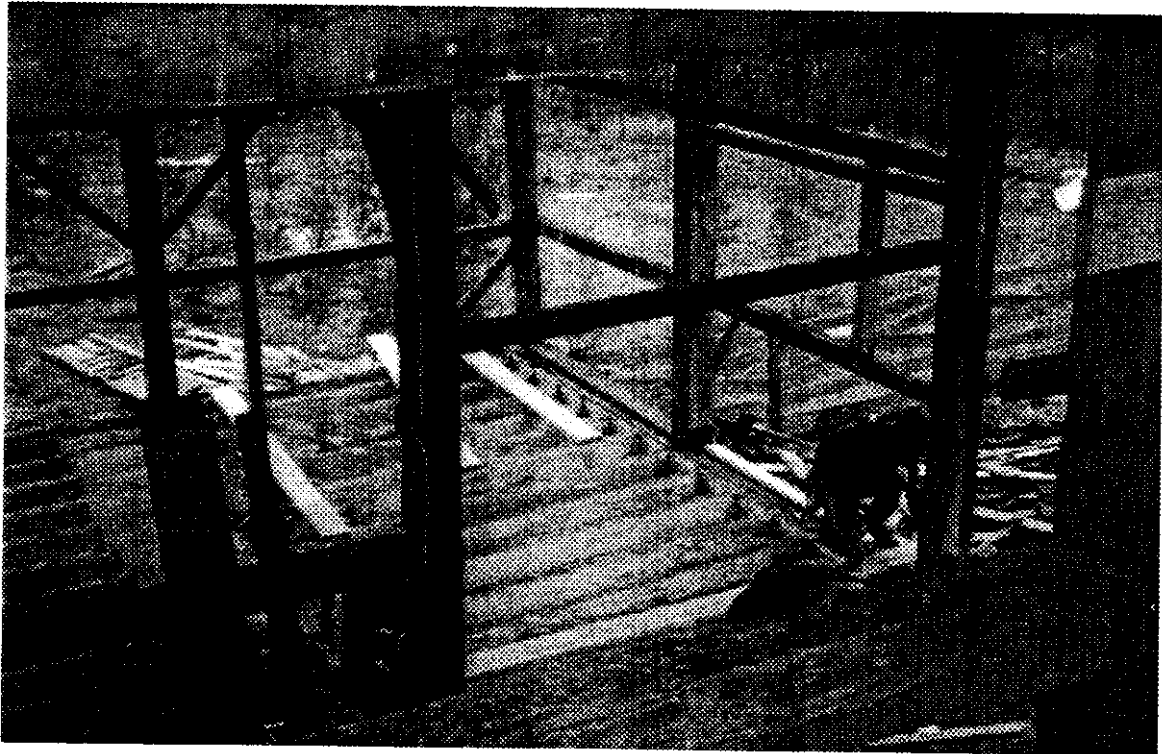




Above: The preparation for shimming the floor begins. Here we are finding the point where it is level.



Above: southeastern view of the exposed structure.



Looking towards the northwest corner from above. The existing floor boards have been removed.

11-28-94

Worked on the floor of the main level shimming on top of the existing floor beams to level the surface (used 2x8 joists atop the shim)

The Westernmost bay has all new floor joists and some new subflooring in place. The new floor cantilevers out three and one half inches beyond the existing structure for the new walls to bear on.

Others ripped up more existing flooring (in the center North to South bay); cleaned up scraps from the roof, loaded them into the truck and dumped them elsewhere on the site

The Northwestern most column (at the main level) was jacked-up temporarily to hold it in place. We knocked out the rotted material it was bearing on, replaced it with new material, shimmed it up, and released the jack.



Above: Matt Douhan(left) and Rolland Resurrection(right) work to pry existing floor boards off of their joists.



Bob Harmeyer stands in the northwest corner of the main level amidst the new floor joists



11-30-94

Framed in more of the new floor extending to the diagonal beam that cuts through the dining area (continued shimming and leveling as well).

More subfloor was nailed down as well.

More existing flooring was ripped up.

Things are moving along.

12-5-94

Dormers received roof decking and rafters on Saturday

Today we laid felt and shingles South of the ridge (shingles just got delivered today)

Applied fascia boards on East, West, and South sides

Began building parapet wall in the dining area

Bridge is a little narrower now

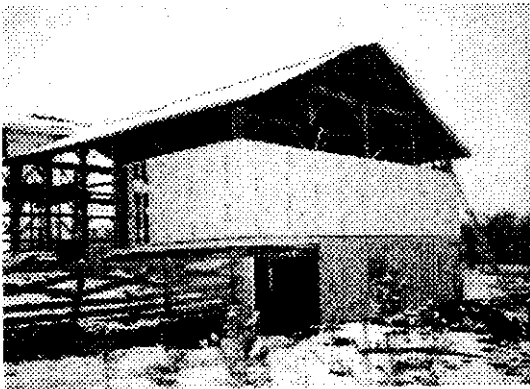
12-12-94

Exterior wall on the west side is getting framed in -- blueboard is on the outside

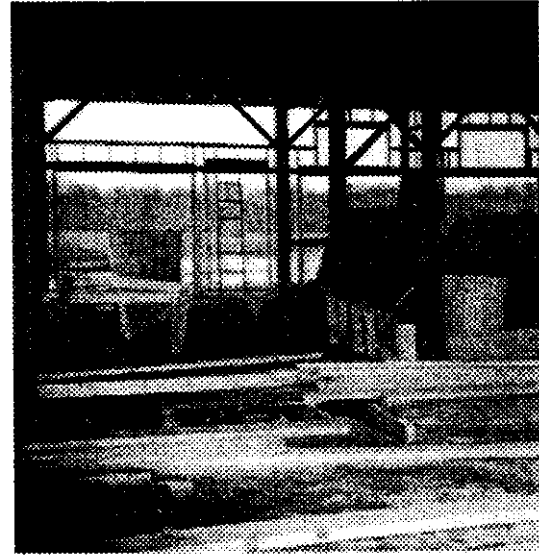
Today others framed in more wall area

I laid more subfloor (in the southeast area of the barn)

All new floor joists are in place



Northwest view of the barn. Exterior walls are framed up to eight feet above the floor and covered over with blueboard.



Above: View looking south through the main level in what will soon be vertical circulation space.



View of the western bay of the main level (looking southwest). This is the future location of the kitchen and living areas.

12-13 (Tuesday)

Nearly finished laying subfloor on the main level

Parapet wall was started (between dining area and stair)

12-14-94 (Wednesday)

Finished subfloor on main level

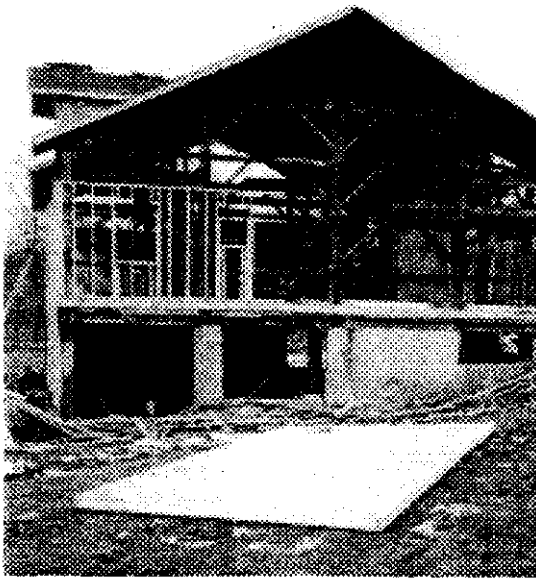
Roof too icy to shingle

Framed in most of the exterior walls

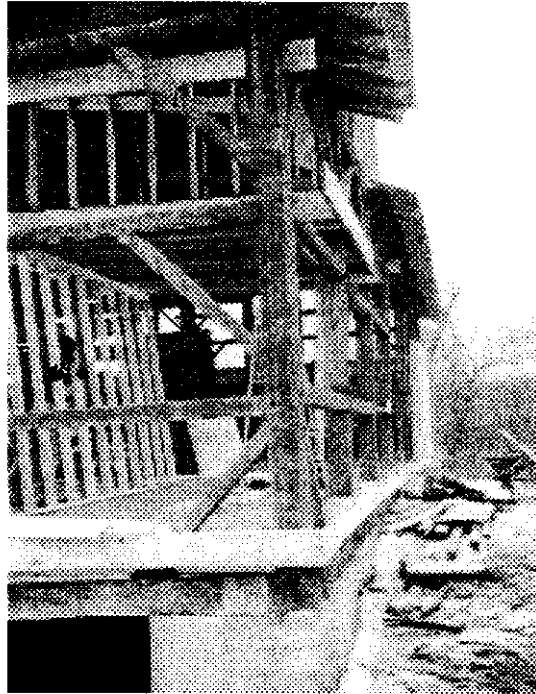
Built beams for bridge support



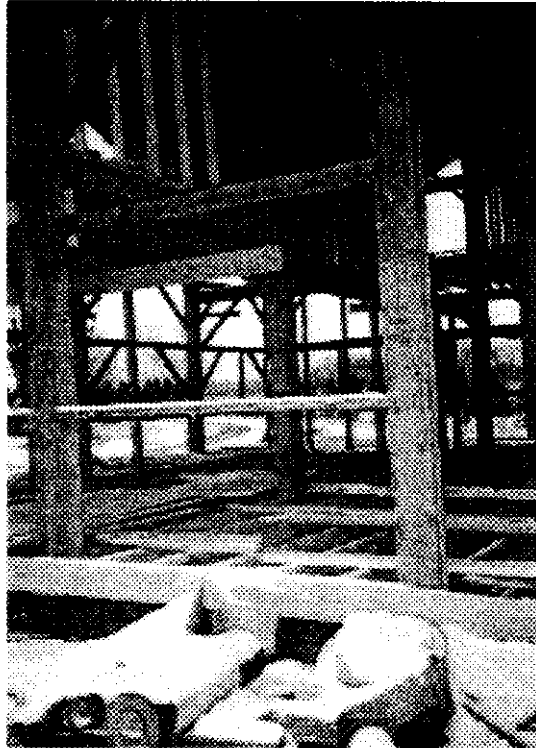
Above: Studio members help to raise a wall into place.



Above: Eastern elevation of the barn with new stud framing being put into place.



View from Northeastern corner looking down the northern edge of the structure.



View into existing structure looking southeast.

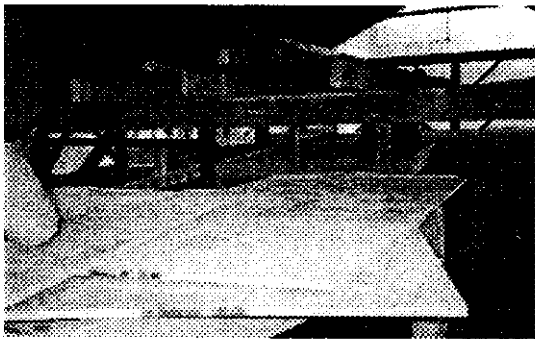


1-9-95 (Monday)

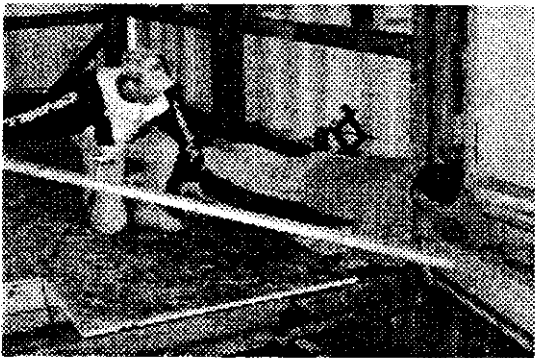
First day back from Christmas break
Framed in master suite interior walls
Others put in columns and beams for the
loft/kitchen area

1-11-95 (Wednesday)

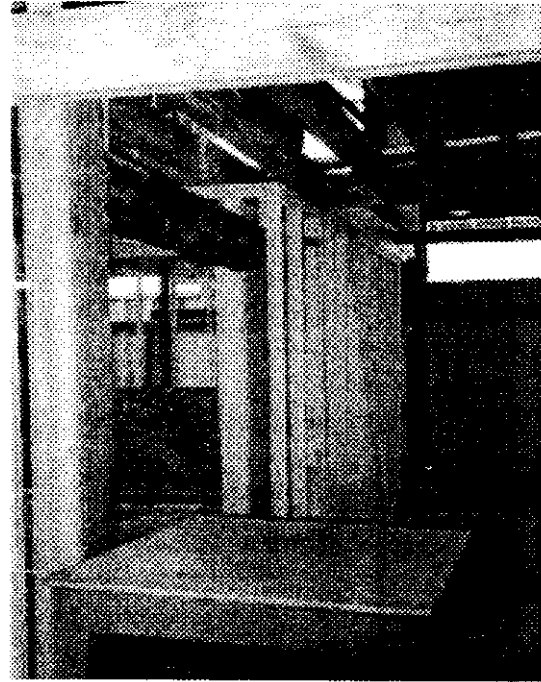
Warm day
Laid joists in loft space (I did this with
Sarah, Aaron, Jeannie, and Jen)
Laid subfloor here
Framed in wall on North interior (laun-
dry, entry, etc.)
Put one of the beams for the bridge in place
-- had to notch it out to get it to fit (it was
too deep)
Built partition walls for loft -- will put in
place on Friday



Above: Subfloor is being put in place in the loft area. In the background one can see the floor joists in place for the other upper level spaces.



Above: Kelly Mulder (left) and Phil Matton (right) help to position the first beam for the bridge.



Above: The outside of the western boundary to the master suite. The existing structure appears to become encapsulated but is actually exposed to the interior of that space.



Above: Matt Douhan (left) and Rolland Resurrection (right) frame in the wall that comprises the southern boundary of the entry, closet, and laundry spaces.

1-13-95 (Friday)

Spent all day shingling the roof (it was a warm day) -- ran out of shingles.

The bridge is now in place -- no railing yet though

Loft above kitchen done (parapet walls done)

1-18-95 (Wednesday)

Framed walls on exterior North side.

Backhoe on site -- dug down 11' on East side to pour new foundation

1-20-95 (Friday)

Cold, cold, cold day!

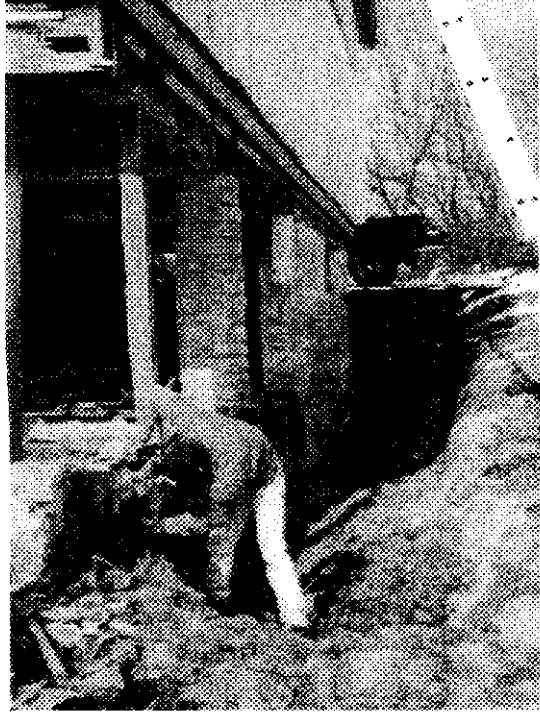
Finished framing exterior walls

Hung more blue board -- not quite finished

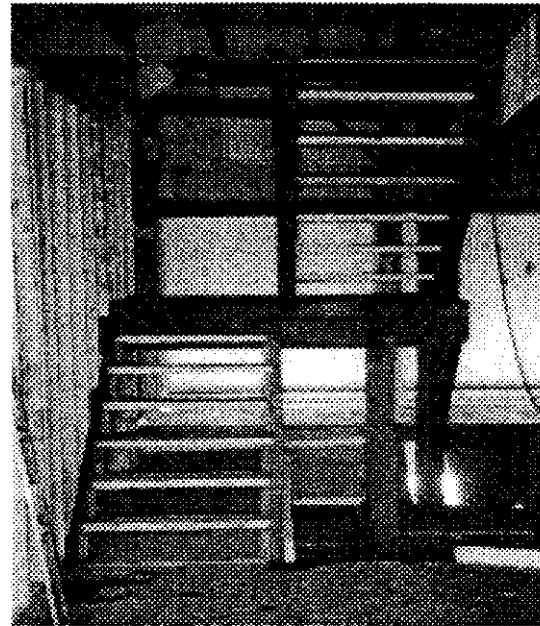
1-25-95 (Wednesday)

Framed in kitchen walls. Decided not to keep corner column -- instead provide bearing walls. The column was in the middle of the circulation path -- don't like the looks of it.

Others framed upper level interior hallway, hung blue board, and began construction of stair landing (main to upper level) utilizing salvaged black walnut as main structural members -- notched to fit.



Above: Bob Harmeyer (foreground) and Bruce Meyer work to make certain that the trench is the proper depth for pouring the new foundations.

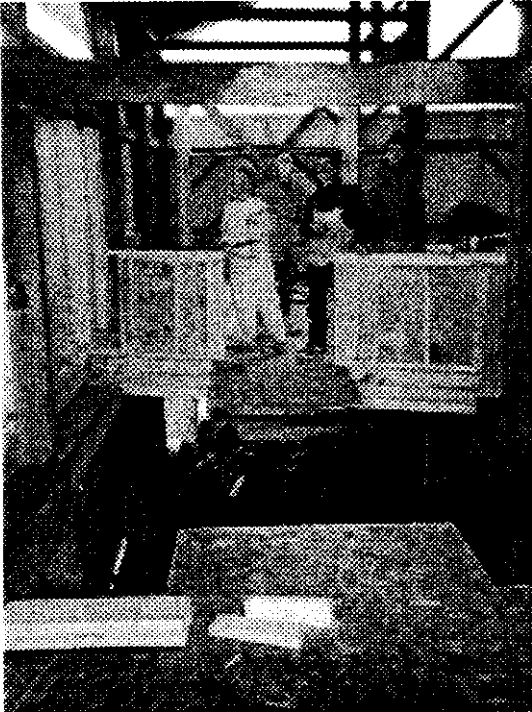


Above: The stair to the upper level viewed from the north. The treads are temporary and will be replaced with black walnut made from the old floor joists

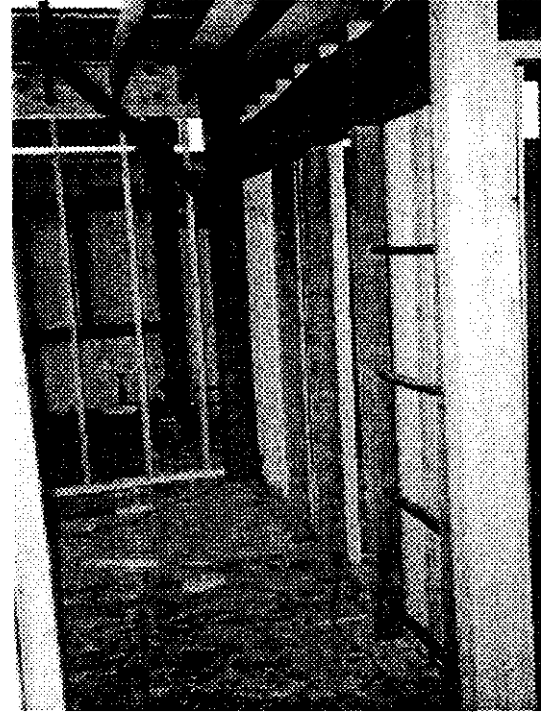


View of the soon-to-be residence from the southwest. The upper two levels have been enclosed with insulation on the exterior.





Above: The bridge in progress viewed looking towards what will soon be the living area.



Above: The western boundary of the master suite. An existing ladder, two other vertical members, and the beam above are exposed to that space.



Above: Entering the loft from the hallway one must step up to the level of an existing beam.



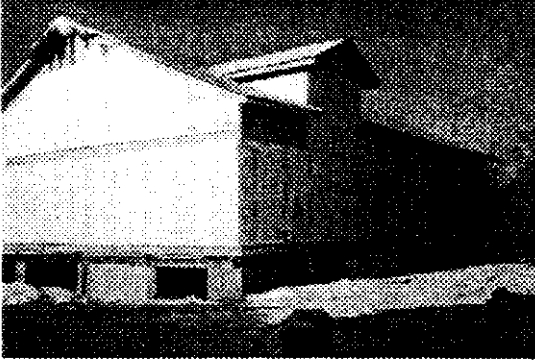
Above: Aaron Haschell reframes the kitchen replacing the corner column with bearing walls.

2-1-95 (Wednesday)

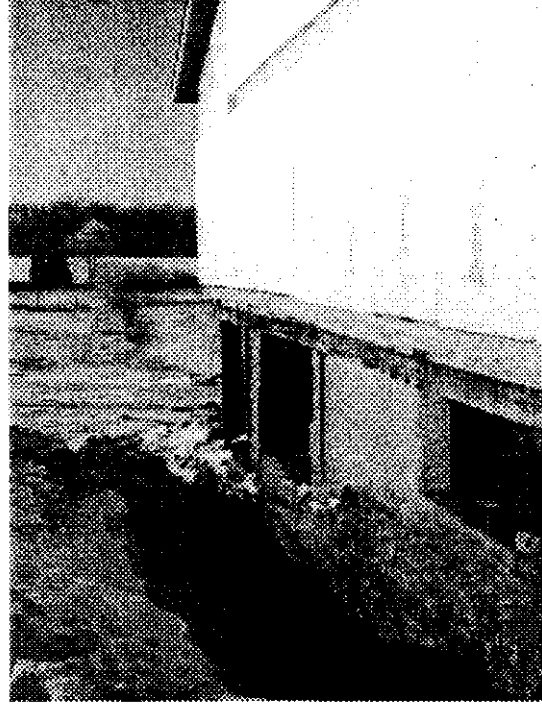
*Framed and blue boarded the lower level
Built forms for new foundation*

*Dug out trench -- was 10'-8" deep -- needed
to be 11'-0"*

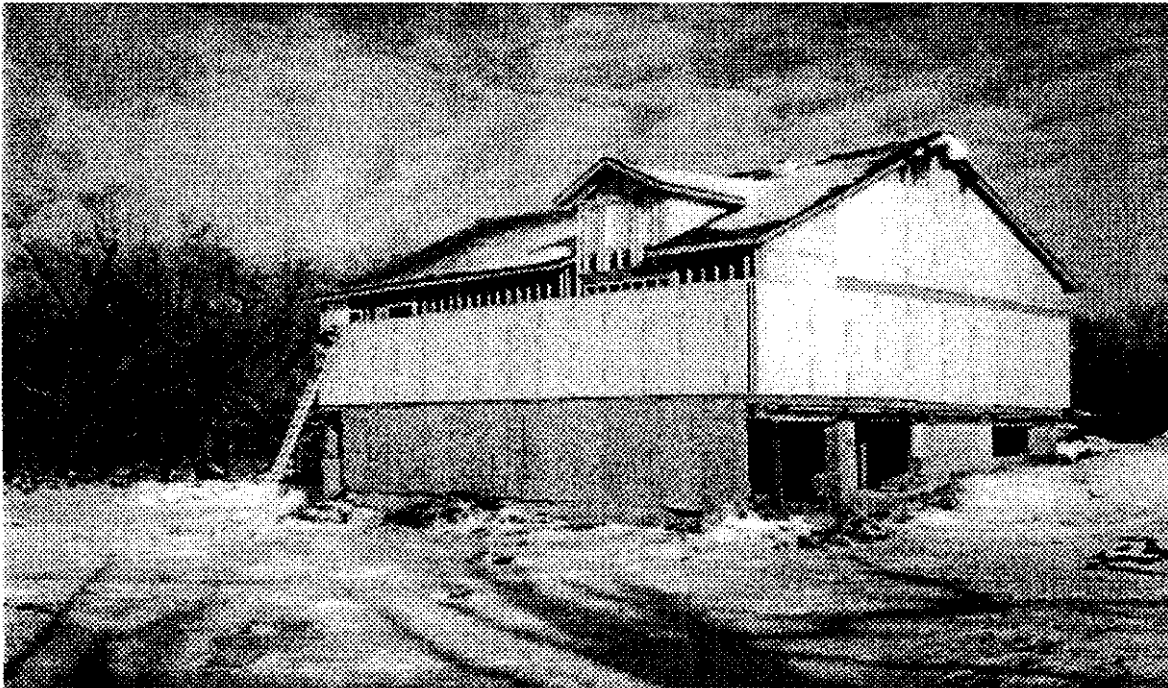
*Jackhammered out concrete wall where
garage bays will be*



Above: View of the facility from the northeast.



Above: The trench is dug for the pouring of new foundations along the eastern elevation of the facility.



View from the southeast. One can see that the upper two levels of exterior walls have been framed in. In addition, on the eastern face one of the center bays has been opened up (concrete has been removed) to make way for one of the garage bays.





Above: Formwork has been built along the east in preparation for pouring the foundations.

2-3-95 (Friday)

Removed old floor joists from basement

2-6-95 (Monday)

I helped to . . .

Frame in rear wall of closet in the guest bedroom

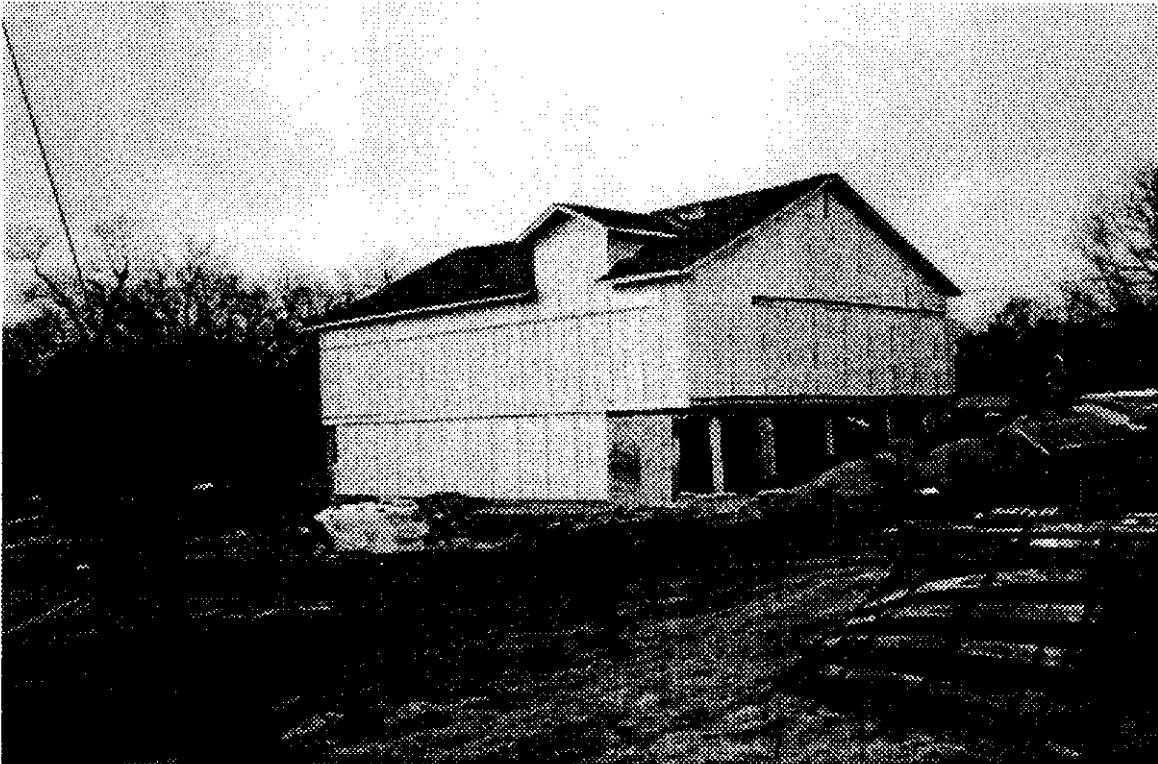
Drill holes for electrical wiring

Others . . .

Took the metal track down from the peak (along with the hay hook)

Framed in wall between the master dressing room and the master bath

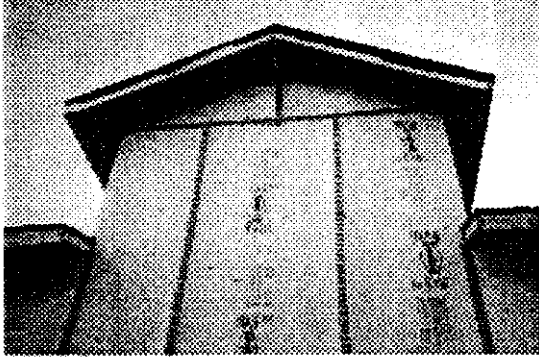
Planned out wall between the study and the bridge on the main level. Etc. . .



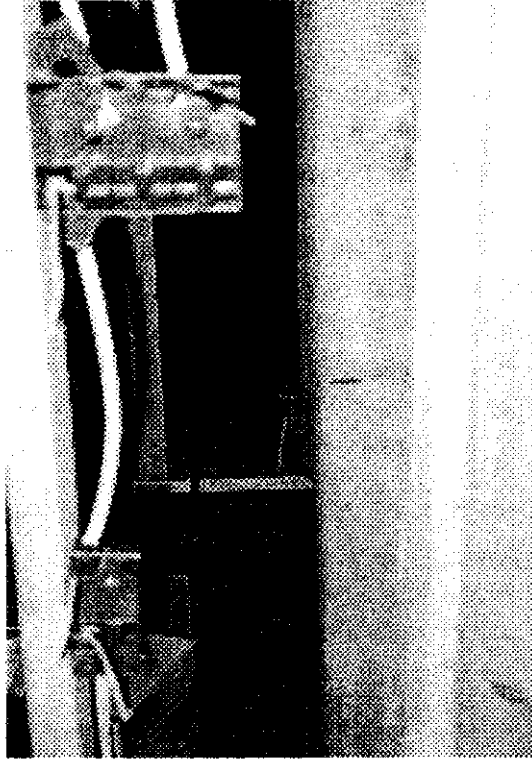
In this southeastern view, one can see that both future garage bays have been opened up. A new wood column has been erected between them for structural support.

2-18-95 (Saturday)

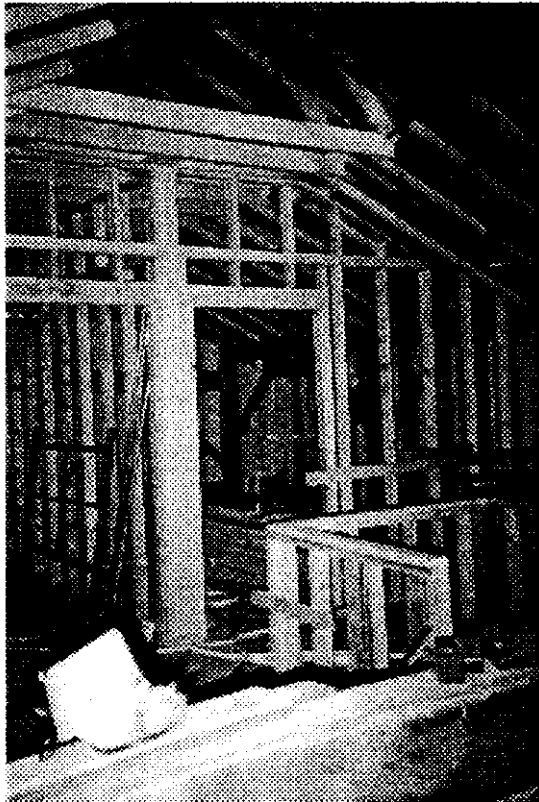
Tim and I worked. He taped blue board while I ran electrical wire in the master bath



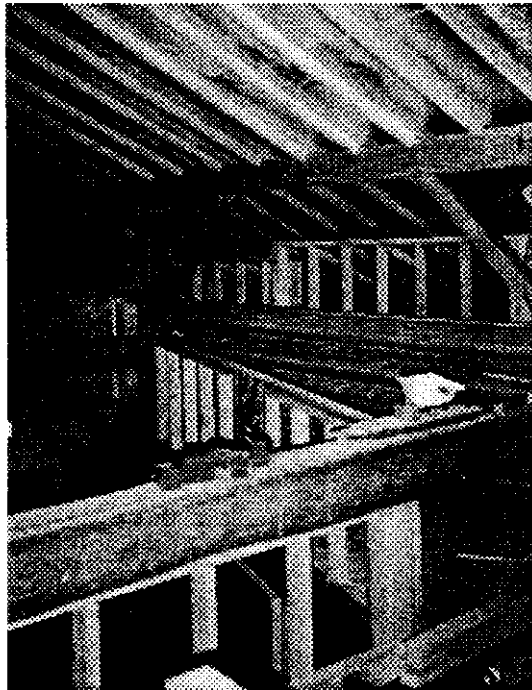
Above: Tape has been applied to the insulation on the north side.



Above: Electrical wiring has been run throughout parts of the house.



Above: View from the upper level hall looking towards the bedrooms.



Above: View of the upper level from the top of the stairs looking down the hall towards the loft.



2-20-95 (Monday)

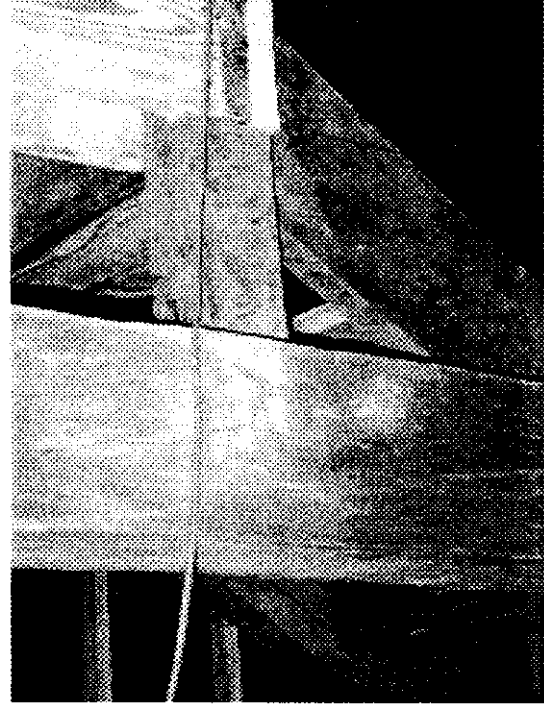
Some rotted knee bracing was replaced today by reusing other walnut pieces. Works great!

Regarding the garage bays, initially we attempted to cut out the concrete on either side of what would remain as a column between the two. Whoops! The piece designated for the column fell out on its own after being cut. Therefore, we erected the wood column to serve as the needed structural support.

Electrical -- I worked on the master dressing room. As of now -- switched two places. Can't locate outlets for the vanity until I know the dimensions of the linen cabinet they're having made.



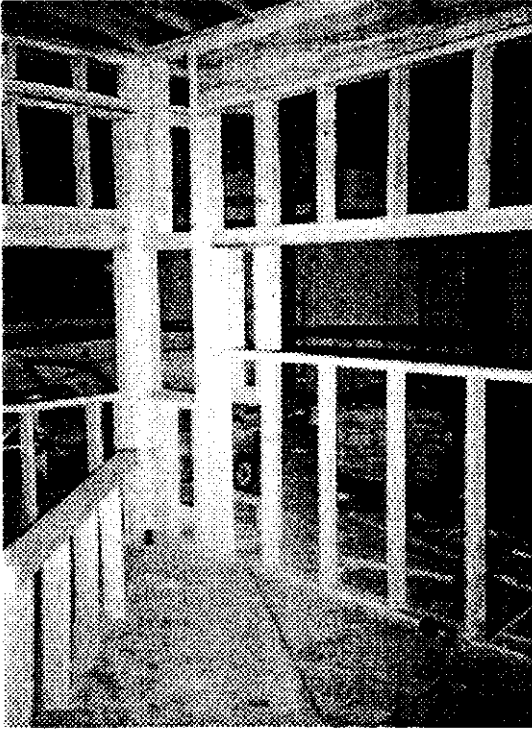
Troy Miller observes the new wood column between the garage bays. The intended column cut from the existing wall can be seen in the trench in the foreground.



Above: View of the corner support for the stair landing at the upper level. The short vertical member was cut from walnut salvaged from removed existing structure.



Bob Harmeyer uses a jackhammer to break unwanted concrete and stone away from the existing wall. He is standing on a piece that was removed from above.



Above: Inside the kitchen looking southeast towards the living area. The corner structure will serve as an appliance garage in this space.



Jeannie Kemble verifies the rough opening of a window in the master bath -- it is being resized.

2-22-95 (Wednesday)

Tony eliminated 1 switch from the dressing room (getting rid of the 3-way)

I mounted outlet boxes in the bathrooms too low -- moved them

vanity ht. =32"

backsplash=36"

outlet=38-41"

Much of the batt insulation on the perimeter walls was put in place. In places where electrical wiring was not yet run, insulation was not stapled at the bottom (so that wiring can be manipulated at a later date.

Wired the entry/air-lock today

Intend to pour foundation along East face on Friday -- formwork is ready for it.

2-25-95 (Friday)

Electrical work -- Jen and I hooked up laundry room (ran wire)

Box for W/D still needs to be mounted

Discussed options for hallway lighting

-- Clean-up day --

2-26-95 (Saturday)

Tony and Suzanne were there

Walked around with them discussing lighting options

Ran wire in living area

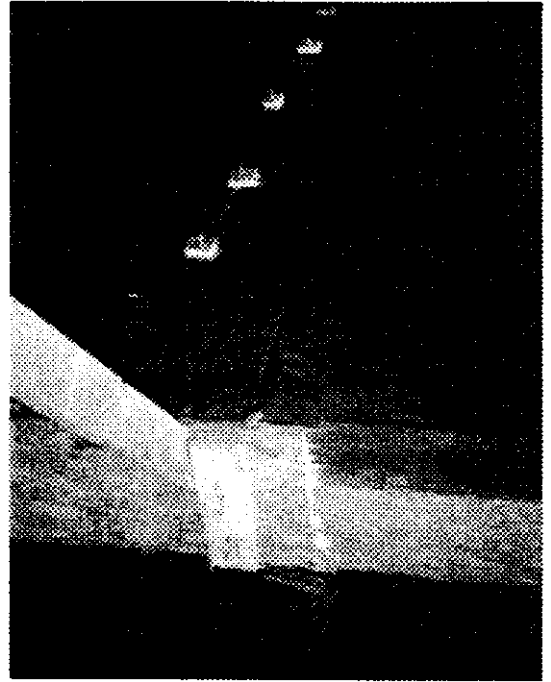


4-2-95 (Sunday)

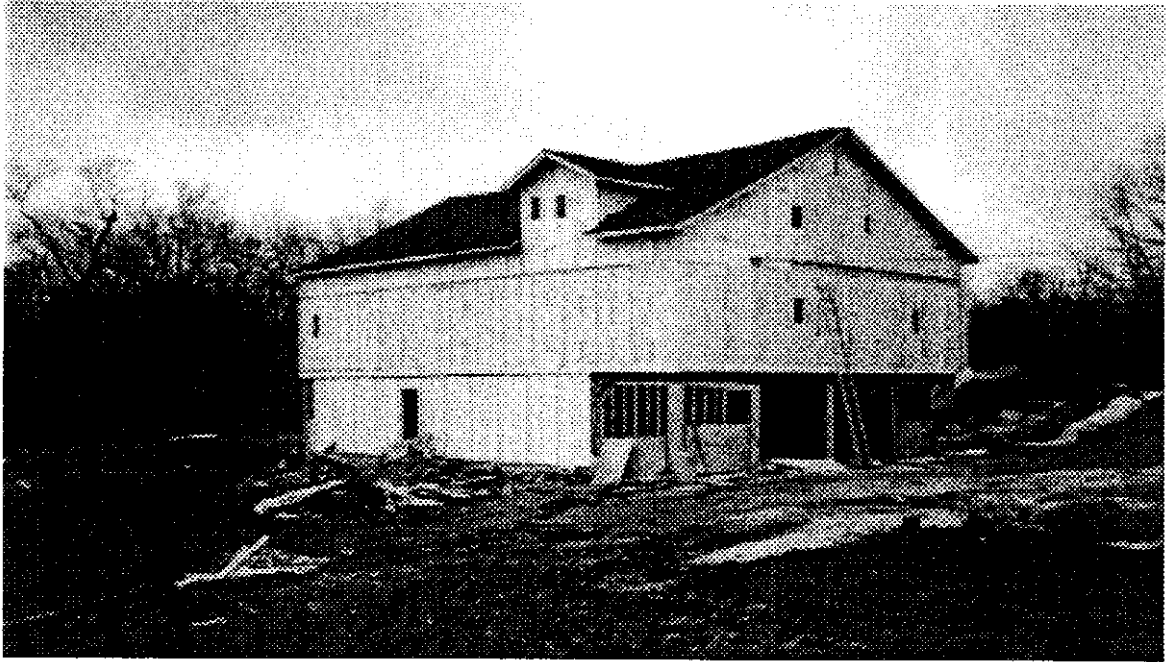
Friday we poured the slab for the lower level -- no major catastrophies. Took all day though

Talked with Tony today about putting up fly rafters on the east and west eaves where currently only roof decking is cantilevered and the fascia is attached.

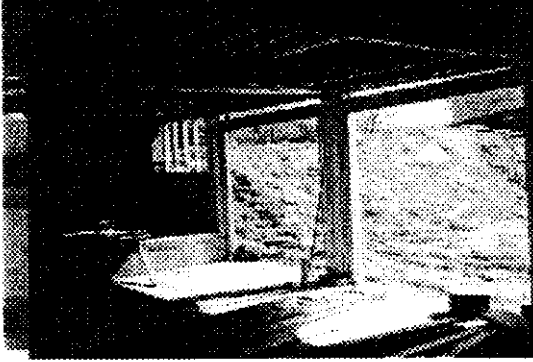
Tim and I reinforced the parapet at the top of the stair to the upper level on Friday. We cut the top plate back on each side of the 'L' and replaced it with L-shaped plywood pieces -- glued and nailed through the top layer. It worked! (under Rod's advisement) It is now quite a bit sturdier. Some joist hangers have now been attached in places where the joist bears on nothing.



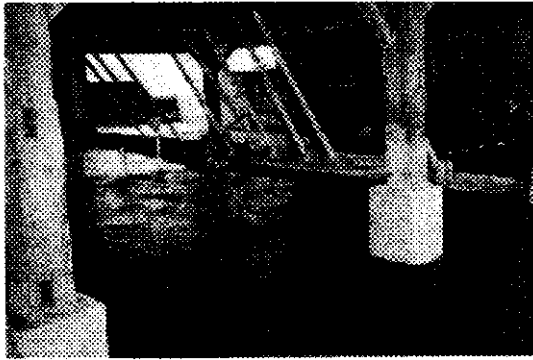
Due to the lack in depth of the existing foundation on the north wall, the slab in that northernmost bay had to be poured at a higher level than the rest of the concrete. This is a view of that level change and anchor bolts that have been positioned there for the later pouring of a shear wall.



In this Southeast view, one can see that the lower level has for the most part been framed and insulated.



Above: View of the lower level looking Northeast through the garage



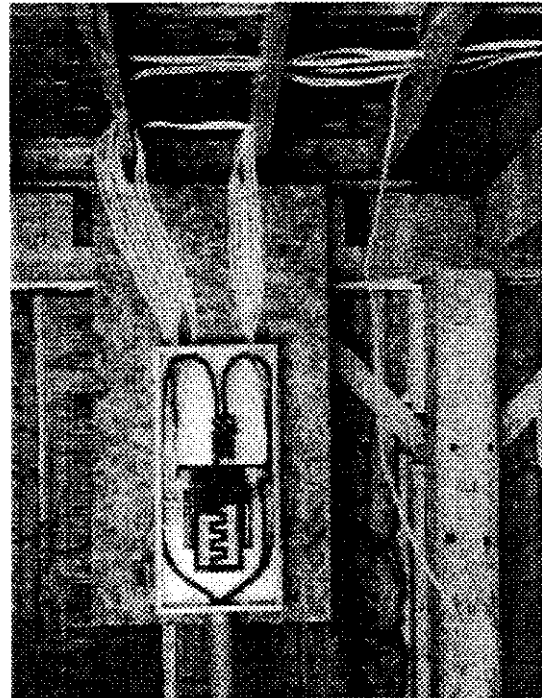
Above: View of the lower level looking northwest over the newly poured slab and column foundations.



The new electrical feed is run underground above the water line from this pole to the house.

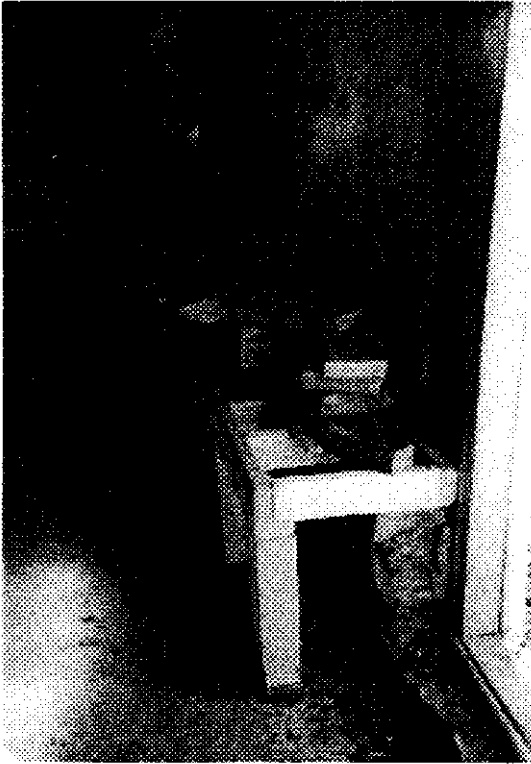


Above: The main electrical feed wires are brought up under the slab into the garage where they will be connected to a new panel.



Above: The new panel is in place and many of the feed wires from circuits throughout the house have been connected to it.

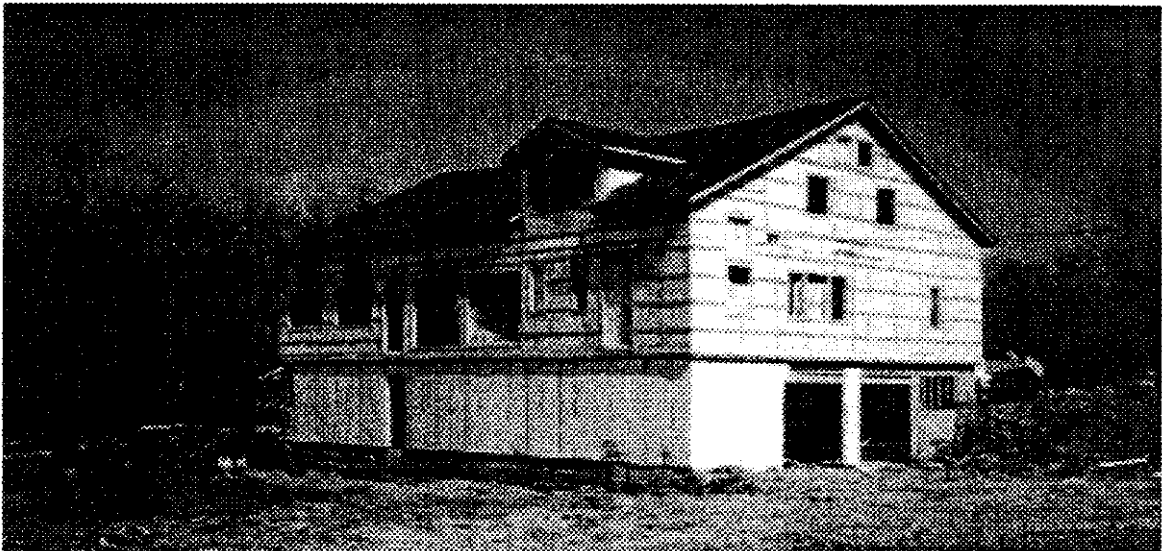




Above: A chase is needed along the south wall in the lower level to carry ducts. The detail then becomes a window seat that has begun to be framed in.



The new stair to the lower level is in place. Due to lack of proper headroom, the original design of the angled stair was abandoned (at the owner's request) and was instead built parallel to the stair above. It does not touch the slab in order to leave room for the brick floor that will be laid at a later date.



Furring strips have been positioned every two feet on the exterior in preparation for hanging the siding. Many of the window holes have been cut in order to allow for proper furring around them.

4-24-95 (Monday)

Some of the windows have already been installed. Most of the large ones came today (those that were ganged).

Two Amish men were here to help. Windows were installed by one crew and shimmed by another (I was involved with this)

All windows are now in place with the exception of the low east window in the study which was the incorrect size -- will need to be exchanged for the correct one.

The southern exterior door in the living area was hung today. Tony and Suzanne selected it themselves.

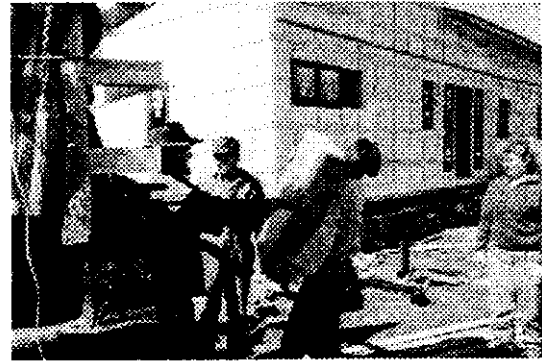
Meanwhile, the plumbing is being installed little by little.

Drywall is supposed to come on Wednesday.

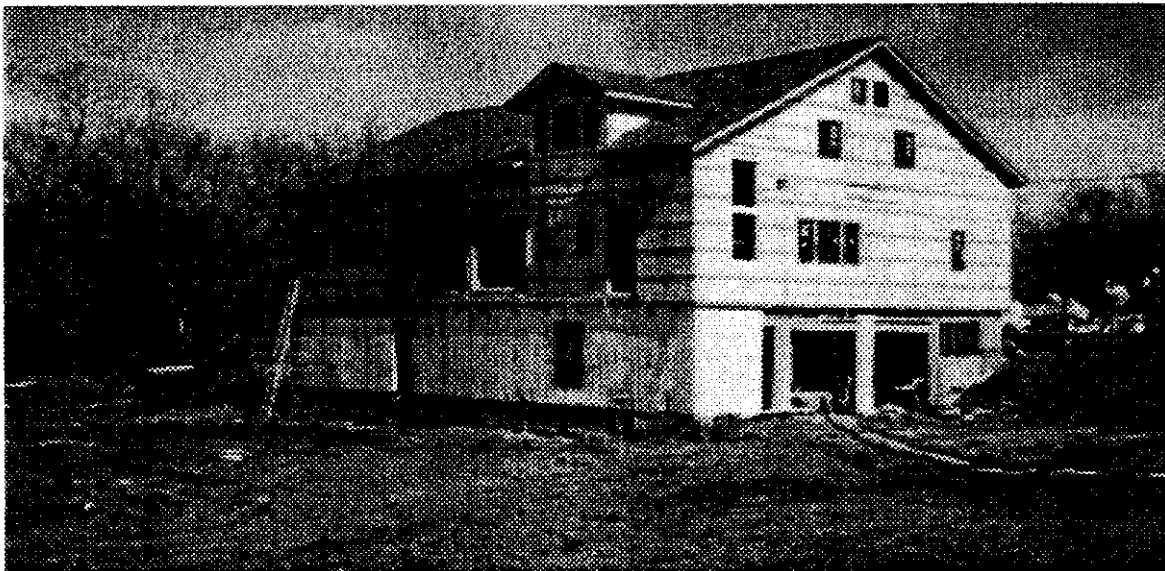
The car siding on the ceiling still needs to be completed -- must still be hung along the southernmost bay and eventually coated with polyurethane or paint (Suzanne has spoken about the possibility of white-washing certain areas).



Above: Tony arrives on site with windows and two Amish men to help install them.

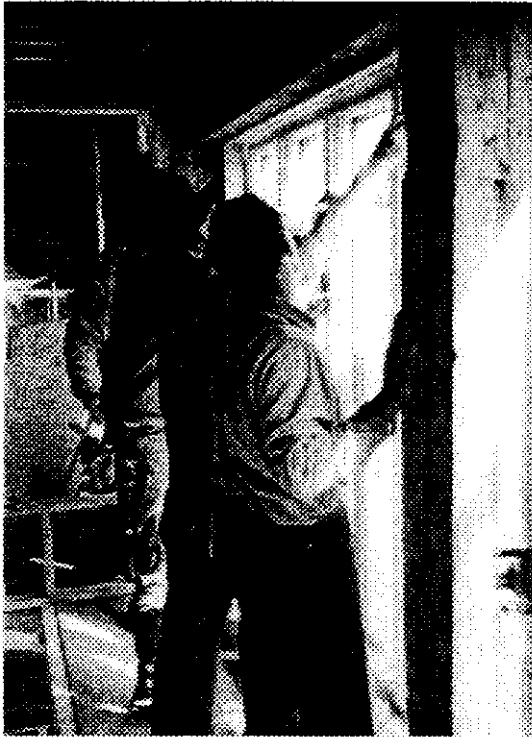


Above: Sarah Marshall is handed a window to carry into the house. All of them must be safely stored until their installations.



Southeast view of the house with most of the windows already installed. Though much work remains to be done, one can begin to get a good idea of what the final product will look like.





Above: Tony (foreground) and several others hold one of the windows in place while it is tacked onto the exterior.



Above: One of the Amish positions a window in preparation for installation.



Above: Plumber Tom Needler (left) shows Matt Woodruff (center) and Aaron Haschell (right) what should happen next in the attachment of PVC.



Above: Tony (left) and one of the Amish (right) help to install one of the southern exterior doors.



POST-CONSTRUCTION NOTES

The experience gained from this project has proven invaluable. Not only is my comprehension of the construction process much more solidified, but I now have experience in dealing with a client and resolving details of a project at a level not possible in the traditional schematics of a typical studio project.

Regarding experience in interacting with a real client, I have gained a much better understanding of the need for being a good communicator -- not just in an amongst ourselves as the architecturally versed, but with those who are not so familiar with the lingo, techniques, and ability to comprehend a vast number of decisions at once. This communication is important in that one must be able to transfer the understood importance of issues to assist the client in making an educated decision for the betterment of the product. Many times the client looked to our studio group for guidance. It proved very productive when we were able to mentally connect as was exemplified through decisions regarding electrical needs, lighting needs, material detailing, positioning of chases, etc.

I must also express my newfound knowledge regarding client involvement in the construction process. At times it created difficult situations in that the owner understandably felt a need to be in direct control of many aspects of the project. As students under a strict schedule (as we would have liked to have presented a completed project in May), we were somewhat hindered by this need. Purchasing materials for standard work became difficult to carry out in a timely manner. Many times demand was greater than supply and

extra shopping trips were necessary. The time lag between request for materials and reception of them became frustrating.

For any future projects of this type, it is the recommendation of this student that a client contract speak to the need for immediate access to cash -- possibly through credit accounts set up with local suppliers.

It was a wonderful growth experience to be placed in a situation in which the client's opinion differed from the recommendation given by the architectural consultants. An example in this case would be the siding color. Though the studio felt strongly about what the scheme should be, the client felt otherwise. The decision rested in the Shidellers' hands; therefore, our recommendation was discarded. The lesson learned here: first, to paraphrase Bruce Meyer, there are no right answers -- only different philosophies. Second, one may have wonderful ideas as a designer, but it is the ability to prove them worthwhile and interest others in them that counts. I have had no better lesson on this in my educational career than this project.

To speak to the understanding of details in this project will require much discussion. The idea of adaptive reuse -- combining old with new -- was a wonderful context in which to enrich my understanding. It is realistic in that we are continually combining old with new each time a new facility is erected in any existing context. Though the specific application here differs somewhat, the idea is similar. Considerations must be addressed regarding how to mesh what is there with what is to be. The question of how this new addition should be placed within the context must

be answered. This project necessitated the answering of these questions. New framing would be placed in and around existing members – situations which in themselves brought about great opportunity for detail resolution. Due to the fact that no part of the existing barn was square in relationship to anything else, projecting an accurate outcome of our attempts to revitalize the place was virtually impossible. Many of the final details that provide much of the character of the place were not realized until rough framing was somewhat complete. For example, the upper level craft/hobby room and bathroom were framed in, and it was then realized that an existing horizontal member that ran approximately two feet above the floor level was rotten and should be encased somehow. A decision was then made to create a window seat by framing an area around that member. This impacted the fenestration.

Standing in an already framed in master bedroom, it was realized that existing knee bracing would hinder the placement of the proposed fenestration. A meeting was called, and the debate began on whether or not to remove the bracing or alter the window sizes and placement.

Another example of this resolution of detail was the framing of the second level. The upper right photo on page 64 shows the final solution after the upper level had originally been supported vertically with new framing. The thought about how that would need to be drywalled encouraged the replacement of these new pieces with the reused pieces of walnut seen in the photo.

There were many of these types of design decisions made during the construction pro-

cess. Once relationships were viewed understood, changes often took place. Framing for the positioning of drywall lead to many decisions about whether or not knee bracing should be exposed to the space. In the master suite this can be seen in the resolution of how the new framing should relate to the existing beam that runs near the ceiling. Near the entry to the master suite it is exposed to the living spaces and then appears to run inside the new framing. In actuality it is then exposed to the bedroom space (as can be viewed in the upper right photo on page 60).

The kitchen and stair changes strongly exemplify the strengthening that can occur in a design when the architect serves as the builder as well. When the corner column was erected as support for the loft above the kitchen, the actualization was less impressive to most than the visualization of that solution. The studio was able to reach a new and somewhat stronger solution which lead to the new detail of a corner appliance garage serving as shelving for the living area. It was even later discussed that the top of the kitchen wall (on the surface facing the living and dining areas) be wrapped with a 10" strip of reused walnut serving as a sort of moulding separating the white surface of the kitchen from the loft which overhangs above (to help create the illusion that this mass above is floating). These are details that were facilitated by the union of the designers with the construction process.

The stair resolution, when it was determined that the proposed solution (in light of changes in surrounding construction) would lead to problems in reaching the necessary headroom clearance, proved successful due to this union as well. Several new solutions were able to be proposed to the owner who then selected



what he felt was most appropriate. The manner in which the new solution related to the stair above was a strong influence in the decision. Though the owner's decision was not shared by those who were advising, the solution remains a positive one.

Other spontaneous decisions that lead to fine detail resolution include the new implementation of walnut pieces, which had been removed from the existing facility, as members to frame an area around the new Northern entry on the interior. Details such as this would not have been discovered were it not for the design/build approach. Its very nature allows for experimentation -- similar to if one were building a small model in a studio (but at a bit more costly). When dealing with a project in adaptive reuse, however, the recycling of materials (such as our reuse of the old floor joists and other walnut posts) can alleviate this cost while providing a strong connection to the structure's history.

One would find that the ability to make strong design decisions during the process of construction, such as ours regarding whether the railings on the second level should be solid or somewhat open (an issue that was not addressed until we could stand in the spaces that were created), can lead to interesting discoveries. With the designer in control through the process to turn vision into reality, many interesting design possibilities become available. We build small scale models in our studios in order to better understand if the spaces we see in our minds are truly pleasing. We build small scale models and learn by experimentation, adding pieces and taking others away in order to achieve a better, more fully explored solution. If the financial losses can be minimized through a means such as re-

cycled or reused materials, is this not a wise approach at the actual scale where the impression is a true one?

There is much to be gained from the design/build approach. The architect as master builder can potentially create much stronger and more interesting solutions than can be imagined on paper in that their tools for exploration are real. Only when a project has been explored at full scale can one truly know the potential of that which can be accomplished. This is an approach to architecture that should be experienced by all who are being educated for the profession -- at least once. It aids in one becoming architecturally well rounded.



APPENDIX A
Correspondence





Ball State University

College of Architecture and Planning
Department of Architecture

September 7, 1994

Mr. and Mrs. Anthony Shideler
Albany, Indiana 47320

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, 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 any other. 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 hired 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,

A handwritten signature in black ink, appearing to read 'B. Meyer', written over the word 'Cordially,'.

Dr. Bruce F. Meyer
Professor of Architecture

To: Dr. Bruce Meyer
School of Architecture
AB 307

From: Lawrence Cistrelli, Jr., J.D., CPCU, HIA
Risk Management and Insured Benefit Programs
Office of Controller

Date: October 19, 1994

Re: Insurance and Home Building Projects in AR 403 and AR 404

This memo will confirm yesterday's phone conversation.

You indicated that Architecture Students will be involved in home building projects off campus on a regular basis in the near future. You wanted me to look at those projects relative to University insurance coverages.

The proposed projects are covered under the University's liability policy. That policy protects the property and person of those parties injured by the negligence of the University.

It is possible that while working on these projects the students might injure themselves by accident or through their own carelessness. The University does not retain insurance to cover those situations. I would suggest advising students (and parents) of this situation so that medical insurance can be purchased. Most students will probably be covered through their family health insurance. Those students without health insurance should be advised of the availability of student health insurance.

Should an accident involving personal injury occur, I will need to be informed of the particular facts. I will file all such reports with our liability insurance company. If the company finds the University liable, the policy will respond to the medical expenses. If no liability is found, the student will be responsible for his medical expenses.

Lawrence Cistrelli

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, we 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 mill the casework and base ourselves to save on the enormous cost of these materials, we would expect that special cutter blades and/or a router would be provided by you. Even equipment like a small backhoe I may be able to borrow at no cost to do the simple foundation and septic excavations. These decisions we 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 (Al Tuscano?)
- construction of new roof (Al 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 these services I 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 *Barnitects*

APPENDIX B
Cost Take-Offs (Interior Finishes)



62								
63	(alt.) Drywall Primer - Valspar PVA	25 gallons	10.99			274.75		
64	(alt.) Paint - Flat Latex Valspar	20 gallons	16.99			339.80		
65	(alt.) Paint - Eggshell Finish	20 gallons	19.99			399.80		
66	Polyurethane - per 1 gallon	39.88	32.88					
67	???????							
68	GRAND TOTAL (OF BOLD.#S)					\$28091.98		
69								

APPENDIX C
Tentative Construction Schedule

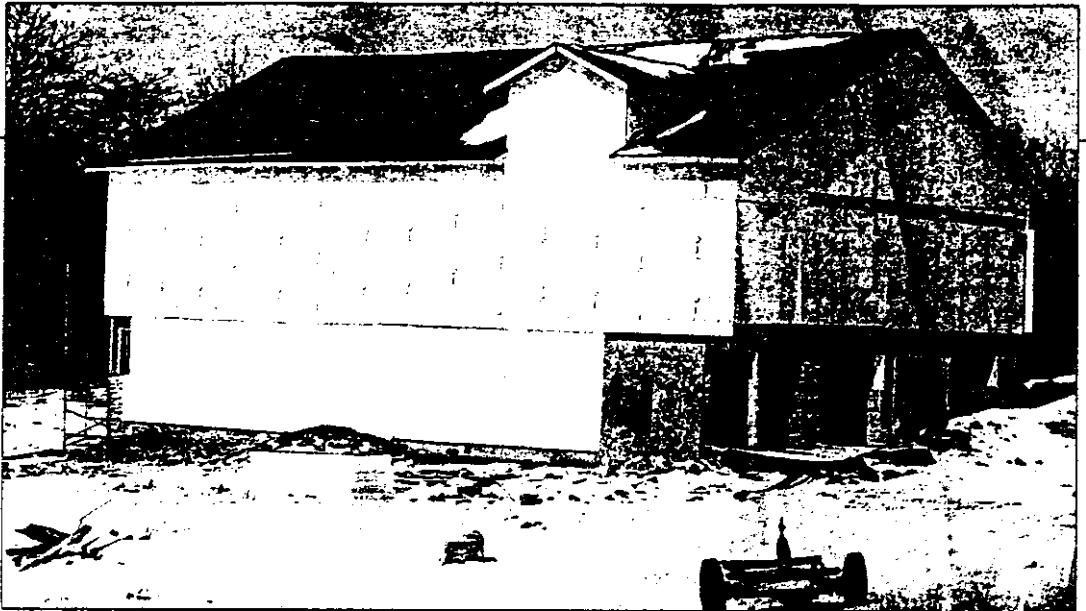


EXTERIOR FRAMING	EXCAVATE FOUNDATIONS AND SLAB including sheer wall and fireplace footings	
INTERIOR FRAMING		
ROUGH OUT ELECTRICAL and telephone	FORM FOUNDATIONS AND COLUMN BASES including sheer wall and fireplace footings	
ROUGH OUT PLUMBING		
PRESSURE TEST PLUMBING	WATERLINE UNDER SLAB	
ROUGH OUT DUCTWORK complete frame enclosures	TRENCH-WATERLINE	
	TRENCH-ELECTRICAL & PHONE	
HANG BATT INSULATION hang vapor barrier		
INSULATE BOT. OF ROOF blue board	POUR FOUNDATION WALLS AND COLUMN BASES including sheer wall and fireplace footings	
HANG CAR SIDING-CEILING		
SOFFIT FRAMING	FORM SLAB, porches and drive apron	
SET WINDOWS AND DOORS	POUR SLAB, porches and drive apron	
HANG SIDING; tape / fill blueboard seams		
HANG DRYWALL	COAT FOUNDATIONS AND INSULATE	
MEASURE FOR CABINETRY		FIT CABINETS
TAPE AND MUD WALLS	PLACE PERIMETER DRAIN AND BACKFILL	ANCHOR COUNTER TOPS
	SEPTIC & LEECH FIELD	SET TUBS AND TOILETS
		SET SINKS
		LAY FINISH FLOORS hardwood, tile, carpeting
		FINISH FLOOR sand and urethane finish
		WINDOW AND DOOR TRIM and base molding
		PAINT seal trim and casework
		HANG LIGHTING FIXTURES
		SWITCH & OUTLET COVERS diffusers and vent covers
		GRADE SITE
		SEED AND PLANT

APPENDIX D
News Articles



Article taken from *The Muncie Star*,
April 2, 1995



B

eaming with pride

By **NANCY MILLARD**
Special Features Writer

Back in the 1840s when the sturdy barn was built on a gentle slope near the Mississinewa River, the farmer never dreamed that 12 architecture students would transform it into a contemporary house turned into sunsets.

The stalwart old barn, built of black walnut that was probably felled on the site, is taking on new vigor, despite being well into the second half of its second century.

Structurally sound, the hand-hewn beams and secondary supports are as sturdy as ever. But now they are highlighted as integral to the design of Tony and Susanne Shideler's house near Albany.

The Barnitecture Project — conducted by Bruce Meyer's class of fifth-year students in Ball State's College of Architecture — began last fall when the Shideler's agreed to let the class convert their old barn into a house. Their narrow house was destroyed by fire a year ago.

The students designed and are doing most of the actual construction of the house except for cabinets, dry-wall finishing and plumbing. Tony Shideler is overseeing the wiring. No surprise, since he is the director of a statewide Purdue University mechanical engineering technology program being taught at

Ball State University.

One of the students, Sarah Marshall, met us at the make-shift front door in the barn's north wall.

"Each student drew up a house plan, and then the class took all the plans and discussed them," she said. "We formed five groups comprised of those who had done similar plans, and we refined them. We submitted the five plans to the Shideler's and worked with them to combine the plans into one set."

Stud framing and an open stairway suggest entry to a spacious hall, the core of the house that opens to original rafters above and to the lower level. The latter, where sheep huddled on the day of our visit, will eventually be the winter garden.

Sarah led the way to the kitchen area in the northwest corner. She pointed out an informal eating area that looks out over fields and trees along the river. The Shideler's like to cook and entertain, so the kitchen opens partially into the living room.

Above the kitchen is a loft for reading or relaxing. It seems to be suspended over the eating area and the living room and has a view out those windows.

"We all had located the living room in the southwest corner overlooking the pond," said Matt Dougan, who had stopped pounding nails to join us. "Broad windows face the pond and the fields. The room soars to the rafters above."

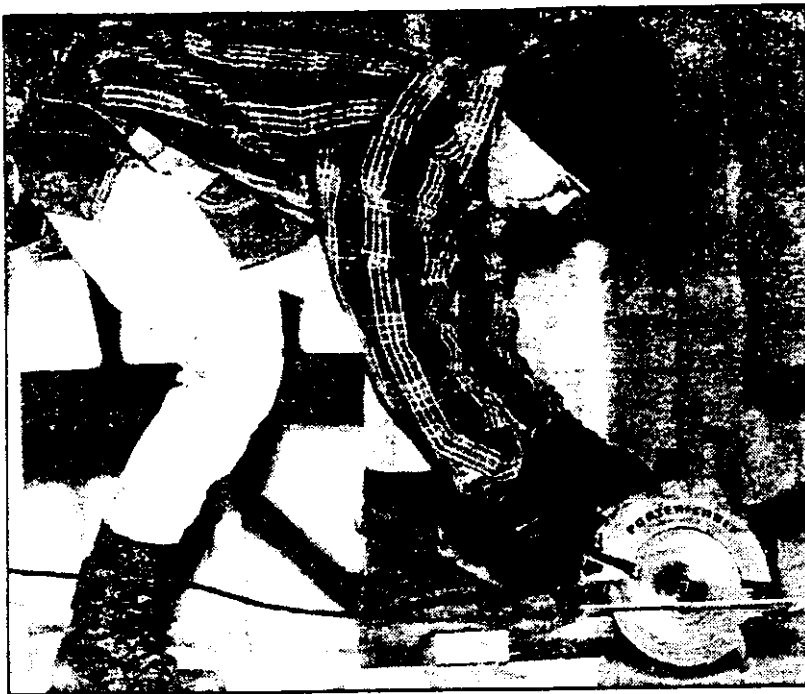
"The sunsets are fantastic," added Marshall, explaining that rooms were geared to views south and west.

A spacious, open dining room fits neatly next to the kitchen and living room. One wall is strongly angled.



Star photos/K.L.B.
Tony and Susanne Shideler's barn near Albany (Top photo) is in the process of being turned into a house. The Barnitecture Project, which began last fall, is being done by Bruce Meyer's class of fifth-year students in Ball State's College of Architecture. Above, a student works on the inside of the barn.

See BARN on Page 2B



Star photo/KURT HOSTETLER

An unidentified student does some work on the Barnitecture project.

Barn

Continued from Page 1B

In the center hall a horizontal half wall repeats the same acute angle, like an arrow, leading the eye to window views of the pond. An original ladder to the loft above was left significantly in place, harking back to the barn's initial function.

"The whole concept of the angle is to create a new symbol of home in place of the barn's 10x10-foot grid," Matt said.

"There really wasn't a square corner in the barn. Everything was slightly off, even the floors, which we had to level by about 6 inches. What we're building has to be squared for appliances and cabinets," Douhan said.

The master suite occupies the east side of the structure. "Master bedroom, dressing room, bath and sitting room," said Marshall, describing what the studs will enclose. Above these rooms there will be two bedrooms, a bath and sewing room that looks down from a balcony onto the center hall and through the stairway, providing glimpses of the winter garden.

"More than two-thirds of the house is open space," said Douhan, pointing up to the rafters. "The heat will flow upward and in a conduit across the center peak of the barn and back down. In summer it will be just the reverse with cool

air."

While we explored the structure, other students scurried about, measuring, pounding, installing wiring. They appeared relieved that the weather had turned warmer.

"Not until Jan. 26 did we have the place closed in," Douhan said. "We had some really cold days in here. But November and December were warmer, so we got a lot of the outside work done."

"So far we're ahead of schedule," Marshall said. "Sometimes what we designed doesn't work, so we call a little meeting and say, 'Look guys, come up with a better way to do this.' This project is a learning situation, so when something doesn't work, we figure out another way to do it. It takes twice as long to build this way, probably. That's why we decided in the beginning not to charge for our labor."

The design/build project is quite unique, the students said. "While some architects actually design and build," Marshall said, "most have professional builders do the construction."

"This way we learn what works and what doesn't because we've tried it. I'd do it again, but not with 12 others."

The Barnitecture project should be finished by graduation, she added.

"We're going to have an open house so our parents and friends can come see what we've been talking about all year."

Article taken from *The Ball State Daily News*,
April 27, 1995



■ Through ruins of what used to be the home of Tony and Suzanne Scheidler, a new house can be seen under construction.

by Laura Cummings, Assistant news editor

PRACTICALLY Experienced

Students studying architecture fulfill class by rebuilding burned-down home for family.

by Laura J. Cummings
Assistant news editor

SHOVELING 10,000 CUBIC FEET OF SHEEP

MANURE is not a typical architect's job, but through an innovative thesis project to renovate a 148-year-old barn, 13 architecture students are experiencing all of the ups and downs of design and construction.

"Everybody's taken their share of shoveling manure and slopping in the mud," said Bruce Meyer, professor of architecture and the students' thesis adviser, as he stood on the second floor of the three-story frame.

[CONTINUATION]

Architecture

CONTINUED FROM PG. 1

year, but this design/build project is a first for the university. The project consists of transforming an 1847 walnut barn near Albany into a house for Tony and Suzanne Shidellers, whose adjacent home burnt down March 17, 1994, as a result of an overheated freezer.

"Considering the fact that they're college students and they've never done anything like this before, they've done an extraordinary job," said Tony, who is the director of Purdue programs at Ball State.

The students began the project at the beginning of the fall semester by individually developing designs for the house. After studying similarities in the 13 original designs, the students formed five groups, which drafted new designs. These designs were then presented to the Shidellers.

"My wife and I looked at the five and picked what we liked of each," Tony said.

The students then drafted a final, composite design, and construction began in November, continuing every Monday, Wednesday and Friday through rain and freezing temperatures.

"You can go around this barn and look at different elements and relate those back to the original 13 (designs)," said Matt Douhan, a fifth-year architecture student.

Meyer said he thought of converting the Shideller's barn into a house after some of his students asked if they could

do a design/build project for their thesis. But working with the existing walnut frame of the 6,000-square-foot house has not always been easy, according to Douhan.

"Nothing in this barn is square," he said.

Another challenge for the students to work around was the four sheep living in the barn at the start of the project.

"We had sheep downstairs," Douhan said. "They remained there until last month when we poured the slab. The sheep were still in there, and we just built up around them."

According to fifth-year architecture student Jennifer Gilmer, who said the worst part of the project was "shoveling sheep doo," two of the sheep were eaten by neighboring dogs after they were moved outside.

Another obstacle faced by the group was convincing Scheidler to agree to design ideas, fifth-year architecture student Amanda Fritz said. She said the group of students thought the house's siding color should be beige with red accents, but Scheidler thought red was too bright.

"With dealing with a real person and someone else's money, it's their decision that matters," she said. "You don't get to do everything you want. But that's the real world."

According to fifth-year architecture student Bob Harmeyer, another challenge came from having 13 designers working on one project. Whenever a spontaneous change needed to be made, everyone wanted to be in on the decision.

DESIGN PROCESS: PHASE III The Final Design

Design Objectives

This design maintains the idea of the offset kitchen space and carries the angle through to the dining room parapet wall and the stair to the lower level.

A small wall divides the dining space from the hallway to create more closure and to allow for the positioning of a china cabinet or other similar furniture.

The bridge from the living area to the study maintains the idea of overlapping spaces as one can look down on either side into the winter garden below.

The addition of dormers on the upper level facilitates a craft room, with a magnificent view out to the south side, as well as a bathroom on the north side.

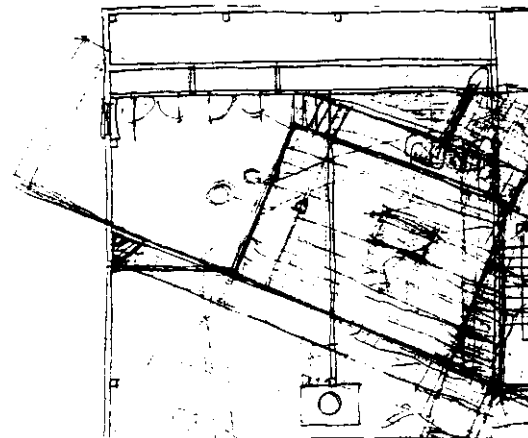
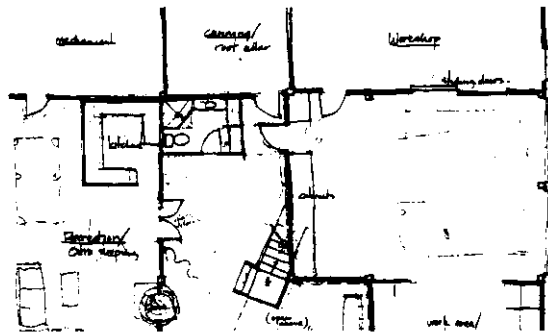
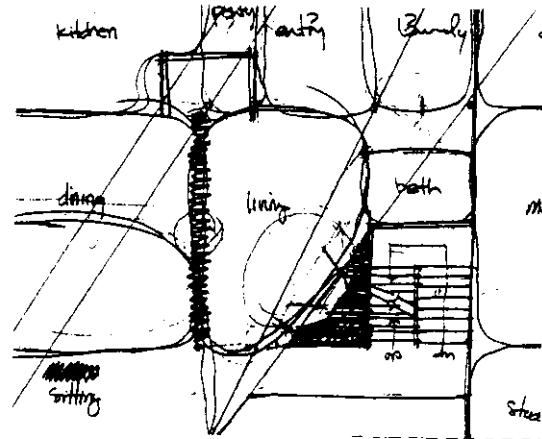
The design continues to utilize the termination of hallways with windows on one end (since design/build changes have been made this applies to both the main and upper levels).

Living and sleeping spaces are pulled away from the north wall creating a buffer from cold northwestserly winds. Oriented towards the south, they open up to wonderful views of the pond and surrounding countryside as well as to the rising and setting sun. The more private spaces remain towards the east facilitating the asset of receiving morning light.

Main entries are located both on the north and south sides -- the north opening into an airlock and the south to the winter garden.

Development Sketches

The following sketches were developed by the group during the final charrette.



Above: general layout and zoning studies.

