

BIRKETT LOG HOUSE AND ADDITION

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ARCHITECTURAL AND ENVIRONMENTAL DESIGN

(ABSTRACT)

The thrust of this project is twofold. The first is to create an addition to a reconstructed two-story log house. The second is to locate this structure upon the site in such a manner as to enhance the experience of its presence during approach.

The first goal is addressed by connecting two appendage structures to the rear facade of the log house by means of a narrow transitional space. The intent is to maintain this transitional space as an architectural connection between the greater masses without allowing it to become a dominant element. The arrangement of the addition massing respects the prominence of the original log structure and compliments its *dog-trot* configuration. The shapes of the addition masses, freestanding studio/utilities building, deck area and pool also respond to the vehicular path which culminates in a circle.

The second goal, the positioning of this structure within the boundaries of the selected site, was greatly facilitated by the site's numerous attributes. These range from the historical precedent of a previous log dwelling built upon the grassy knoll of choice to the natural enclosure of the site. A *U-shaped*, deciduously forested valley of dramatic slope along the three enclosing sides, the site provides a seasonally changing backdrop within which the entire structure can be experienced. Further enclosing this valley along the fourth side is a small, tree-lined river whose woody screen is permeated only in one small spot by a ford, which had been the site's previous access.

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I would like to express my appreciation to
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My Wife for Patience,
My Son for Inspiration,
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My Committee for Guidance,
And My Friends for Persistence.

To the T. S. Eliot Breakfast Club

"Well, I never!" said Mrs. Watkins. The meeting of the College Council on Metaphysics then applauded her and stood up cheering. Of course some of the old-school existentialists humbugged it, but nevertheless, the response was overwhelmingly positive. Then Mrs. Jenkins shouted over the crowd, "That woman never ceases to amaze me." The Logicians and the Semanticists gloated and looked anxiously over to the Metaphysicians to see their reaction to the carefully planted "never ceases" insertion. Mrs. Jenkins obviously had been working for the Logicians to arouse insurrection among the three or four Zeno Partisans. But suddenly Dr. Walker, who had been a recluse professor for almost twenty years, stood. With the crowd instantly silenced by his commanding and unexpected rising, he uttered something so incredibly unutterable, so impossible, so unsolvable, that this mass of philosophy started heaving right and left and dying on the spot, blood bursting from their ears in an astounding death agony.

From CRUEL SHOES

By Steve Martin

To and

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FOREWORD

The process of this design thesis began with the discovery of a two-story log house of *Dog-Trot* plan and full dovetail construction. The craftsmanship and soundness of the structure were quite remarkable given the material of choice and the age of the house. Oral histories from former inhabitants placed the age of the structure at over one hundred and fifty years. Purchased with the intent of restoration in a new location, the logs were tagged, cataloged, dismantled and transported to a storage site. There the log stacks were canvassed and fumigated to prevent further insect damage.

Several months passed before a suitable location could be found for the project. Finally, a site was discovered which would prove to be an ideal backdrop against which to exhibit this architectural antique. As the structure had been purchased to be the basis of an actual home, the thesis design and the design to be built were developed concurrently. The inevitable result was a divergence among these two designs. At the time of this writing, the built project has been occupied for more than one year and grows more precious to its inhabitants each day. This would tend to indicate the success of the built design. The thesis design, while free from all budgetary constraint, shall remain confined to the boundaries of this book until freed in the minds of its readers.

THE ORIGINAL STRUCTURE

Found standing abandoned along side an all-but-forgotten strip of highway, first impressions of the structure were not very favorable. Closer investigation revealed that this house, suffering from wind-damaged metal roofing and the collapse of a subsequent addition, had in fact been largely spared from the ravages of time. This salvation was at least partially due to its more recent skin of asphalt siding and poison ivy. The two-story log house, estimated to be over one hundred and fifty years old by the testimony of former inhabitants, would certainly have been a more prominent local dwelling of its day. Measuring nearly an exact fifty-two feet in length and eighteen feet in depth, the structure sat solidly atop a two foot high foundation of handmade brick and terminated with a large brick chimney at either end. The originally open *Dog-Trot* area, which would have functioned as an internal porch, had been enclosed at some point and a front porch had been added. Also, a single story, wood frame addition had been attached to the right side of the rear wall of the house. This addition had apparently served as a kitchen to some later occupants.

The southern pine logs used in construction ranged in diameter from nine to fifteen inches with an approximate average of twelve. Hand-hewn on two sides to a strict thickness average of five and three-fourths inches, the logs bore the coarse tool marks of both adz and broad axe. The lengths of the logs varied as required by placement, but log groups of any given length never varied by more than one inch. The notching used to assemble the house was a sophisticated full dovetail and achieved a very tight fit. The interior of the house had been subjected to heavy lathe and plaster, the removal of which revealed a rich textural surface of hand-tooling that had been long protected.

It was this log house, rich in texture and history, majestic in stature and construction, and yet abandoned in the wake of progress and prosperity, that would be salvaged for restoration. It was this log house upon which the design thesis would be based.



FRONT FACADE (1)

END FACADE WITH ADDITION (2)



CENTRAL HALL - SECOND LEVEL (3)



ATTIC STAIR (4)



THE SITE

As surely as an understanding of the attributes of a given site can enhance the design, so too can the discovery of a site which satisfies certain of the preconceived requirements initiated by a given project. Thus was the case in this instance. The log house, by its very nature, demanded a site of specific character. The site must allow the house to flourish in relative solitude, surrounded by the appropriate elements of nature. The project required presentation within a site of great serenity, far from the bustle of urban sprawl.

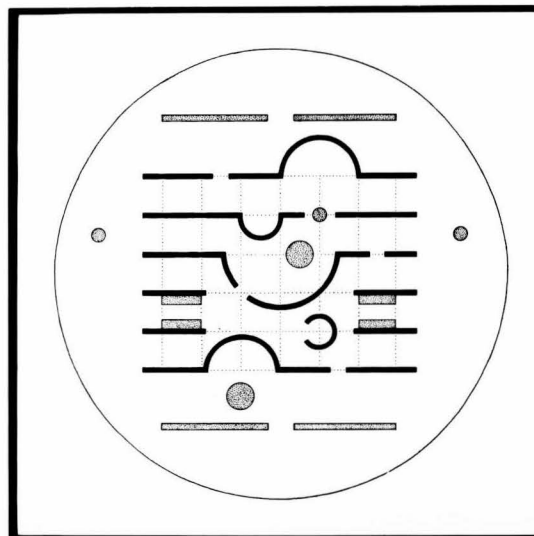
The site discovered actually enhanced this notion of presentation by surpassing the requirements suggested by the original log structure. The topography of the site was such that the project would be almost completely enveloped by the mountainous terrain, yet nestled upon a small rolling hill. Once transplanted to this site, the original log house would become the dominant structure. It would become the focal point of this small valley. The log house could be dealt with, in a sense as a piece of sculpture carefully positioned within a space created just for its display.

Furthering this idea of a controlled presentation of the project was a mental comparison of the site to the plan of Aldo van Eyck's Pavilion, Arnheim. As the walls of the Pavilion were created to restrict the observer's view to selected glimpses of what lay inside, so too would the walls of the site control viewing. Three sides of the site were contained by a steep and continuous mountain range, while the fourth was defined by a tree-lined river. This wall of trees lining both banks of the river was pierced only once in the area of the ford which had been the historical access. Moving the entry farther north left the ford area to act as only a window into the site; it became a portal to entice the viewer, but restrict passage. The new access would establish the vehicular path from which the visitor would experience the sequential unfolding of the project.



SITE WITH PLAT

PAVILION, ARNHEIM - PLAN (5)



"Central to my idea was that the structure should not reveal what happens inside until one gets quite close, approaching it from the ends. Seen from the sides, it appears closed and massive—guarding its secrets."¹

"Distance and a slow impression-sequence in the park; proximity and a rapid impression-sequence in and around the pavilion. Affected harmony—lawns, trees and sky; intrinsic controversy—a story place, thick walls and a roof."²

Aldo van Eyck
Pavilion, Arnheim

INTERIOR VIEW (6)



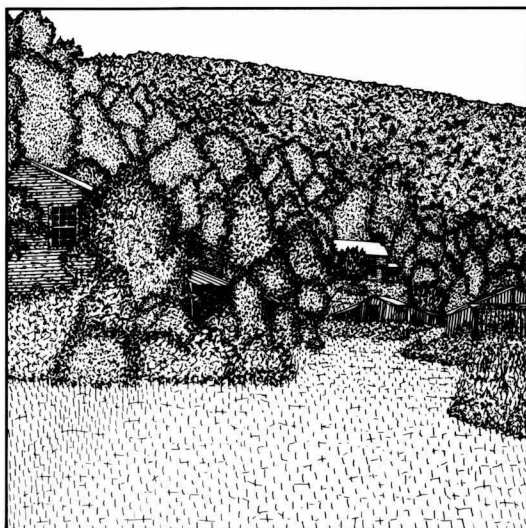
The site may be essentially divided into three parts. These consist of a broad forested band and two large cleared areas. The forested area is steeply sloped and surrounds the site on three sides. As this forestation is predominantly deciduous, it creates a seasonally changing backdrop against which the project would be viewed. This seasonal change also enhances the view from the project.

The division between the two cleared areas is less apparent than the division found between the forested and non-forested areas. Stretching generally from northeast to southwest across the central one-third of the site, the two cleared areas are most appropriately defined by difference in elevation. This division occurs at approximately the one thousand three hundred foot topographical line. The cleared area below this elevation is adorned with a recently abandoned log and frame house and its usual complement of peripheral buildings. The cleared area of higher elevation contained only the stone foundation and remains of an older log structure. The division of these two areas, while outlined by a small stream, would be firmly announced by a small log barn. This barn acts as a gate house along the visitor's pathway to establish the lower boundary of the area upon which the project would be built, the clearing of higher elevation.

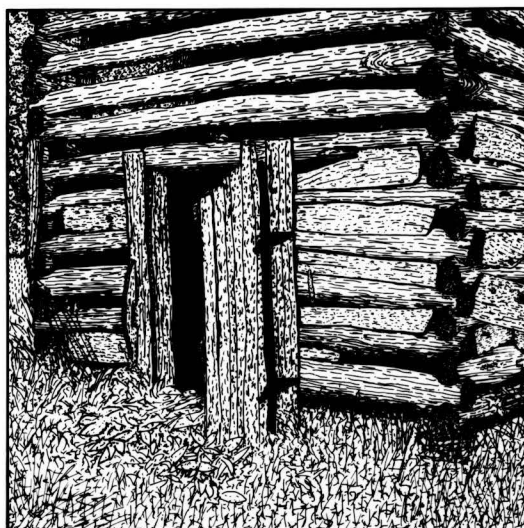


SITE LOCATING NEW CONSTRUCTION

EXISTING BUILDINGS



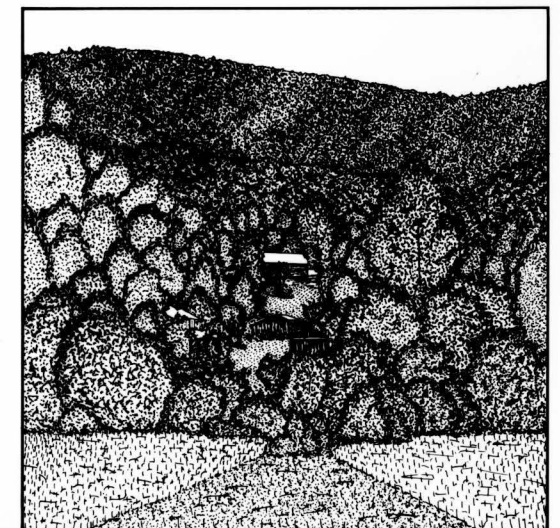
LOG BARN

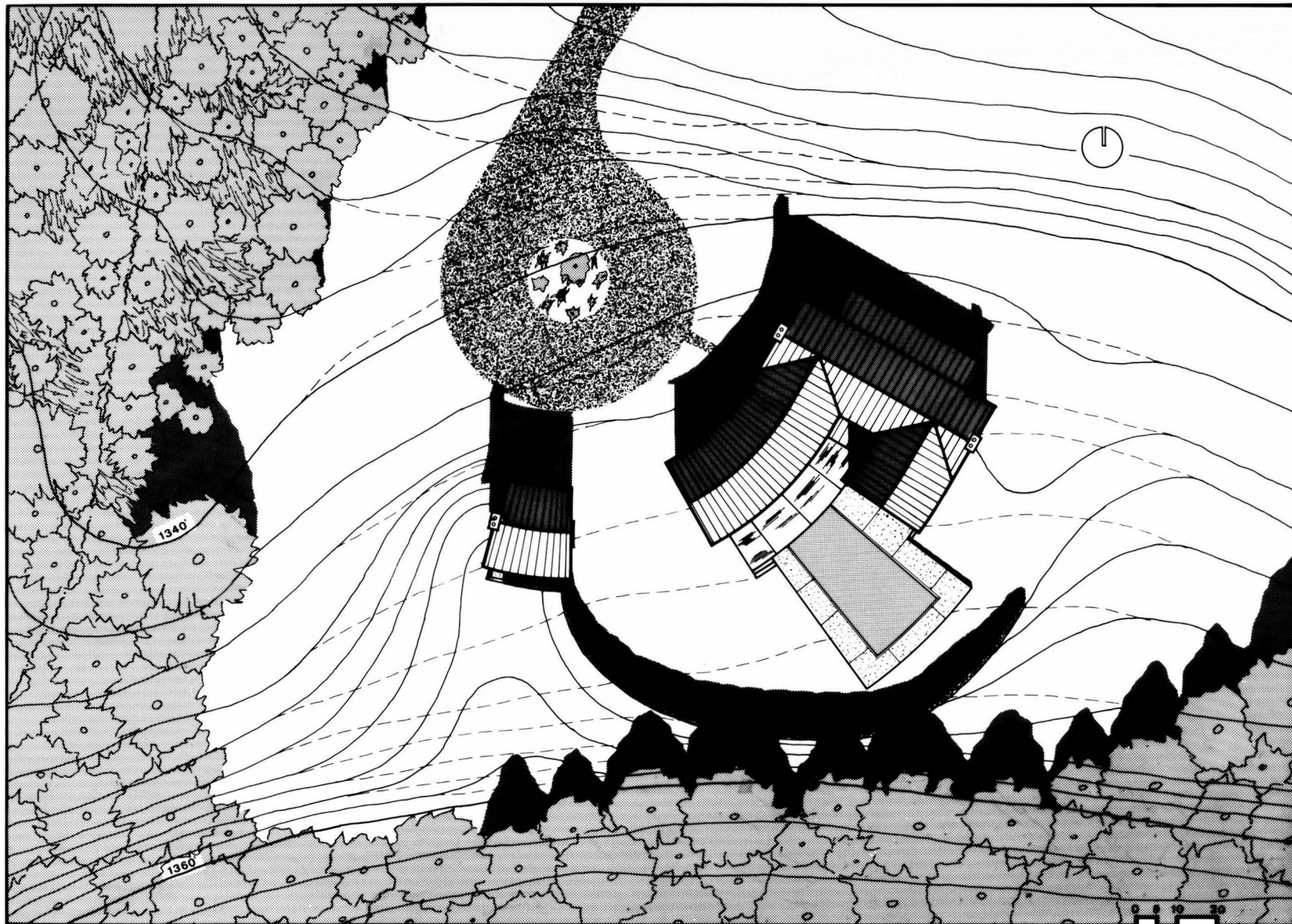


THE IMPRESSION-SEQUENCE

The initial glimpse provided by the ford area is intended to intrigue both the casual passerby and the arriving visitor. By providing only a quick glimpse and not access, the observer is compelled to retain this image like a mental snapshot until access is permitted. Moving the entry farther up stream lengthens the time the visitor has to contemplate this image. As the visitor gains access, the *Sequential-Impression* begins to gently unfold. Movement along the vehicular pathway orchestrates this visual harmony between project and nature.

INITIAL GLIMPSE





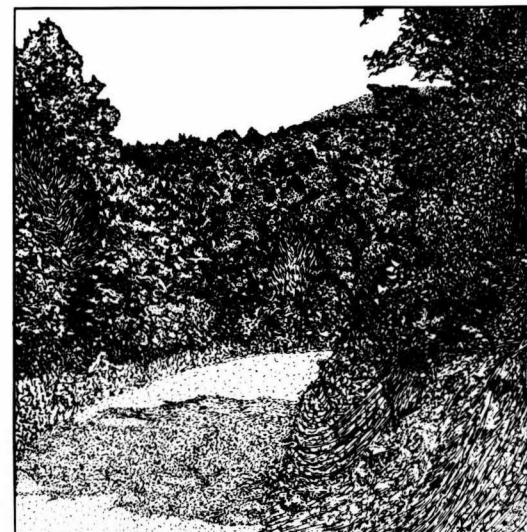
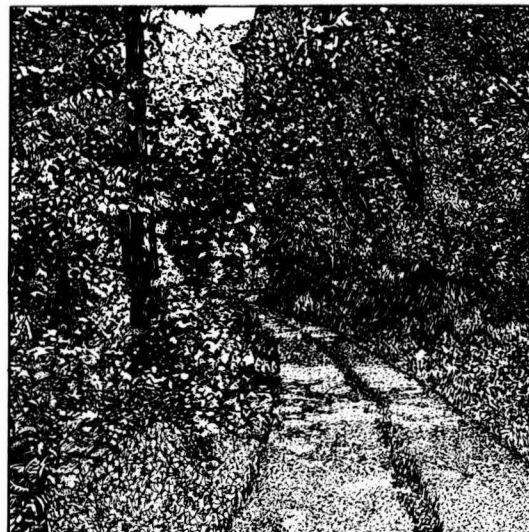
STRUCTURAL MASS ORIENTATION

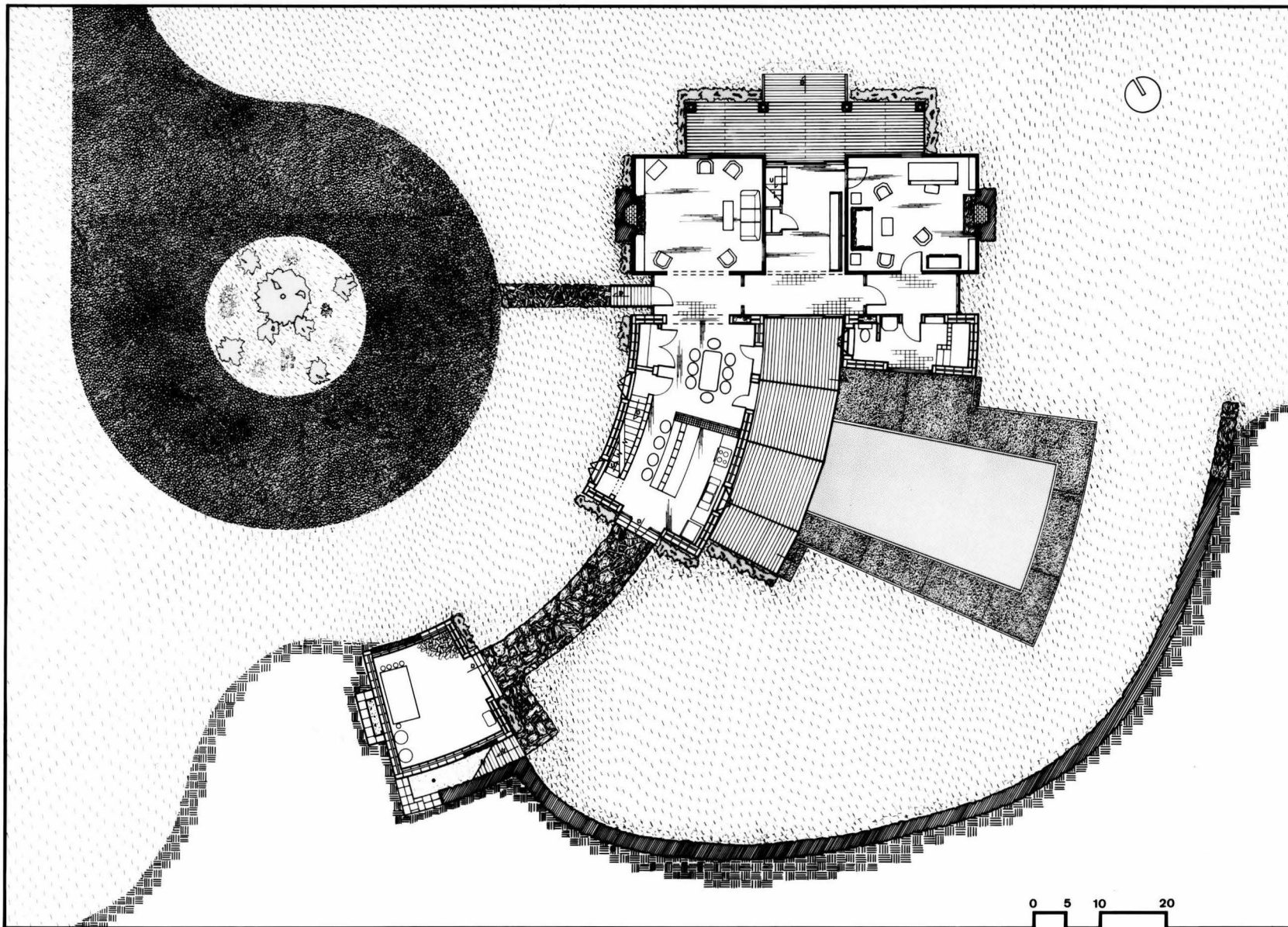
The reconstructed log house and addition is located on a grassy knoll in the farthest southwestern corner of the site's clearing. This lengthens the pathway and accentuates the vertical movement across the site. Connecting the addition masses to the rear facade enhances the log structure's presence. This placement precludes early discovery and promotes the gradual emergence of the addition. Termination of the vehicular pathway in a circular return creates a transitional zone between those of the vehicle and house. The additions, studio/utilities building, pool and deck area all gain curvature in plan as they receive this circular momentum. This curvature also augments the open and expanding nature of the pool and deck areas, while the stone retaining wall establishes their southern boundary. The studio/utilities building, by virtue of its similarities and proximity to the main addition, creates an implied continuum through the void of separation.

Historically, the *Dog-Trot* area would have functioned as an internal porch and entry. As modern necessity to enclose this circulation space prevents its use as a porch, one has been added to the front. This addition is in the tradition of the I-form house, prominent in the local vernacular.

THE IMMEDIATE SITE

THE IMPRESSION-SEQUENCE...



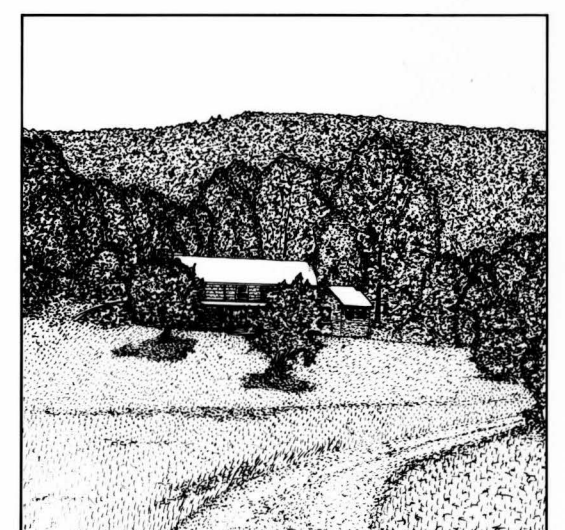
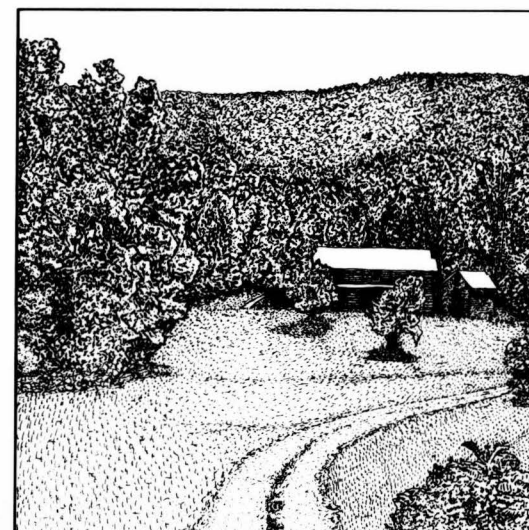
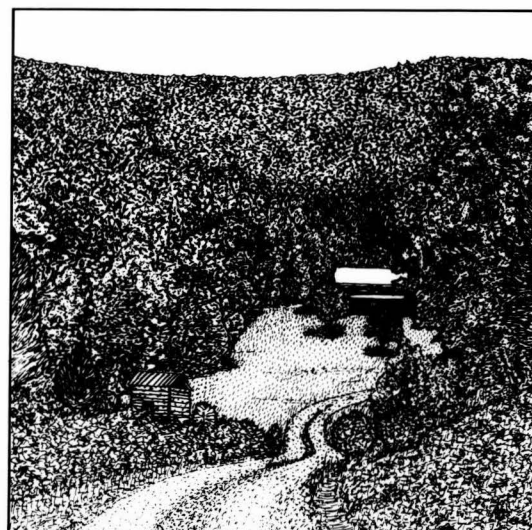
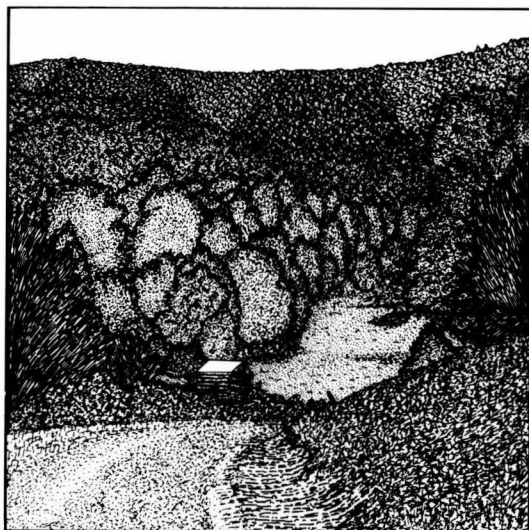


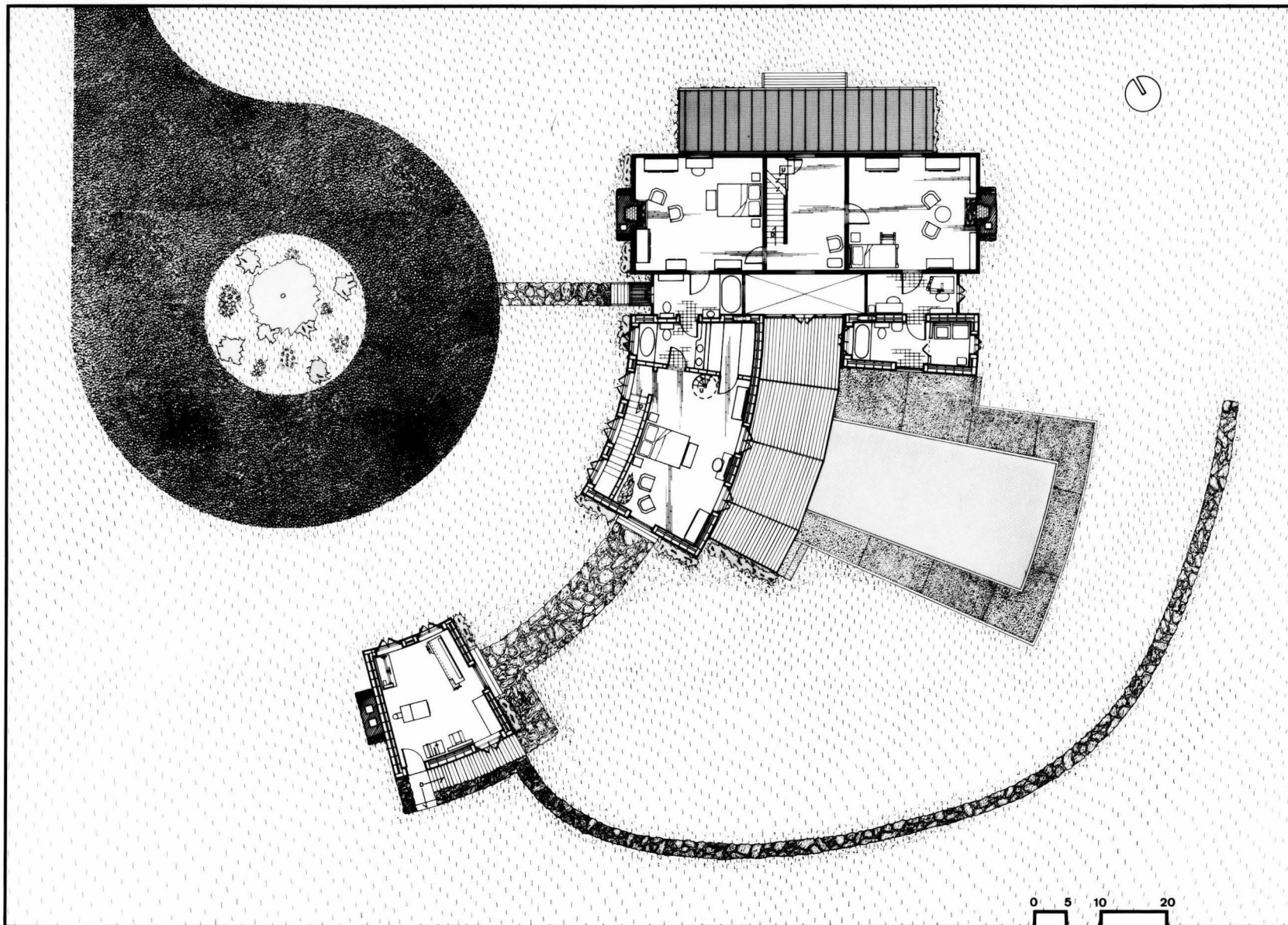
FIRST LEVEL

The original *Dog-Trot* area and connecting space establish a cruciform arrangement of voids between the structural masses. Glass and light steel framing in these areas satisfy the need for enclosure while maintaining the visual penetrations. Large movable glass panels used in the *Dog-Trot* could be slid apart and replaced with screens allowing natural ventilation. With the entrance now located in the west end of the narrow connecting space, opening the new front door completes the visual penetration along this axis.

The intent is to incorporate the log structure into a contemporary dwelling, respectful of its original character. Therefore, the original rooms of the log house would not be subdivided to create closets or bathrooms. Plumbing would also fall outside the confines of the log walls.

The two first-level pens of the log house serve as a living room and a library/guest room, from west to east, respectively. The small addition houses a full bath, while the large addition serves as kitchen and dining space. The studio/utilities building houses an active solar heating system which is connected by underground piping to a small basement beneath the near half of the large addition. This basement houses additional thermal storage and a pool heat and filtration system.

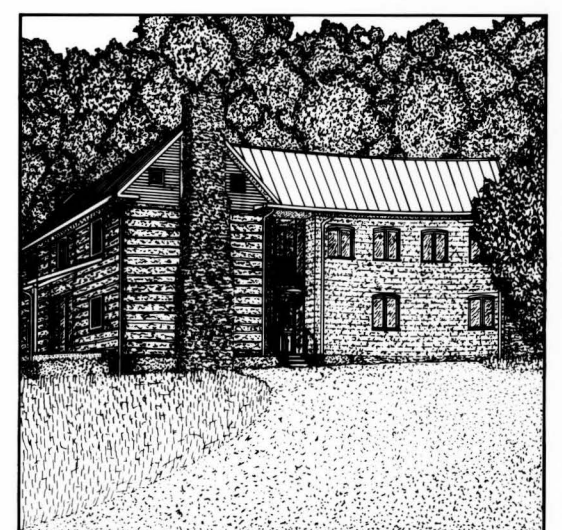
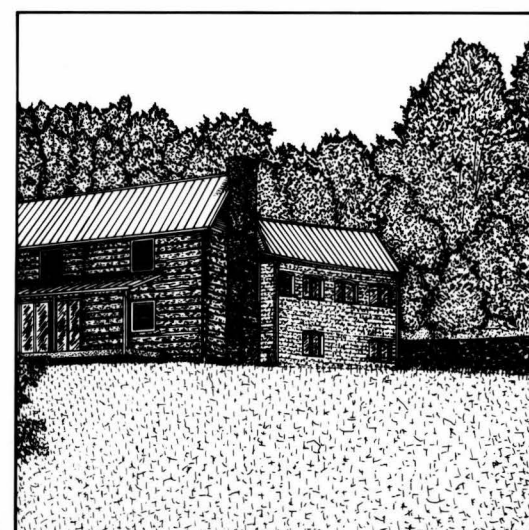
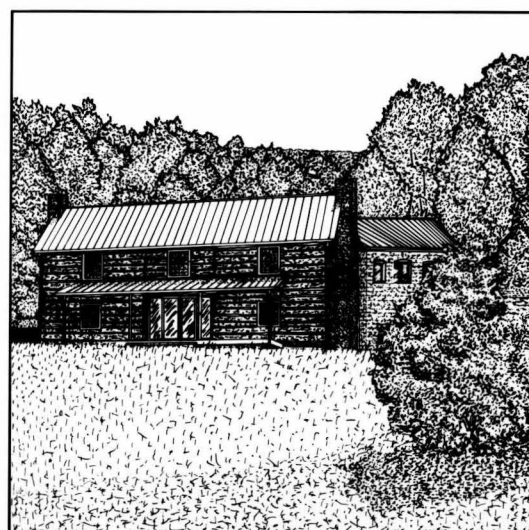
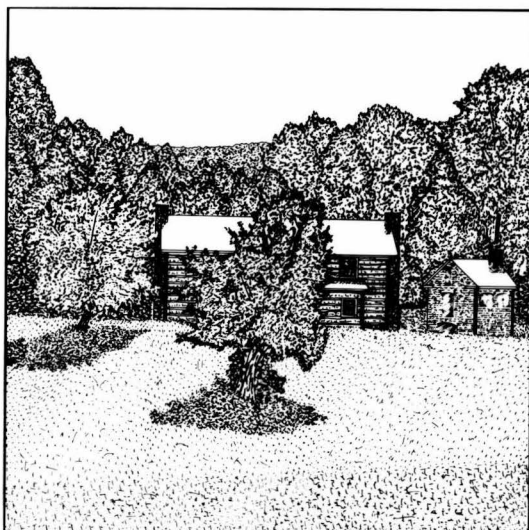


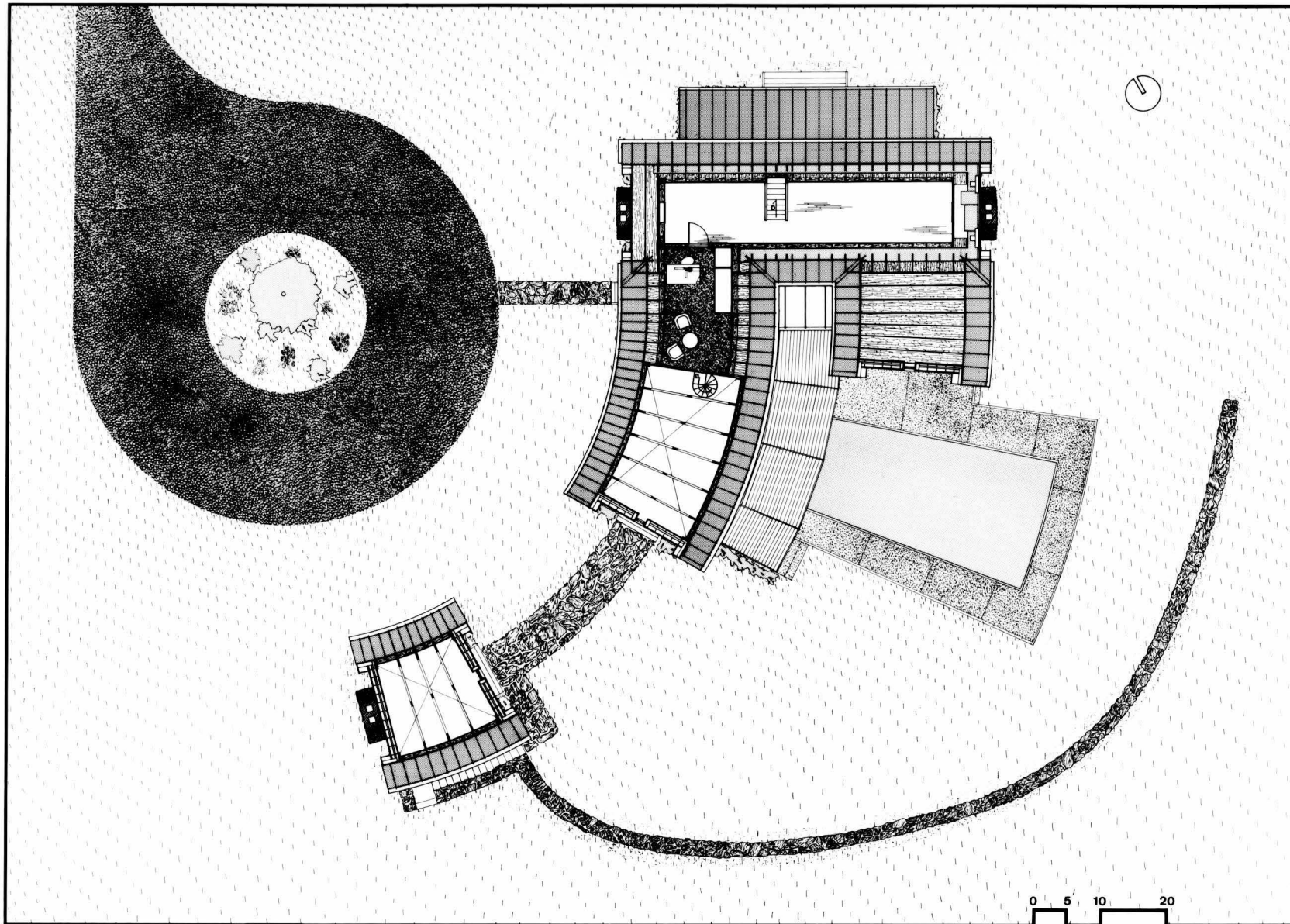


SECOND LEVEL

Influence exerted by the original log structure becomes even more apparent on the second level. The bedrooms in the log house are not cluttered with superimposed closets. Instead, wardrobes, trunks and other furniture are used while nonseasonal items are stored in the attic. The central hall is enclosed by its original log walls and continues to serve as a junction in the circulation. The two-story space located directly behind this hall is at the intersection of the *Dog-Trot* axis and that of the new entry. To comply with limited circulation and to maximize privacy, each bedroom has a full bath. The master bedroom, complete with a private stair, functions as a secluded suite. This stair is constructed of reinforced concrete with a pristine central runner of oak treads and risers. The walls of this stairway are constructed of split face concrete masonry units, as are most of the interior and exterior walls of the addition. The curving walls of the stairway are gently washed with light from the three windows.

The studio/utilities building houses a sculpture studio and wood shop on the second level. This space serves as both support facility for and refuge from the numerous daily activities of a busy household. This room is accessed from the adjacent stair or from the plateau behind the stone retaining wall.



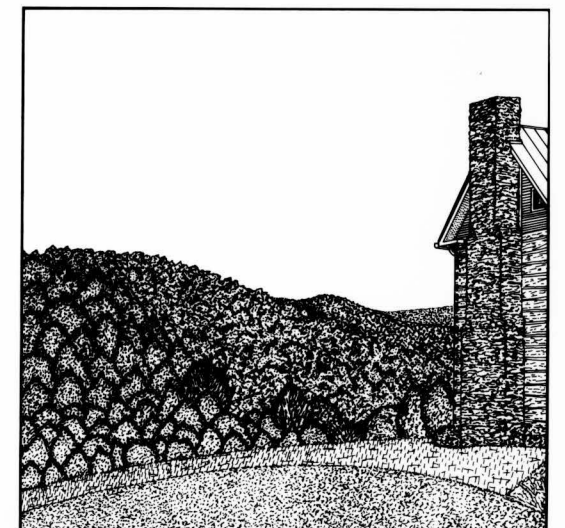
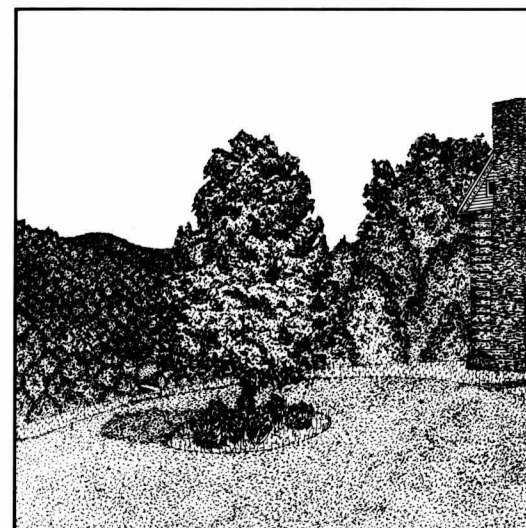
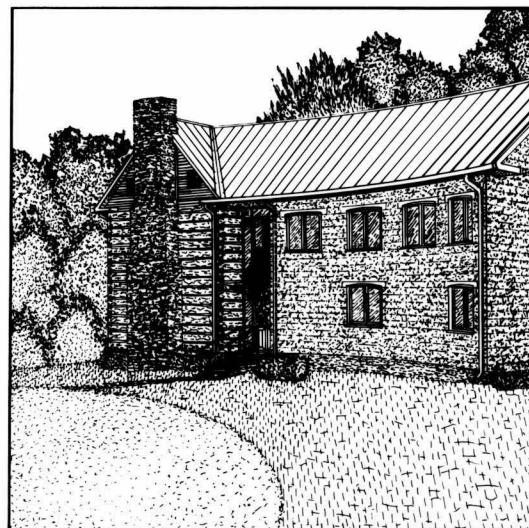
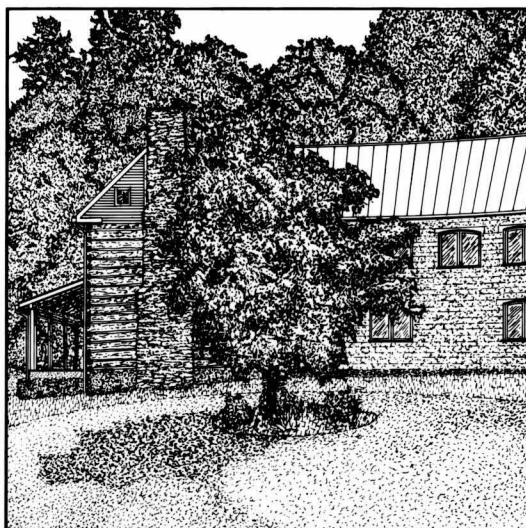


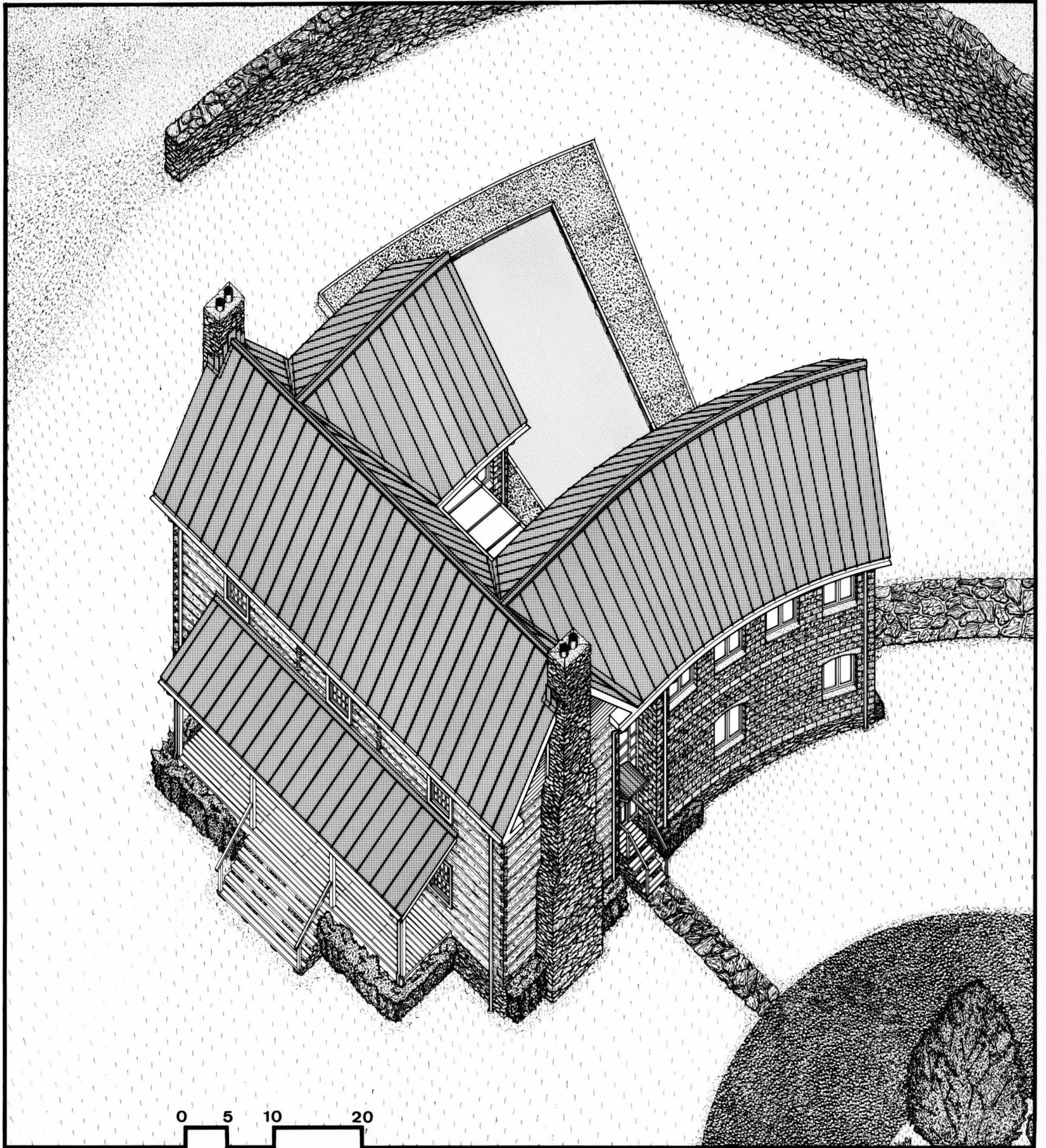
LOFT/ATTIC LEVEL

The loft/attic level plan reveals several aspects not previously mentioned. The attic space runs almost the entire length of the log house with four foot high knee walls comprising the long sides. Large vents and exhaust fans installed on opposite ends of the attic reduce the build-up of excessive heat. This space houses the heat exchanger and ducts for the log portion only. The additions and the connecting space receive heat from a radiant slab system. The attic is accessed from either the central hall stair on the second level or a door from the master bedroom loft.

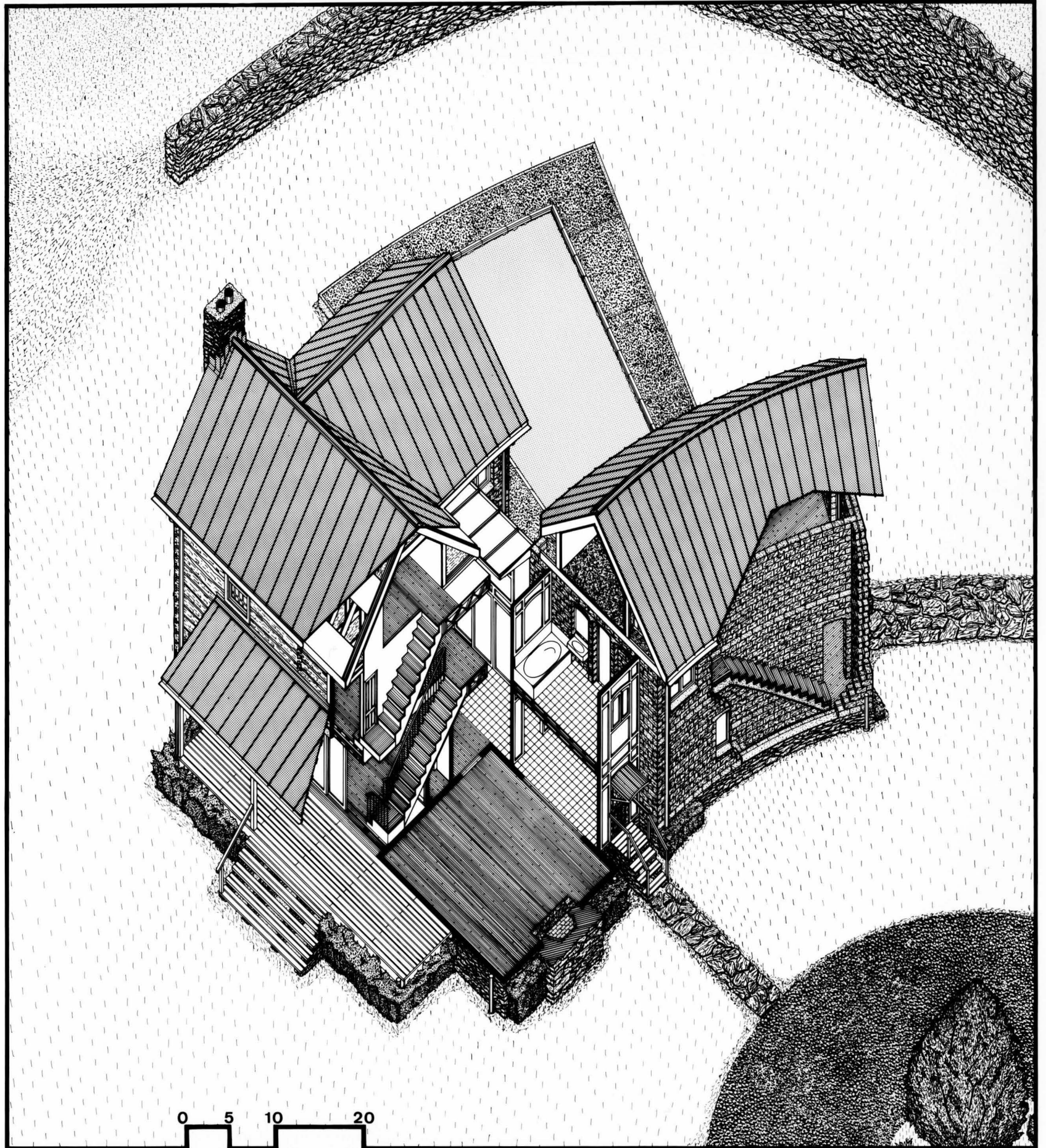
A circular stair provides access to the loft. This space is defined on either side by knee walls four feet in height. This loft, a private study for the master suite, looks down upon the bedroom through open trusses. Constructed of rough-sawn oak timbers of large dimension, these open trusses give the master suite a sense of additional space beneath a cathedral ceiling.

The studio, which structurally mimics the master suite, benefits similarly from the open, spacious feel of a cathedral ceiling. This additional overhead space also eases the task of handling lengthy pieces of lumber. The open trusses will, no doubt, add to the character of the studio by becoming the roost of many a work-in-progress.



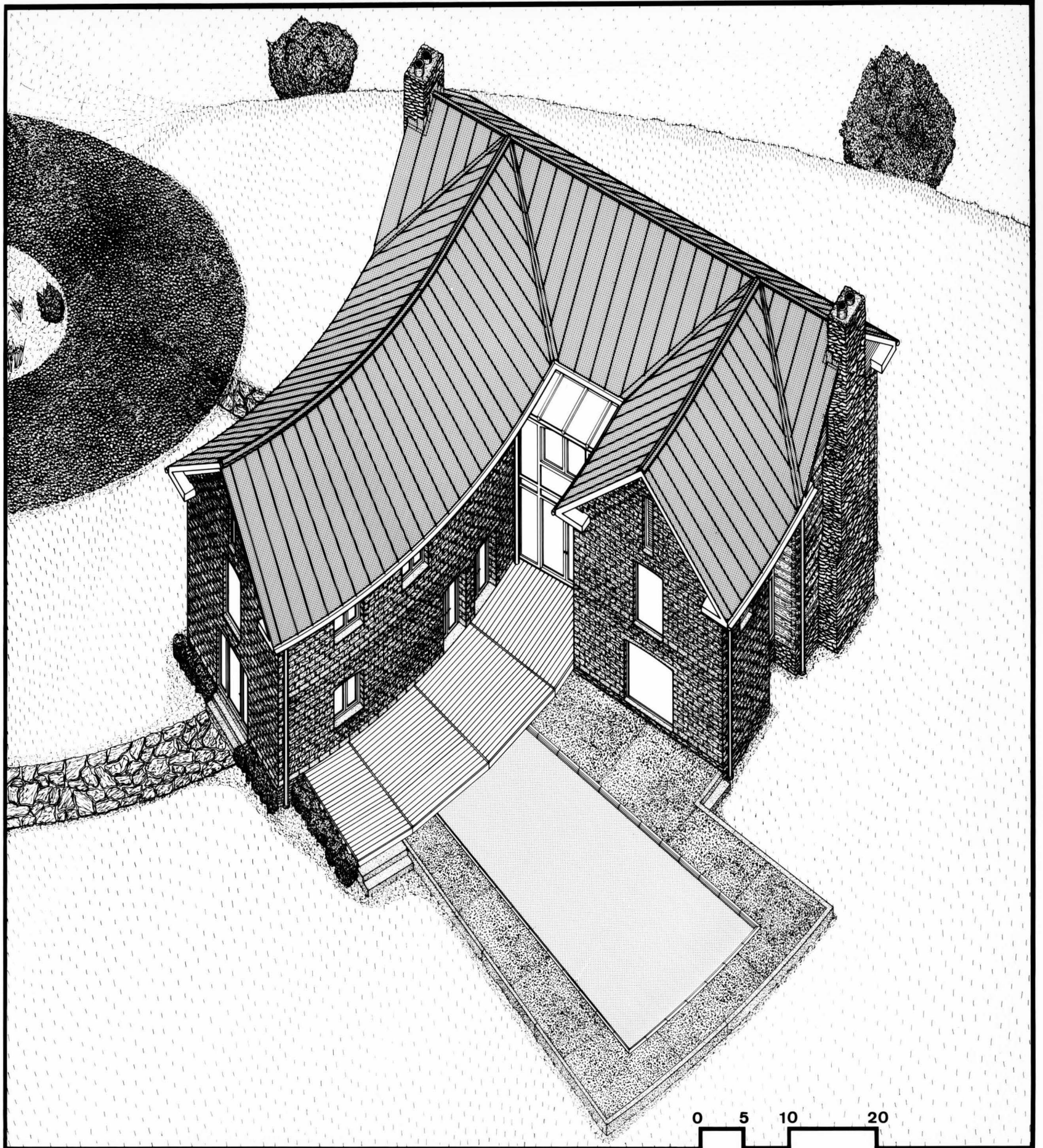


FRONT AXONOMETRIC

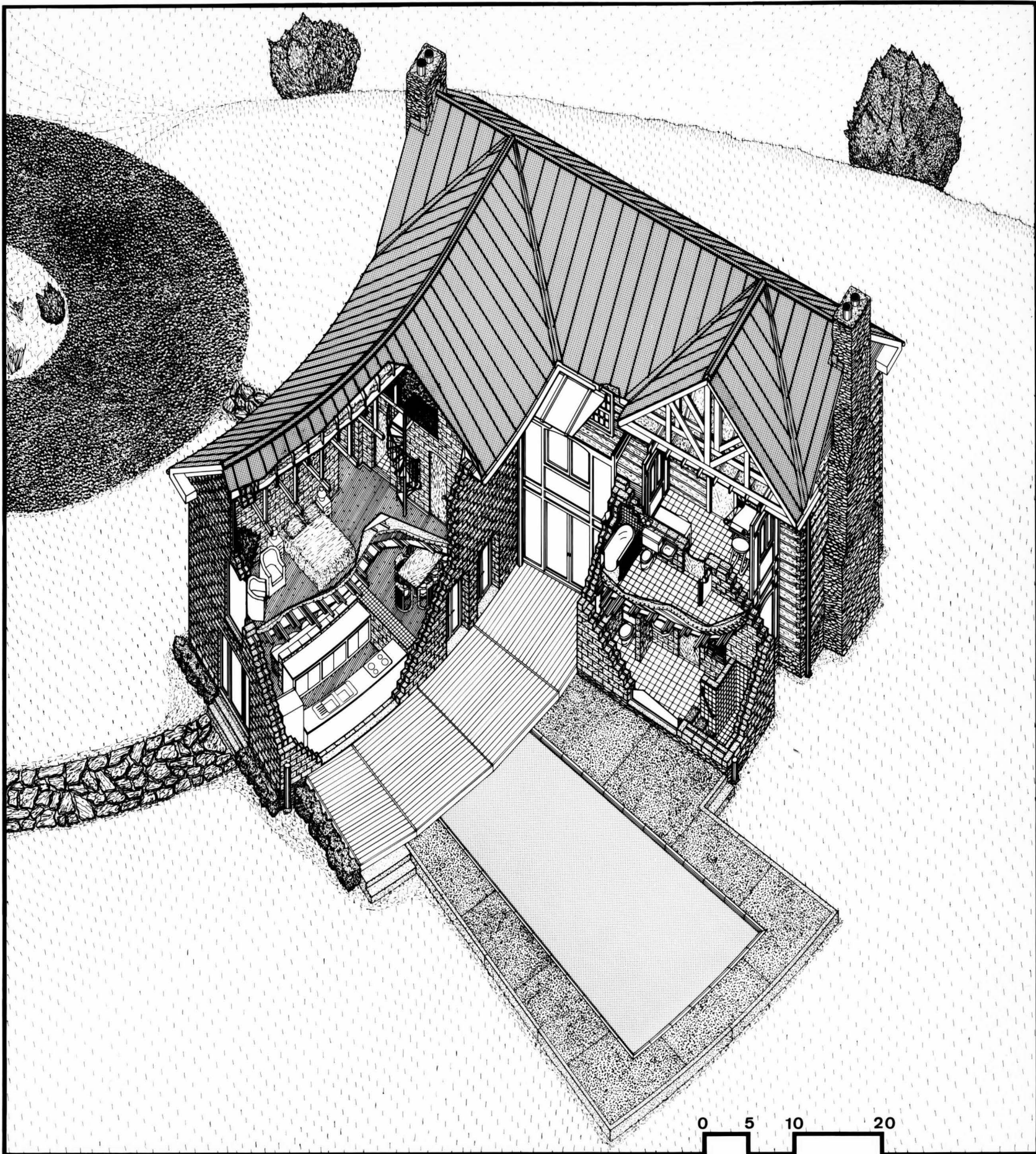


FRONT CUTAWAY AXONOMETRIC





REAR AXONOMETRIC



REAR CUTAWAY AXONOMETRIC

NOTES

¹ John Donat, ed., World Architecture 4 (New York: The Viking Press, 1967), p. 60. Copyrighted by Studio Vista Ltd., London, 1967. Reprinted with permission from MacMillan Publishing Co., New York.

² Ibid., p. 60.

SOURCES OF ILLUSTRATIONS

Birkett, Terri W., Personal Photograph Collection. Stuart, VA **1., 2., 3., 4.**

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