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RICE UNIVERSITY

**SIX HOUSES**

by  
**DONGXIAO LIU**

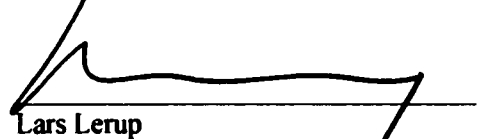
A THESIS SUBMITTED  
IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE

**MASTER OF ARCHITECTURE**

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HOUSTON, TEXAS

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## **Abstract**

The series of Six Houses projects offer choices rather than making improvements along the way. The reason for offering these choices is that one choice can not take the place of the other, but rather refers to another. A reference exists and creates a link. The many links among these houses build a net. This net becomes a self-contained system. Inside the system the study of its language and its grammar is possible.

The process of design, or choice making constantly reveals the unconscious forms in conscious language. The choices should be considered as an understanding of the language so that each choice is also self-contained.

The work is done through repetition. Even the texts should be considered as a repetition of the drawings.

**Project:** six one-story houses.

**Sites:** unspecified.

## **Acknowledgment**

I am very grateful to the members of my thesis committee for their support and patience in the process of my thesis: to David Brown, who scheduled my work and helped tailor my drafts; to Lars Lerup, who encouraged me to stick to my own way and put my work into a larger context; to Douglas Oliver, who inspired me at the crucial moment. I would also like to thank the people in my final jury who gave me precious advice and critique: Jason Payne, Ned Cramer and Keith Krumwiede.

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I owe a lot to Yung Ho Chang who led me in the first steps of architecture.

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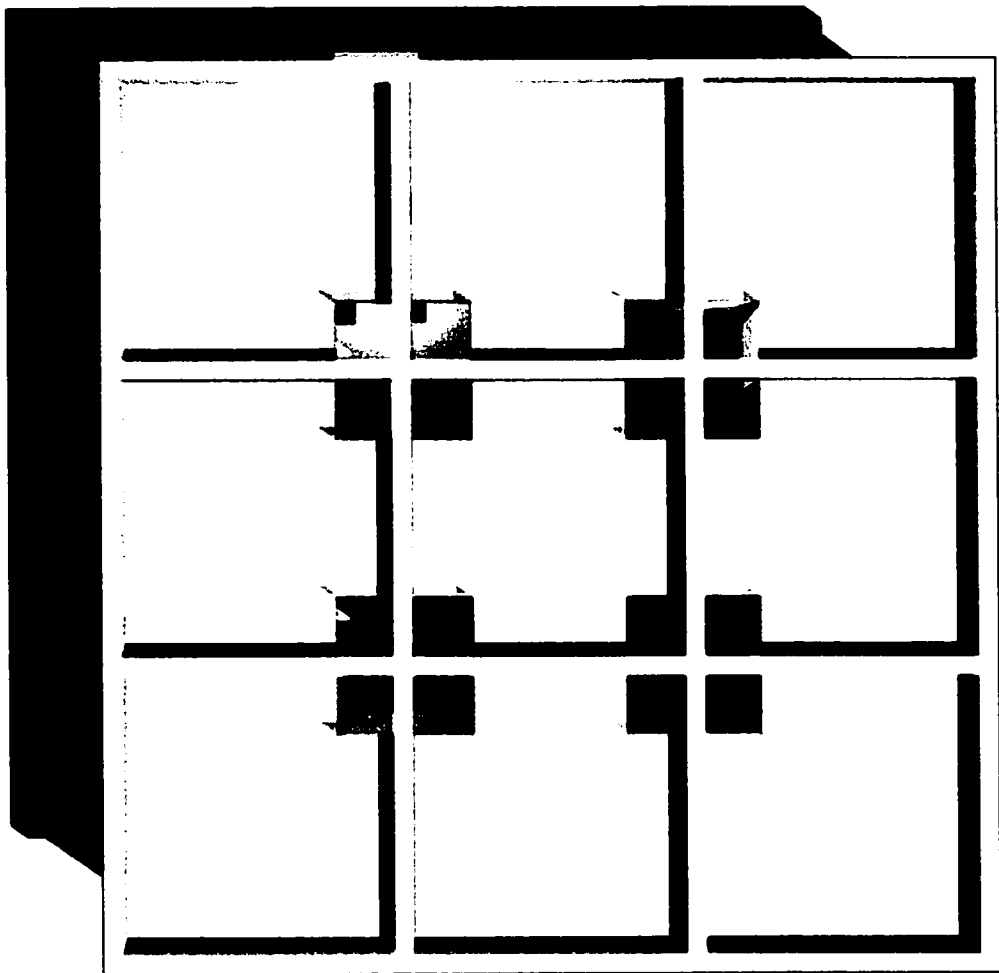
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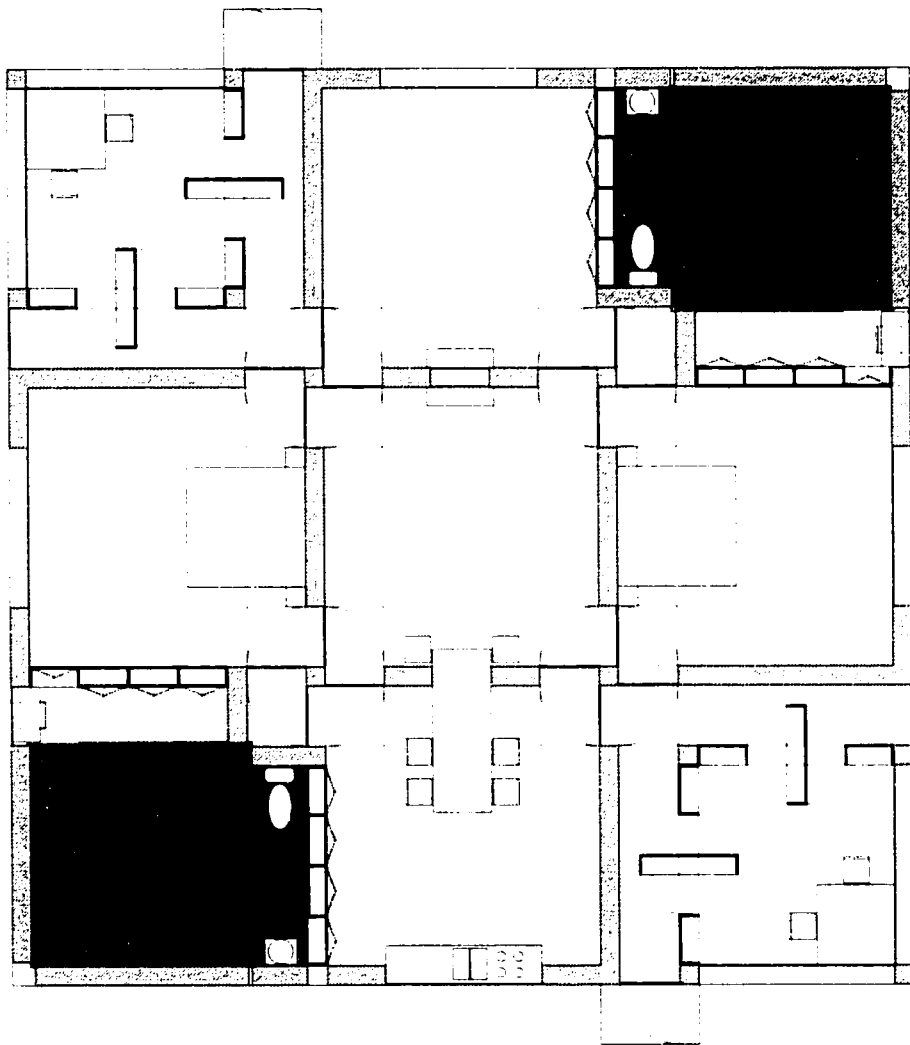
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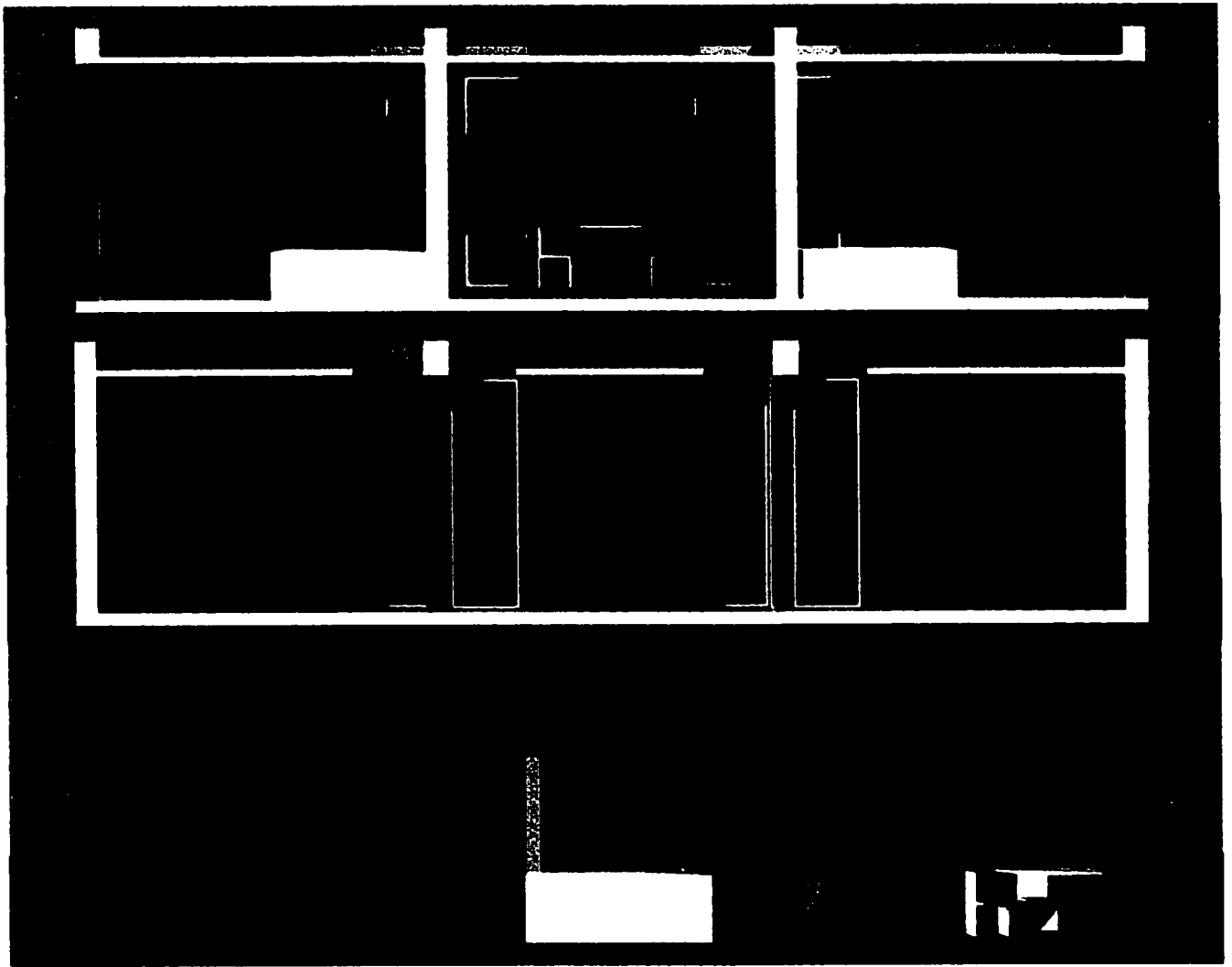
□ **House One** is an attempt to combine John Hejduk's nine-grid-based *Texas House*<sup>1</sup> with a wall-enclosed *Chinese Courtyard House*<sup>2</sup>. This combination is achieved by superimposing two interlocking squares (two courtyards enclosed by walls) onto a nine-grid column-beam system. Each square occupies  $\frac{4}{9}$  of the total area and overlaps in the center square. Paradoxically the horizontal and vertical symmetry inherited from both prototypes is weakened by the interlocking squares and strengthened by the four light wells over the exposed beam-column joints at the four crosses inside the grid. The House is not only controlled by its horizontal and vertical axis meeting at its geometric center, but also by each beam-column joint which functions as the sub-center around which the four rooms connected by four revolving doors become a sub-unit of the house. The center of the house begins to shift among the five points (one geometric center and four sub-centers). Hereby the combination acquires a desire to move and turns into a dynamic system instead of the static system characterized by either of its parents. The dynamic system causes an ambiguous reading: Is it still a nine-grid system, or four squares overlapping each other, or maybe even a cross with four squares attaching at its four corners? □ The ambiguity in reading the form confirms the ambiguity in the program and the spatial experience. The diagonally opposed layout of the two-bedroom/bathroom sets coordinates with the interlocking of the two courtyards. The light well in each center (which is a sub-center of the house) simulates the opening to the sky in the traditional Chinese courtyard<sup>3</sup>. Each bedroom/bathroom set can be considered as a courtyard house and the two join together. At the same time the circulation inside provided by the four groups of revolving doors makes the three public rooms (guest, dining, family room) necessarily sharable and therefore all nine rooms unseparable. From the outside continuous facades wrap the entire house making the nine-grid and two interlocking courtyards disappear into a large wall-enclosed square. This contradicts the inside reading that the interlocking squares share the center square and push away the separated pavilions (the studio) to the upper and lower corner. □ The ambiguity produces the paradox: Is a piece of wall flanking by two openings part of the surrounding wall or a column in the nine-grid system? A sequence is detected within the grid or along the walls-void, solid, void, and solid. A logical solution can be added to the sequence: sometimes the column becomes a negative, a gap in the wall. □

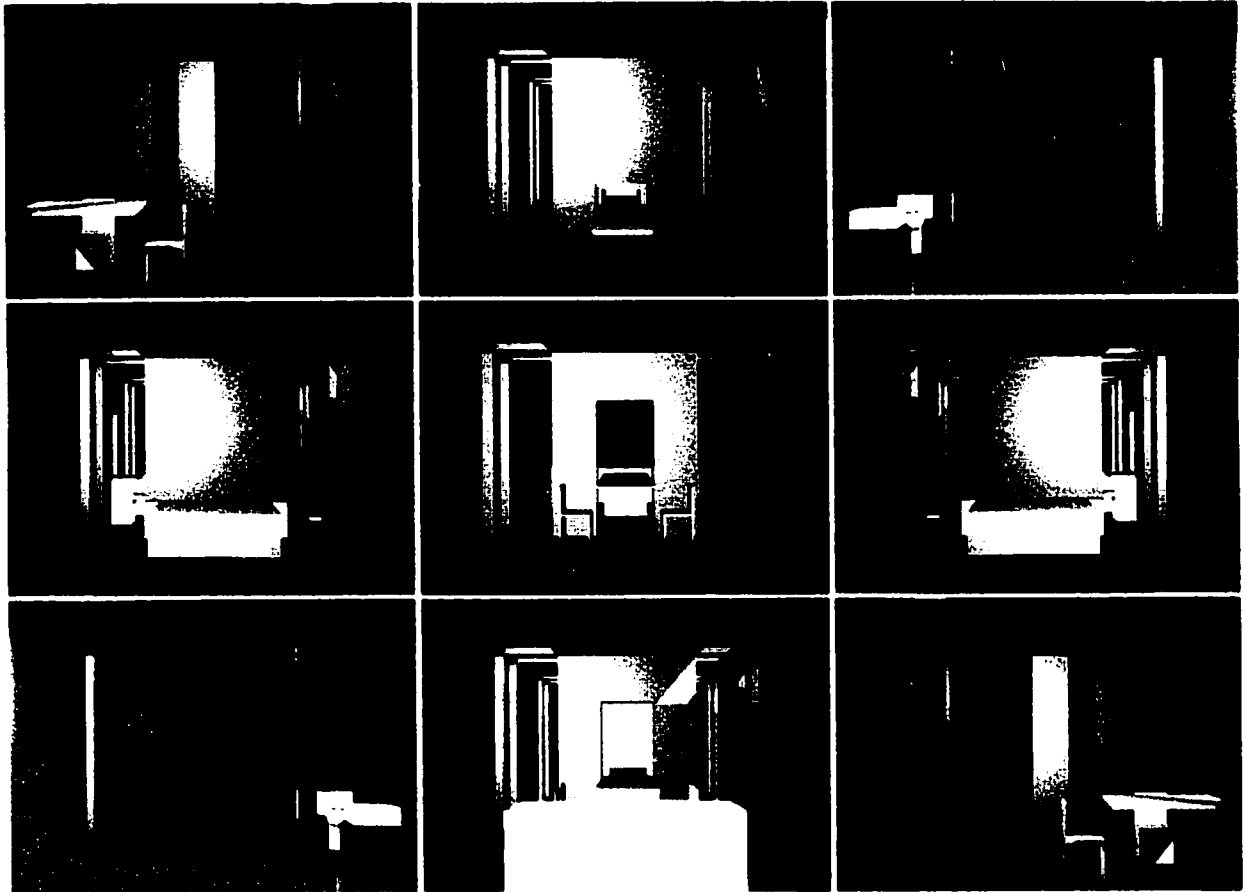




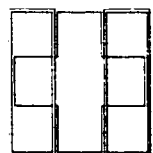


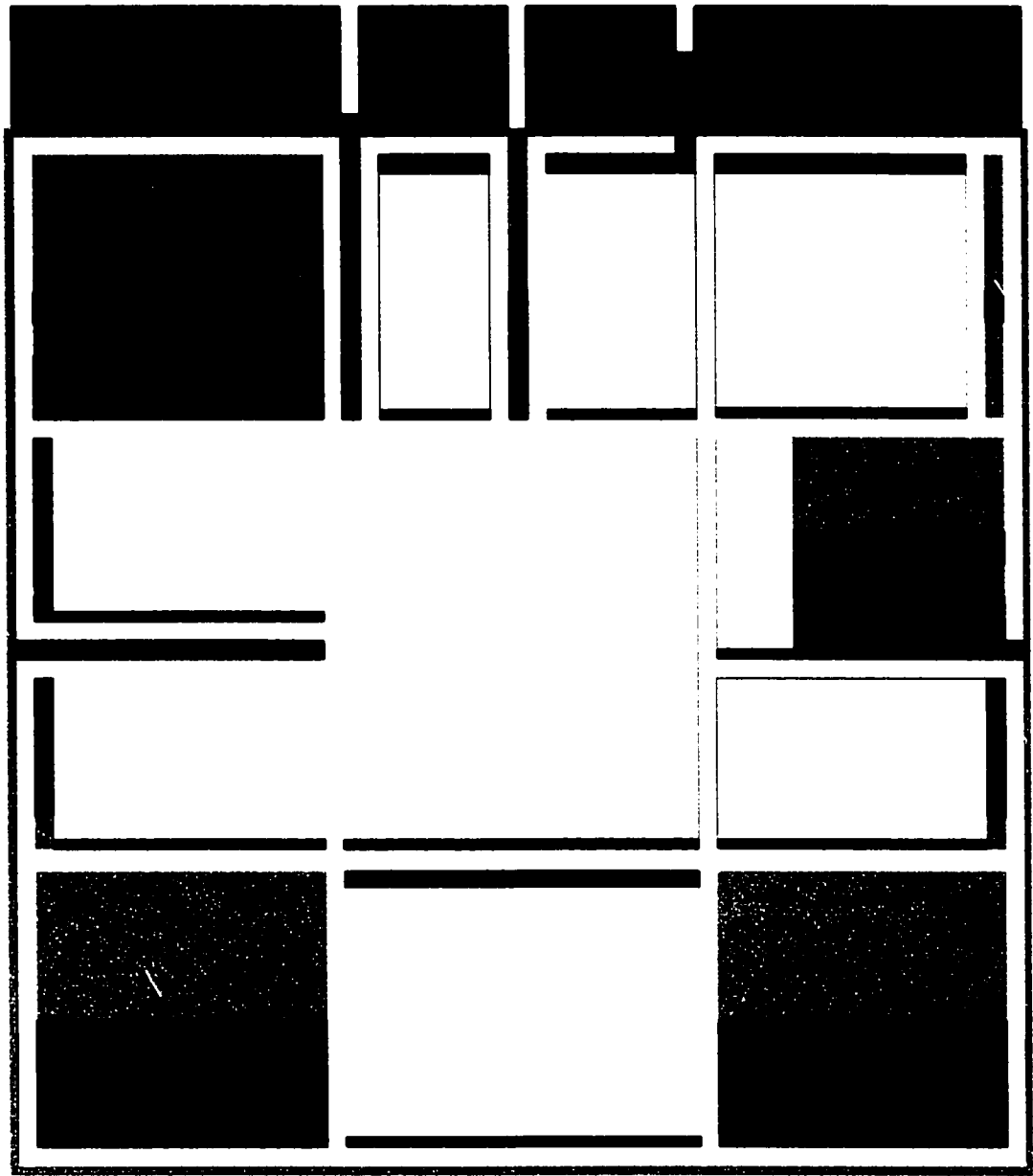


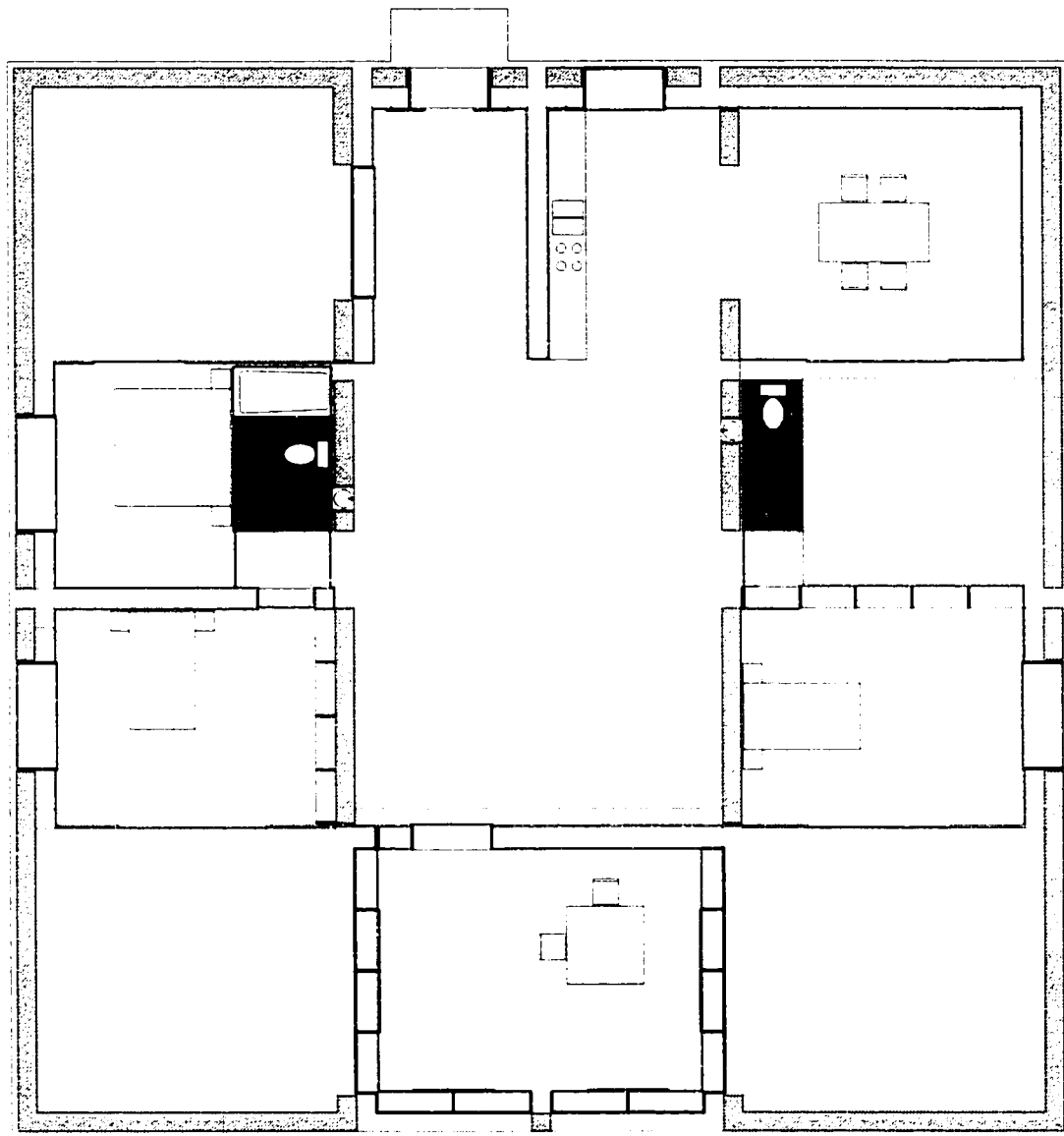


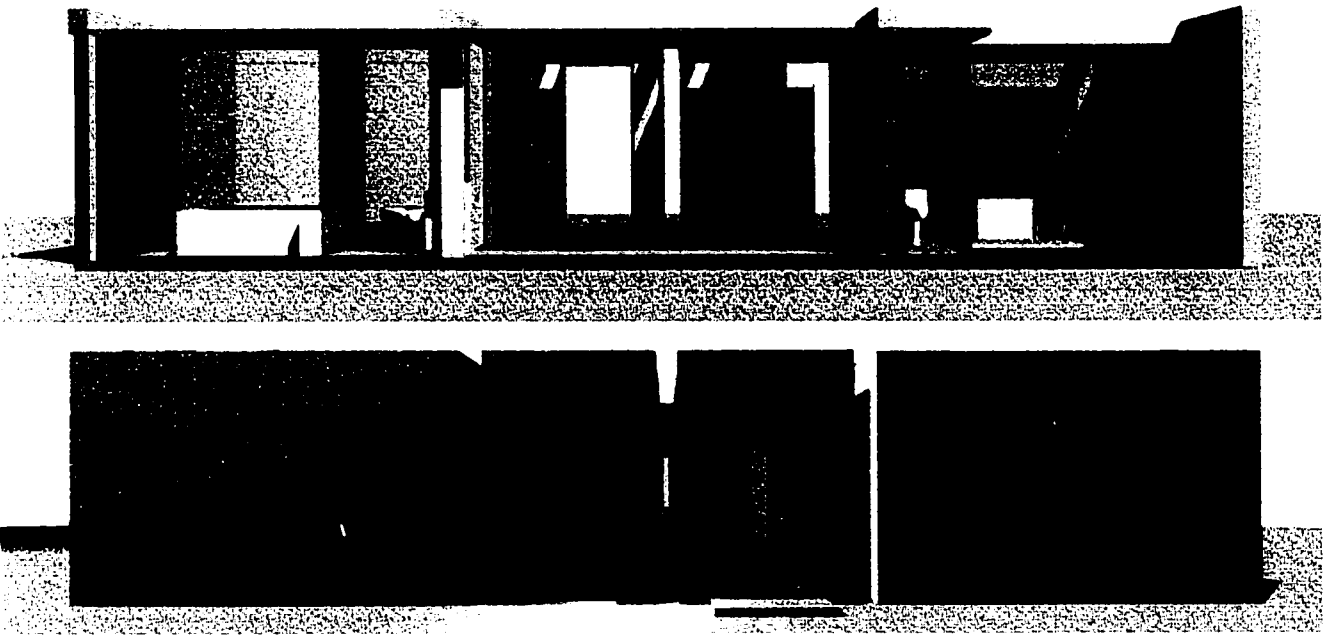


□**House Two** continues the permutations of **House One**: the big square containing the nine-grid splits into two separate rectangular courtyards that are connected and penetrated by continuous glass panels in the shape of a deformed glass cross. In **House Two** the nine-grid recedes and the walls dominate. This shift removes the ambiguity of **House One**. There is a residue of the nine-grid kept here; the negative column is evidenced by a gap in the wall. A new pair of opposing factors takes the place of the previous dialogue between walls and columns. The positive concrete walls enclose the courtyards and the negative glass-panel walls cut out gaps along the edge of the cross. The gaps effectively create a sequence inside **House Two**: outdoor, indoor, outdoor, indoor, outdoor. All doors and windows are shaped as identical closets. These closets break through the walls, stand in the gaps, and establish the only form of access. The glass panels vary in degrees of transparency determined by differing the needs of privacy. Altogether **House Two** is defined by linear logic.□The program complies with traditional Chinese urban ideology: the courtyard provides a setting for privacy and the alley (the narrow space between courtyards) a stage for the public life<sup>4</sup>. While the two longitudinal courtyards catch the two horizontal arms of the “cross” and enclose the private functions, the remains of the “cross” act as a catwalk where the public life occurs. **House Two** combines the traditional Chinese neighborhood, which consists of courtyards and alleys, into one house.

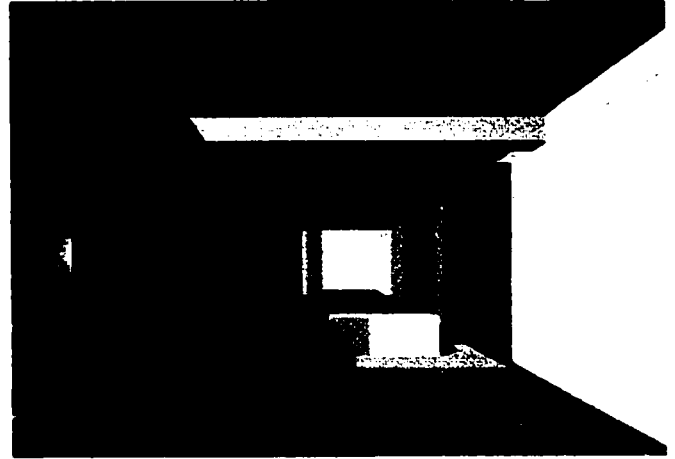
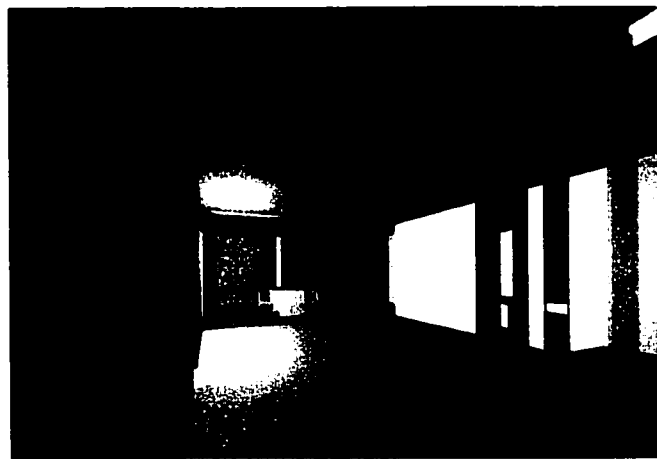
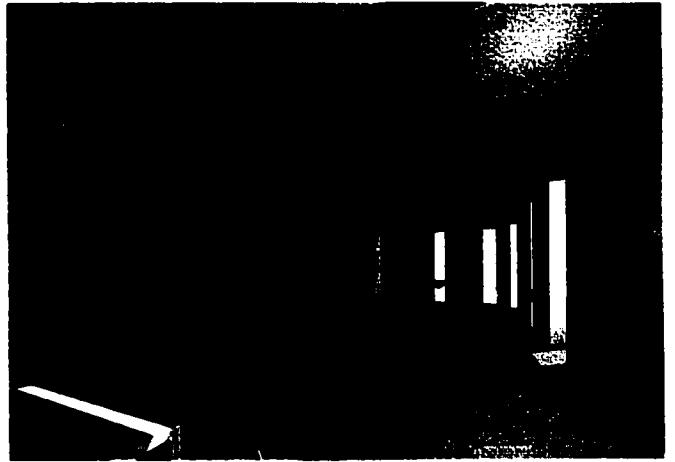
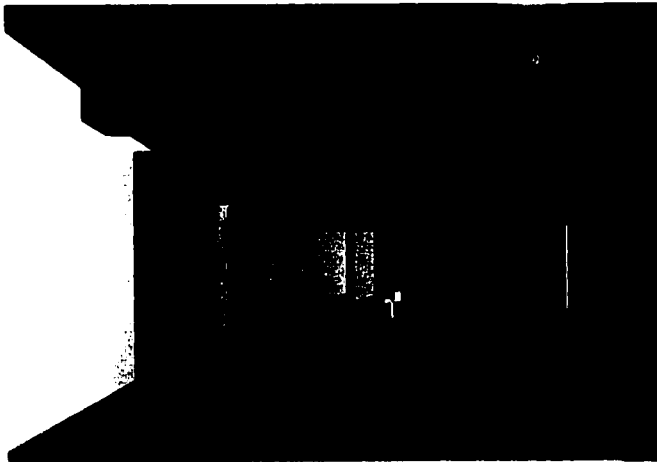




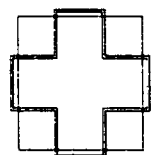


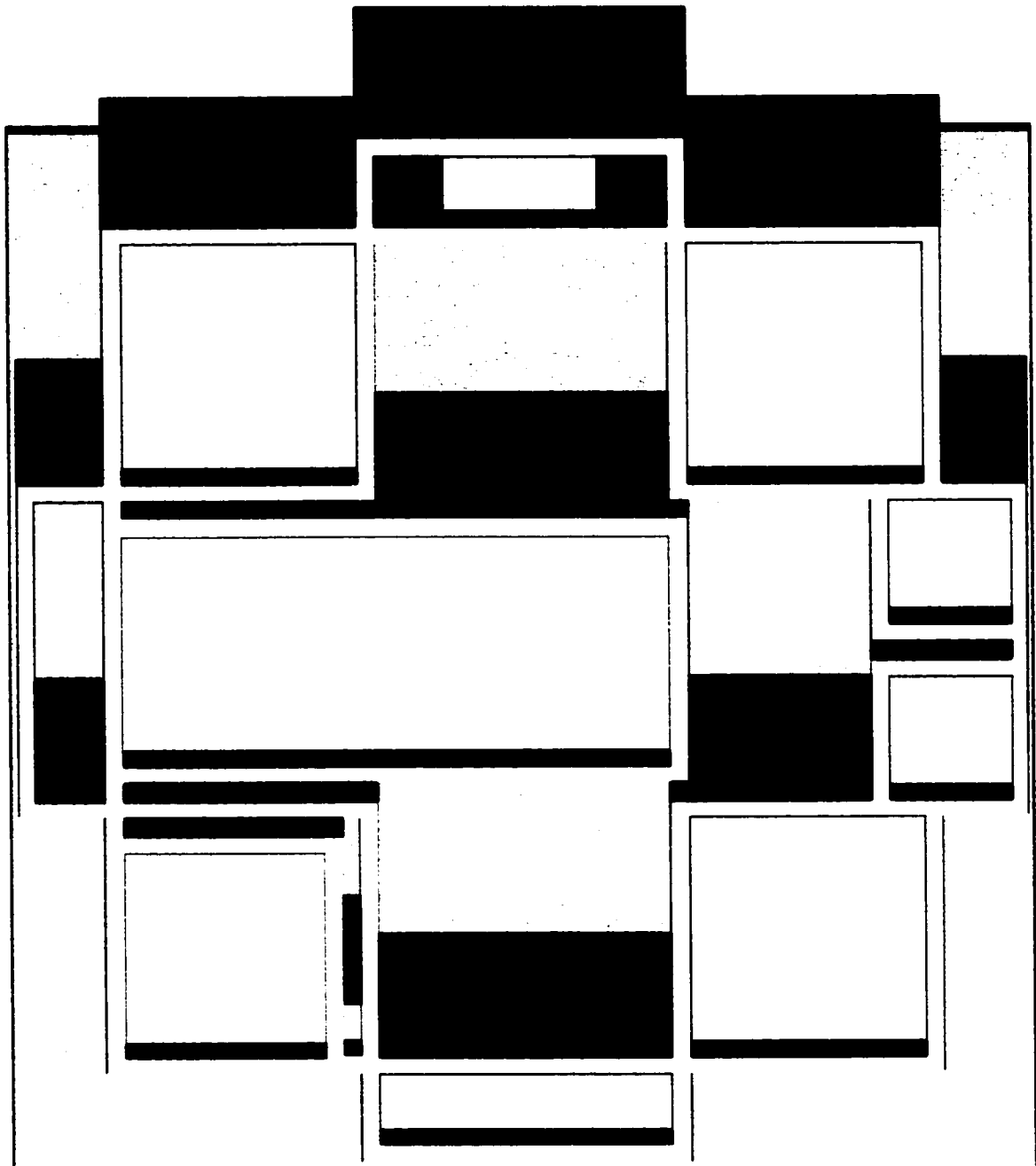


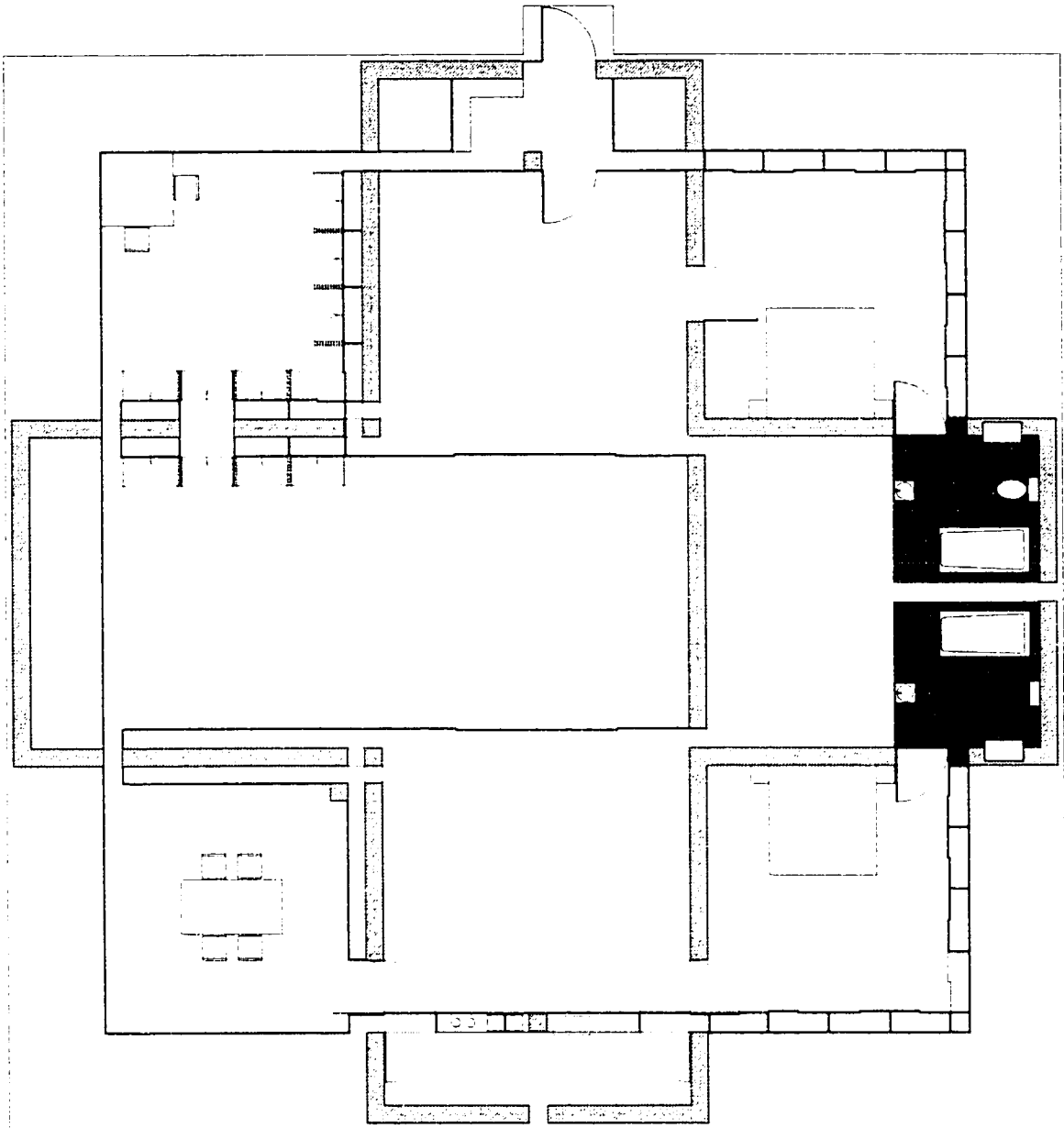




□**House Three** is an inverse of **House Two** in terms of the relationship between the cross and the courtyard. The cross is defined as positive by an enclosing concrete wall whereas the big square takes the negative form and is enclosed by a double glass wall. By superimposing the square onto the cross the nine-grid reappears. The sequence of indoor, outdoor, indoor, outdoor, indoor rules the spatial divisions inside the cross. It echoes the sequence in **House Two**. □Attaching to the same nine-grid system, the program of **House Three** is exactly the same as **House One** whereas the spatial experience is so different from it after two permutations.□

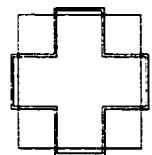


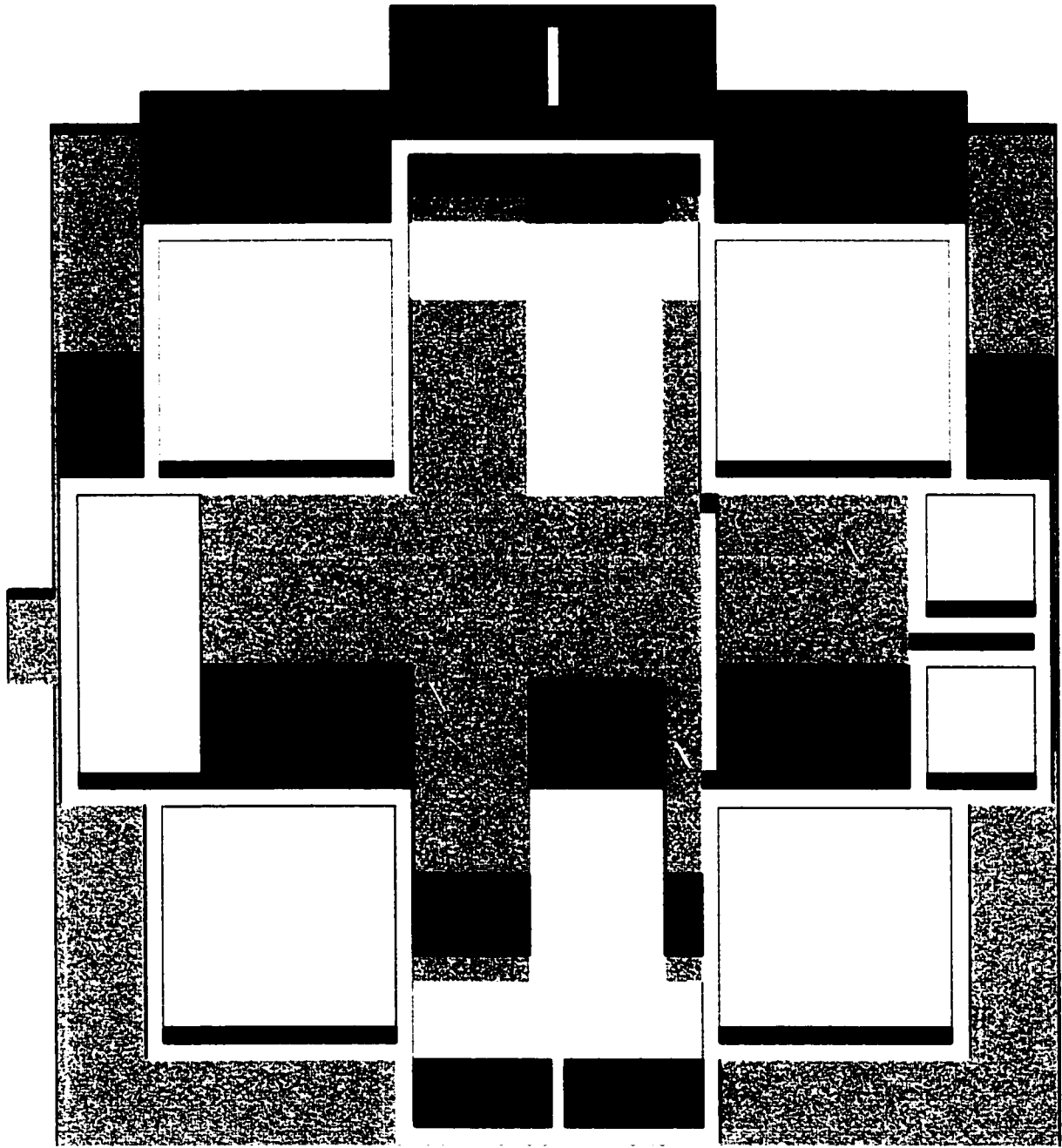


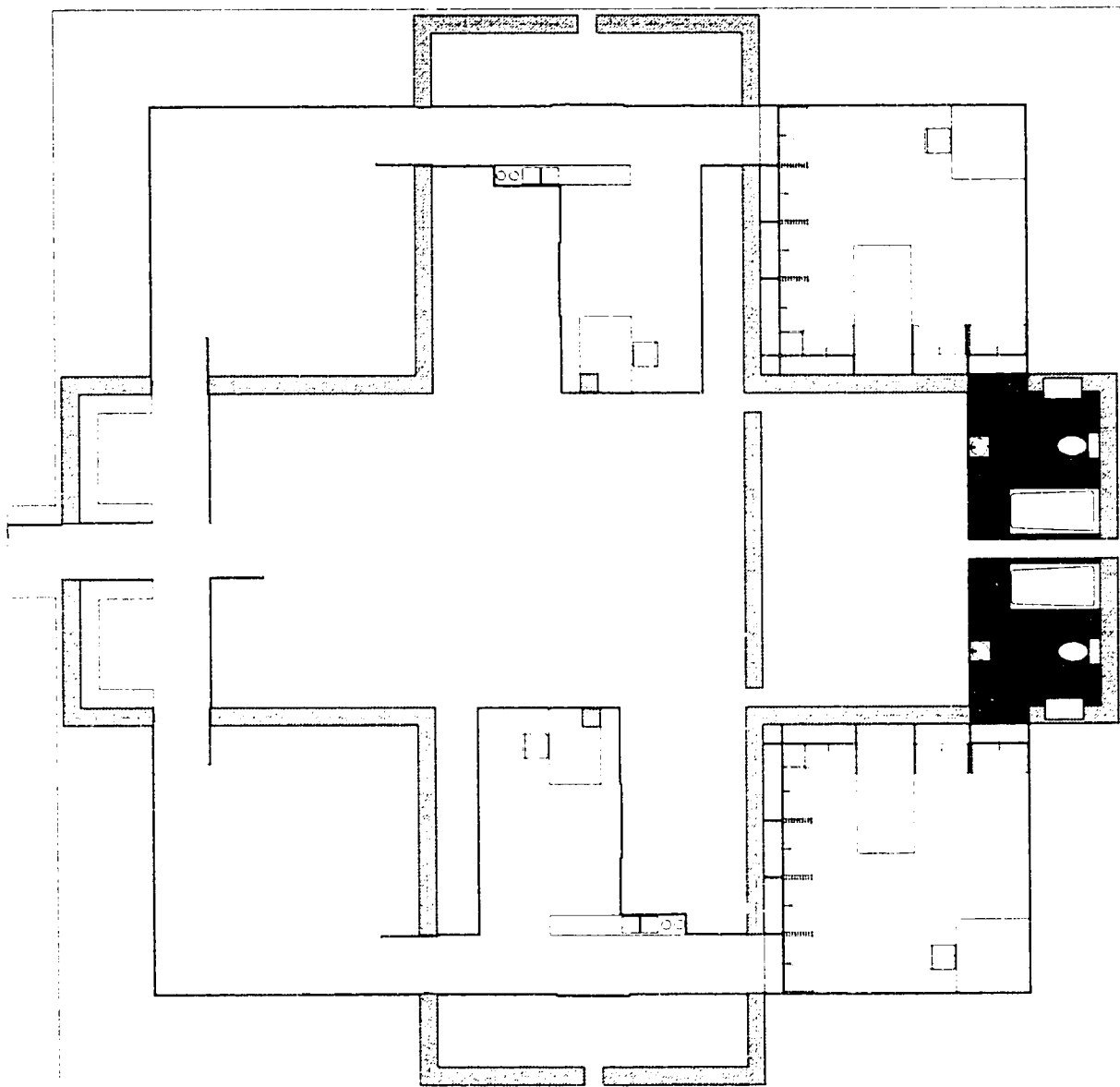


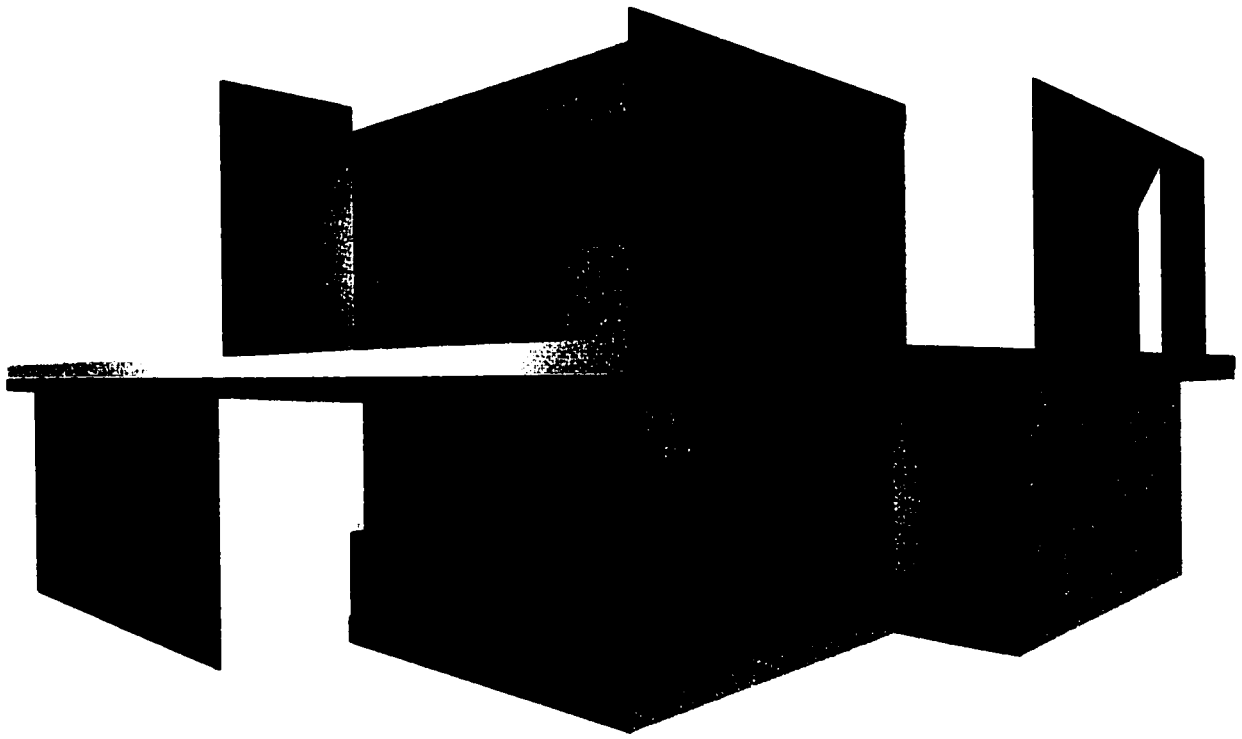
□ **House Four** inverts the sequence of spatial divisions inside the cross of **House Three**.

□ A different program occupies **House Four** that consists of two mirrored living units. The host and hostess live in their separate units yet the architecture provides plenty of opportunities to greet each other inside the house. In contrast to **House Two** which represents of traditional Chinese urban ideology, **House Four** incorporates a western ideology of housing, if it can be considered as such, within the slightly changed configuration of **House Three**. □

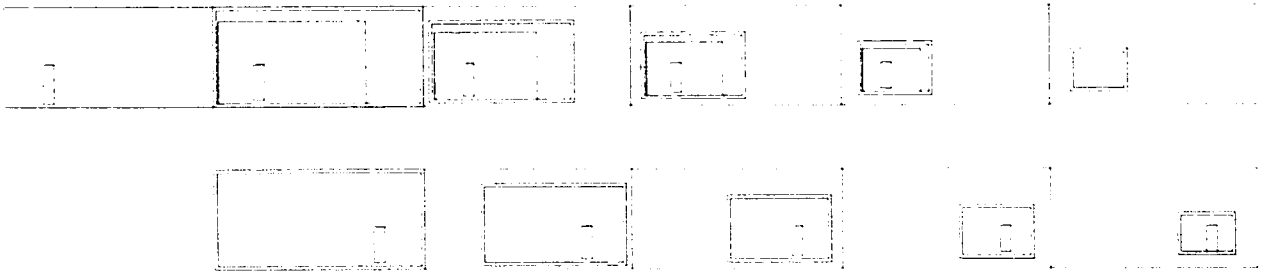
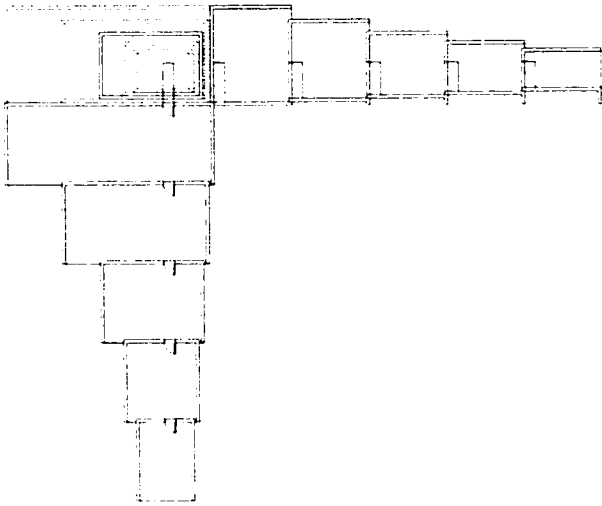




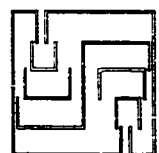


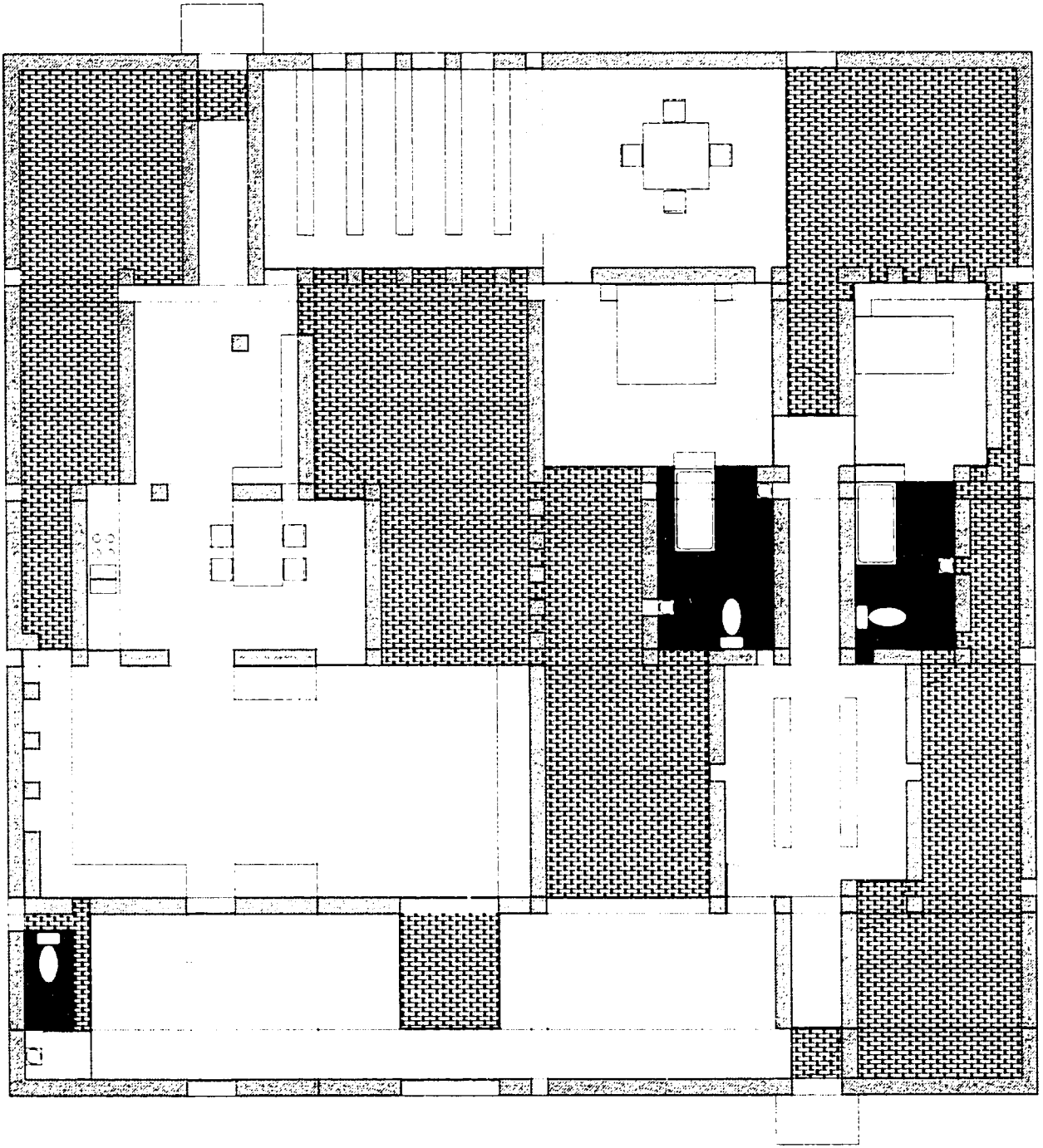


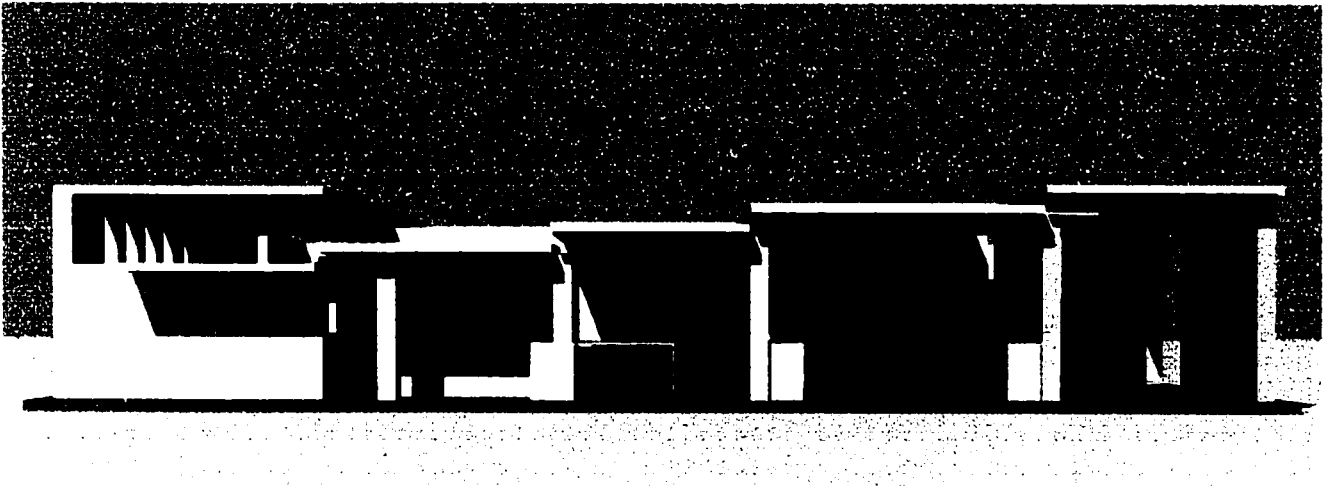




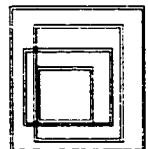
□ **House Five** starts with the comparison of a *Chinese courtyard house*<sup>5</sup> with a **Telescope House**<sup>6</sup>. Both houses share the character of the processional axis. In the Chinese courtyard, the word "*jin*" defined a gradual access, yard to yard, from the most public space into the most private space.<sup>7</sup> A similar vector exists in the **Telescope House** connecting units of identical shapes, which gradually change scales. □ A parable about the *Molbius Circle*<sup>8</sup> of two snakes biting one another's tail, trying to swallow each other inspires me to confine two telescope houses within a courtyard. The two single-directions continue one by one and end up moving in a *Molbius circle*. The "*jin*" steps indoors from room to room by increasing or decreasing privacy depending on the direction of travel. However, the interplay of figure and ground, the surrounding and surrounded of the indoor and outdoor spaces within one courtyard, disturbs the clockwise or anti-clockwise sequence in the circle. The openings and gaps in walls always offer the chance to face the other telescope within the courtyard. The dialogue between indoor and outdoor spaces overcomes the impulse to circle inside the telescopes. □ **House Five** frees itself from the scheme of the nine-grid but continues the play of ambivalent forces-the ambiguity, which lies in the challenging forces of the courtyard versus the telescope. □

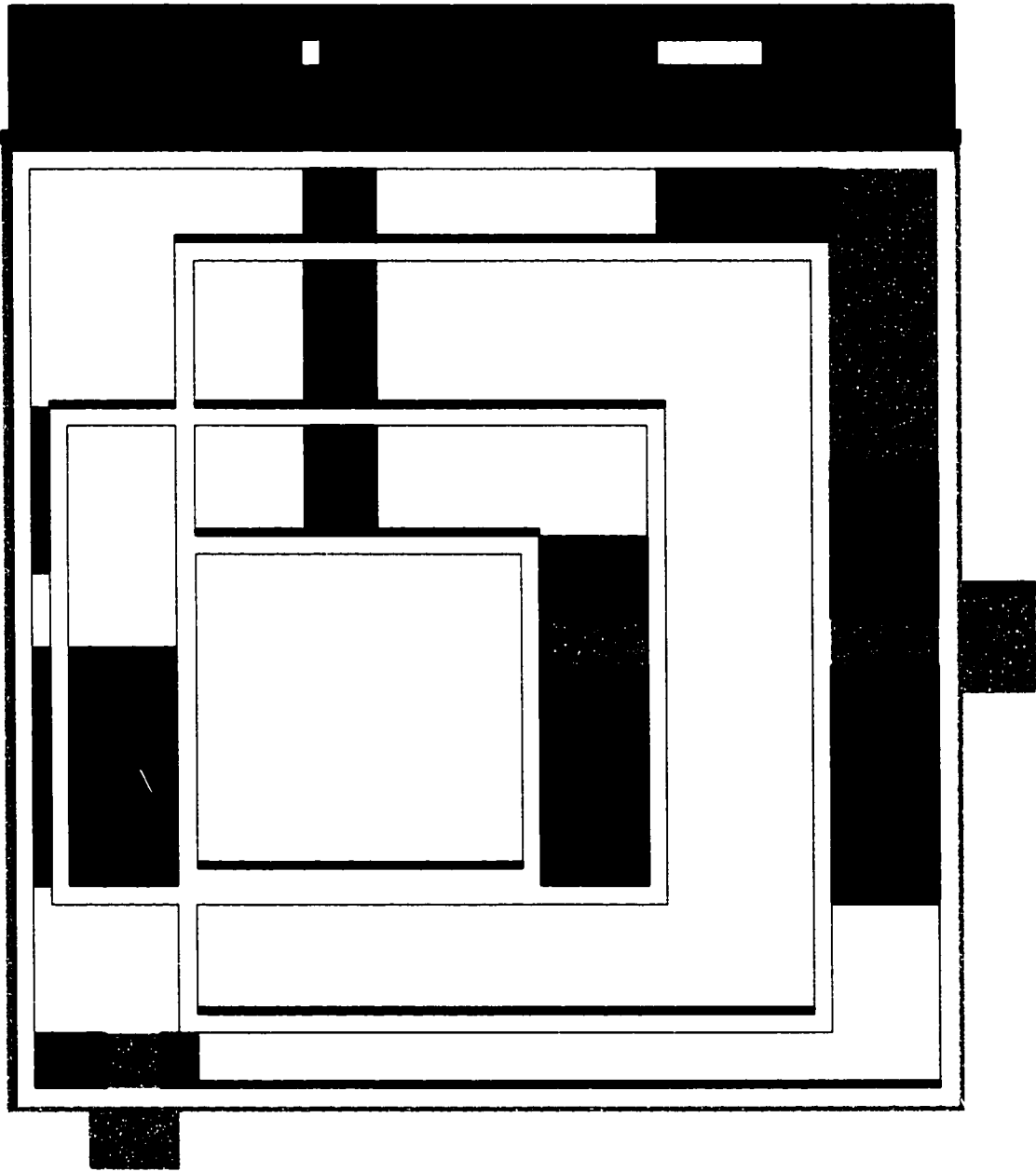


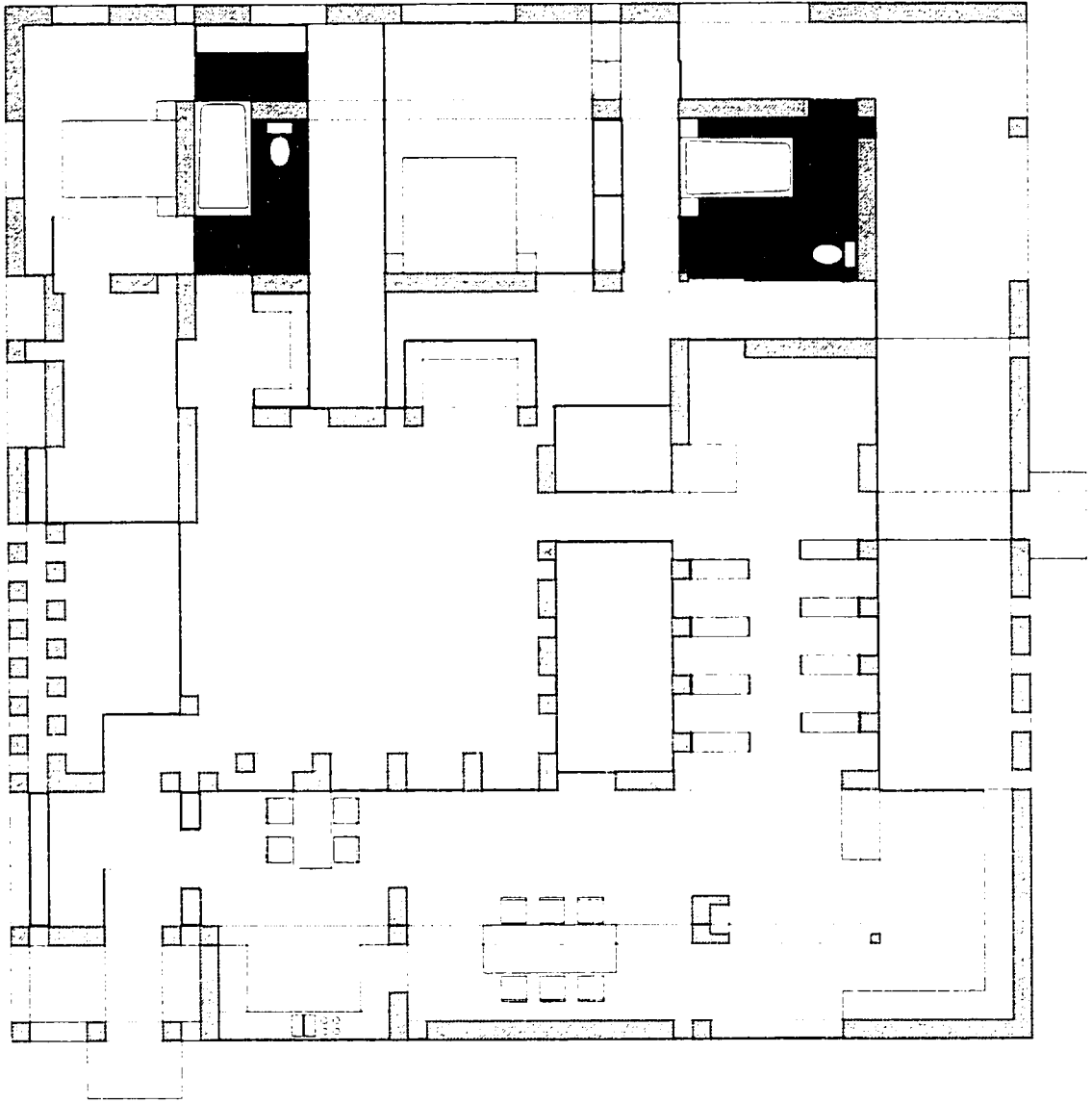




□ **House Six** is composed of four squares one nested inside the other. The idea of “*jin*” continues from **House Five**, exists here one follows the shrinking “rings” from the outer to the inner, instead of the linear path shown in the **Telescope House**. The plan of **House Six** derived from overlapping elevations and sections of the **Telescope House**. The dwelling program encircles the central square. The program also penetrates and permeates the layers of walls in every direction. Recalling **House One**, the center shifts when moving inside the house. This shifting is due to the relative uncertain locations of the four squares, which do not share the same center. More complicated than **House One**, **House Six**’s interplay between walls and columns is not only along one continuous surface, but also determined by the relationship between layers. □ The discovered language continues, keeping its grammar while changing contexts. □











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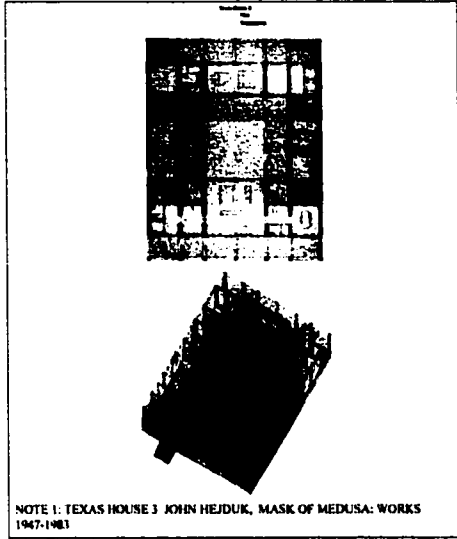
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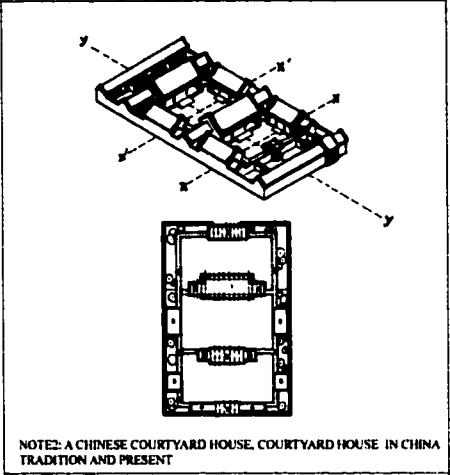
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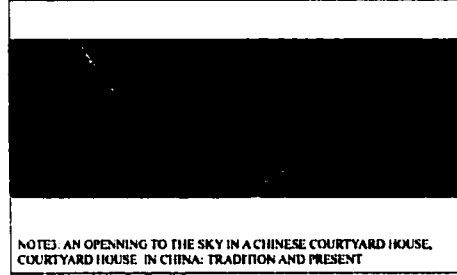
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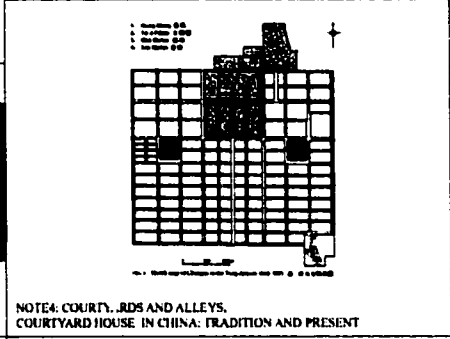
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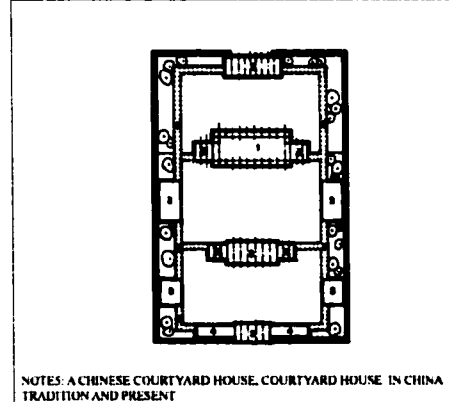
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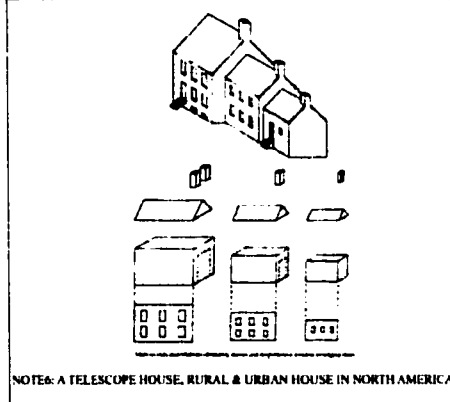
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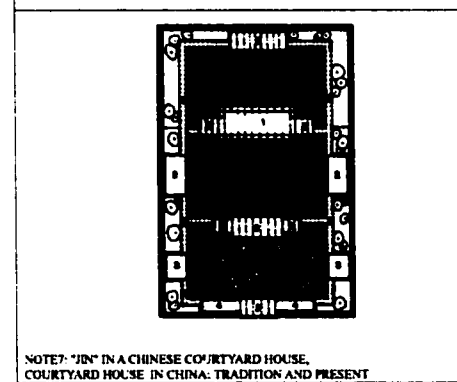
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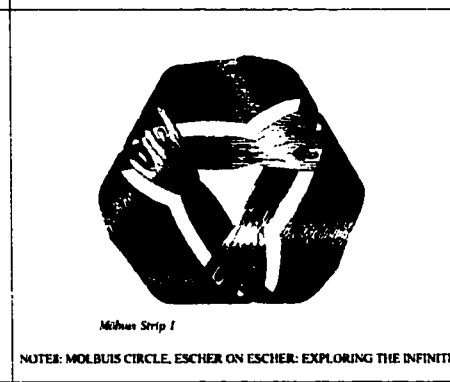
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