

# SUBURBAN HOUSING LIVING BETWEEN WALLS

by

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Thesis submitted to the Faculty of the  
Virginia Polytechnic Institute & State University  
Washington Alexandria Architecture Consortium  
in partial fulfillment of the requirements for the degree of

## MASTER OF ARCHITECTURE

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June 1996 Alexandria, Virginia

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## ABSTRACT

The site, located in Alexandria, Virginia, is three acres and bounded by a road to the north, existing single family homes to the east and west, and a wooded area to the south. The slope falls away from the road and there is a swale running down the center of the site. The site strategy has three elements. The first is a private drive running along the western site boundary which will allow access to all six dwellings. Large site walls, dividing the site for each dwelling, comprise the second element. The third element is building walls set perpendicular to the site walls which begin to establish each dwelling.

Following the site strategy, the dwellings are composed of three basic areas. The public side includes a carport which is set close to the drive, and along side of it the beginning of the major axis leading through each dwelling. The dwelling itself exists in the space created by the walls established upon the site. The living rooms are composed of indoor and outdoor space separated by large glass walls set into and between building walls. On the private side outside rooms are established, between and beyond the frames created by the building walls, which terrace down the slope.

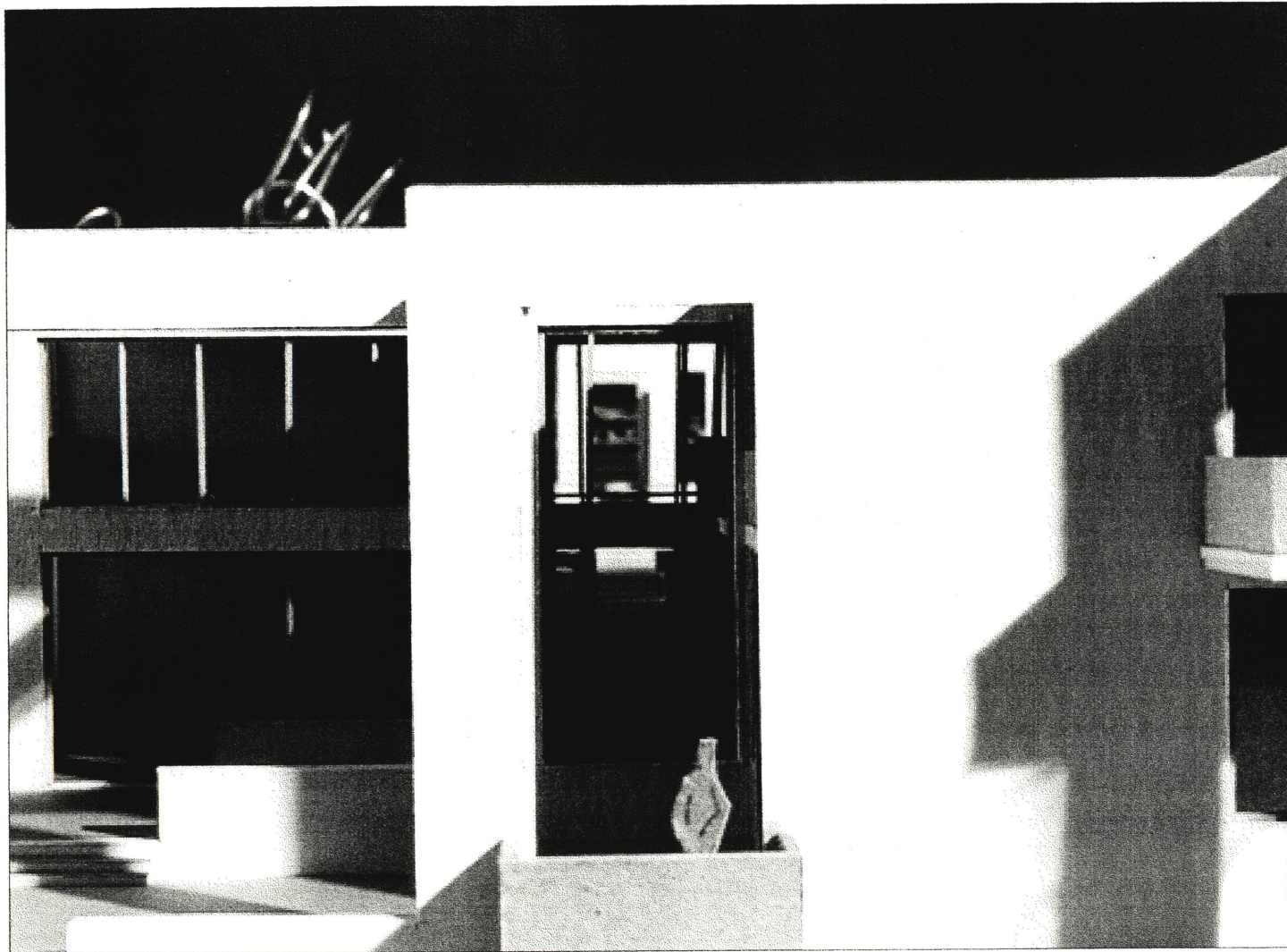
The materials, concrete masonry units and poured in place concrete are utilized as different building elements so the walls reveal their purpose through their form.

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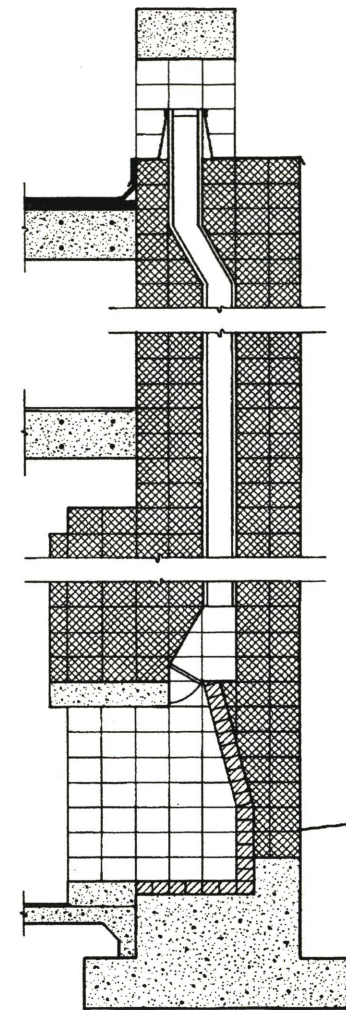
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Primary axis through dwelling



Section through masonry fireplace

## INTRODUCTION

Through the manipulation of site walls and building walls, their order and relationship to each other and their site, I will design a suburban residential prototype.

I will create:

Separation between public and private space.

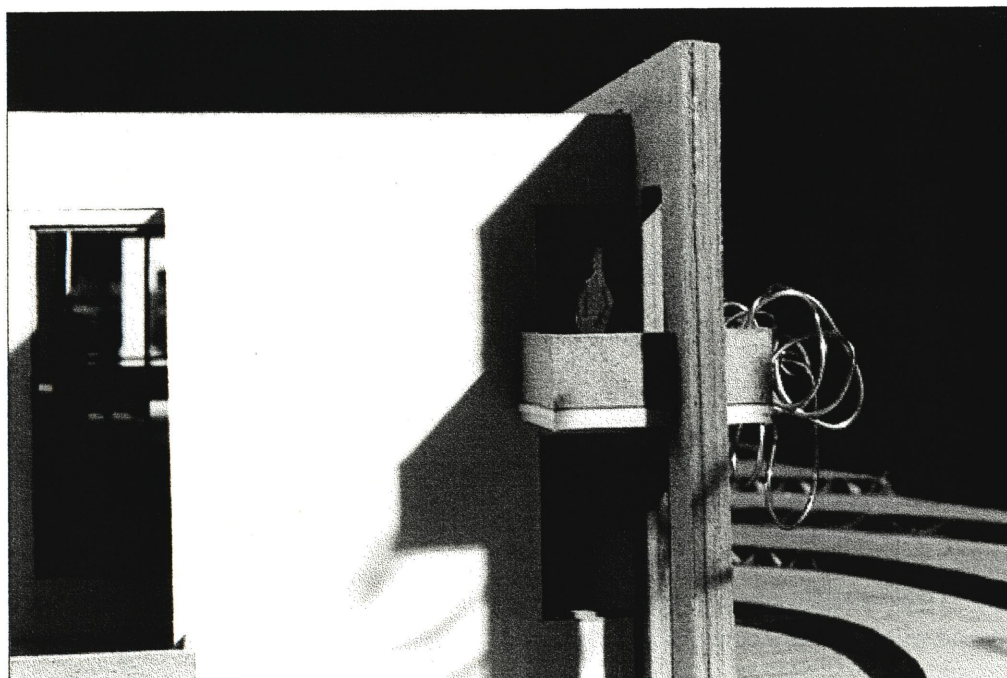
Defined places to dwell between and adjacent to the walls.

Separation from but awareness of adjacent dwellings.

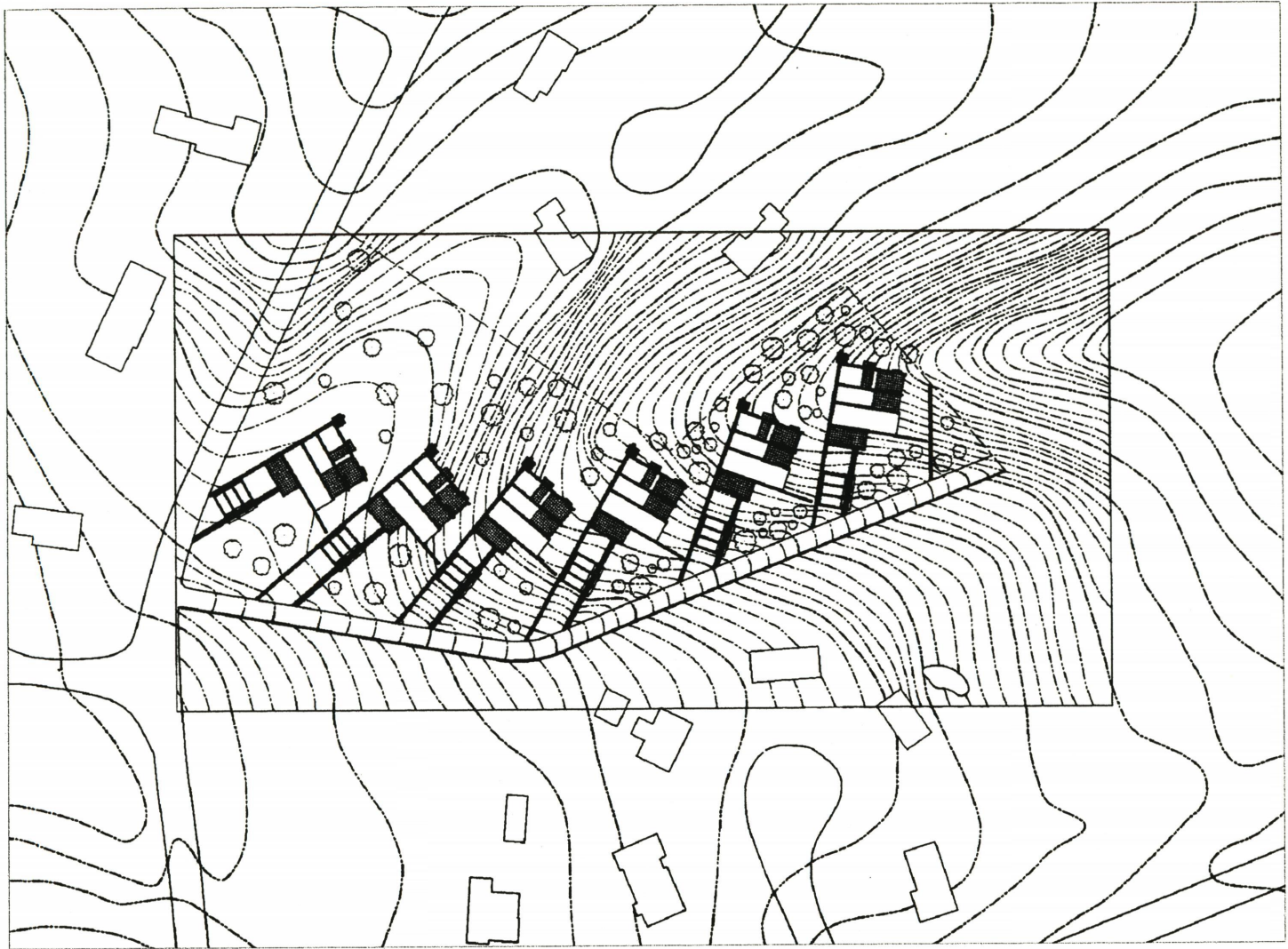
Sense of community and continuity amongst dwellings.

Increased density while maintaining privacy.

Continuity between inside and outside places.



Corner balcony @ north wall

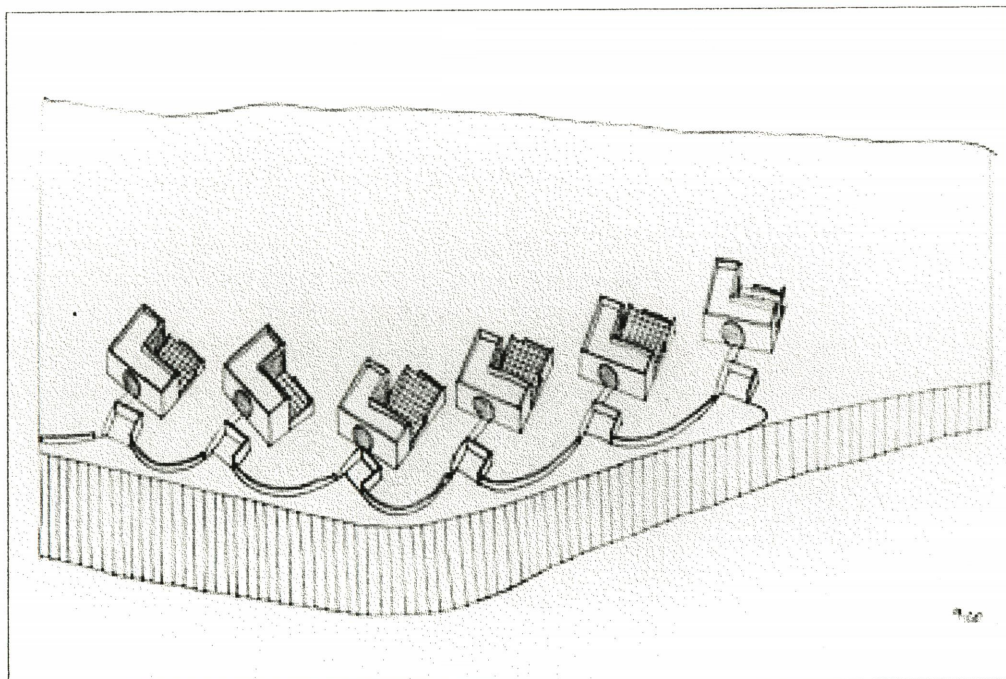


Site Plan

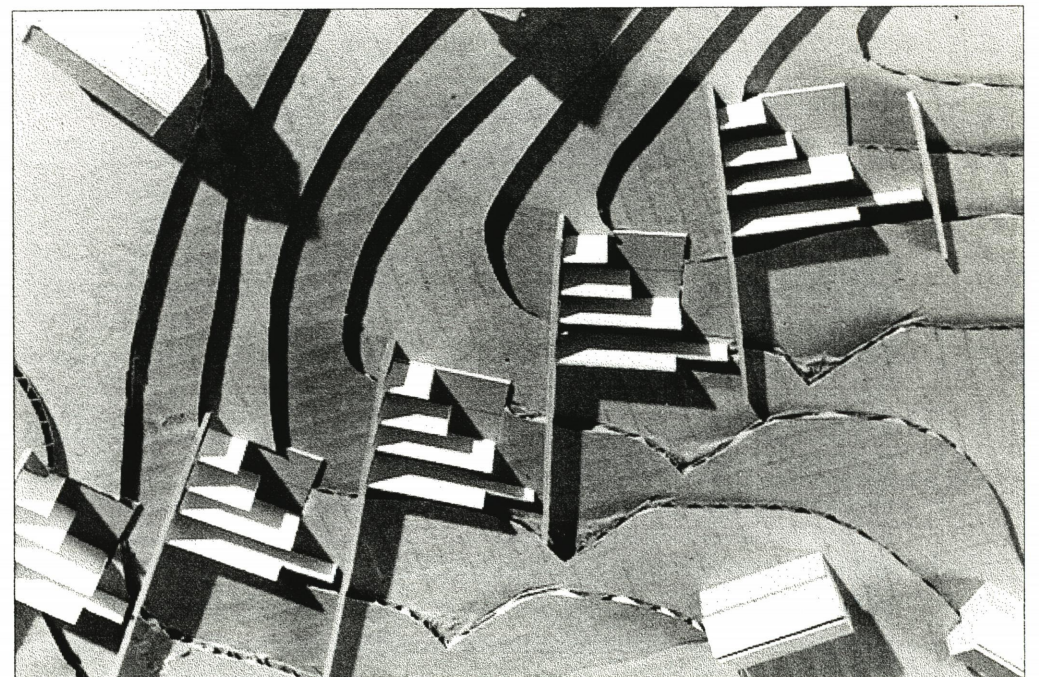
The site, located in Alexandria, Virginia has a distinctive slope of approximately eight percent, and becomes steeper, narrower and dense with trees as one travels away from the road. Each house is sited slightly askew from its neighbor and is oriented on the slope following the line of a swale that continues down the center of the site.

The variety of views offered by the building walls and the limited views through the site walls create open vistas while maintaining privacy.

## SITE

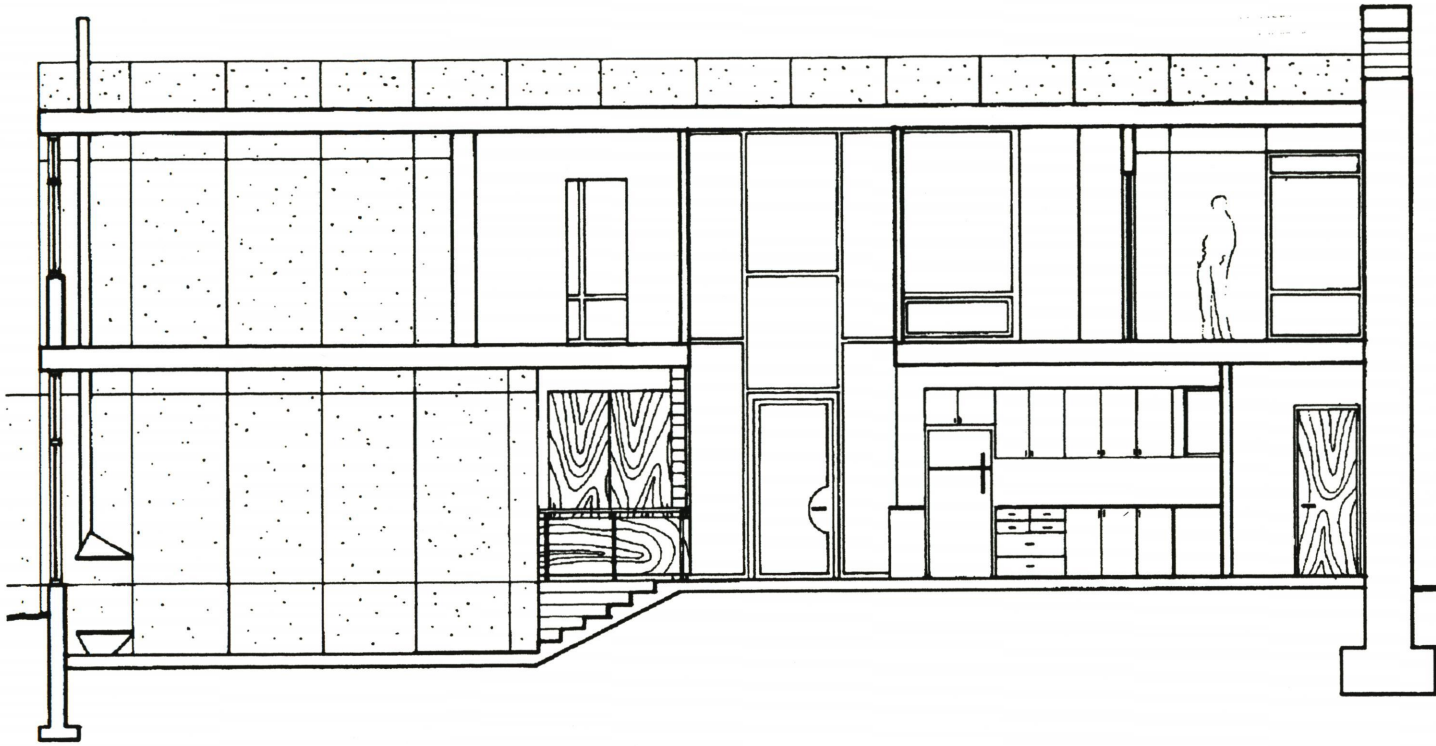


Preliminary axon sketch of site plan



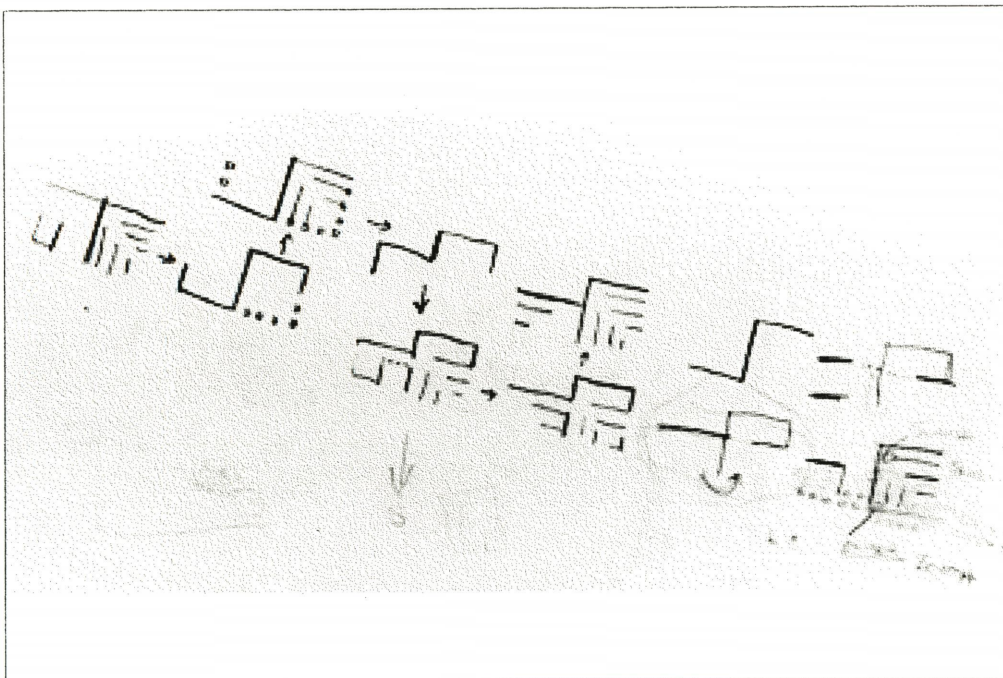
Site parti model

Through its evolution the parti went through many changes but in the end its form became even simpler than the original driving idea. Such a simple form of varying lengths of building walls placed perpendicular to the site walls created a variety of complex spaces when used to create dwellings. The introduction of openings, floors and walls also helped to make lively spaces in which to dwell.

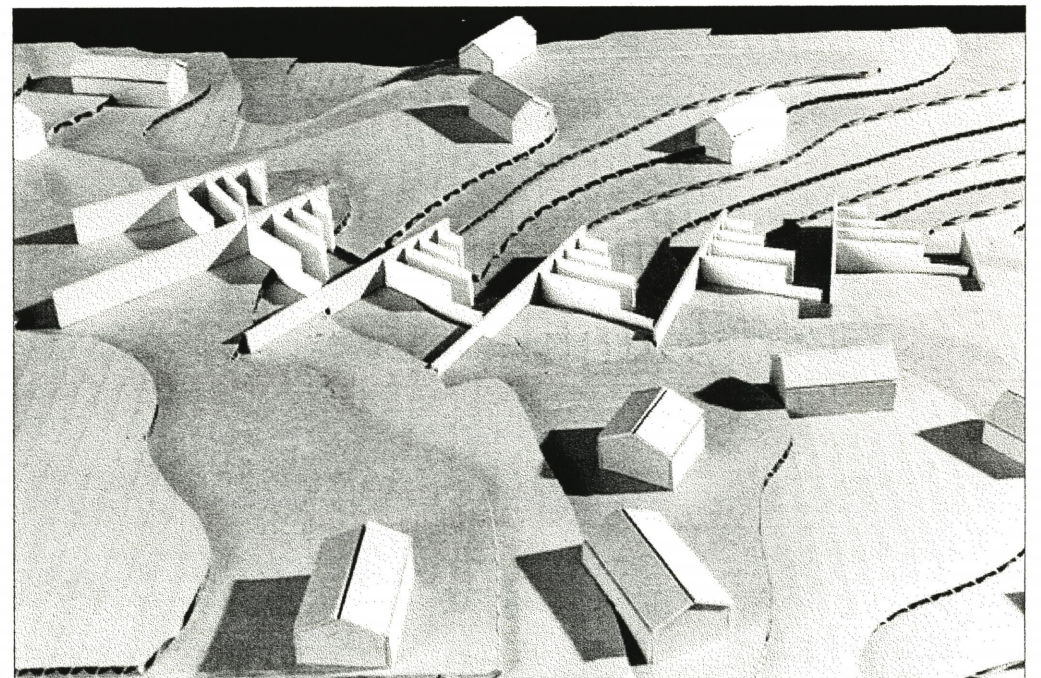


North / South building section

## EVOLUTION

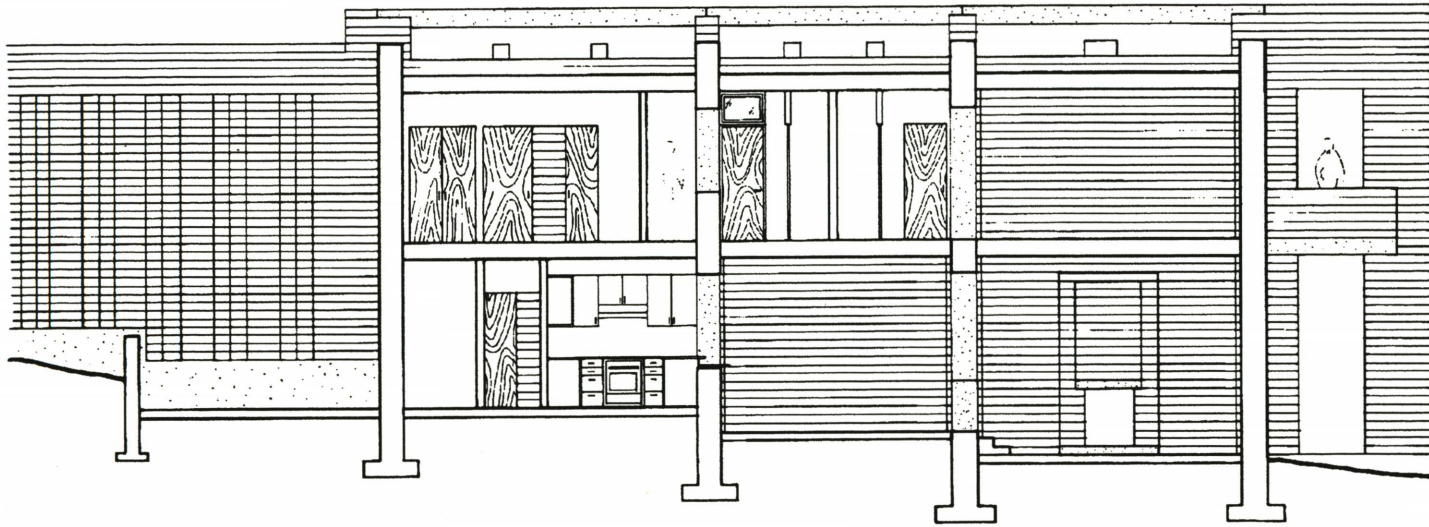


Preliminary parti development sketches

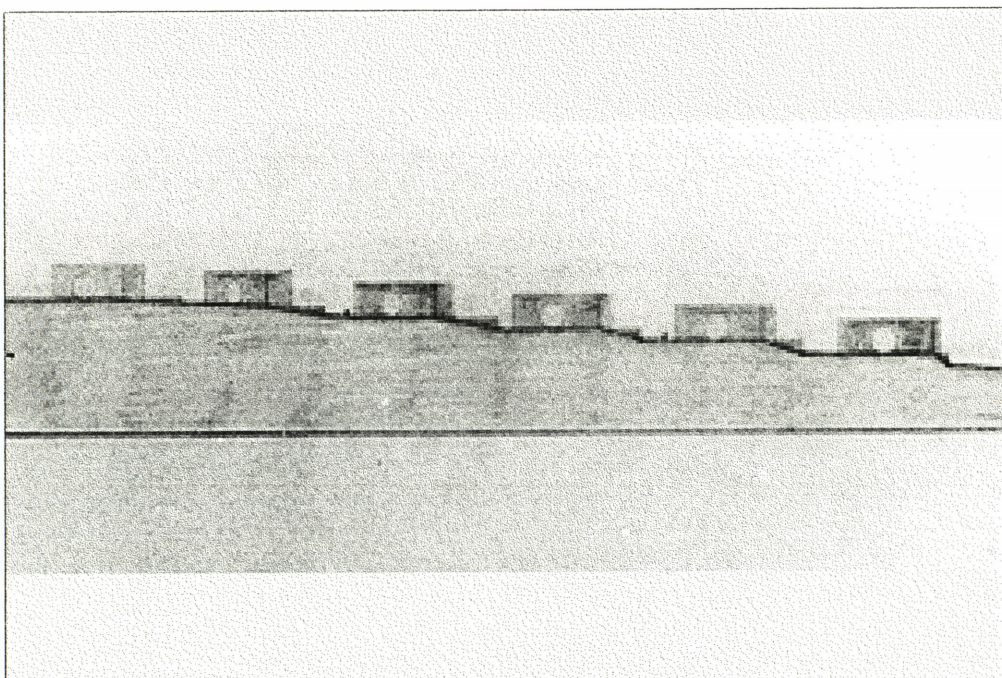


Site parti model @ west elevation

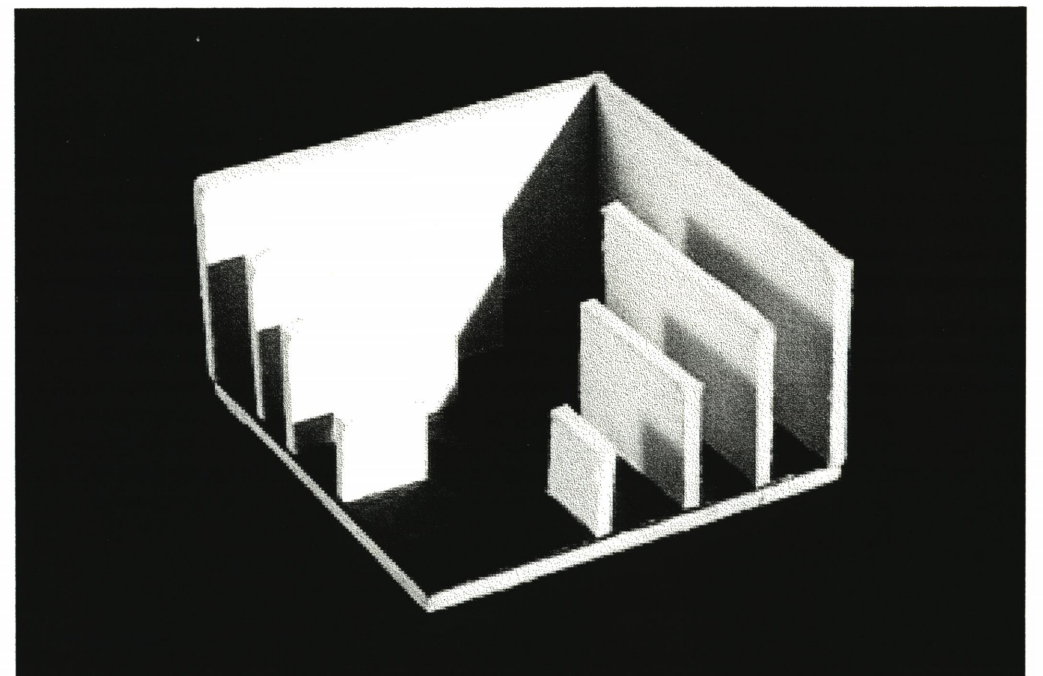
Each dwelling not only has level changes inside which define different rooms, they also march down the slope creating a variety of exterior spaces. Much of these level changes were derived from the preliminary parti model of a dwelling and it was assisted by combining it with such a significant slope.



East / West building section

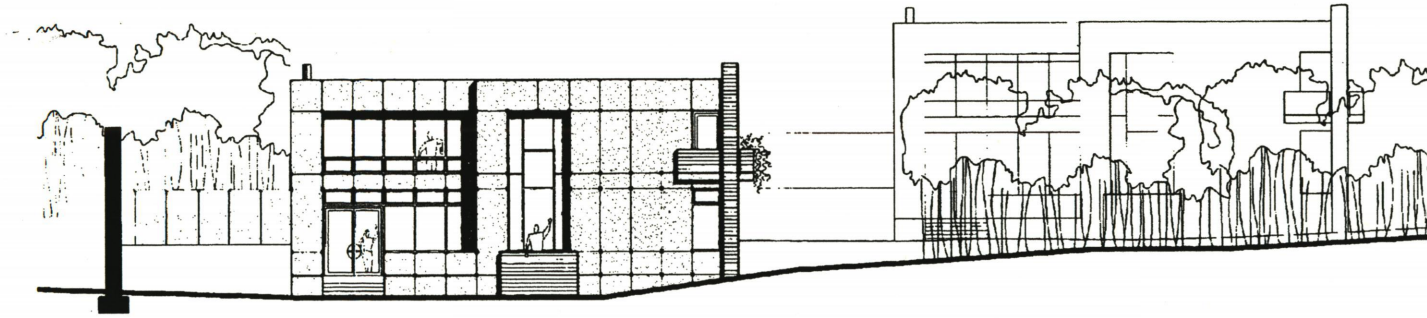


Preliminary axon / section through site



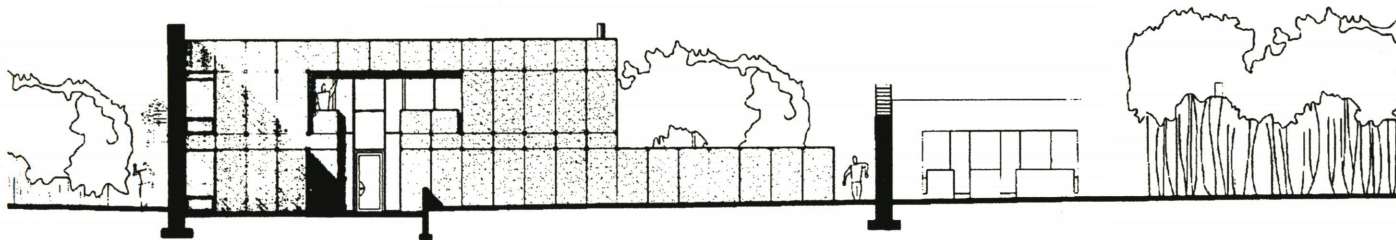
Parti model

PARTI



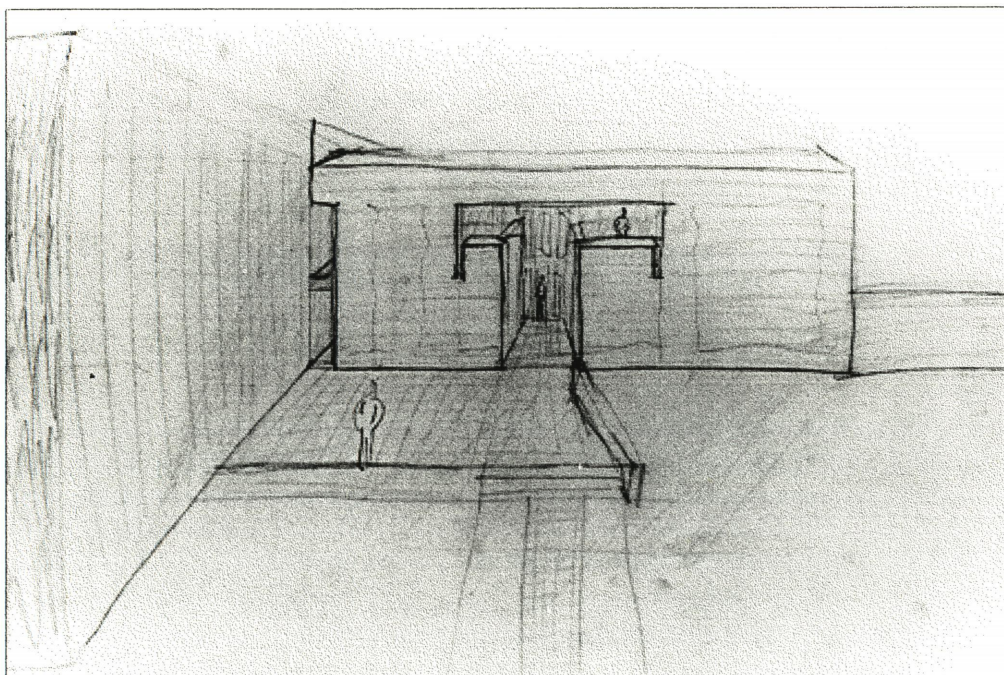
The west and east elevations illustrate dwelling simultaneously with public & private places and limited & generous views.

Upon arrival the entry draws the visitor through the west wall into the house along its primary axis which is the only clear opening through each dwelling. The end of each axis is punctuated with a balcony which extends through and beyond the final building wall.

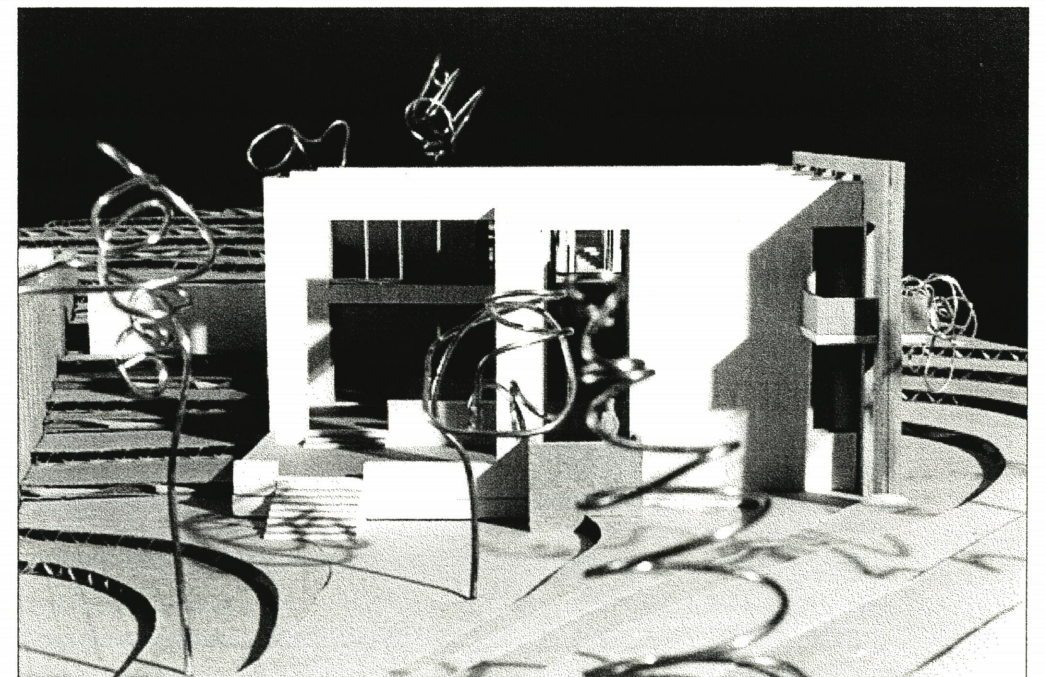


East & west elevations

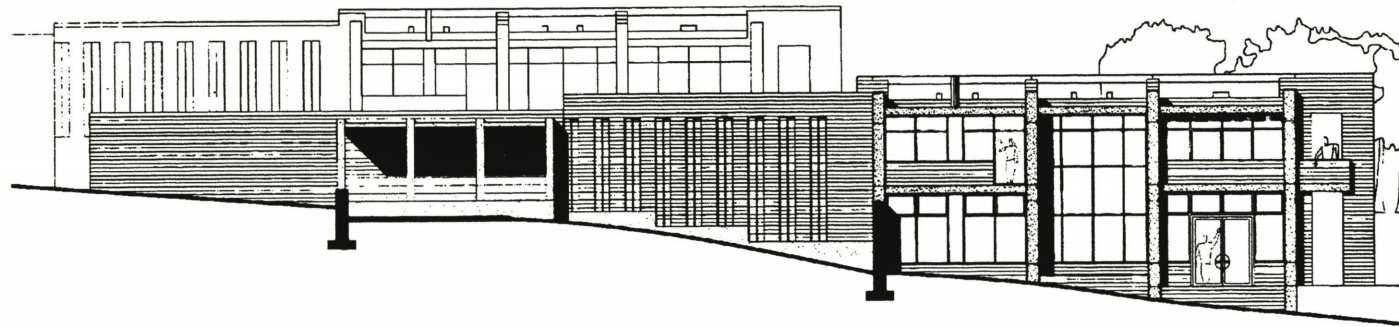
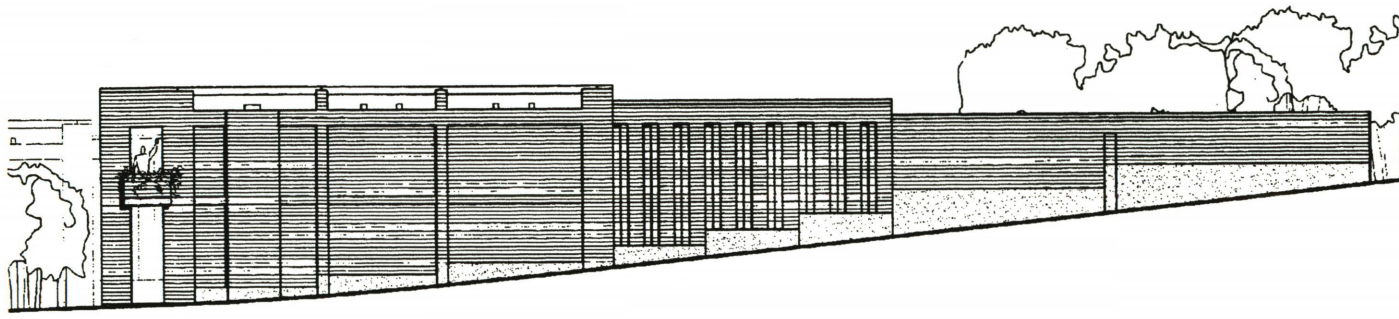
## ELEVATIONS



Perspective sketch of west elevation



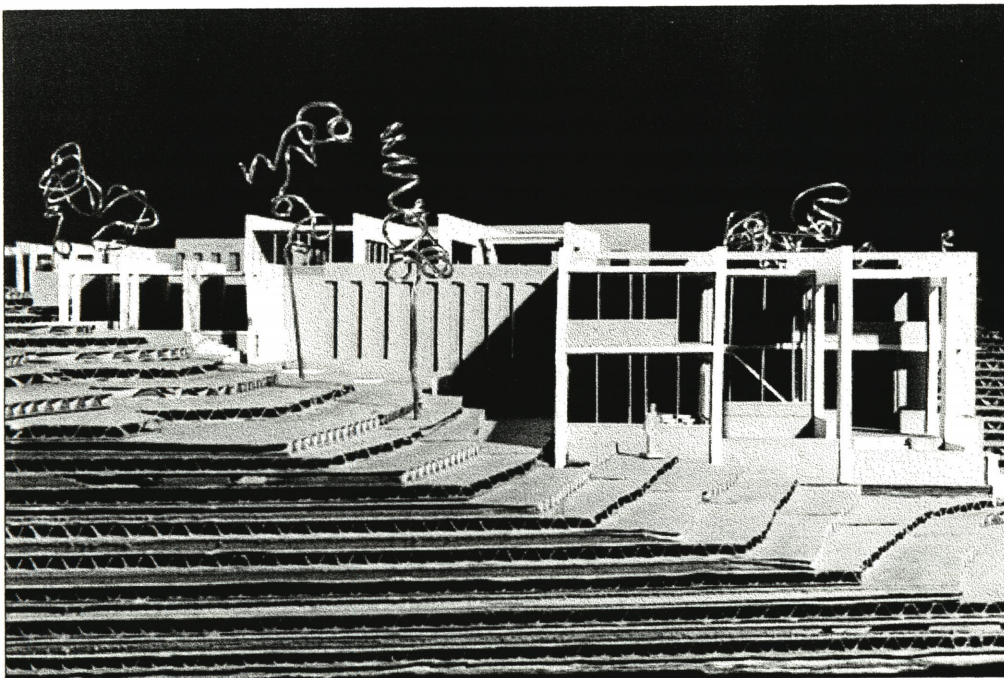
East elevation



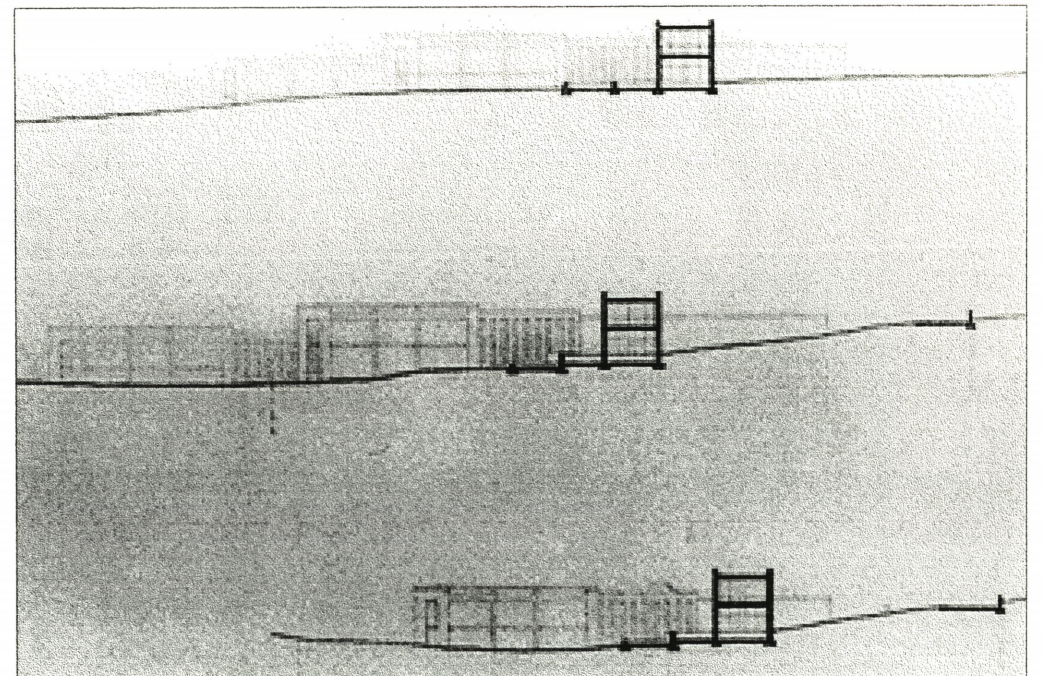
North & south elevations

The south facade is the most transparent. This elevation clearly contrasts the opacity of the site wall and the defined openings of the building walls with the majority of the dwelling's enclosure created by aluminum and glass. The neighboring site wall allows such an open facade to also keep its privacy. At no time are neighbors able to have a direct view into each other's homes unless the effort is made to step outside on the second floor balcony and pass through the site wall.

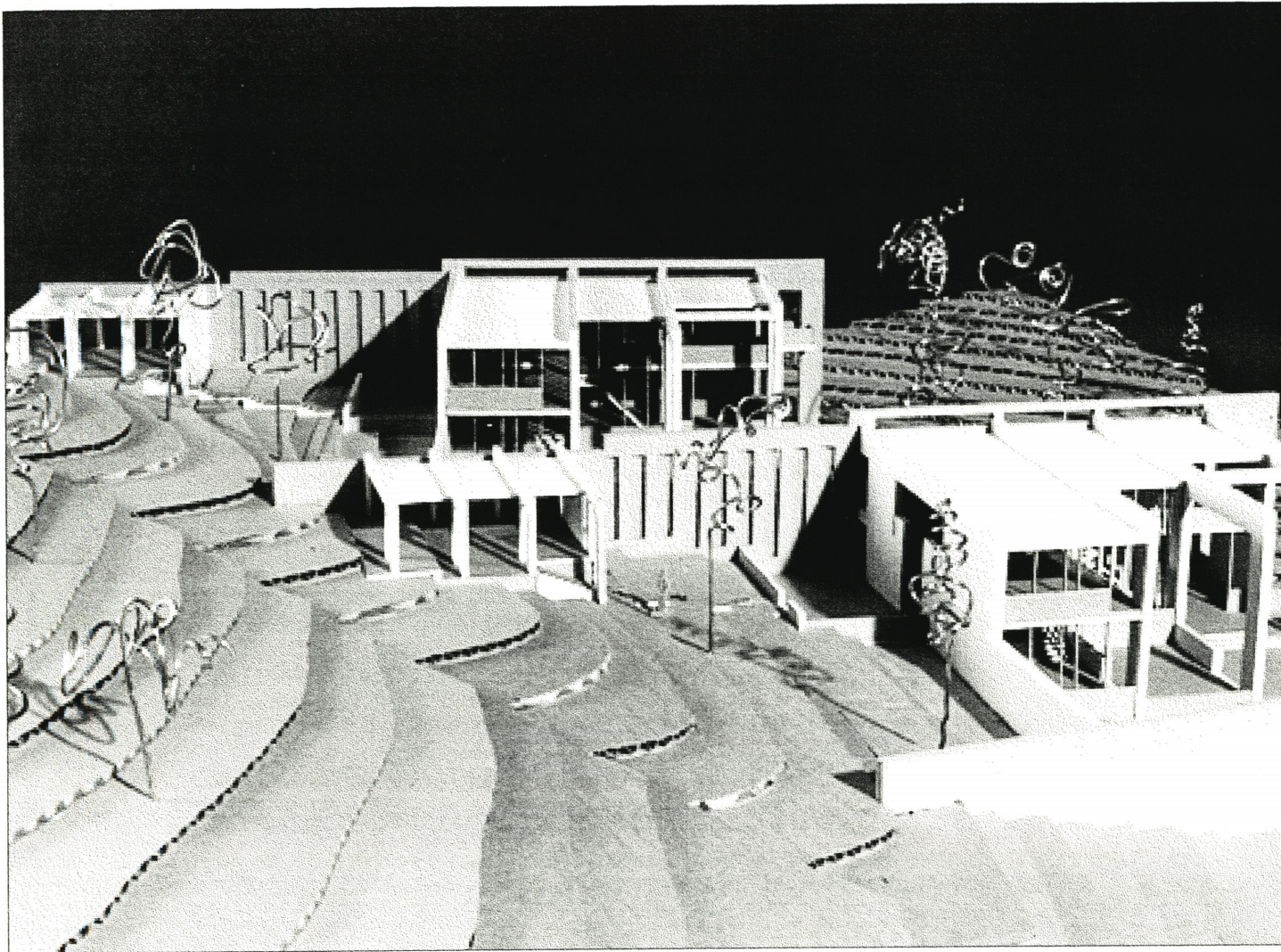
## ELEVATIONS



South elevation



Preliminary section elevations

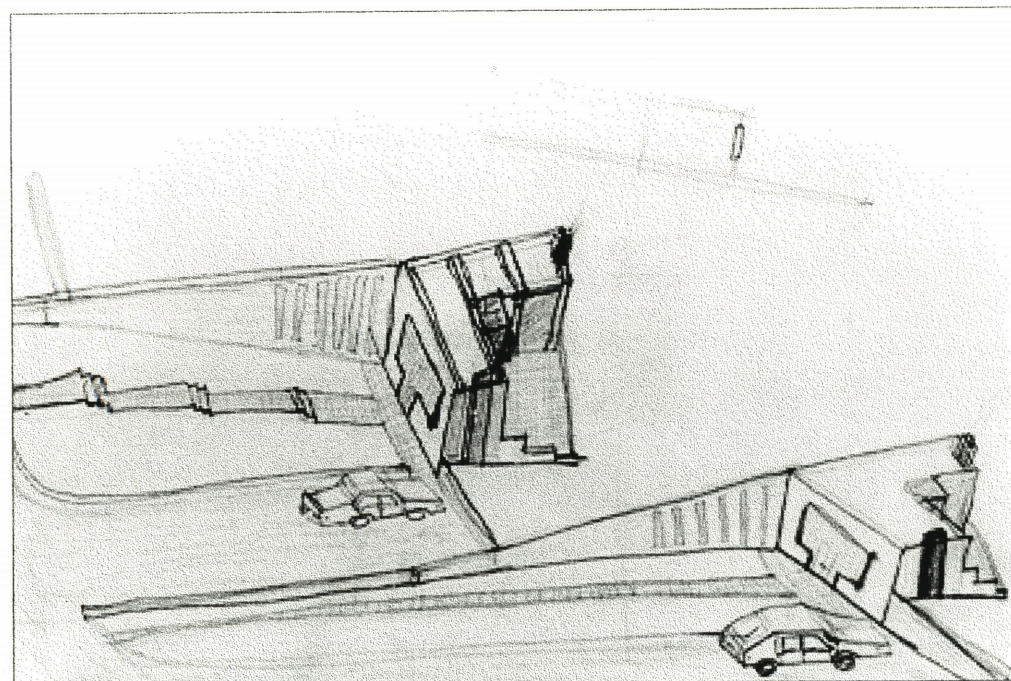


South elevations



Primary axis

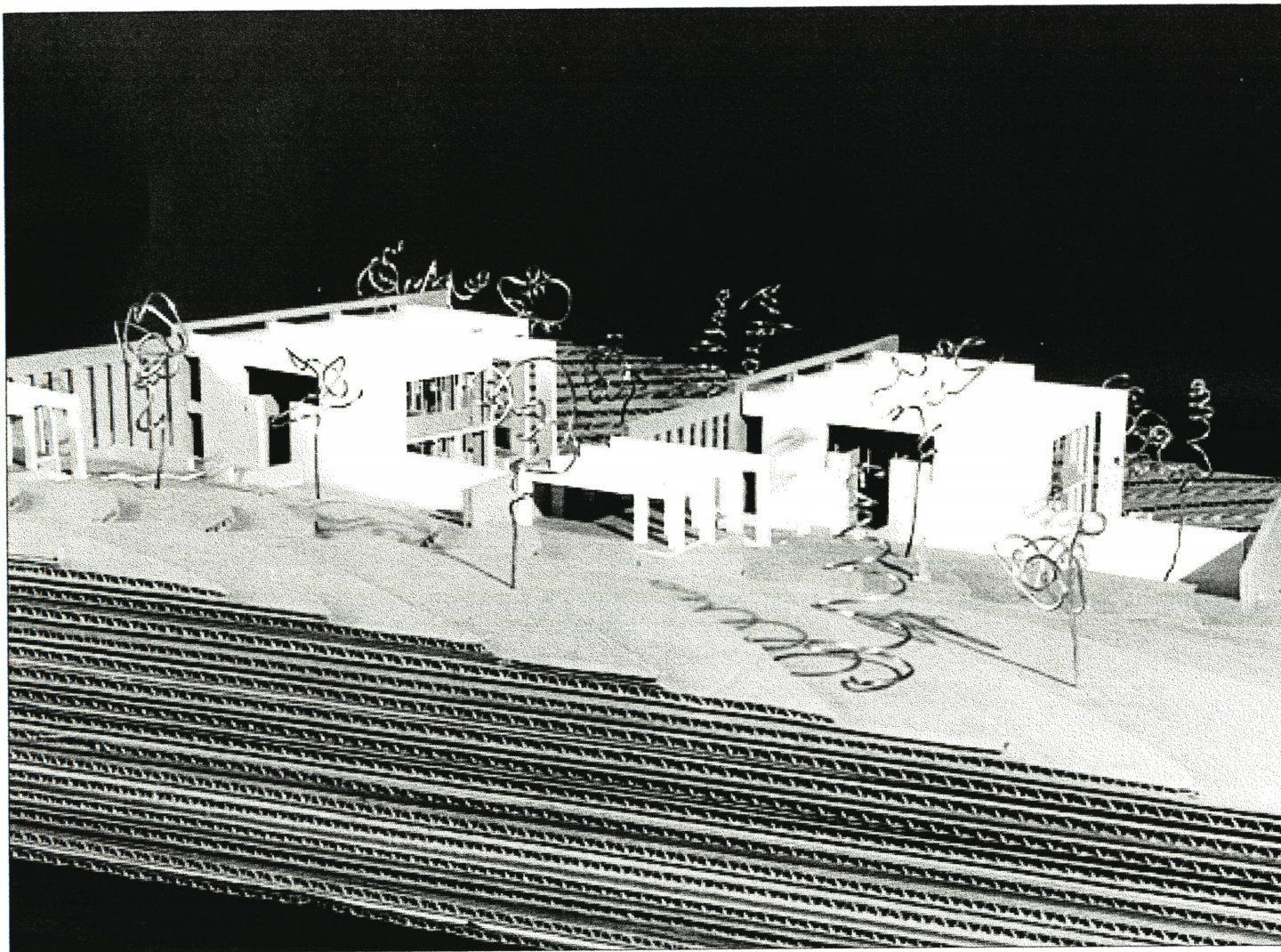
## AUTOMOBILE



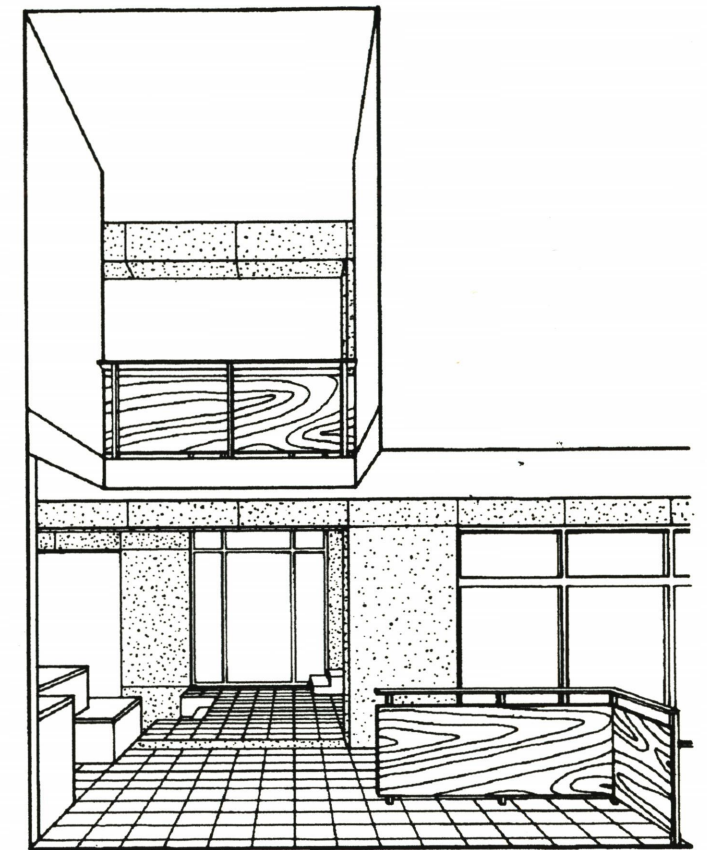
Preliminary perspective sketch

The relationship between the car and the dwelling was an important concern. The place to keep a car began as a traditional driveway close to the front door, and became a detached structure mimicking a small version of the dwelling and its relationship to the site wall.

The pedestrian path to the entrance is adjacent to the carport, but the places for car and pedestrian are clearly separate. The path is an extension of the primary axis of each dwelling which begins at the road, passes through the front door and ends in a balcony in the final building wall.



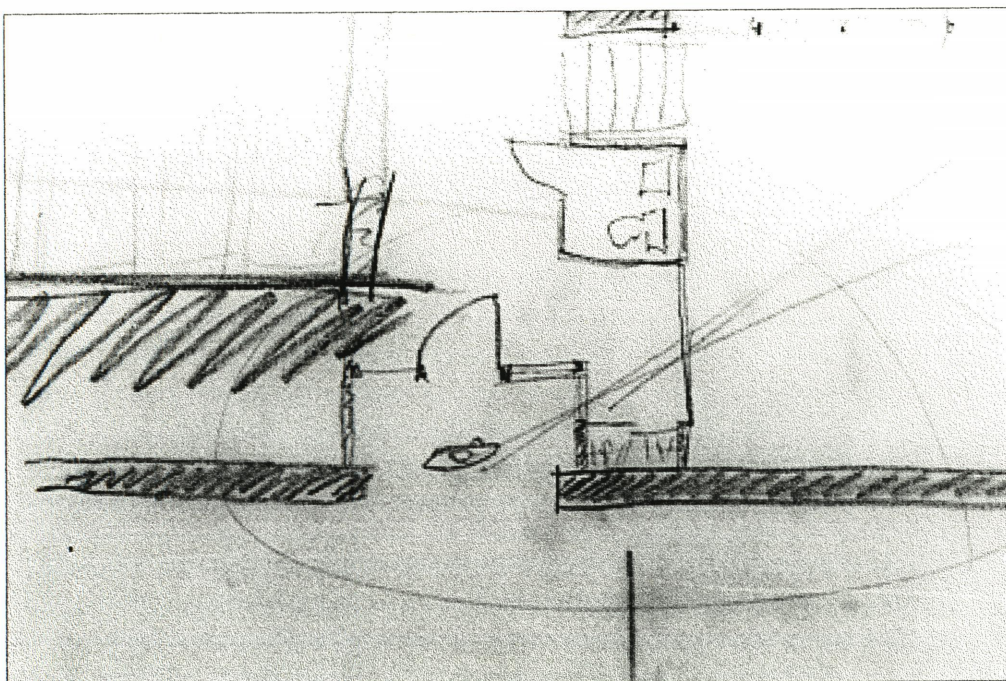
West elevations



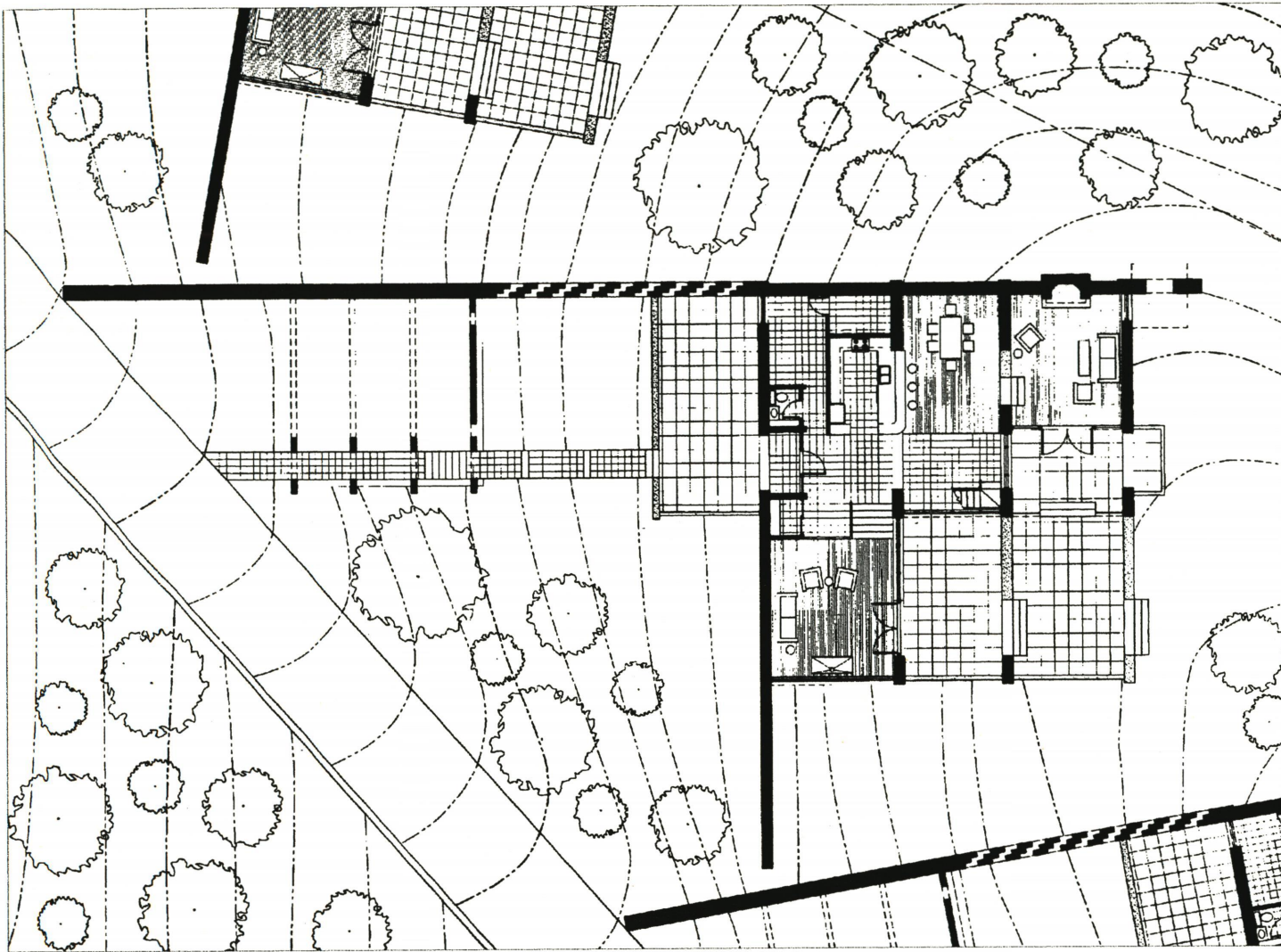
Perspective from entry

## ENTRY

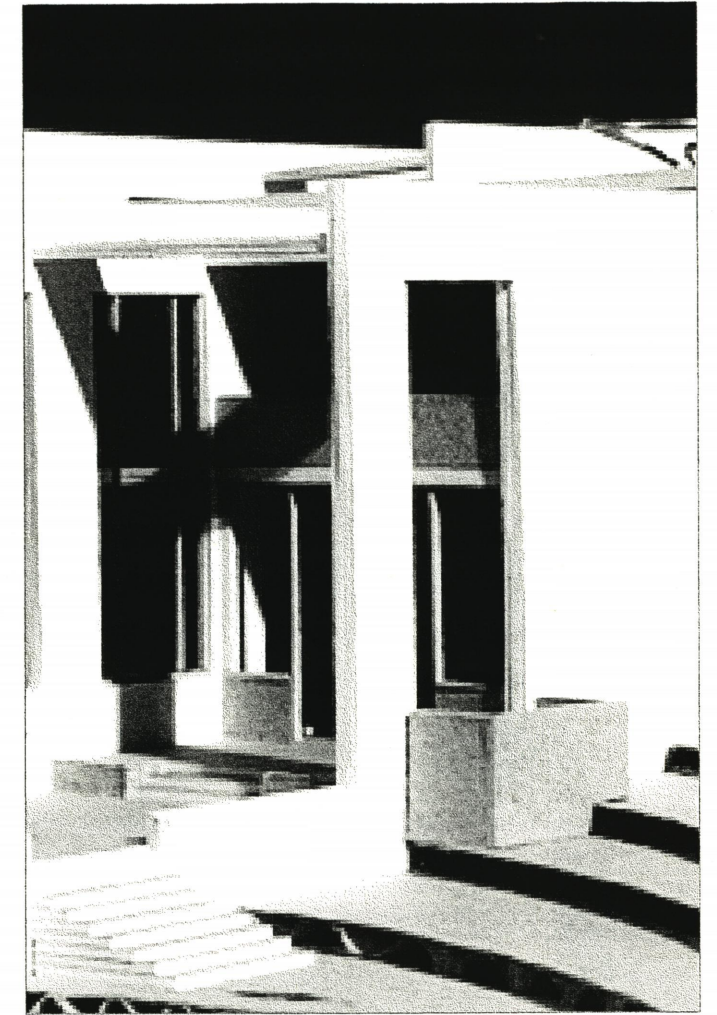
The entry sequence allows one to pass through the first building wall into a two story covered space before entering the dwelling. This two story space continues inside only broken by a balcony spanning across the second level. With glimpses of all of the living spaces, one continues straight ahead to the glass and is able to see the destination of the dwelling's major axis. To arrive there, one must experience two levels and two more rooms of the house.



Preliminary sketch showing visual axes from entry

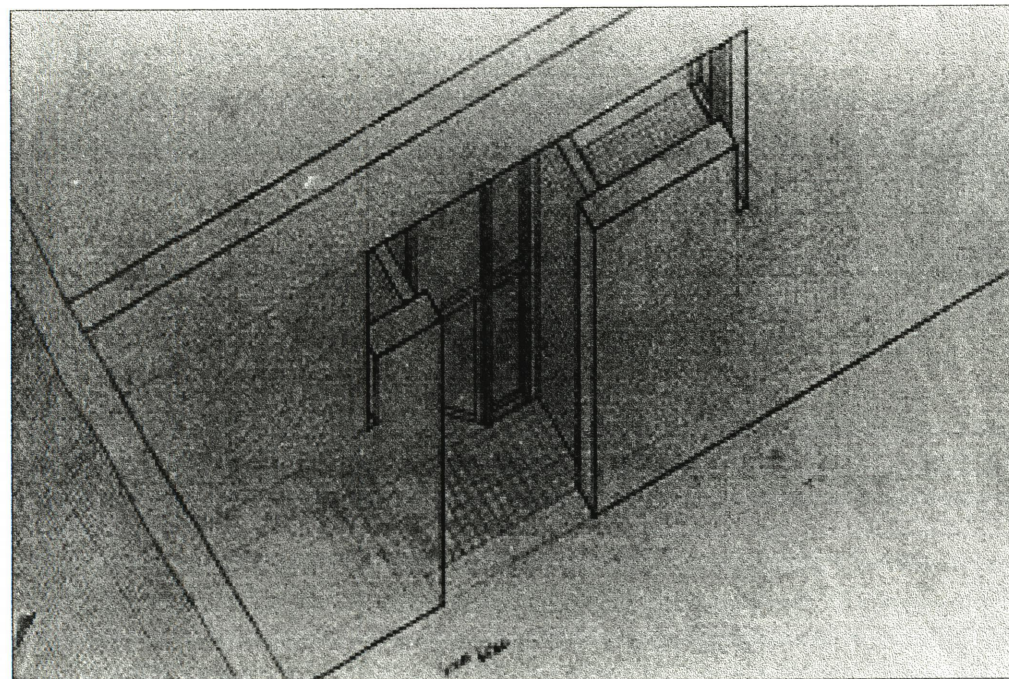


First floor plan



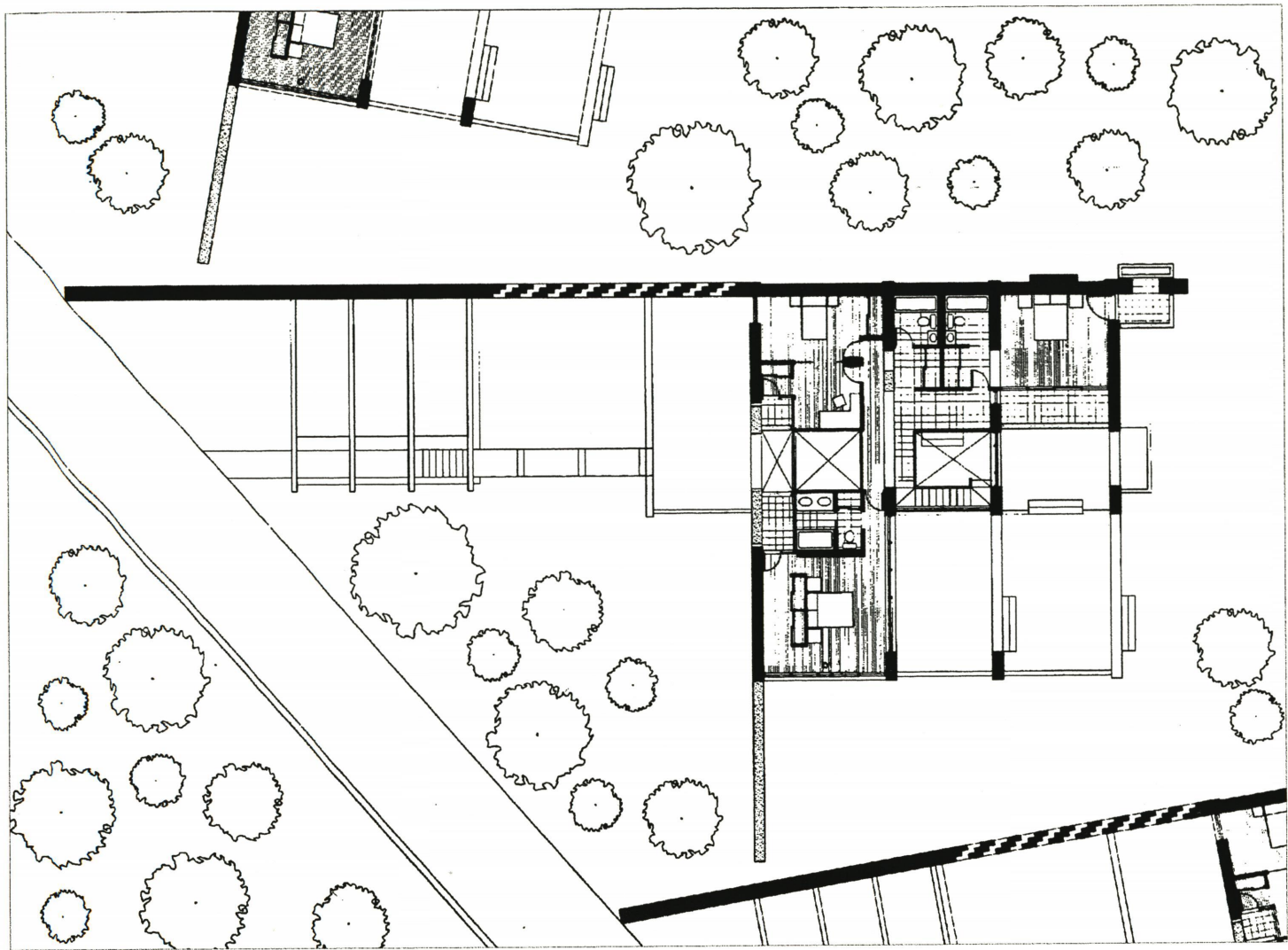
Primary axis

## FIRST FLOOR

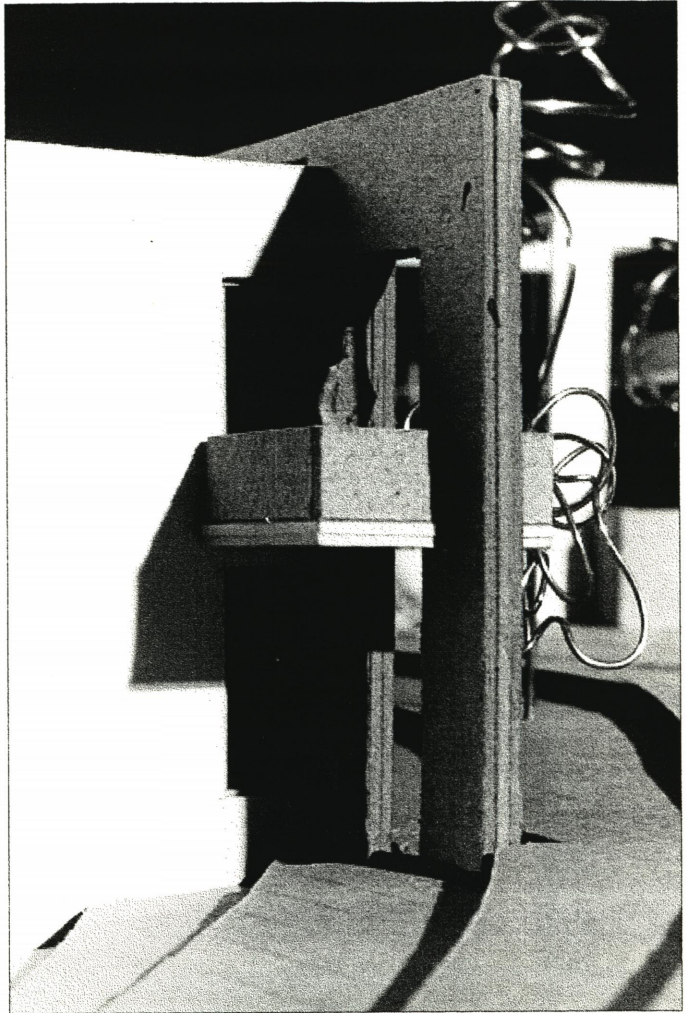


Axon of entry

Each dwelling's living spaces, both inside and outside, are defined by the relationships among the building walls and the level changes between them. Each primary interior room is defined by passage through a wall or a change of level. The same rule applies to the relationships between outside spaces. The pattern is broken only when going from inside to outside where the level does not change therefore bringing each room into the other.

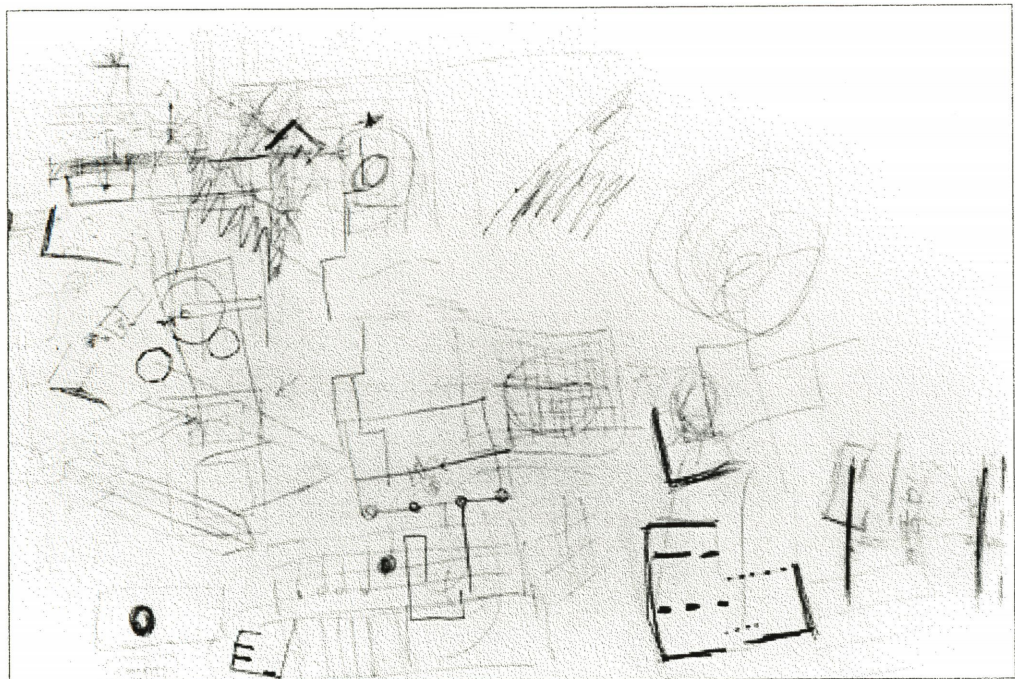


Second floor plan



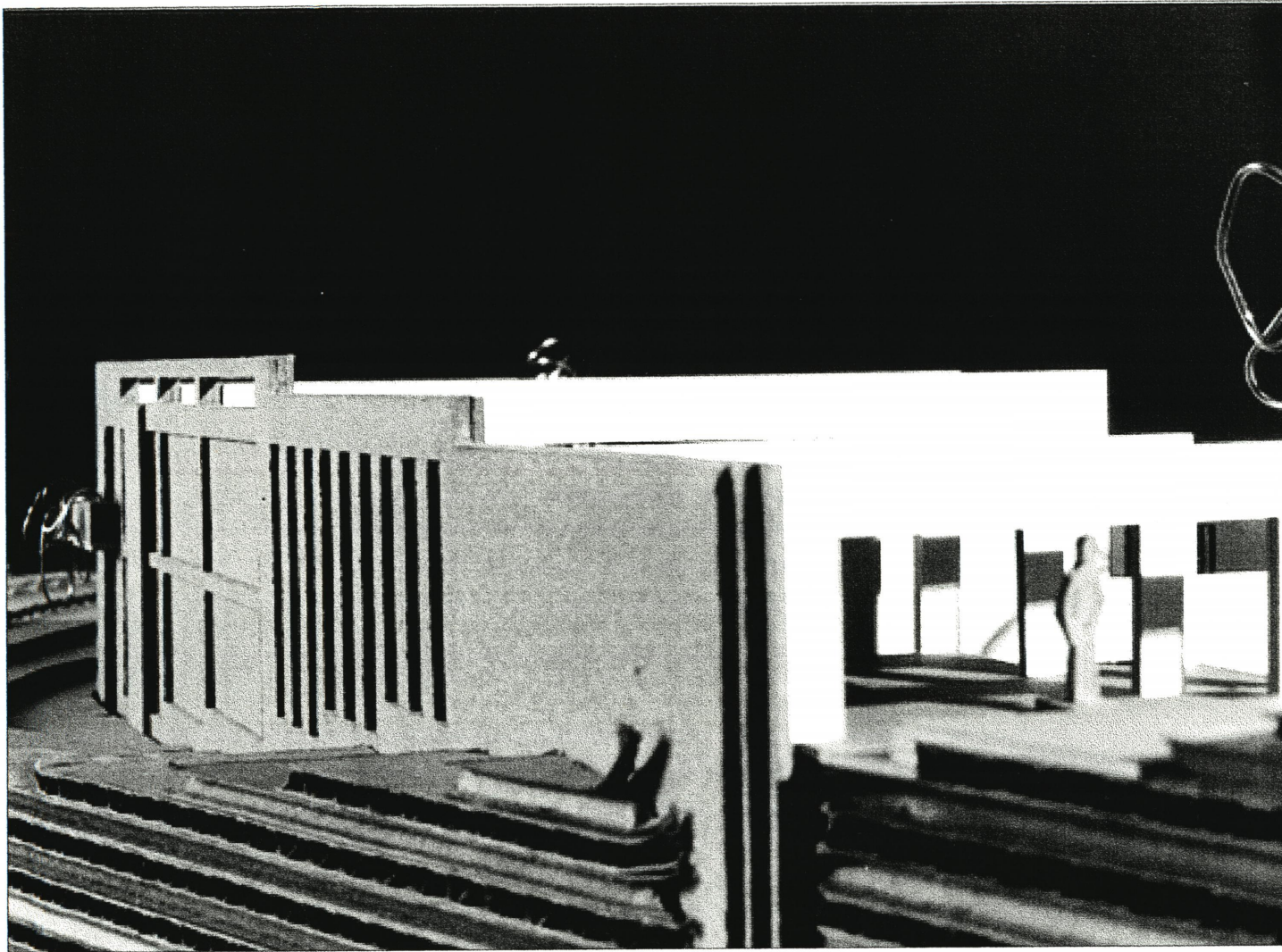
Corner balcony @ north wall

## SECOND FLOOR

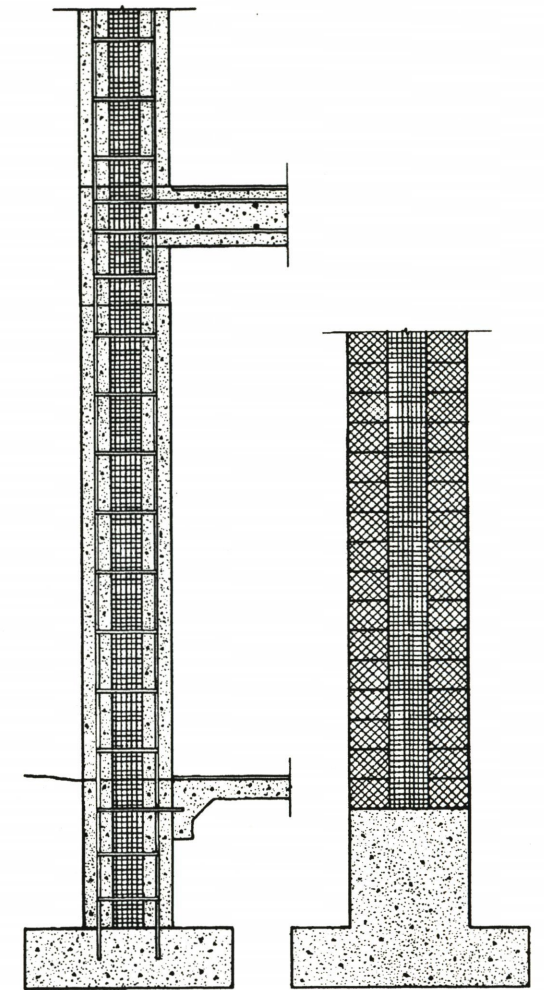


Preliminary process sketches

There are four distinct balconies accessible by the private rooms of the house. Each has a different character, size and view, but all become extensions of the rooms from which they project. The two next to the west wall also share the two story entry space outside but within the realm of the dwelling. The balcony in the north wall offers a rare opportunity to see and interact with the adjoining dwelling. The last balcony to the south becomes an exterior extension of one of the master bedrooms.



North side of site wall



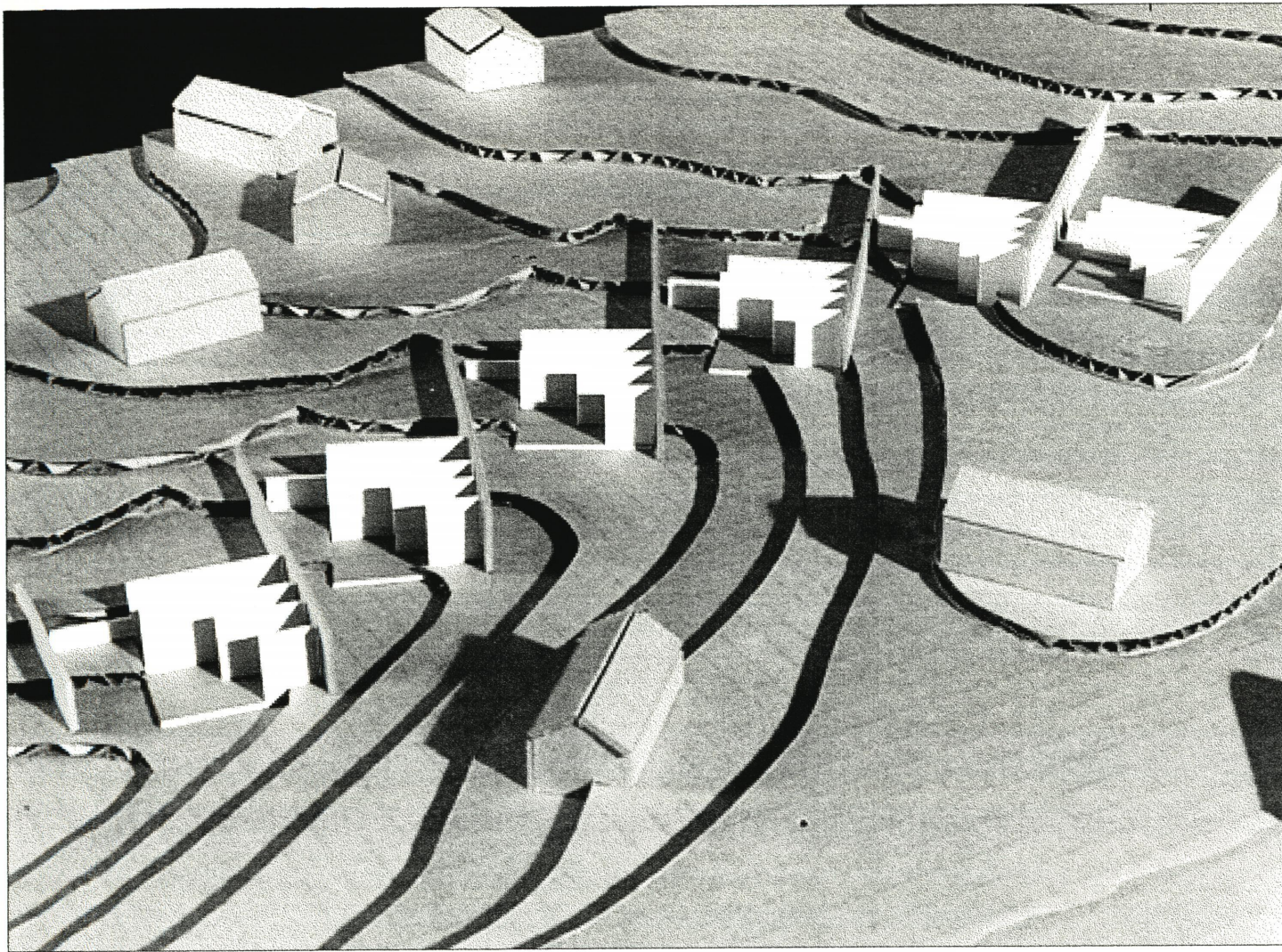
Wall sections through concrete & CMU walls

## WALLS



West elevation

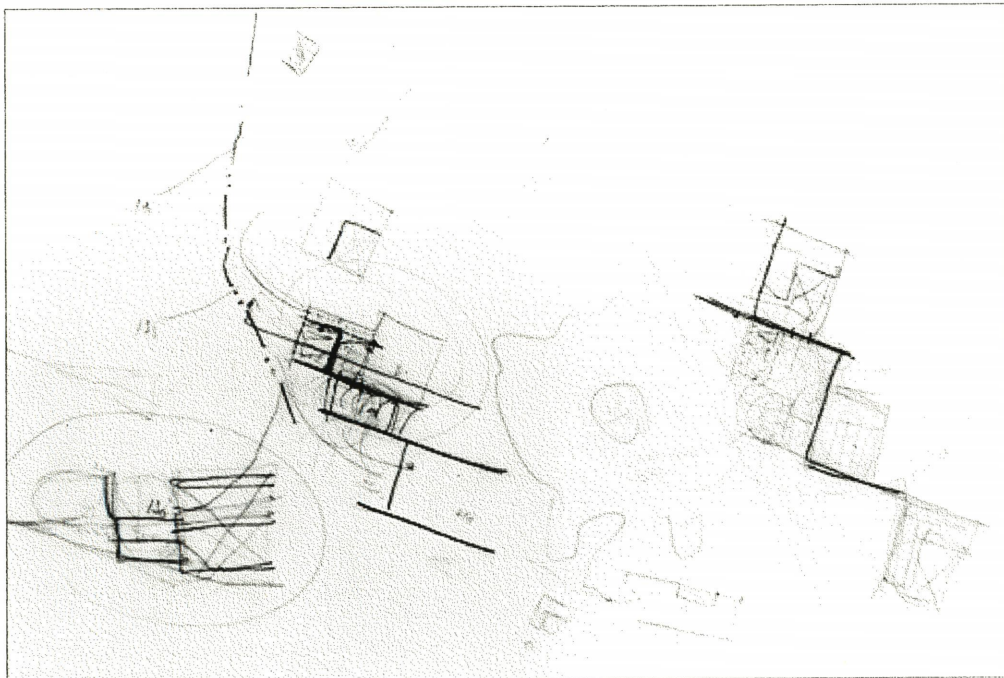
The northern edge of each dwelling's site is defined by a massive concrete block wall. These site walls cut into the earth. The form of the building walls beyond is subtly shown as a relief in the block coursing. Vertical slits cut through the site wall allow limited glimpses of the neighbors. At its end each wall offers a balcony which appears to balance in a large vertical opening.



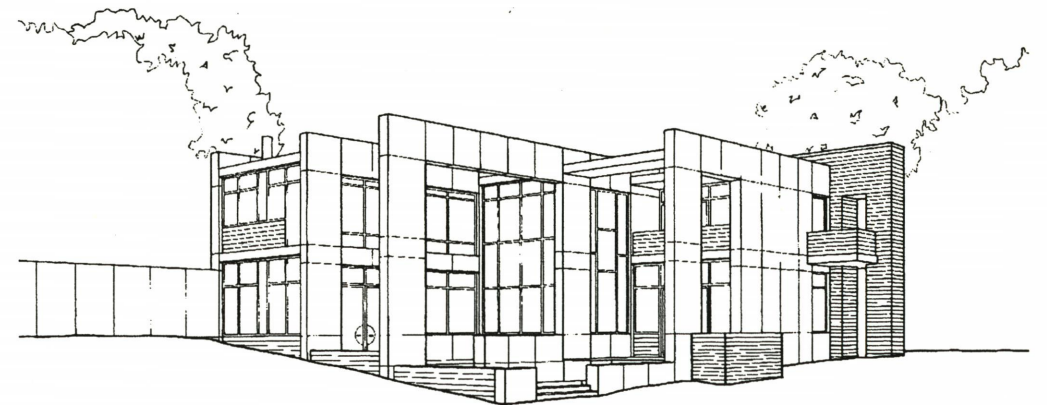
Site parti model @ east elevation

Preliminary sketches reveal the creation of one undulating wall which runs with the slope. The goal was to tie all the dwellings together using one unifying wall. In their final organization the site walls become more dynamic and ordered as they radiate off of a common axis. Each exists ten degrees askew from its neighbor. Together the walls form a visually homogenous group without physical connections.

## WALLS



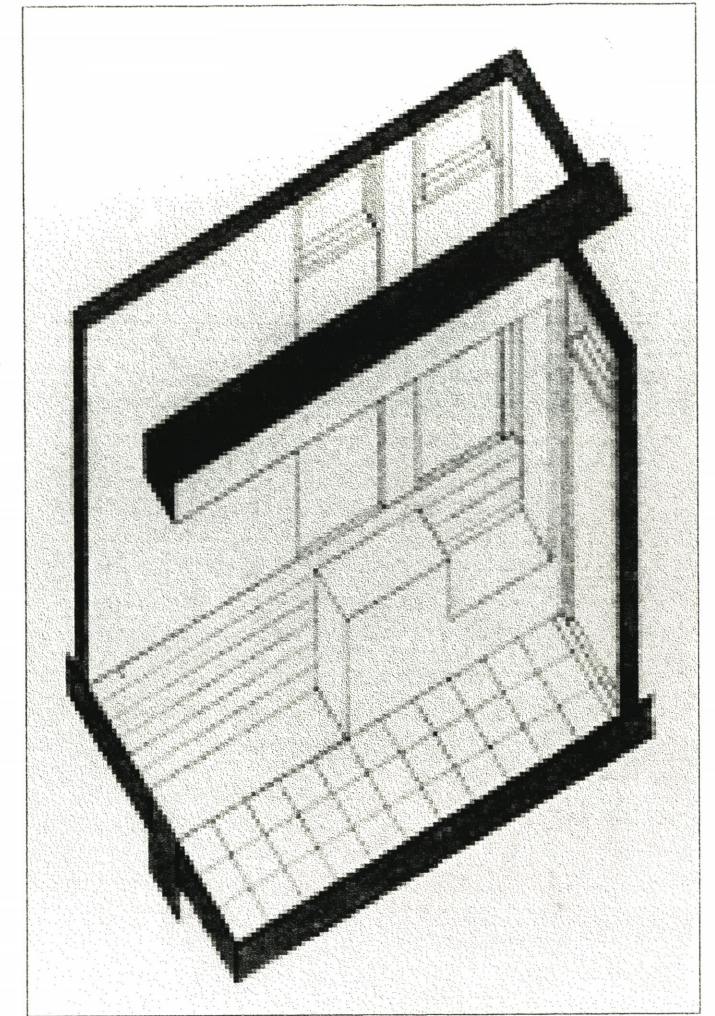
Early sketch of site walls



Perspective of southeast corner



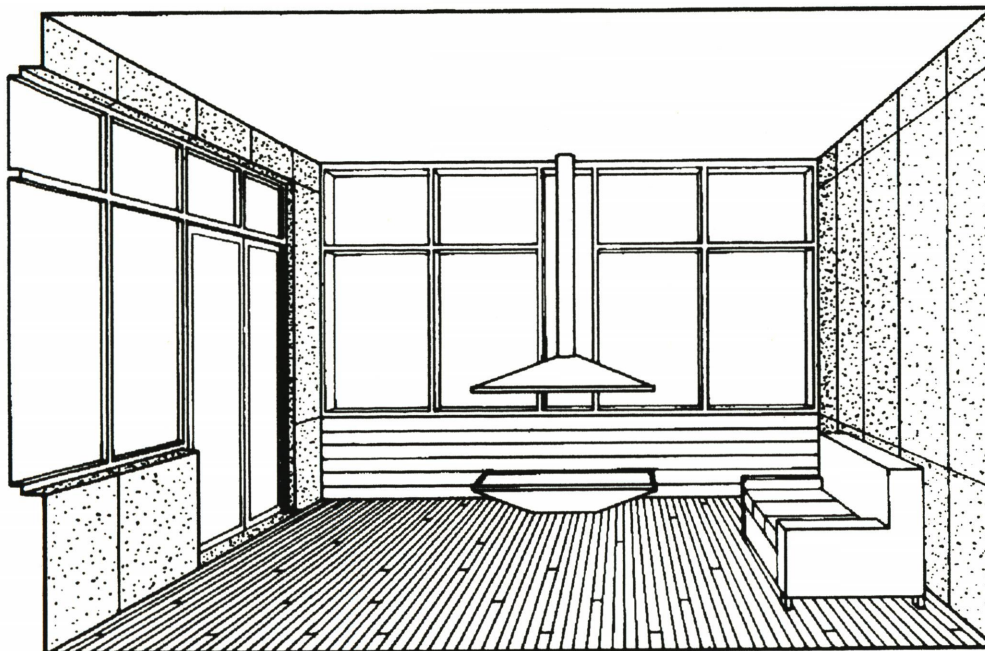
Southeast corner



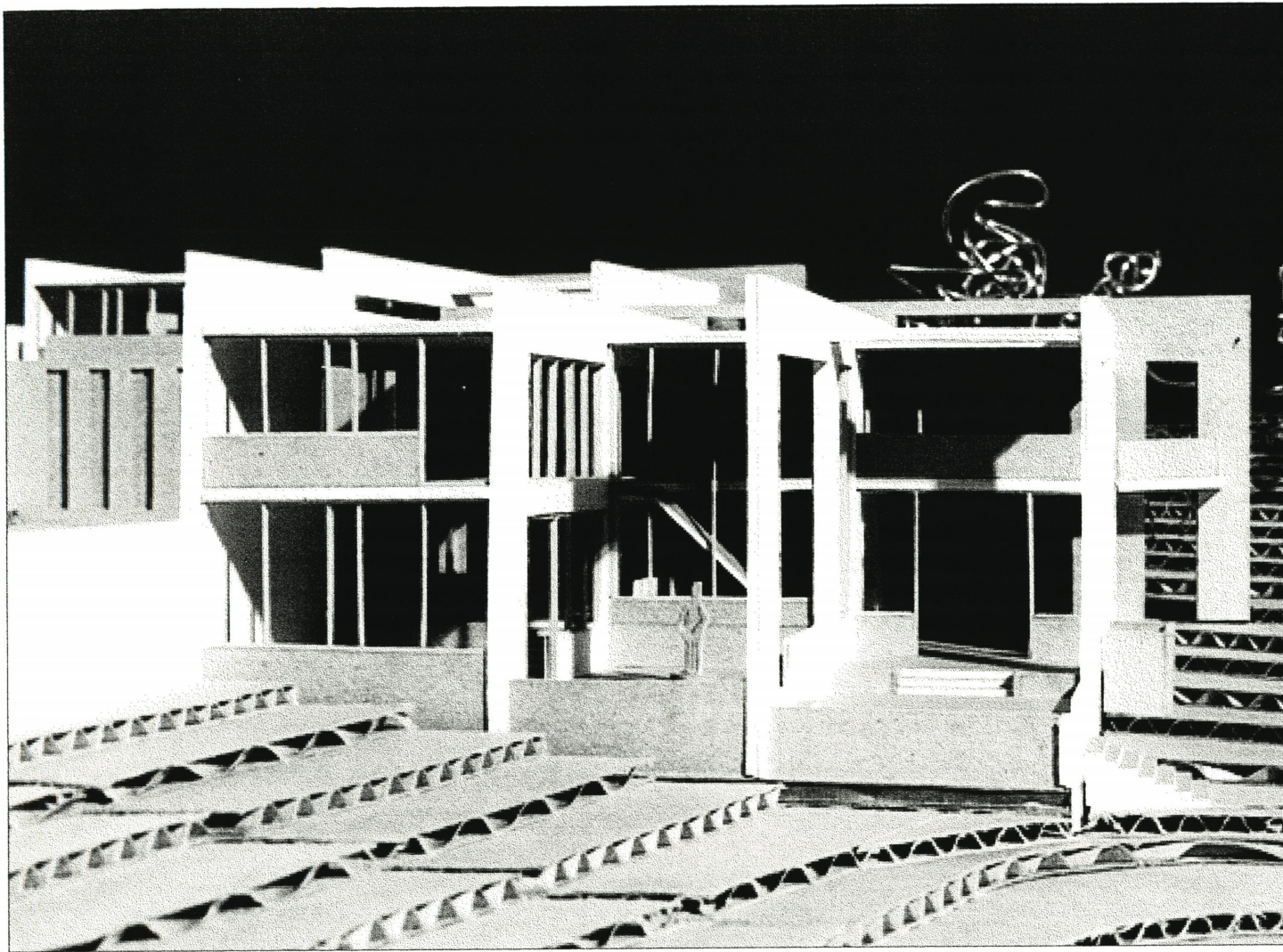
Axon in hallway outside children's bedrooms

## FRAMES

The concrete building walls create and define a variety of opportunities. The space between the upstairs bathroom and the children's bedrooms is divided by a built up portion of wall which offers a place to jump, climb, read or play. The frames created by the walls bordering the outside terraces help to accentuate differences between each exterior space which in plan are very similar.



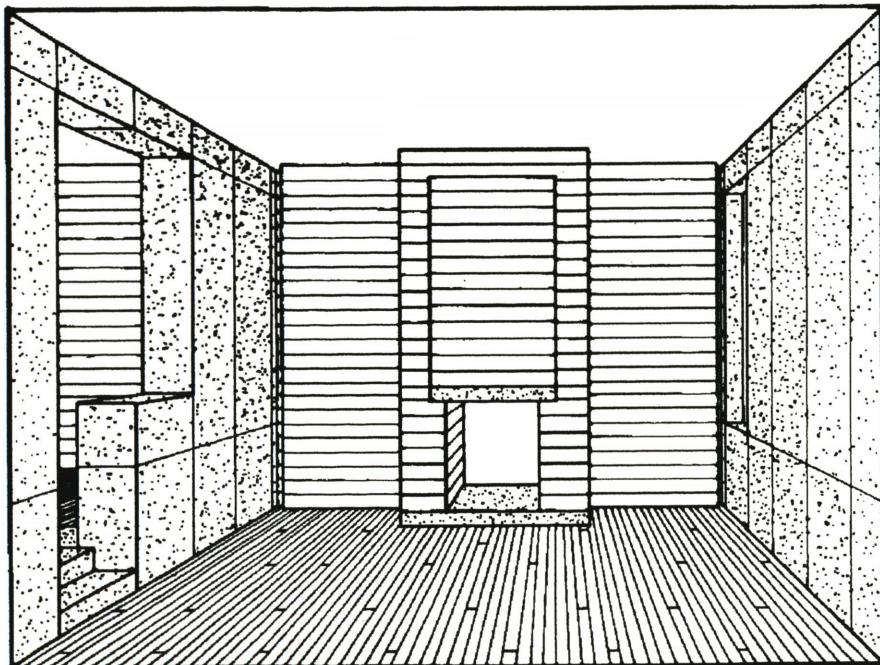
Perspective of livingroom



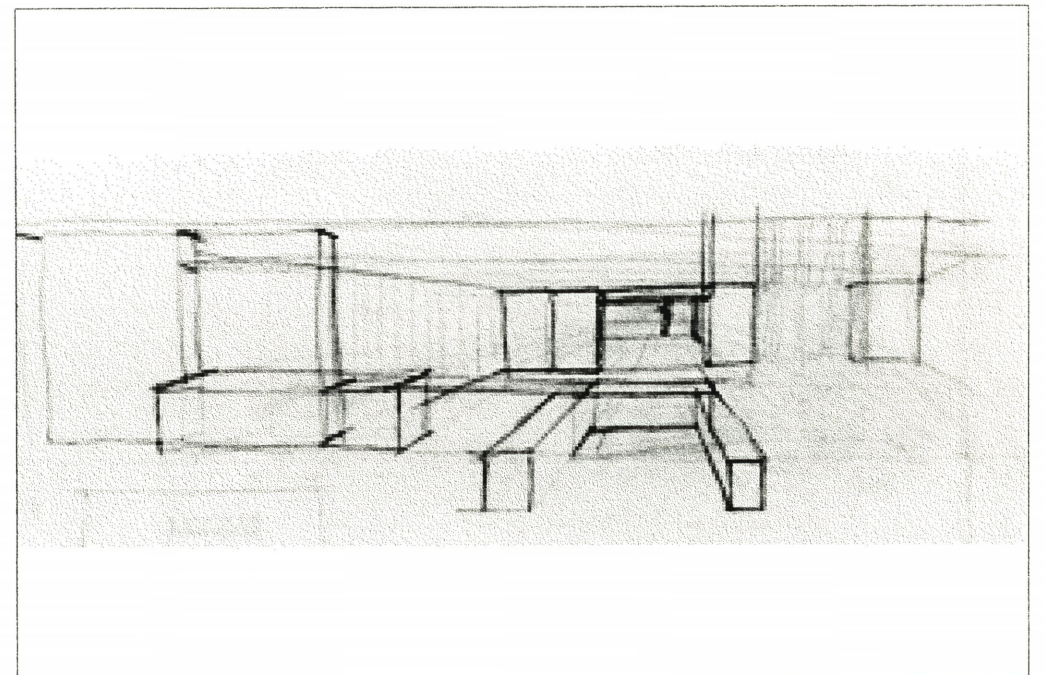
South elevation

The building walls appear to deconstruct as they extend farther away from the site wall. Within the dwelling they create very defined openings offering limited passage or perhaps a specific view. These openings also create places for plants or artwork. As the building walls extend outside they become more like frames defining space, but offering little or no obstructions.

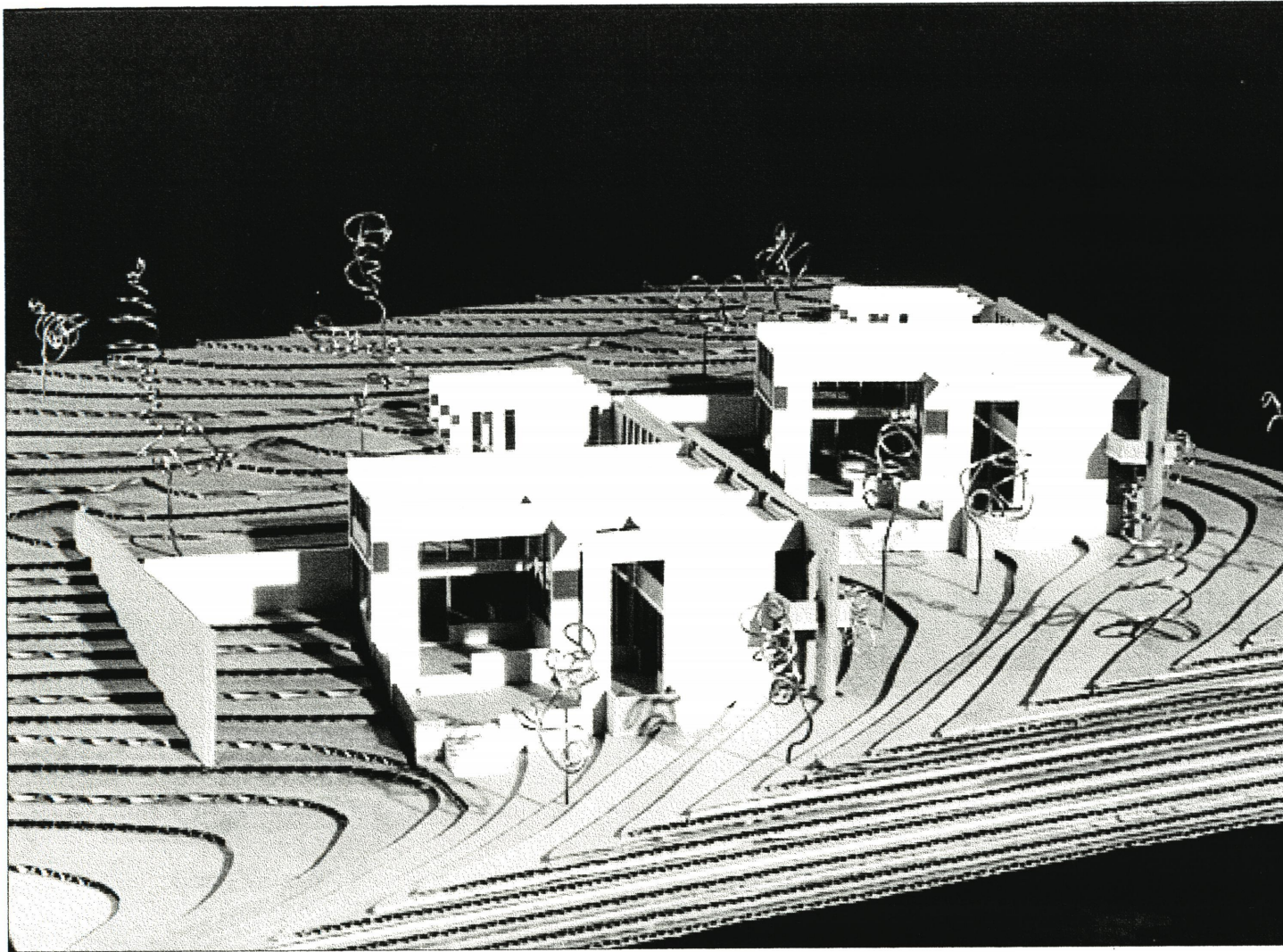
## OPENINGS



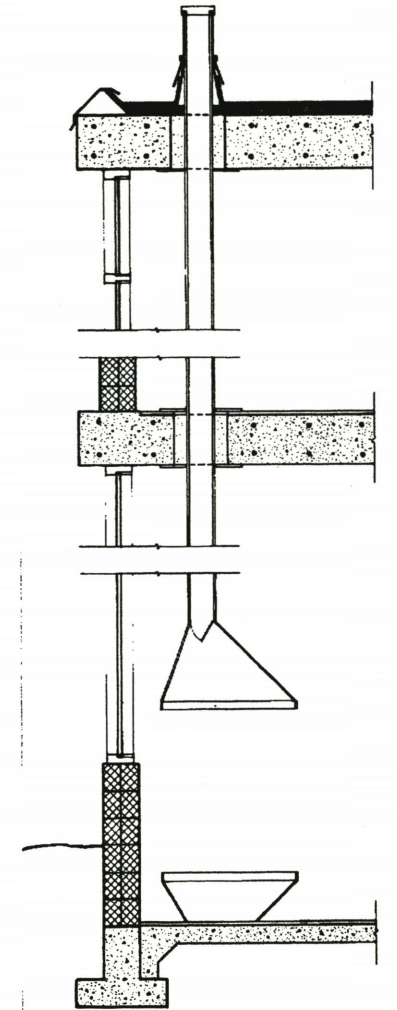
Perspective of family room



Preliminary perspective sketch from kitchen



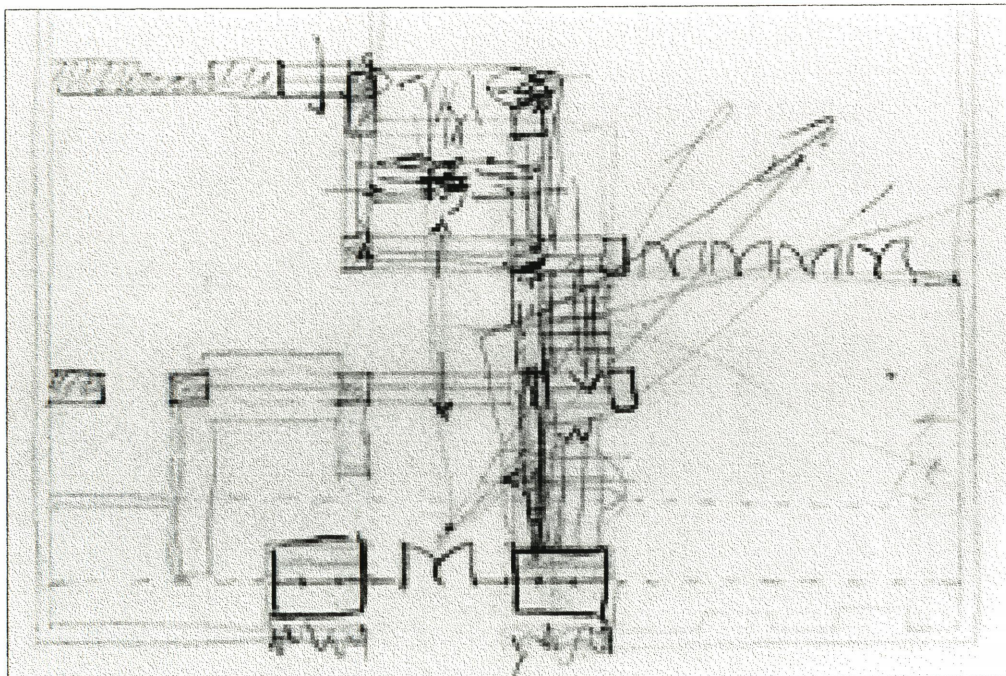
East elevations



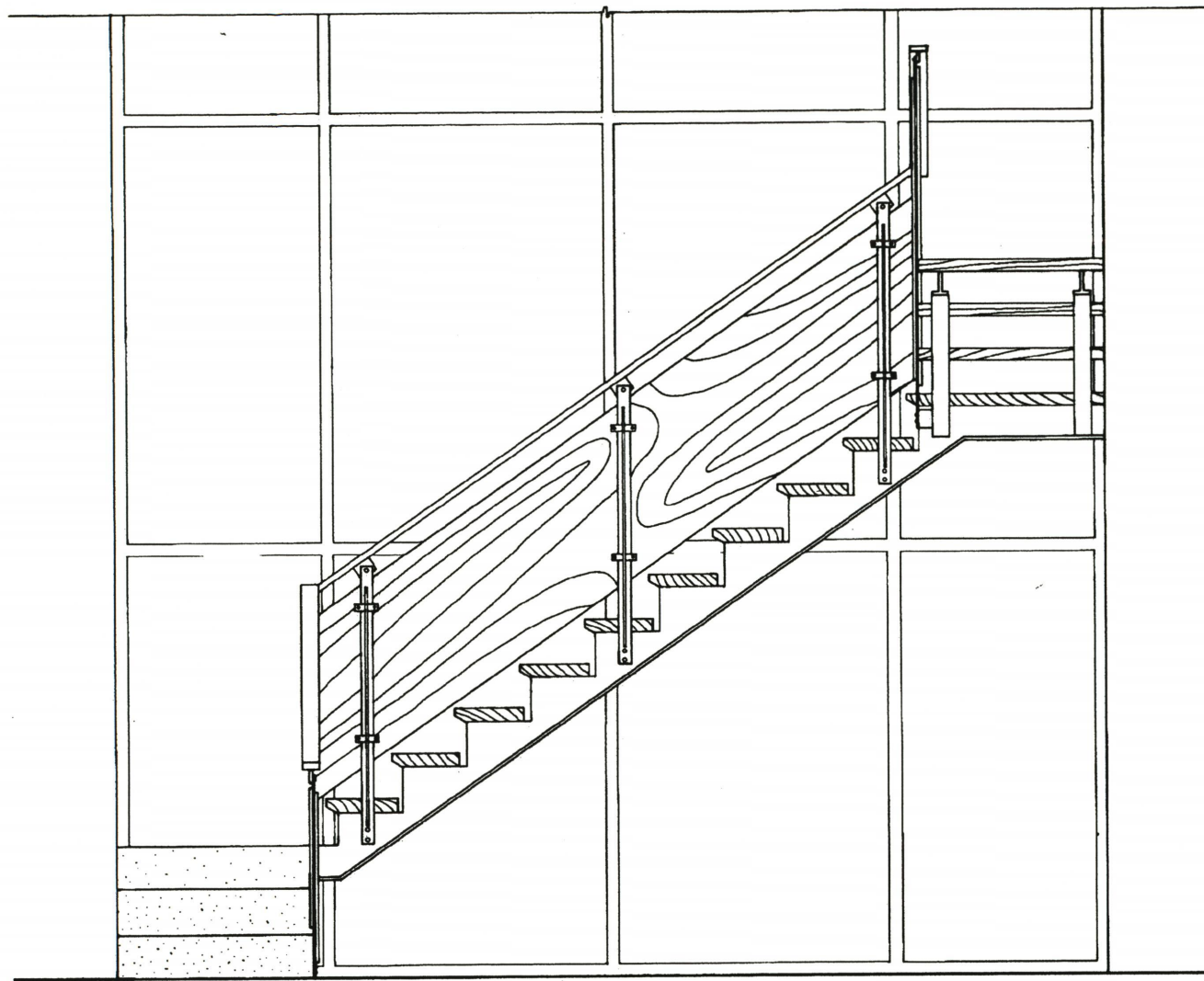
Section through metal fireplace

## TRANSPARENCY

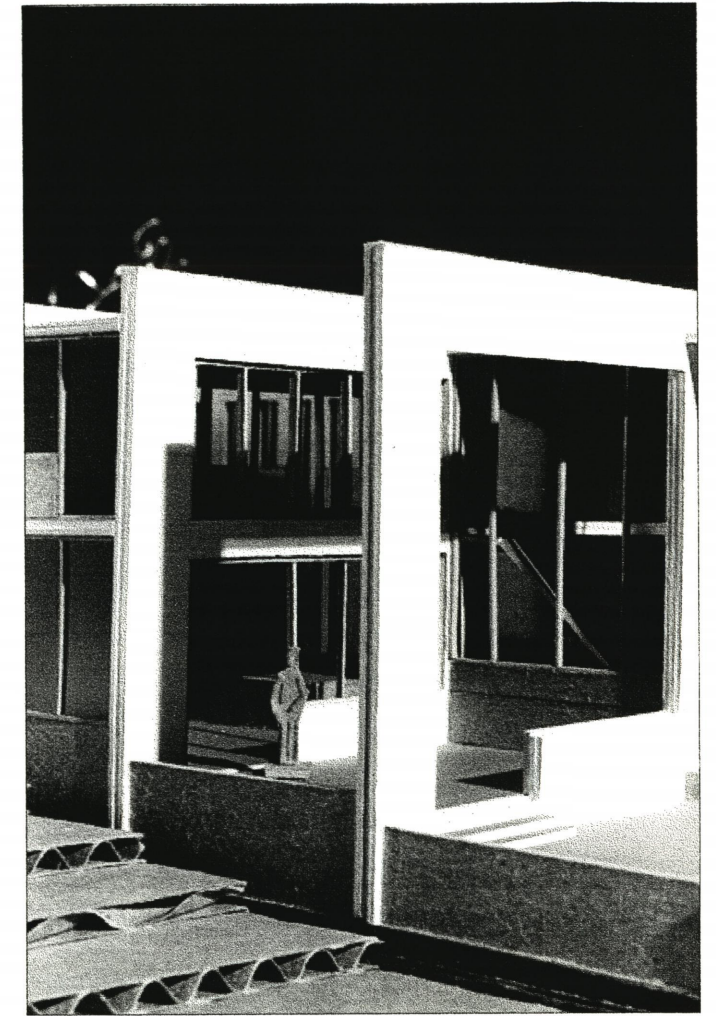
From within the building walls one becomes aware of how these walls have been carved away to become a transparent barrier between inside and outside places. This creates opportunities such as placing a metal fireplace in front of a large glass wall. The interaction between inside and outside places creates a continuity that depends on the quality and defined views of the building walls.



Preliminary sketch showing visual axes through dwelling

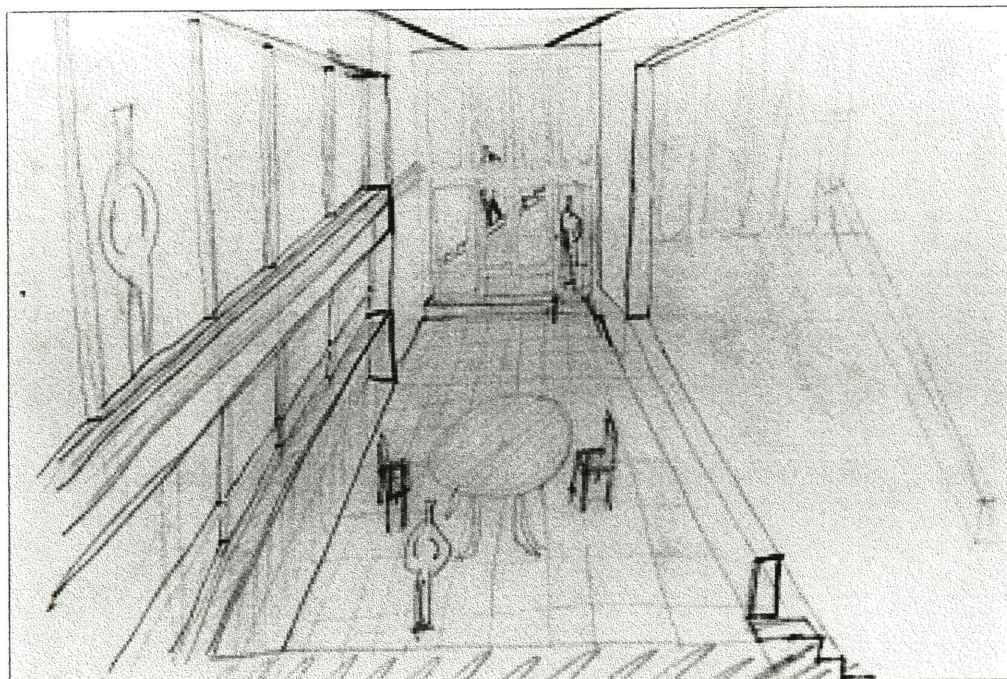


Elevation of stair



Outside room framed between building walls

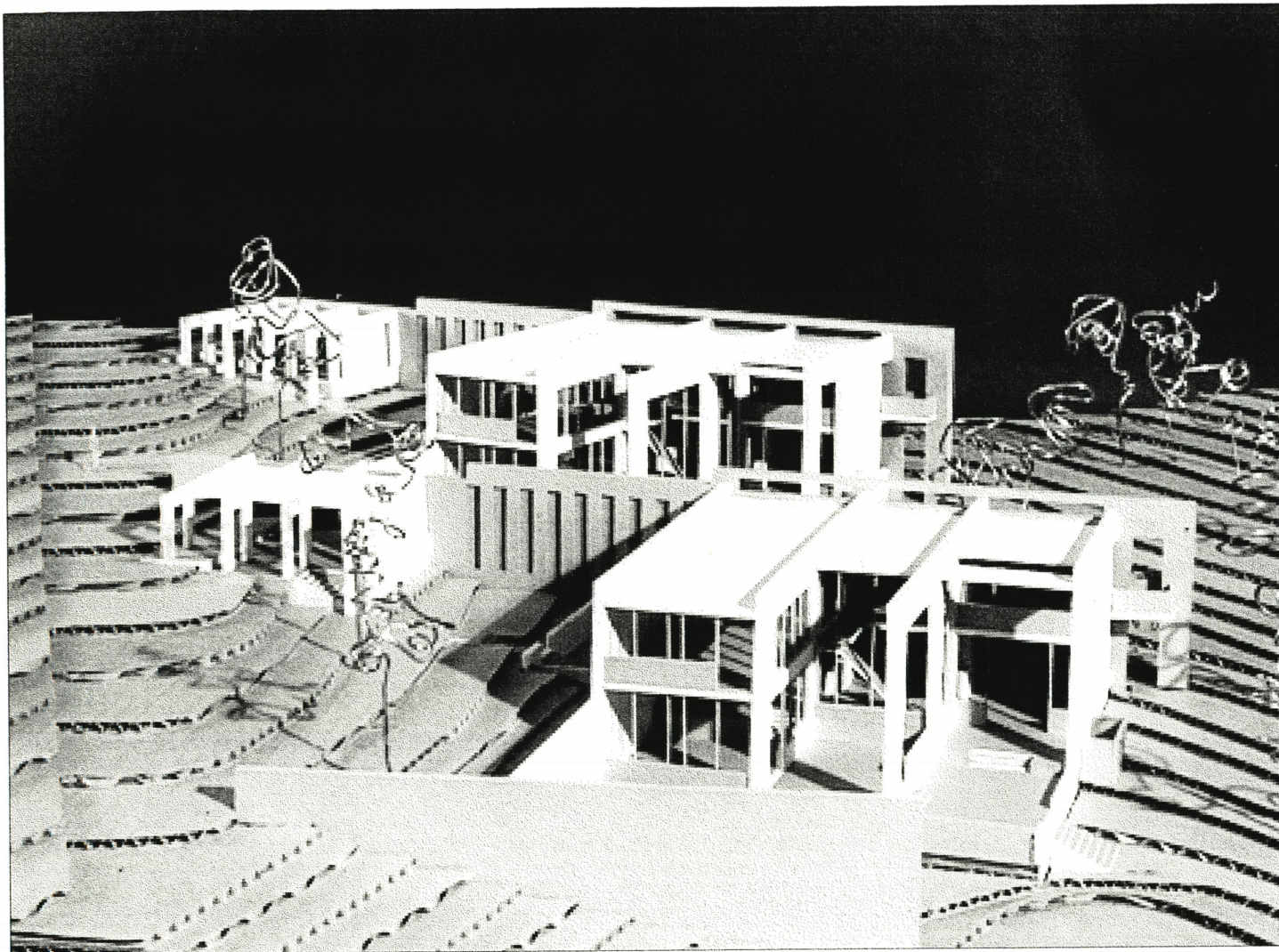
## STAIR



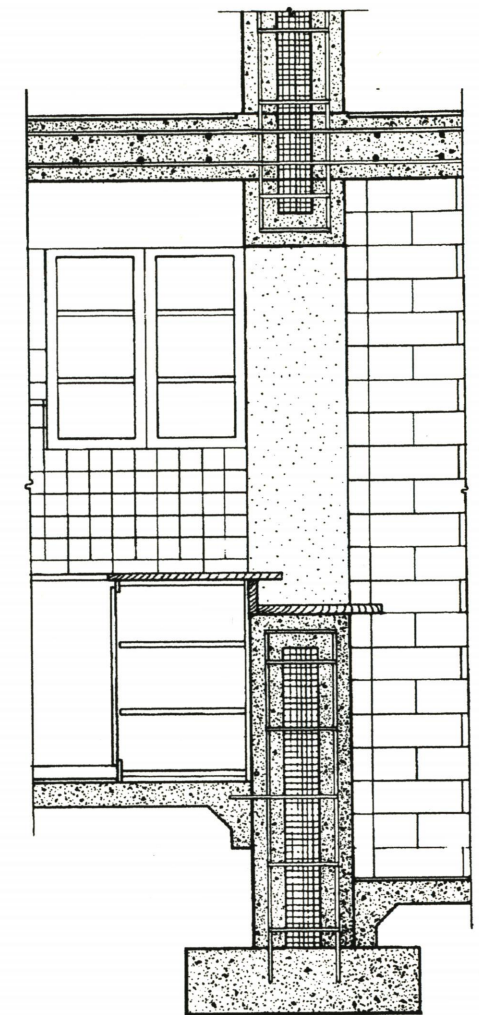
Perspective sketch of outside room

As the parallel spaces between the building walls create rooms, they require the addition of perpendicular walls to create enclosure. This was best defined by large areas of window wall allowing enclosure but not obstructing views.

The in-between space was an ideal place for the stair between floors. The staircase is structurally supported by the building walls and exists as a sculptural element in front of a large glass wall.



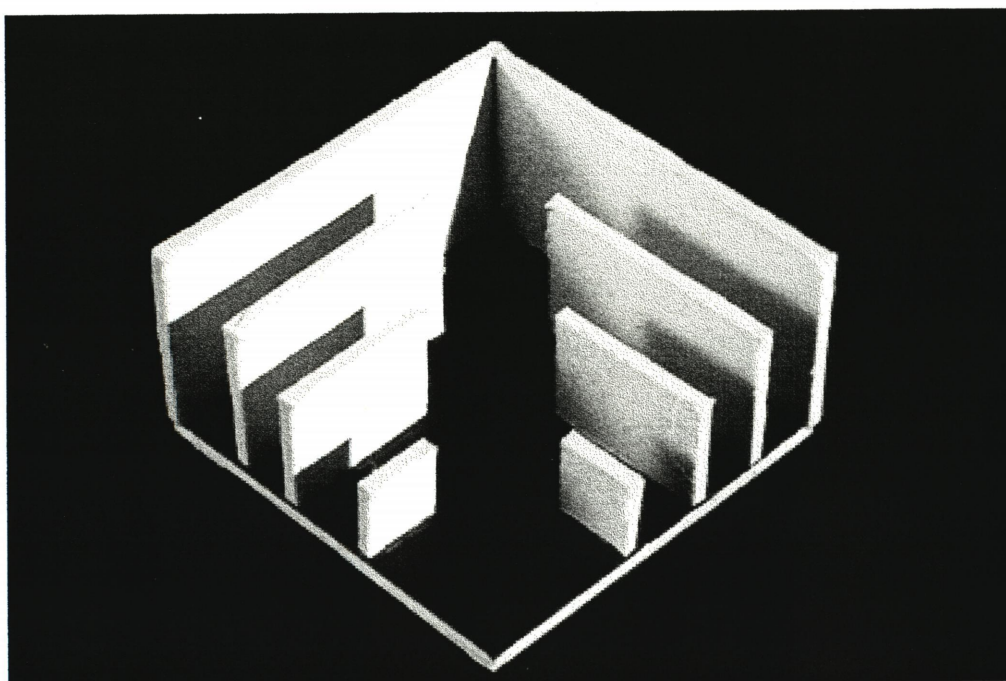
South elevations



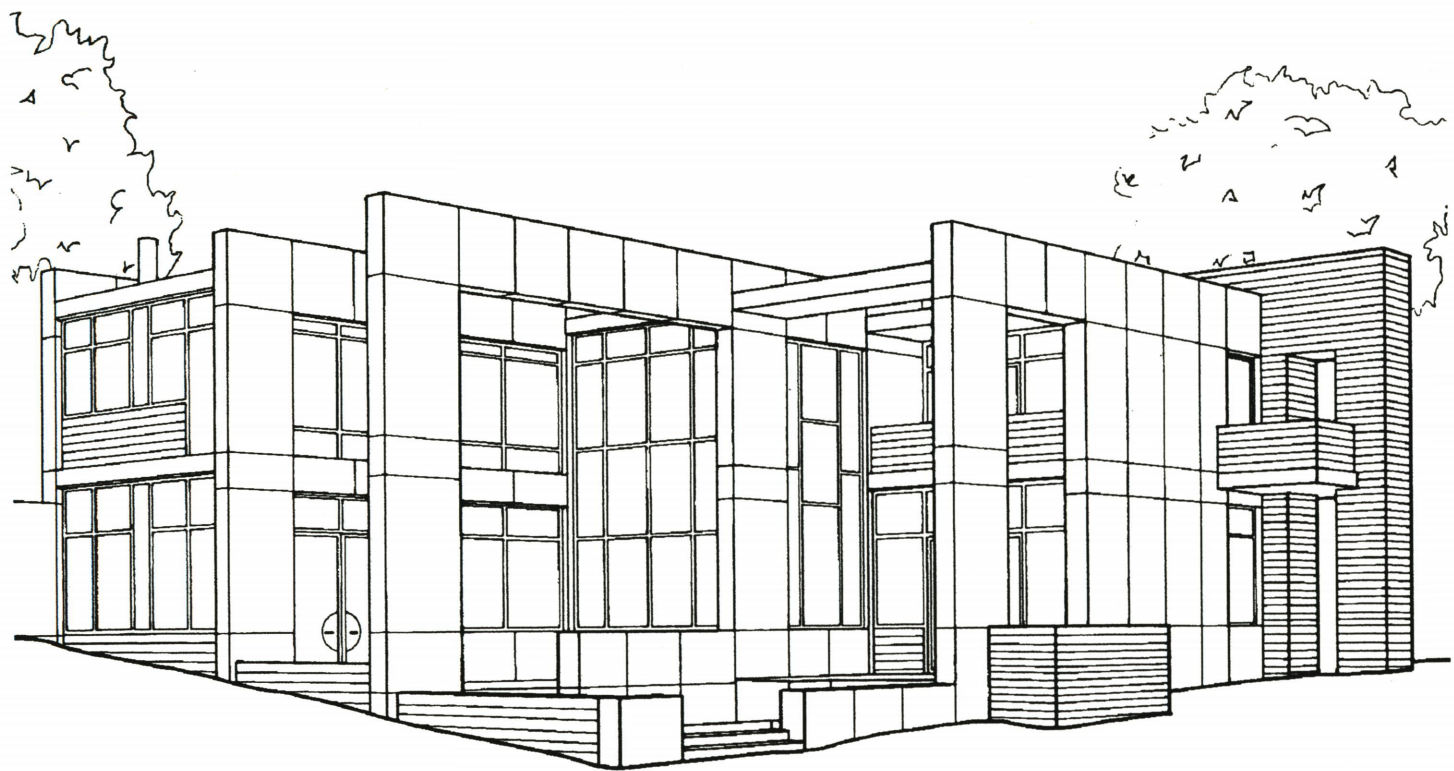
Section through wall between kitchen & dining room

## DETAIL

These images illustrate the evolution from parti to building to structural detail. In the parti a series of parallel masses (walls) are very opaque on their faces and open on their ends. In its final form these ideas were maintained and transformed into a habitable dwelling with complex interactions between spaces and walls. Openings in the building walls made views available between rooms as well as between inside and outside spaces. In some places openings were also used as the base for a counter top or a place for stairs.



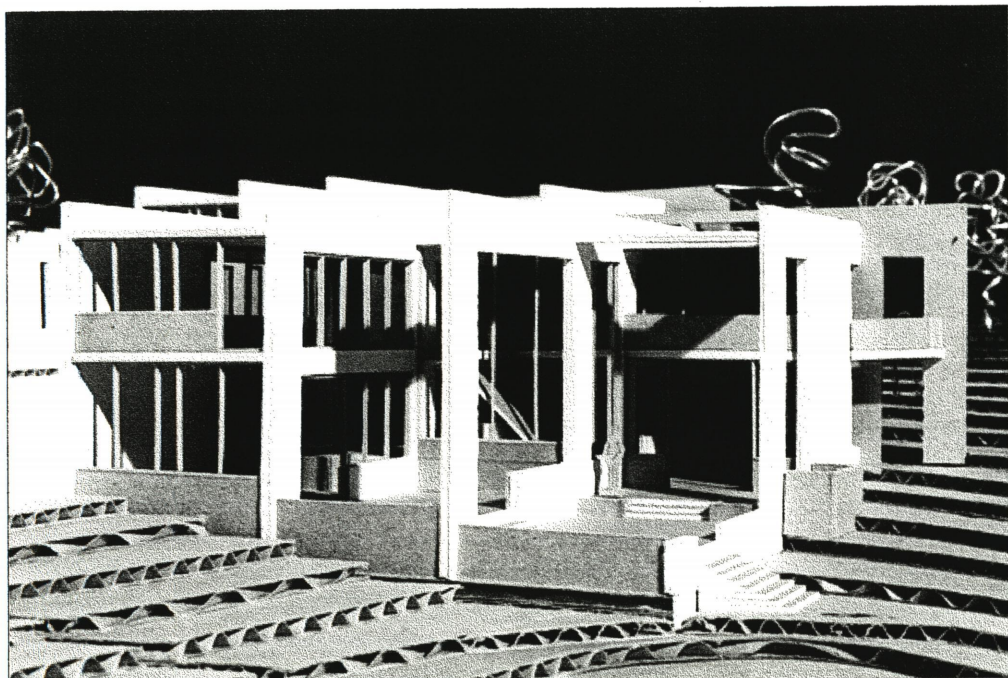
Parti model



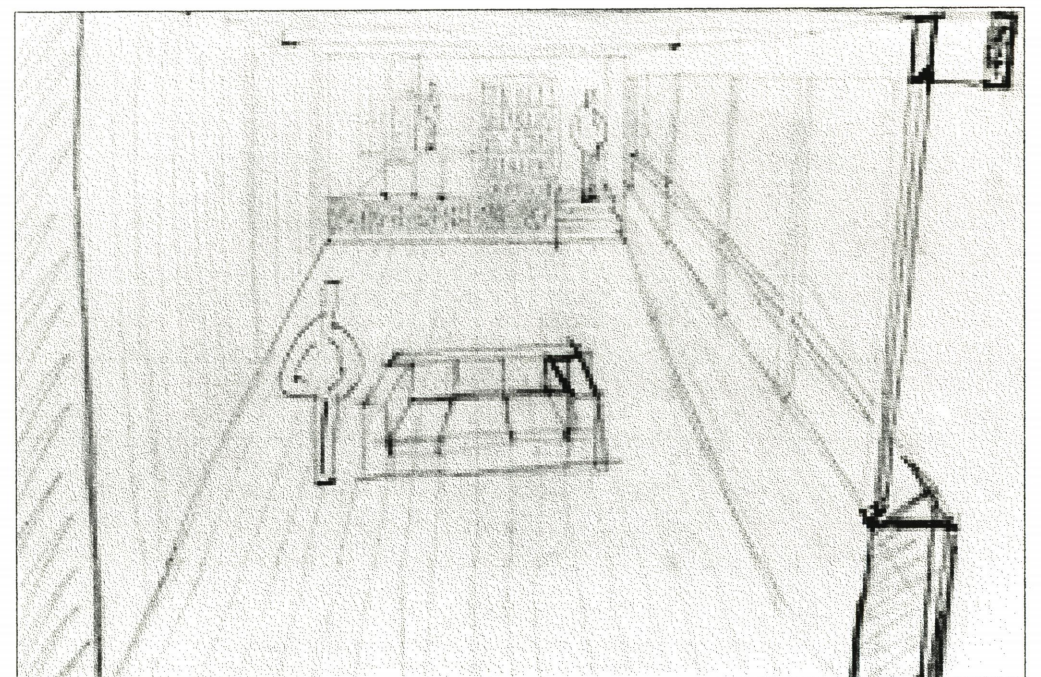
Perspective of southeast corner

The outside rooms to the rear of each dwelling offer a variety of space which is just as complex as those inside. Each defined space has a different character and feeling due to changes in level, position between walls and openings in walls, or the roof above. Each outside room extends the limits of the dwelling to complete a square. This again brings the dwelling's form in plan back to the beginning parti dividing a simple square with varying sizes of walls.

## OUTSIDE ROOM



South elevation



Perspective sketch of living room

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