

A FORMAL EXPLORATION BASED ON
OBSERVATIONS OF A MEDIEVAL VILLAGE

by

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requirements for the degree

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Abstract

A Formal Exploration Based on Observations of a
Medieval Village
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This thesis presents applications of a design
attitude that has as an important concern the collective
organization of space and built assemblages.

A site plan of a campus for a modern educational
institution is based on communal gathering places and
connecting streets, and built ground form made by
parking garages and large earthmoving operations.

Building sized regions are organized into zones
which define a laboratory or classroom or a combination
of offices and classrooms, and which collectively define
the zone of the distribution.

The exploration includes the application of
conventional rectilinear building methods to a situation
demanding nonrectilinear angle changes.

Thesis Supervisor: Maurice Smith
Title: Professor of Architectural Design

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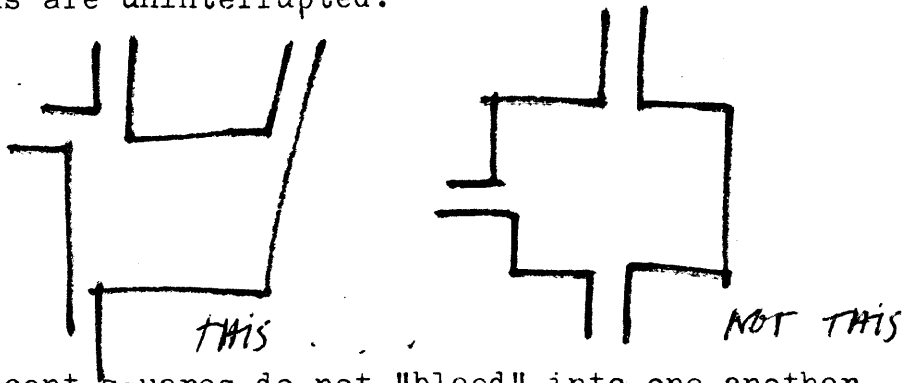
Text

The modern prototype for medium density, close-packed environments is the orthogonal grid serving as the physical basis for many American cities and towns. The element differentiating the two perpendicular directions is a rectangular block establishing movement either "with" or "across" the block. One direction is usually emphasized by giving those streets a larger width. Although a grid makes it easy to form a clear mental picture of a large region of dense building and simplifies the process of locating an unfamiliar place to that of establishing its grid coordinates and the correct grid orientation, it suffers to whatever extent streets lack associative differentiation. A problem arises when all streets look and feel the same. Incorporating associative qualities into a grid requires altering dimensions, making grid discontinuities or further subdivisions of the smallest standard subdivision, and controlling building heights, types, etc. through zoning. The grid also lacks a means of acknowledging in spatial terms the difference between public and private places because the only available spatial unit from which they may be generated is the subdivision. Public space is merely an incompleteness in the grid.

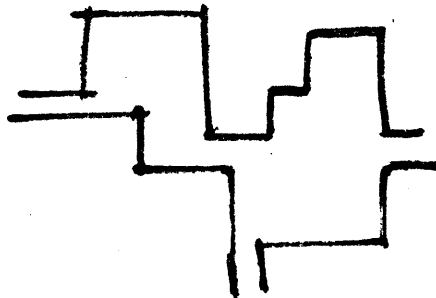
During January, 1976, Gail Boyajian and Jean-Pierre Carniaux and I spent three weeks in France observing and documenting positive formal qualities of a medieval village as an example of one attitude toward close-packed, highly dense, built places. Sauve is built on a rocky hillside, with a river and vineyards to the east, and a rocky plateau, once the location of extensive vegetable gardens, to the west. The over all form of the village is a direct result of river, hillside, and plateau. The major access enters the village from the east via the Pont Neuf and then turns sharply to the right and passes along the edge of the major commercial square before exiting to the north. A large part of the village unaffected by the access has an isolated quality. The place where the access becomes a part of the village is formally acknowledged by narrower dimensions. Within the village there are two large communal spaces, one on the access and serving as the current commercial center (butcher, post office, restaurant, cafe, "Tabac", and grocery store are here), the other (the ex-commercial center) near geographical center and serving as parking lot, playground and occasional open-air market. Major streets are roughly parallel to the river and follow the direction of contours, gradually climbing from the lower, northern end, to a place at the southern end level with the plateau.

These streets provide automobile and cycle access. Other streets run across the contours and because of the sharp rise in section are limited to pedestrians.

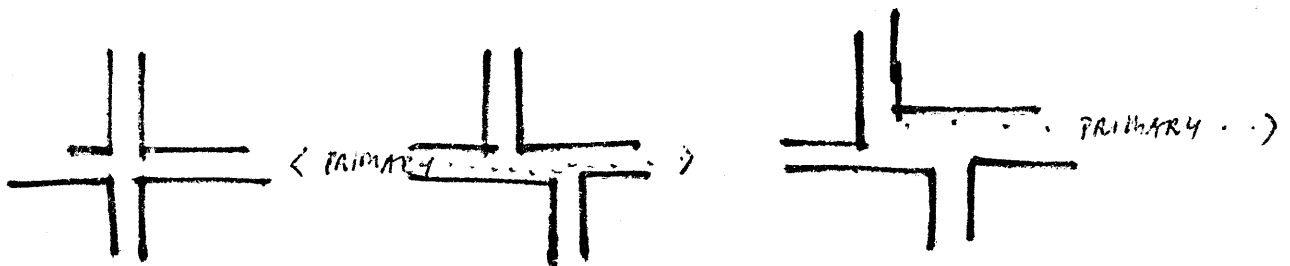
"Places" are generally not "split" by the distribution. Streets occur along the edges and the largest dimensions are uninterrupted.



Adjacent squares do not "bleed" into one another. A space with street-like dimensions makes a separation.



Street intersections tend to be displaced to differentiate directions.



Inspite of its over all spinal form and the presence of directional streets, the location and orientation of streets is nonetheless generated by the location of important destinations (communal places) and by the form of the natural landscape. There is no grid!

The aforementioned relationships and the distribution network of Sauve formed the basis of a design exploration. The prospect of a comparison of two solutions to the same design problem, each based on a different attitude, familiarity with the uses and institutional structure, plus easy access to base maps and drawings made a redesign of the east campus area of M.I.T. a reasonable choice. A 1/200th scale site plan is organized around three major exterior communal spaces--one west of Mass. Ave., one east of Mass. Ave., and a large space along Memorial drive near the river. A service street accessed from Vassar Street and Kendall Square runs along the backside of the proposed built region. A pedestrian street from Mass. Ave. joins it at the second of the three squares and continues through until reaching the large, raised, landscaped area with views of the river and Boston. Parts of the zone between the second square and the square along the river edge were developed at 1/40th, 1/20th and 1/8th scales.

One of the important organizational elements is a

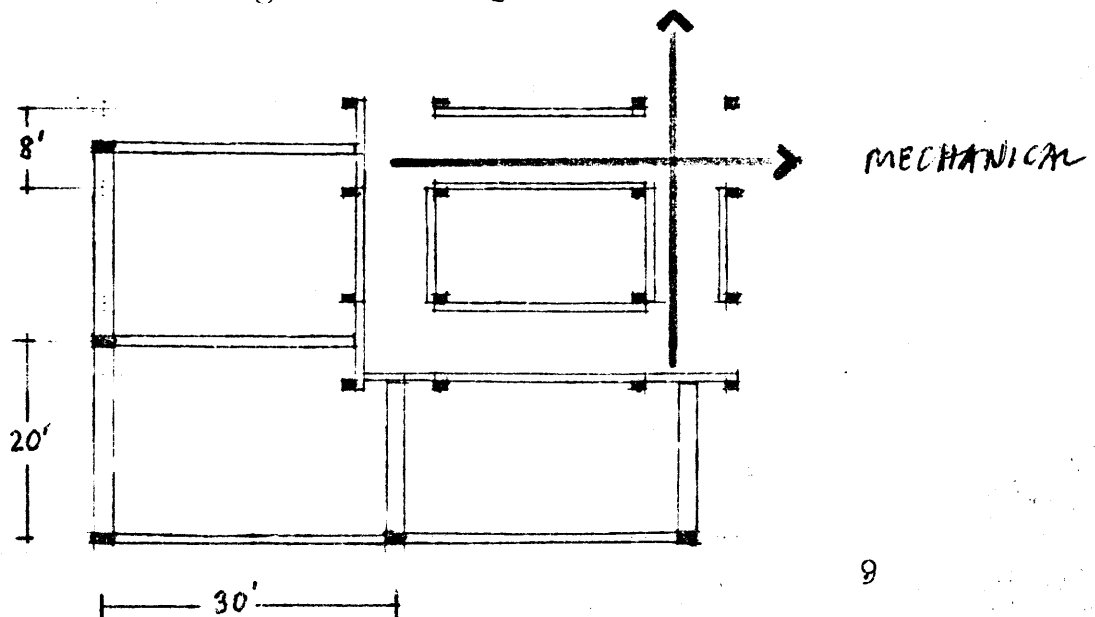
parking garage accessed from the service road. The garage is three dimensional ground which supports building along its edges and above. Exposure to light is increased by making more squares along the street. Buildings are entered from these squares and service stops are made there. Each square is formally acknowledged by a short connection between it and the next one. Entrances to buildings are located so that distribution is along the edges of the squares. (See 1/40th scale diagram.)

The average professional solution for any of today's collective building situations is a series of unrelated, repetitive units subdivided from a minimal, singular building form and accessed by a minimal corridor-like distribution system. The double, single, and triple loaded corridors are universal prototypes for office, school, and apartment buildings. Less minimal solutions include collective spaces that are "converted" privacies essentially undistinguishable from them. The decision to house many different people and activities in the same building or place is simply not enough to encourage the full range of social experience. A formal contribution to a pluralistic social environment must include a range of different spatial conditions. Real privacies should exist as required, but rather than being the ex-

clusive spatial condition, they can be the hard, discontinuous edges of a series of overlapping, reciprocal use spaces incorporating the collective distribution and serving locally as extensions of nearby privacies.

The 1/20th scale diagram based on the 1/40th scale distribution diagram was a first pass at organizing smaller zones within the built regions. These zones define the distribution system and can be used as one large laboratory or classroom, or divided into a combination of office and classroom spaces. Heavy poured-in-place enclosing walls were the major spatial elements.

Two structural systems were chosen. A 20 by 40 foot bay was used for the parking garage. This system included the possibility of substituting a more closely spaced column grid to facilitate distribution of mechanical systems, allow vertical openings, and increase the number of options for making level changes.



A second system is based on columns (usually doubled up) four feet apart carrying beams of 16, 24, or 32 feet. A 12 foot space separates each four foot space. The four foot space allows vertical and horizontal distribution of mechanical services. The second system narrows gaps where shifts in the orientation of the structural systems occur. Where actual continuity is desired the gap is closed with poured-in-place floors.

A third system includes poured-in-place bearing walls positioned outside the zone of the two previous systems. Beams framed at angles into the beams of the bay systems and spanning out to the bearing walls carry poured-in-place floors. This system is necessary to allow the weaving together of different directions, which has to occur to avoid strong discontinuities in plan, to appear in the edge region of the building. Otherwise the larger spatial result would be one of "bent" buildings.

In general, the direction of the structural grid in any given region is determined by the direction of the distribution in that region. As the distribution shifts either the grid shifts, or in less important cases, the new direction is acknowledged in the orientation of poured-in-place walls or infill masonry. A grid shift is an opportunity to make major vertical continuities and requires special attention where actual continuities in

the floor are desired. Grid shifts between regions with minimal built connections are much simpler and the resulting spatial condition seems worth the effort.

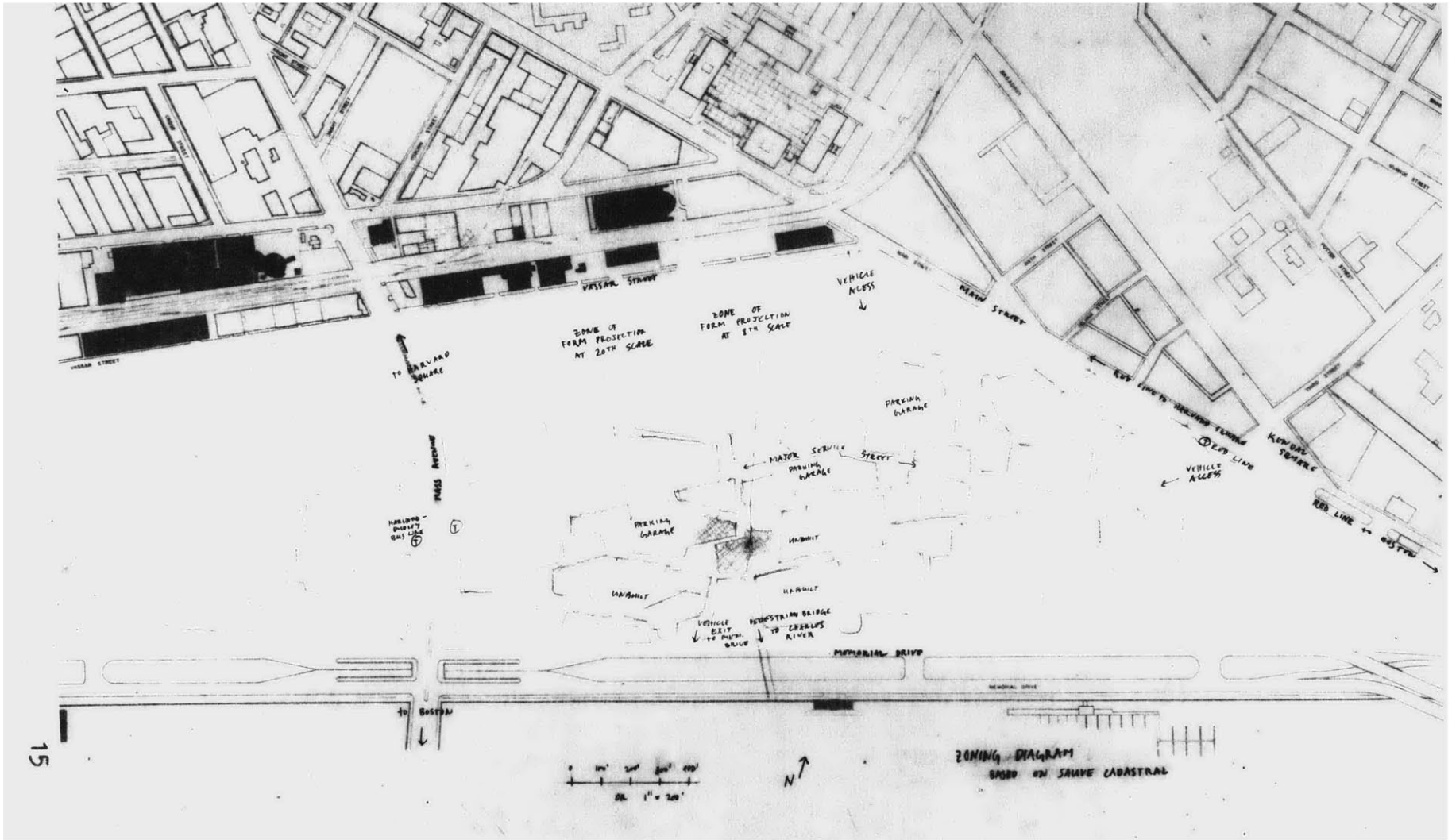
Once the orientation and general sizes and positions of the two structural systems were fixed, major defining walls were established, some of which replaced columns and defined mechanical, elevator and firestair shafts as well as the separation between parking garage and adjoining use spaces. The 1/20th scale "Ground Plan" shows one possible configuration for the walls and structural system in the zone of the previous diagrams. (This drawing includes some infill masonry and partial privacy making definitions as initial suggestions about how those spaces could be made.)

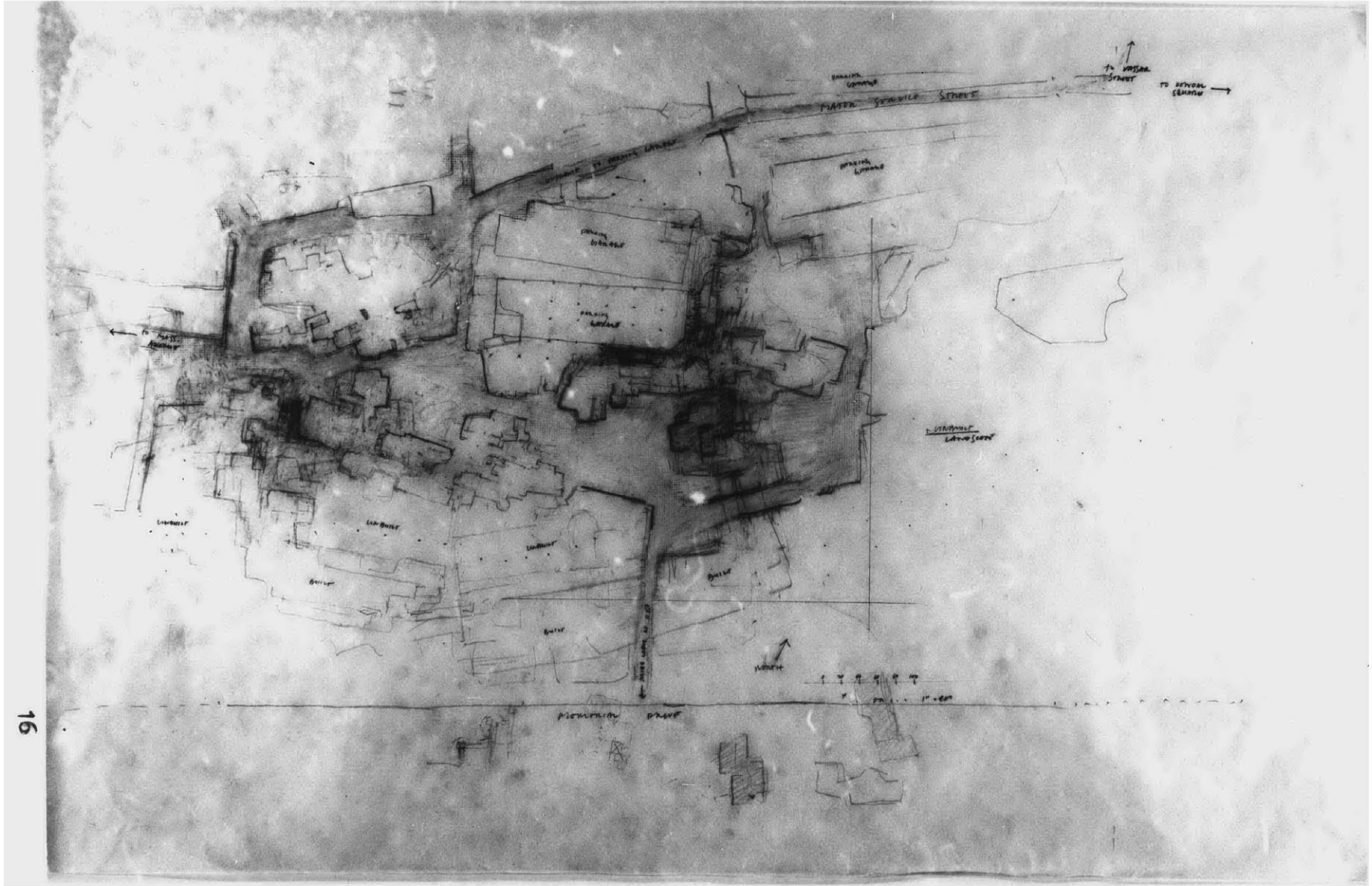
An 1/8th scale "Ground Plan" made of the eastern part of the 1/20th scale drawing shows one possible organization of classrooms, offices and an eating place. Masonry infill and a panel system incorporating fixed glazing and moveable windows were other elements of the building vocabulary. The panel system completed the privacies made by the bearing walls and was the basic unit for weather enclosure. (As shown it is a diagrammatic version of a final solution.) An alternate ground plan indicates another possible subdivision of the basic framework set up by structural definitions.

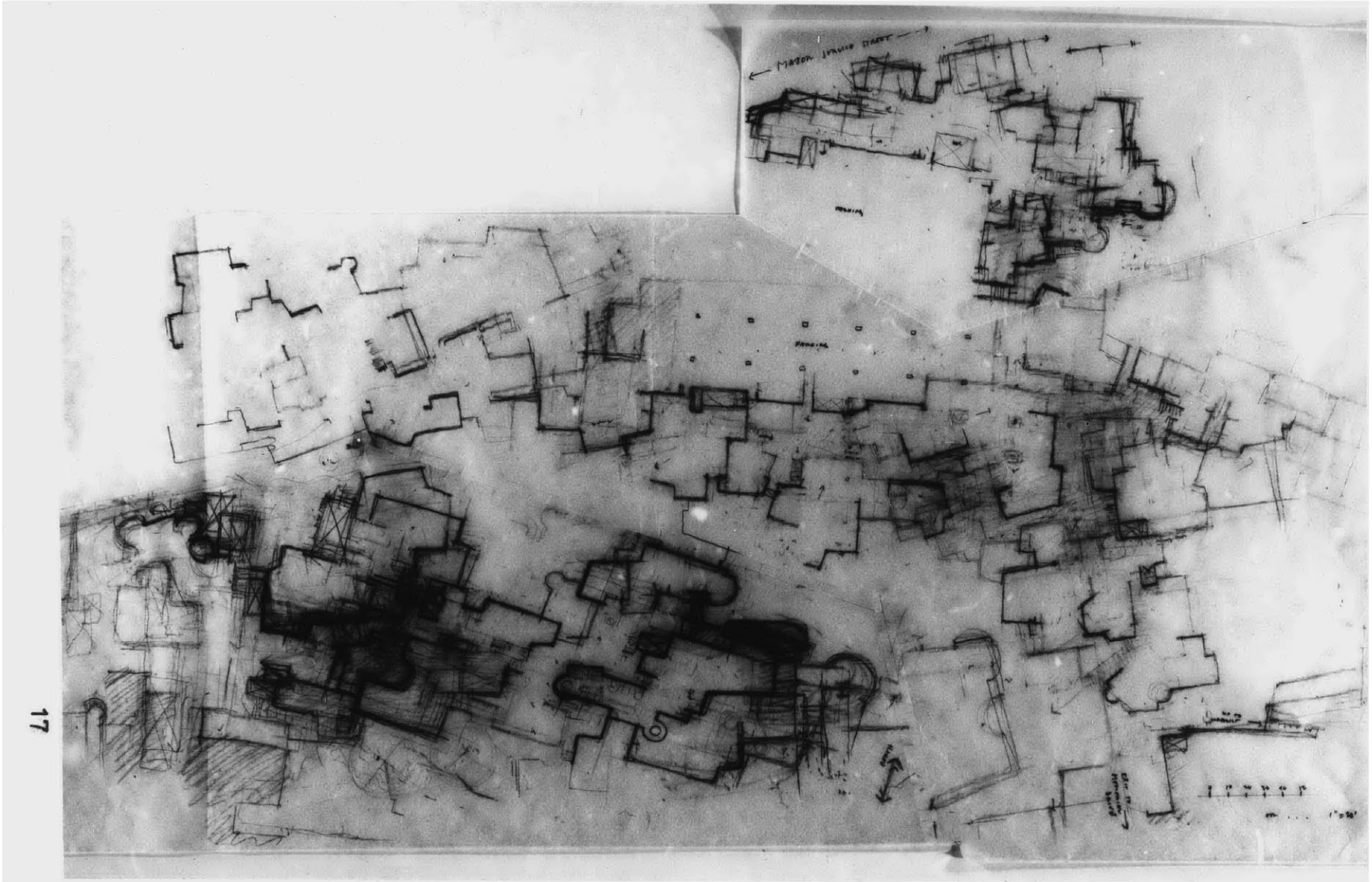
The remaining plans and sections document the configuration of the structure at upper levels. The plan at 29 feet includes one possible arrangement of classrooms, offices and distribution.













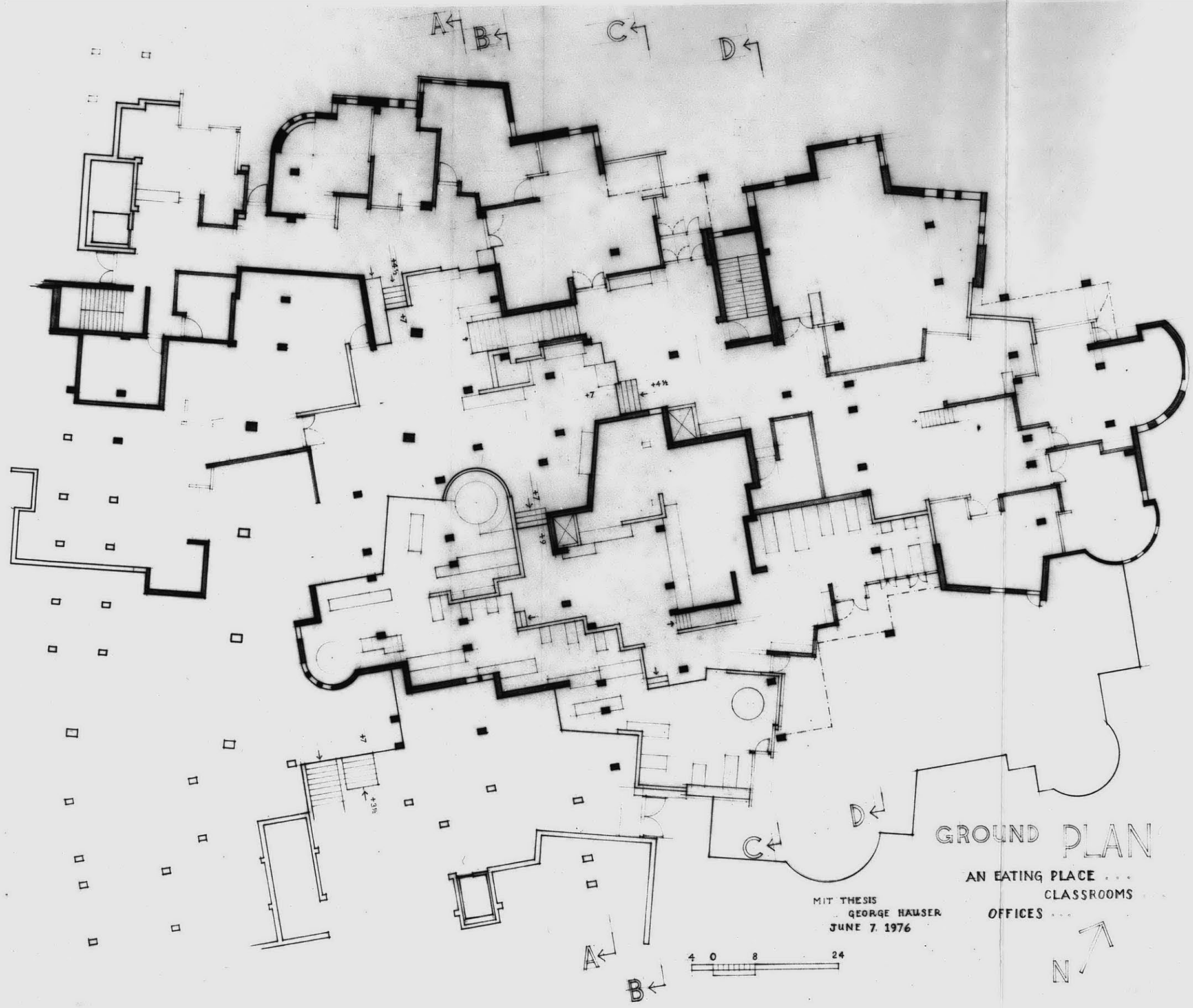
Following Drawing Shows More
Complete Development of this
Site

GROUND PLAN

PARKING ... OUTDOOR "PLACES" ...
CLASSROOMS ...
OFFICES ...

MIT THESIS
GEORGE HAUSER
JUNE 7, 1976

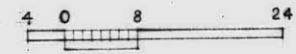




GROUND PLAN

AN EATING PLACE ...
CLASSROOMS ...
OFFICES ...

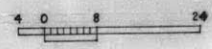
MIT THESIS
GEORGE HAUSER
JUNE 7, 1976



20




ALTERNATE
GROUND PLAN



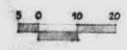


CODING . . .
DISTRIBUTION
LABS / CLASSROOMS / OFFICES





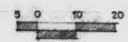
PLAN AT 41'

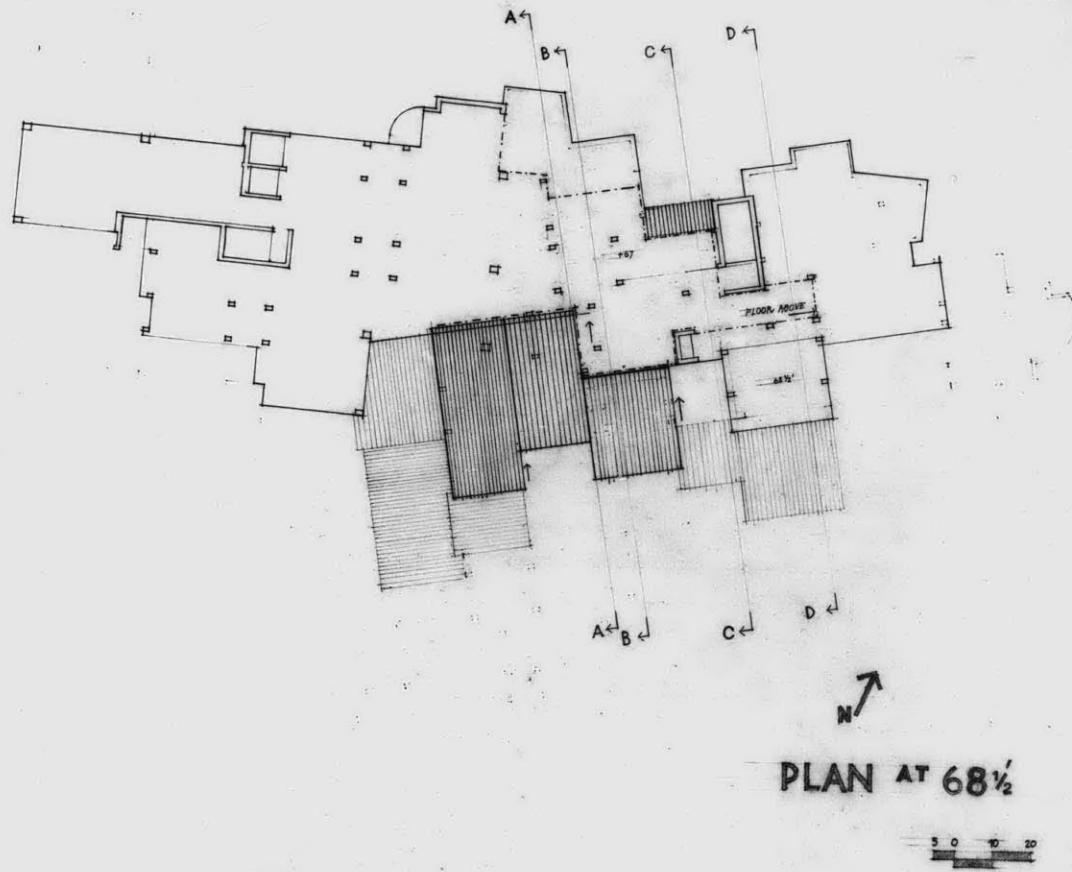




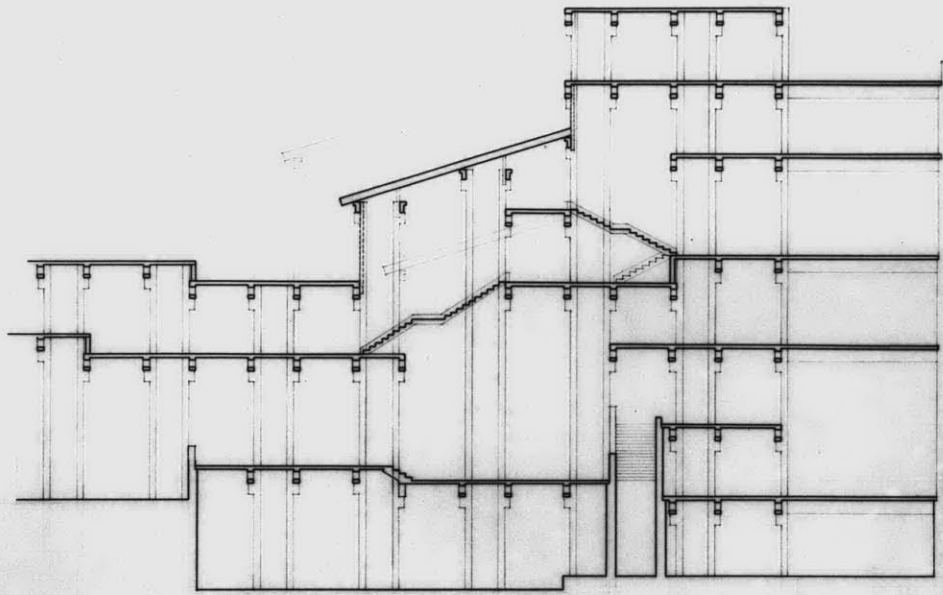
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PLAN AT 56 1/2'

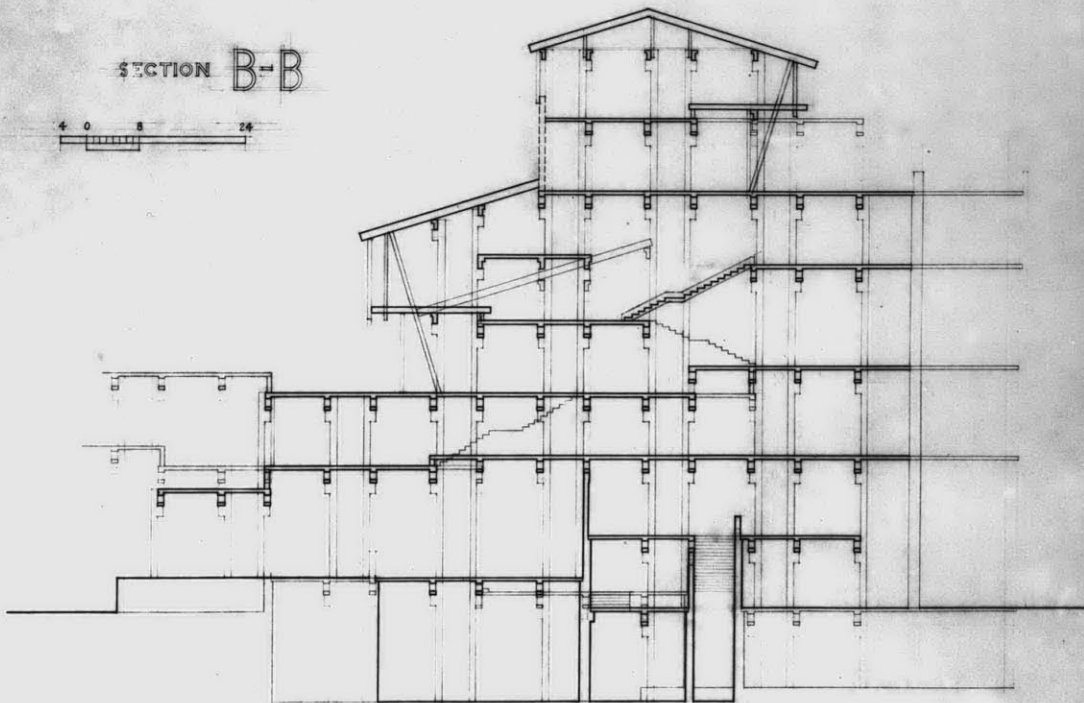
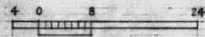




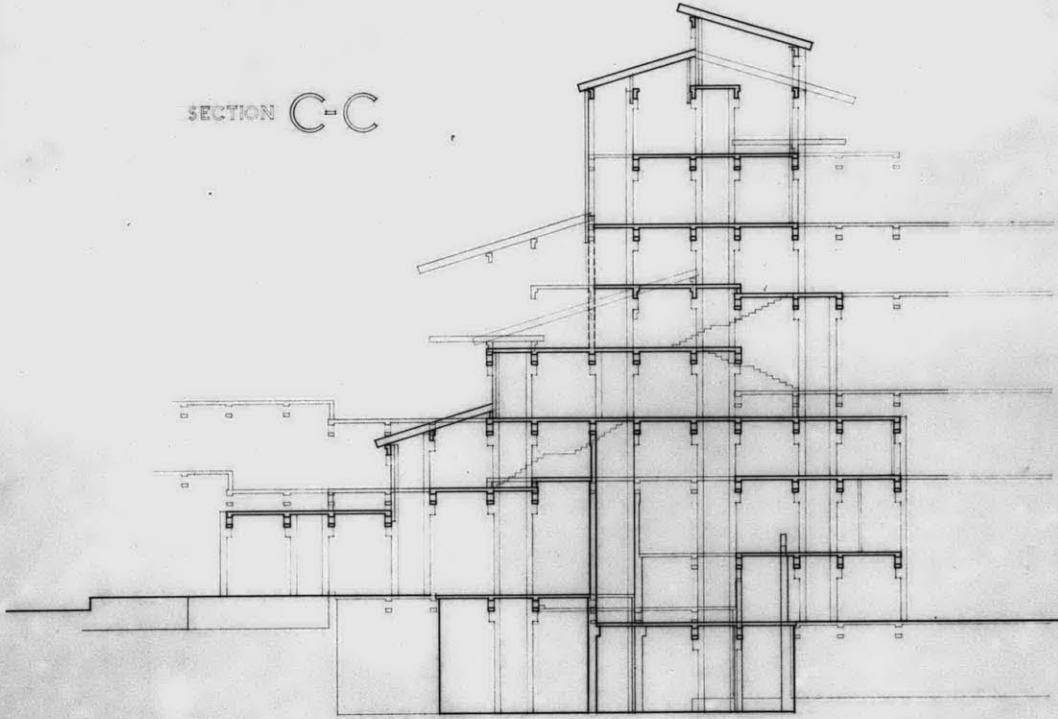
SECTION A-A



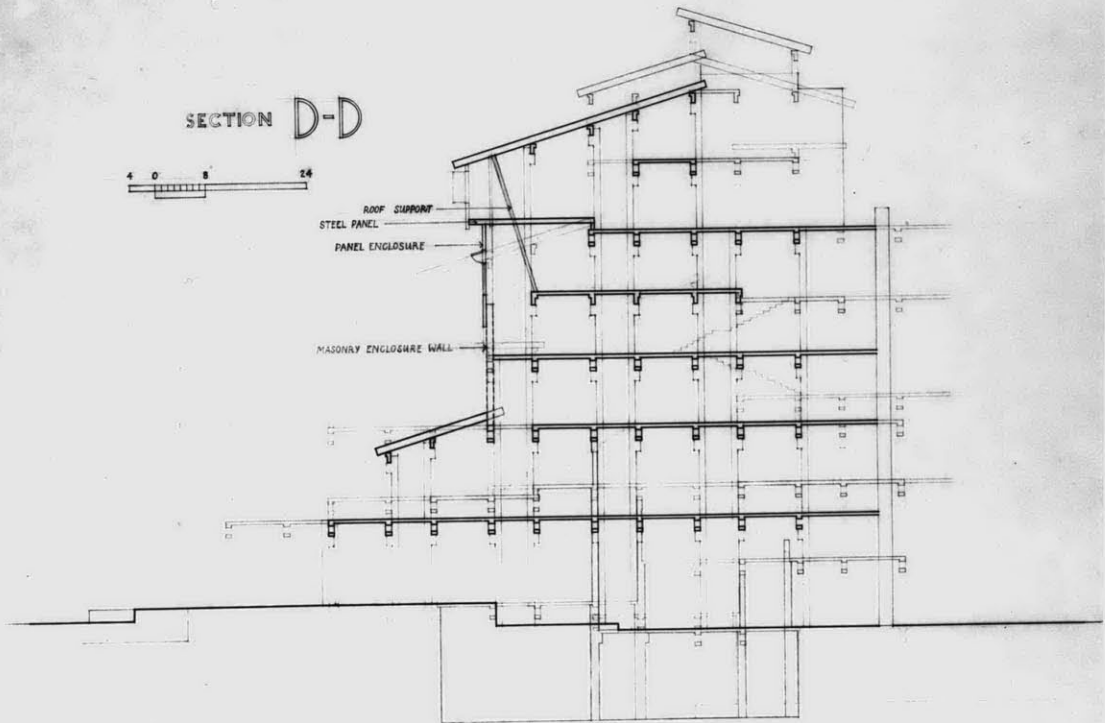
SECTION B-B



SECTION C-C

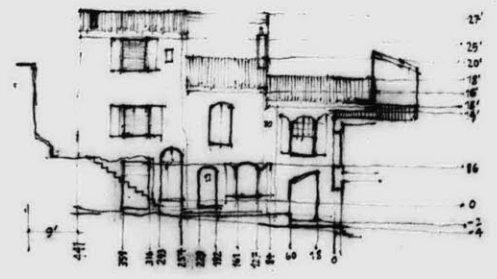


SECTION D-D





27



27
25
20
15
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5
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-5
-10

