

HIGH-DENSITY MASS-HOUSING

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and
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Architecture 201/202 Spring 1988

Department of Architecture
University of California, Berkeley

with

Center for Environmental Structure

This study is the work of the 201/2 design studio in the Building Process area of emphasis. It was taught in Spring 1988 by Ingrid King and Eleni Coromvli with help and direction of Christopher Alexander.

The students who participated in the course, and whose designs appear in the following pages are:

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Annie Der Bedrossian
Catherine Drayton
James Maguire
Keiko Ono
Kyriakos Pontikis
Jeanne Ratcliffe
Karen Stanton
Michael Supina
David Tsu-wang Sung
Anjali Yagnik

CONTENTS

INTRODUCTION

1. OTHER EXAMPLES

2. THE ESSENTIAL IDEAS

- A. THE INDIVIDUAL UNIT
- B. THE L-GROUP
- C. THE PEDESTRIAN-CAR ALLEY
- D. GARDENS
- E. VARIATION AND REPETITION
- F. MOVING IN AND OUT OF PARKING
- G. GRADIENTS
- H. GATEWAYS AND THE BOULEVARD
- I. THE BOULEVARD AS THE MAJOR CENTER
FROM WHICH THE PRECINCTS HANG

3. PRECINCTS

4. INDIVIDUAL BUILDINGS

INTRODUCTION

What is the appropriate form and pattern for high-density mass-housing. In particular what is the appropriate form for housing projects containing several hundred units, with an overall density in the range of 80 units per acre.

In particular, the following questions need to be answered.

1. What is the appropriate kind of repetition for several hundred units of housing.
2. What are the fundamental units of form and units of development.
3. How does the open space work.
4. How does movement and community work.
5. How does parking work.

In this study, we answered these questions in the context of a real situation in Oakland, where an area of 6.4 acres, presently divided into 4 roughly contiguous parcels, is to be developed with 454 units of housing, and 35,000 sf. of retail space. The overall effective density of the project as shown is approximately 76 units/acre.

We believe the answers we have found are quite general in their application. The same principles can be made to apply to many different contexts, where housing in the range of 80 units per acre is required in large numbers.

I: OTHER EXAMPLES

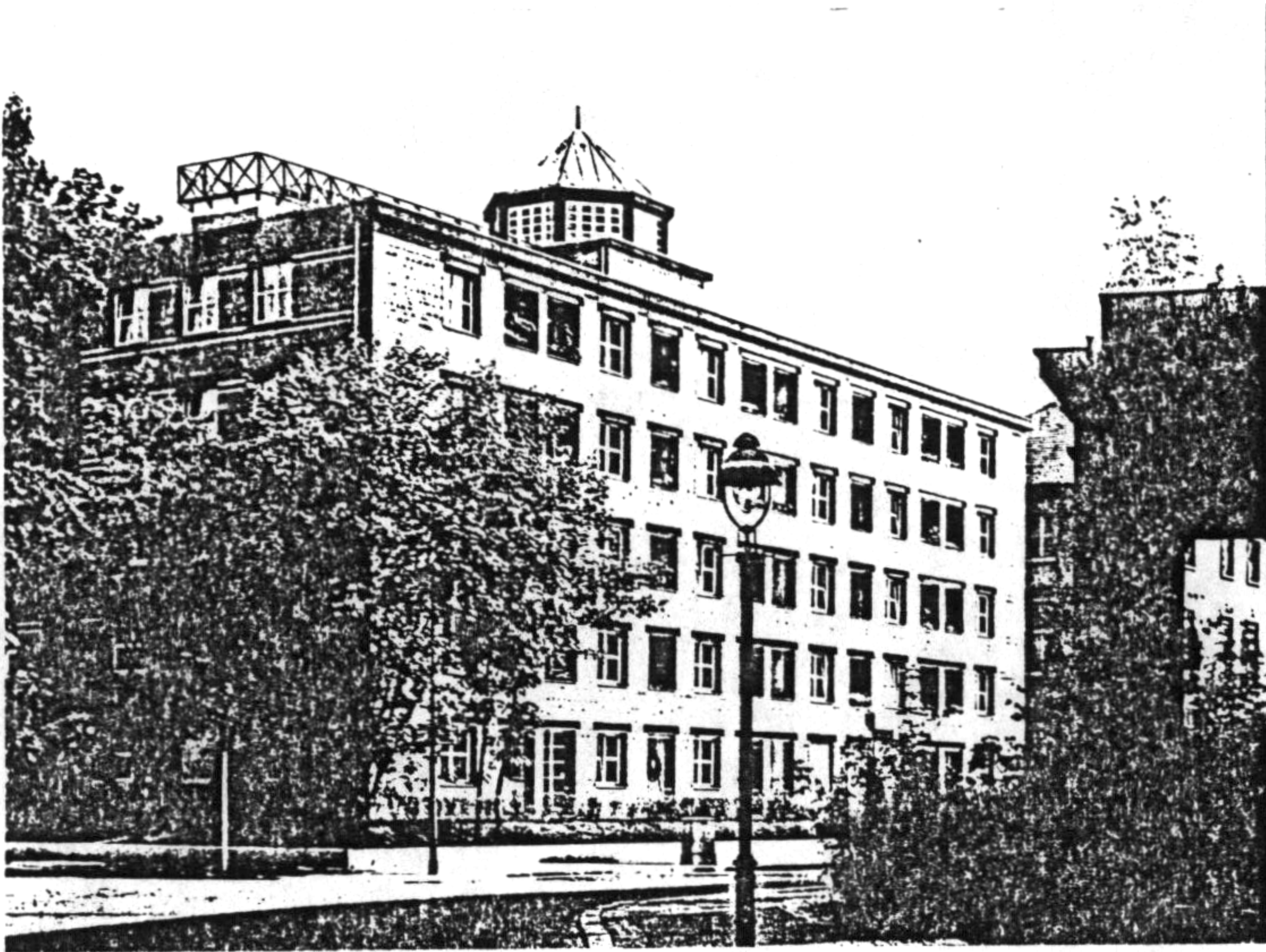
To show the problem graphically, we present some typical Bay area examples of high density housing projects.



We see the following main problems.

1. Lack of individual identity in the buildings.
2. Lack of identity for the individual apartments.
3. Lack of useful outdoor space.
4. Lack of pleasant community in the streets.
5. Very bad relation of parking to the projects, with unpleasant parking garages.
6. Overall feeling of alienation and repetition which is inconsistent with the existence of reasonable private and/or communal life.

It is difficult to solve these problems while maintaining a high density. On this page we present some of the more well-known projects from the Berlin exhibit (IBA 84/87), for which we have calculated approximate densities. In these projects the problems we have mentioned are partially solved, but remain partially unsolved.



Rauchstrasse, 50 units/acre



"Victoria", Suedliche Friedrichstadt,
at least 100 units/acre



Hitzigallee/Sigismundstrasse,
approx 75 units/acre



Tiergarten, 48 units/acre



Ritterstrasse, 60 units/acre

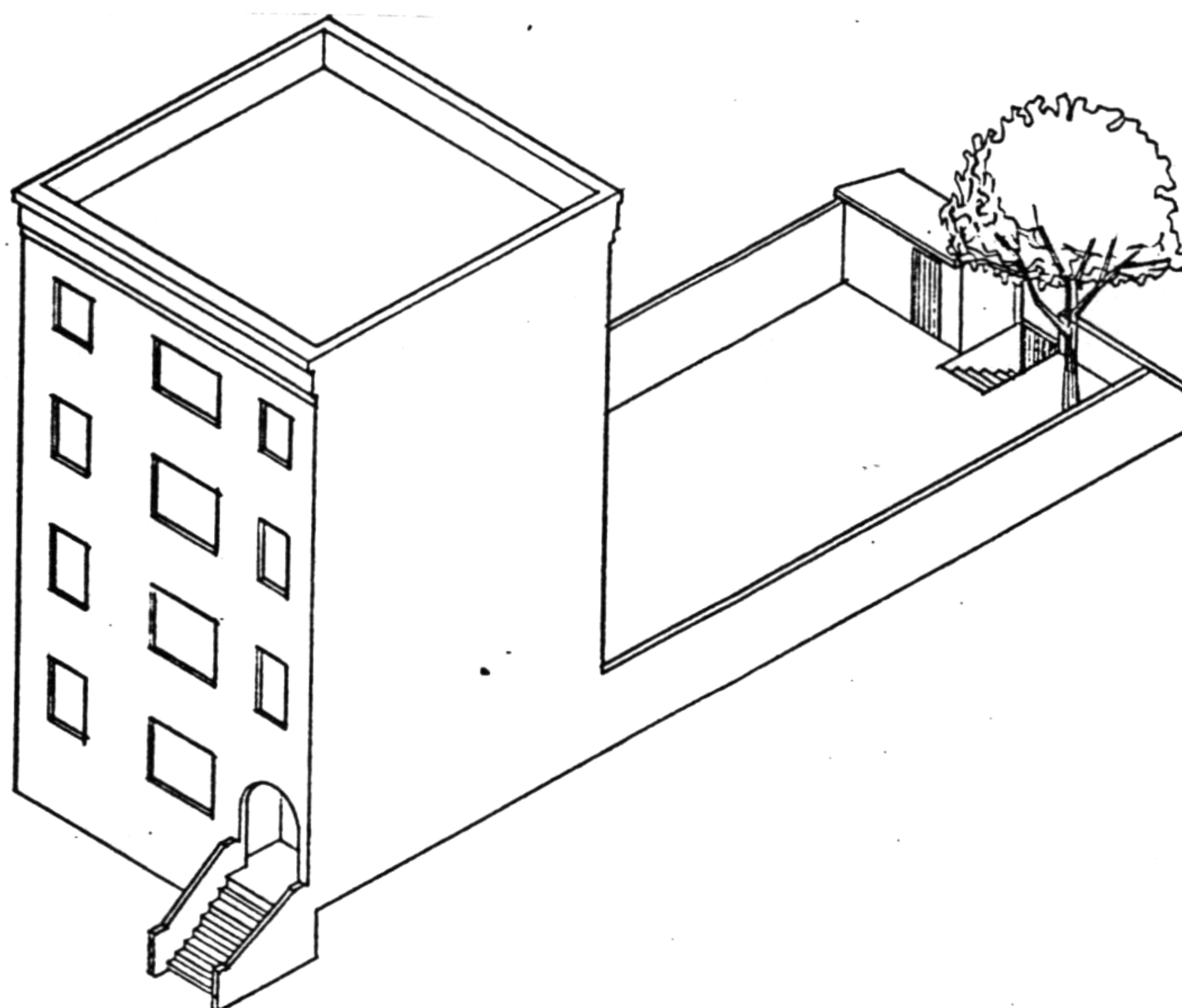
2. THE ESSENTIAL IDEAS

- A. THE INDIVIDUAL UNIT
- B. THE L-GROUP
- C. THE PEDESTRIAN-CAR ALLEY
- D. GARDENS
- E. VARIATION AND REPETITION
- F. MOVING IN AND OUT OF PARKING
- G. GRADIENTS
- H. GATEWAYS AND THE BOULEVARD
- I. THE BOULEVARD AS THE MAJOR CENTER
FROM WHICH THE PRECINCTS HANG

A. THE INDIVIDUAL UNIT

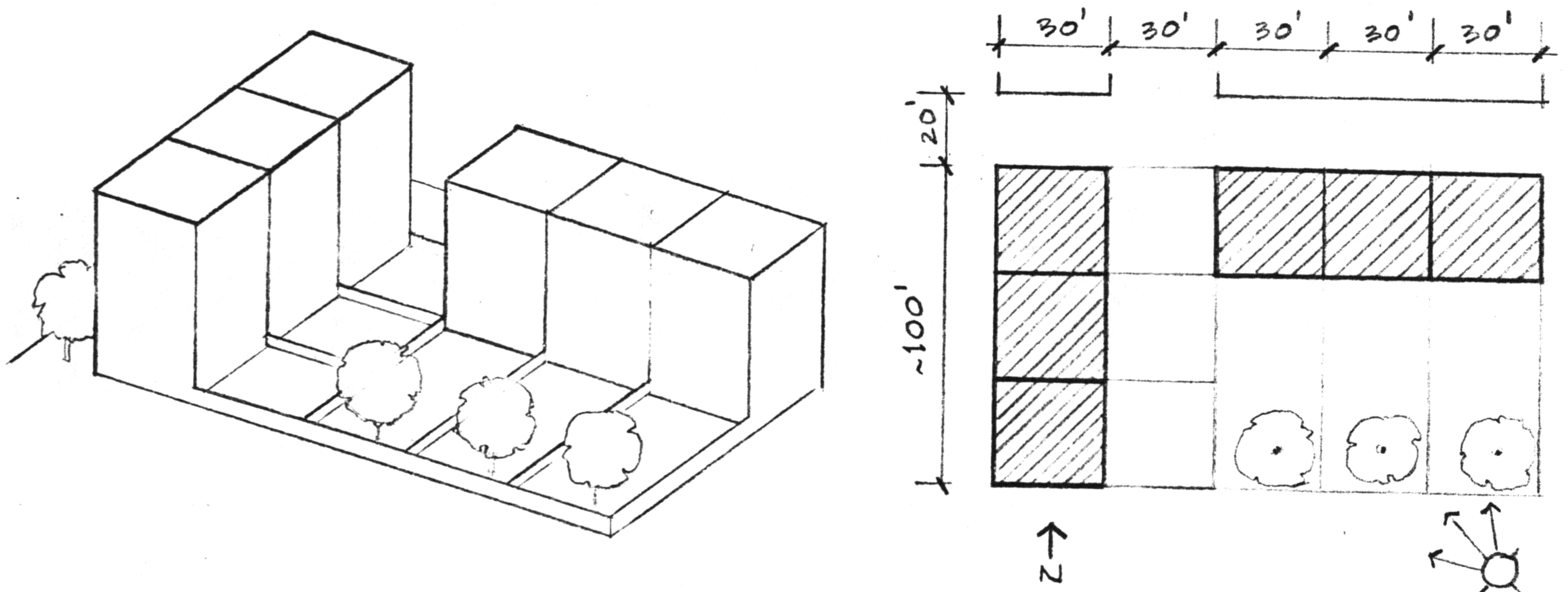
The essential idea lies in the creation of a small building unit which can be repeated hundreds of times, with variation, is easy to build, cheap to build, and provides pleasant apartments with their own identity.

This building type is a building 4-5 stories high, 30'x30, one apartment on each floor, with 30'x60' garden in the back.



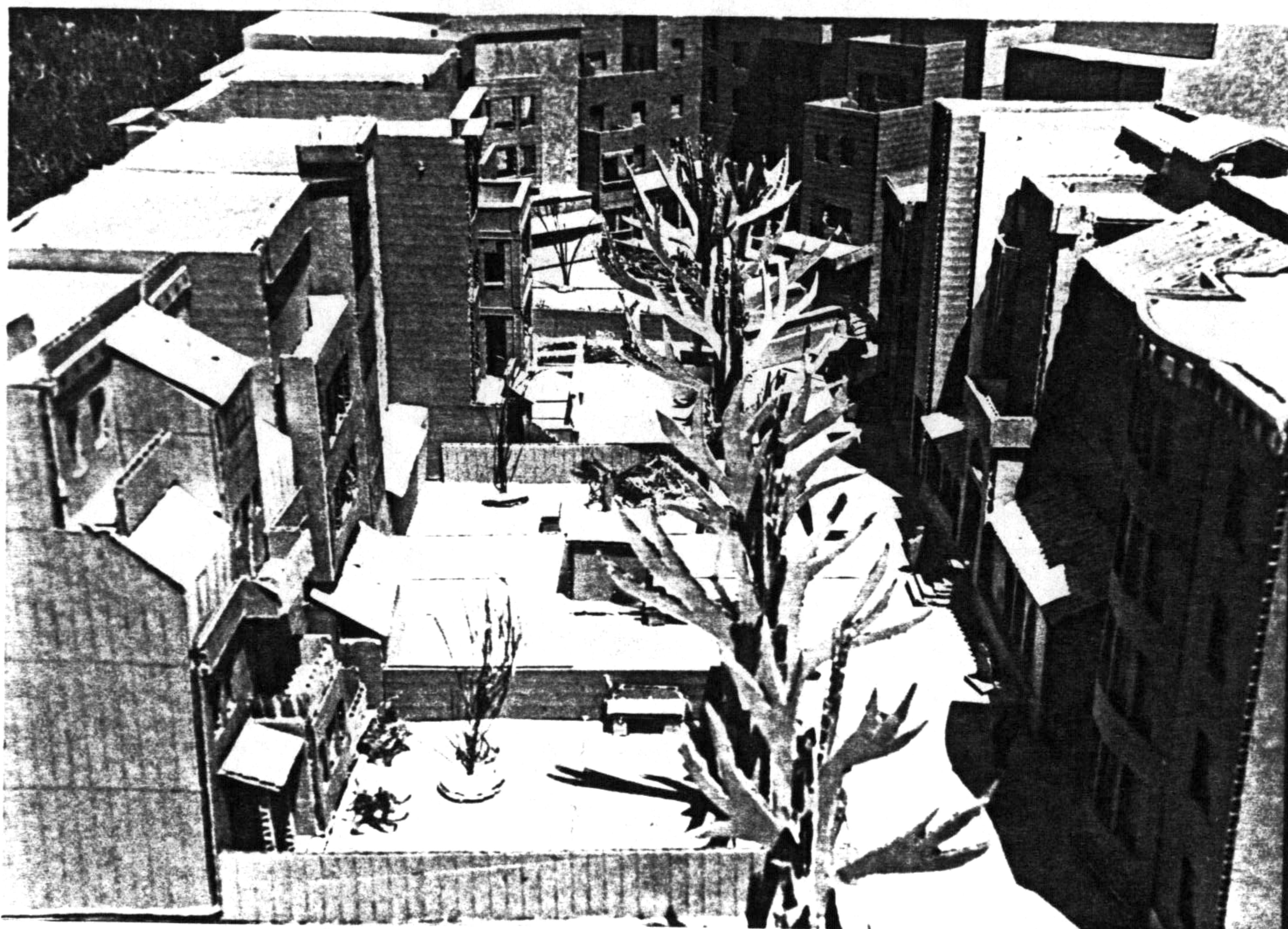
B. THE L-GROUP

The second essential idea lies in the creation of groupings which form precincts. These precincts are garden-like, mainly pedestrian in character, and open towards the sun. Because of the need to keep them open to the sun, and yet partly enclosed, they generally take on an L-shape, and we have come to refer to them as L-groups.



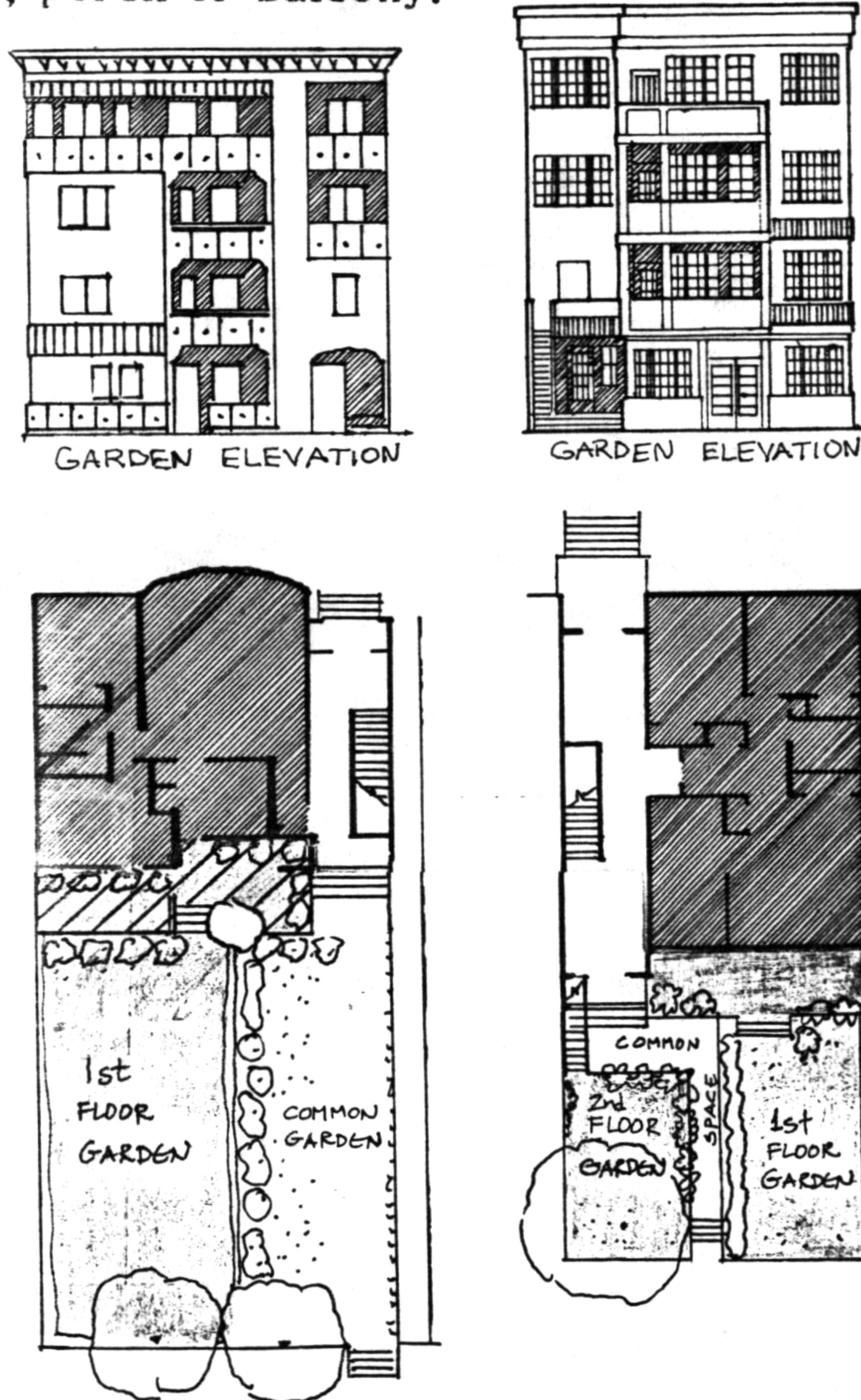
C. THE PEDESTRIAN-CAR ALLEY

At the core of the L-group, is an assymetrical repeating arrangement of buildings, gardens, and alleys, which allows community to occur, and which forces all pedestrian movement into the street.



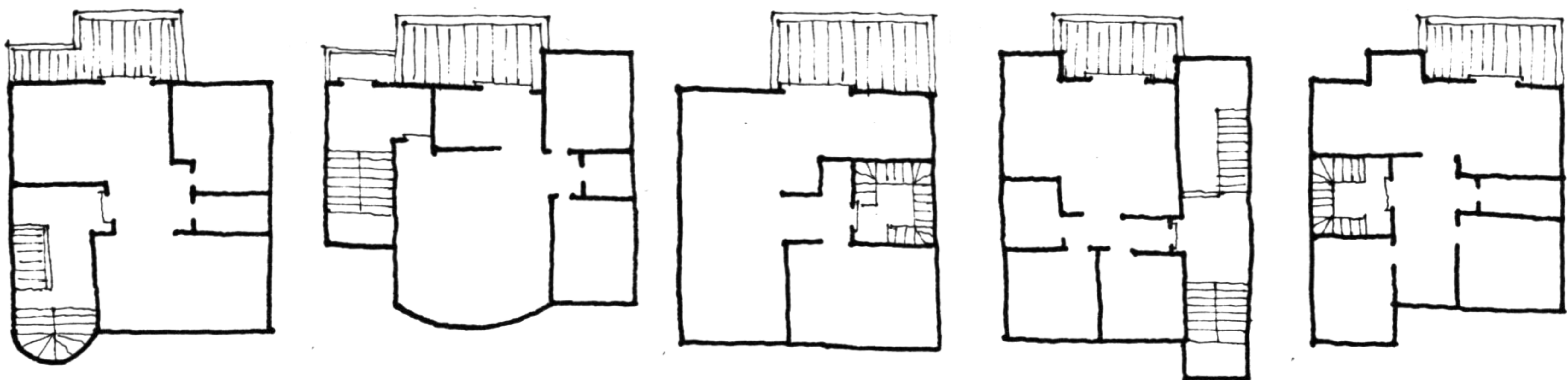
D. GARDENS

Each building has its own gardens. The apartments in the buildings are designed so that each apartment also has its own private outdoor space. This space is either a clearly defined part of the garden, or a deck, porch or balcony.



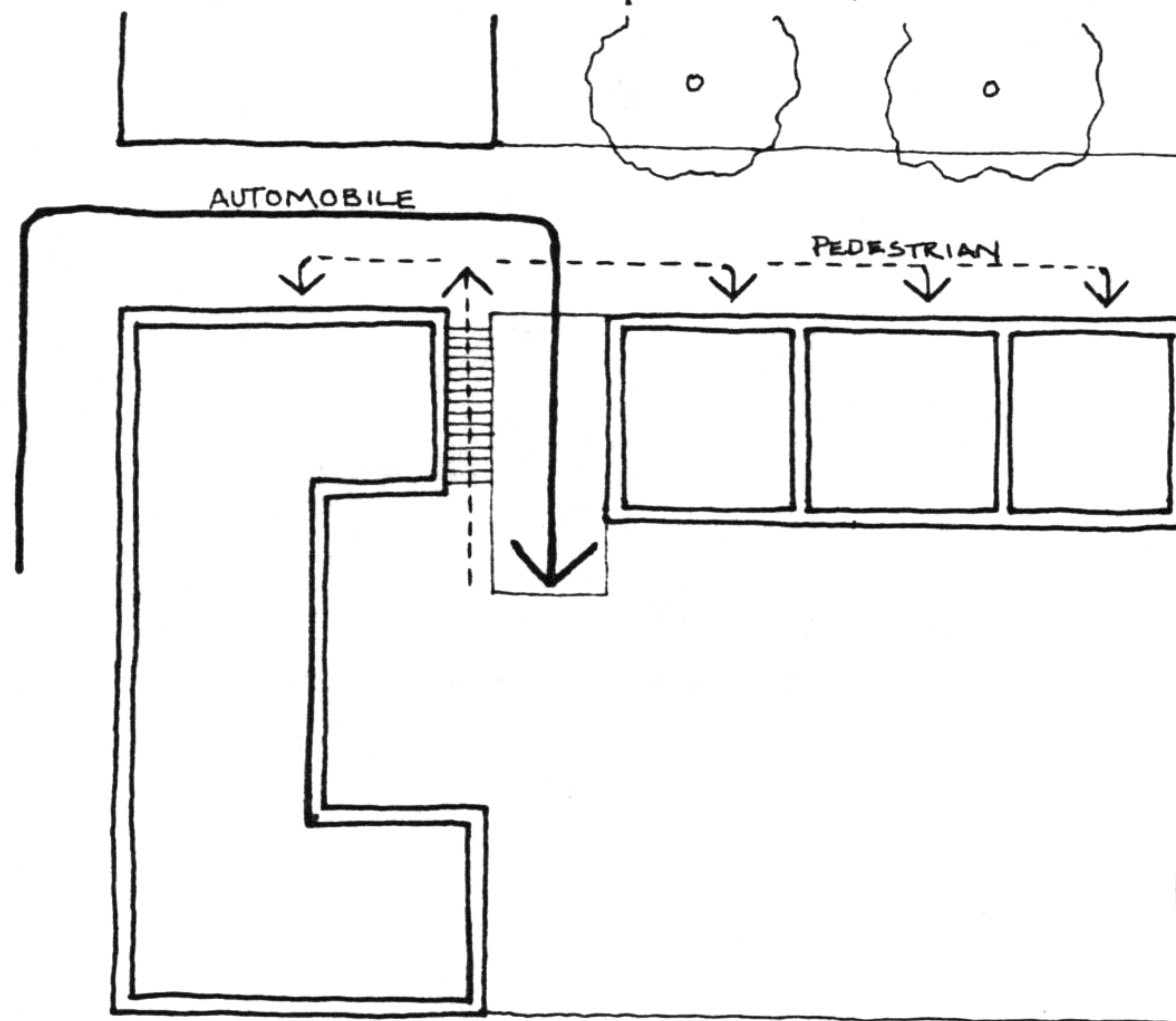
E. VARIATION AND REPETITION

It is essential that the building form is so simple that it is easy to repeat, and that comfortable individual variations will arise, partly because different builders choose to build differently, but also because conditions and context formed by location in the L-group encourages a natural variation to occur.



F. MOVING IN AND OUT OF PARKING

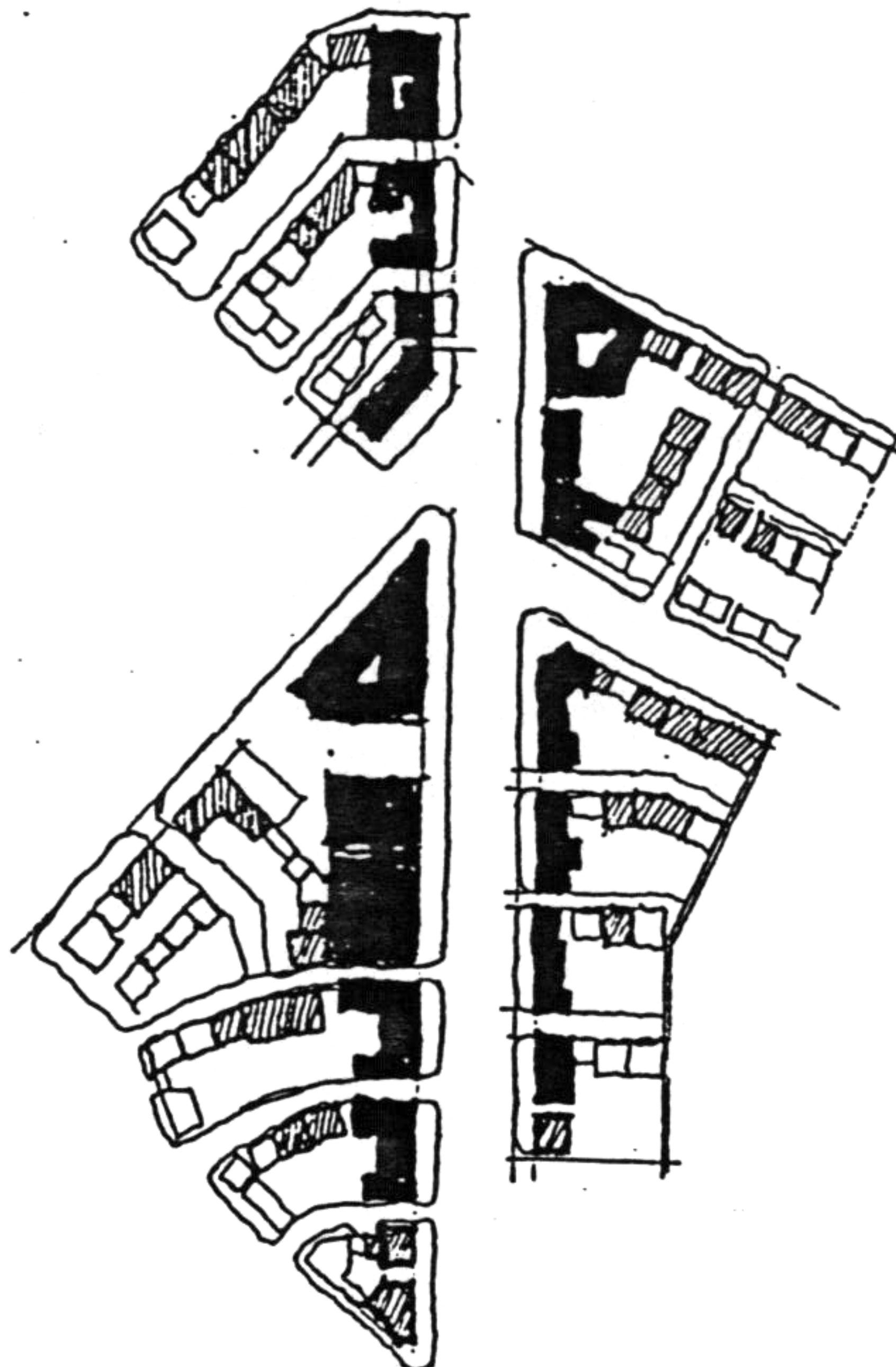
Parking is underground, and related in a very particular way to houses. Drivers coming into parking, come into their own alley, down into parking, and then walk directly out to the alley, so that their path home is through the public space belonging to their own apartment.



G. GRADIENTS

In order to avoid the homogeneous and deadly character of most mass housing, the gradients which occur in the plan and volume are essential to the project.

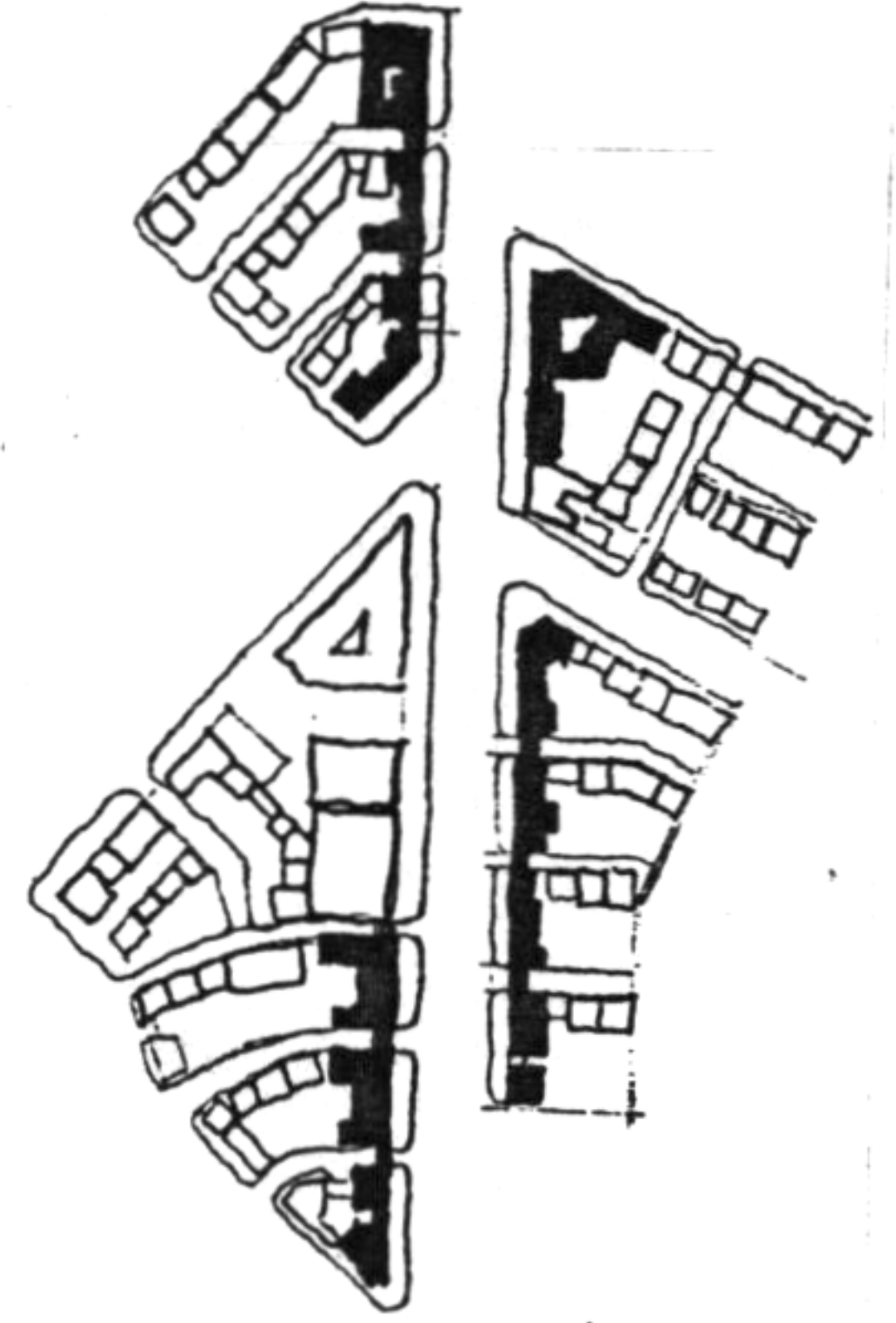
Volumes get smaller towards the perimeter, where the project abuts rehabilitated housing. Volumes get bigger towards San Pablo, which has a different scale.



H. GATEWAYS AND THE BOULEVARD

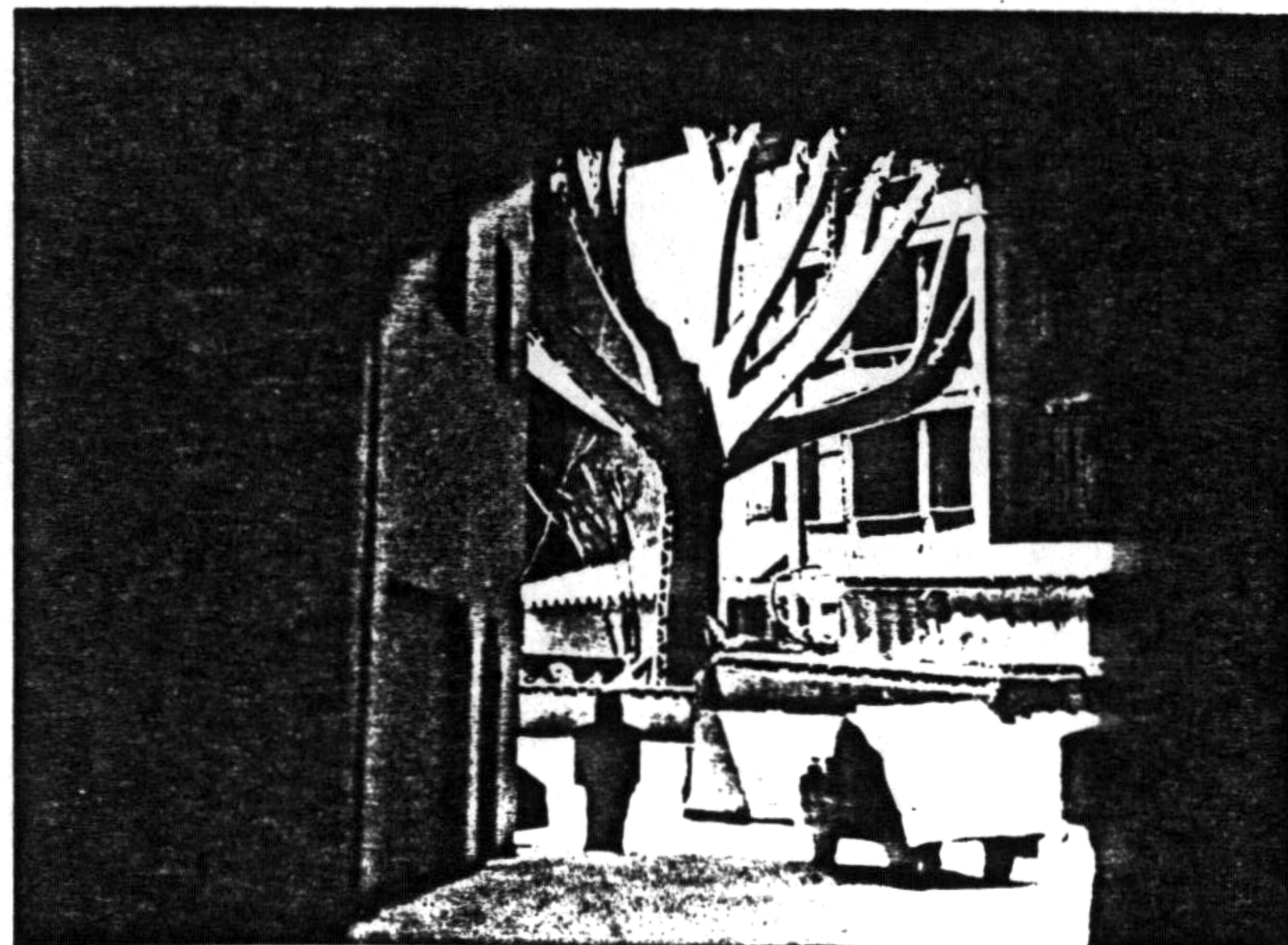
The way that San Pablo, which is a major street, and capable of becoming a boulevard in future development, works in the scheme is essential.

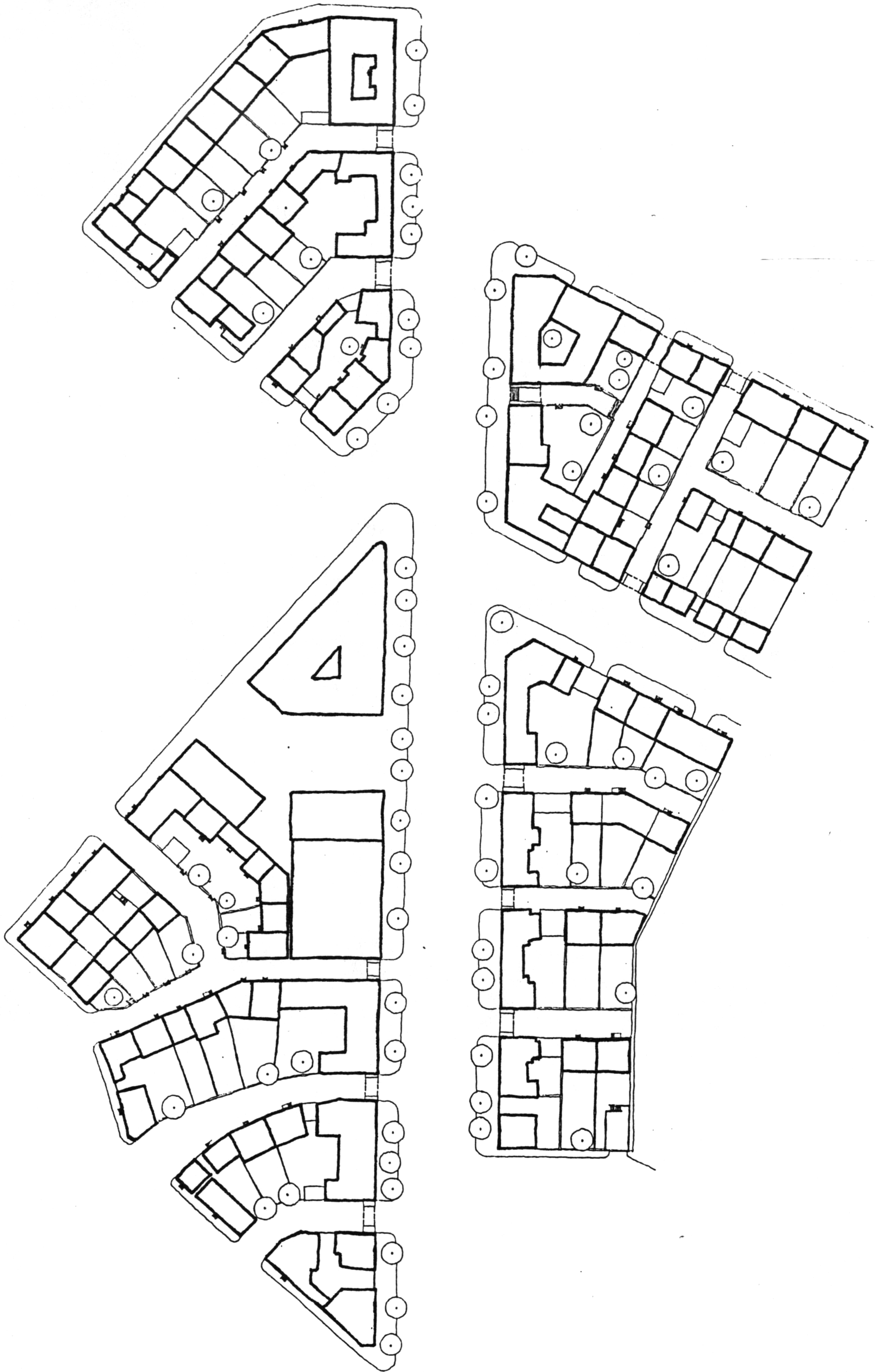
1. First-floor frontage is made of shops and offices.
2. All apartment buildings along San Pablo are bigger and form a "thickening" or boundary between San Pablo and the inner precinct areas.
3. There are gateways, at the points of entry to the precincts.
4. Access to apartments in the San Pablo buildings, is from these gateways.
5. To form the thickening, the apartment buildings have a typical half courtyard form which turns towards the inner precinct.



I. THE BOULEVARD AS THE MAJOR CENTER FROM WHICH THE PRECINCTS HANG

The precincts are strengthened by the way that -- as centers -- they hang off San Pablo and help to feed its life, and also draw life themselves from their proximity to it.





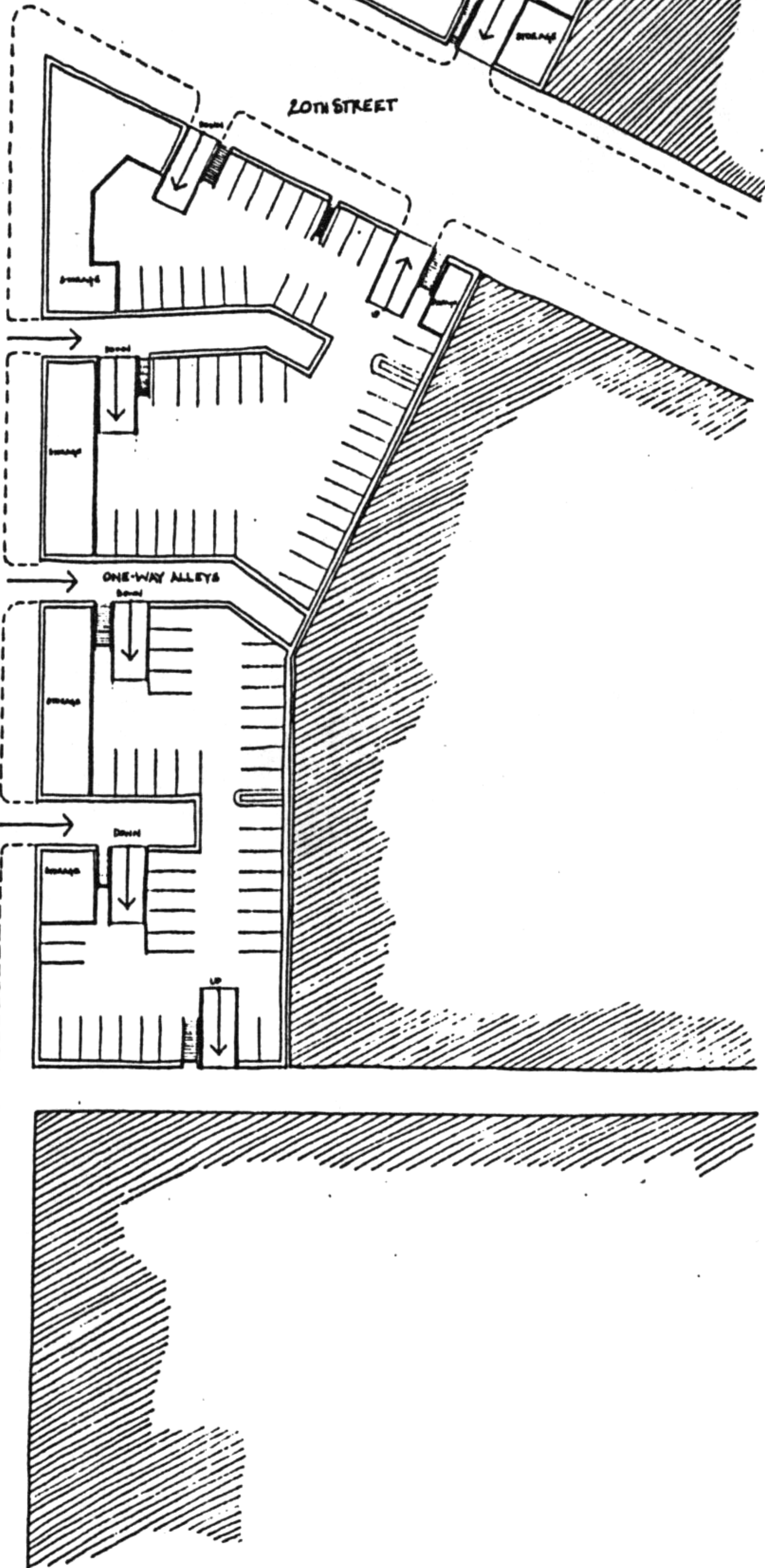
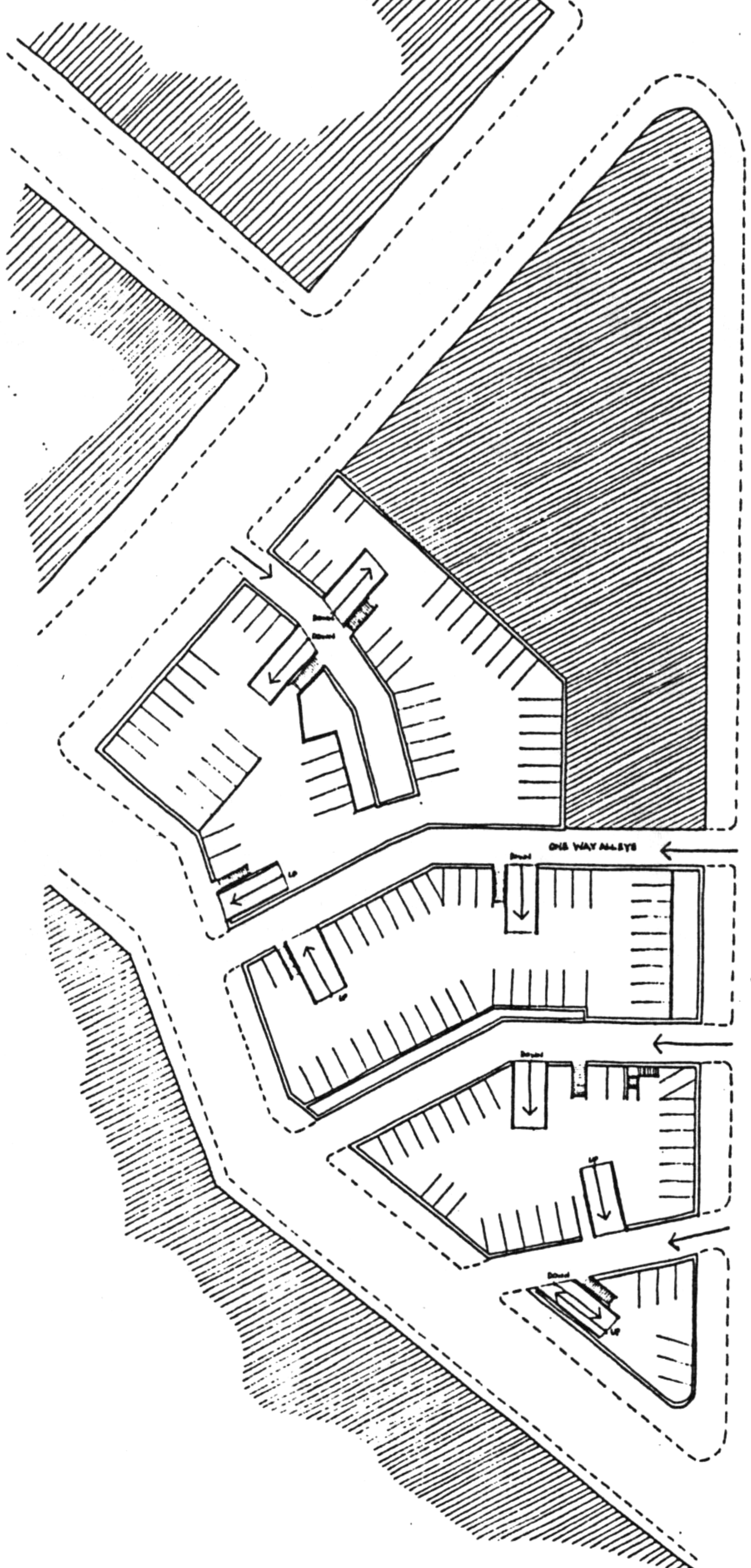
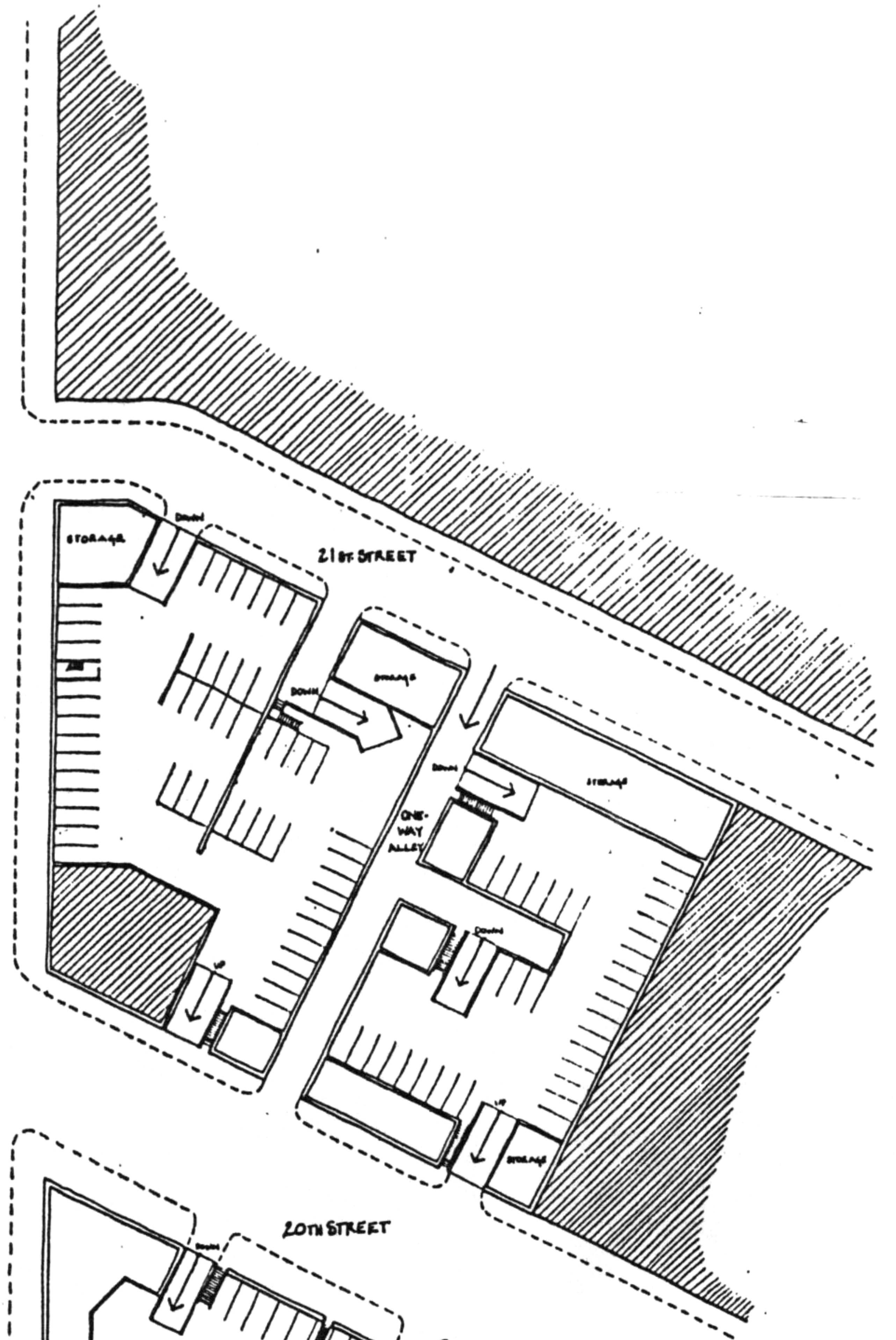
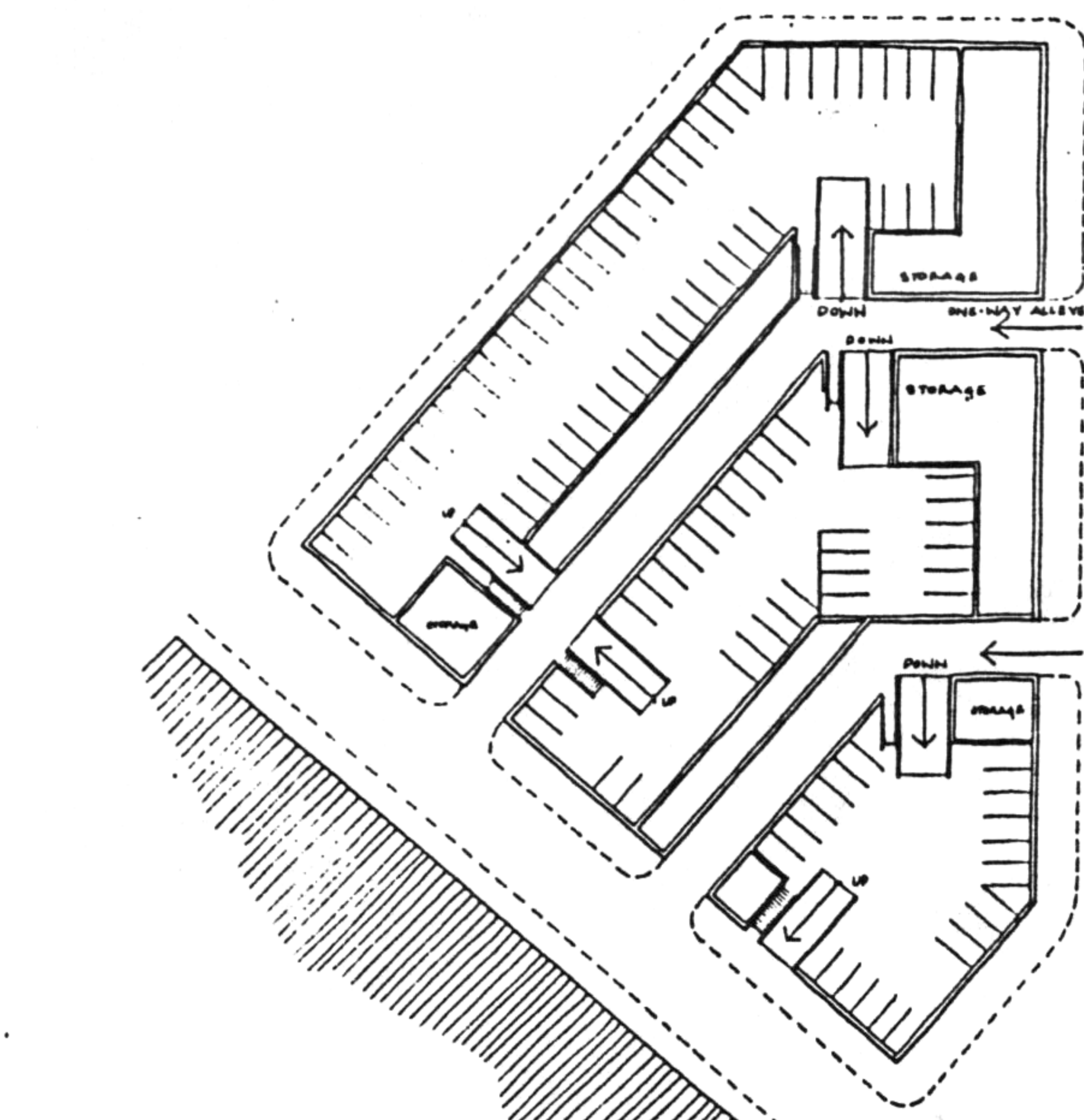
HIGH DENSITY MASS HOUSING
DOWNTOWN OAKLAND

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SITE PLAN

0 16 32 64 128



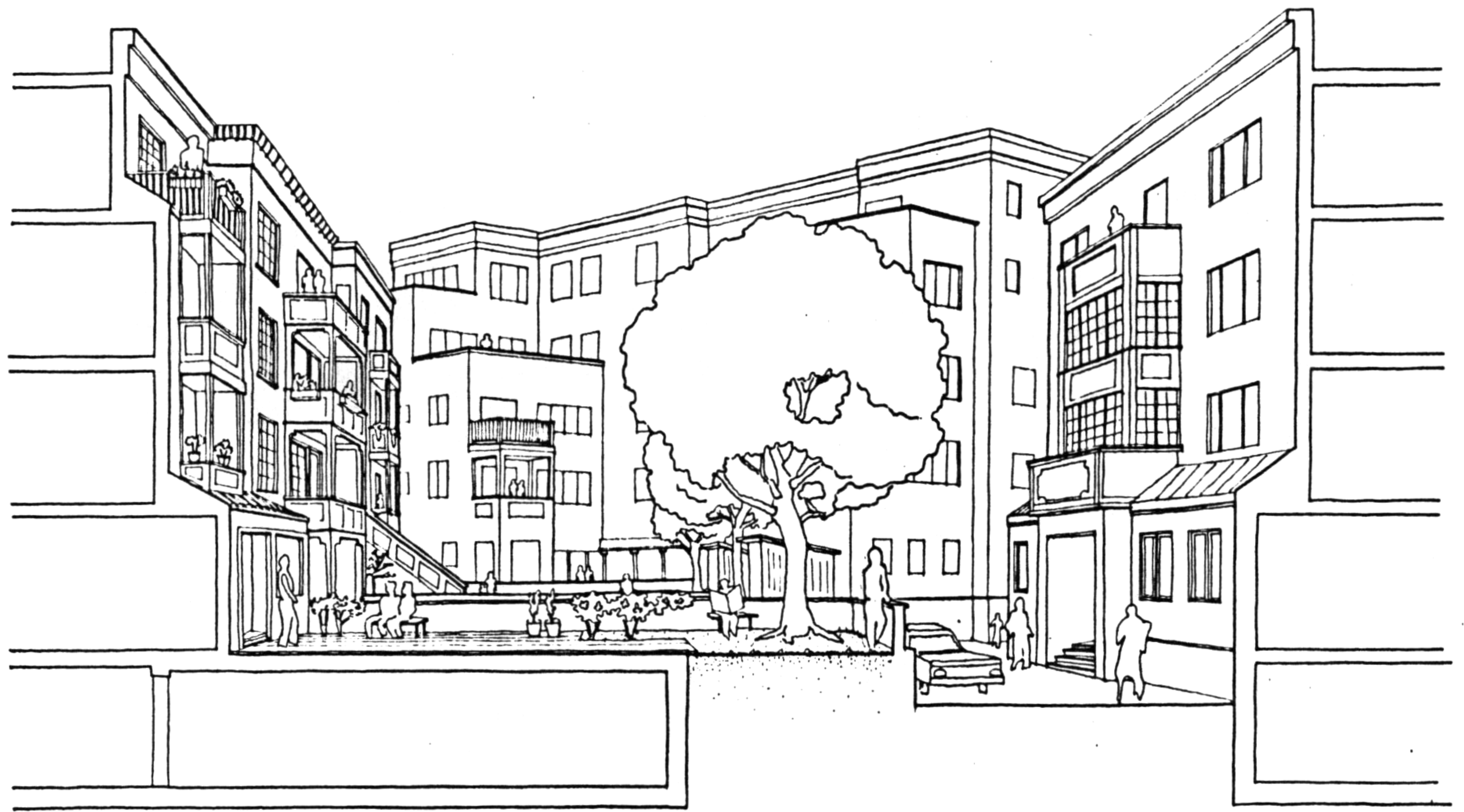


HIGH DENSITY MASS HOUSING
DOWNTOWN OAKLAND

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PARKING PLAN





HIGH DENSITY MASS HOUSING
DOWNTOWN OAKLAND

SECTION PERSPECTIVE

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WEST ELEVATION

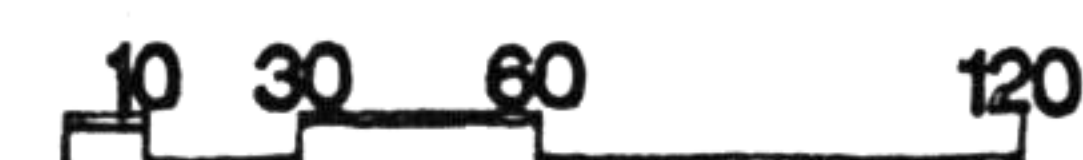


EAST ELEVATION

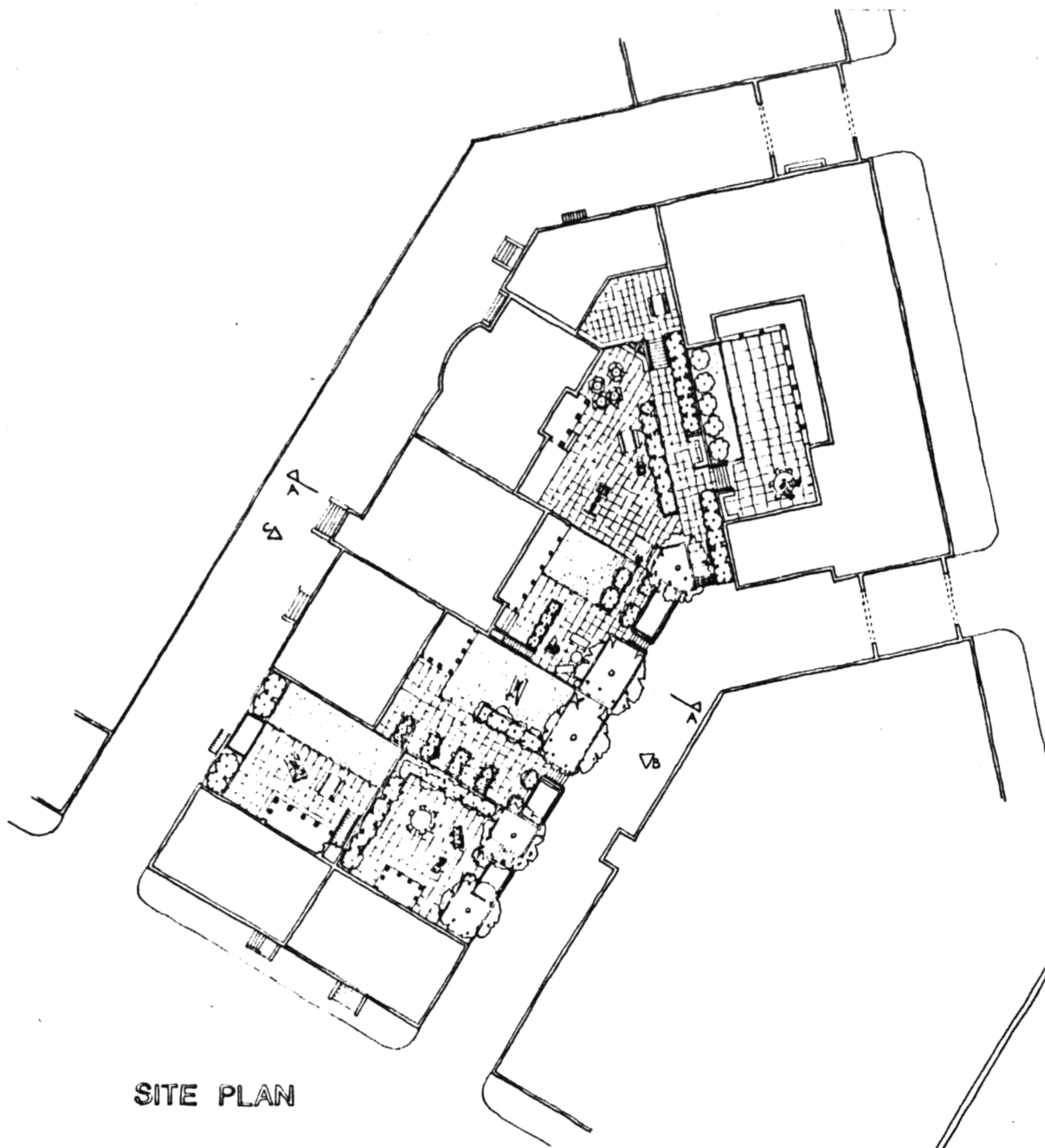
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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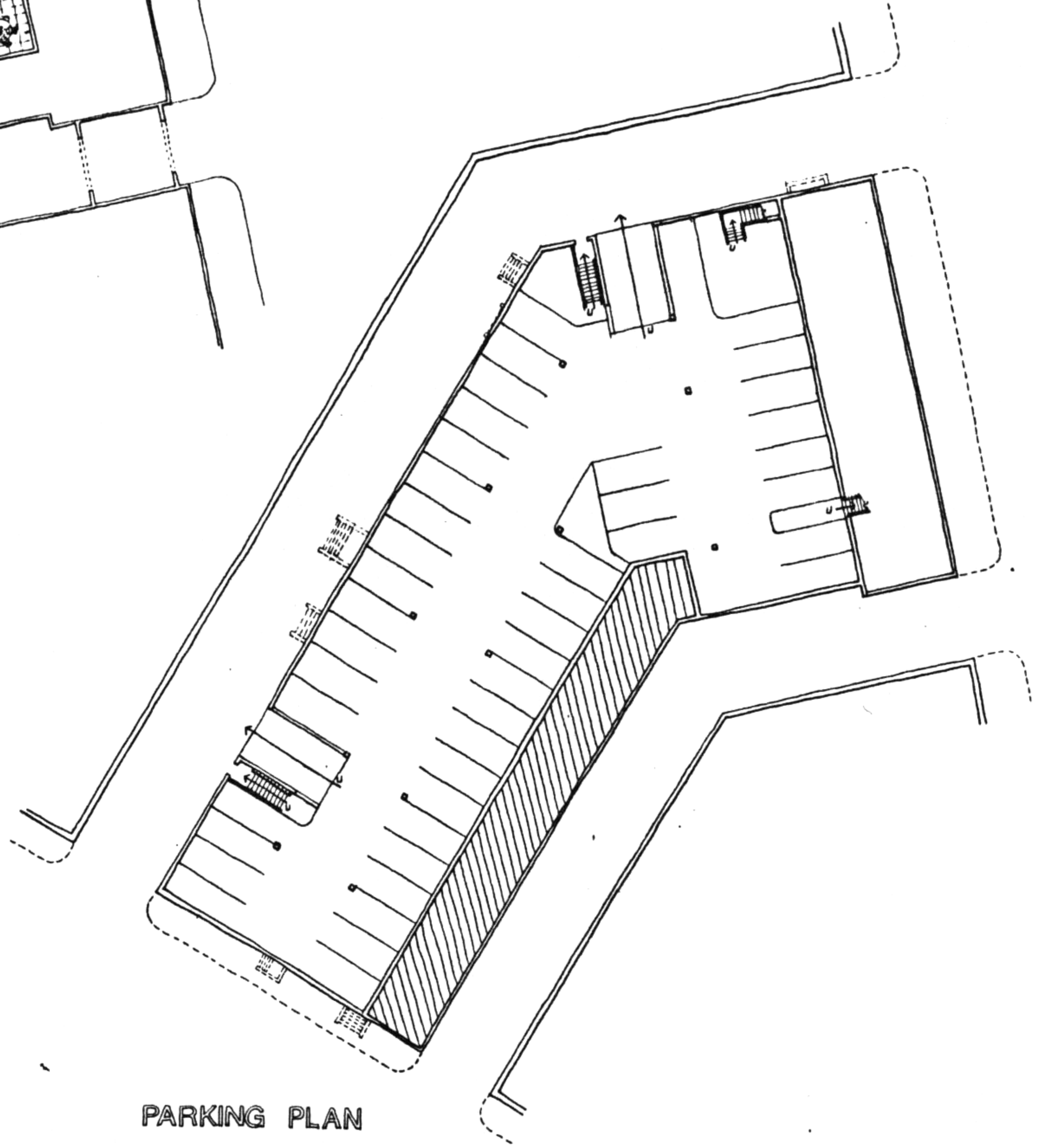
SAN PABLO ELEVATIONS



3. PRECINCTS



SITE PLAN



PARKING PLAN



SECTION A-A

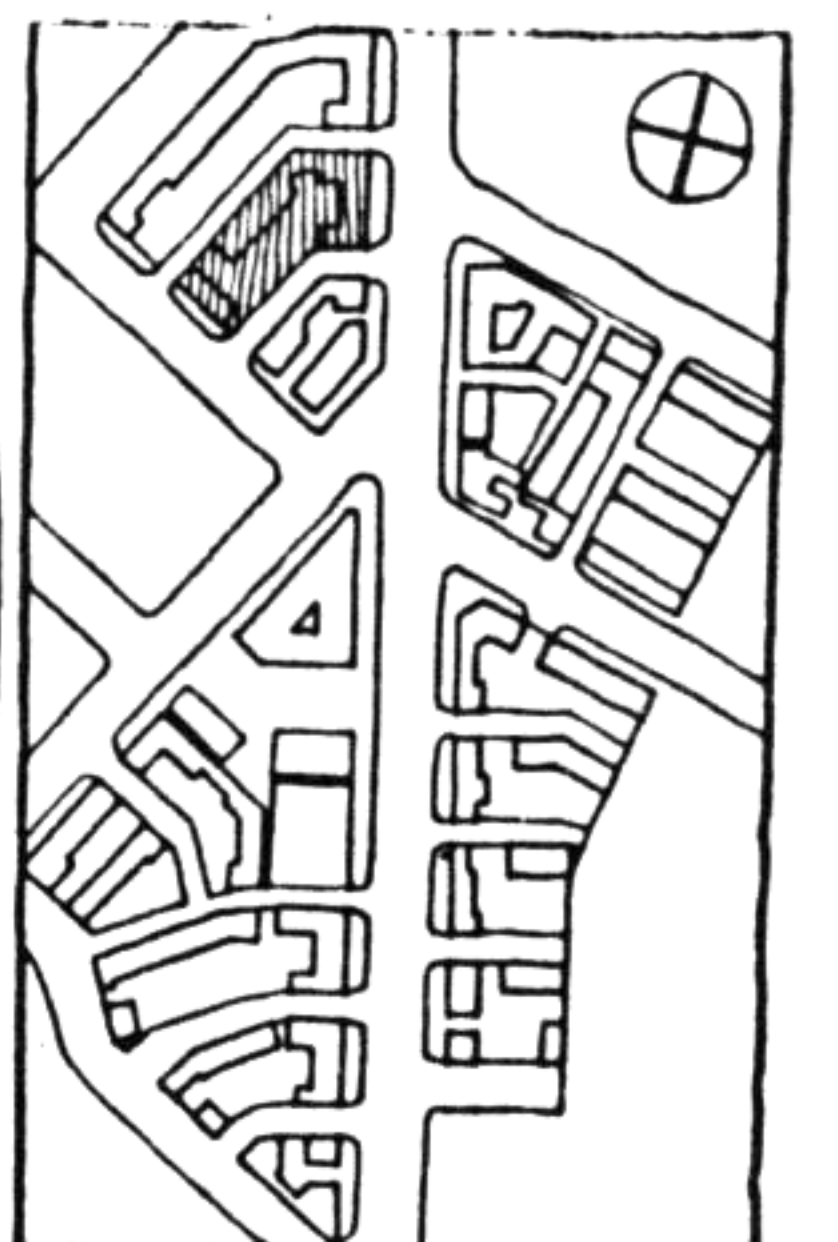


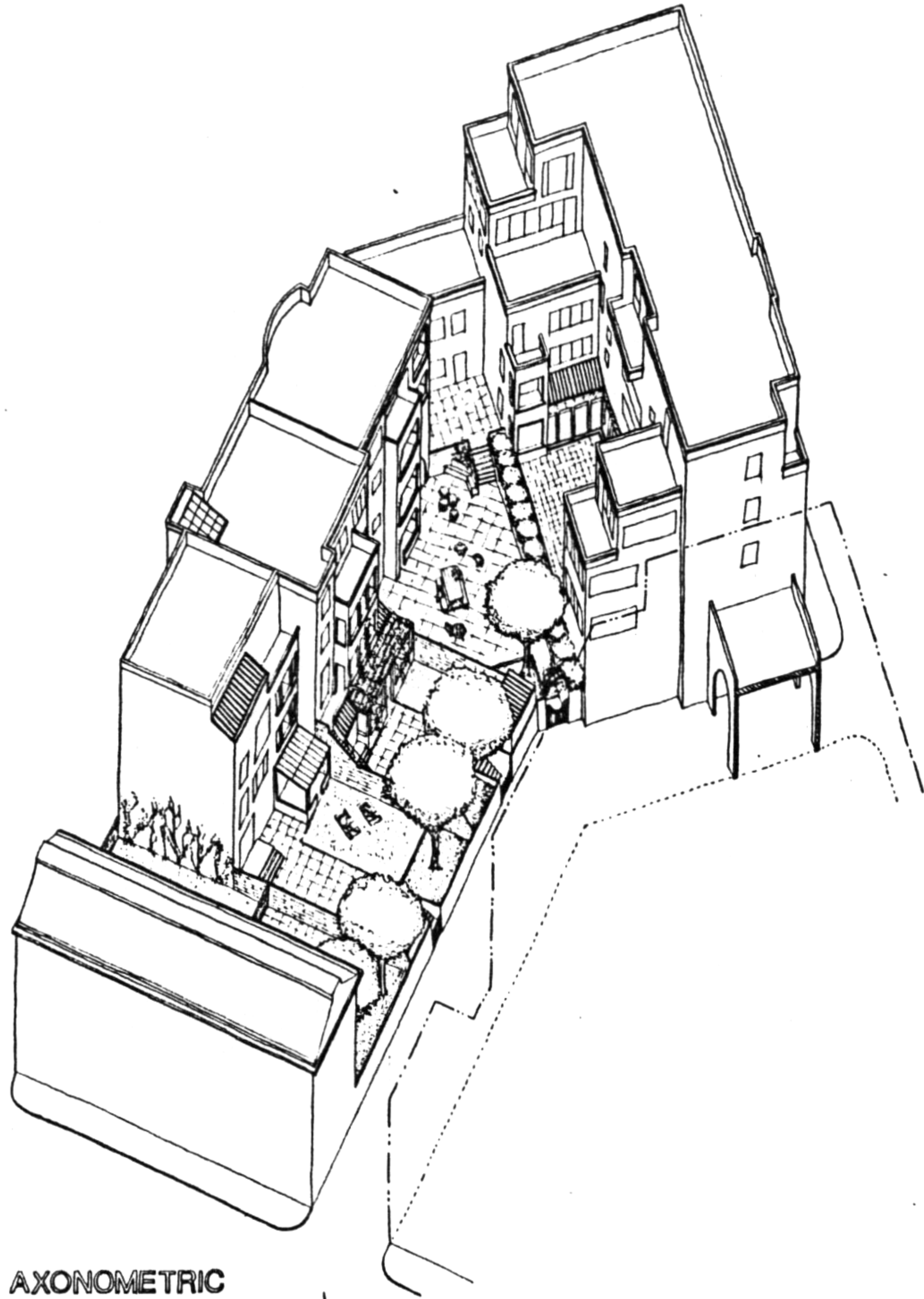
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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L-GROUP 1

JAMES MAGUIRE
MICHAEL SUPINA

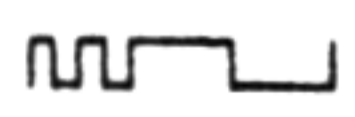




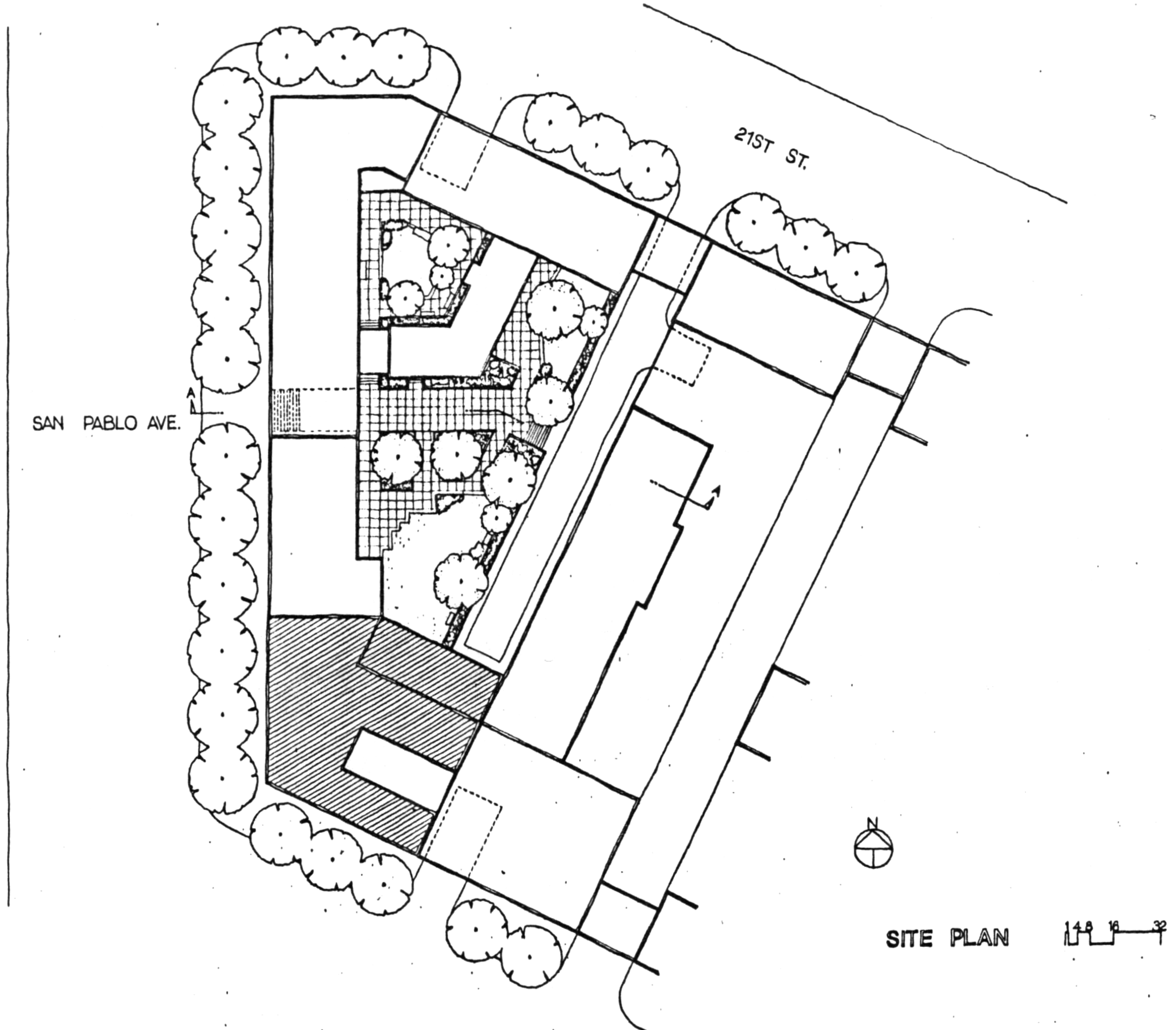
AXONOMETRIC



ELEVATION B



ELEVATION C



SITE PLAN 1/4" = 1'-0"



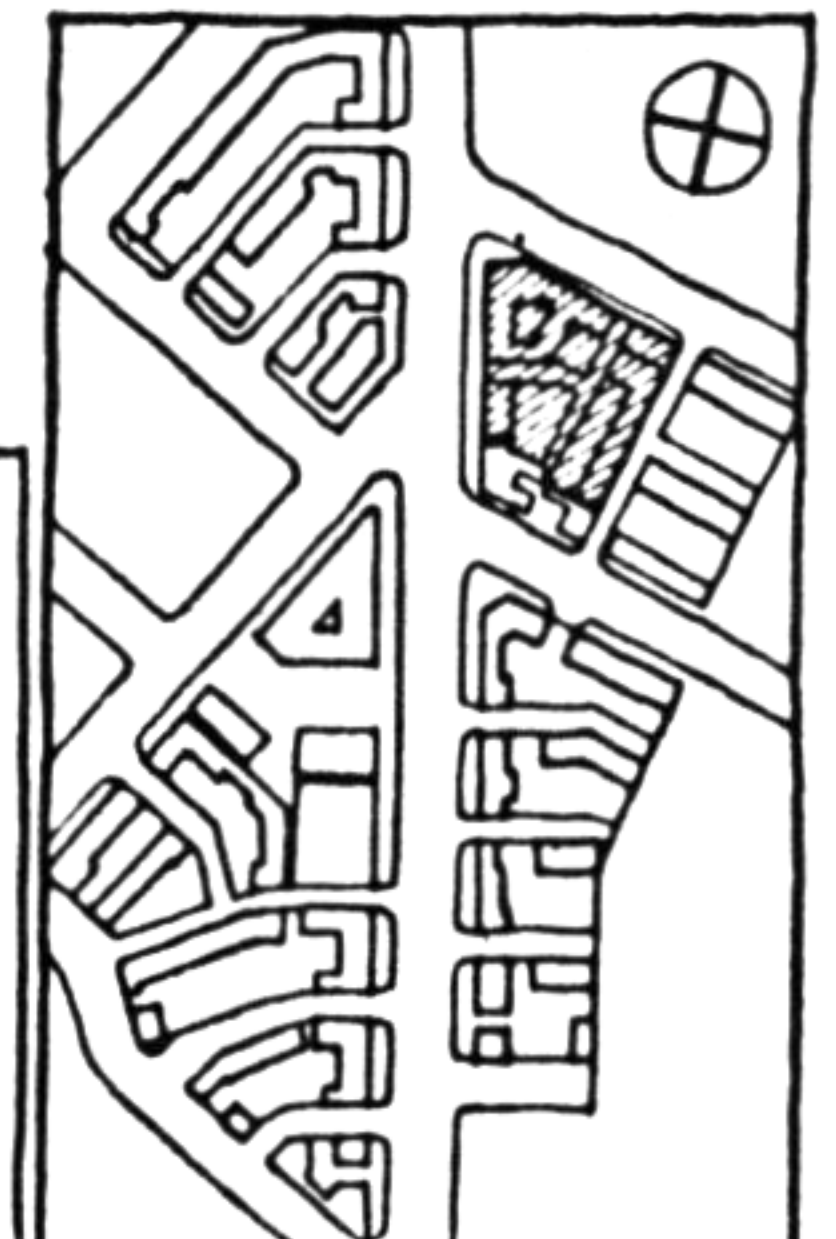
SECTION A-A 1/4" = 1'-0"

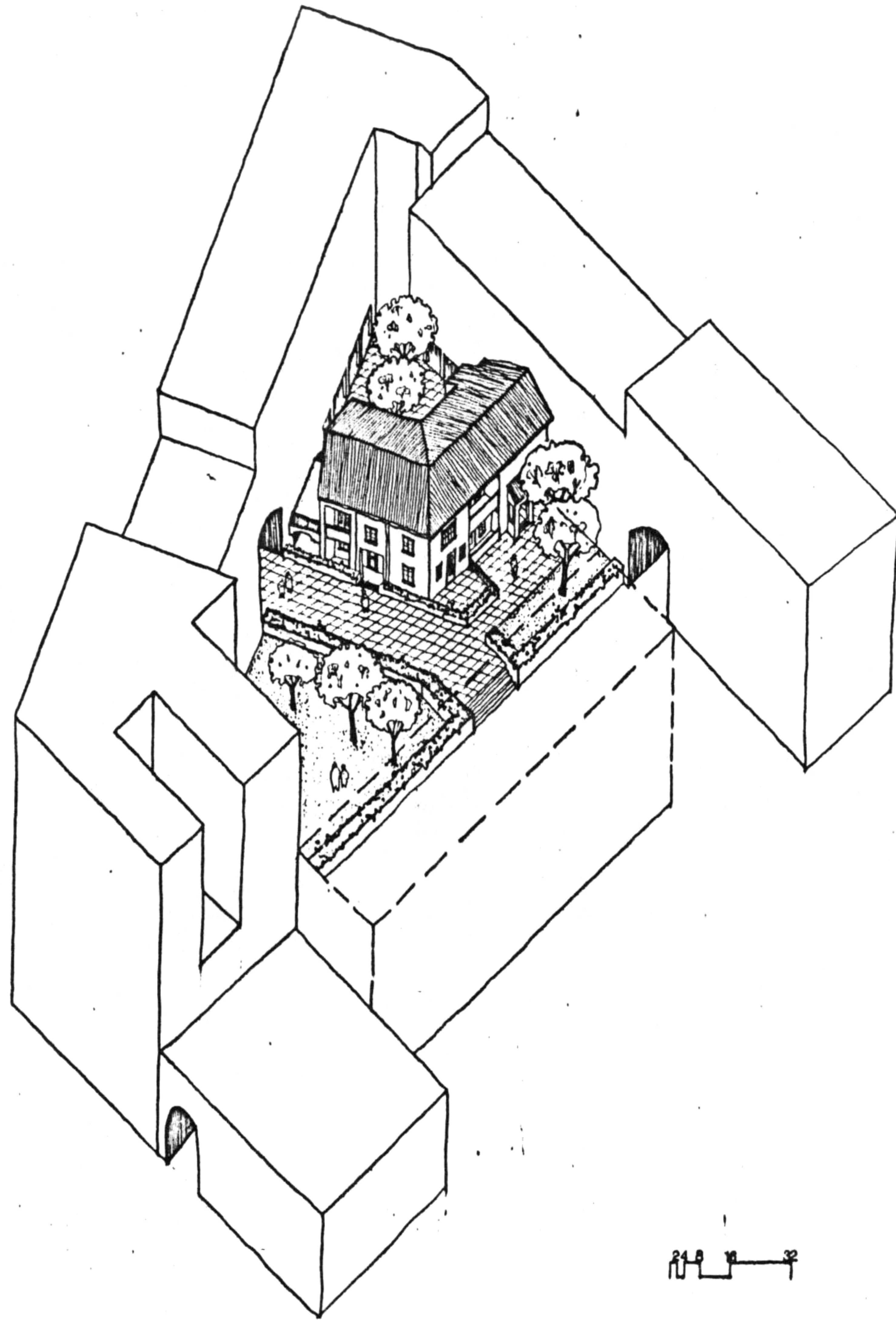
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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L-GROUP 2

K. PONTIKIS
K. STANTON
D. SUNG



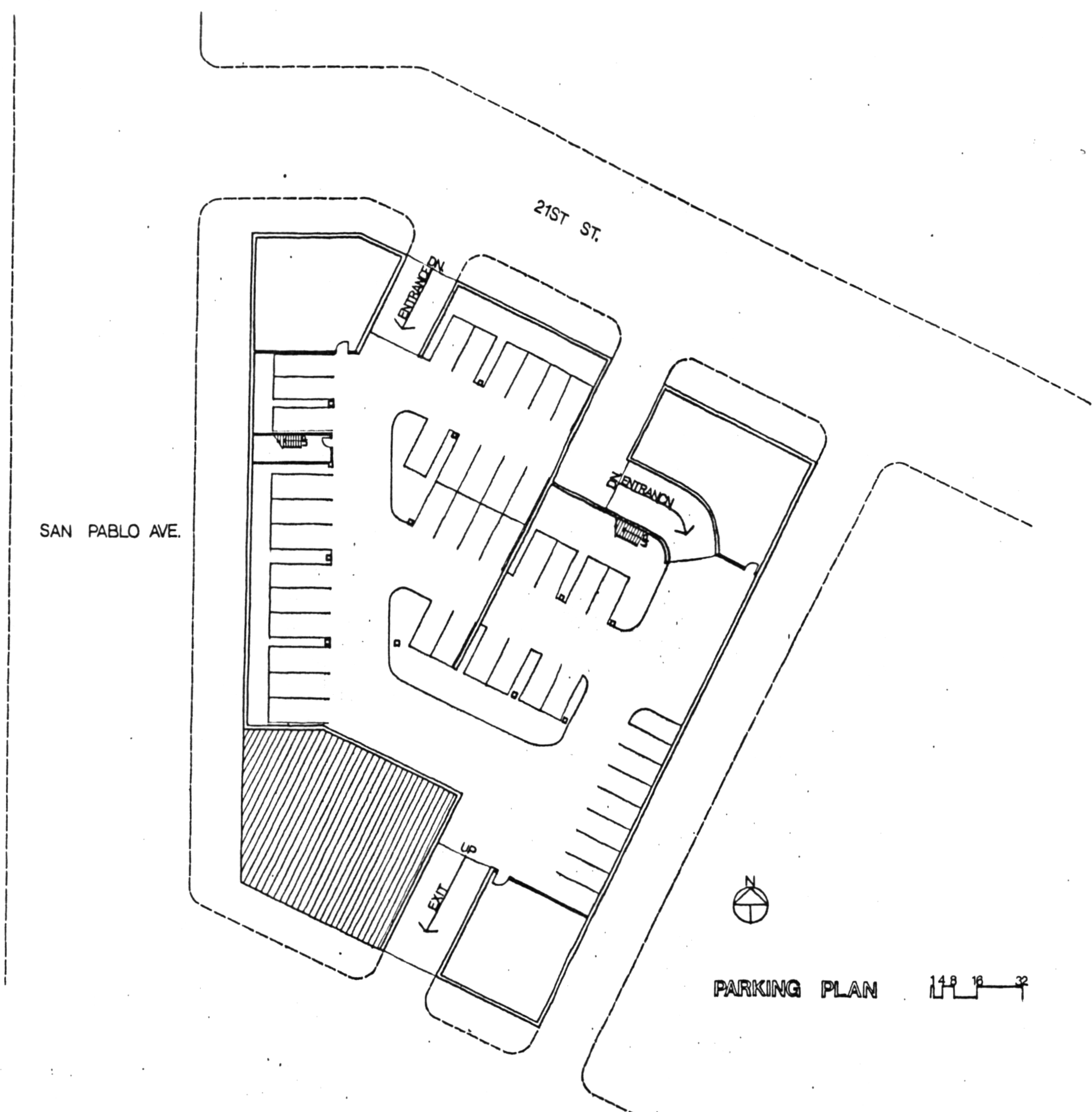


AXONOMETRIC



SAN PABLO ELEVATION



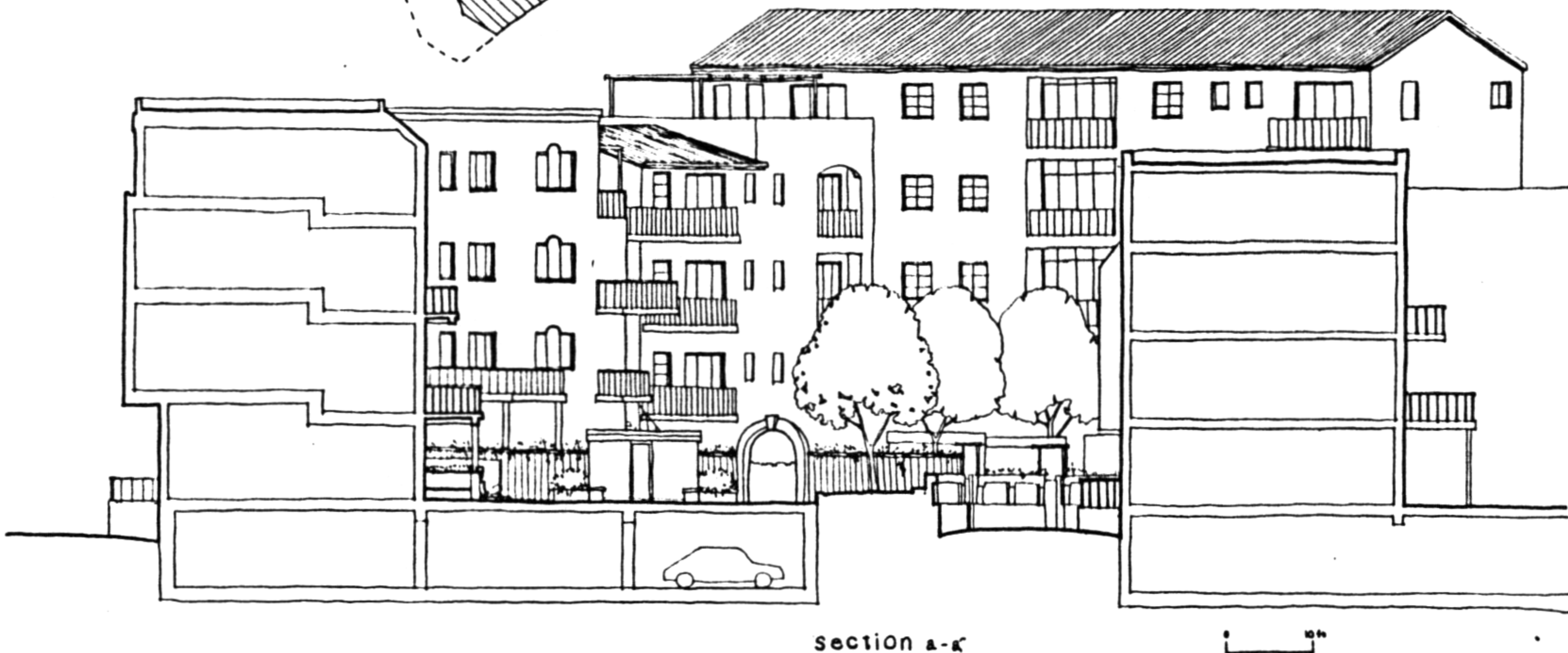
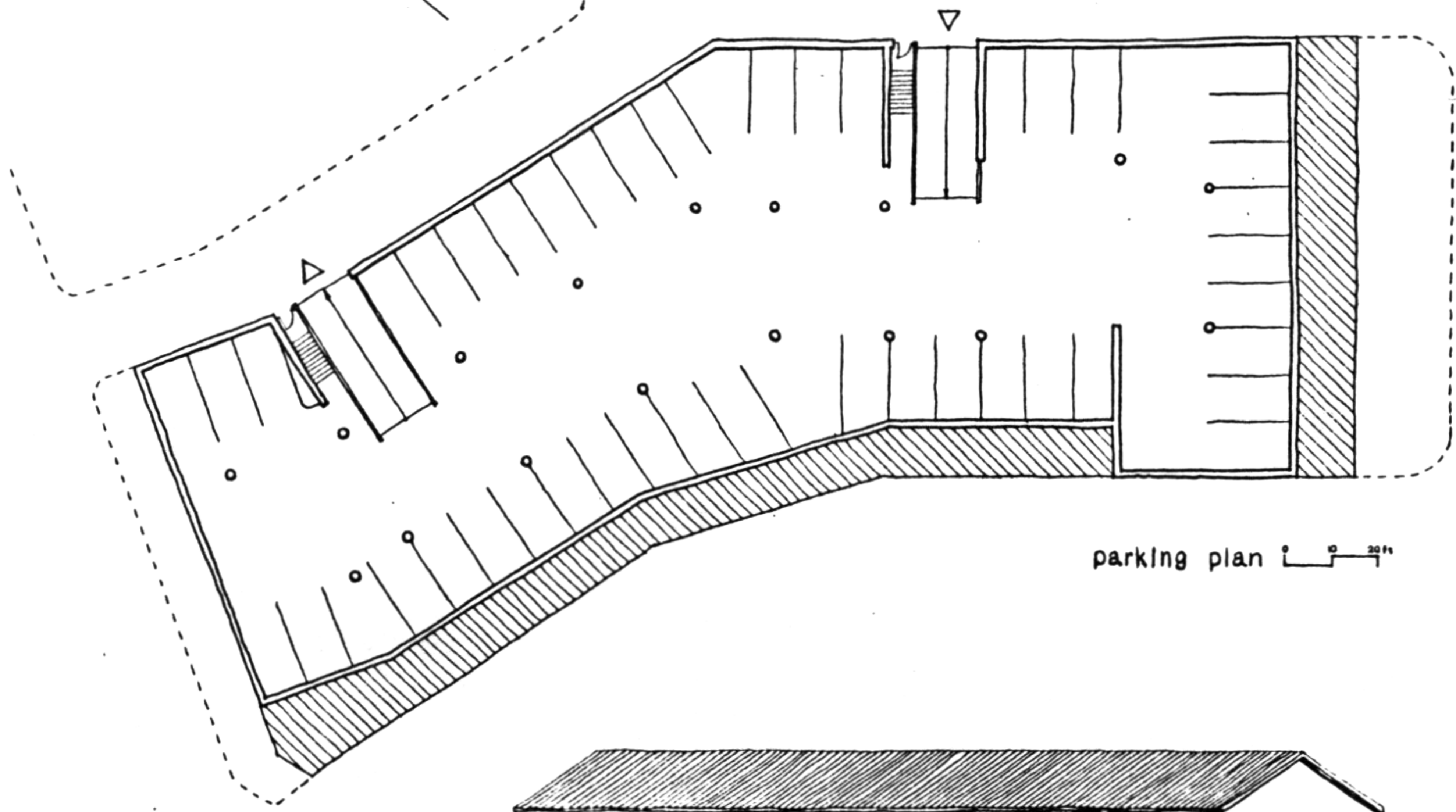
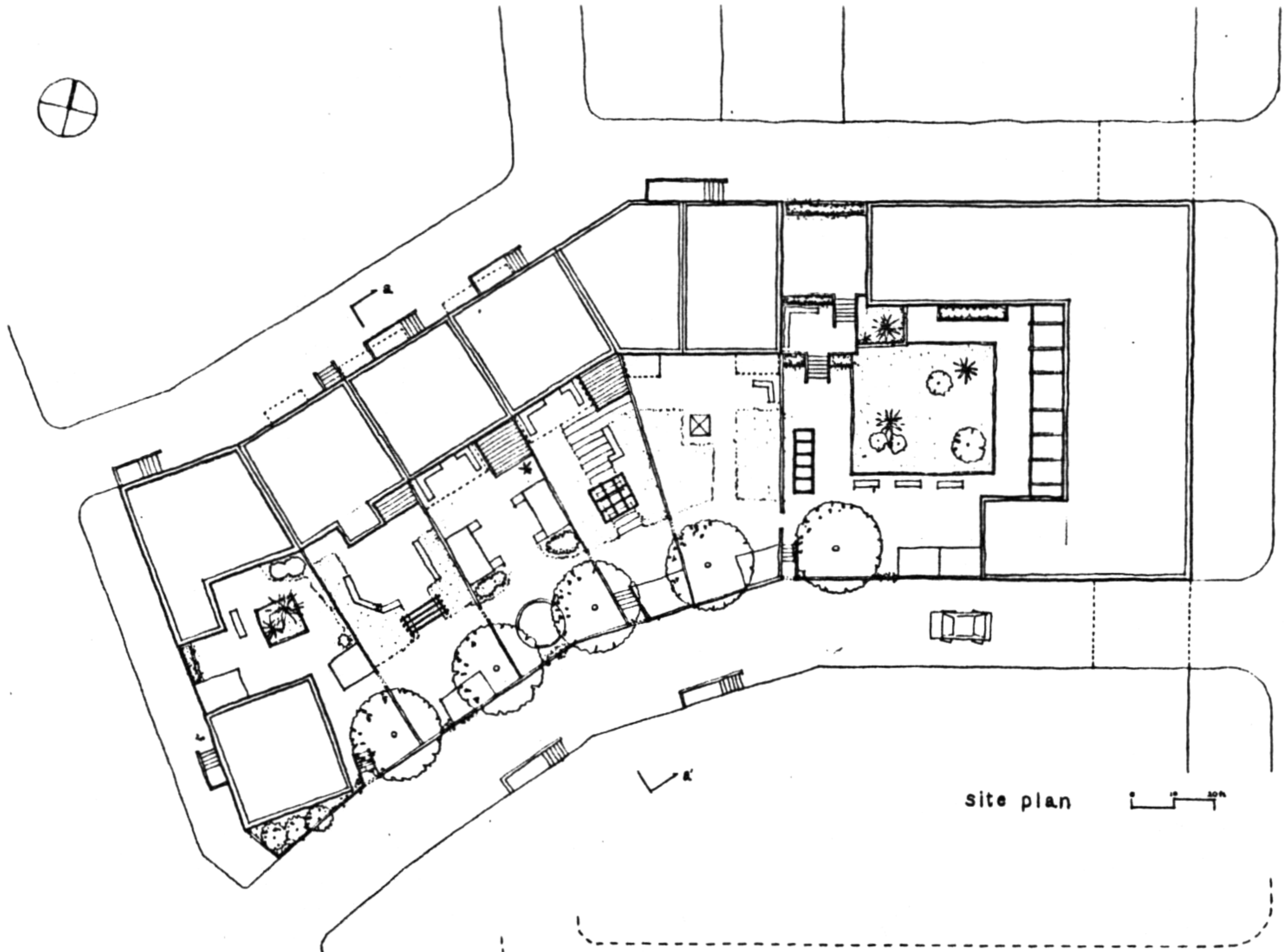


PARKING PLAN 14 16 32



GARDEN ELEVATION

124 8 16

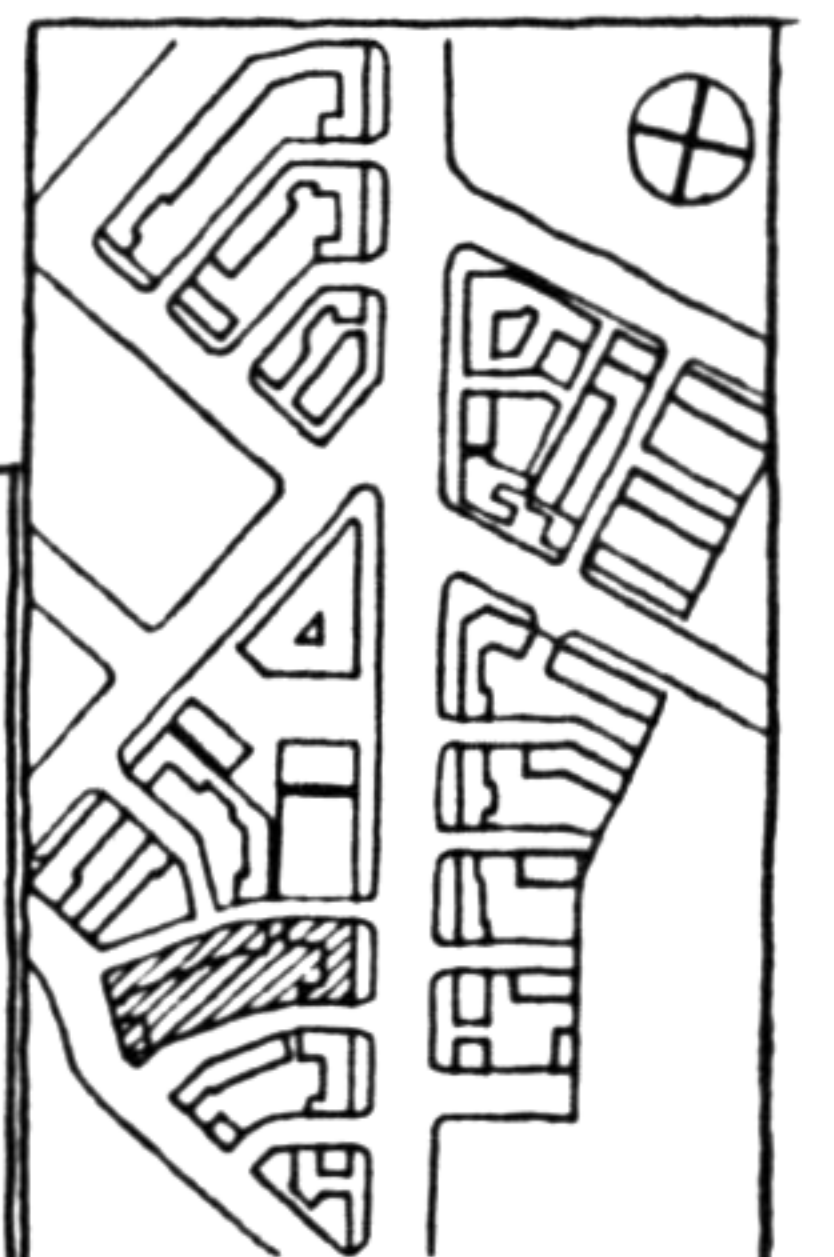


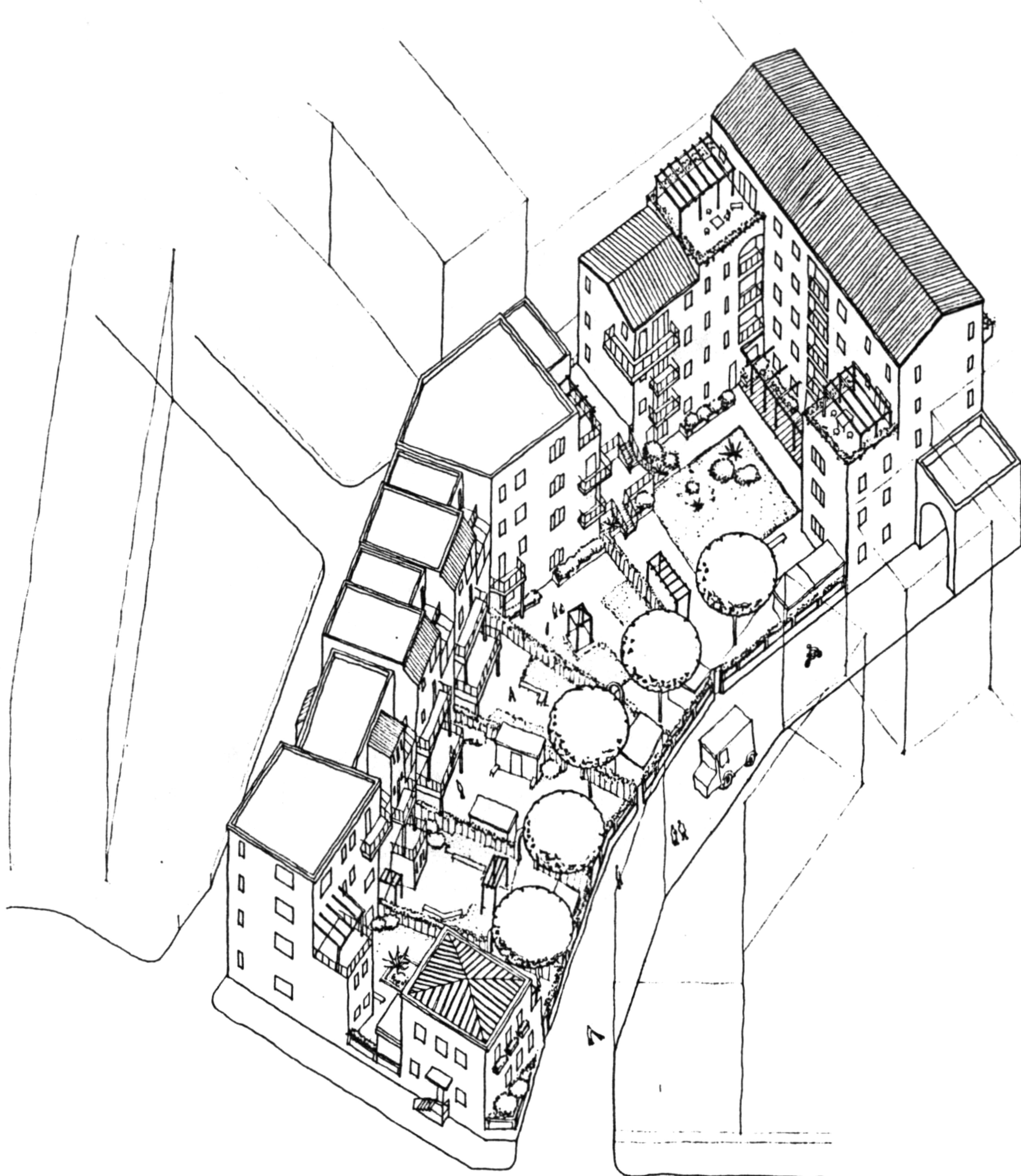
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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L-GROUP 3

ANNIE
DER DEDROSSIAN
KEIKO ONO

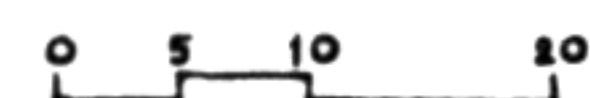


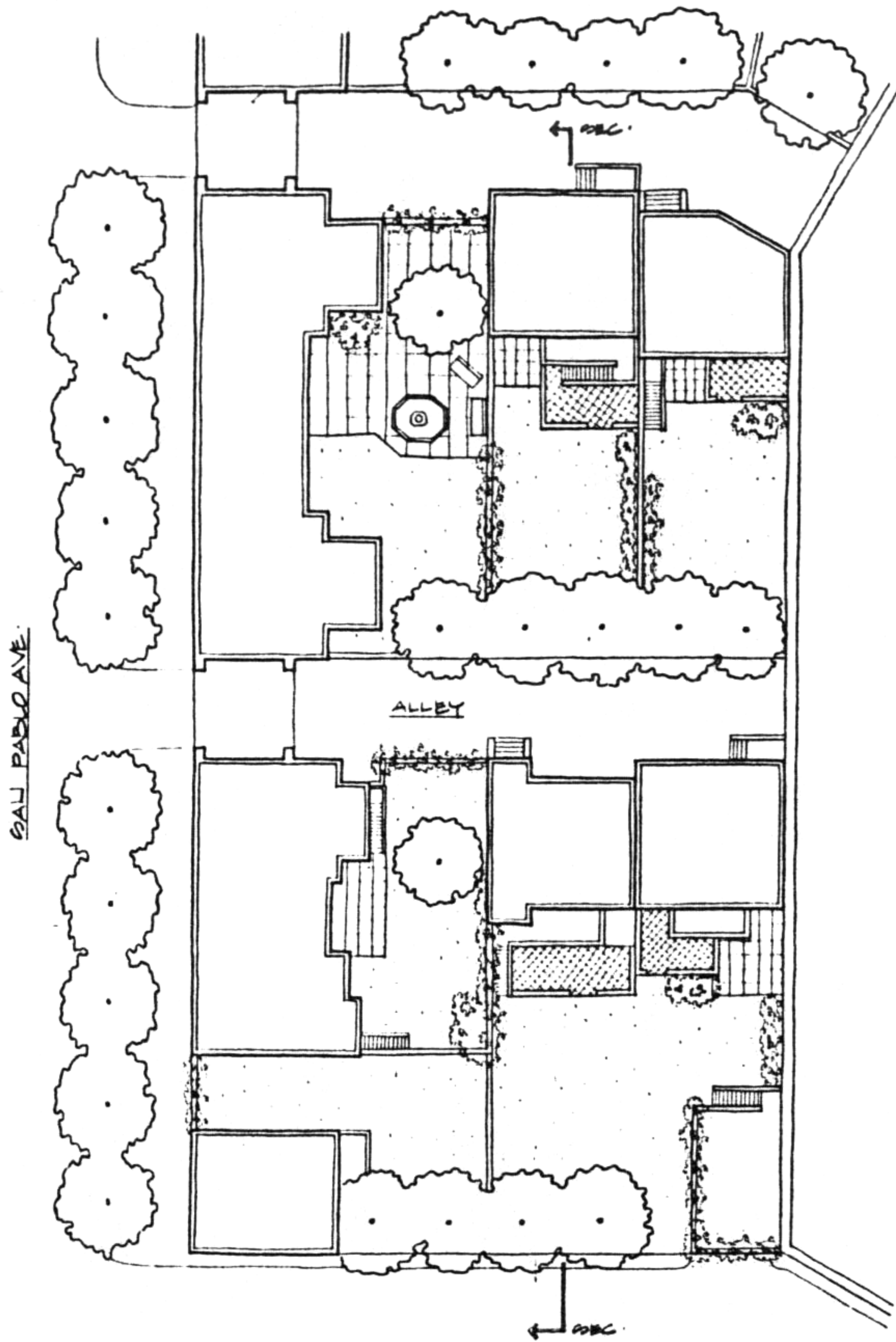


north elevation

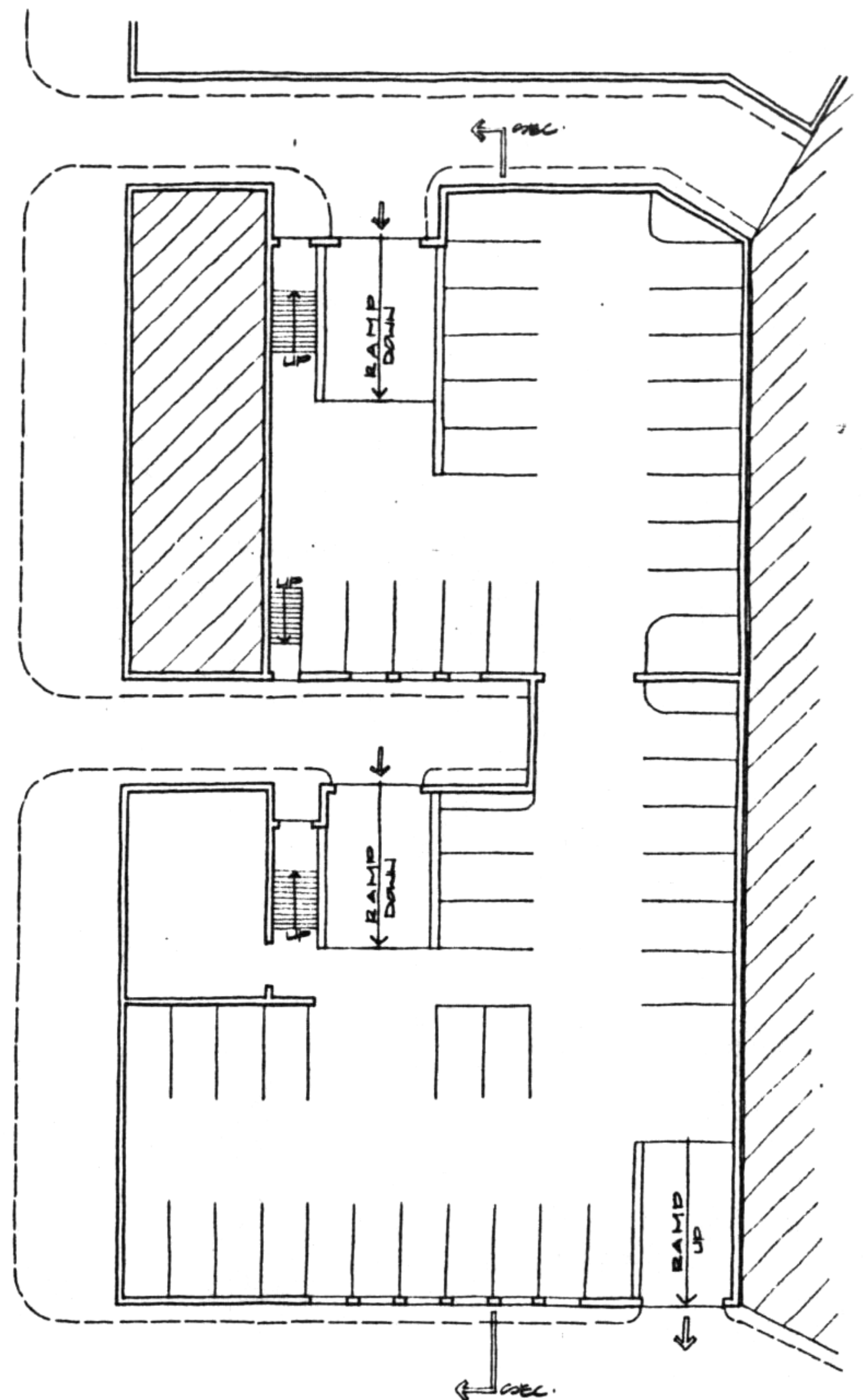


south elevation





SITE PLAN



PARKING PLAN



SITE SECTION

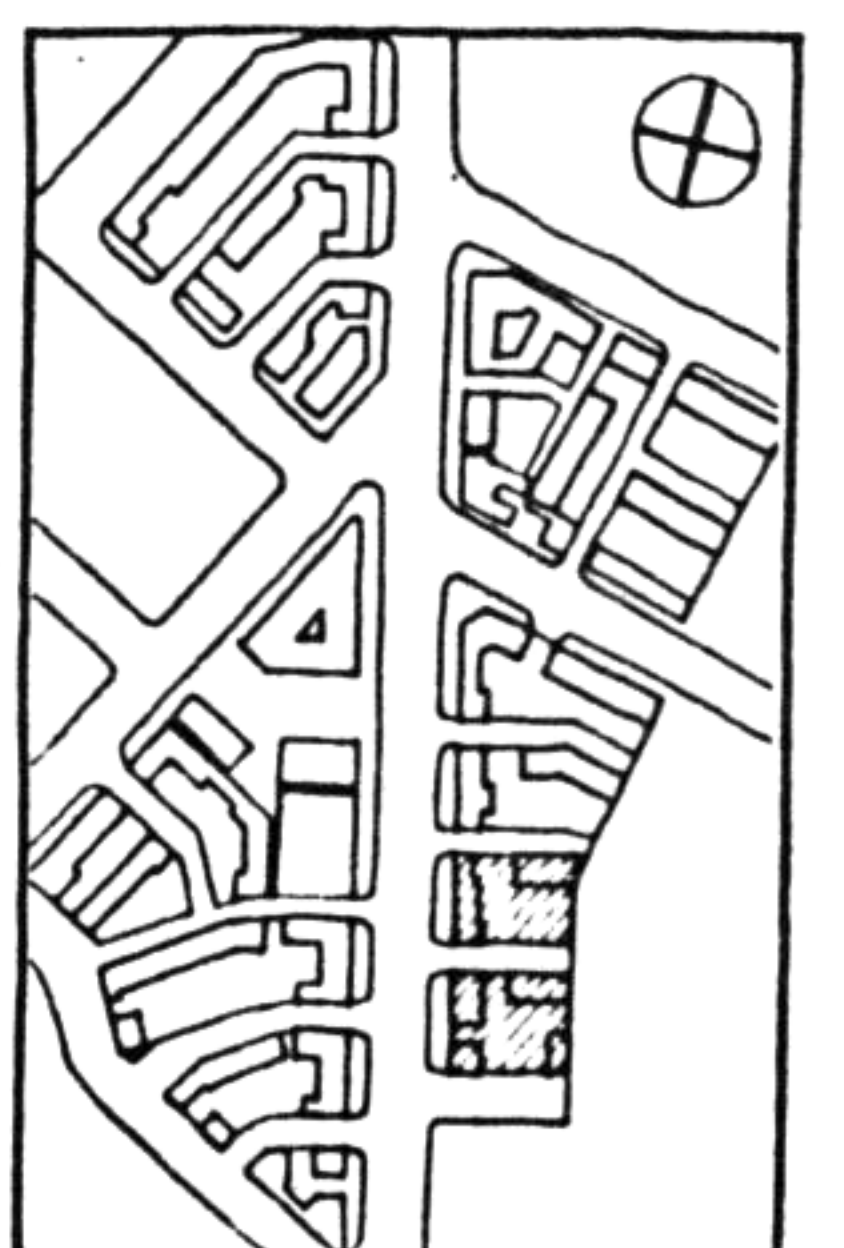


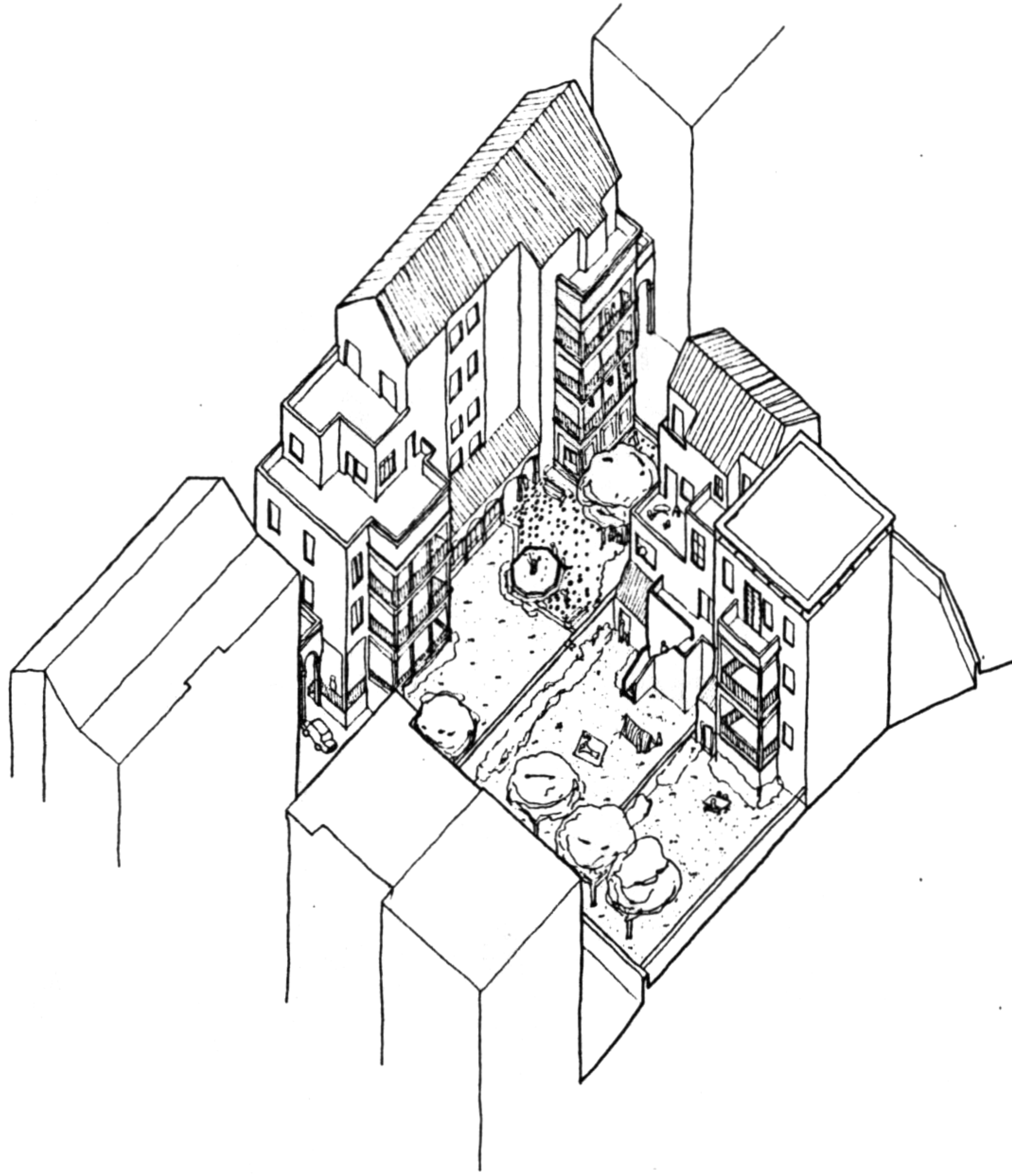
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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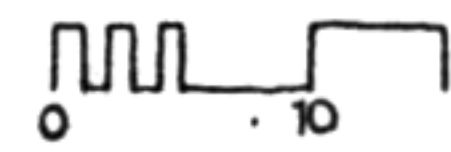
L-GROUP 4

CATHY DRAYTON
ANJALI YAGNIK

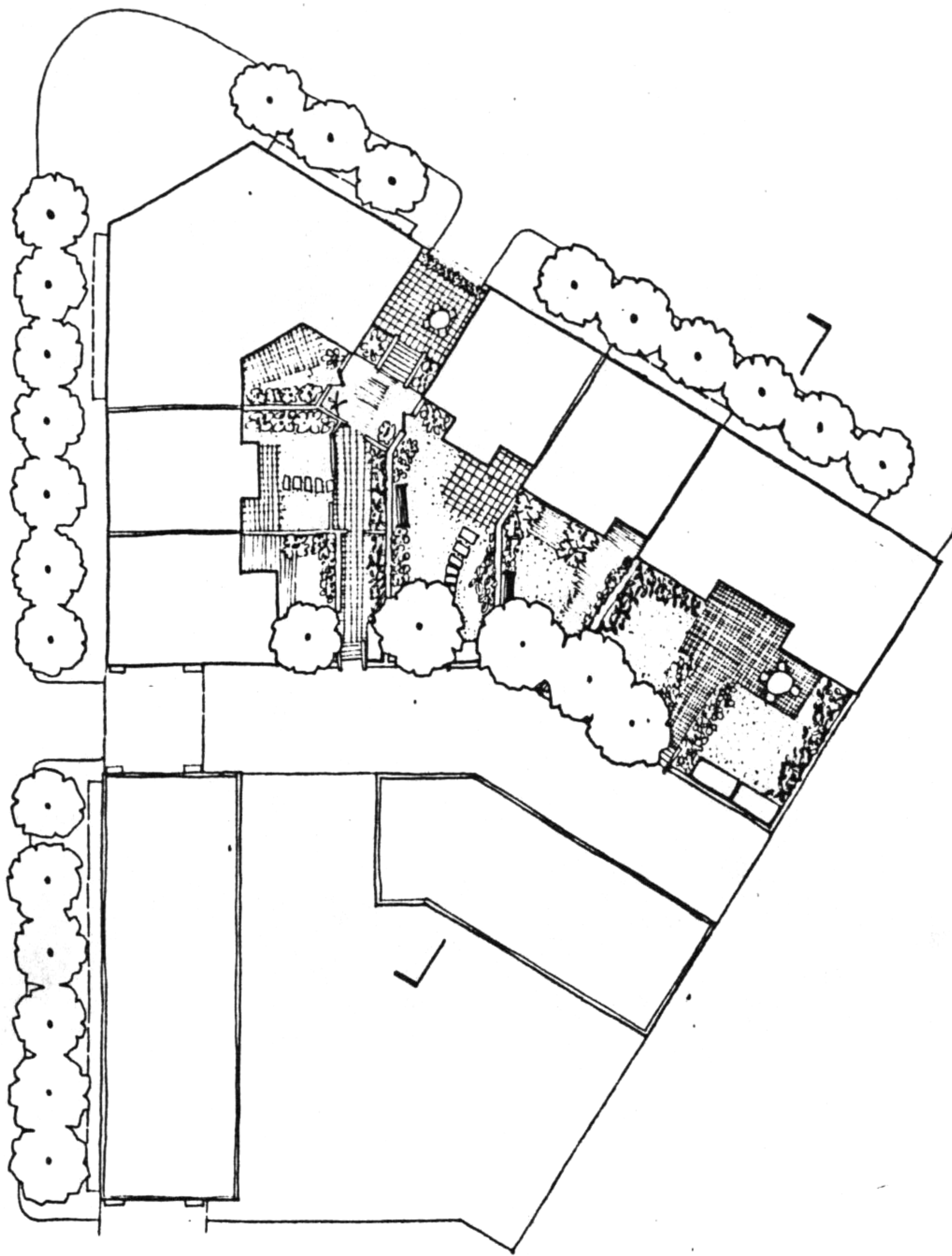




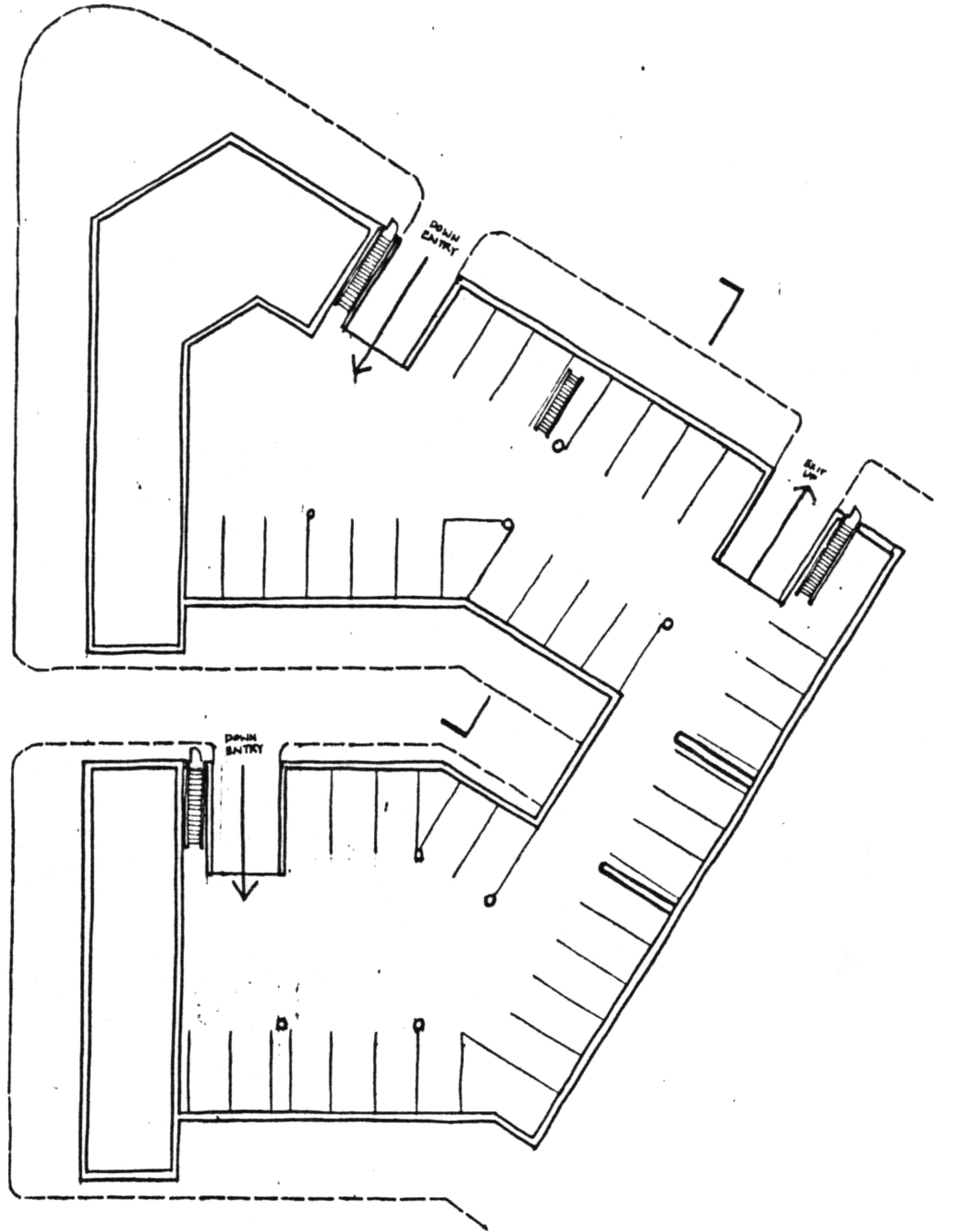
SOUTH ELEVATION



NORTH ELEVATION



SITE PLAN



PARKING PLAN



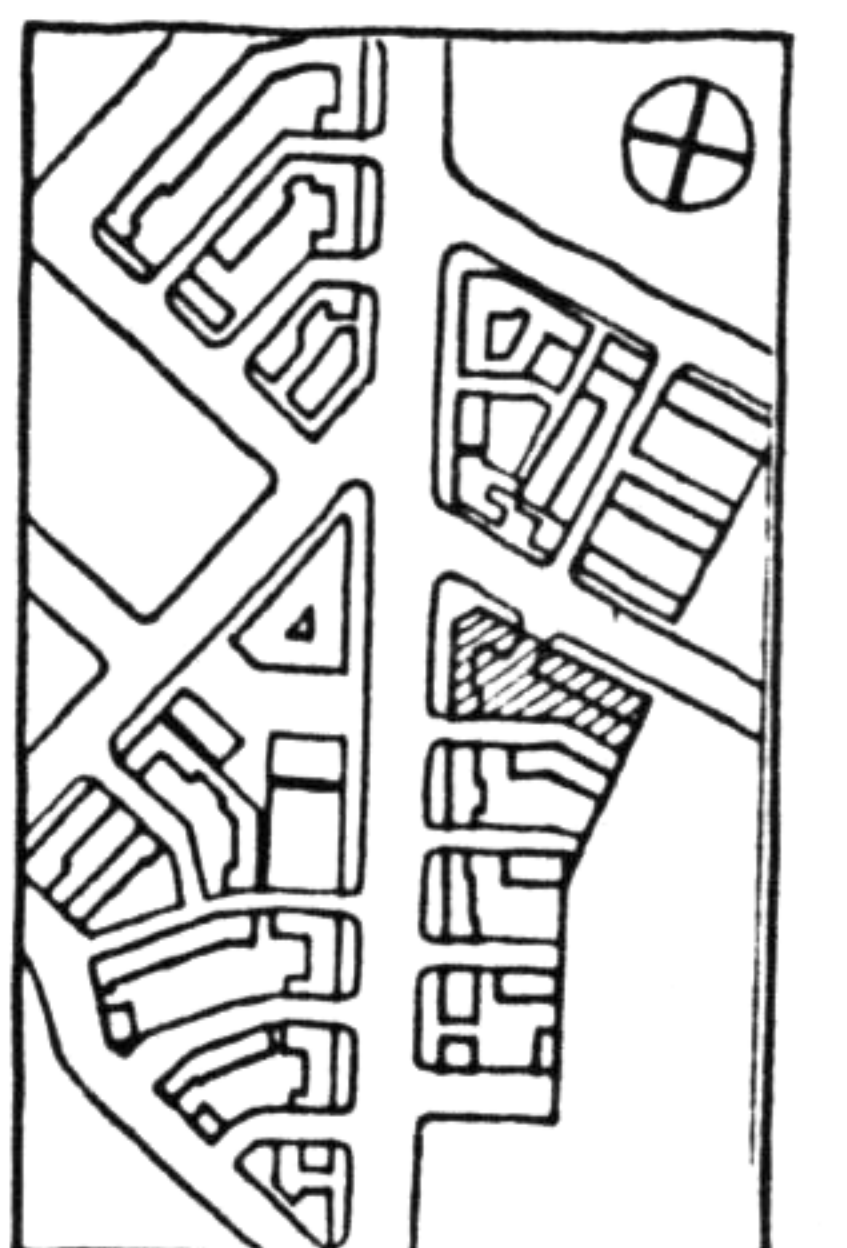
SITE SECTION

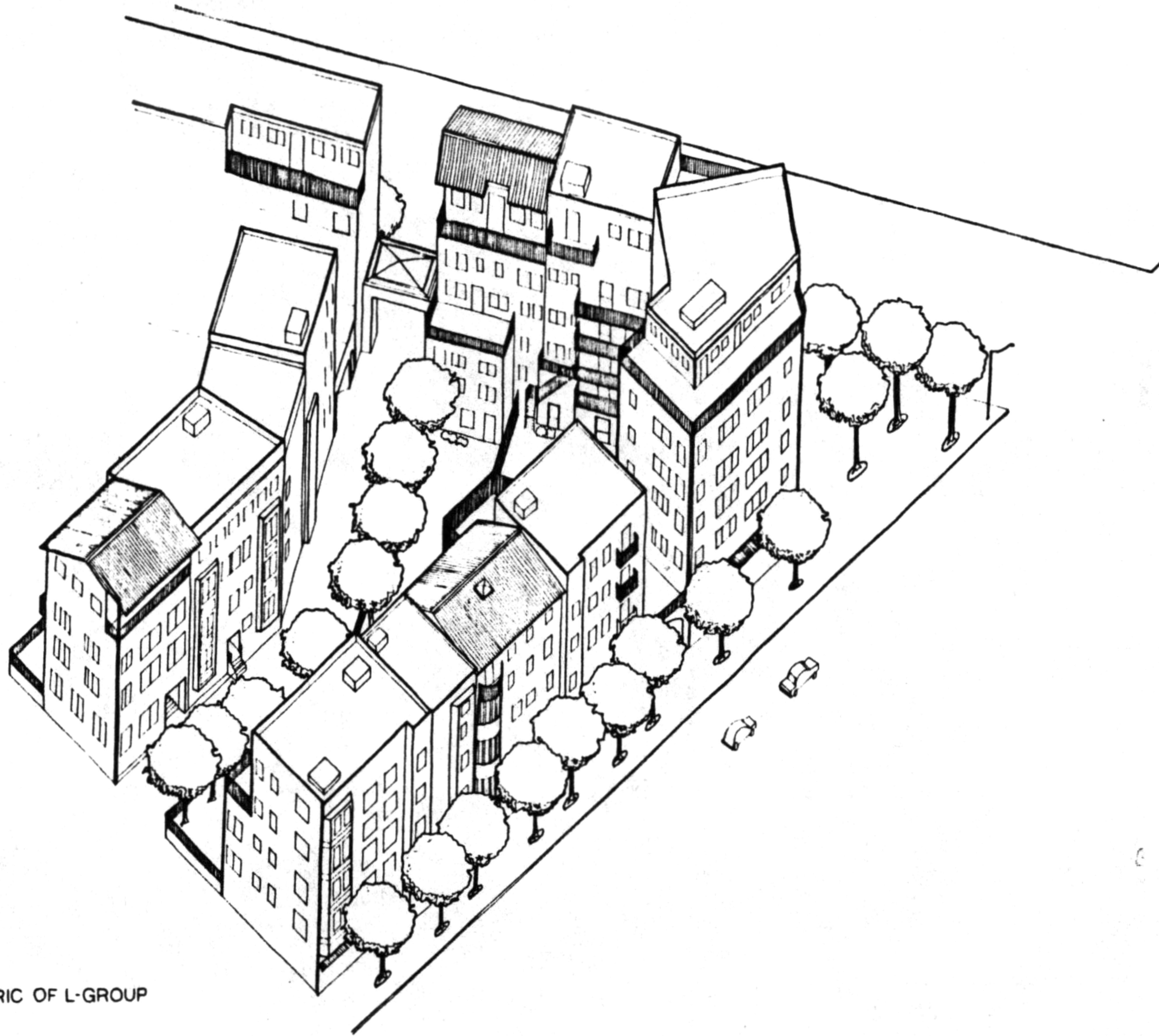
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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L-GROUP 5

JEANNE RATCLIFFE
HOLLY BABE FAUST





AXONOMETRIC OF L-GROUP

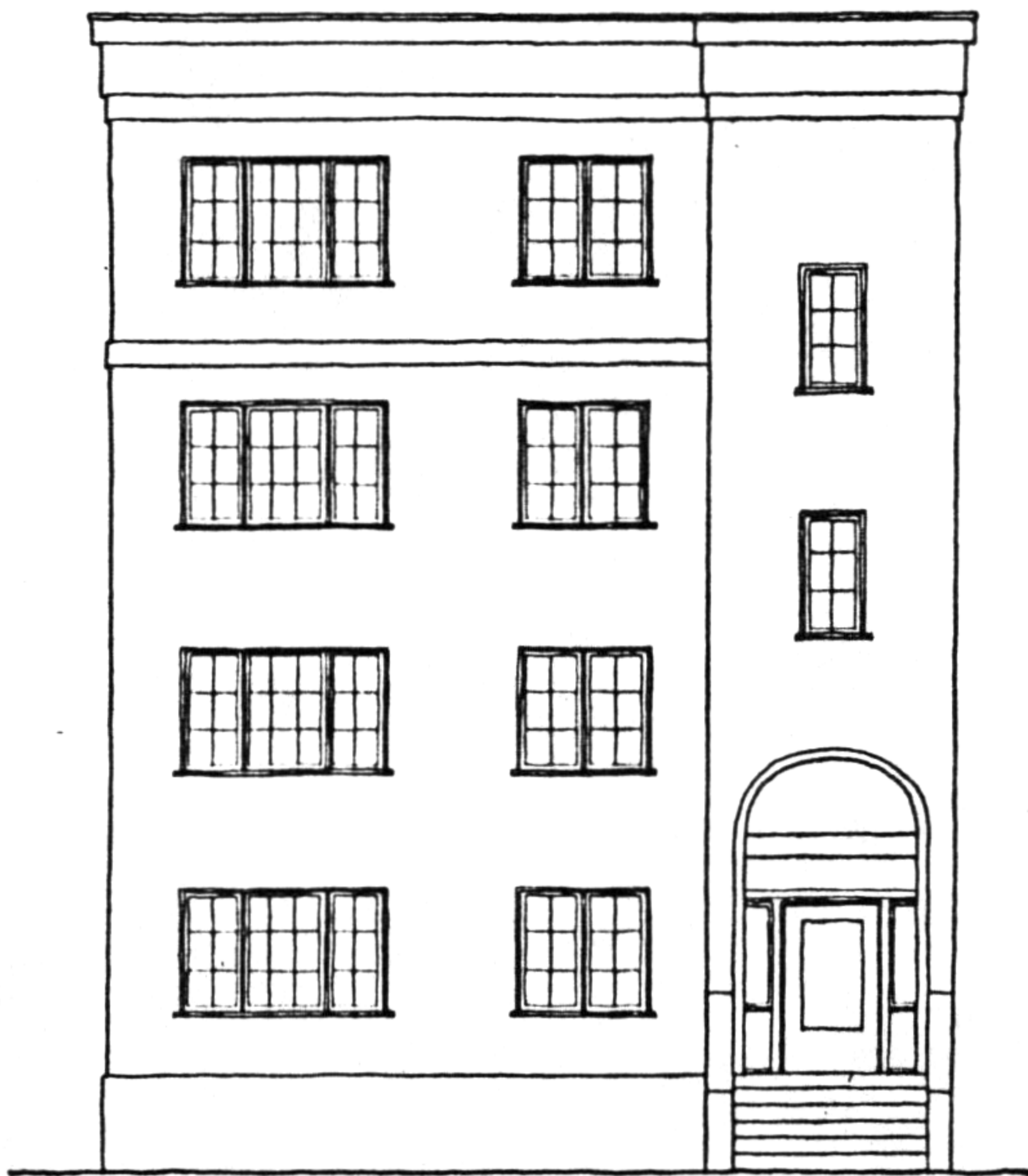


L-GROUP ELEVATION

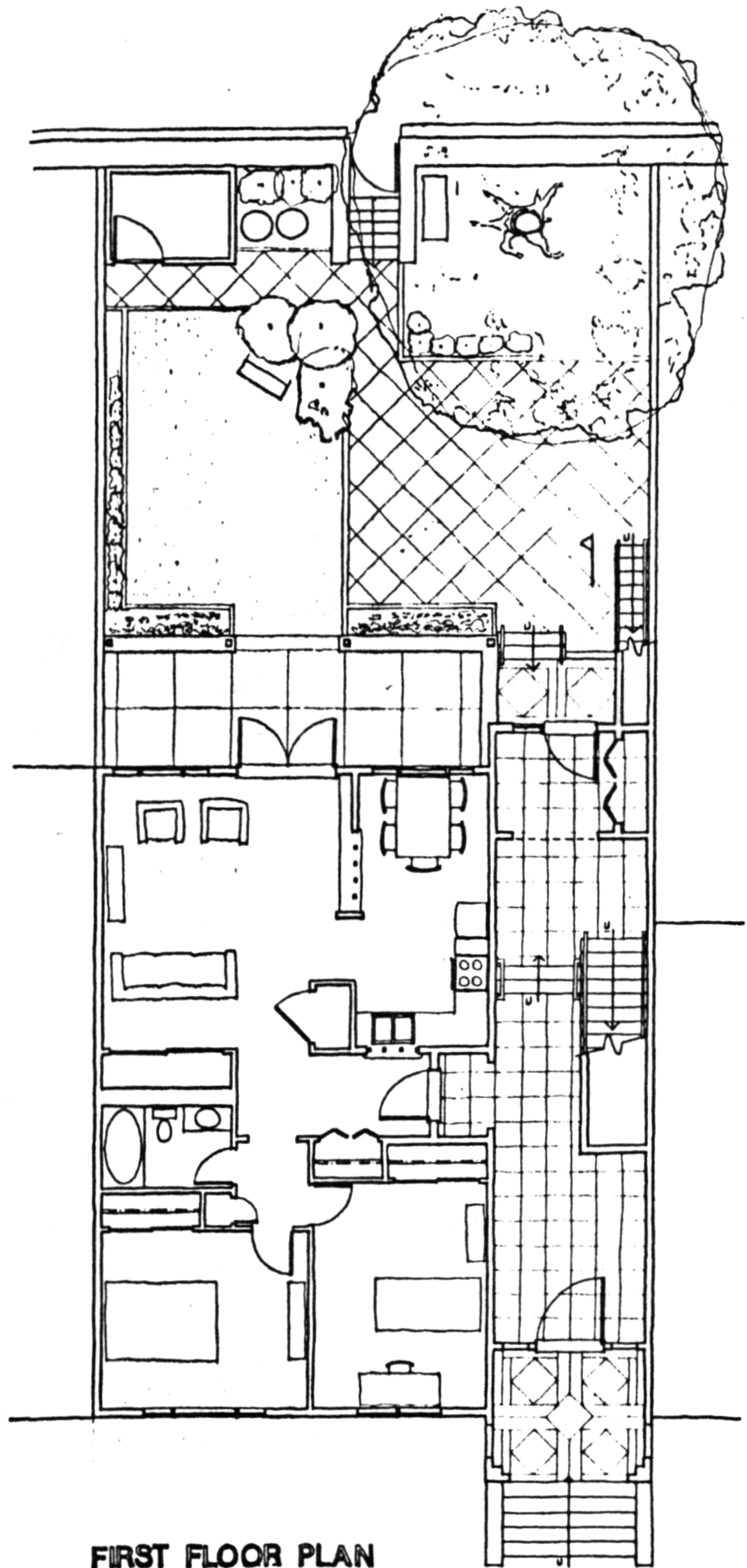


L-GROUP ELEVATION

4. INDIVIDUAL BUILDINGS



FRONT ELEVATION



FIRST FLOOR PLAN



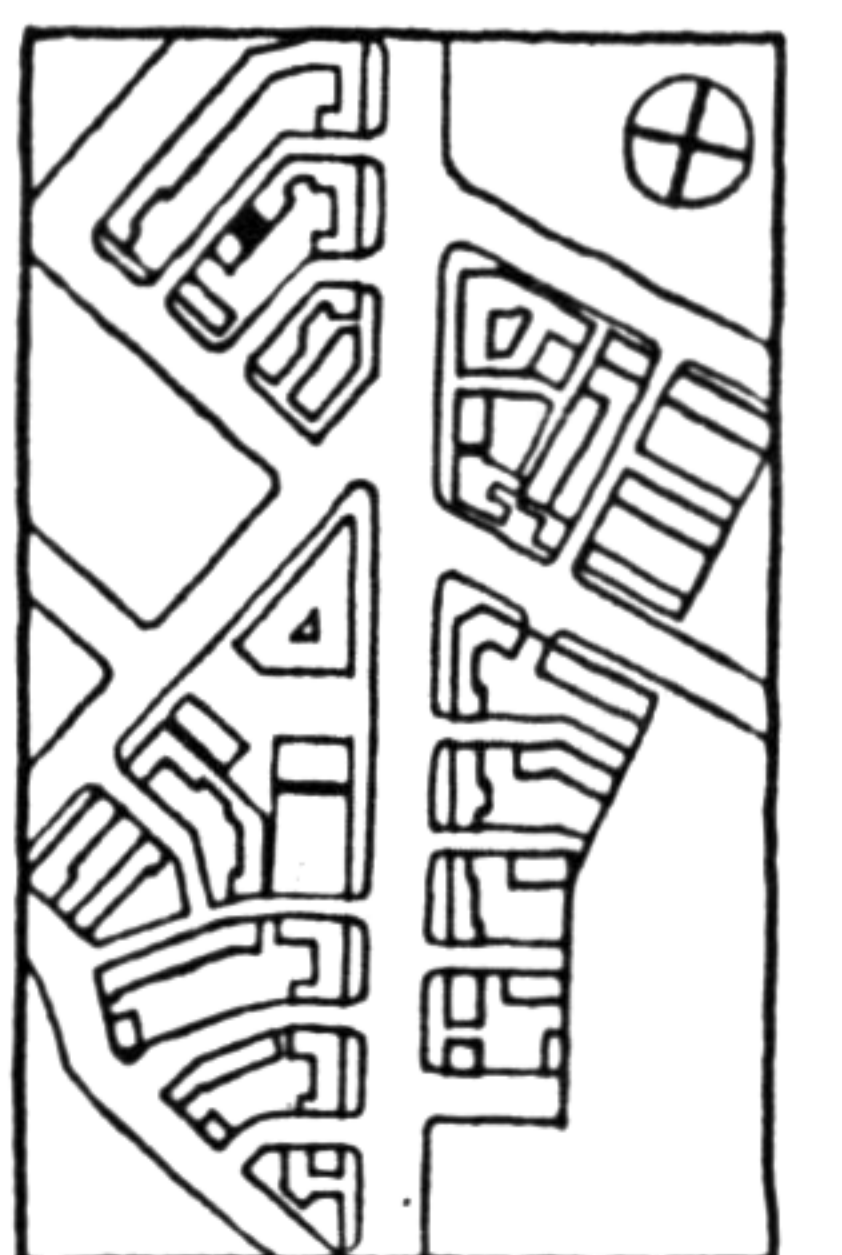
GARDEN ELEVATION

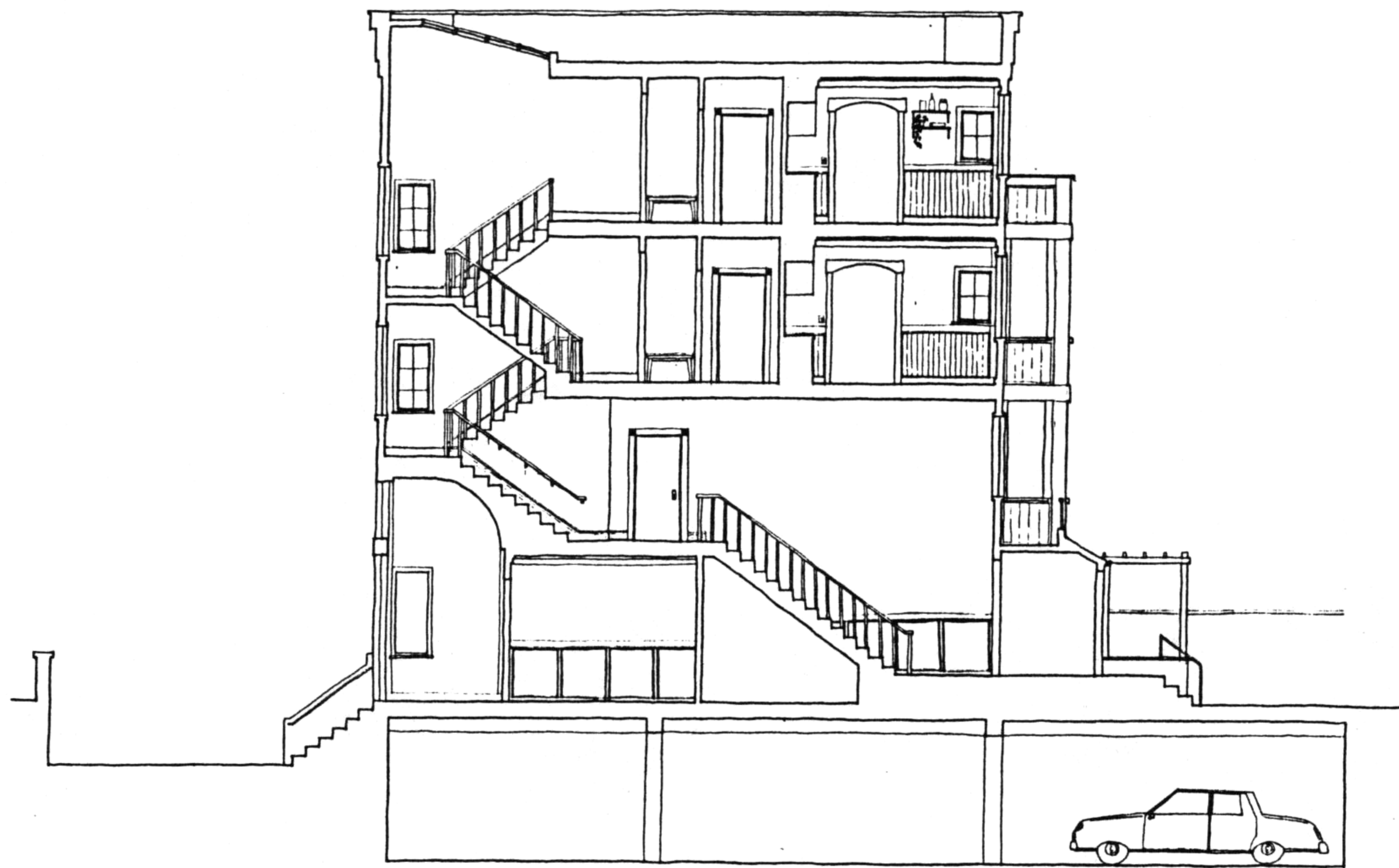
HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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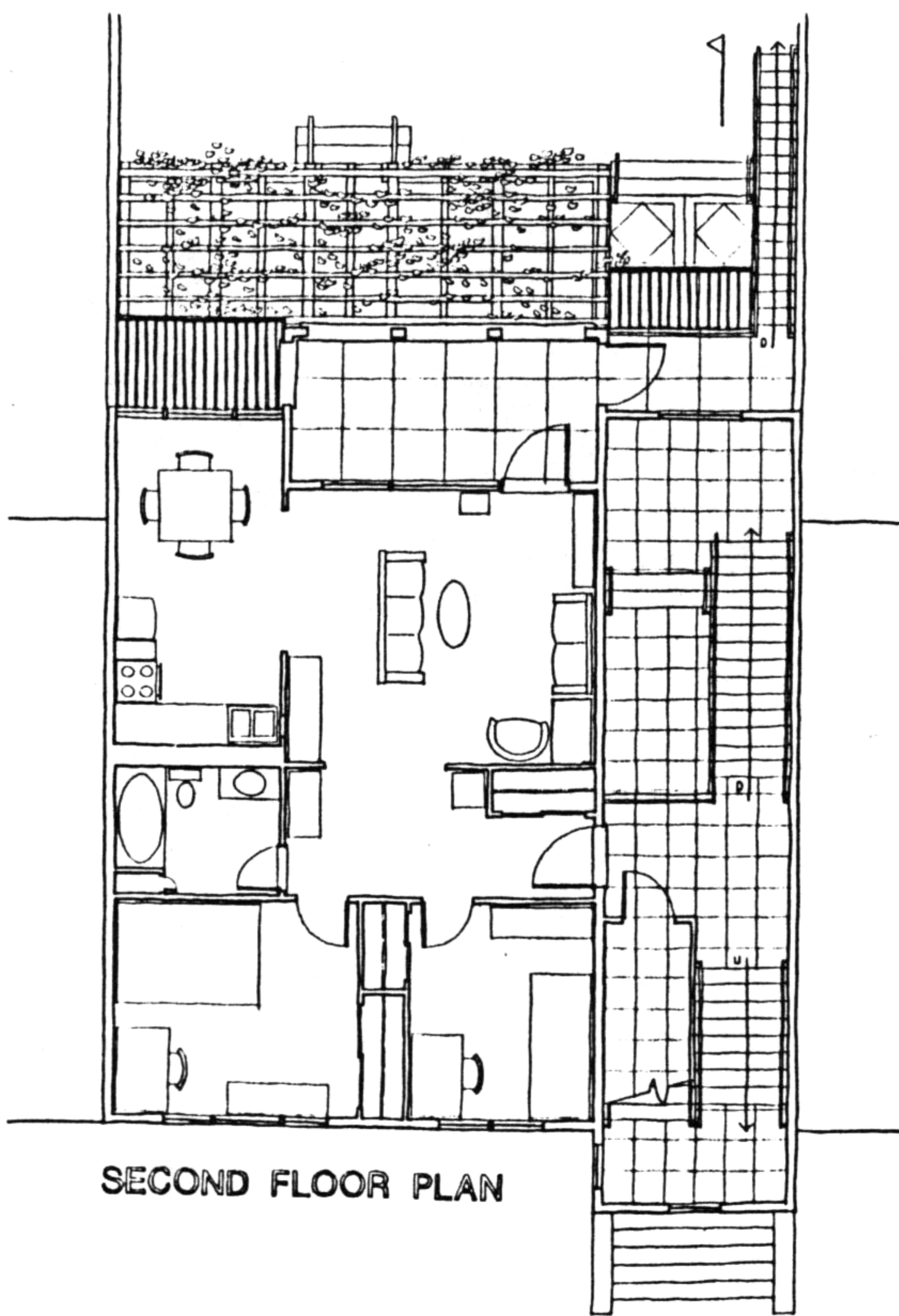
ALLEY
BUILDING

JAMES MAGUIRE
MICHAEL SUPINA

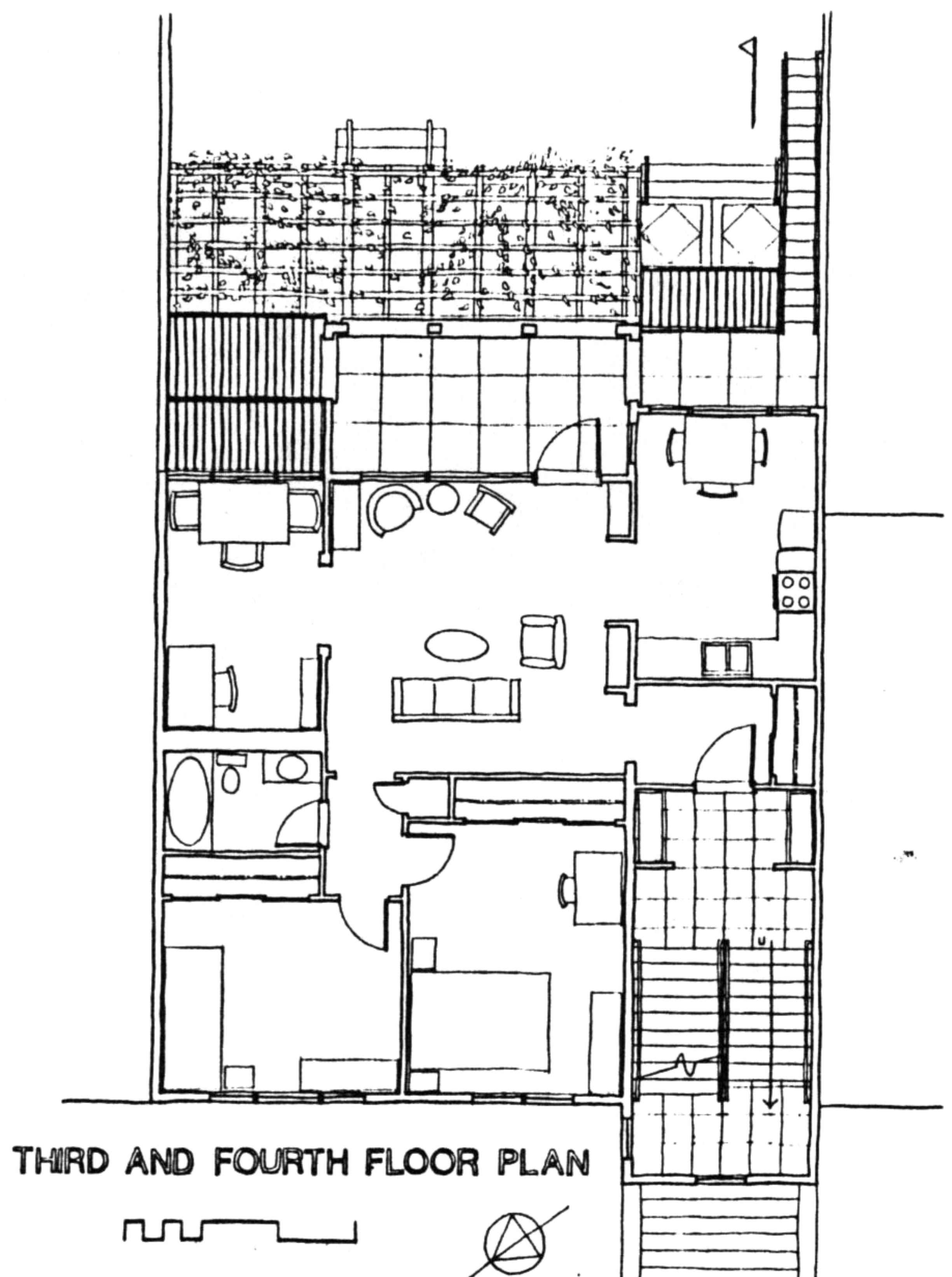




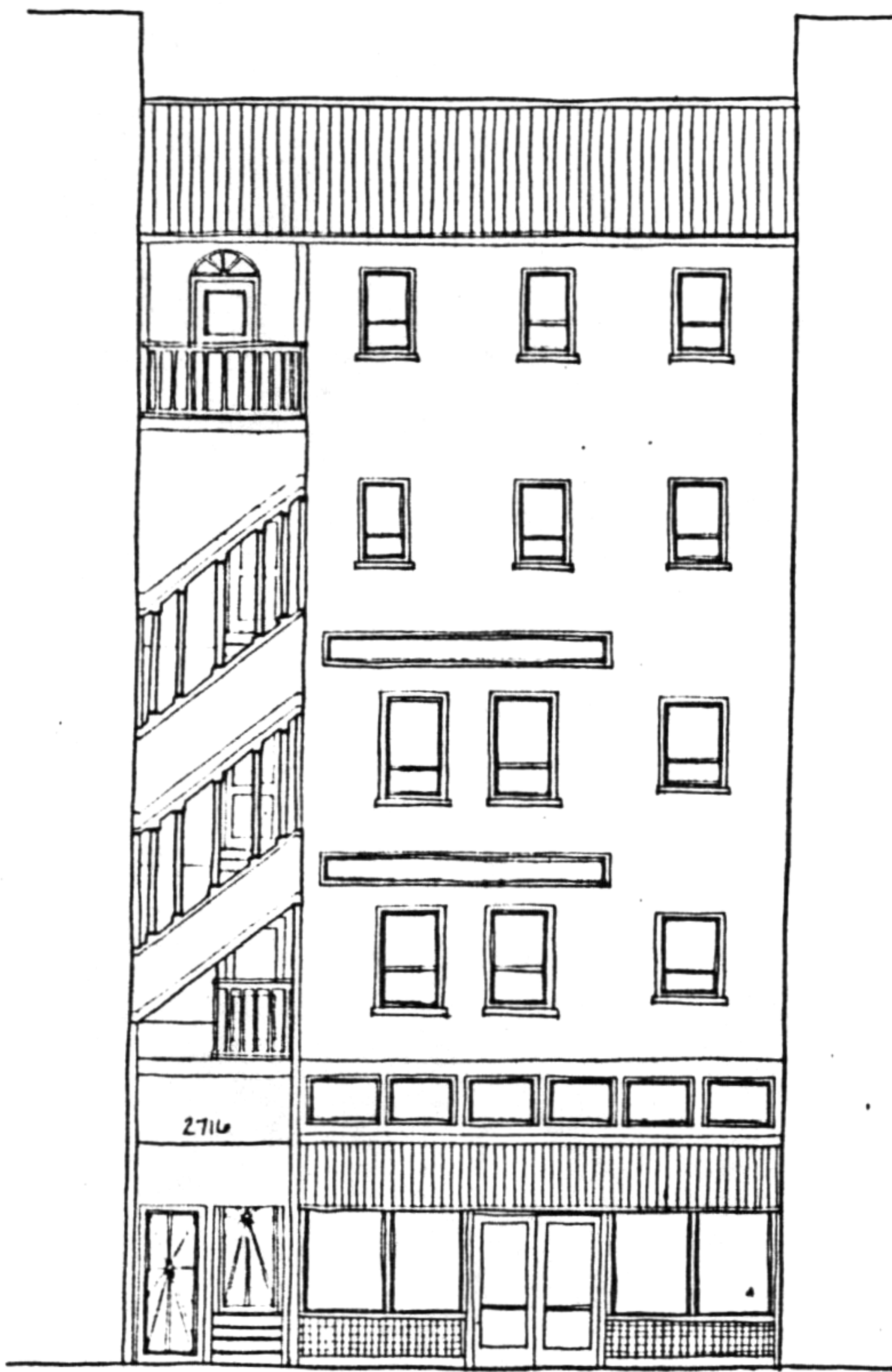
SECTION



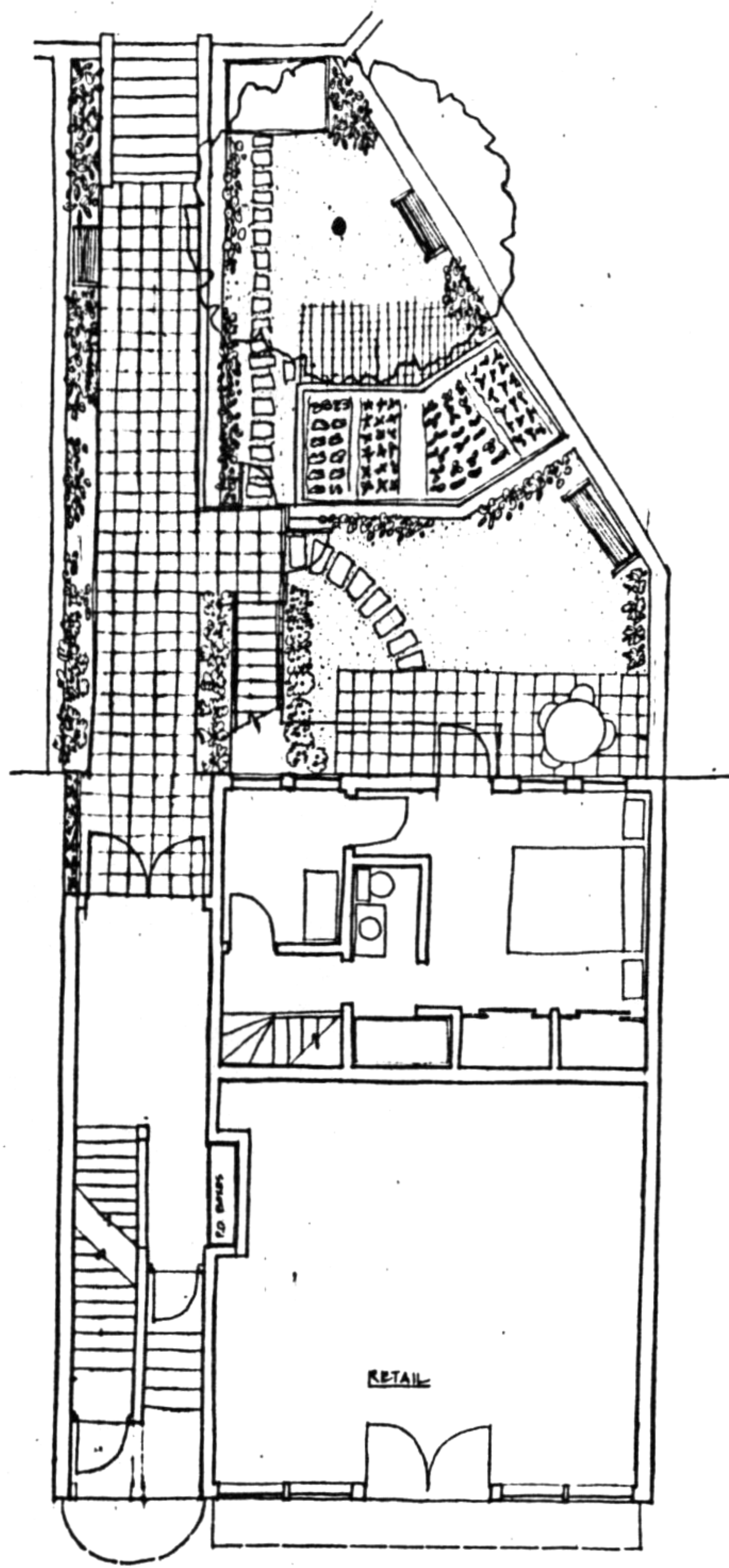
SECOND FLOOR PLAN



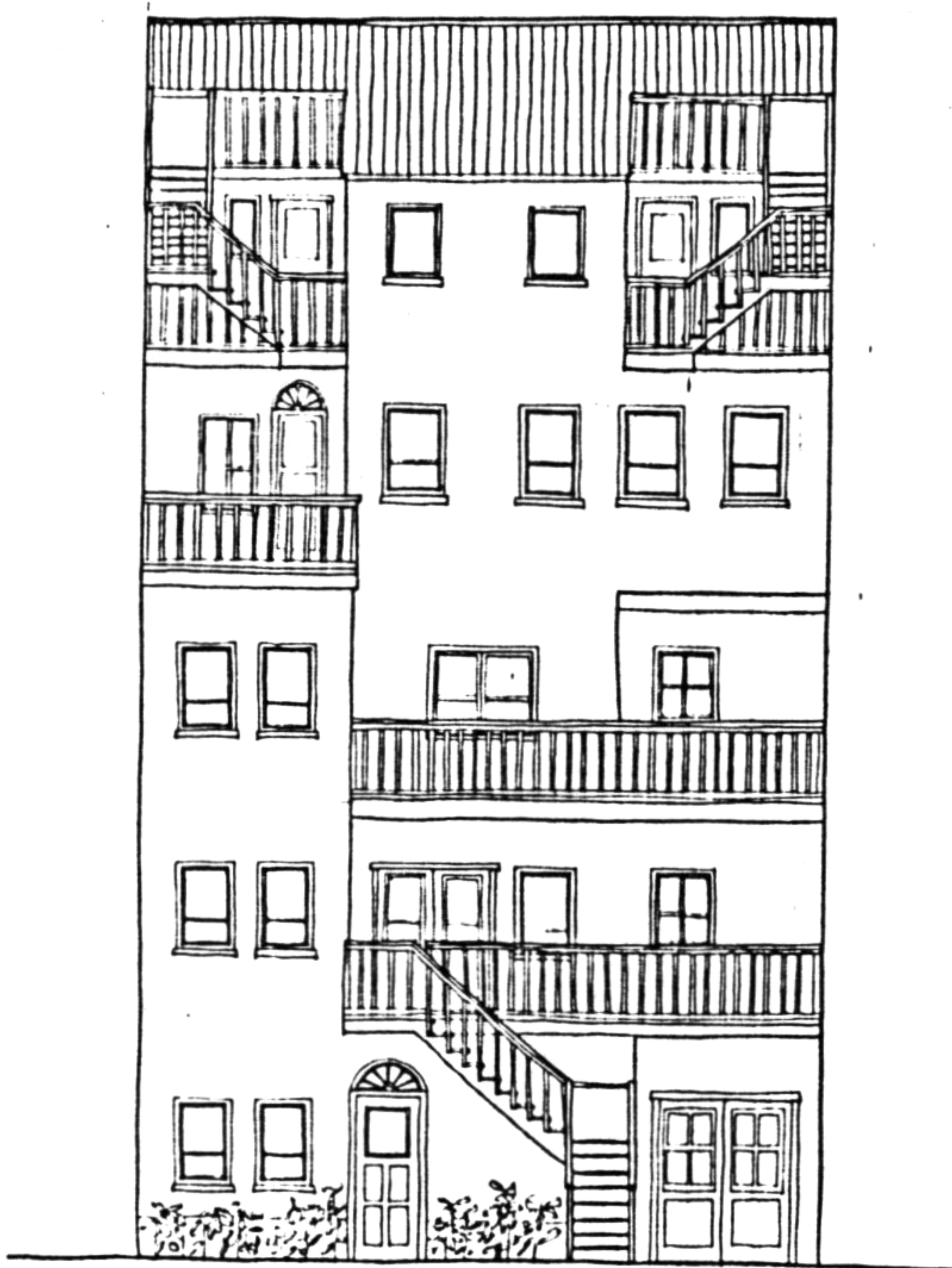
THIRD AND FOURTH FLOOR PLAN



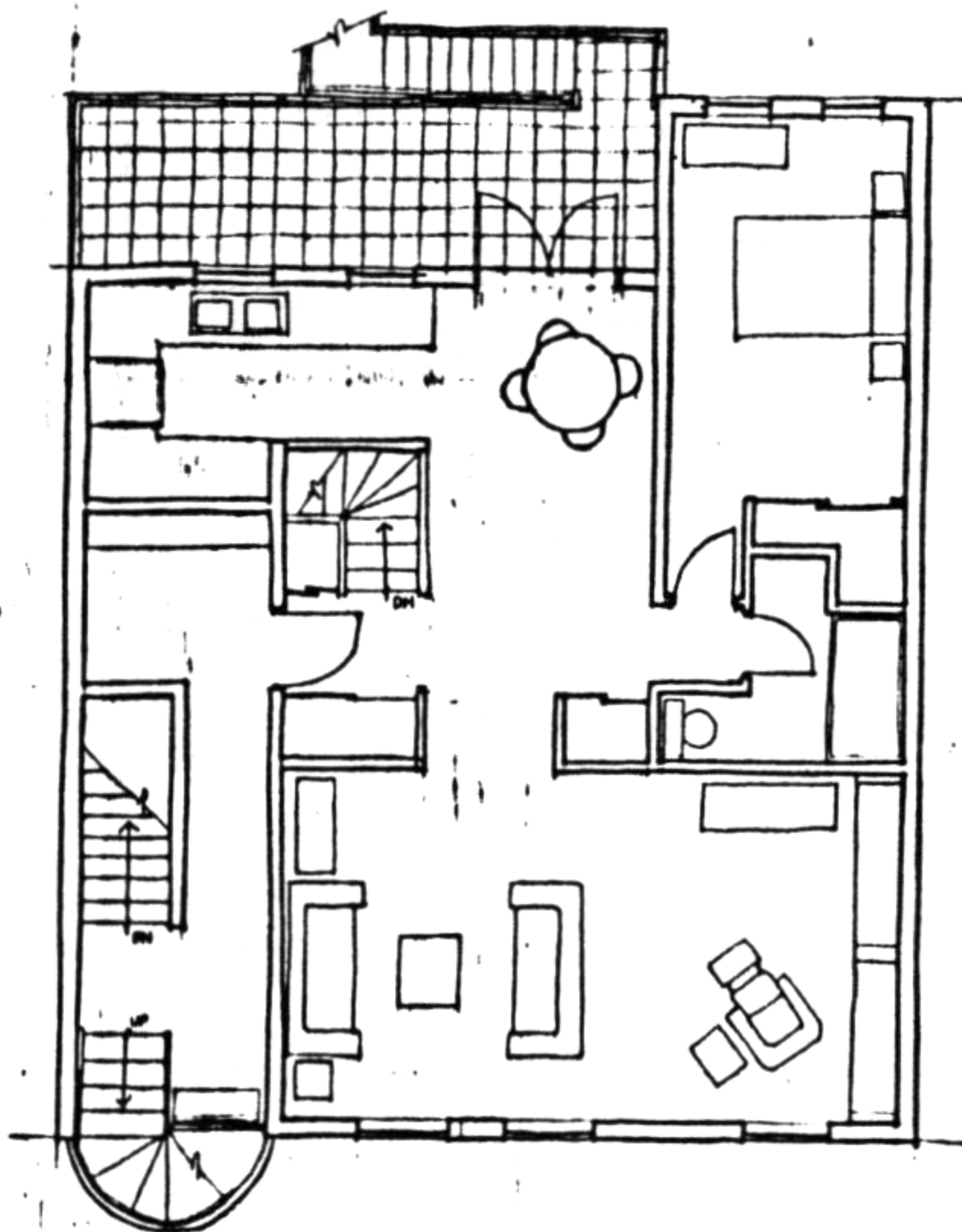
FRONT ELEVATION



GROUND FLOOR PLAN w/ GARDEN



GARDEN ELEVATION



SECOND LEVEL

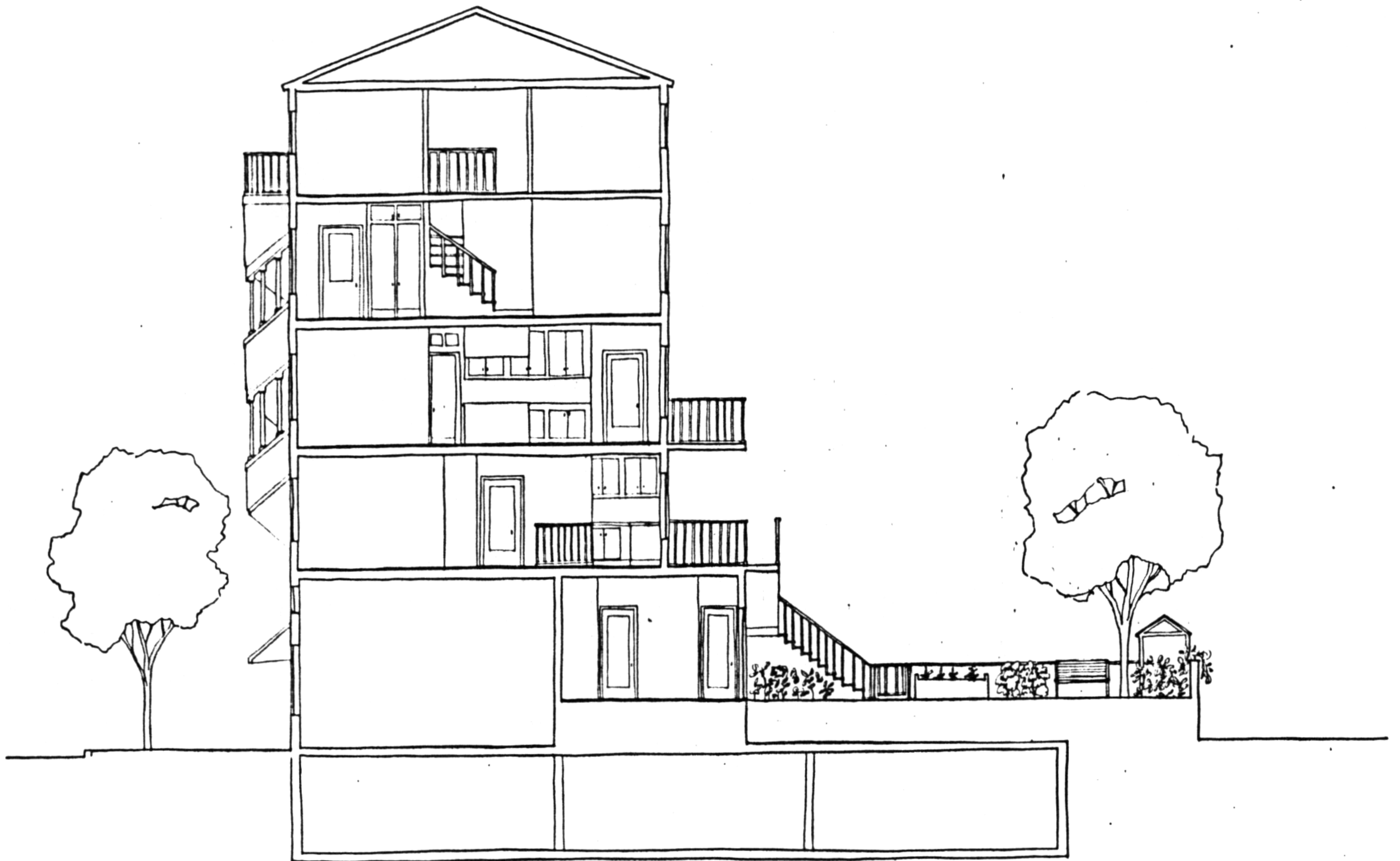


HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

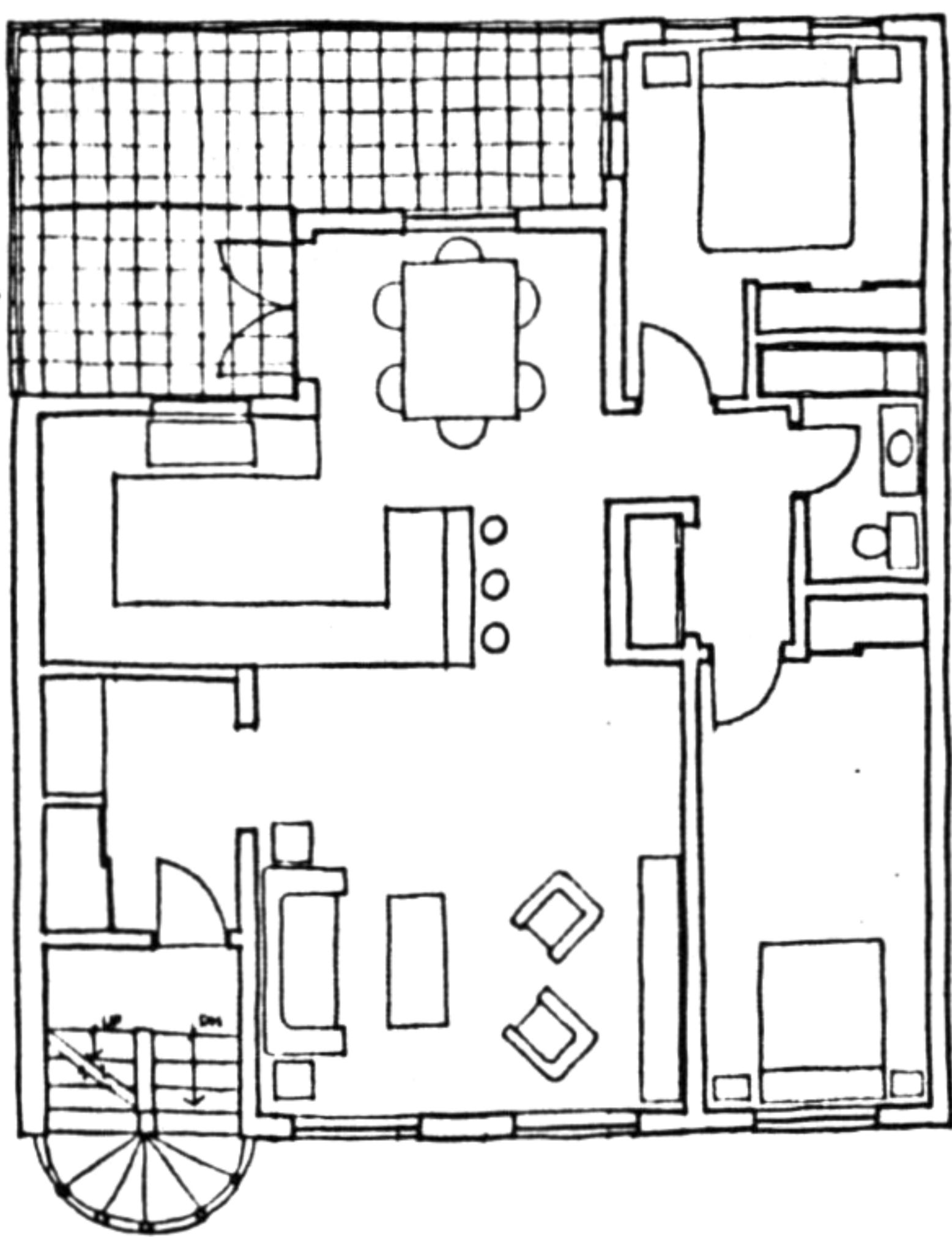
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ALLEY
BUILDING

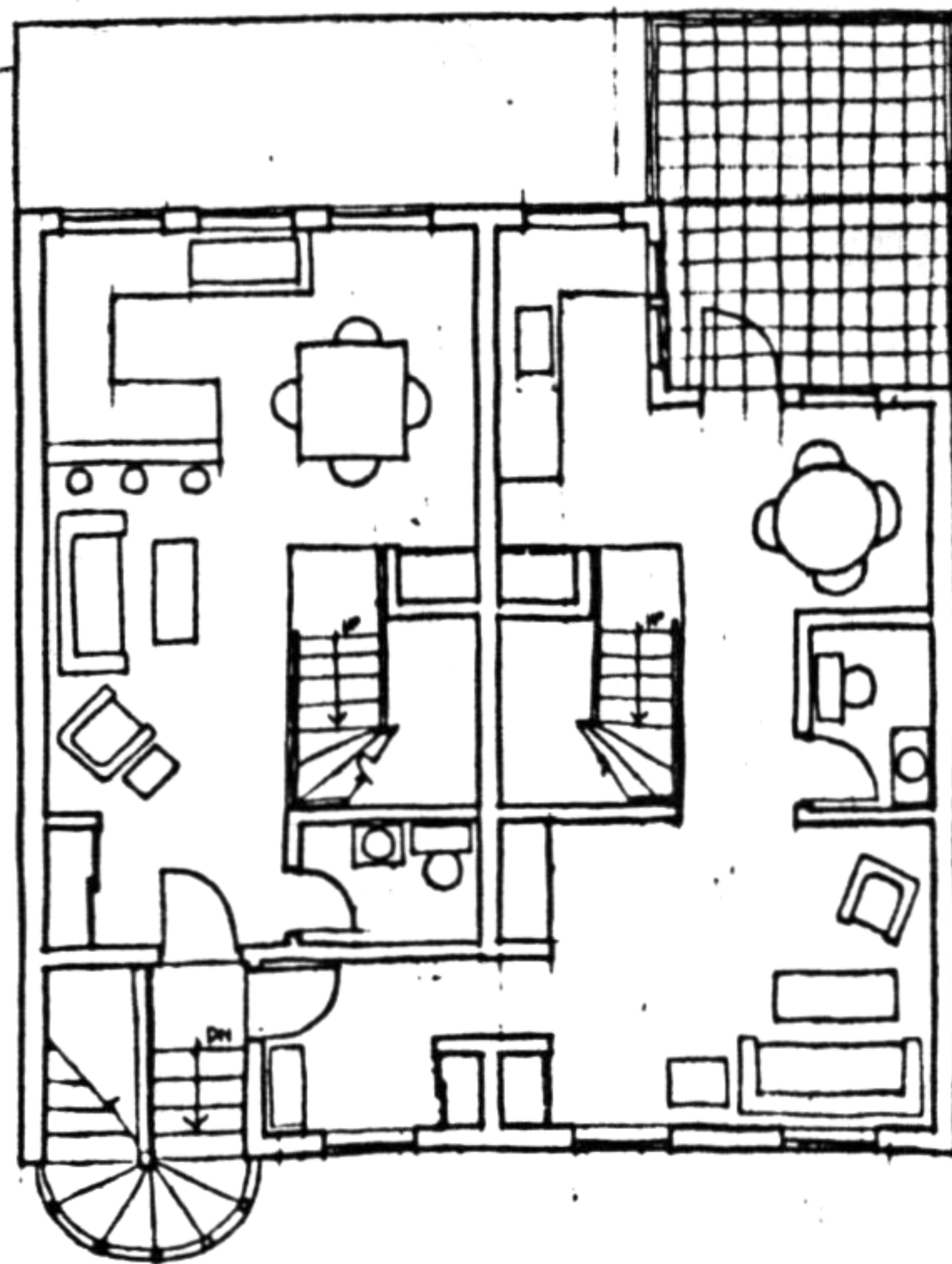
JEANNE RATCLIFFE
HOLLY BABE FAUST



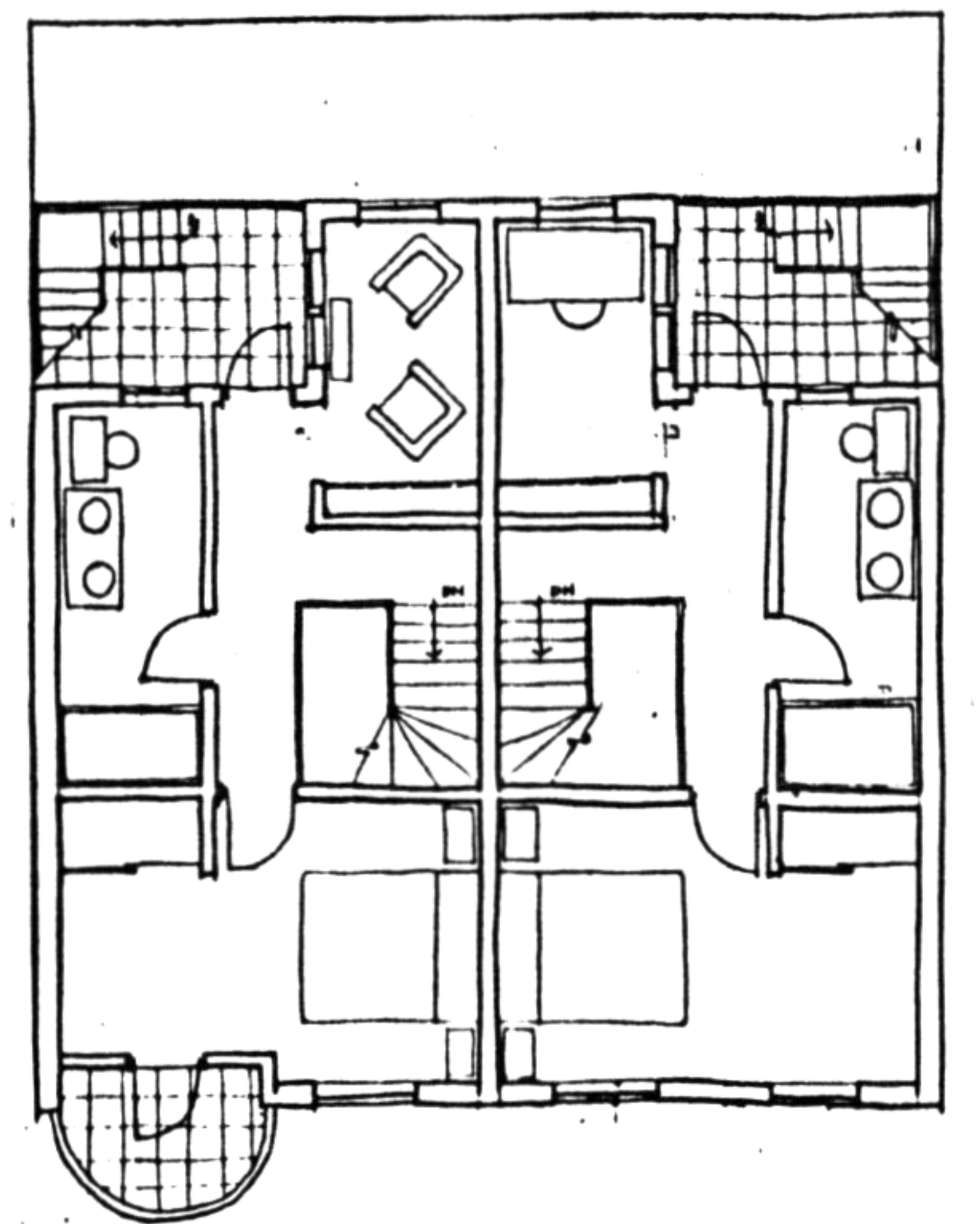
SECTION



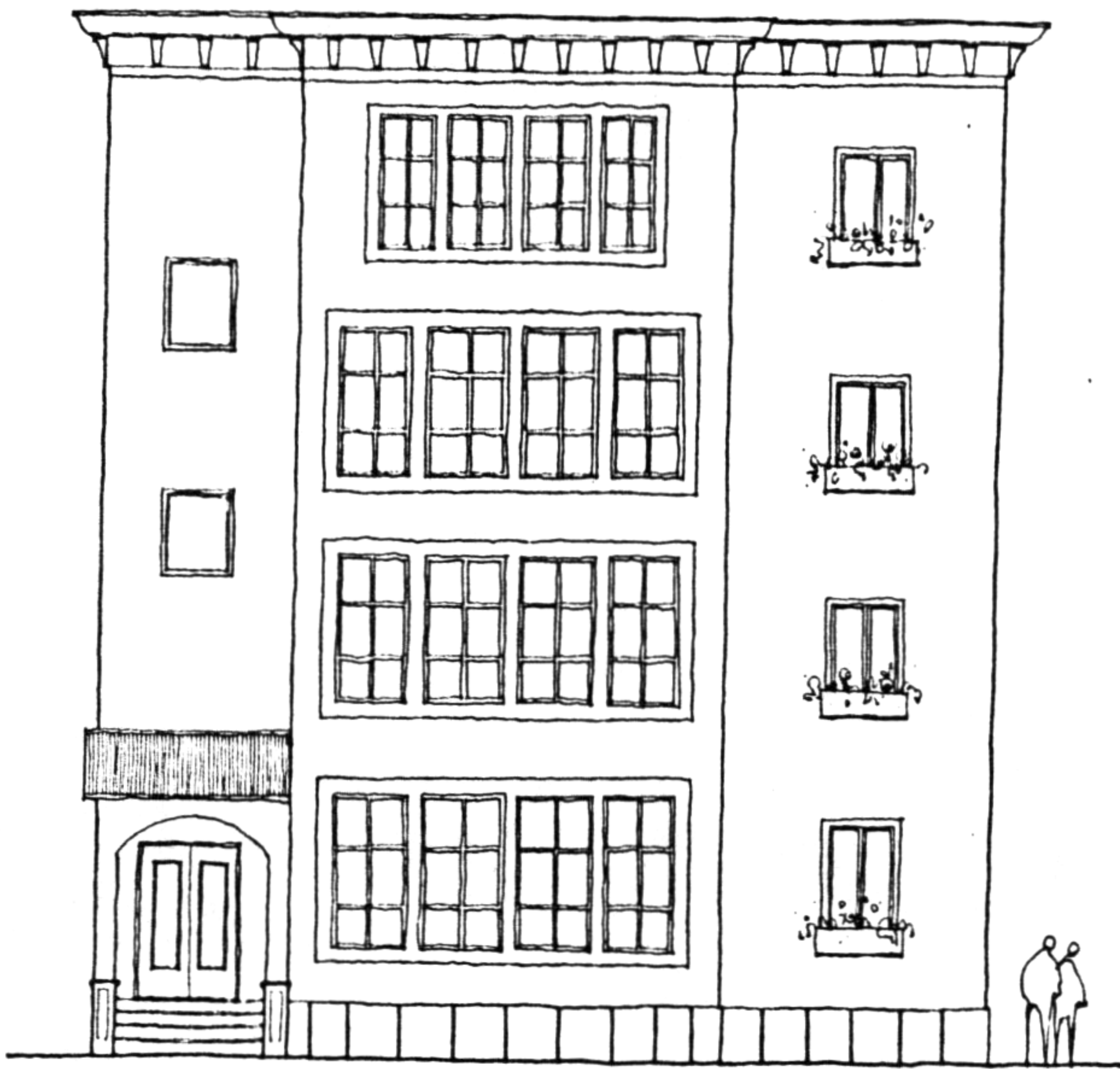
THIRD LEVEL



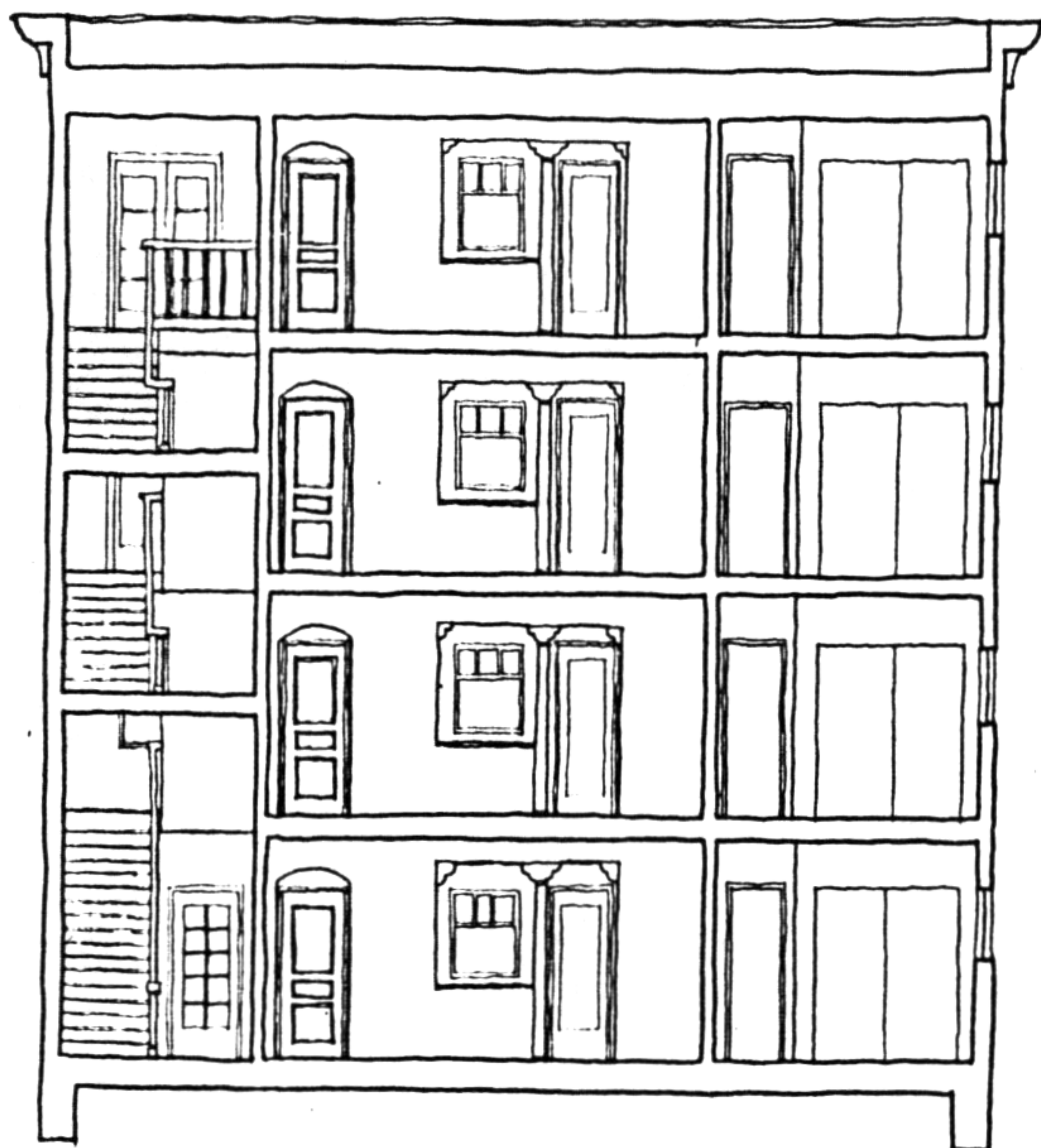
FOURTH LEVEL



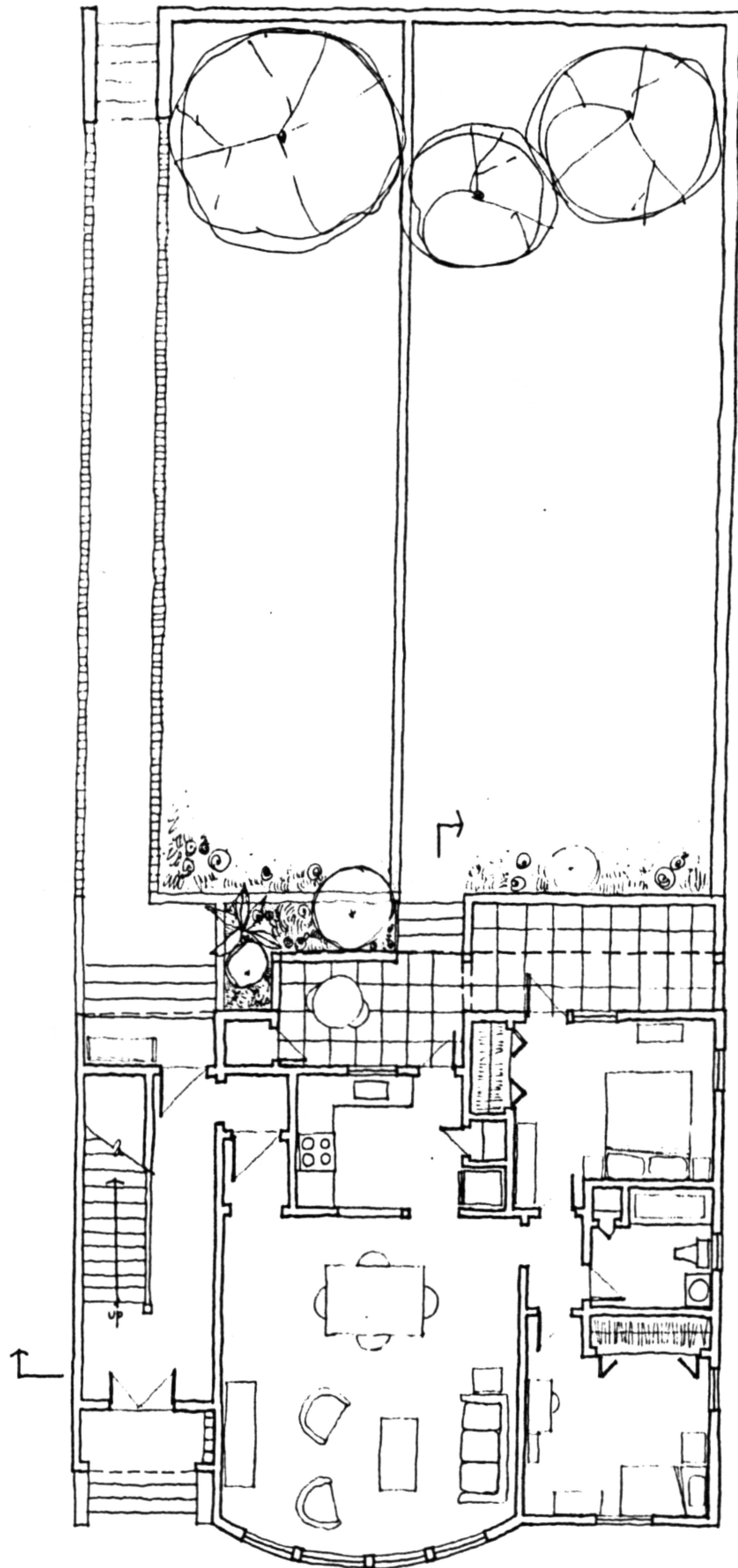
FIFTH LEVEL



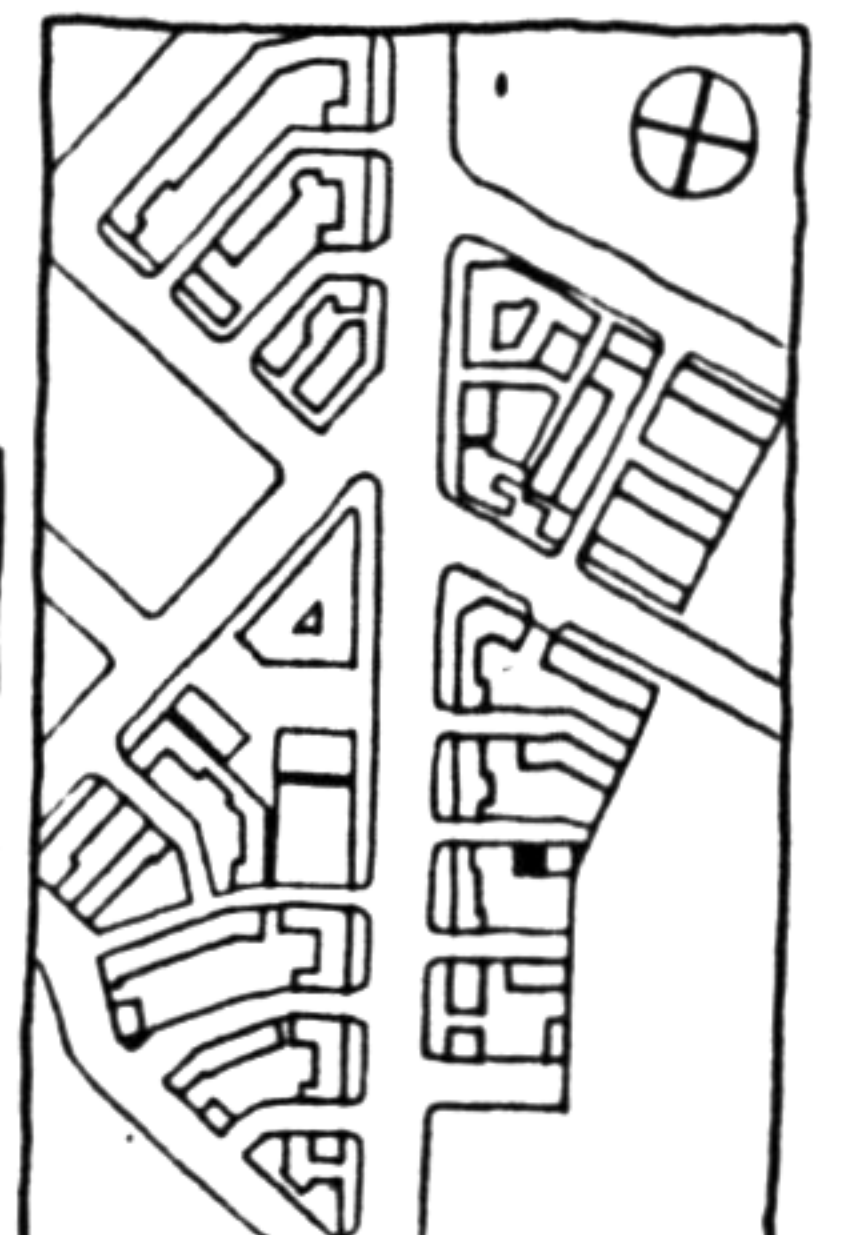
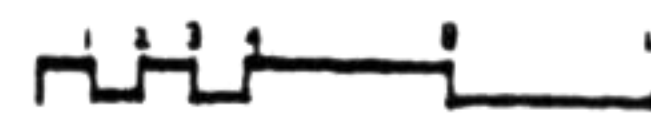
FRONT ELEVATION



SECTION



FIRST FLOOR PLAN

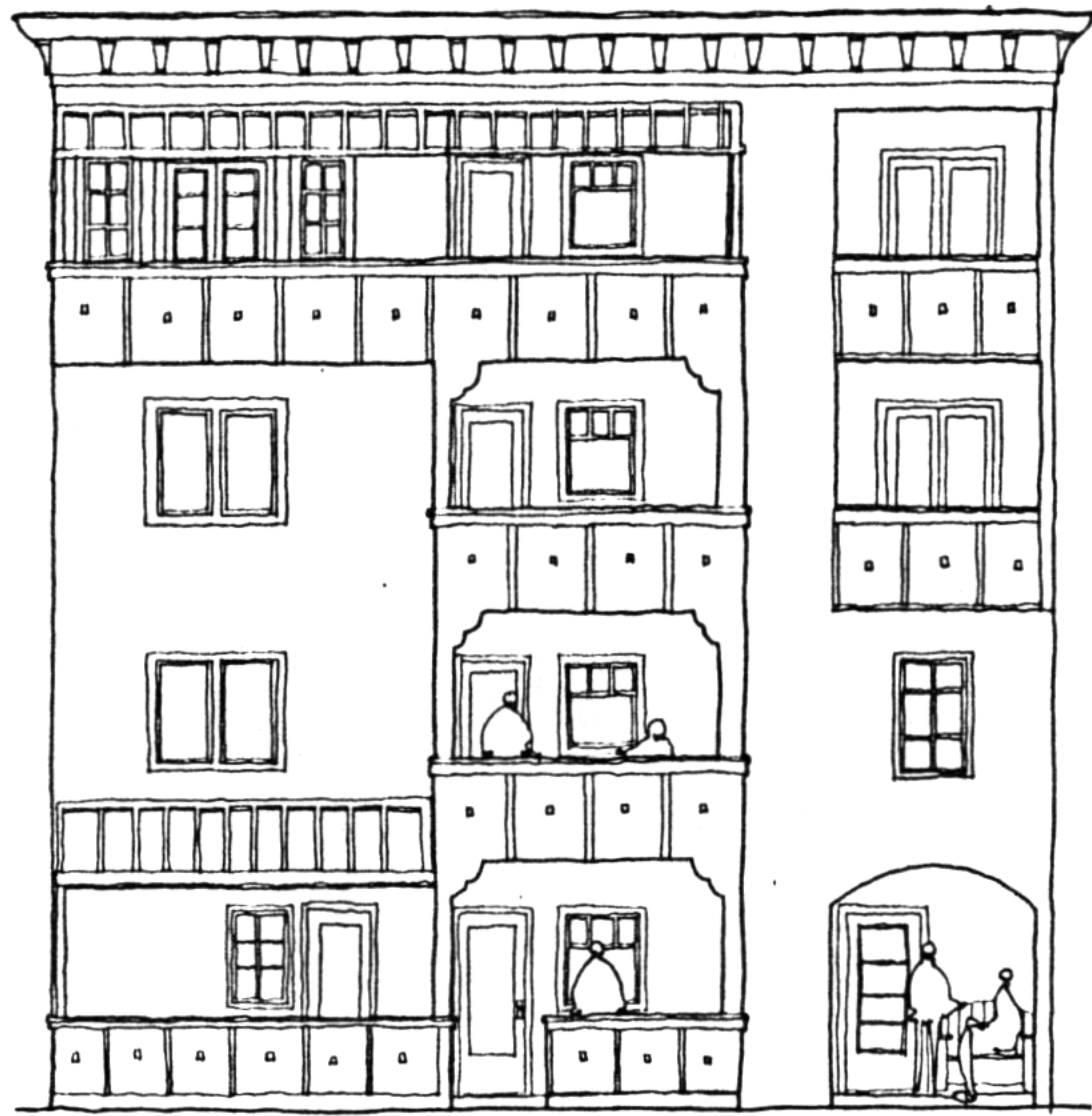


HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

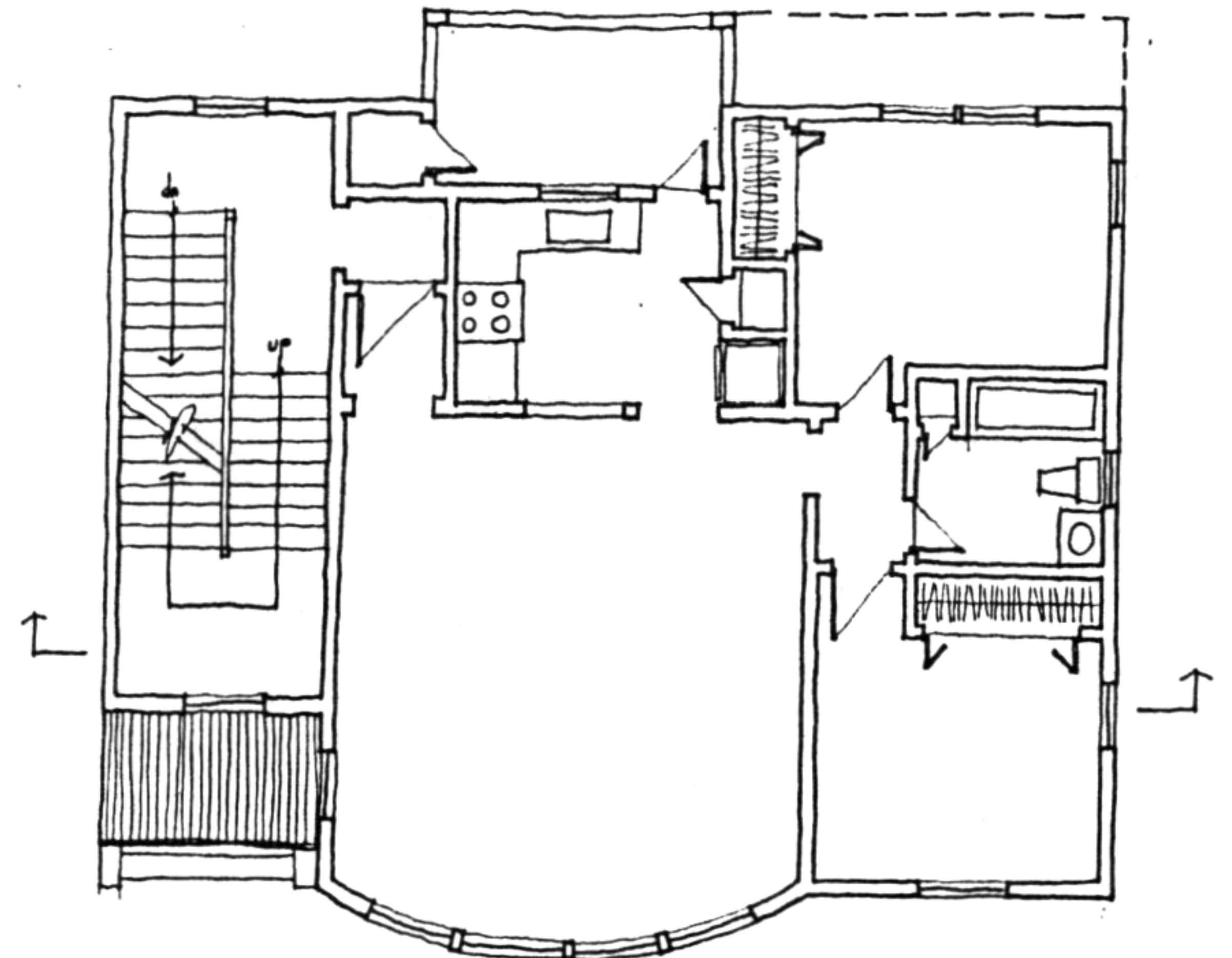
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ALLEY
BUILDING

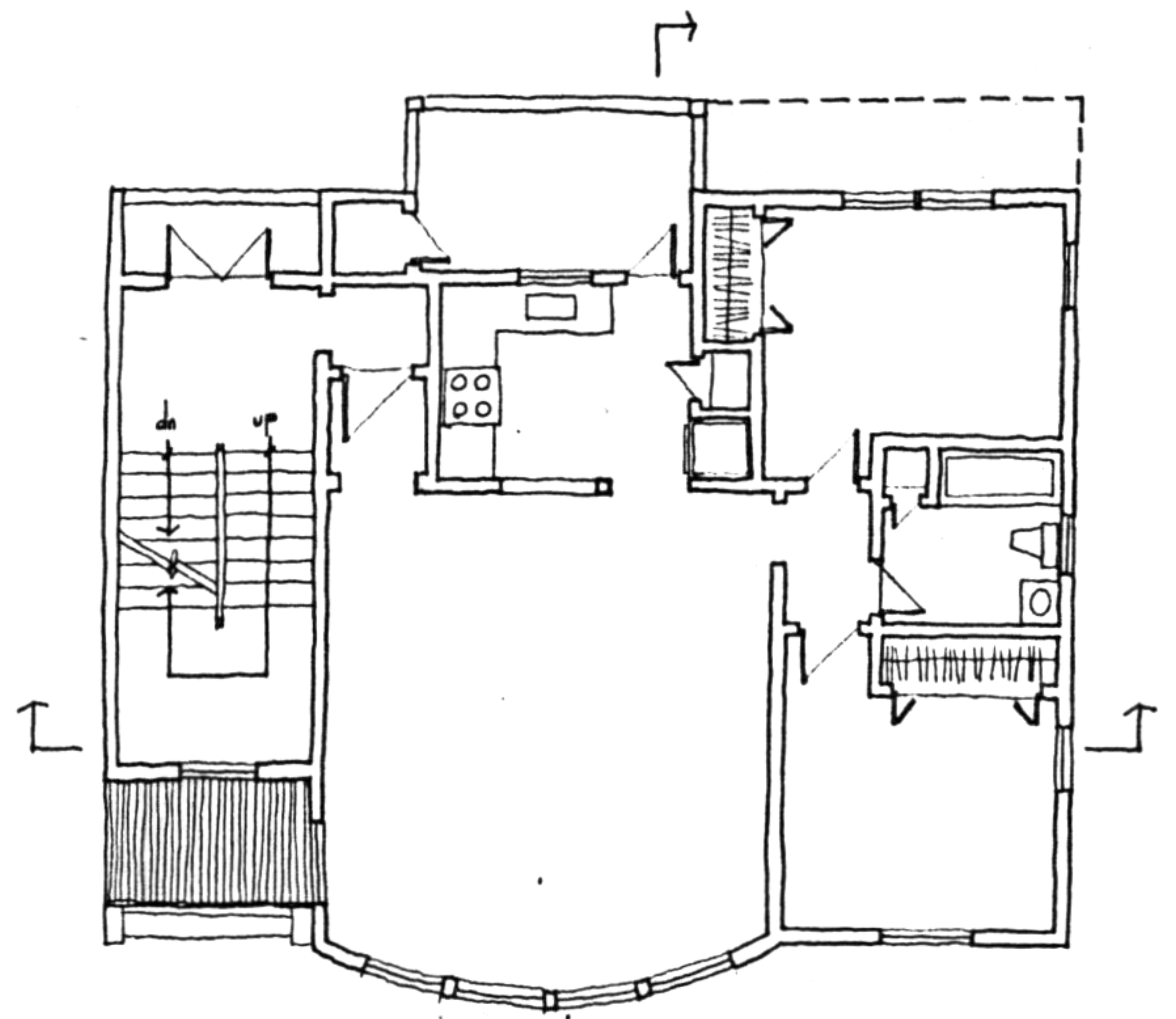
KAREN STANTON



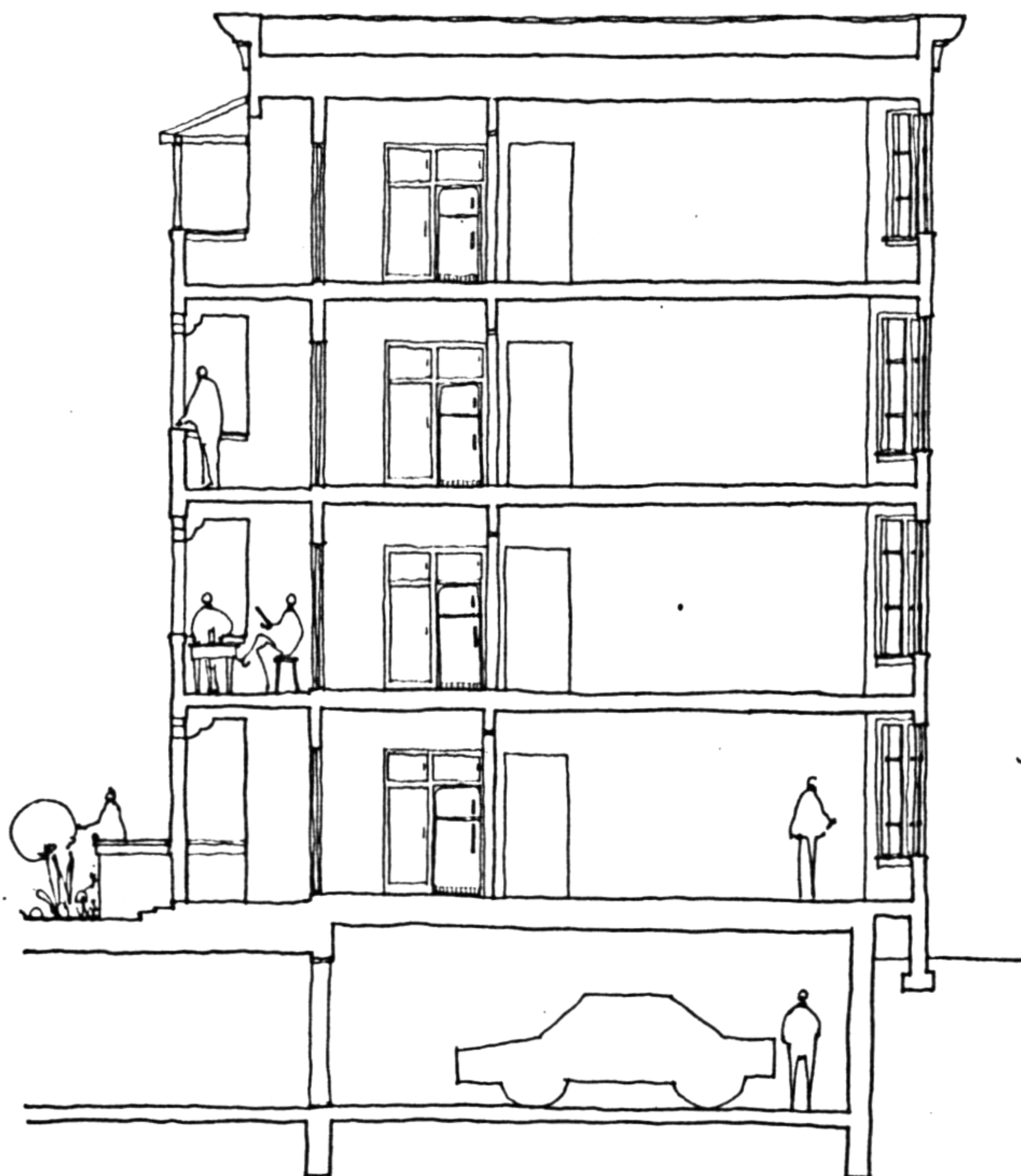
GARDEN ELEVATION



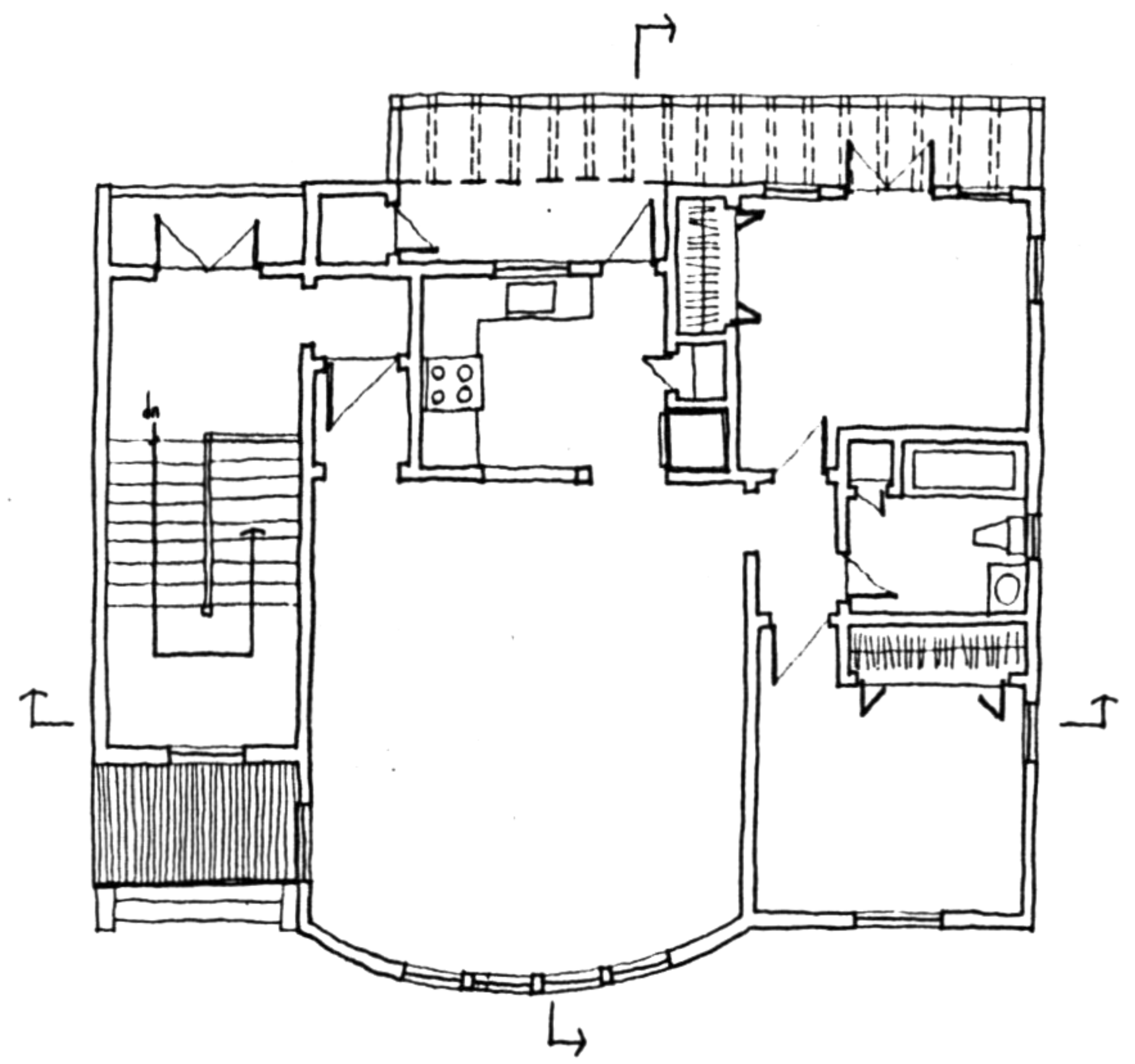
SECOND FLOOR PLAN



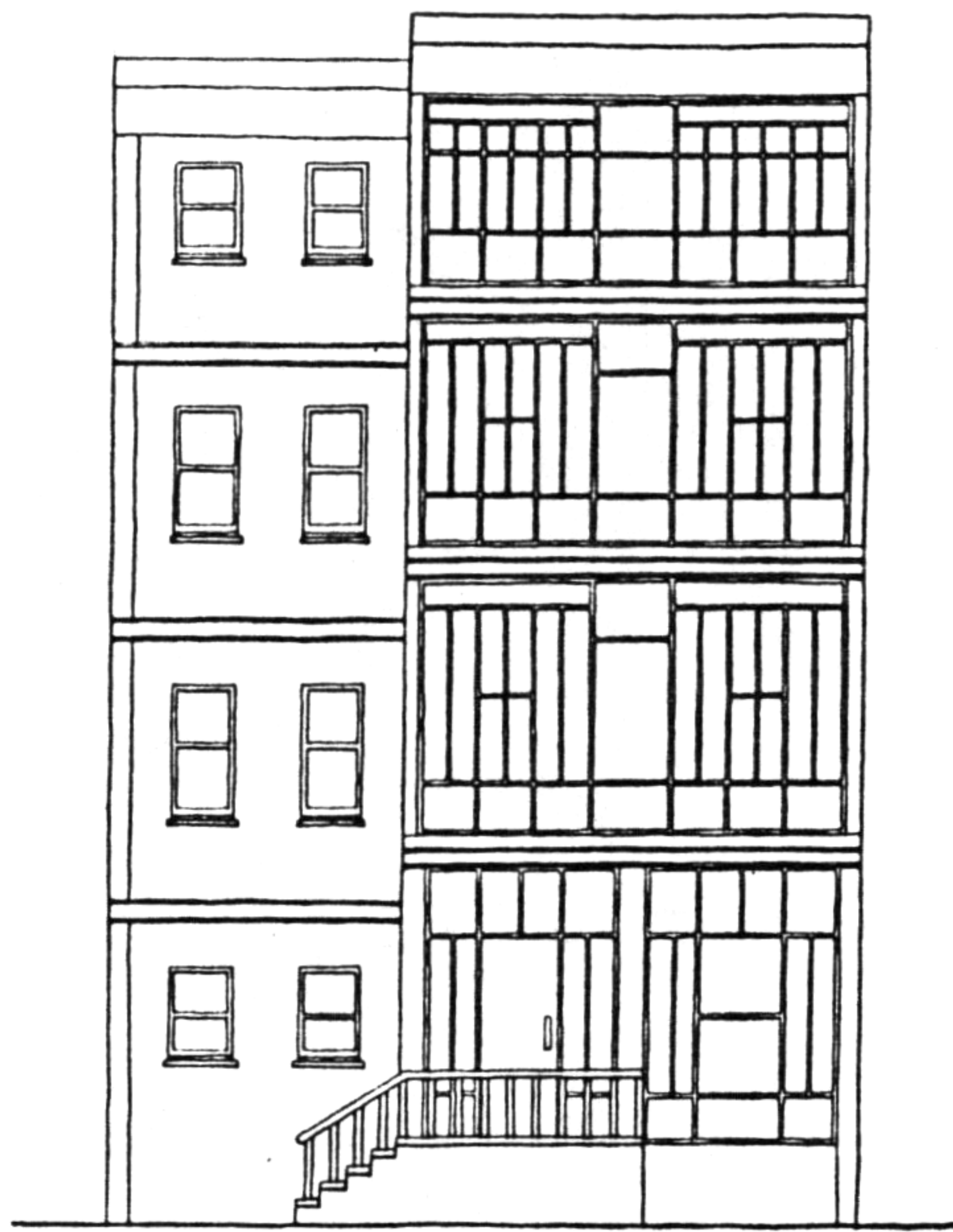
THIRD FLOOR PLAN



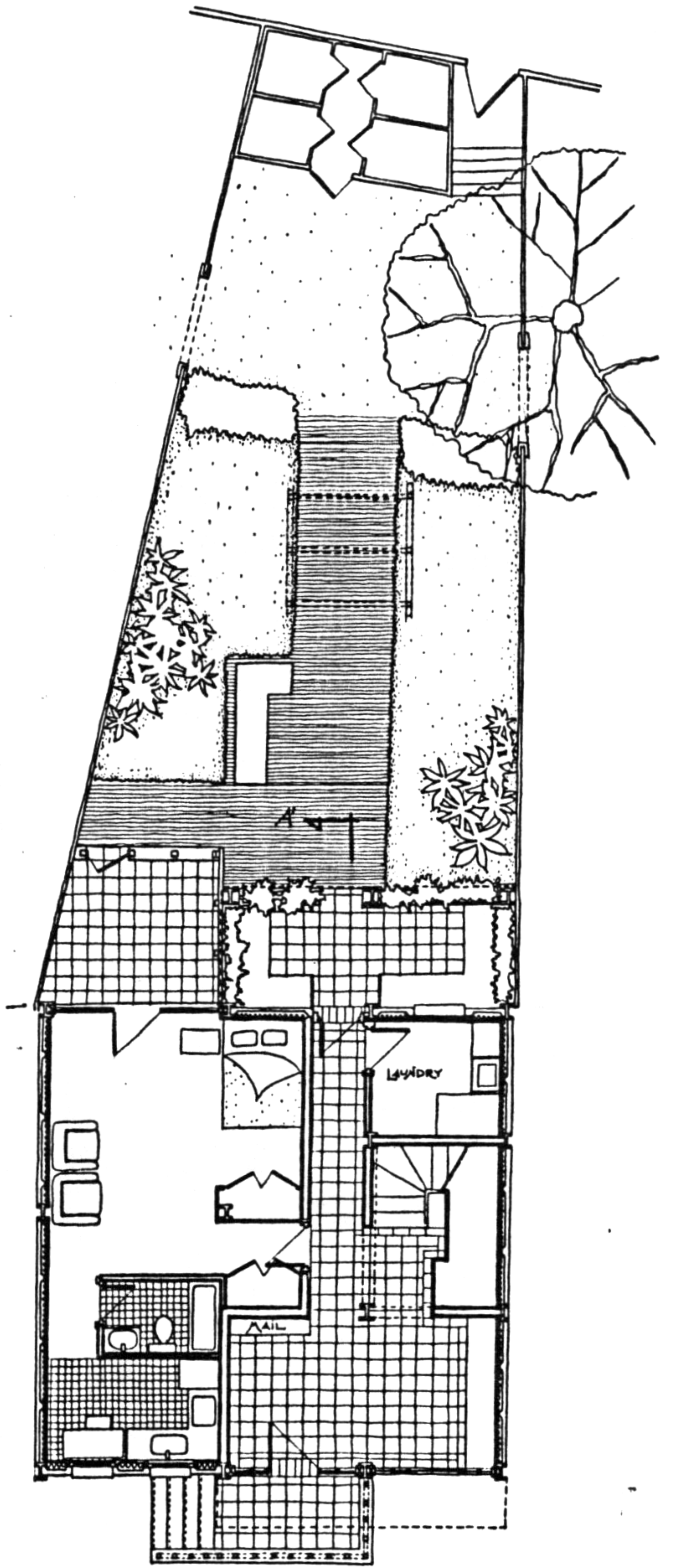
SECTION



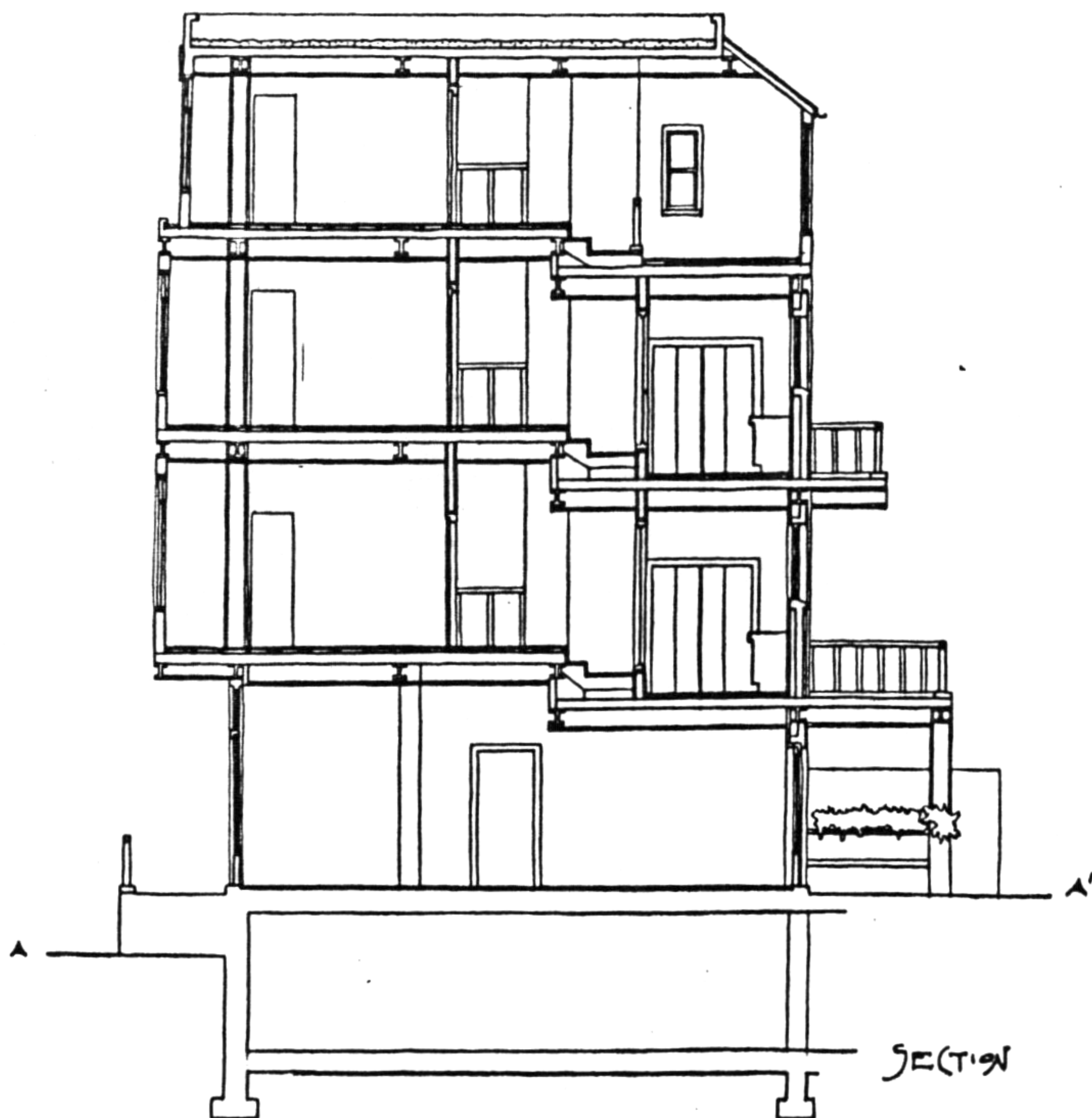
FOURTH FLOOR PLAN



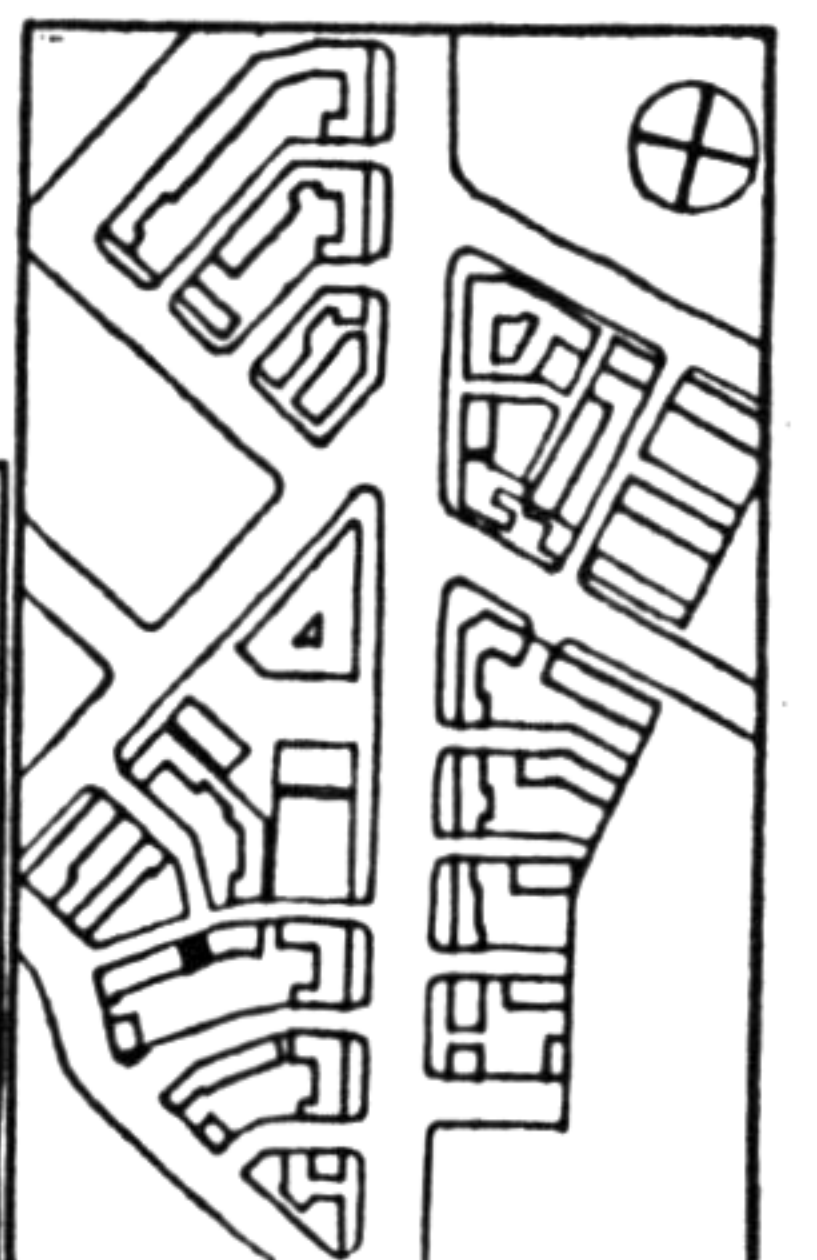
FRONT ELEVATION



A-A GROUND FLOOR



SECTION

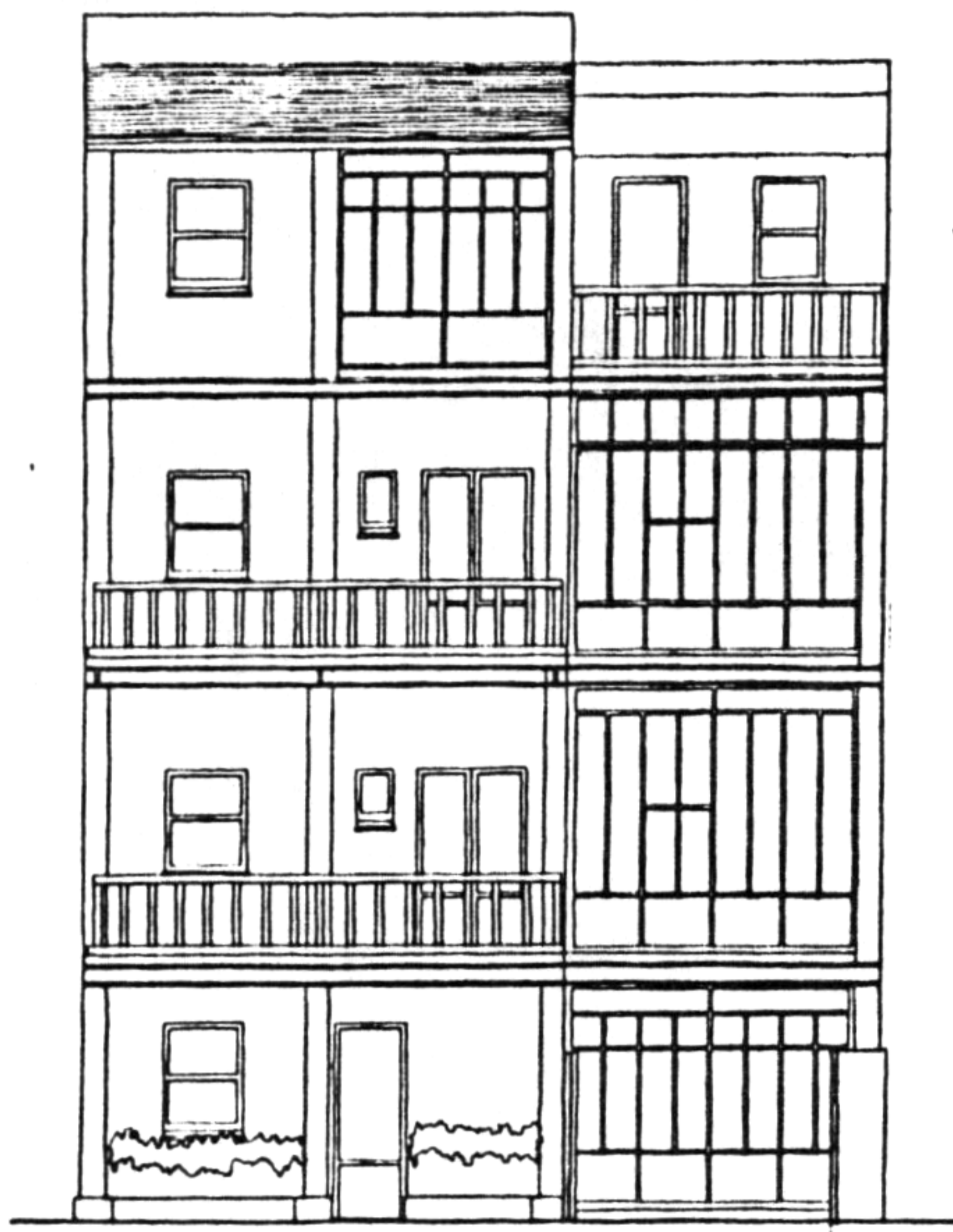


HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

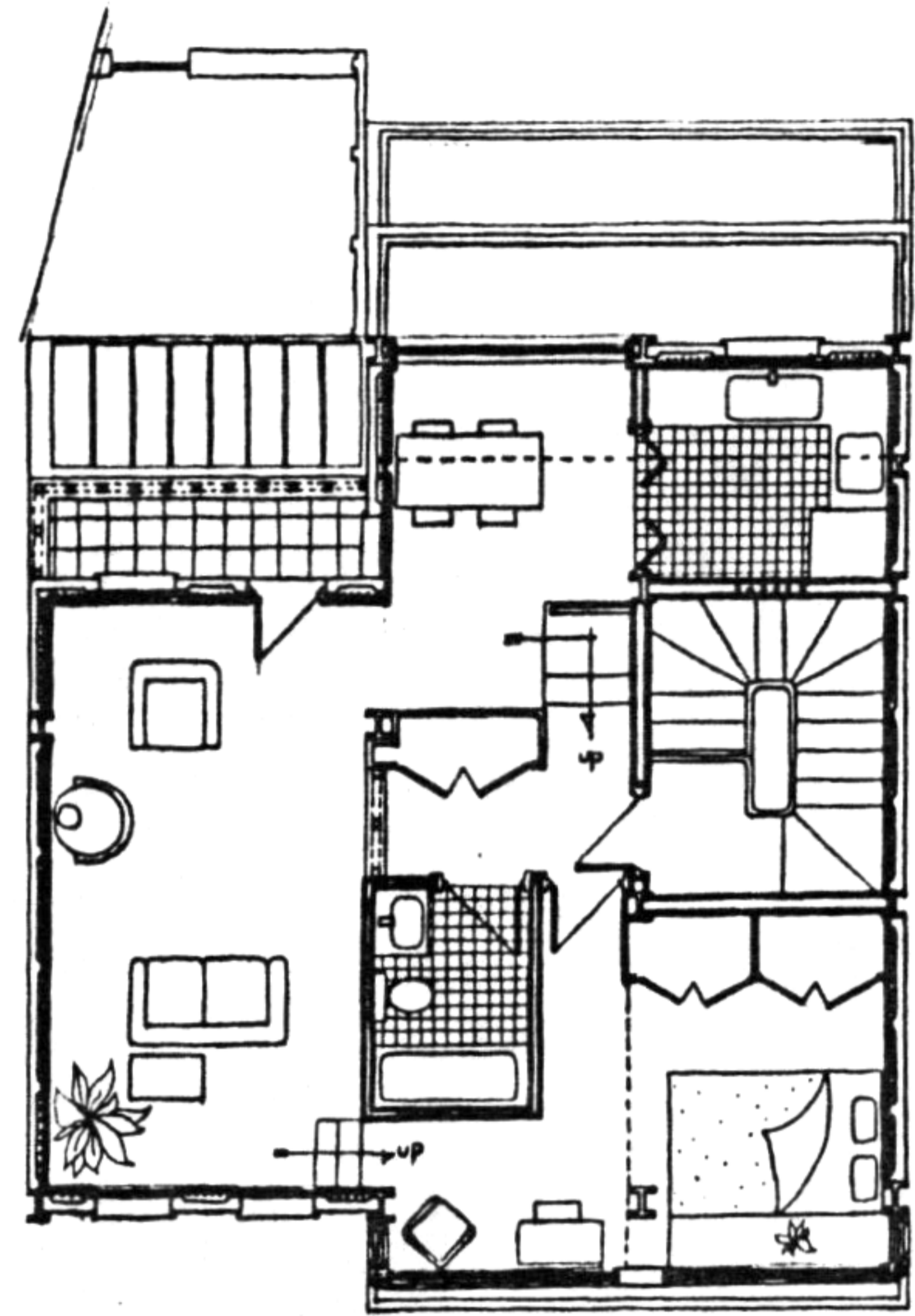
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ALLEY
BUILDING

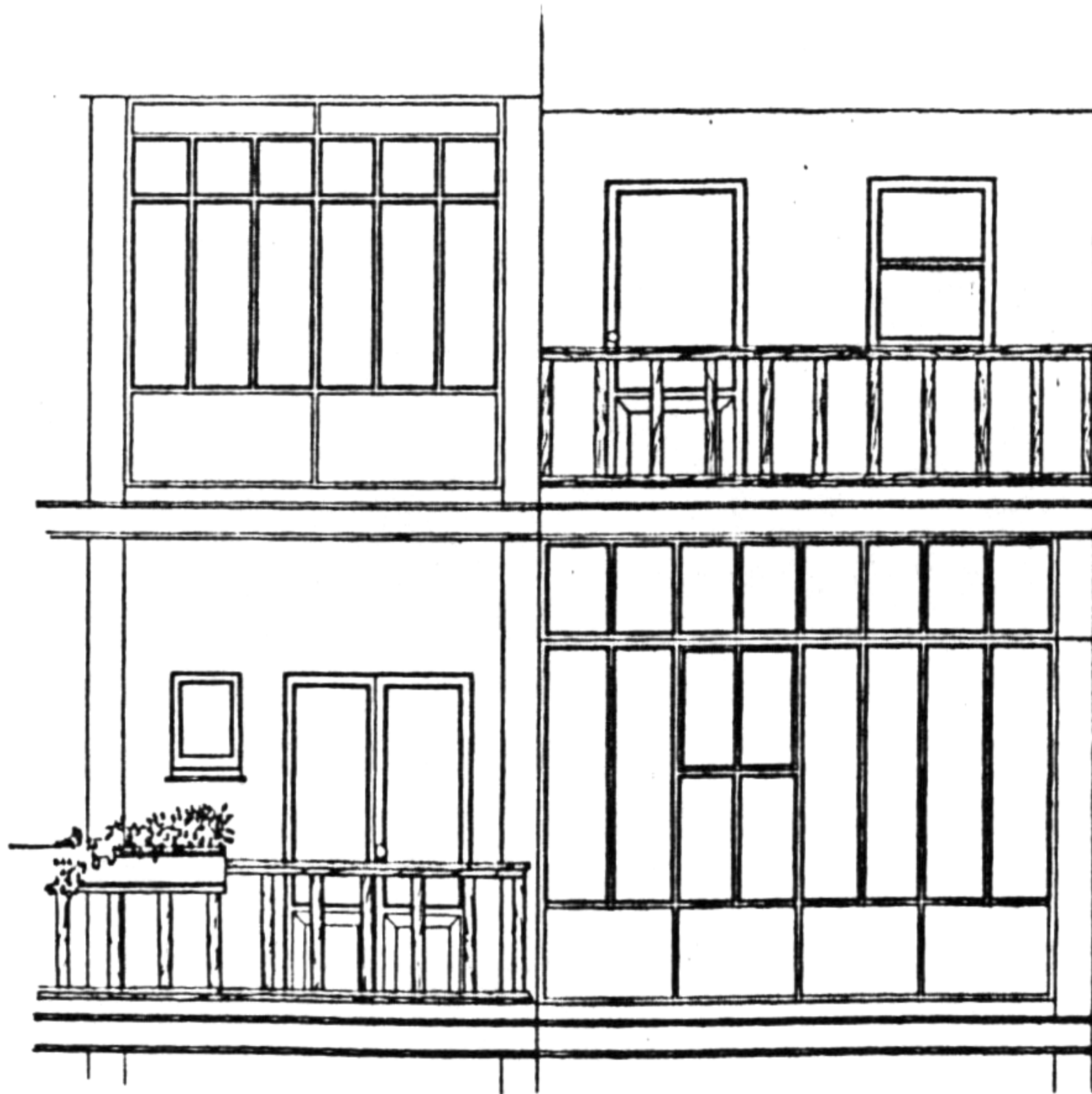
ANNIE
DER BEDROSSIAN



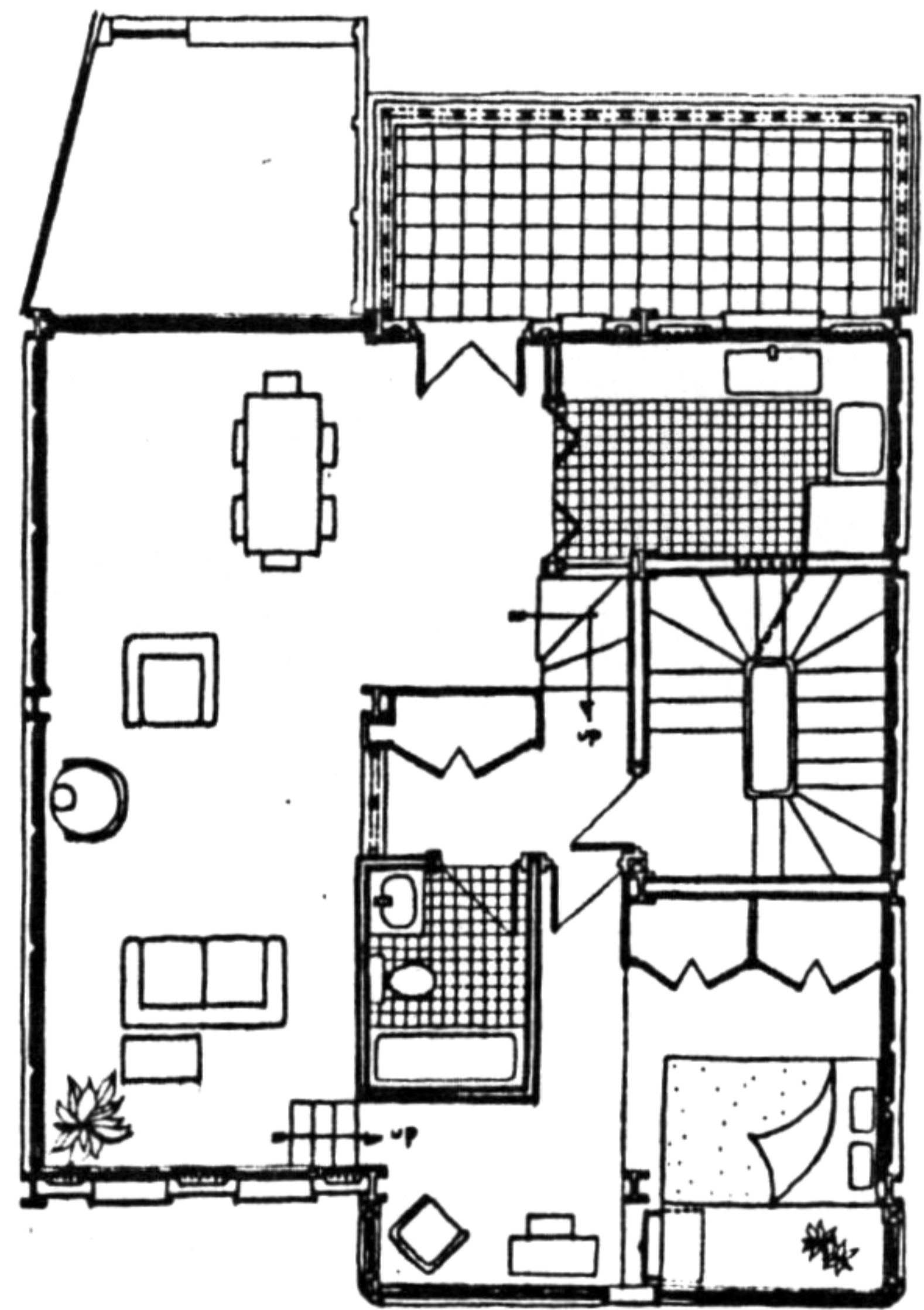
BACK ELEVATION



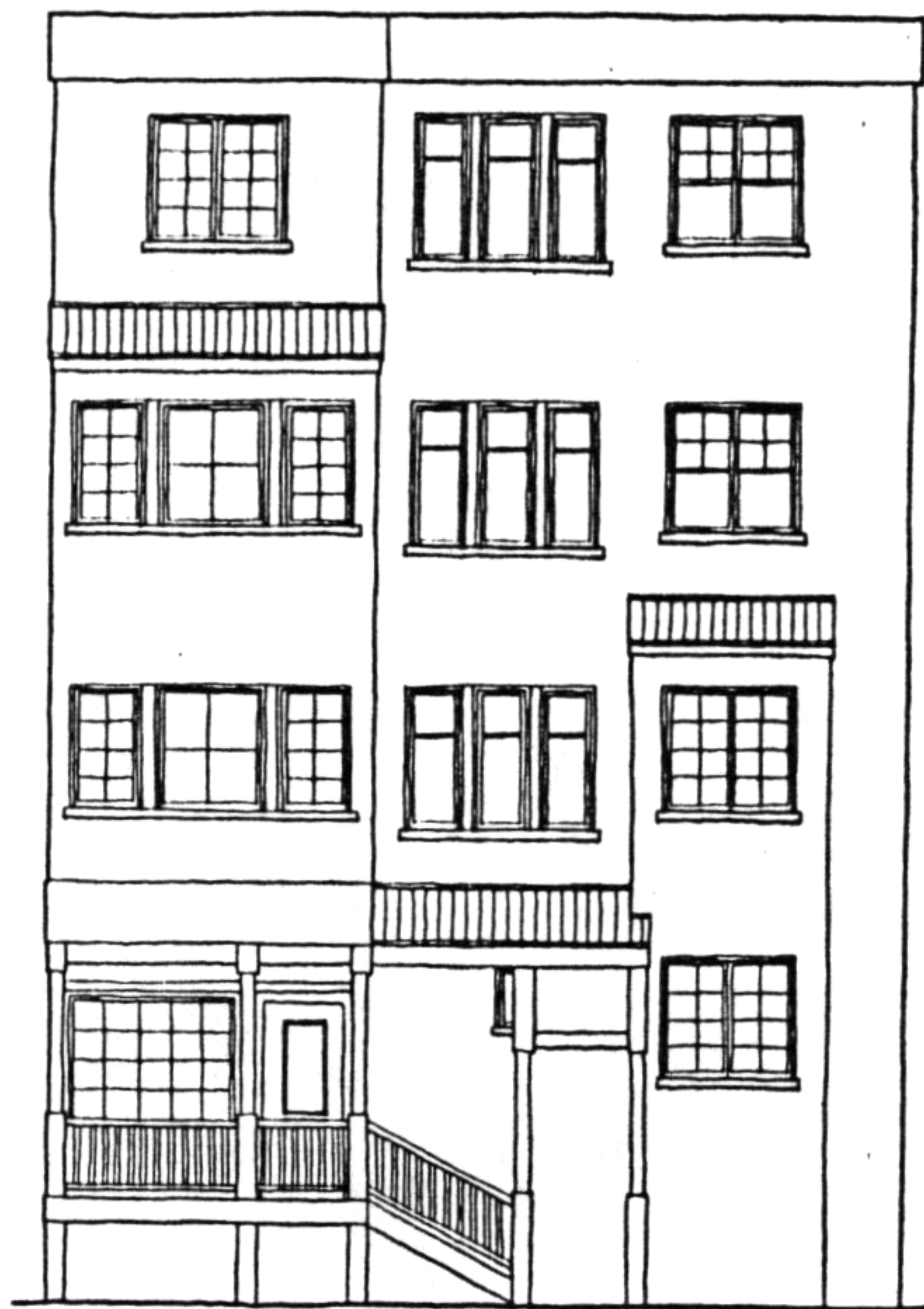
TOP FLOOR



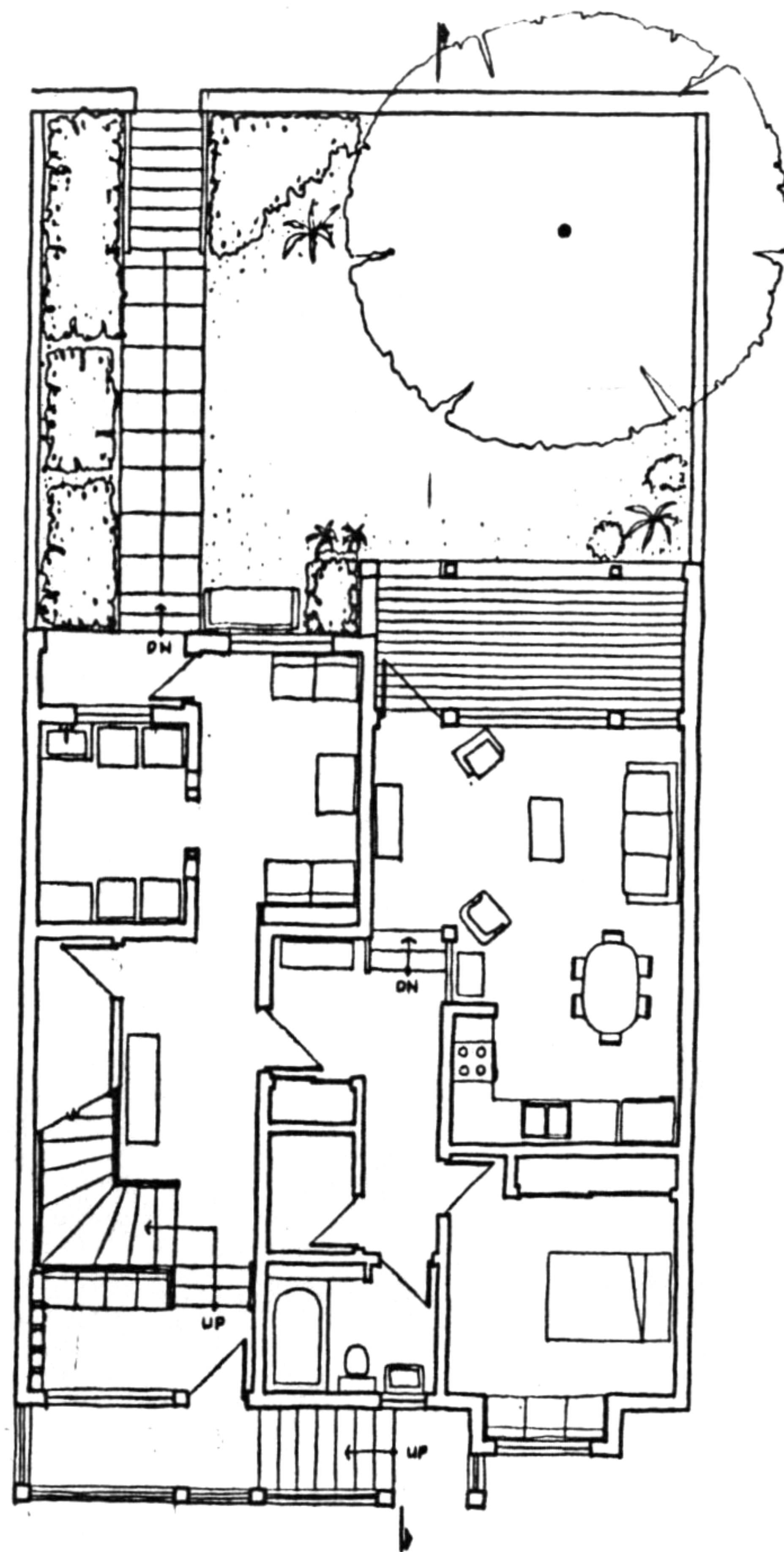
PARTIAL DETAIL



TYPICAL FLOOR



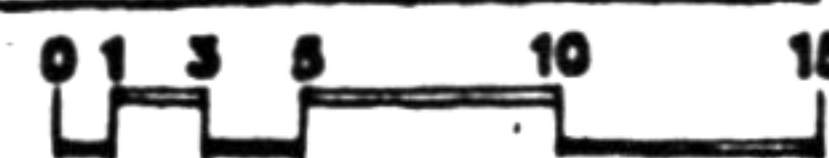
FRONT ELEVATION



FIRST FLOOR PLAN



SECTION



HIGH DENSITY MASS HOUSING

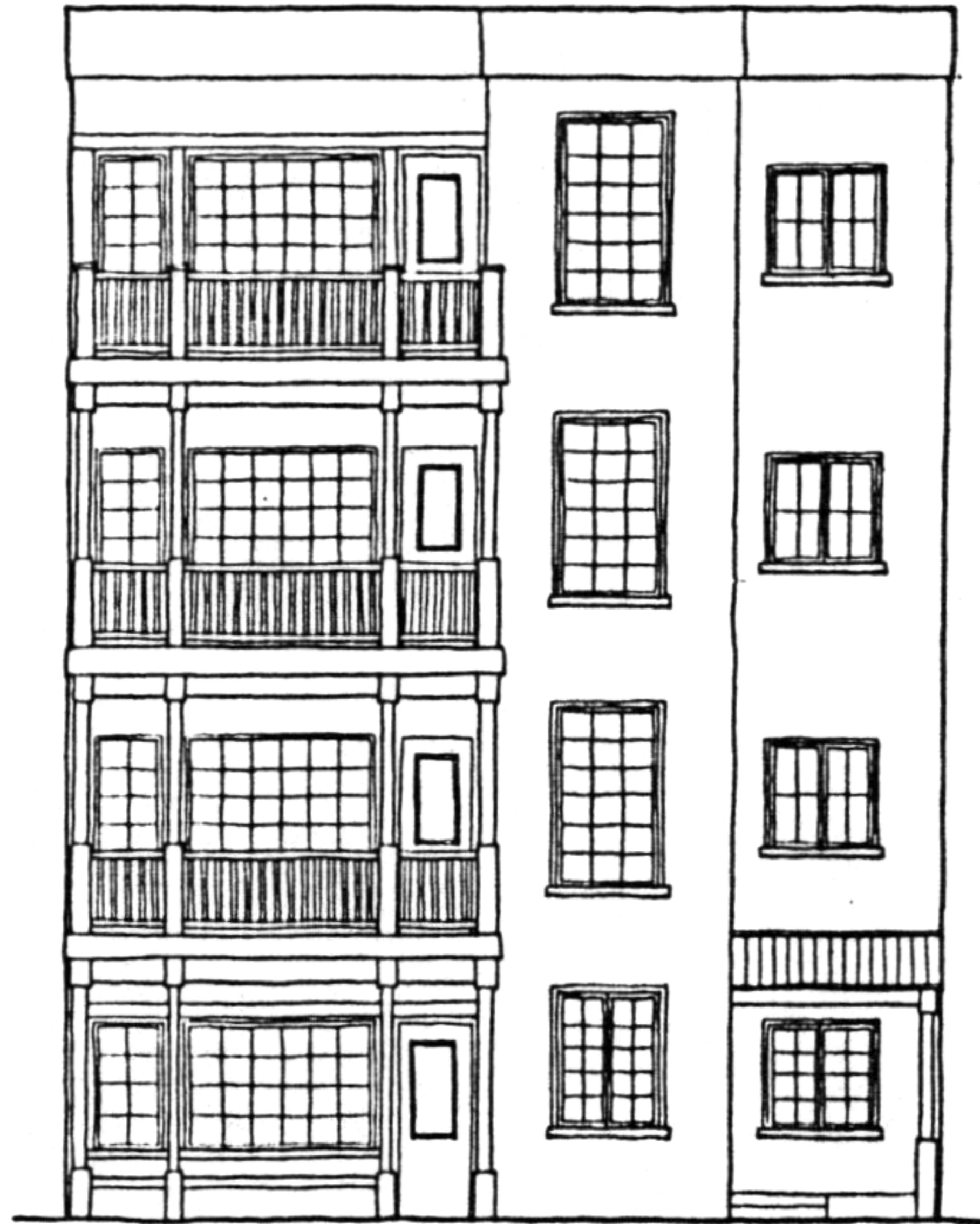
DOWNTOWN OAKLAND

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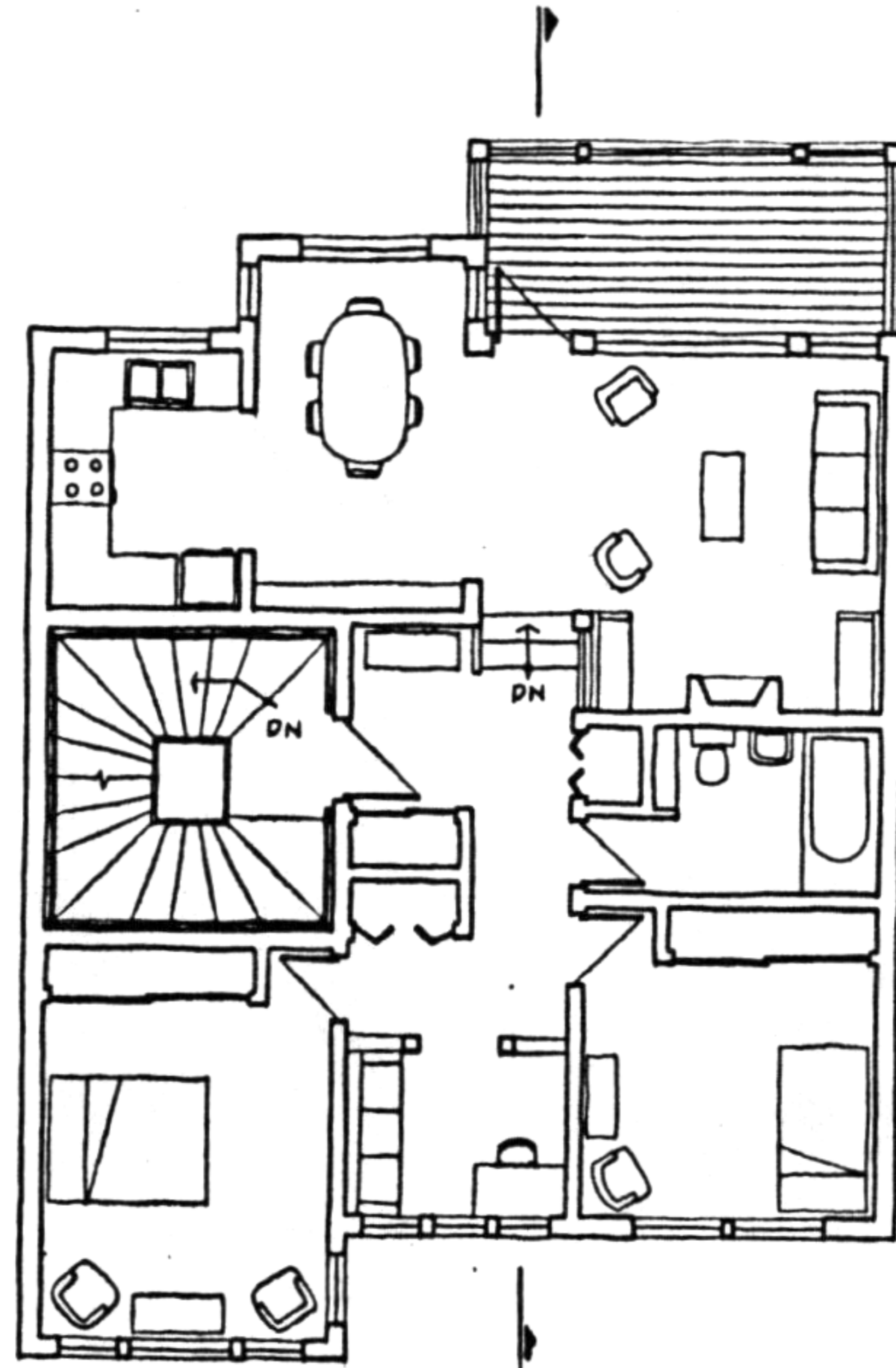
ALLEY
BUILDING

KYRIAKOS PONTIKIS
DAVID T.W. SUNG





BACK ELEVATION



TYPICAL FLOOR PLAN

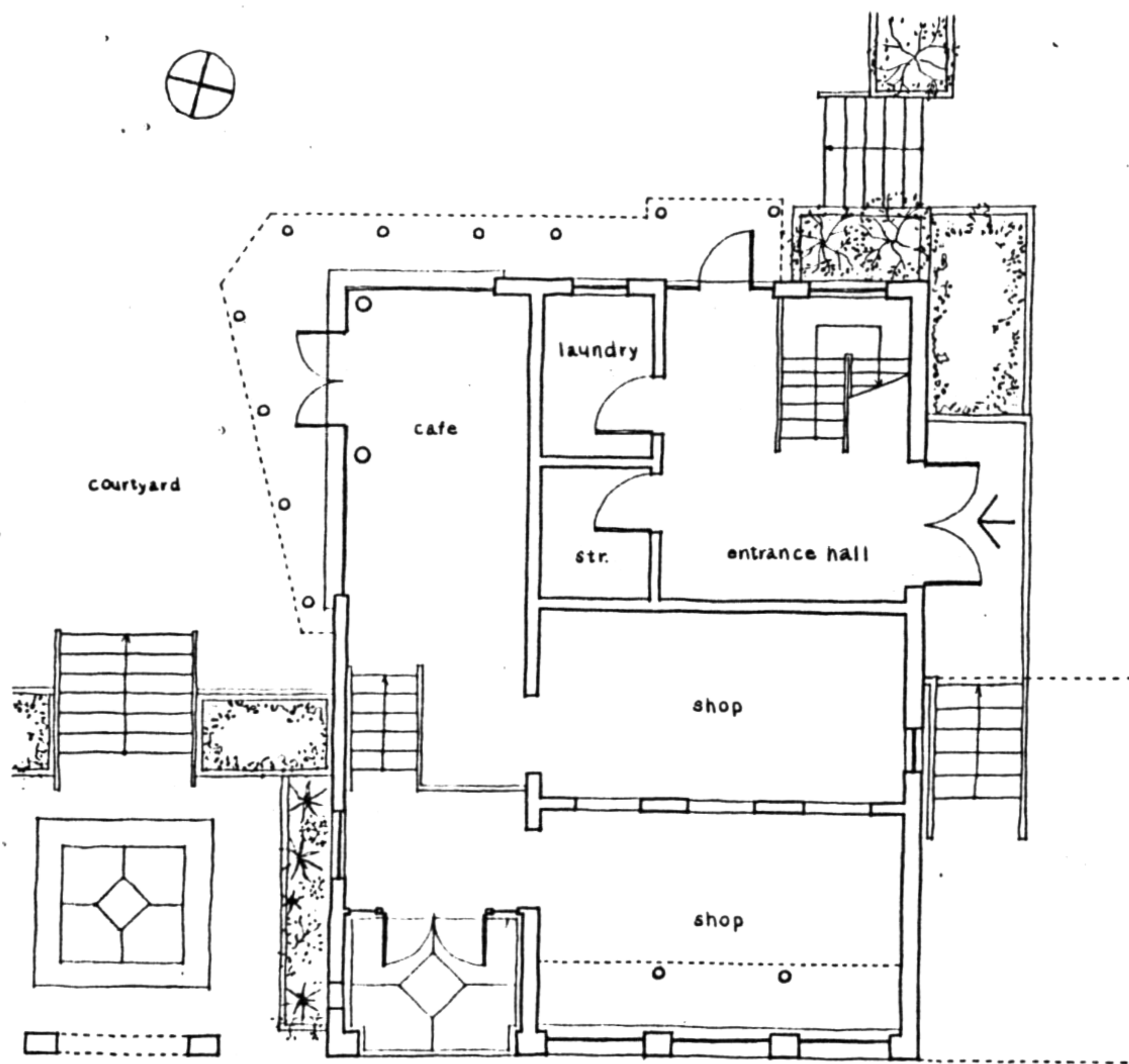


PARTIAL DETAIL ELEVATION

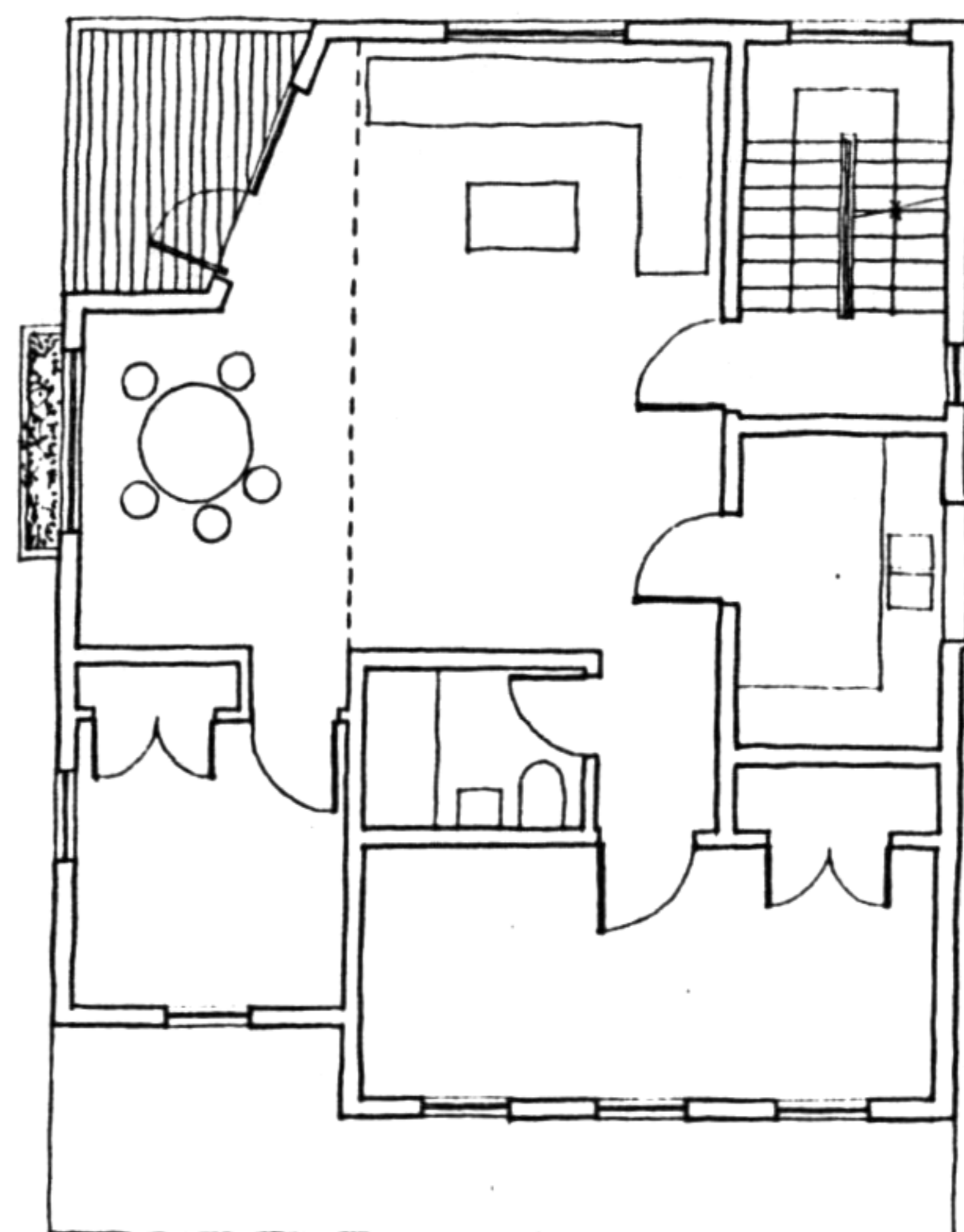




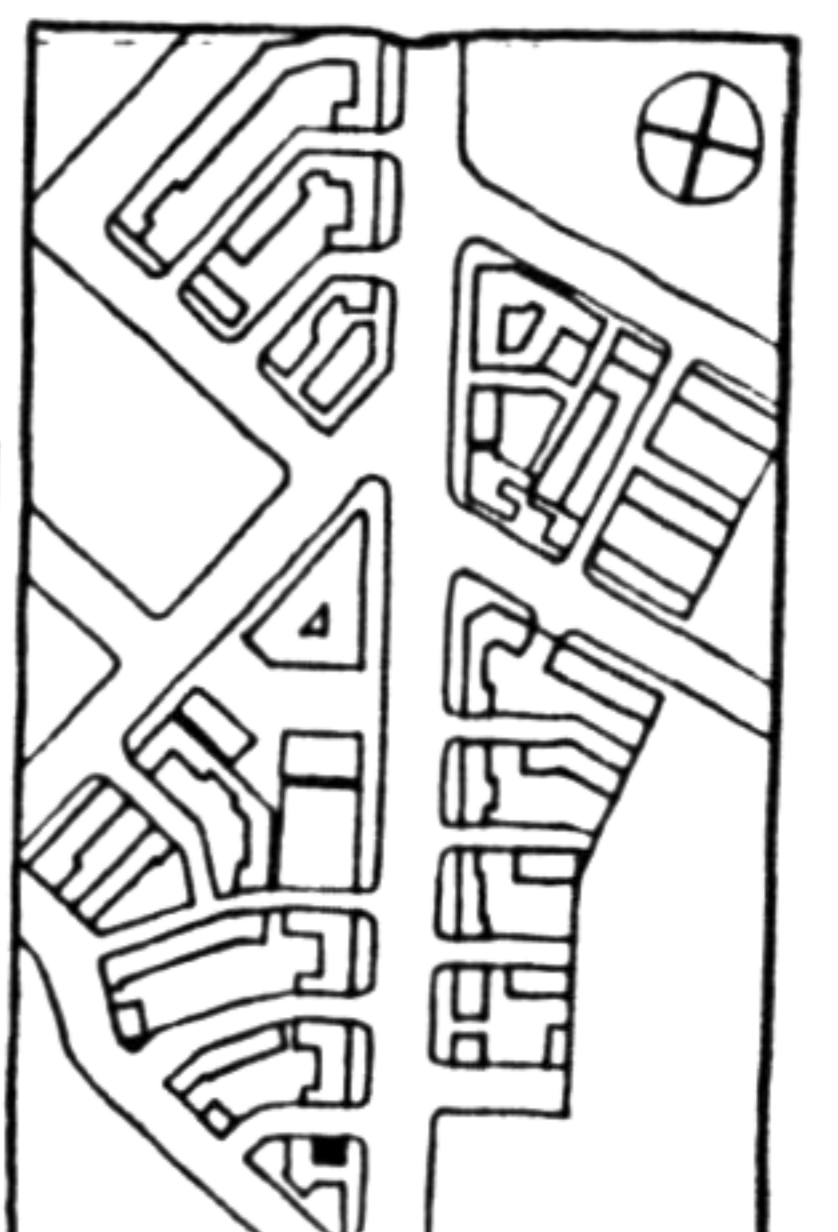
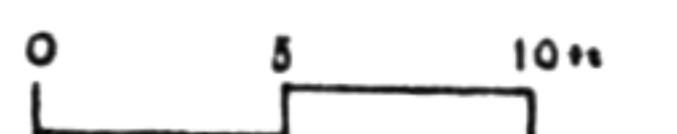
east elevation



ground floor plan



typical floor plan

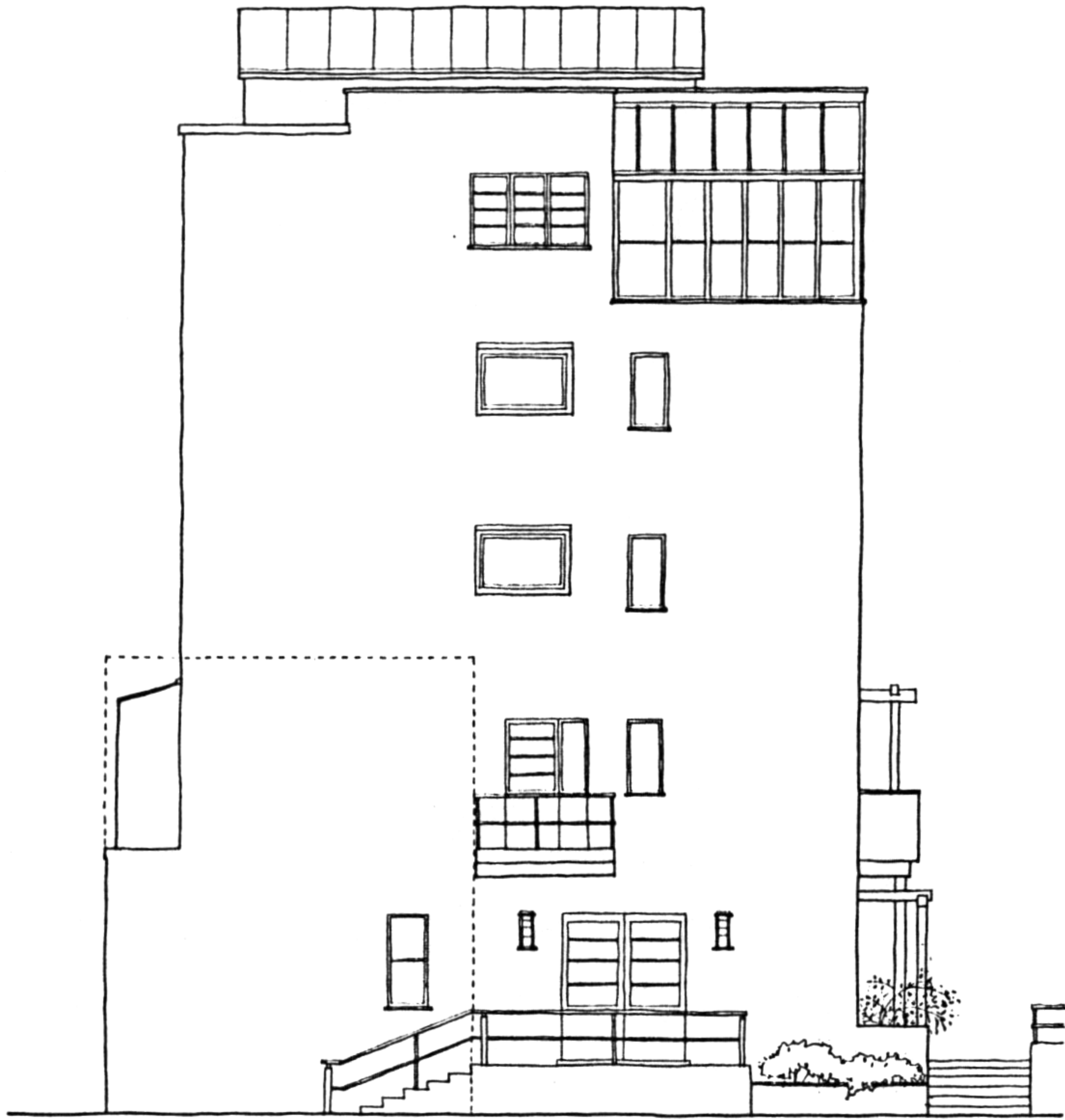


HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

SAN PABLO
BUILDING

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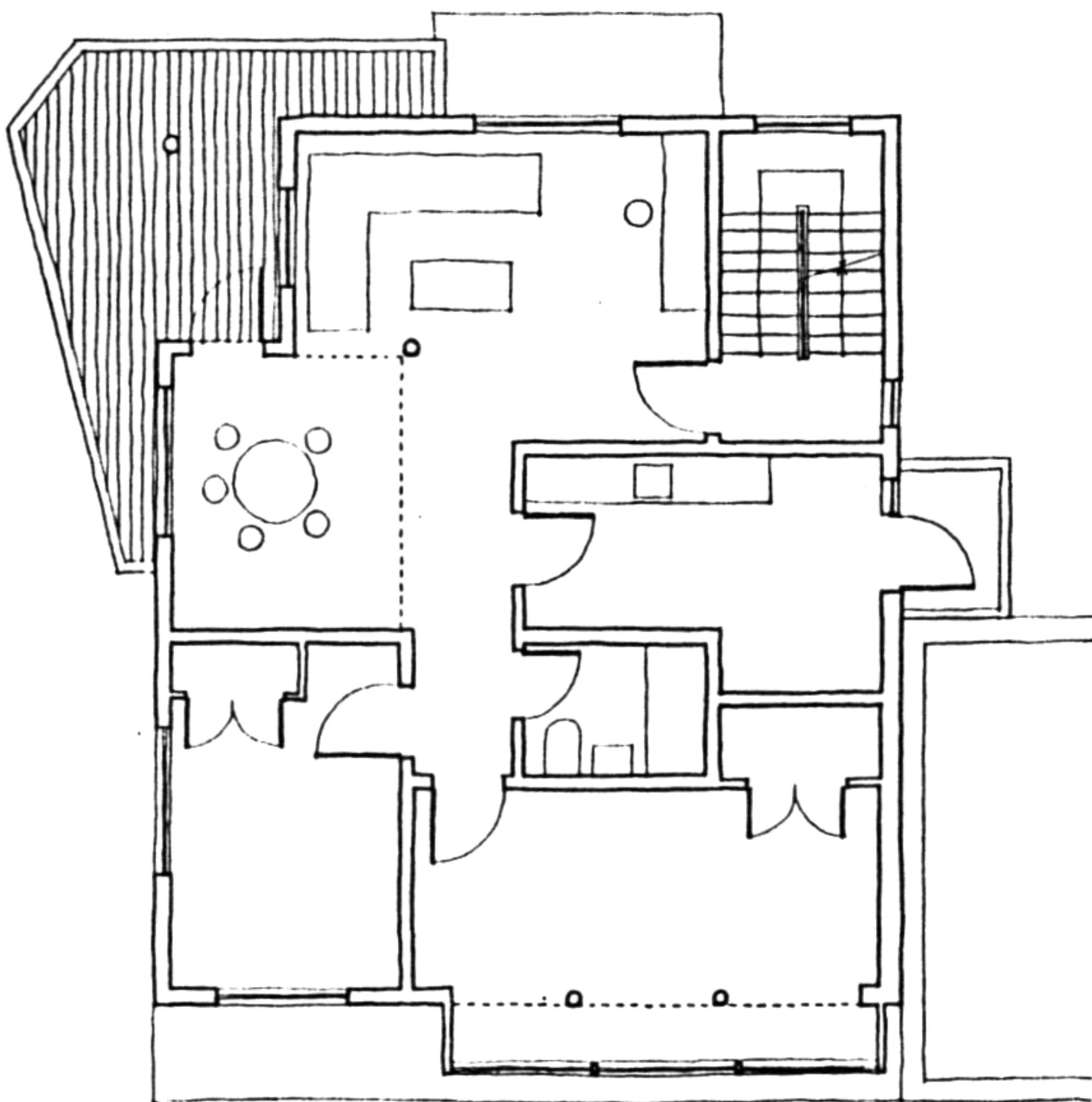
KEIKO ONO



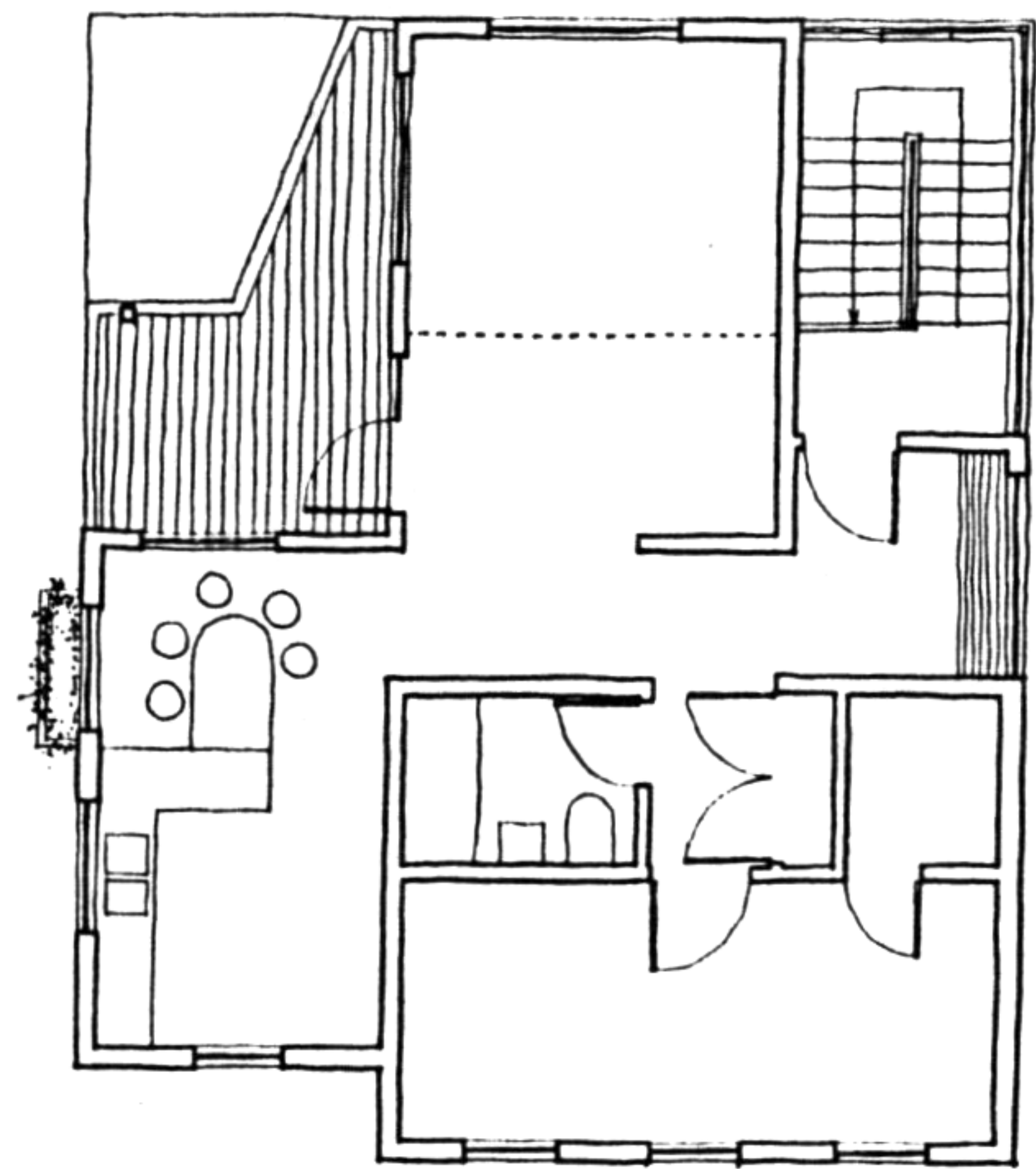
north elevation



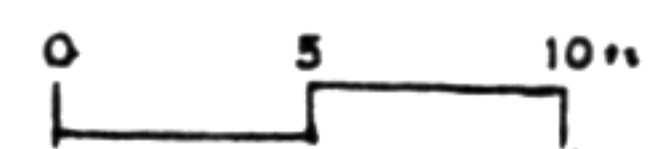
west elevation

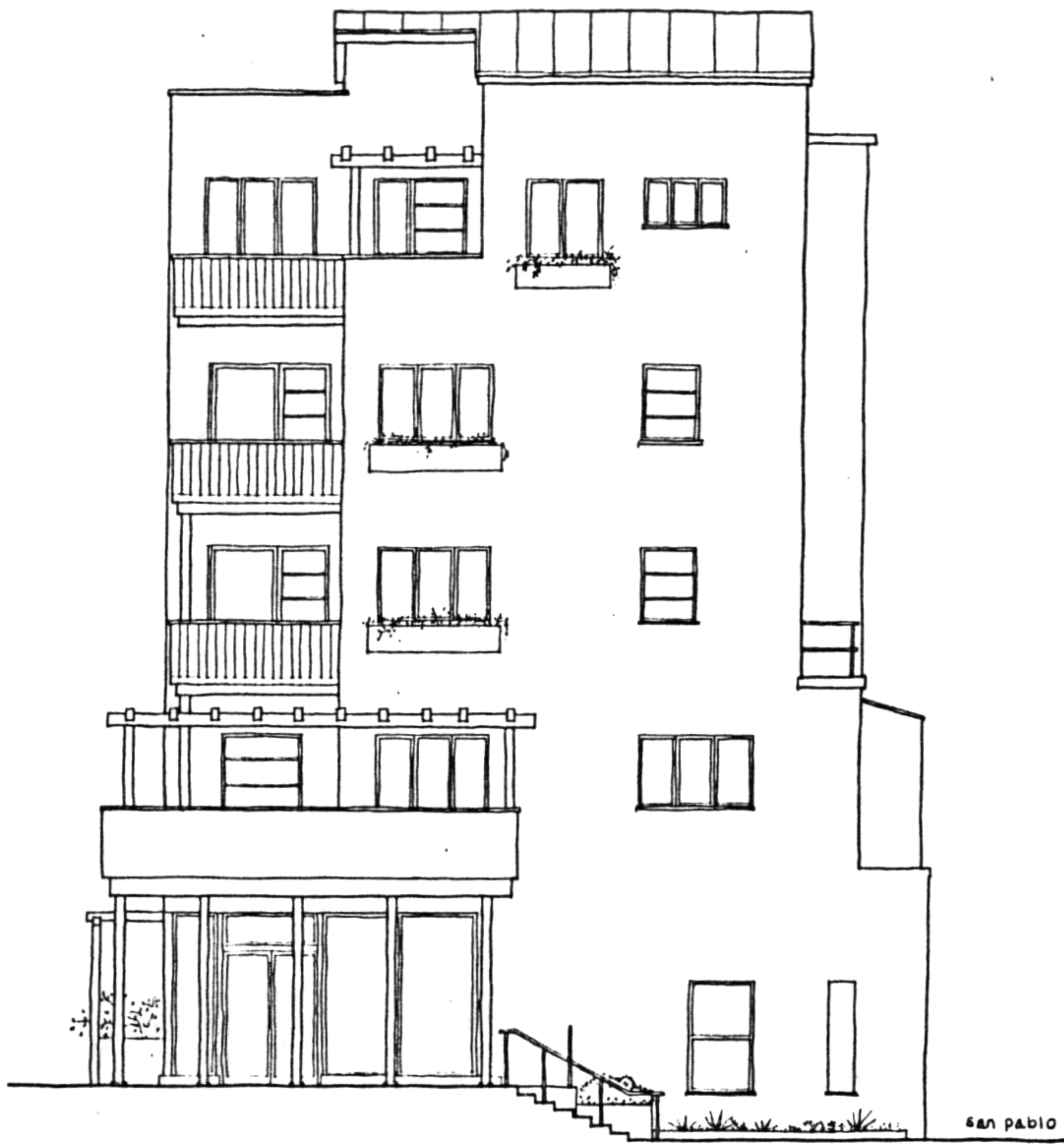


2nd floor plan

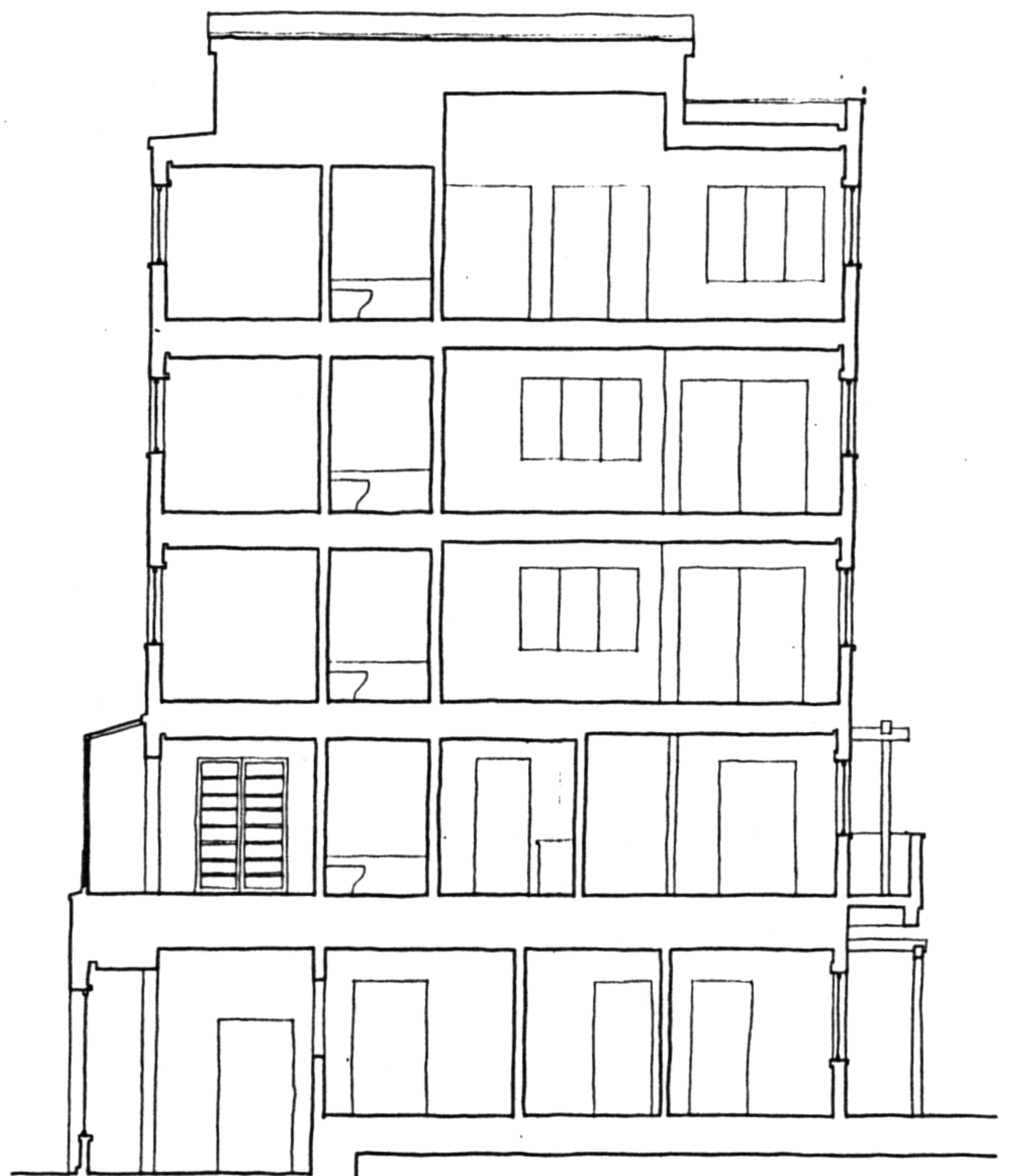
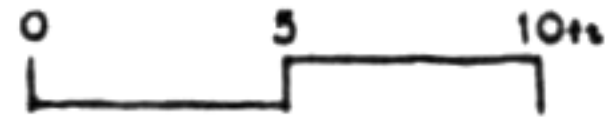


5th floor plan





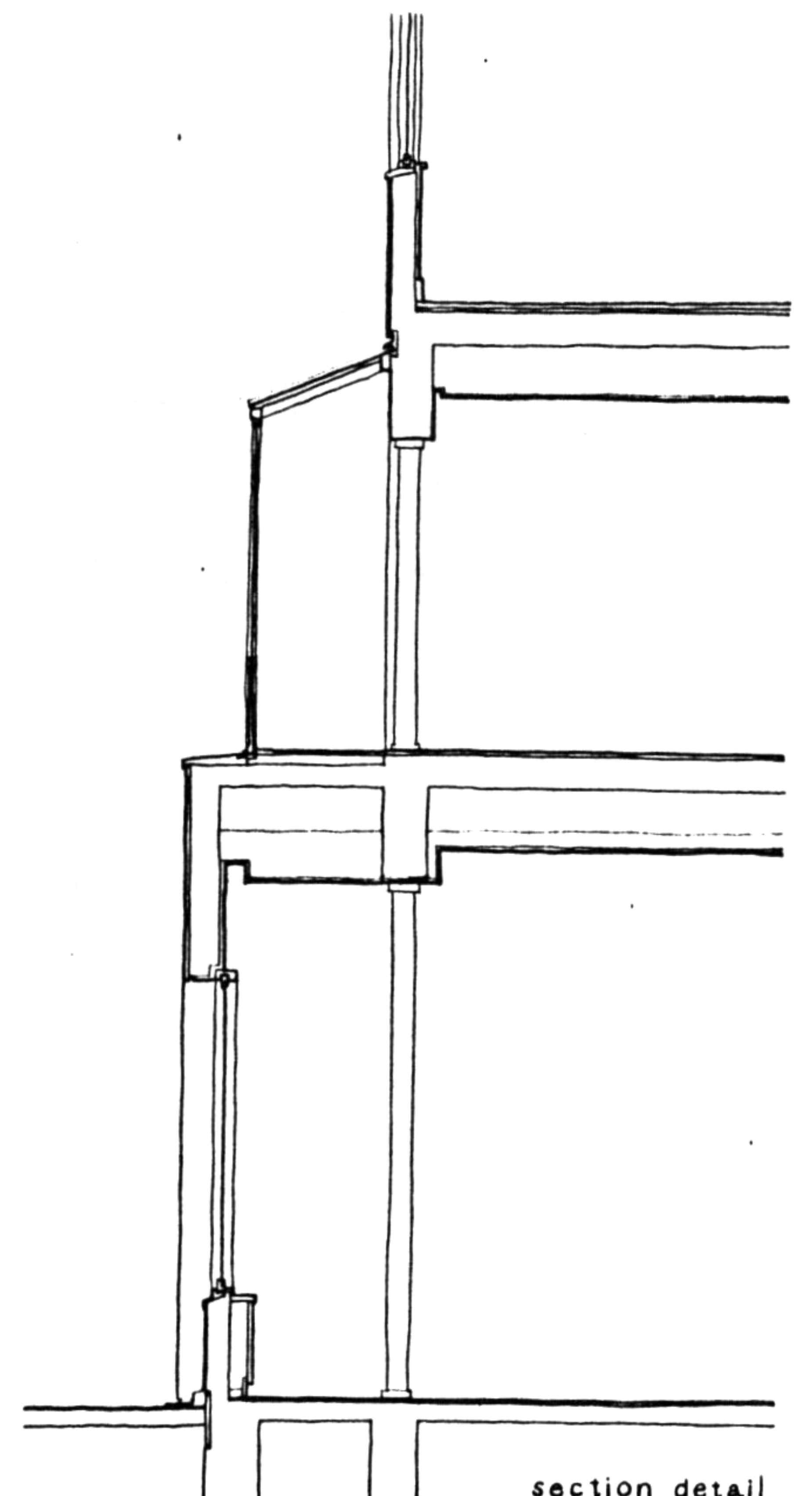
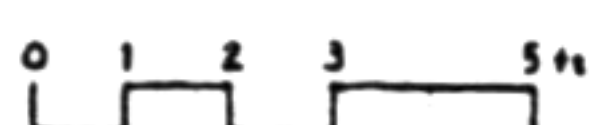
south elevation



section



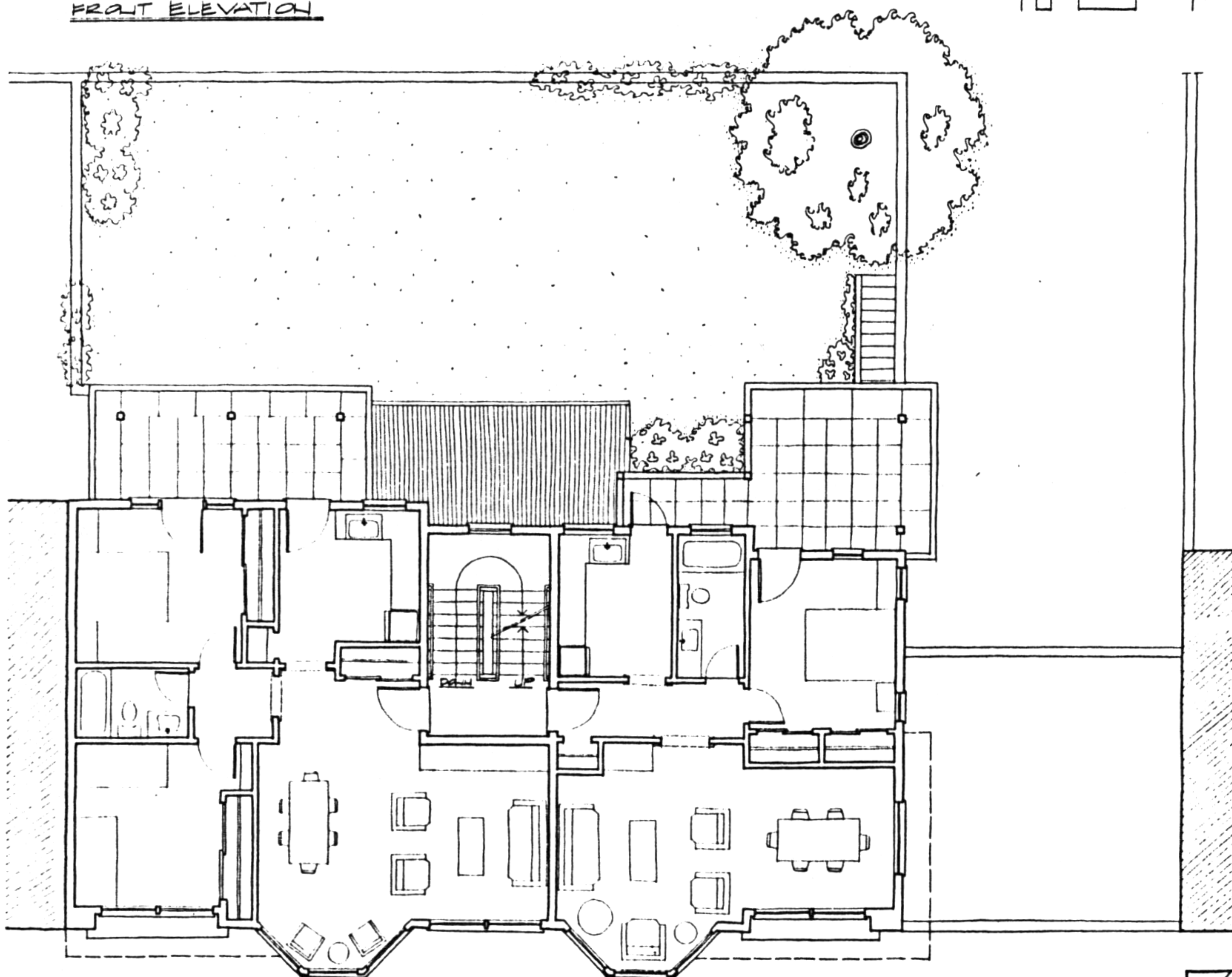
elevation detail



section detail



FRONT ELEVATION



TYPICAL FLOOR PLAN

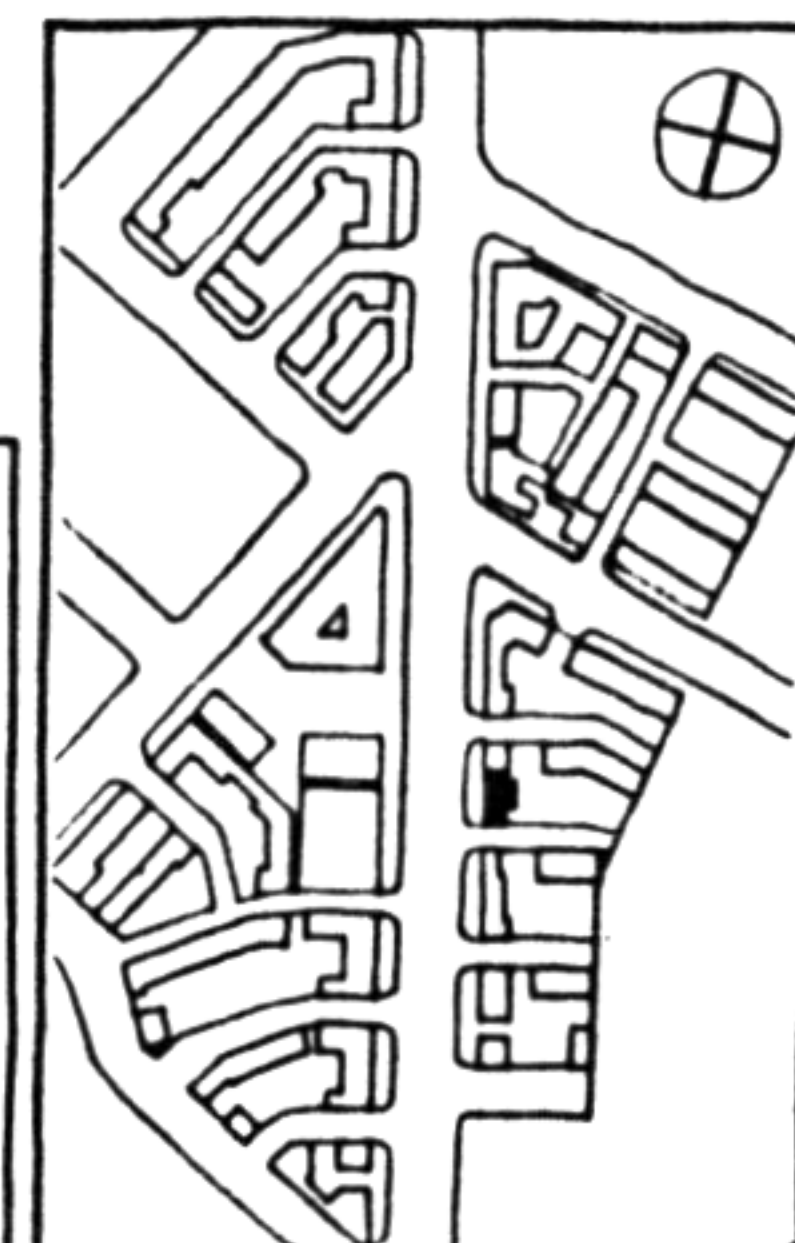


HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

SAN PABLO
BUILDING

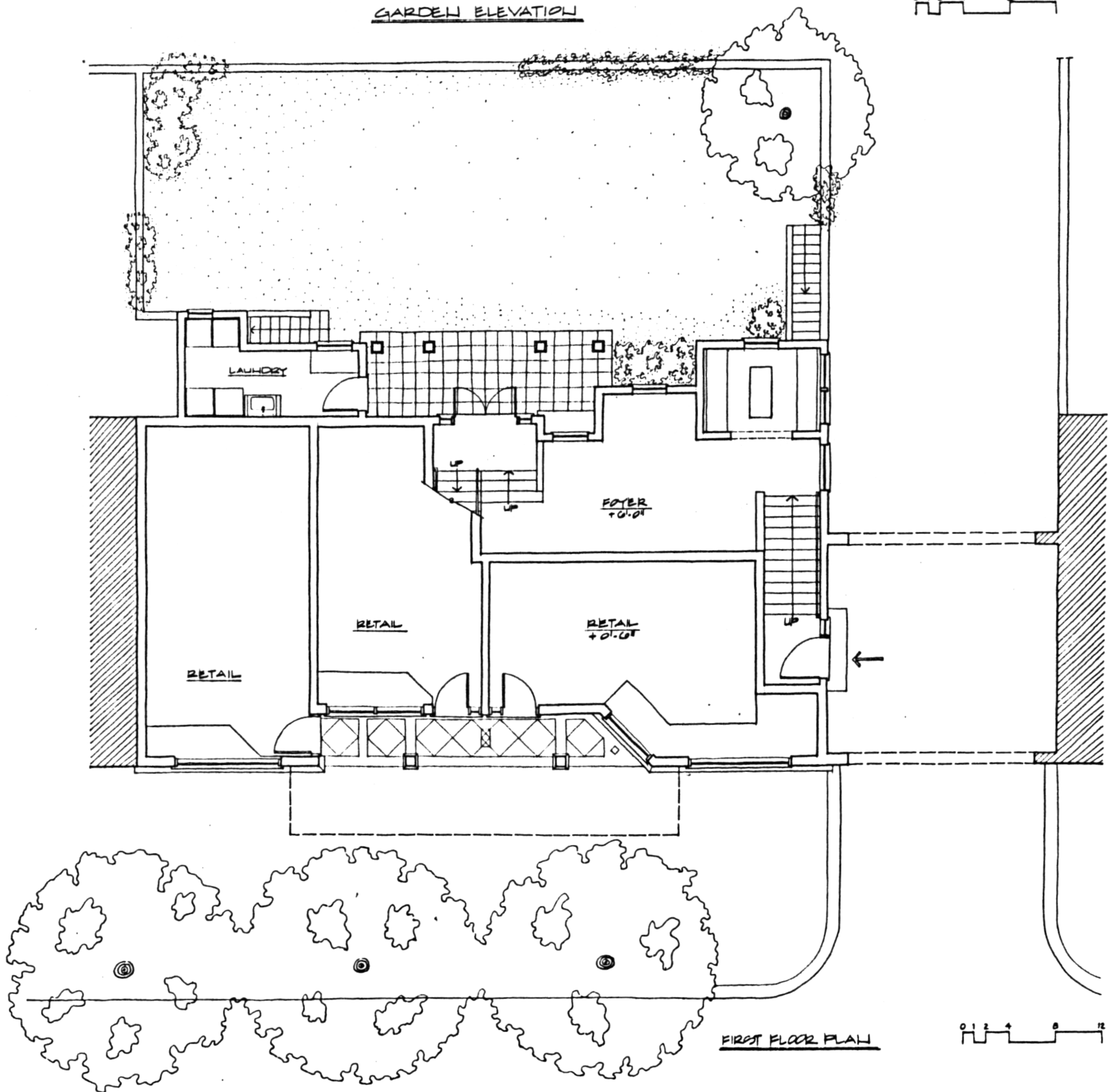
CATHY DRAYTON
ANJALI YAGNIK

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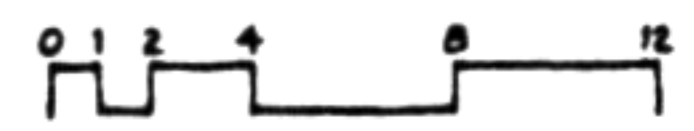




GARDEN ELEVATION

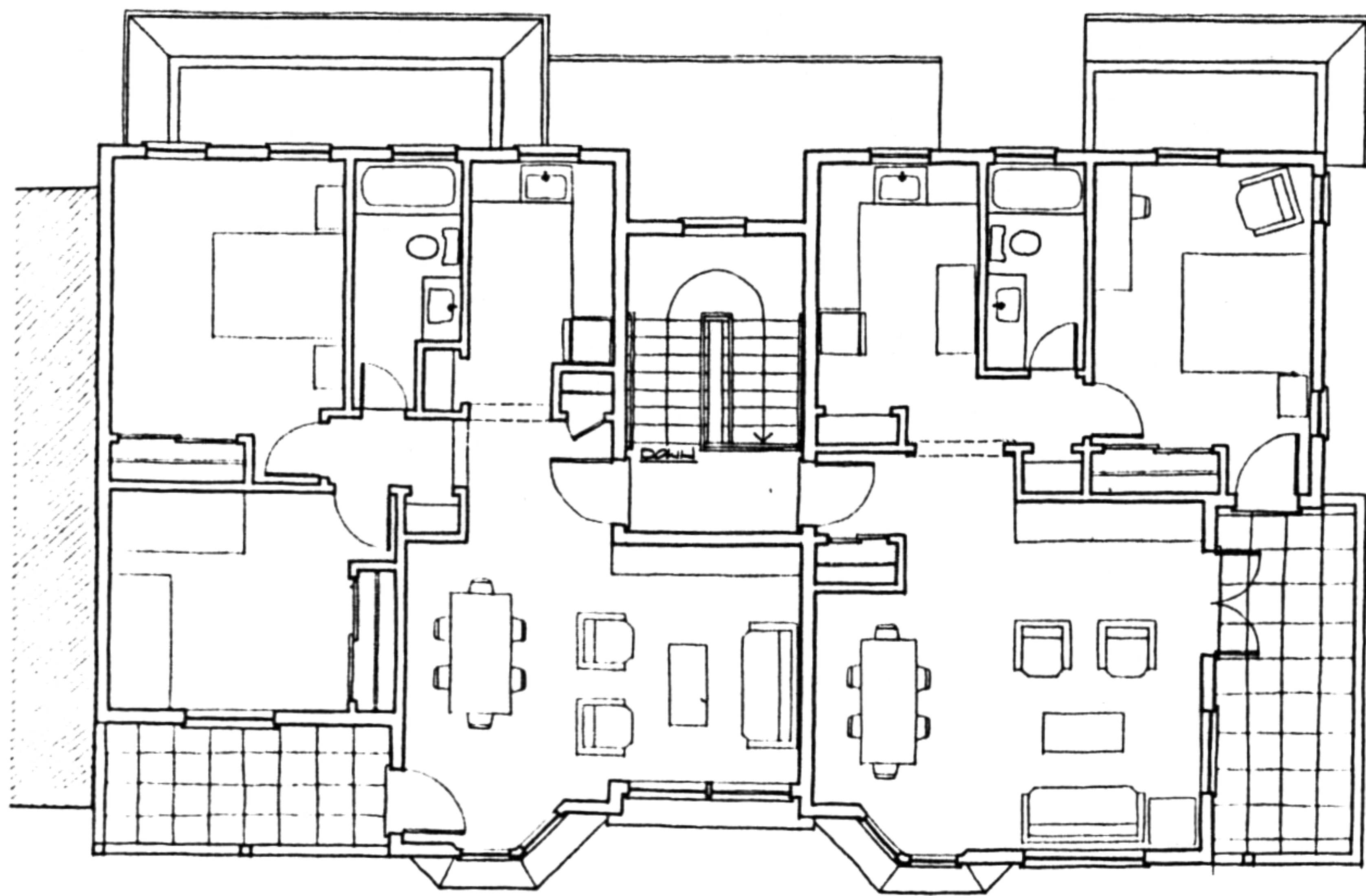
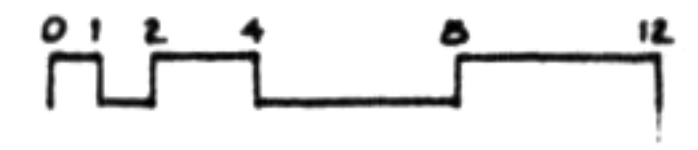


FIRST FLOOR PLAN

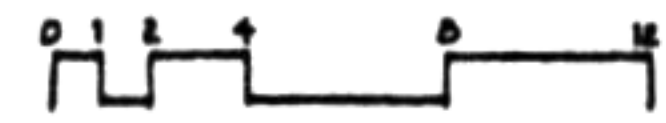




SECTION

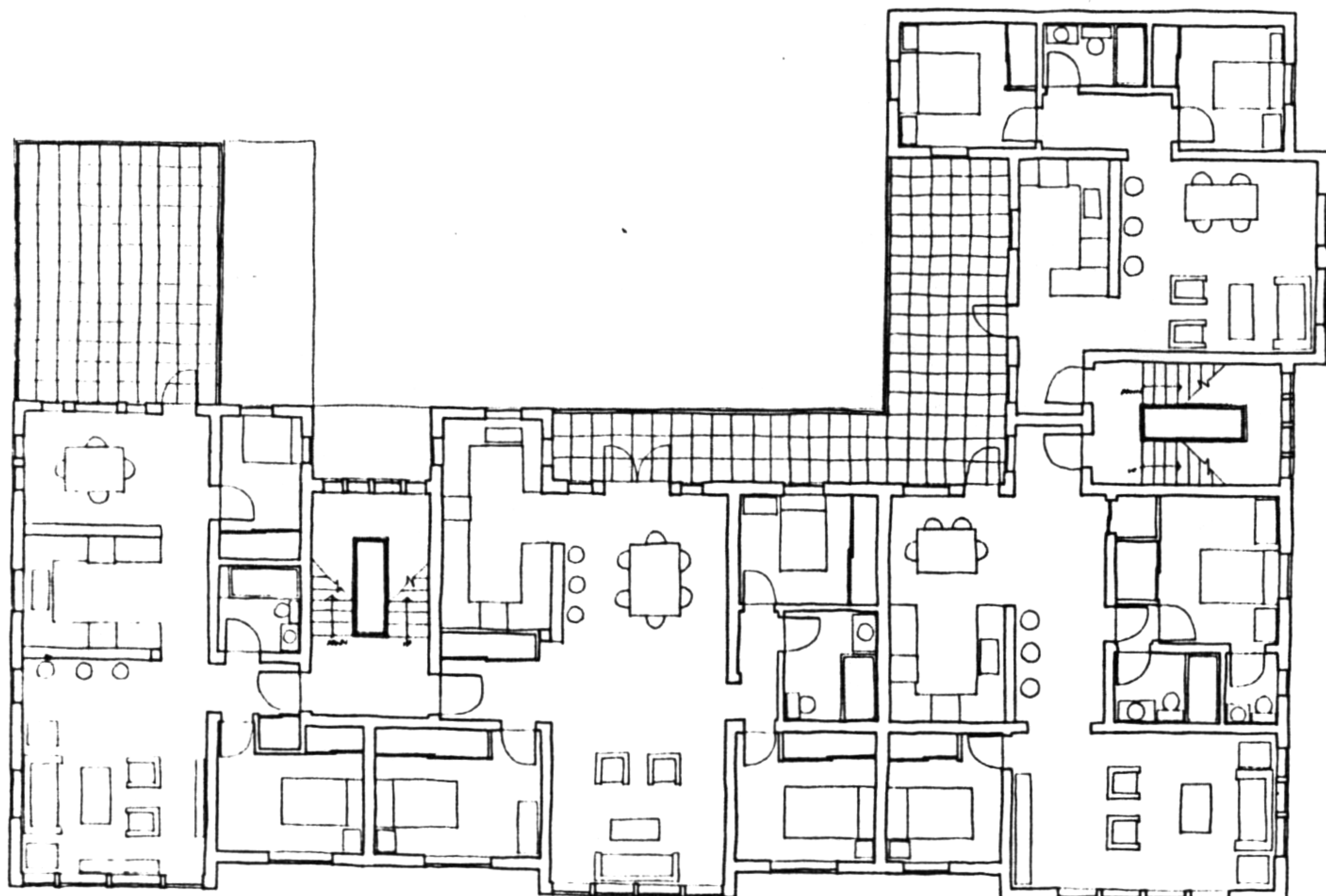


TOP (5TH) FLOOR PLAN





STREET ELEVATION



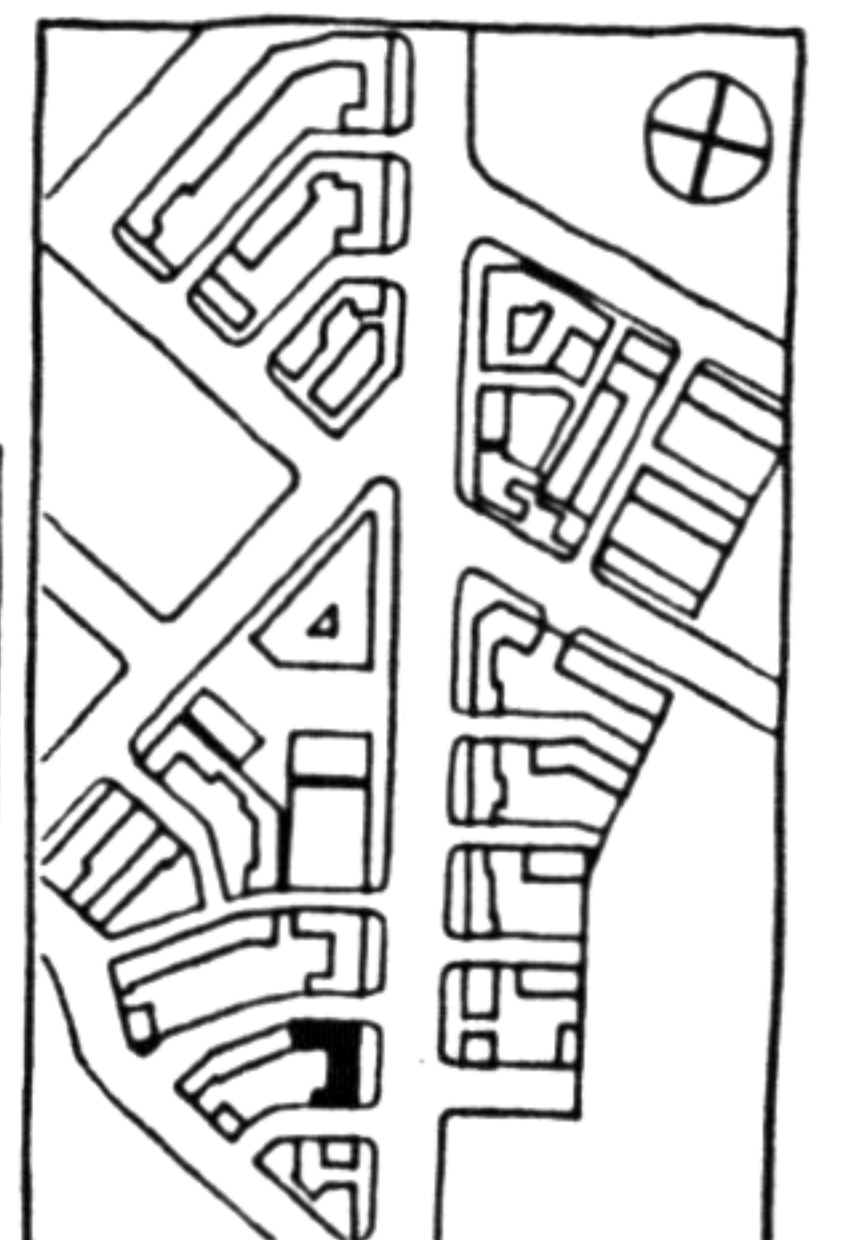
THIRD LEVEL

HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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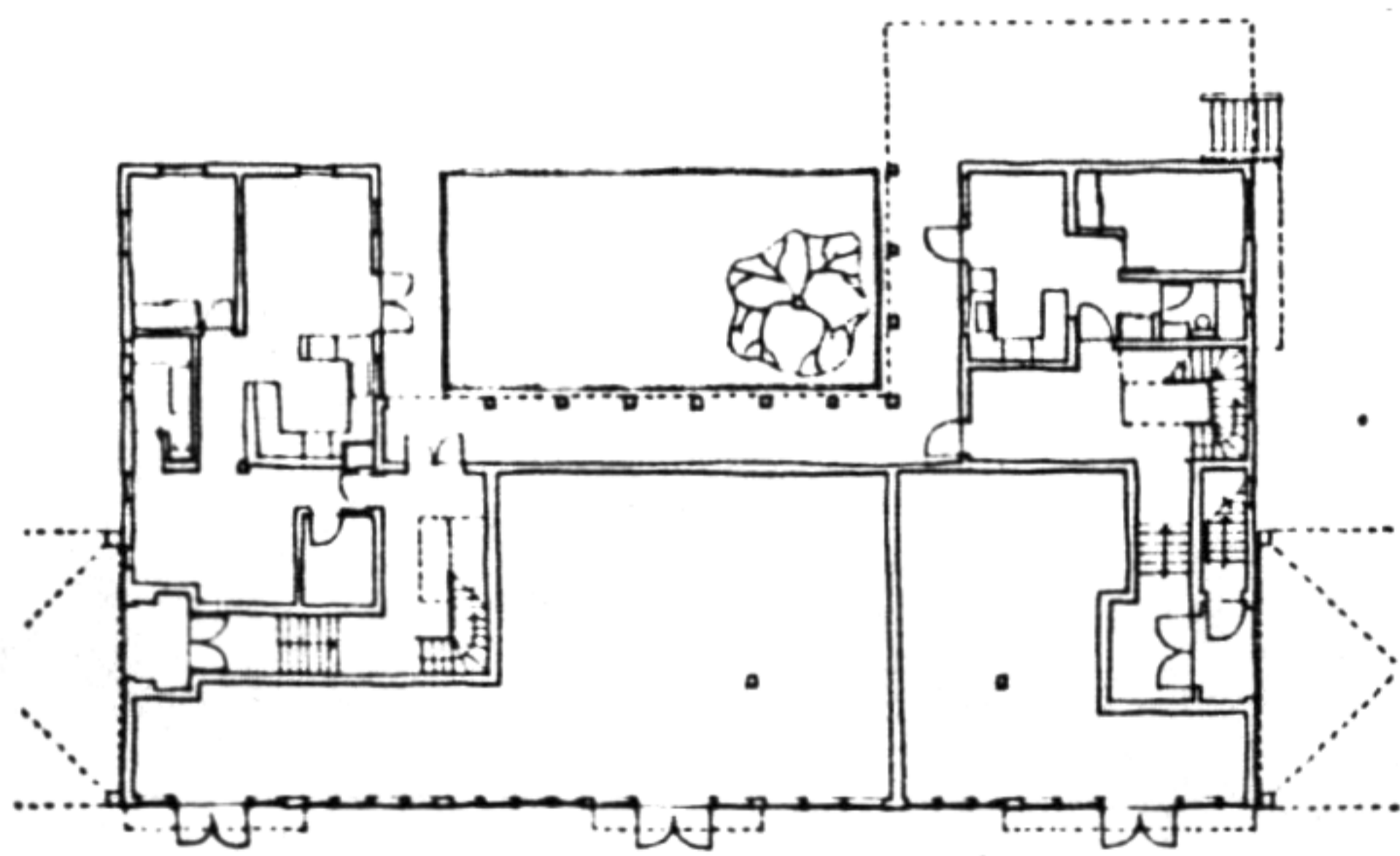
SAN PABLO
BUILDING

JEANNE RATCLIFFE
HOLLY BABE FAUST

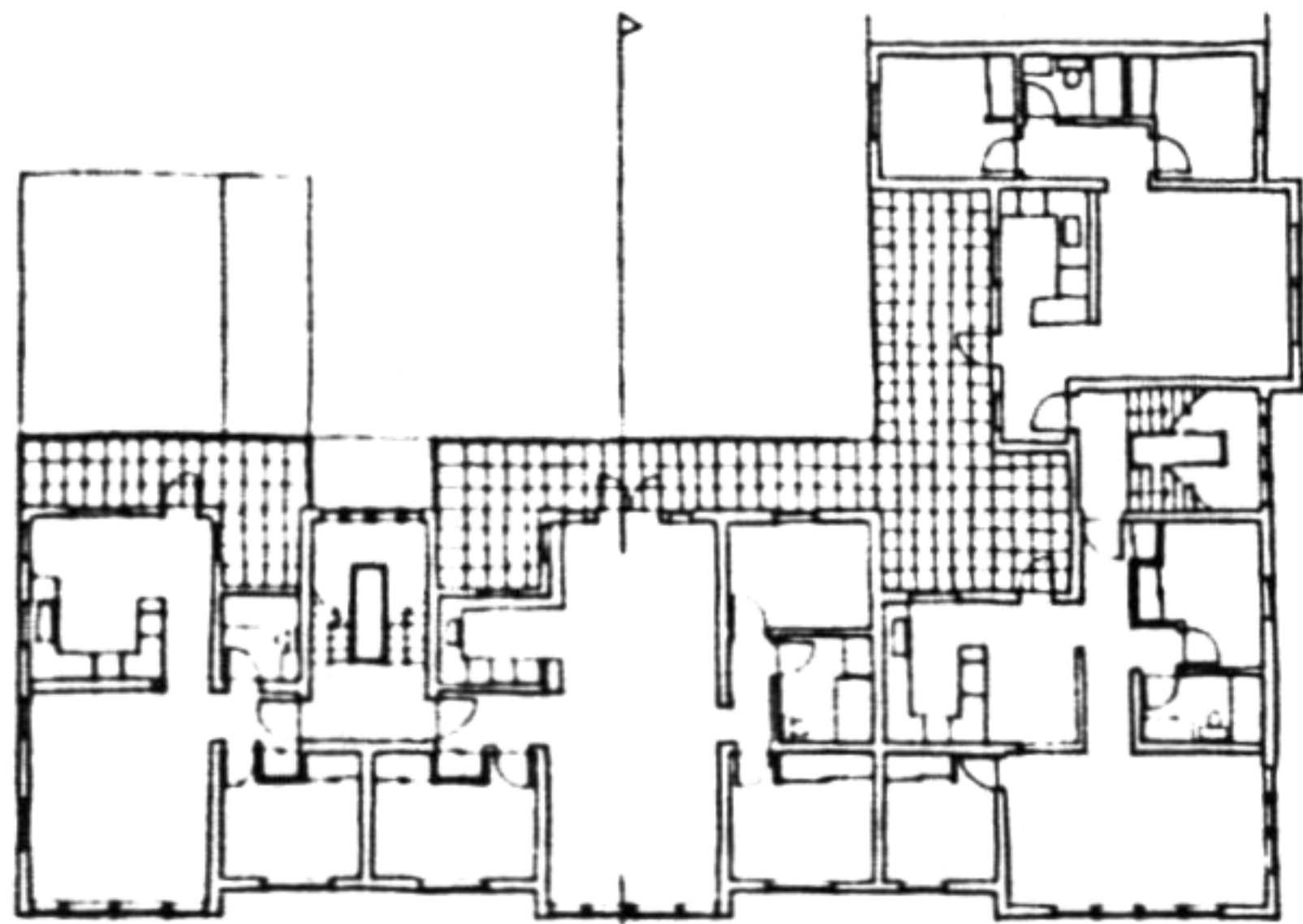




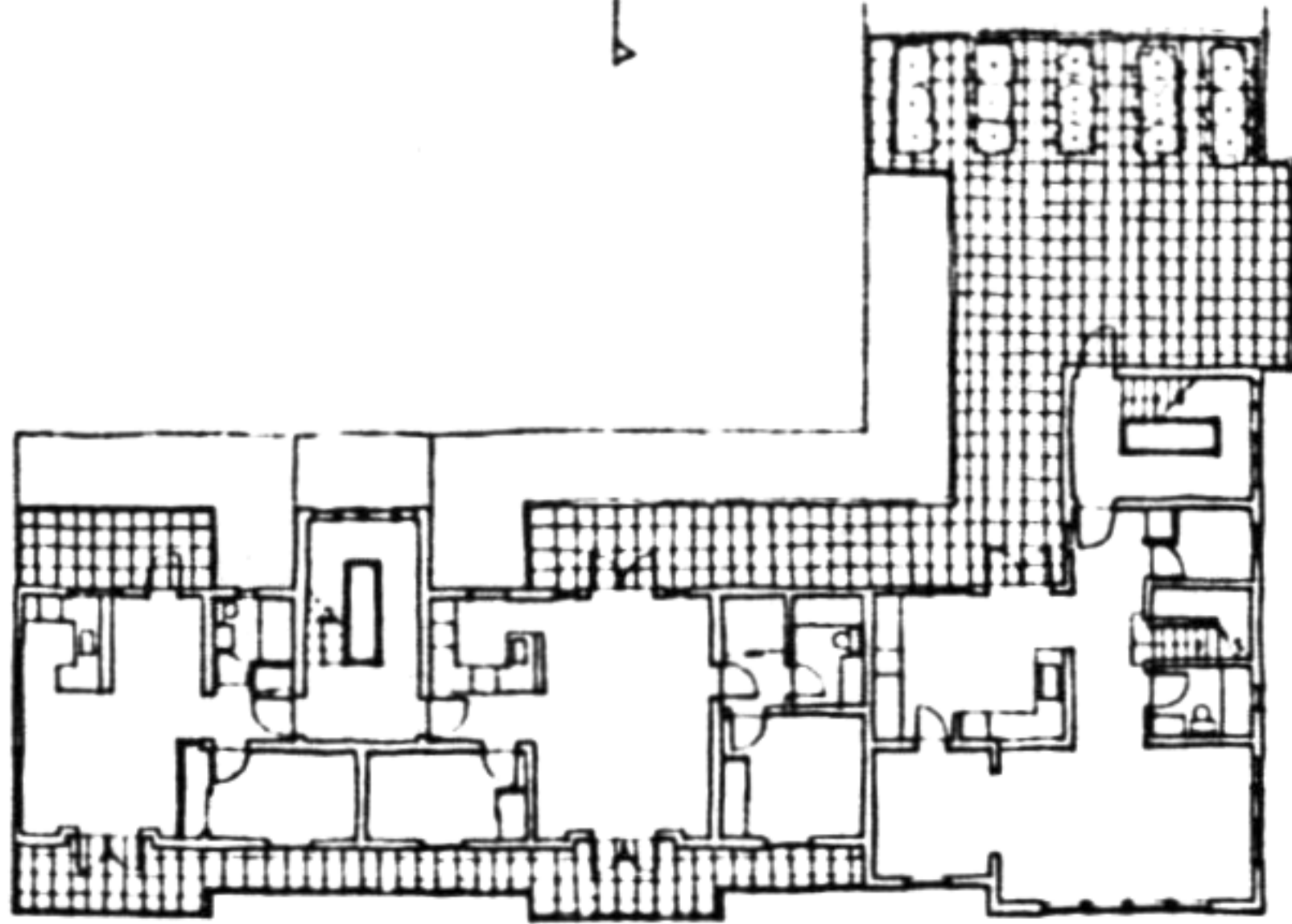
BACK ELEVATION



GROUND LEVEL



FOURTH



FIFTH

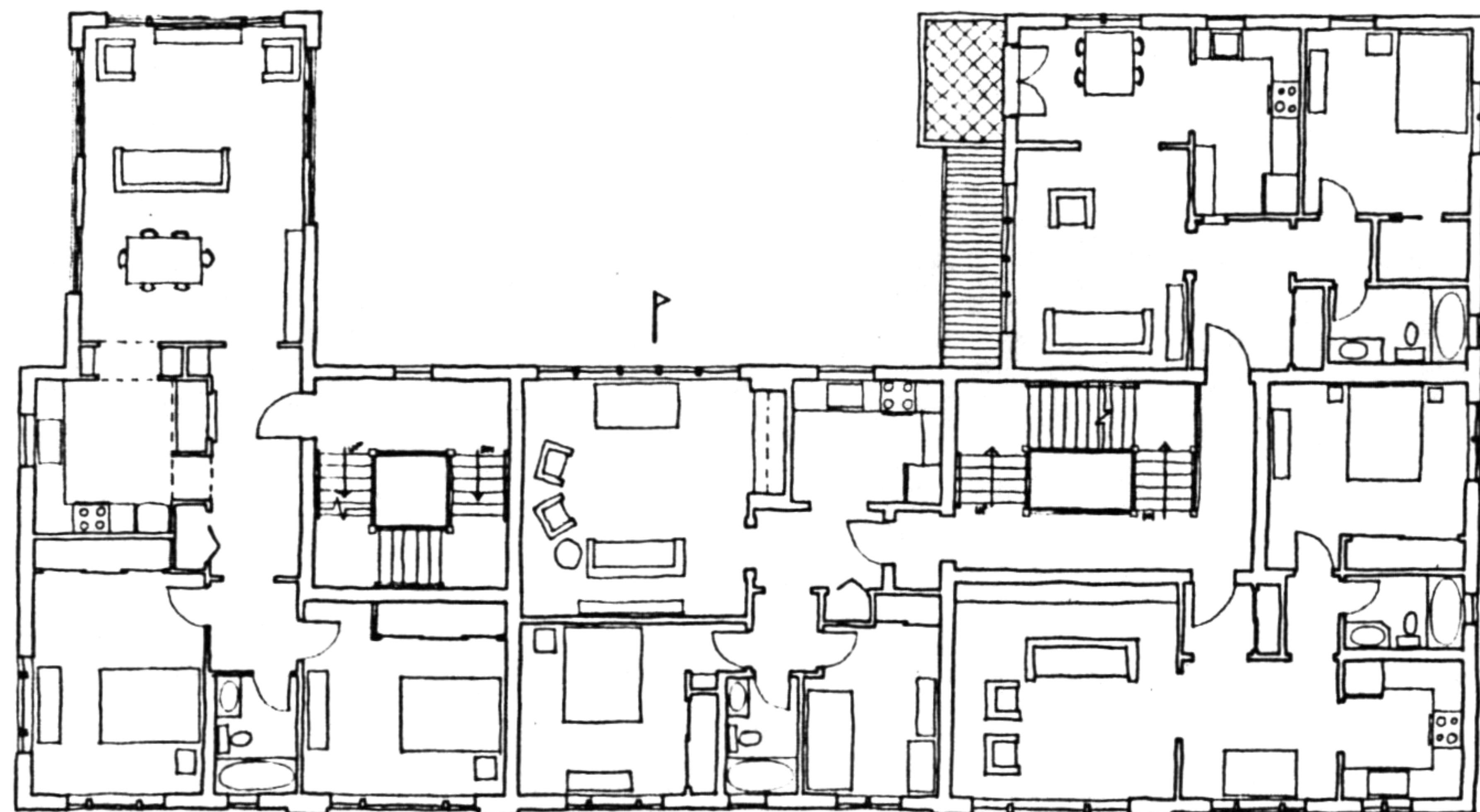


EAST-WEST SECTION

SAN PABLO



FRONT ELEVATION



SECOND AND THIRD FLOOR PLAN

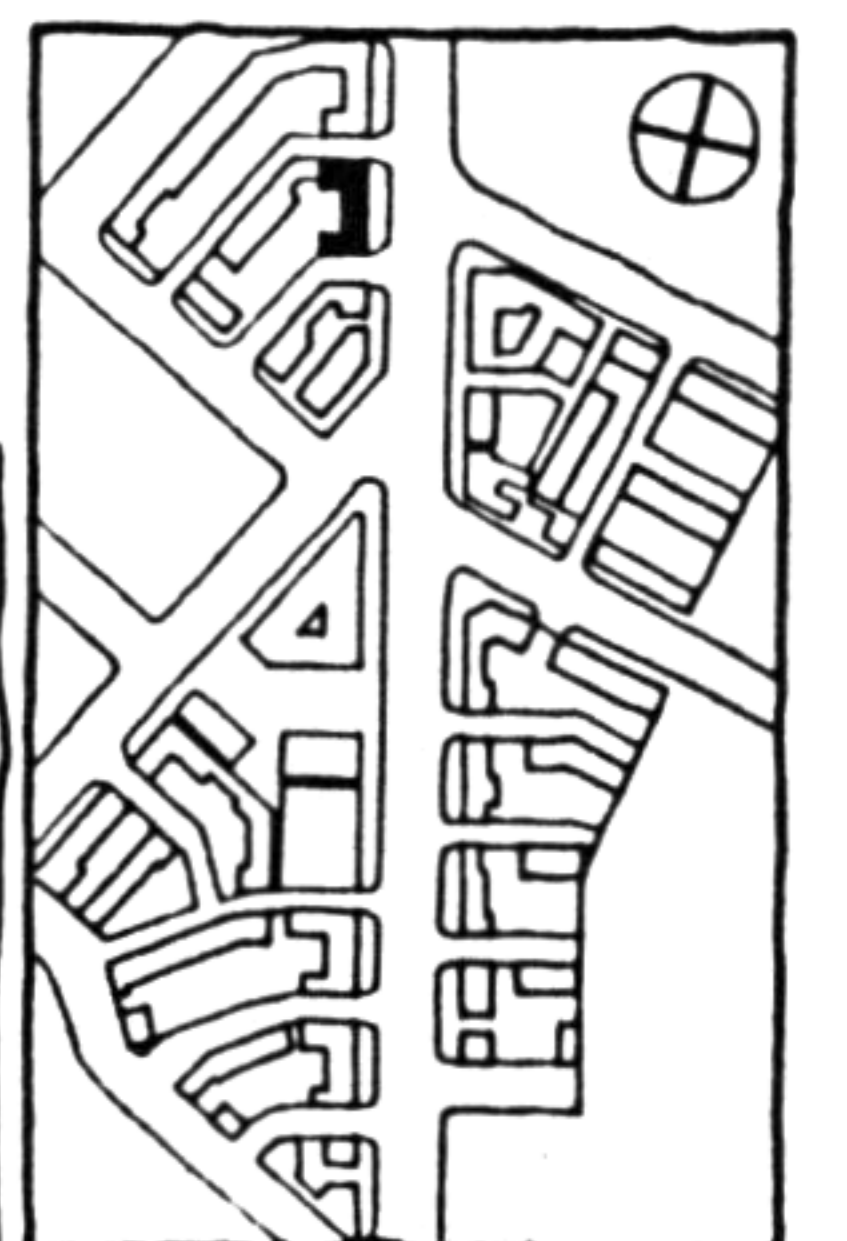


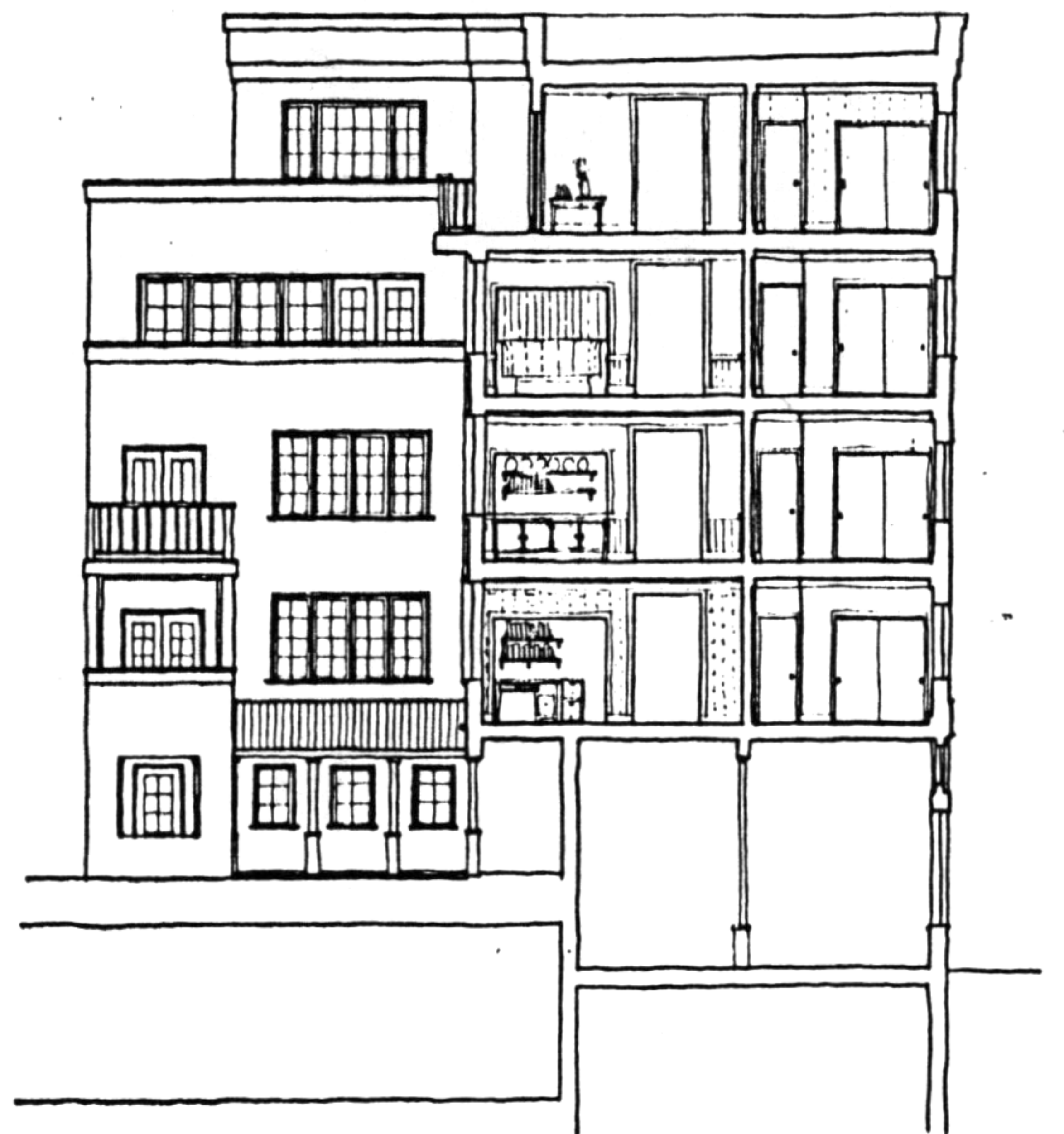
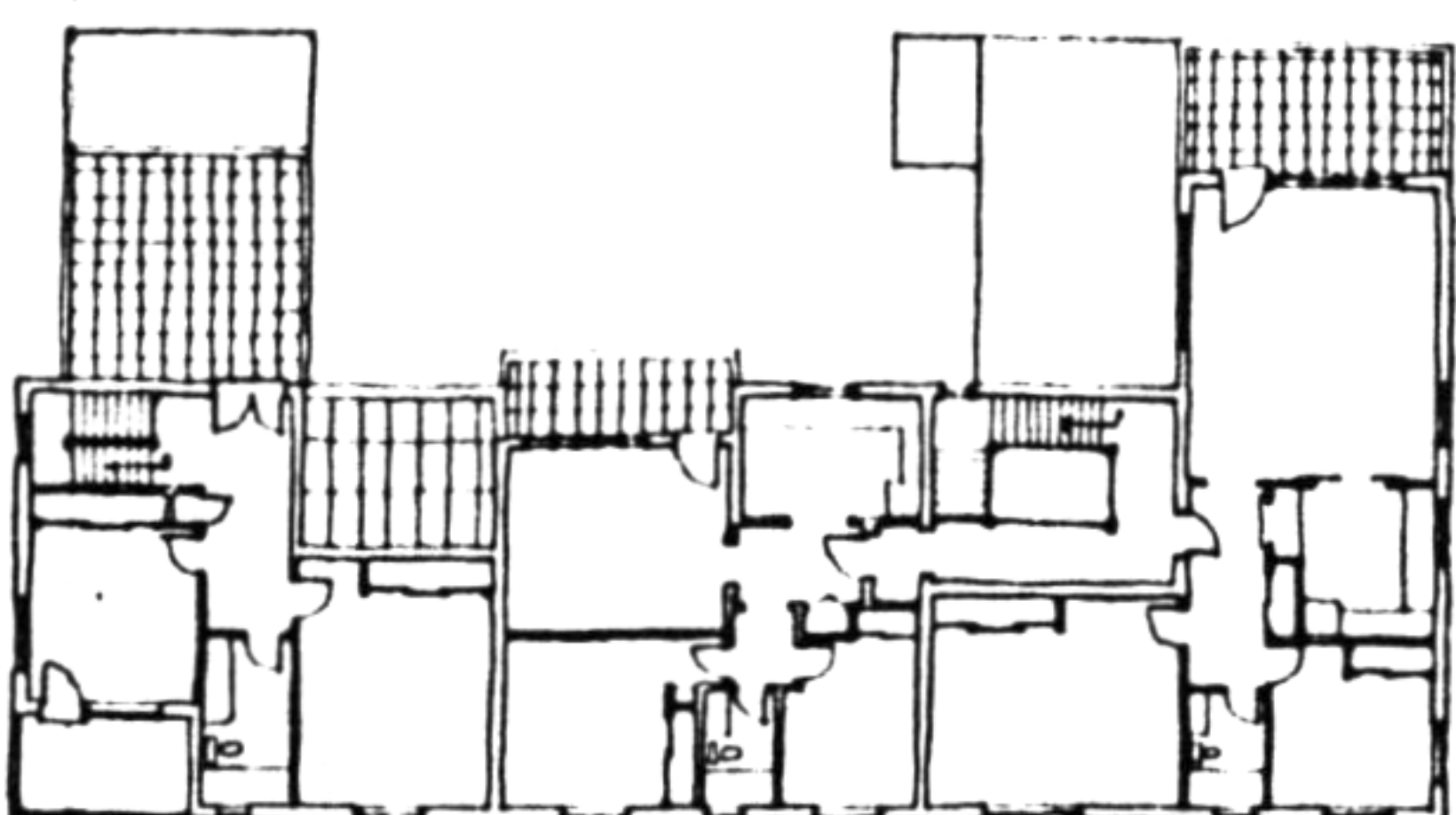
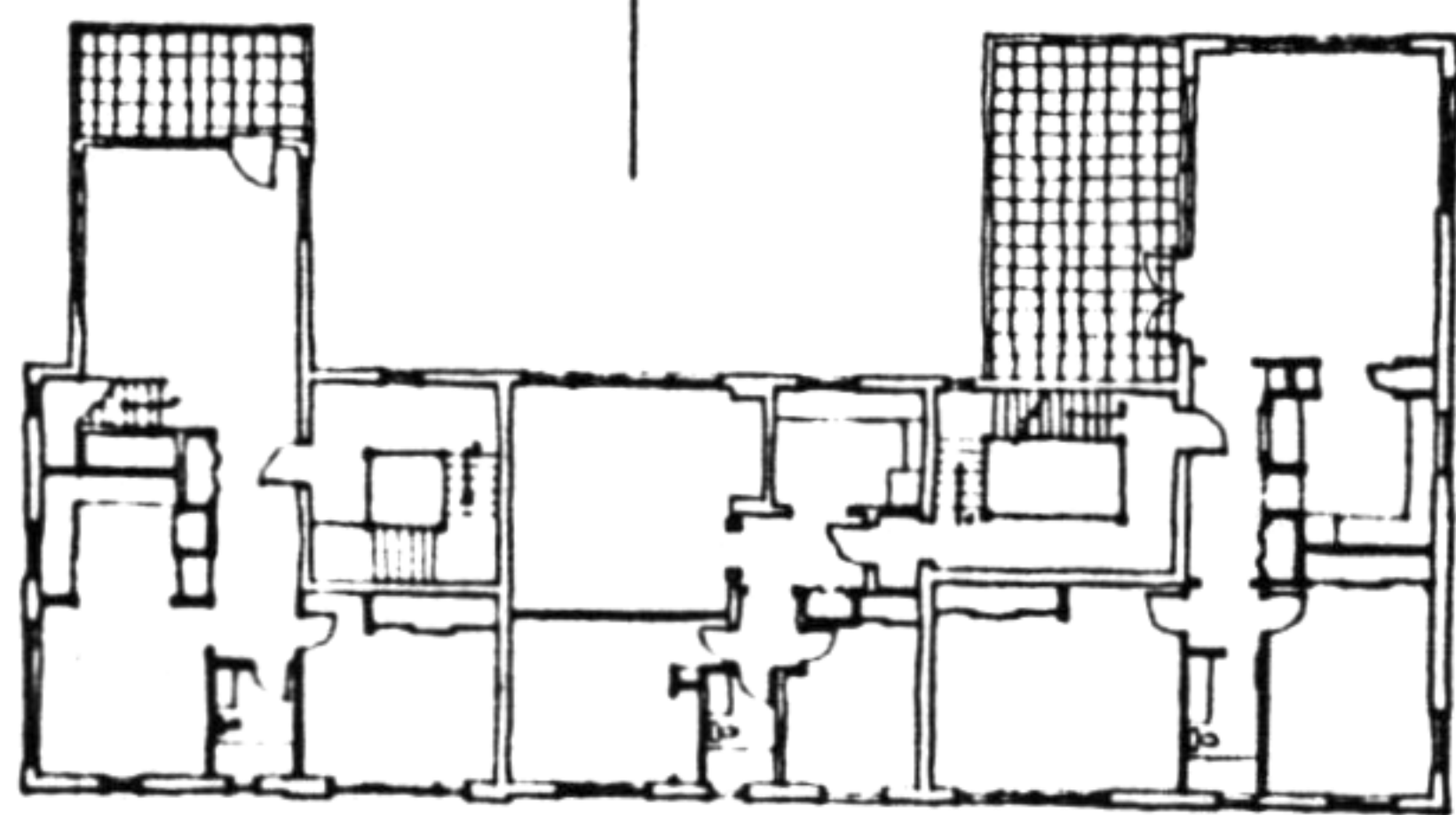
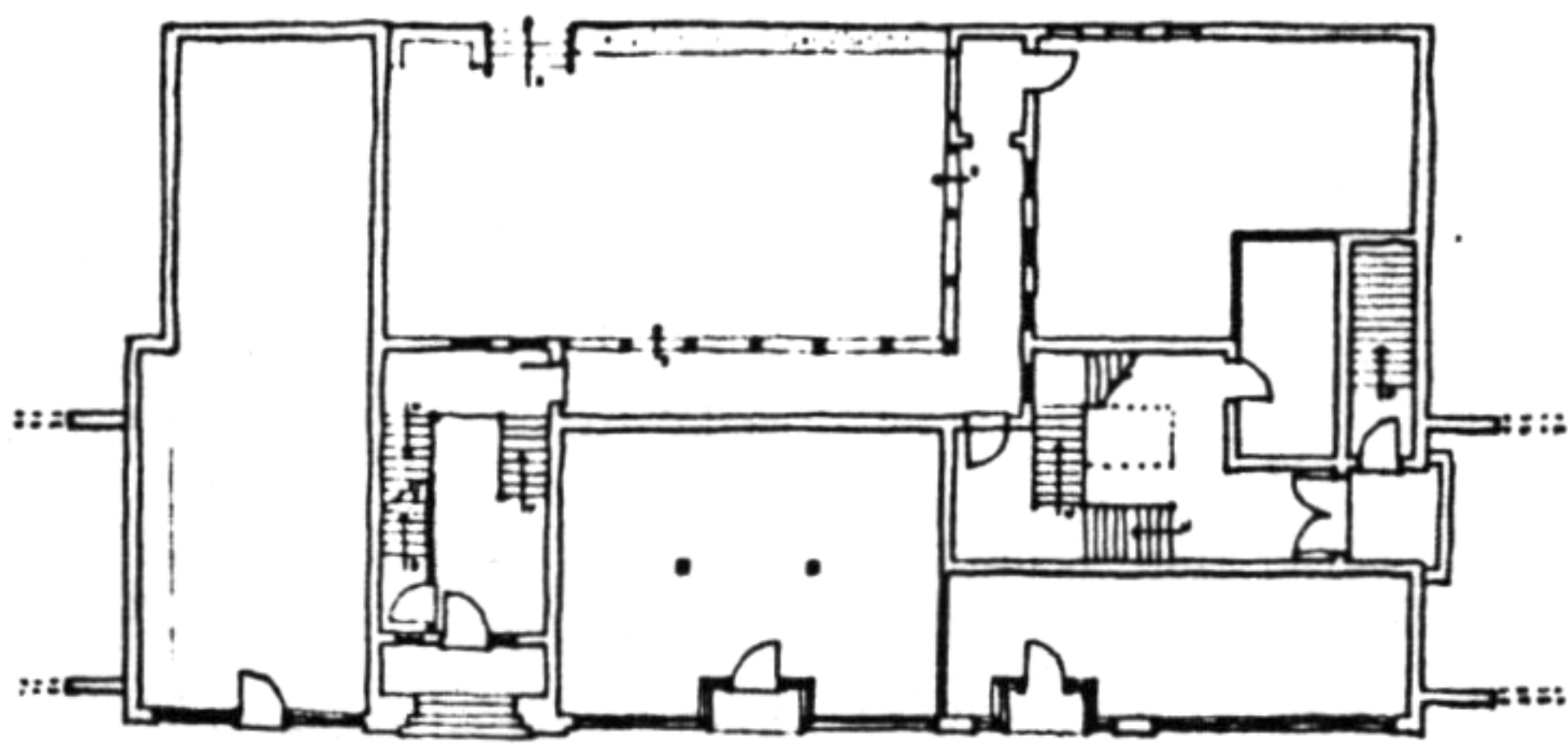
HIGH DENSITY MASS HOUSING
DOWNTOWN OAKLAND

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SAN PABLO BUILDING

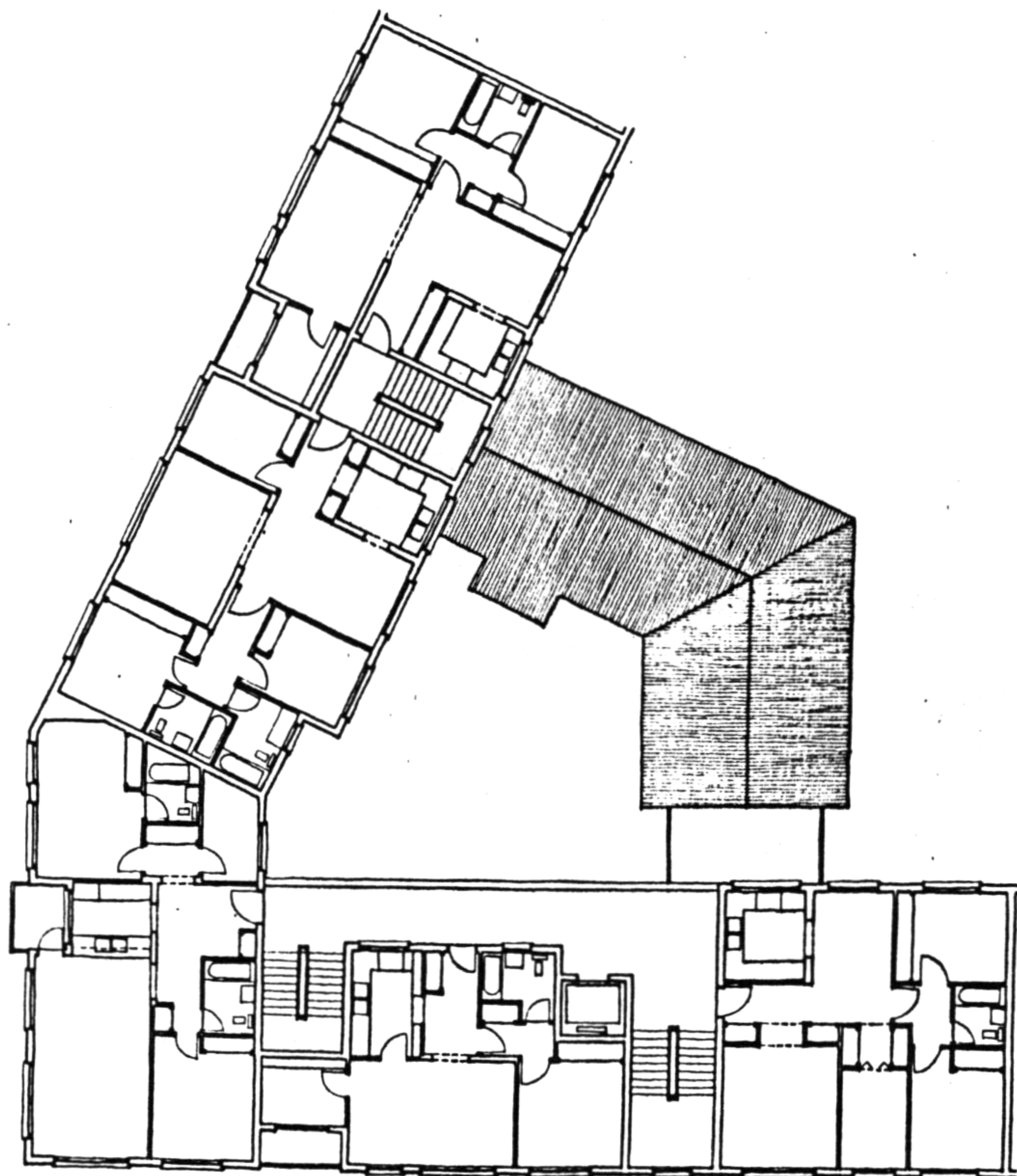
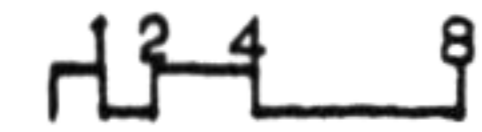
JAMES MAGUIRE
MICHAEL SUPINA







FRONT ELEVATION



TYPICAL PLAN



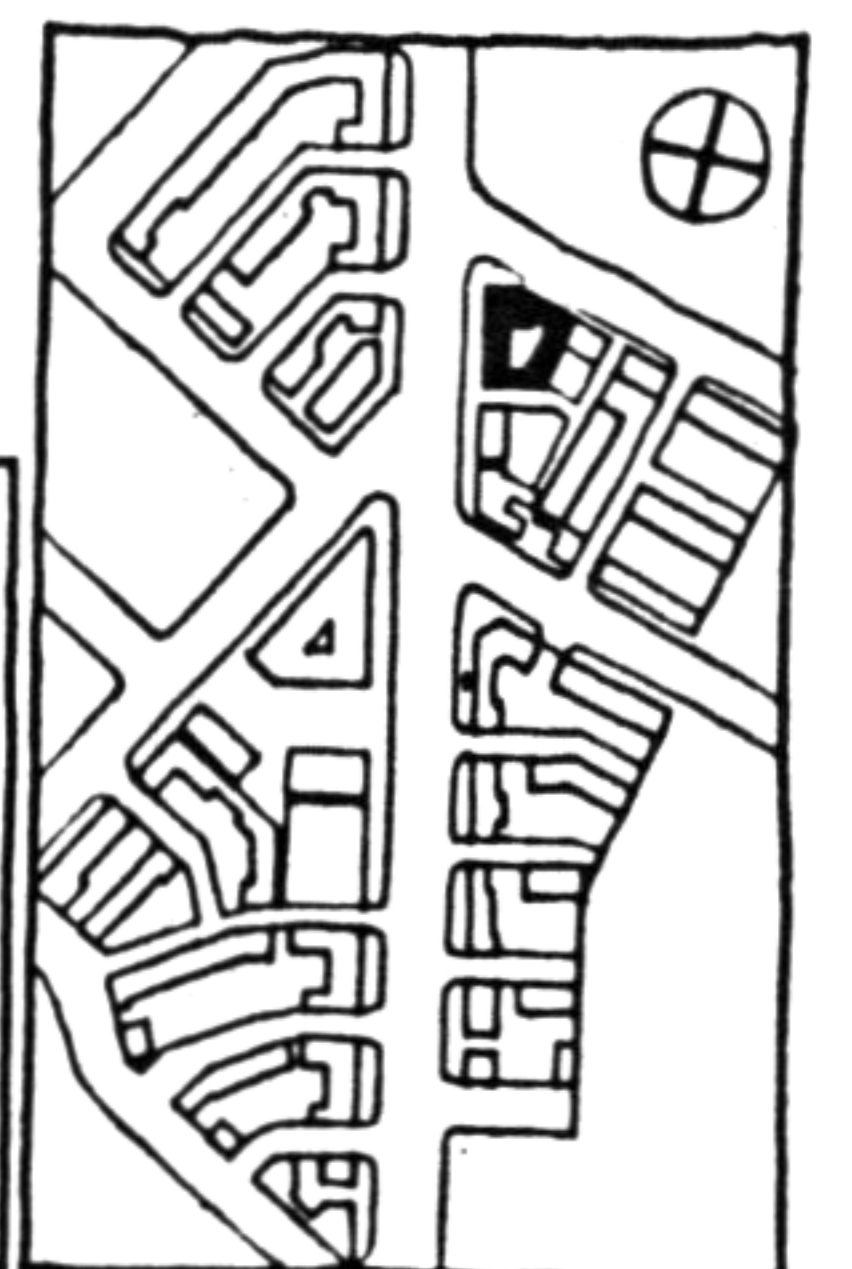
HIGH DENSITY MASS HOUSING
DOWNTOWN OAKLAND

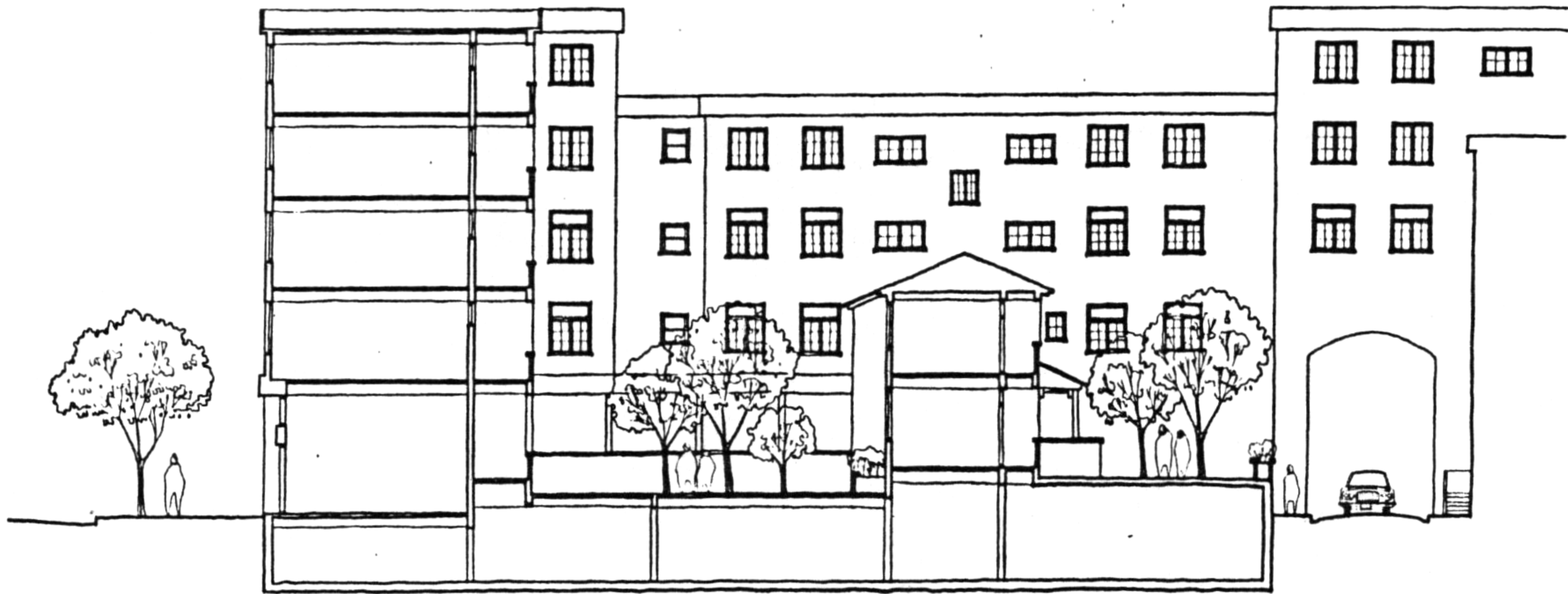
SAN PABLO BUILDING

ARCHITECTURE 201/202 • SPRING 88.

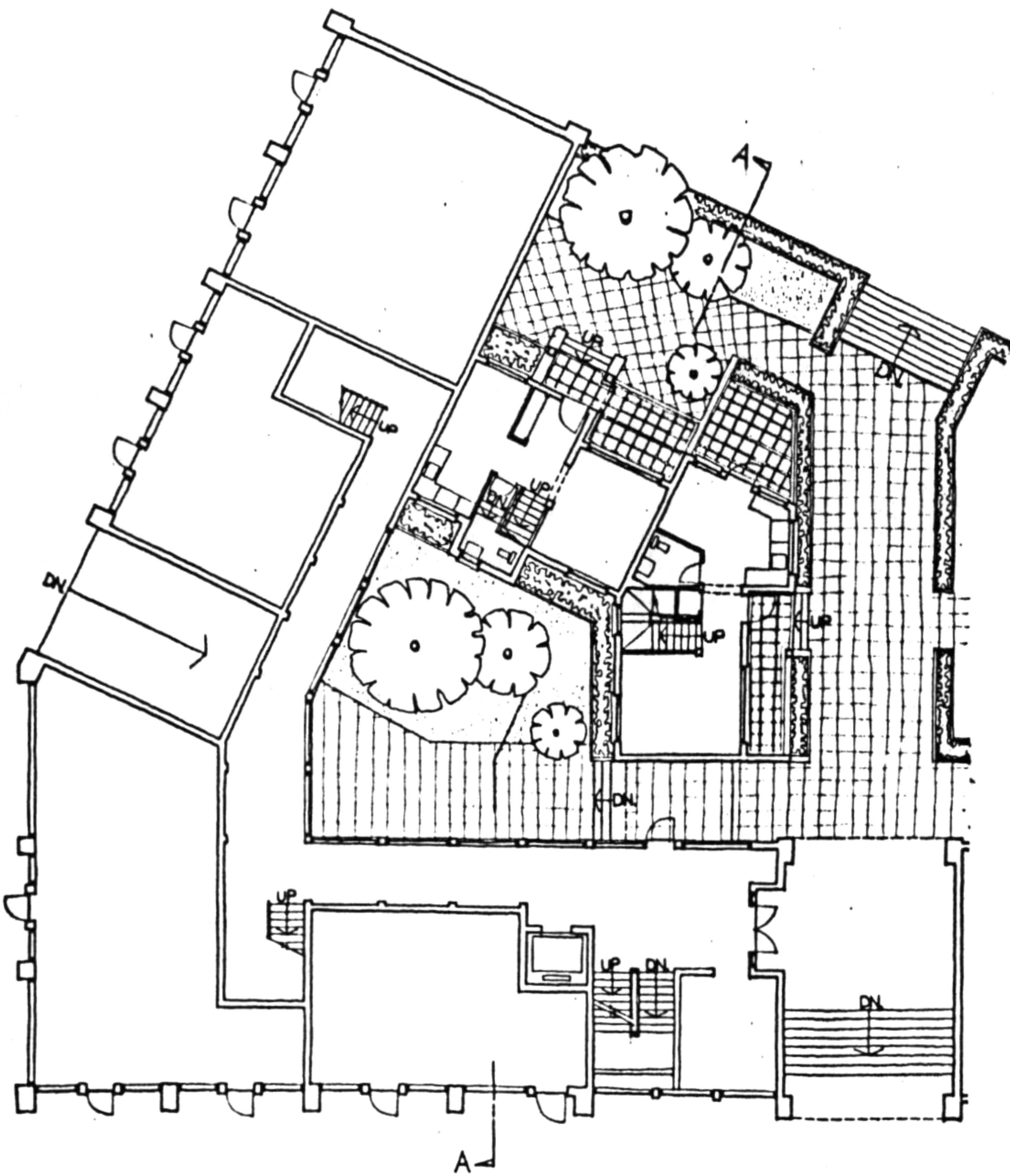
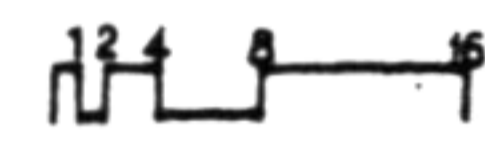
I. KING, E. COROMLI w/ C. ALEXANDER

KAREN STANTON
DAVID T.W. SUNG

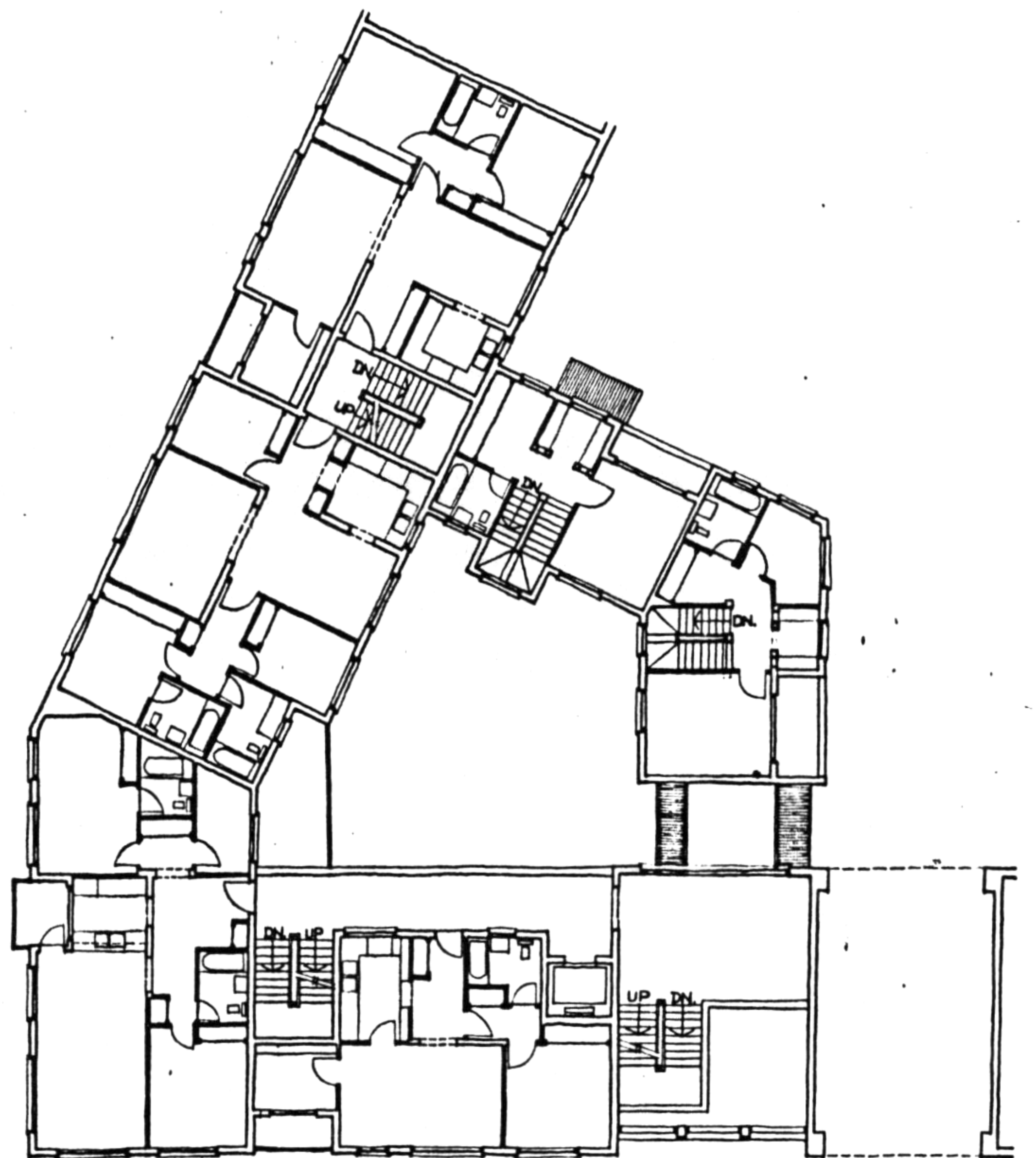




SECTION A-A



FIRST FLOOR PLAN

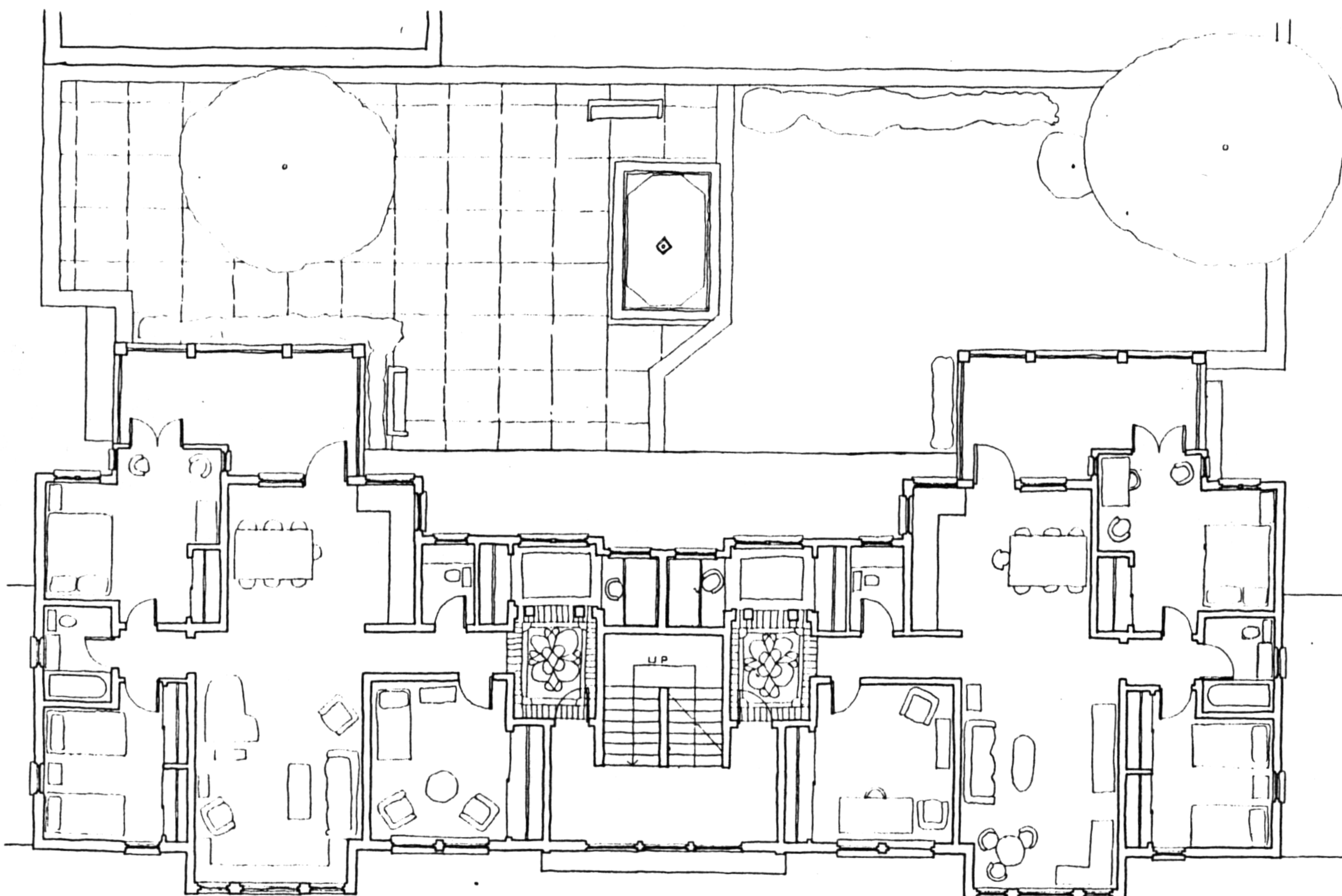


SECOND FLOOR PLAN





SAN PABLO ELEVATION



TYPICAL APARTMENT FLOOR PLAN

HIGH DENSITY MASS HOUSING DOWNTOWN OAKLAND

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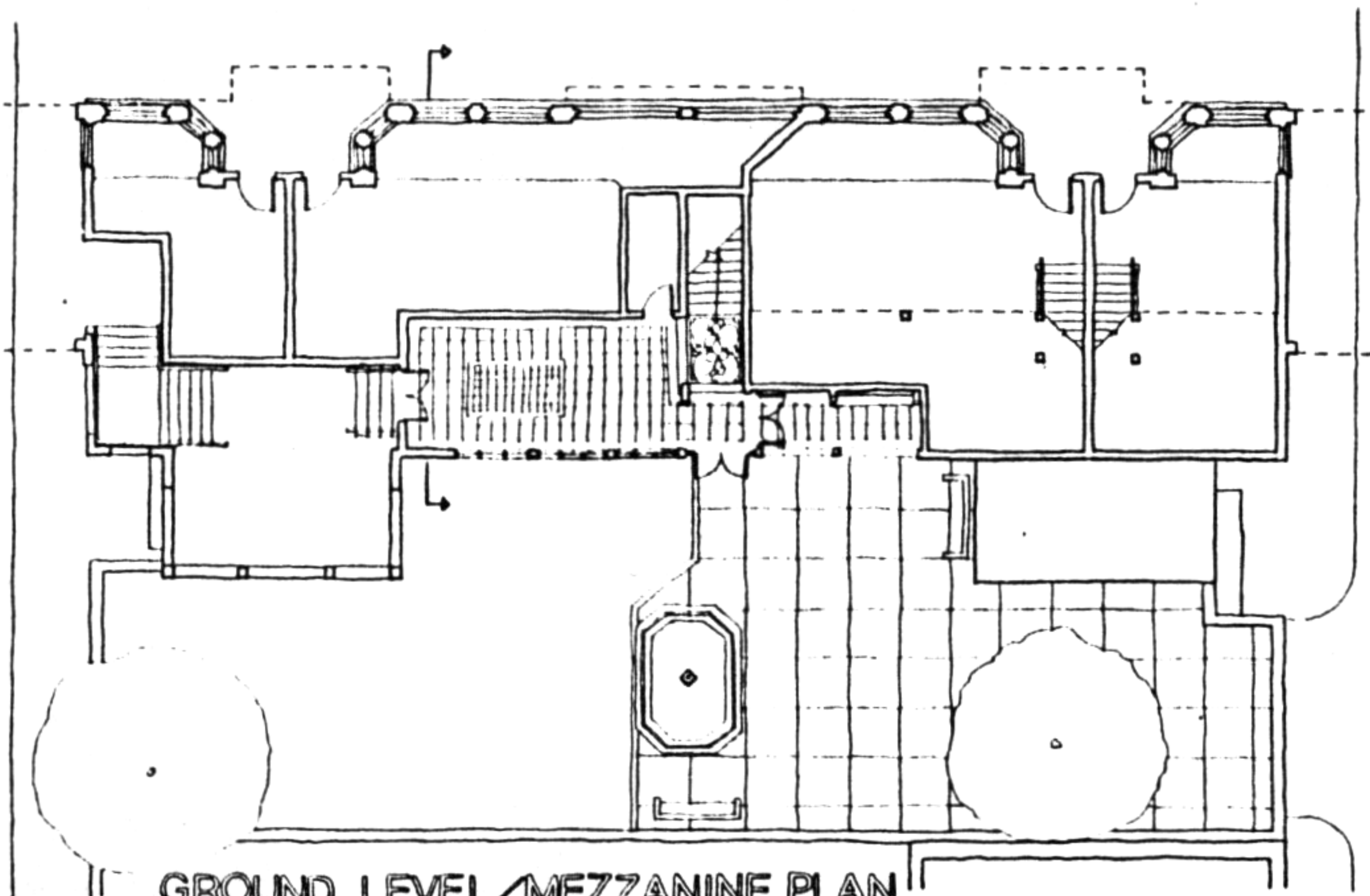
SAN PABLO
BUILDING

CATHY DRAYTON
ANJALI YAGNIK

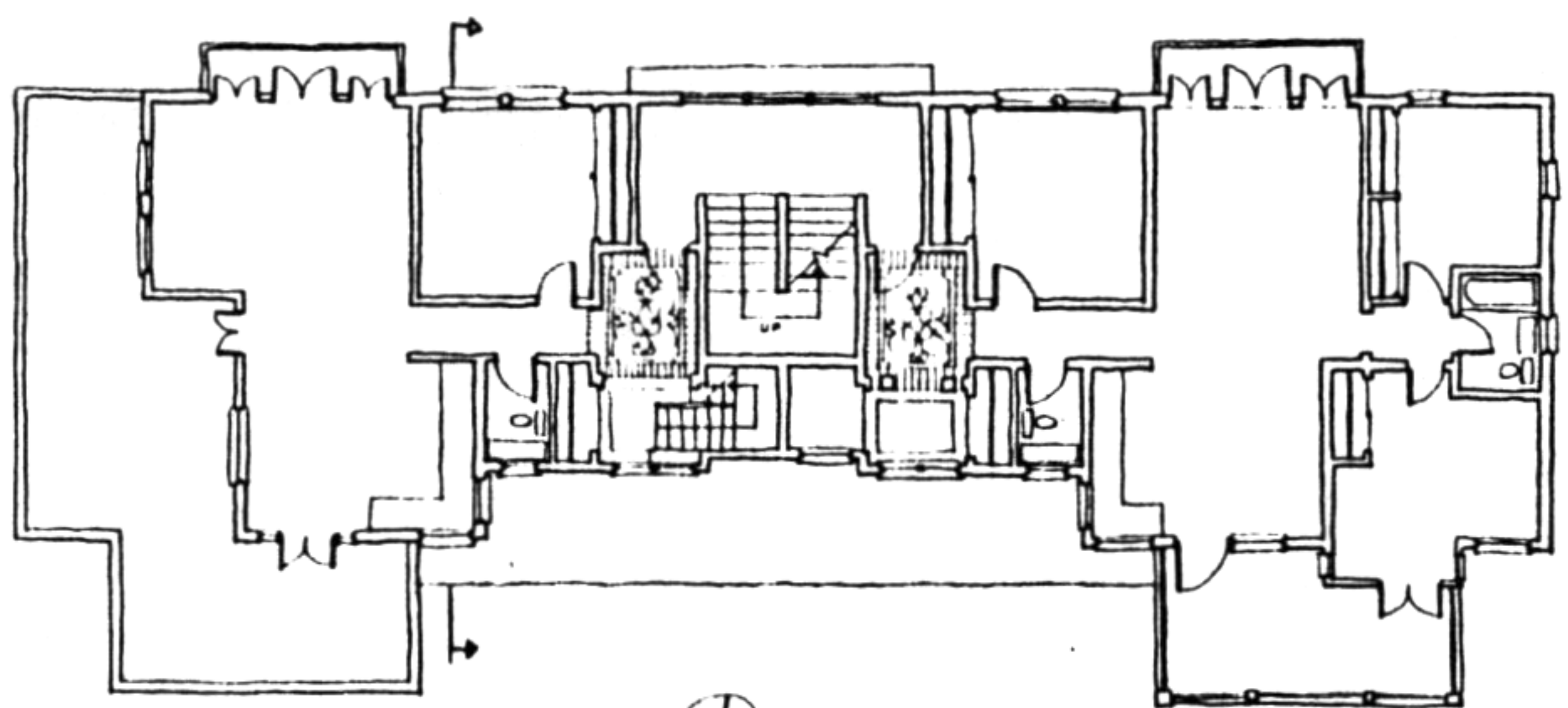




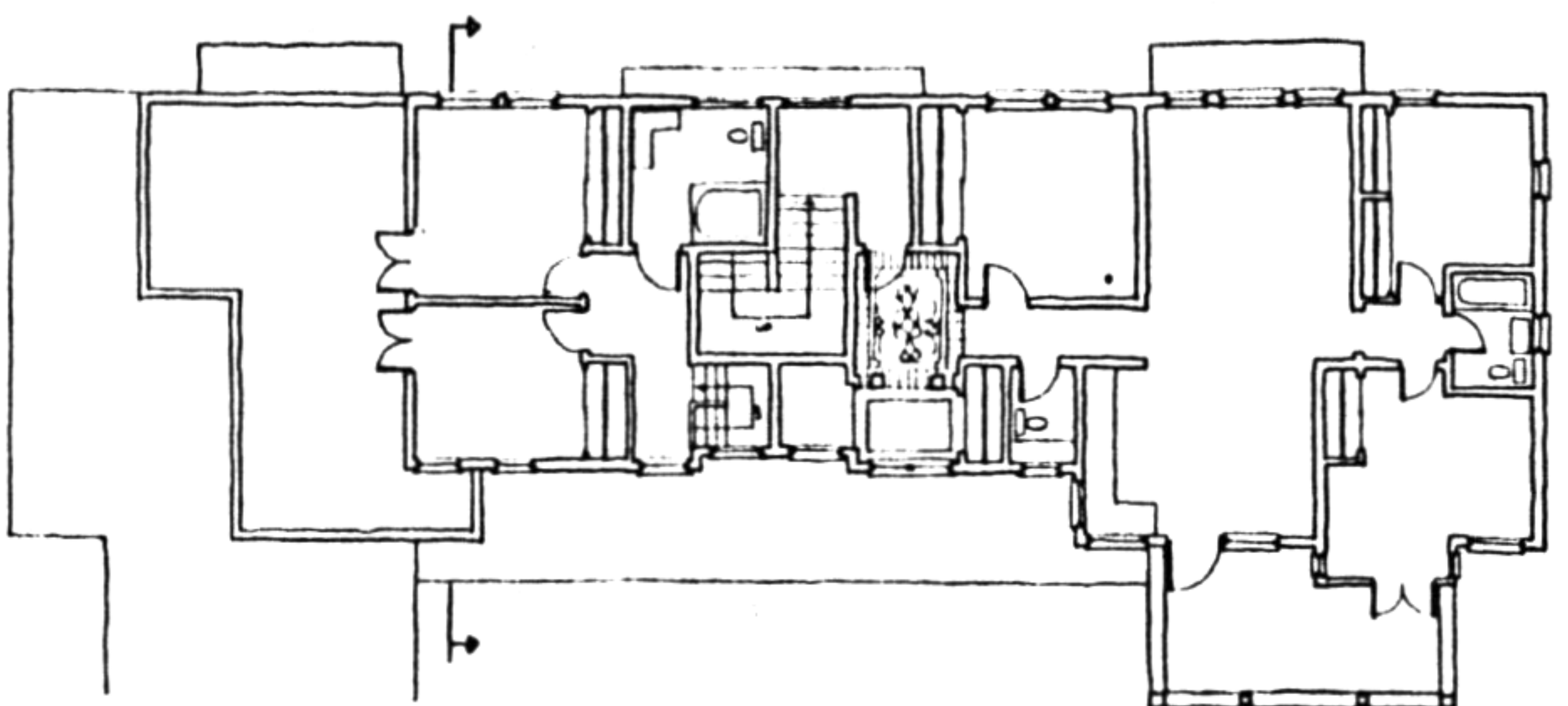
GARDEN ELEVATION



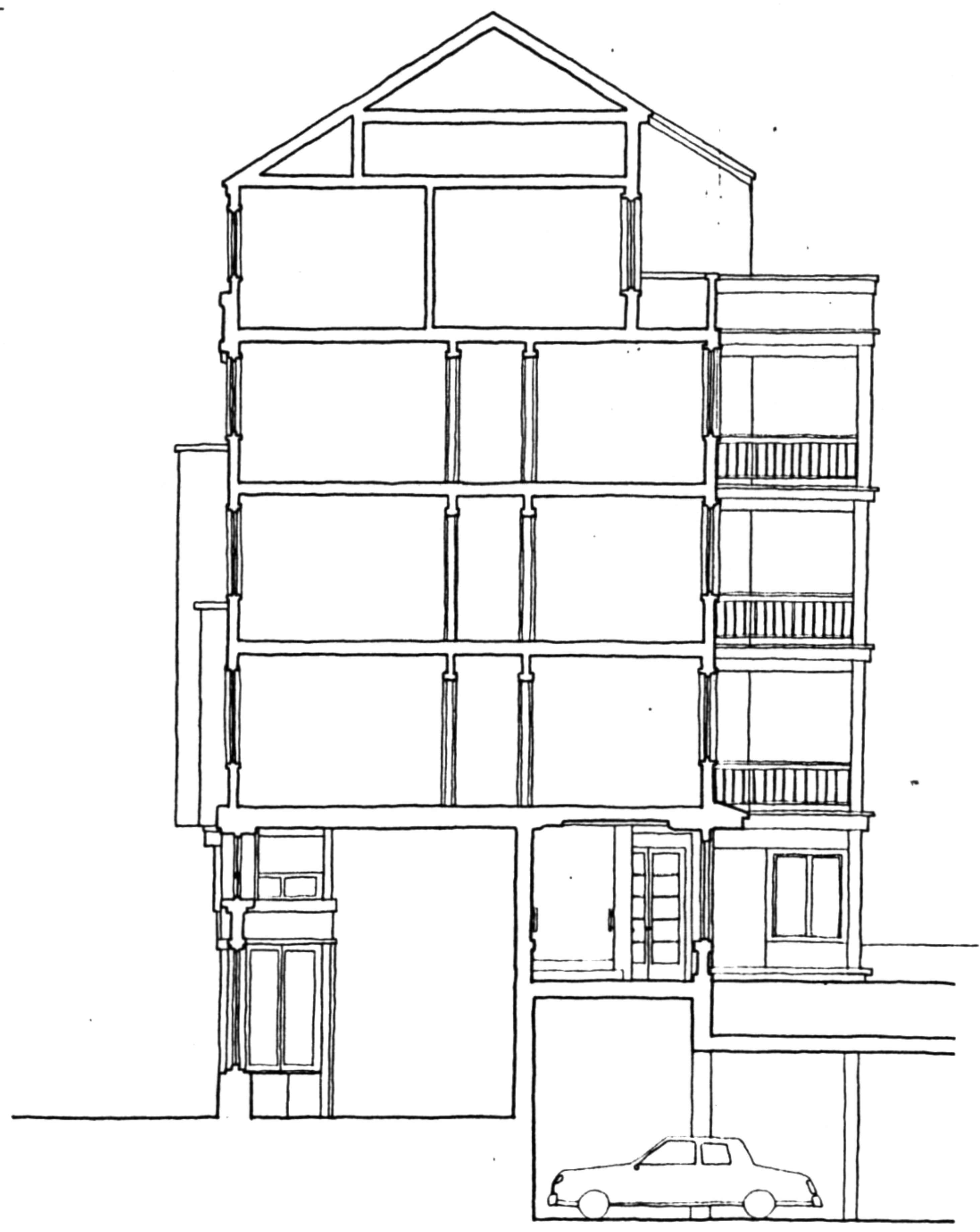
GROUND LEVEL/MEZZANINE PLAN



4 TH FLOOR PLAN



5 TH FLOOR PLAN



SECTION