ARTEMIS

HOUSING FOR GUASARE

THIS IS A PRELIMINARY PAPER, IN WHICH WE DESCRIBE THE PROCESS AND PHYSICAL LAYOUT ENVISAGED FOR THE WHOLE HOUSING PRODUCTION OF THE TOWN OF GUASARE.

CENTER FOR ENVIRONMENTAL STRUCTURE

BERKELEY, SEPTEMBER 1982

We shall first describe the basic assumptions which form the underpinning of the housing production process. These assumptions fall into the following categories:

1. Assumptions about large scale physical layout of Guasare.

2. Assumptions about the internal layout of neighborhoods.

3. Assumptions about the distribution of income, and available cash flow.

4. Assumptions about the process of laying out neighborhoods.

5. Assumptions about the financing of houses.

6. Assumptions about the physical design of houses, and control over the design.

7. Assumptions about the growth of buildings and services.

8. Assumptions about the construction.

1. ASSUMPTIONS ABOUT THE LARGE SCALE PHYSICAL LAYOUT OF GUASARE

1. In general we accept the model defined by ISA in the previous master plan: that is to say, a model which consists of a central high density area, surrounded by lower density superblocks, each one surrounded by vehicular arteries.

2. We also accept the model proposed by ISA and Kevin Lynch for the main street of the town - a boulevard lined by three storey buildings, with shopping and dense flows of pedestrian traffic.

3. We assume the superblocks, which we shall call neighborhoods, are between 200 and 300 meters in diameter. (Other sizes are possible, if necessary for external reasons). The neighborhood comprises approximately 200-250 houses.

4. We assume that each neighborhood is served by one main artery, along one edge. In this sense we differ from the ISA model, since we see no need, and only unnecessary expense of urban services, if each neighborhood is surrounded by arteries on all four sides.

5. We also assume that this one main artery which serves the neighborhood will be oriented towards the main center of the town, so that it "drains" directly into the main street.

6. We also assume that the neighborhood is oriented towards the inside, and away from the artery which serves it.

7. As a result, we assume that the artery, although a potentially very pleasant place, is not part of the main neighborhood structure of the town at all. Specifically, we see the following features in this artery:

    a. Trees along the street.

    b. Two storey houses along the street, which do not open from the artery, but from the neighborhood.

    c. Very few doors or windows at ground level.

    d. Plentiful windows, and possibly balconies opening at the second storey level.

    e. Relatively narrow sidewalks which lead for pedestrians to the town center.

2. THE INTERNAL LAYOUT OF NEIGHBORHOODS

1. We assume that each neighborhood is served by a main street, which opens like a mouth, from the main artery outside the neighborhood, at right angles to the artery. This conforms to a common pattern of markets, visible throughout Latin America.

2. We assume that this main street is wide and pleasant, probably with trees. It may have pedestrian traffic down the middle, or down the sides, or both, but it also allows for the passage of cars.

3. The main street leads to some kind of square, or wider opening, or park, in the middle of the neighborhoods.

4. At this point there is an important public building, preferably a church, if this is still realistic, otherwise a school, or other public hall of some kind. In some cases, school, church, etc, although appearing as a main building in one neighborhood, may also serve another next door neighborhood, which has a different public building at its respective center.

5. This public building is elaborate in some important sense, that it contains feeling, ornament, and has the capacity to function as the psychic center of the neighborhood.

6. Opening off the main square of the neighborhood, there are a number of secondary streets. These are short streets, for cars and pedestrians. None of these streets reach the boundary of the neighborhood.

7. The secondary streets are given a slight angle, off the grid, so that they are oriented by a few degrees towards the middle of the neighborhood. Thus, although they will tend to be roughly parallel to the sides of the neighborhood, they are given a slight radial bias, to make them lead, psychologically, more strongly to the center of the neighborhood, and to create a closer feeling between individual houses and the center.

8. The sidewalks of these secondary streets are relatively wide (perhaps 2.40 m), and are raised about 50 cm above the street.

9. Opening off the secondary streets, there are tertiary streets, which are only for pedestrians. They are, in effect, pedestrian paths.

10. Some of these tertiary streets reach the boundary of the neighborhood, and pass through a small gateway, to the next door neighborhood. Others terminate within the neighborhood itself.

11. Each neighborhood contains one builders yard, a building supply store, subsidised by Corpozulia, which will provide many houses with materials for construction, and also provide professional assistance in construction.

12. Many houses in the neighborhood are given the opportunity to have a small local shop, at the front of the house.

13. The houses along the two sides of the main street, are always two storeys , with some special ornament or decoration or paint on the front facade.

14. The total amount of parking available along the main street, and secondary streets, totals about 70-100 spaces - enough for half the houses in the neighborhood.

15. Families who live in houses which have access from the tertiary streets, park their cars on the secondary street, leading to the tertiary street.

16. There is a gradient of land price in the neighborhood, of such a nature that land is more expensive on the main street, and around the square, and least expensive furthest from the square.

17. As a result, there is a correlated gradient of lot sizes. The smallest lots are near the center, and the largest lots are furthest from the center.

18. In addition, as we shall see in more detail in section 5, there is a further correlated gradient from the center to the outside. Houses with the most complete financing will tend to be built near the center, and the houses with the slowest growth, and least complete forms of financing , will tend to be built towards the perimeter of the neighborhood.

19. This means that the central areas will have beautiful and complete houses, relatively early in the history of the neighborhood. The perimeter area, towards the ends of the tertiary roads, will be slowest to develop.

20. NOTE. The archetypal shape of house lots is not yet decided. There are at present three alternatives:

    a. Long and narrow
    b. Rectangular
    c. Square

In each case the lots will vary, and take on a wide variety of shapes, according to the layout process described below, and merely clustering around a statistical norm. The decision about optimal lot shape, will depend on various factors including climate, Venezuelan culture, and optimum growth patterns for the house.

The following drawings represent three possible layouts of the neighborhoods, all of them based on the same principal assumptions, but with different archetypal lotshapes.

a. The house lot is long and narrow.

b. The house lot is rectangular.

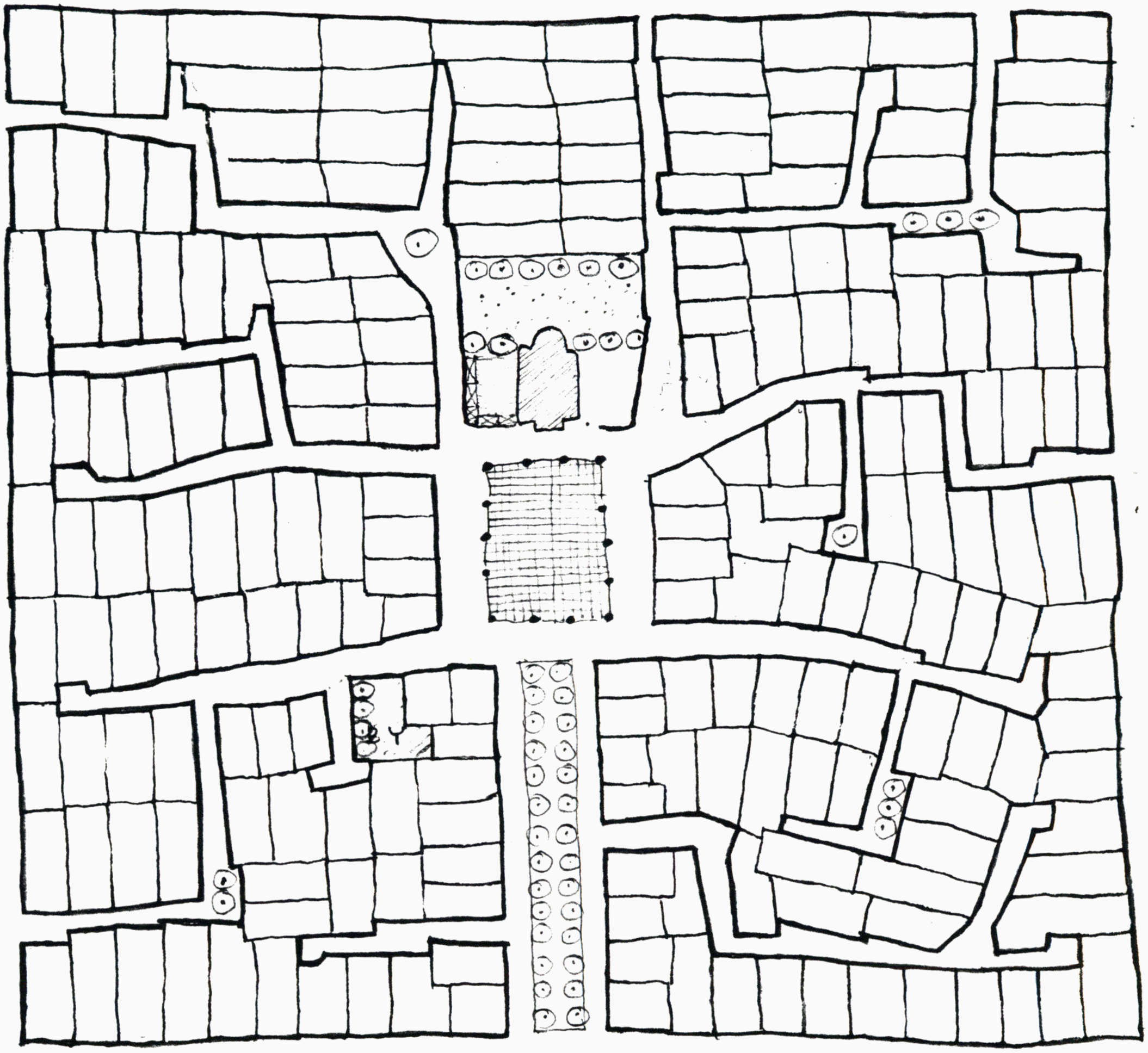
c. The house lot is sqare.

NEIGHBORHOOD LAYOUT WITH LONG AND NARROW LOTS

264 Lots

Lot size: 7-10 m x 30-50 m

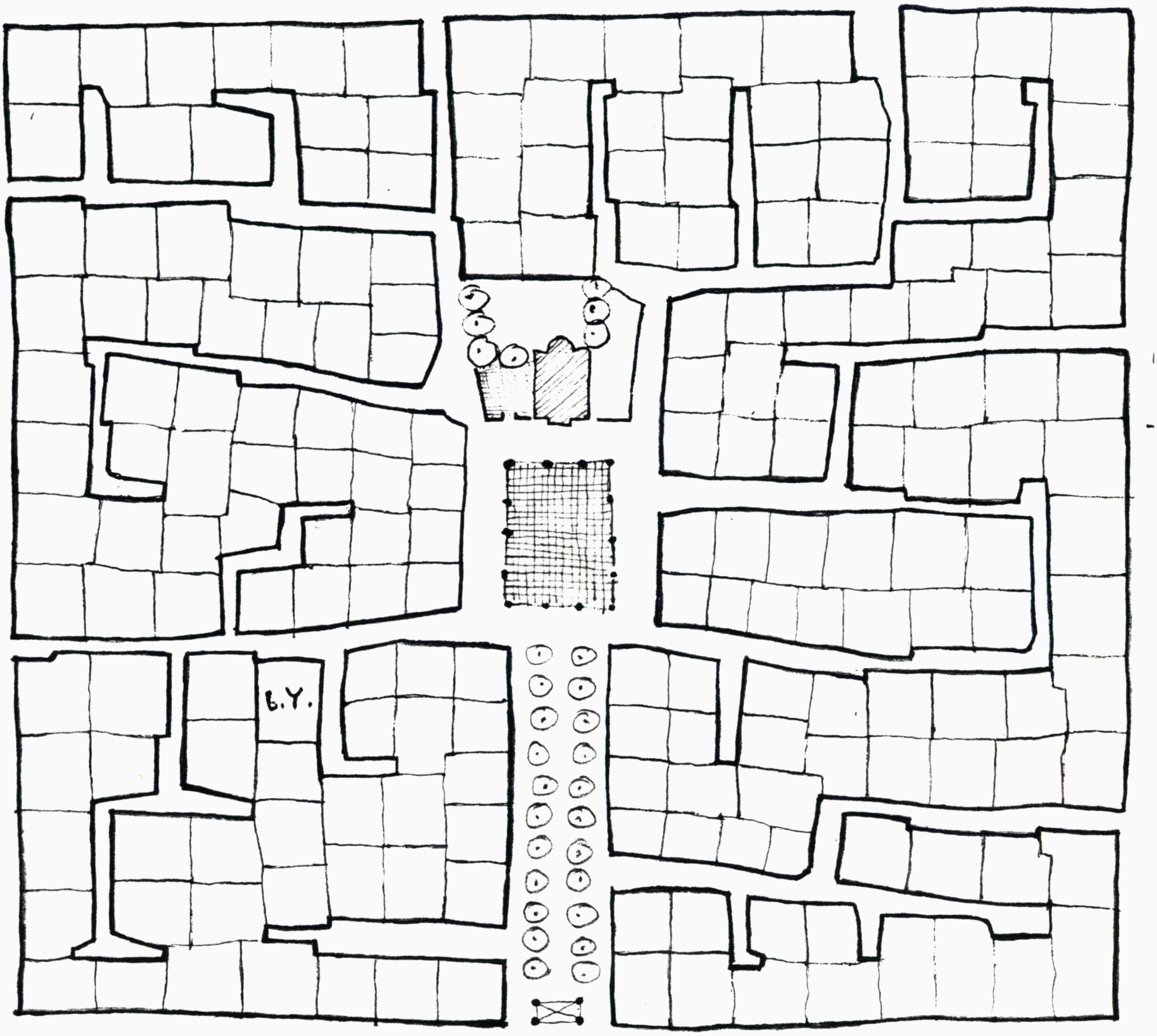
NEIGHBORHOOD LAYOUT WITH RECTANGULAR LOTS



216 lots

Lot size: 11-15 m x 25-32 m

NEIGHBORHOOD LAYOUT WITH SQUARE LOTS



200 lots

Lot size: 17-23 m x 17-23 m

3. ASSUMPTIONS ABOUT THE DISTRIBUTION OF INCOME AND AVAILABLE CASH FLOW, AND GROWTH RATE OF HOUSES

The following assumptions are based in part on the studies made by Echenique's group, and in part on an exhaustive study of Colombian squatter settlements, made by George Vernez. Although Echeniques studies are excellent, it must be remembered that many of his figures for growth are themselves assumptions, not based on empirical observation, but on assumptions about levels of subsidy. The Colombian study is based on exhaustive field measurements, made about ten years ago, in Colombia, and being entirely empirical, is therefore considerably more reliable. It is also important to bear in mind that many of the families in Guasare, especially the lower income families, will probably be Colombians who have crossed the border.

1. We assume that the population of Guasare will have the following income distribution:

Bs. 0-1000	147 families	20 %
Bs. 1000-2000	291 families	39,5%
Bs. 2000-4000	294 families	40 %
Bs. more than 4000	5 families	0,5%

2. We assume that most of the miners families, who will be in the top range of the income distribution, will live, as prescribed by ISA, in financed houses, designed by Samper, on the main street of Guasare.

3. We therefore assume that the corrected income distribution within the typical neighborhood (which is the distribution for Guasare, with the miners removed), will therefore be roughly the following:

Bs.	0-1000	61 families	27,25%
Bs.	1000-2000	122 families	54,5 %
Bs.	2000-3000	41 families	18,25%

4. We assume that the growth of houses, in these different income ranges, will then be the following:

Income		Stages of House Growth			
		1st	2nd	3rd	4th
Bs. 0-1000	sqm	16,5	13	10	11
	time lag		2 1/4	1 1/4	1 year
Bs.1000-2000	sqm	22	15	13	
	time lag		1 1/2	1 year	
Bs.2000-3000	sqm	50	20		
	time lag		1 1/2		

These numbers are average numbers, and as such were used for simulation purposes. In the actual situation, it is likely that some houses will take shorter time to be completed and some of them much longer, may be as long as 8-10 years until they reach the stage of completion.

5. These figures are taken directly from Vernez's observations in the squatter settlements of Colombia. Of course, these figures represent modest levels of financing. Although we intend to seek the maximum flexibility in the different po possible means of financing for houses, we believe that this distribution still represents a good estimate of the rate at which houses for different kinds of families will actually grow.

6. A typical neighborhood of 200 houses, will then have the following income distribution:

High Income	18,25 %
Middle Income	54,50 %
Low Income	27,25 %

Of course, the terms high, middle and low in this chart are relative. Compared with world wide levels of income, all these families are relatively poor.

4. ASSUMPTIONS ABOUT THE PROCESS OF LAYING OUT NEIGHBORHOODS

1. We assume that the neighborhood will not be subdivided, like a typical American tract, but will instead be generated dynamically, according to the arrival of families.

2. According to Echenique'sprojections, new families will arrive in Guasare at the rate of between 100 and 300 families per year.

3. We assume that each neighborhood will take about two years to receive all its families, and to have its layout defined. This means that when families are arriving at the rate of 100 families per year, one neighborhood will be established every two years. If families arrive at a faster rate (for instance 200 families per year), then two neighborhoods will be established in parallel, each one receiving about 100 families per year, and still taking two years to grow to maturity.

4. The entire subdivision process will be managed by a field office of Corpozulia, established in Guasare.

5. Every two months, the families who have newly arrived, and who seek land in the new town, will be given lots within the growing neighborhood.

6. The location, shape, and size of the lot which the families receive, will be arrived at by a formal process administered by Corpozulia.

7. House lots will be laid out in batches of about 10-25 at a time. Lots will be assigned at the end of every two months. In general, lots will be assigned to individual families. In certain cases, groups of lots of up to 10 houses may also be built by a single developer.

8. The incoming families, in a given two month period, will be asked to define their wishes concerning the location in the cluster, the price they wish to pay for the lot, and their capacity to pay for a house.

9. On the basis of these questions, each of the families will be assigned to one of three general locations: on the primary street, the secondary streets, or the tertiary streets. In each of these three zones, an increment of several new lots will be added to the existing layout of lots, every two months.

10. The process of laying out the neighborhood and subdividing it in individual lots is incremental. Every two months a new increment is being added.
    Every new increment comprises two or three different kinds of house lots in relation to their location:

- a group of 6 house lots to be placed along the main street or the square, which happens every four months (for high income families)
- a group of 5 house lots to be placed along the vehicular streets, added every two months (for middle income families)
- a group of 14 house lots to be placed along the pedestrian paths, added every two months (for low income families)

These numbers are again average numbers. Although they describe the order of magnitude of the rate of incoming families according to family income, they will not represent the actual situation at every stage of development.

11. Lots will be assigned to families in any one of the following categories:

    a. Outright purchase
    b. Slow purchase
    c. Very slow purchase
    d. Long term lease (for Colombian families, not entitled to receive Venezuelan land, until they change their citizenship)
    e. Free use, with the option to buy it later (for very low income families)

12. Corpozulia will make arrangements for these different types of purchase/ownership agreements.

13. As the new lots are laid out on the ground, water, sewage, and electricity, will be built incrementally, according to the new streets which are defined by the increment.

14. Street paving and sidewalks, will also be built incrementally, according to a formula, dependent on the money available from different groups of families.

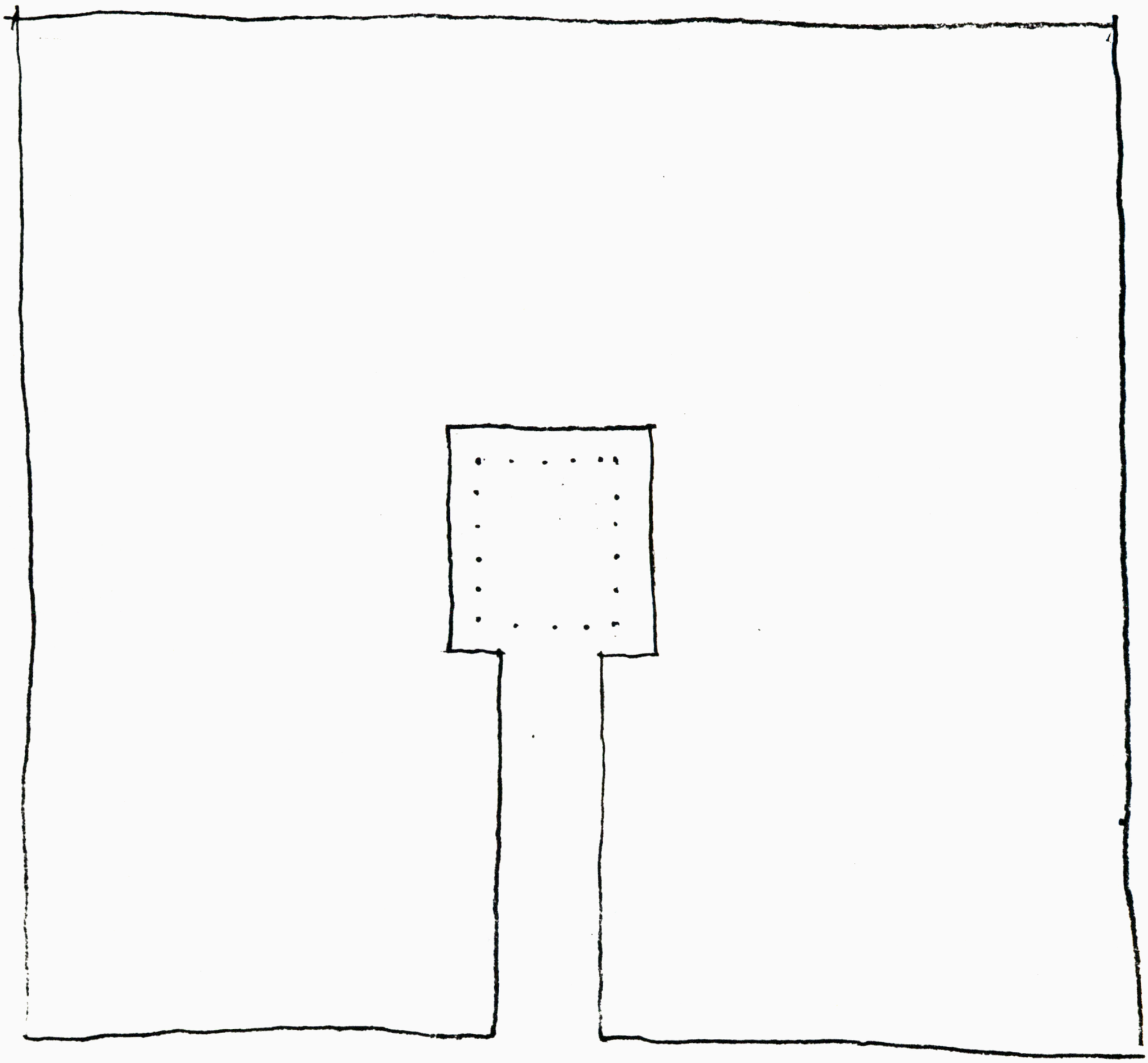
15. Services will be provided in a differential, non uniform manner, throughout the neighborhood, with slightly higher levels of service towards the center of the neighborhood, and slightly lower levels, which can be made up in later years, in the more outlying areas of the neighborhood.

16. However, the general principle which will be followed, is that the richer families, will effectively subsidize the services which serve the outlying areas of the neighborhood.

The following series of drawings represents the process of the incremental layout of the neighborhood, using the example of the long and narrow house lots.

On this specific simulation, the time lag between increments is assumed to be two months, and every new increment to be added every two months varies between 15-30 house lots.

FIRST STEP

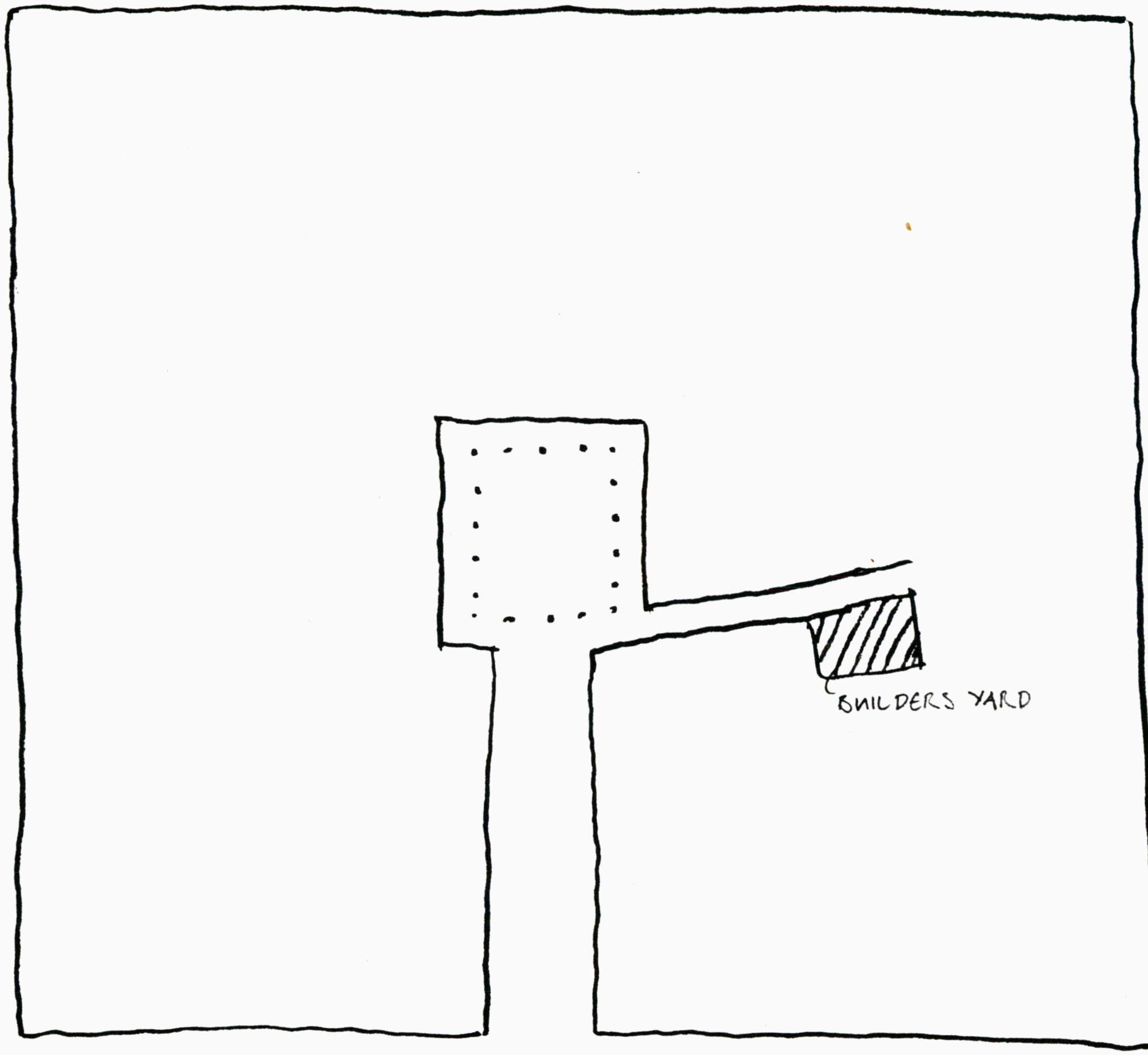


Locate main road and main square, both are closely connected.

The square is elongated in the direction of the main street.

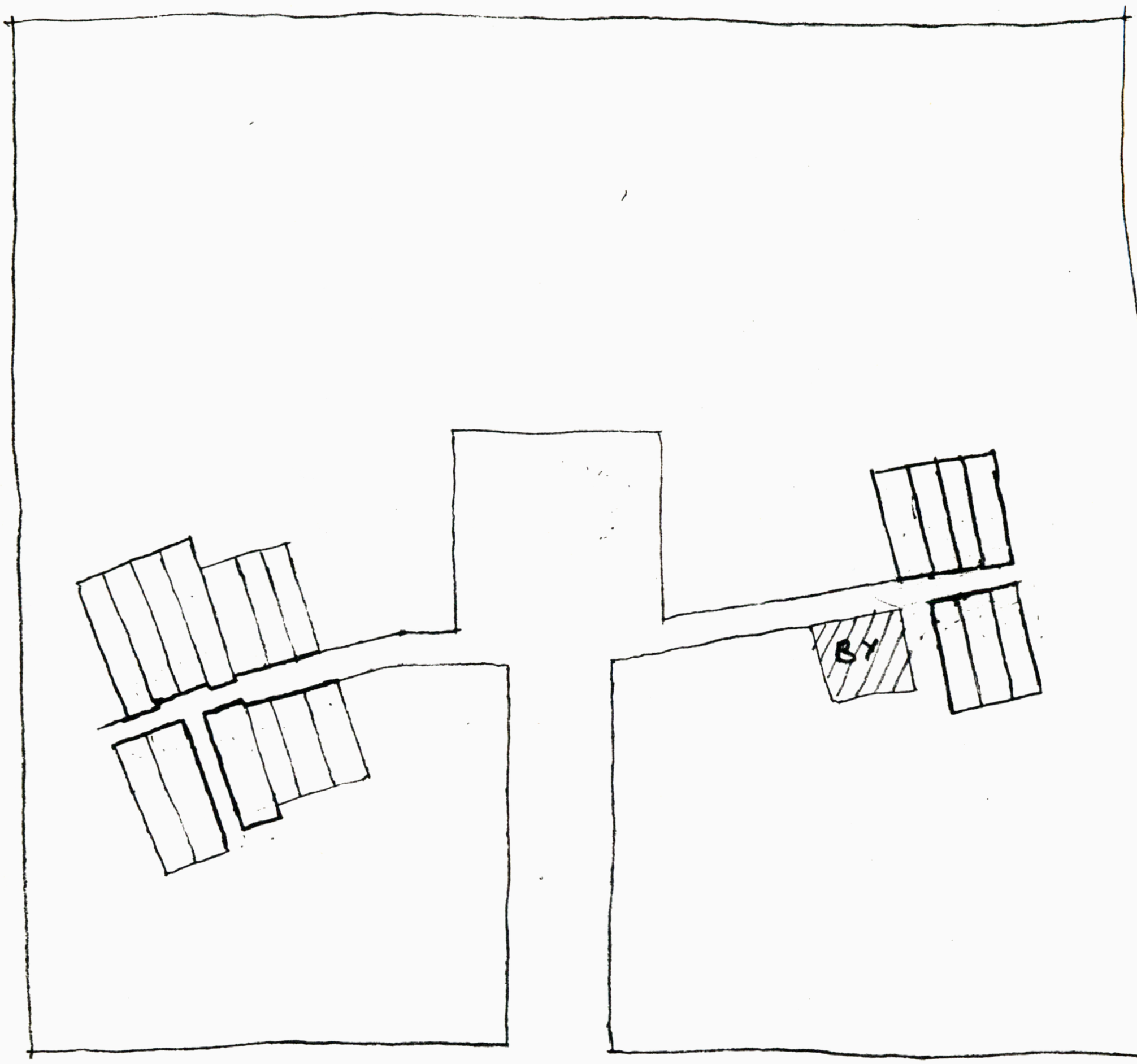
The main street is wide and is connected with the arterial road.

2nd STEP



A secondary street is being placed which leads to the builders yard.

3rd STEP

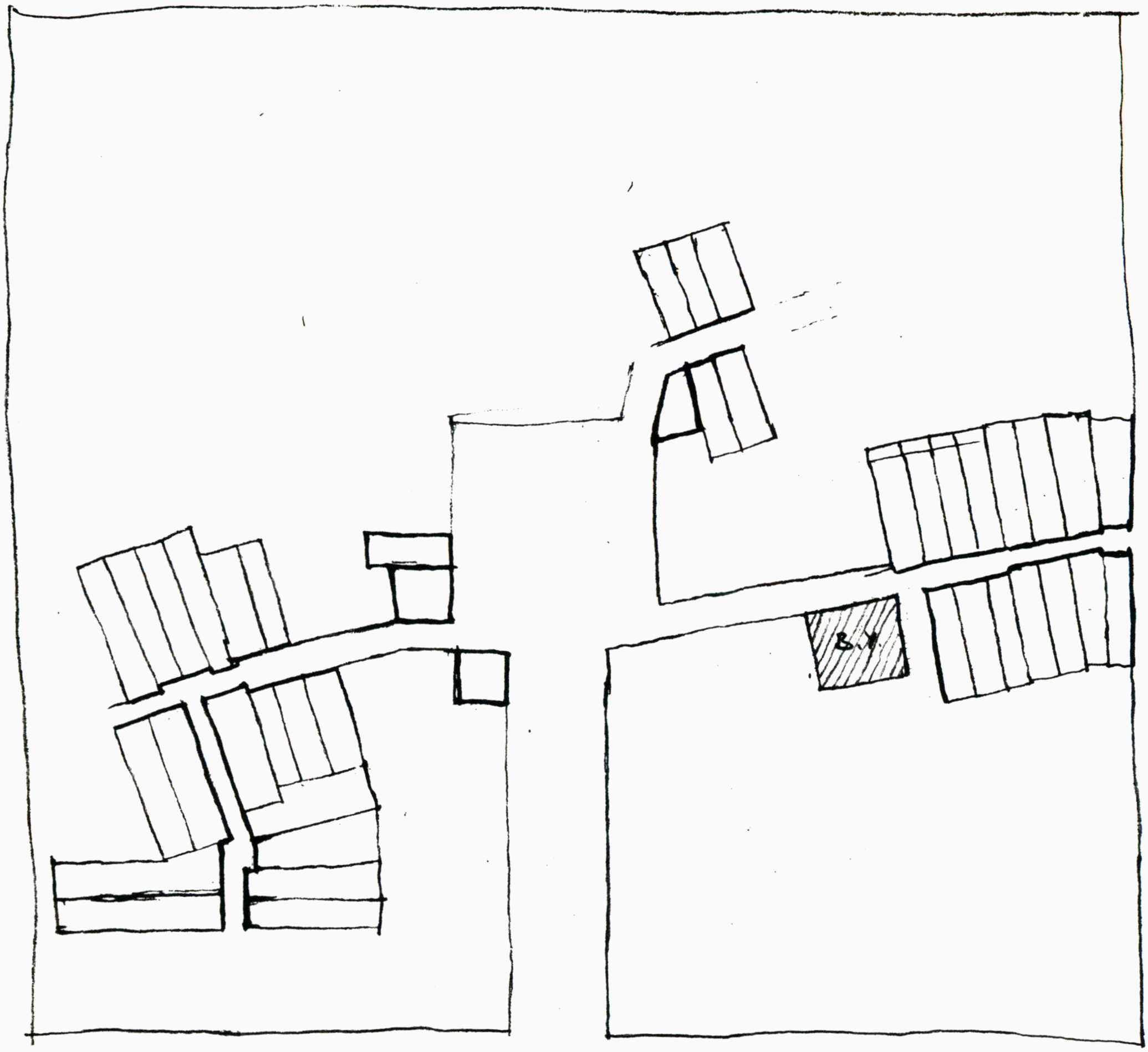


Families are being assigned to lots: 0 on Main Street
5 on Vehicular Street
14 on Pedestrian Path

Houses on vehicular streets pin down their ending points,

houses on pedestrian streets pin down their starting points.

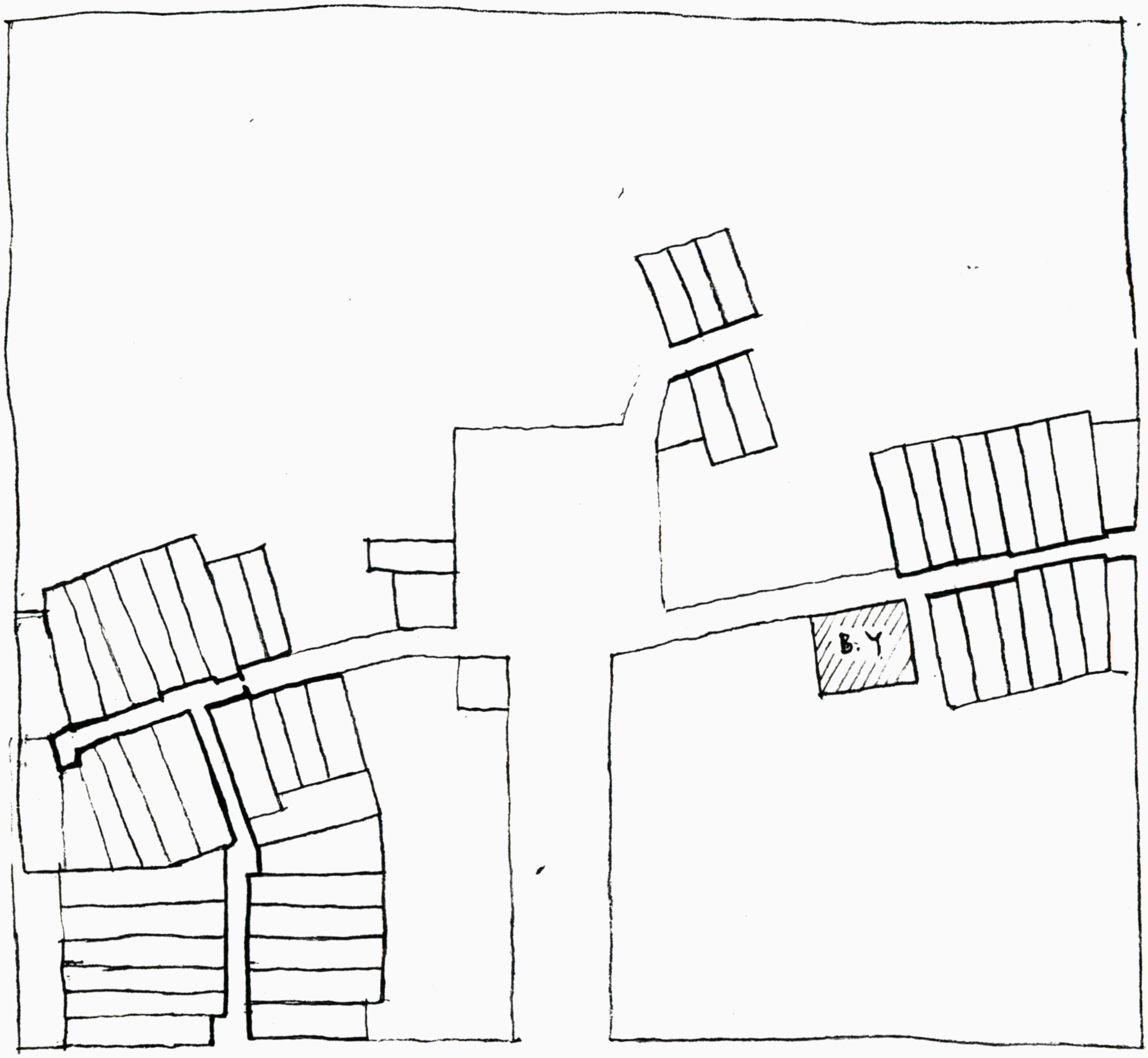
4th STEP



New families: 4 on Main Street and Square
5 on Vehicular Road
14 on Pedestrian Path

New houses on main street and square, pin down corners from where vehicular streets start.

5th STEP

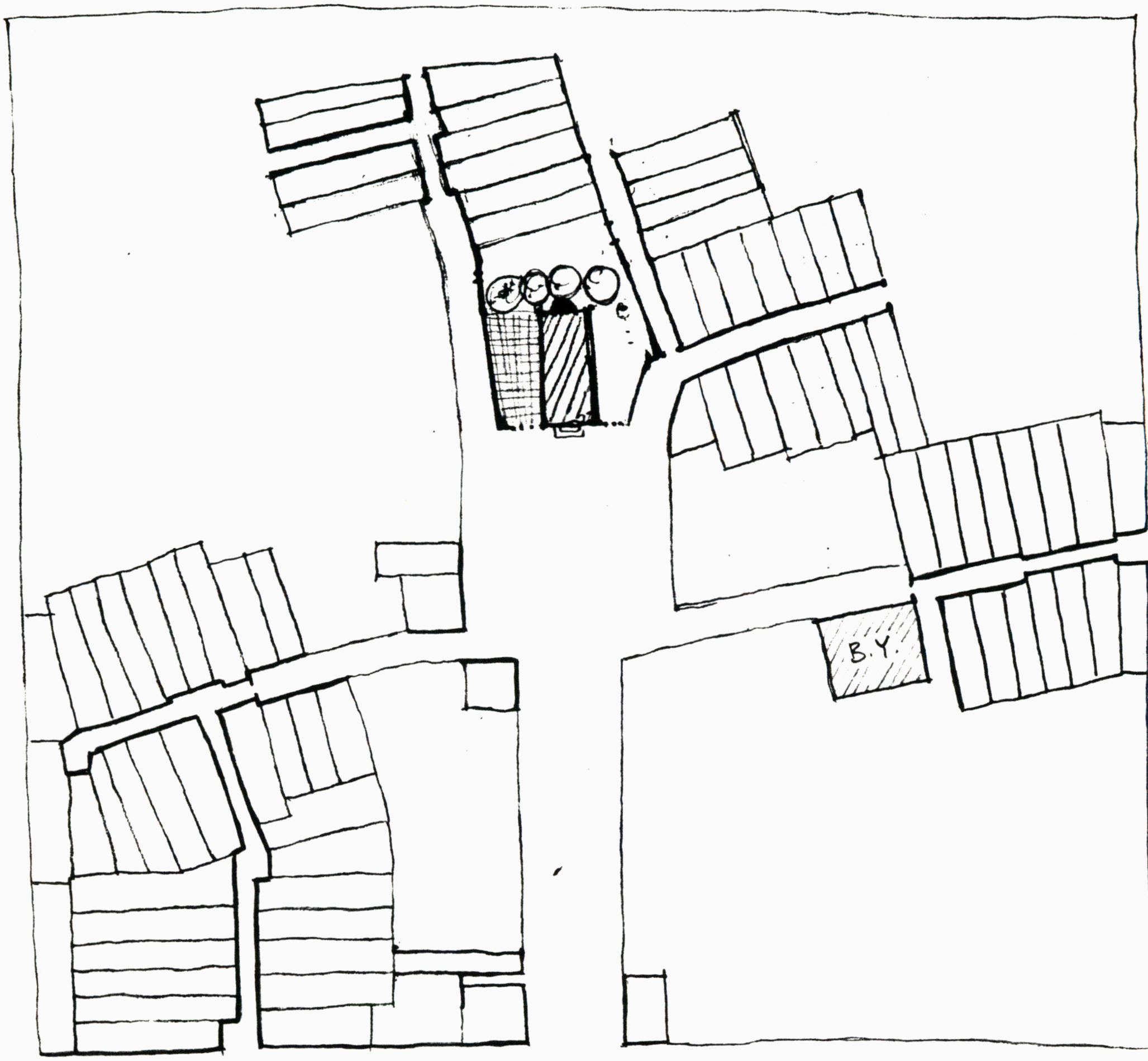


New families: 0 on M

0 on V

14 on P

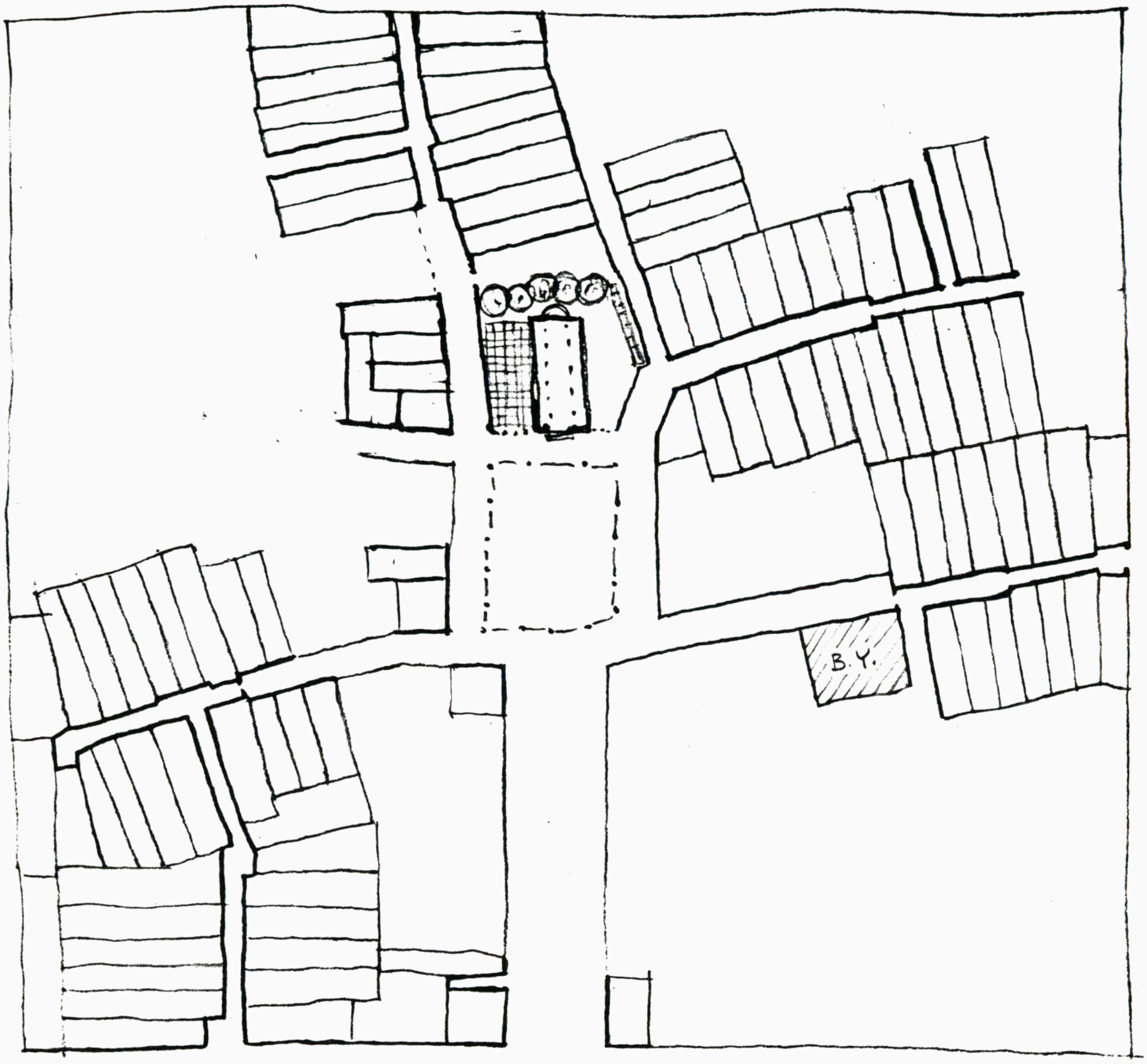
6th STEP



New families are being assigned to lots: 4 on M
10 on V
14 on P

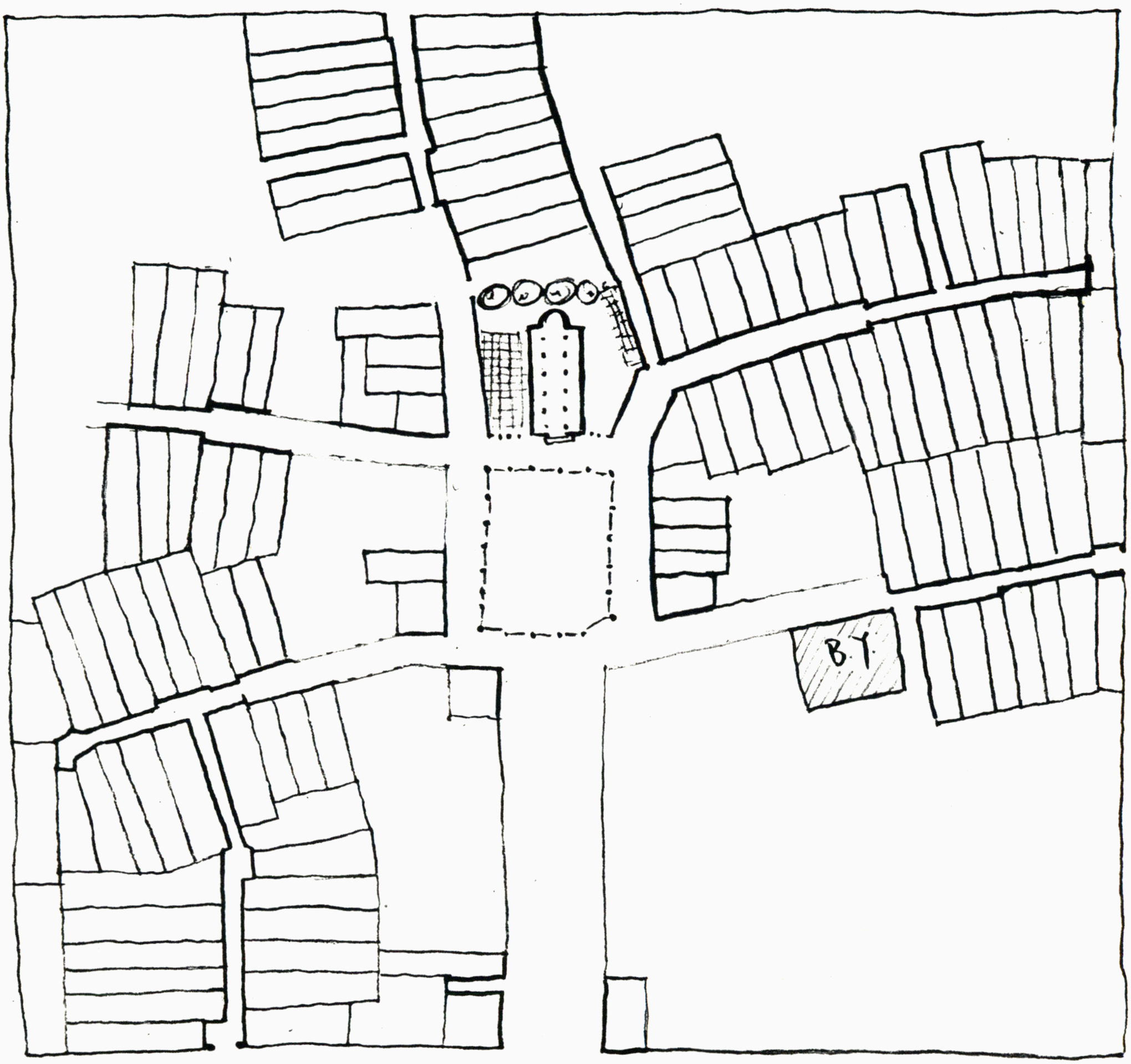
A public building is placed at one side of the main square, opposite to the main street, so that it is visible by entering the neighborhood.

7th STEP



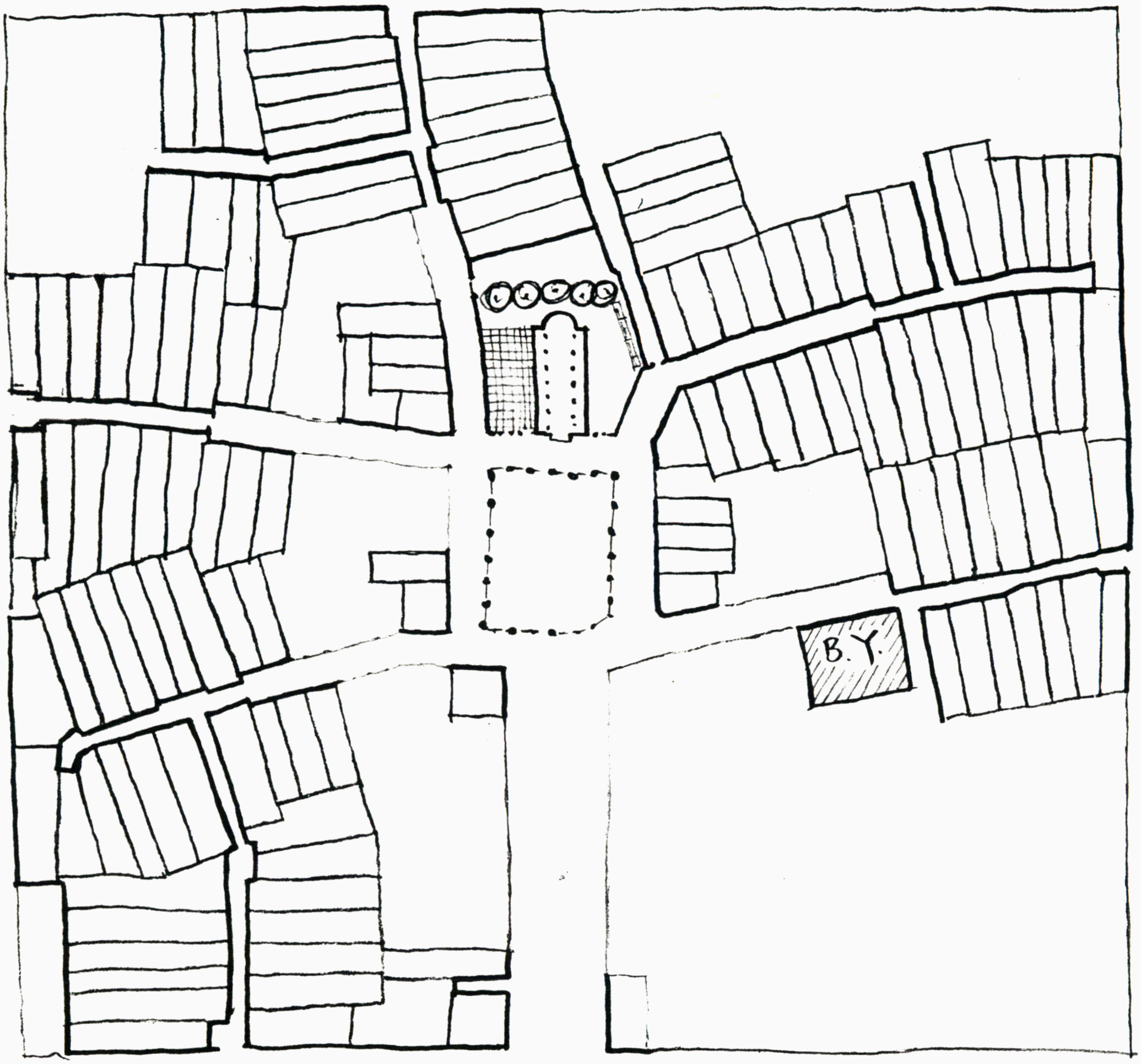
New families: 0 on M
5 on V
14 on S

8th STEP



New families: 4 on Main Square
5 on Vehicular Street
14 on Pedestrian Path

9th STEP

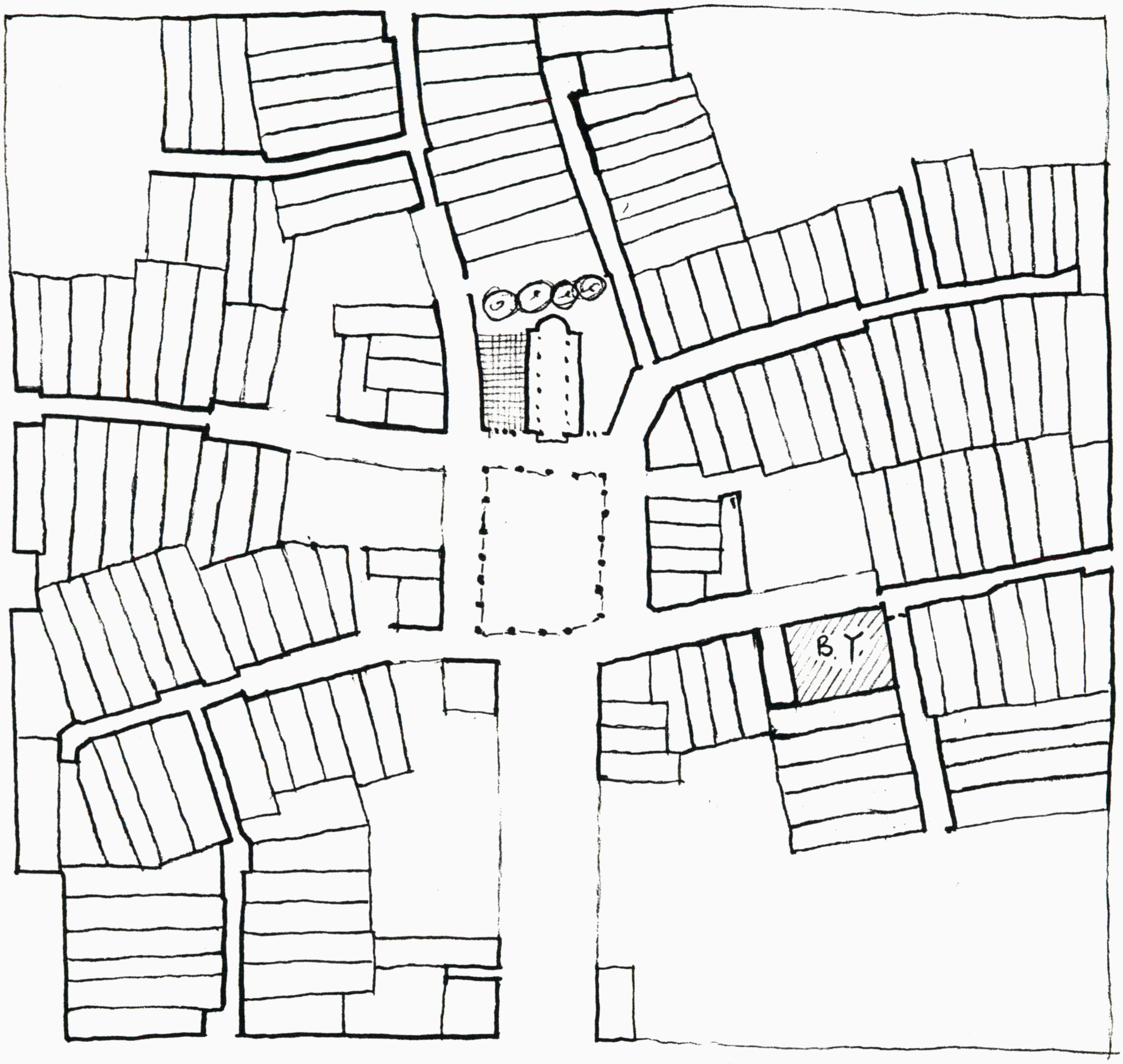


New families: 0 on M

0 on V

14 on P

10th STEP

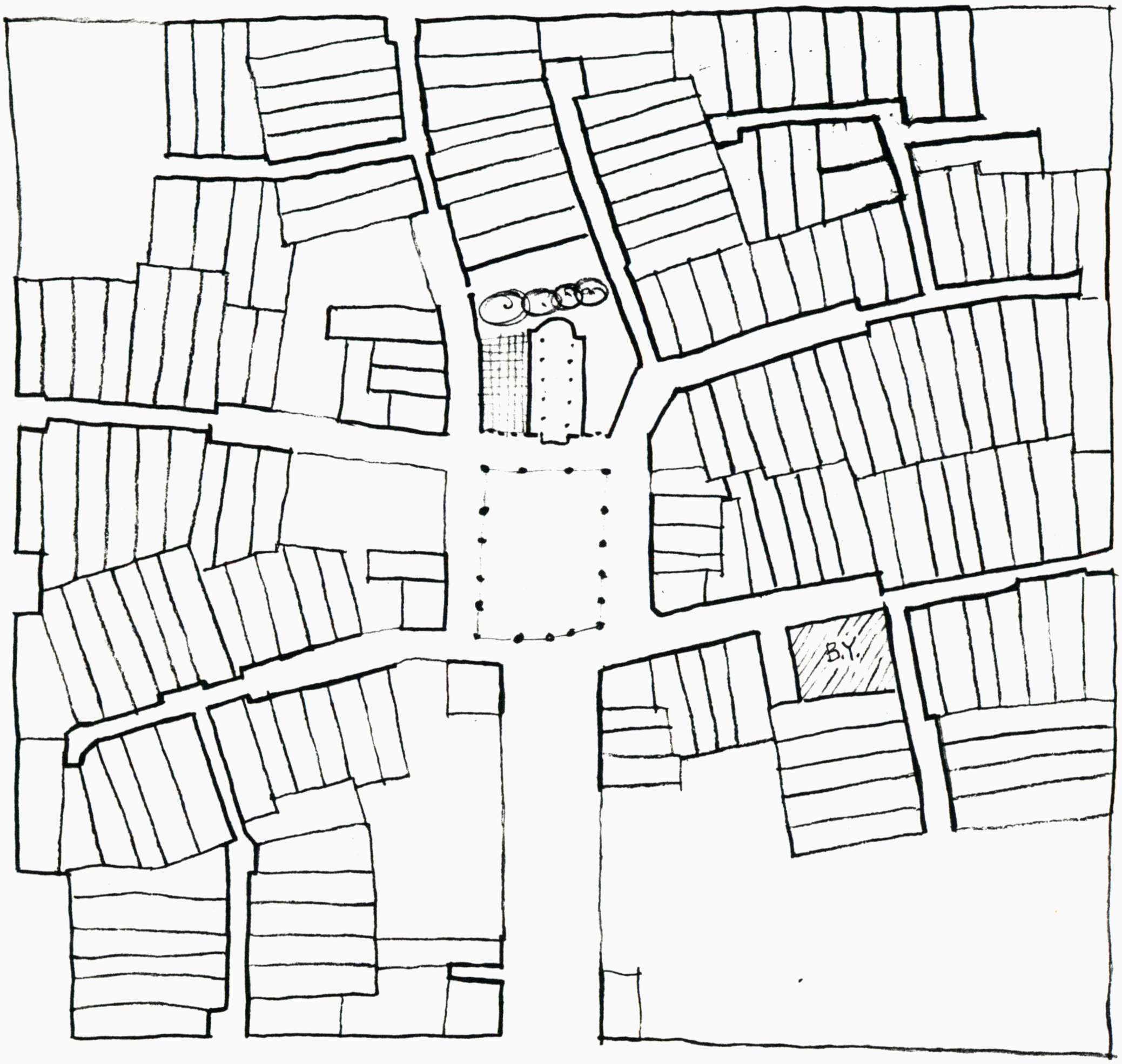


New families arriving and being assigned lots: 4 on M

10 on V

14 on P

11th STEP

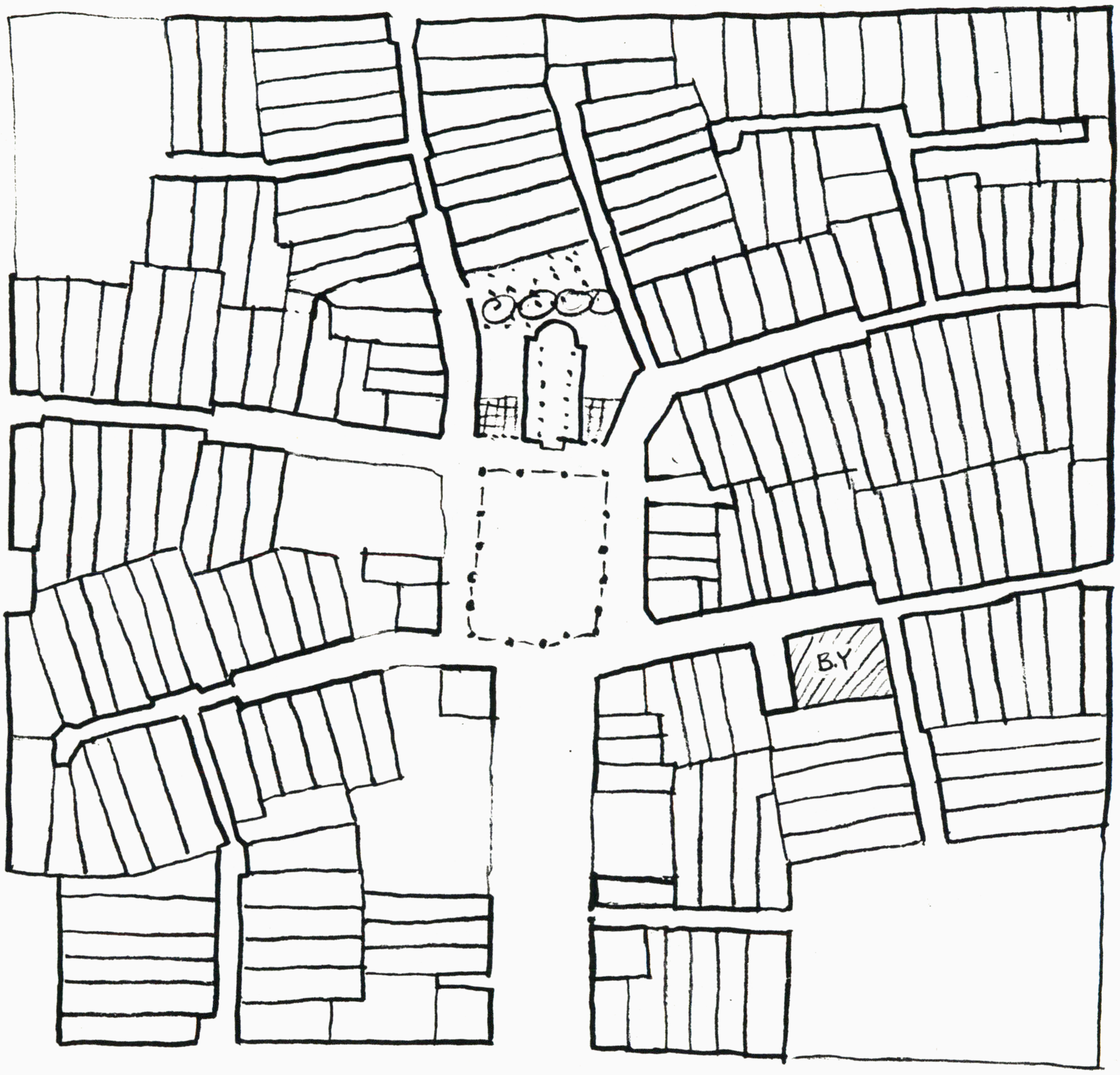


New families: 0 on M

5 on V

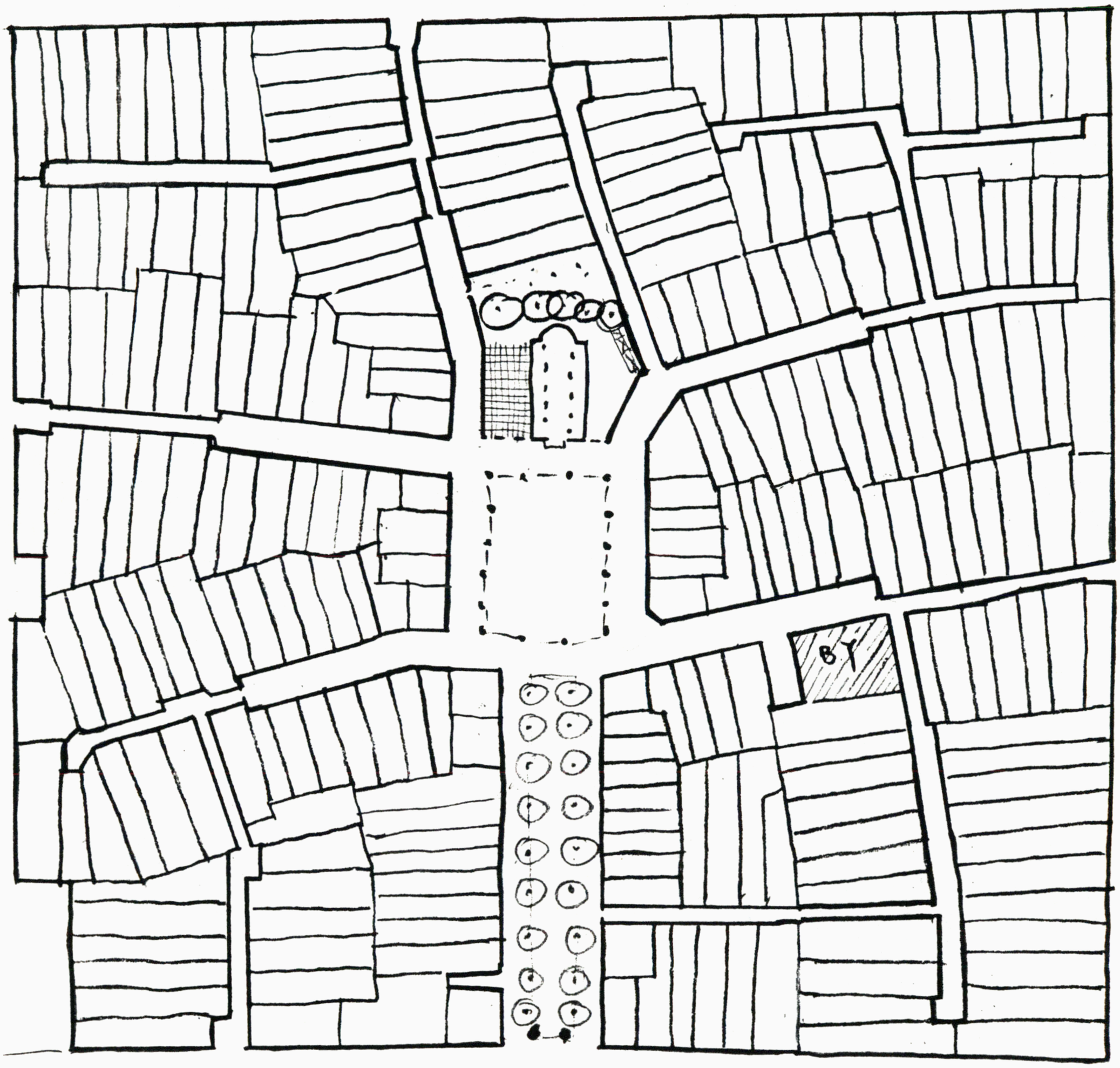
14 on P

12th STEP



New families: 4 on M
5 on V
14 on P

13th and 14th STEPS



New families step 13:

4 on M

5 on V

14 on P

Step 14:

4 on M

5 on V

14 on P

5. ASSUMPTIONS ABOUT THE FINANCING OF HOUSES

1. We assume that all families in the neighborhood will be eligible for some kind of financing.

2. The levels of financing available will be graded, in such a way as to conform to different families capacity to pay. Financing will be provided by CORPOZULIA and/or INAVI, as follows:

   a. Full financing for 50-100 m^2.

   b. Full financing for 30-50 m^2 (partial construction of a house, which may be completed by self help or additional financing).

   c. Financing for one room at a time.

   d. Extension loans for materials, at the local builder's yard.

   e. Credit for materials at the local builder's yard, one room at a time

3. Categories d. and e., in the financing arrangement, rely on the family's capacity to build their house for themselves, with some kind of self help arrangement. In these cases, instruction and technical help will be available from the neighbor builder's yard.

4. In all cases, the land will be used as security, to guarantee repayment of the loans.

5. We specifically recommend against any form of so-called "sites and services" arrangement. In the category of families, who are so poor, that they could not receive any more subsidy than would pay for site and services, we believe that the available money should instead be provided to them in the form of materials for walls and roofs. All families with a choice, will choose shelter instead of services.

   For these families communal water faucets, and toilets, will be provided at the corner of the block, until enough money has built up in the reserve, to run these services to the house.

   In any case, we believe it is imperative to recognise that shelter - i.e. well built walls and roofs, must have priority over provision of water, sewer and electricity, whereever lack of money forces a choice between these alternatives.

6. In general, families eligible for the highest available financing, will be assigned to lots on the main street and square, so that these public structures are spatially and physically complete and beautiful, within the first two years of the life of the neighborhood.

6. ASSUMPTIONS ABOUT THE PHYSICAL DESIGN OF HOUSES, AND CONTROL OVER THE DESIGN

1. We assume that all families will have control over the layout of their own houses, and will therefore be in charge of the design.

2. This process will be conducted within the framework of a set of rules, which will be made available to every family. The family will use the rules, to define the increment of construction they wish to build.

3. Available financing will be contingent on the use of these rules, by the family, and on the conformity of the resulting house, to this system of rules.

4. The rules will be consistent with all necessary aspects of Venezuelan climate and culture.

5. The way the rules will work, will allow incremental growth of all houses... so that even in cases where financing requires slow growth, one room at a time, nevertheless, the system of rules will guarantee that the house forms a coherent whole.

6. We assume that this layout process, and the use of the rules, by the families, may require some assistance by the staff of the local builders yard, being operated under the control of Corpozulia.

RULES FOR HOUSE LAYOUT

There are two sets of rules:

1. The first set of rules describes how the overall and rough design of the house will be made. This set of rules will guarantee the coherent form of the house as a whole.

2. The second set of rules will describe how an increment of a house will be laid out. The increment will be always a room plus some other auxiliary space, like toilet and bathroom, or some outdoor space.

This set of rules will have to take care of two things:

a. How the increment itself will be laid out, paying attention to its components.

b. How the increment will be connected with the rest of the house.

In cases where more than one room is laid out at a time, or even the whole house, the second set of rules, which describes how a room is laid out, will have to be repeated two or more times.

FIRST SET OF RULES: OVERALL DESIGN OF HOUSE

1. The family is given a particular lot according to their available financing and according to their preference for more private or more public location within the neighborhood. The choice of the individual family for a lot is limited to the following types of areas within the neighborhood: "main street and main square", or "vehicular street", or "pedestrian path", or in addition "along artery". Beyond this choice by families, the rest of the decision will be made by the people responsible for lot subdivision, which has to be compatible with the whole pattern of growth of the neighborhood.

2. The house has to form at least two of the lines of the lot.

In the case of the long and narrow lot, probably three lines of the lot can be defined.

3. In all cases one of the two lines of the lot, which are being defined by the house, has to be on the hierarchical most important street. The other lot line, always, has to be the side lot line.

4. The entrance to the house, in corner lots, is always on the hierarchically more important street, (possible exceptions on arterial roads).

5. The house, regardless of the shape of the lot, is long and narrow.

6. There are two possibilities for cross ventilation in the house:

a. The house is ventilated along its long dimension, which requires alignement of openings along the house.

b. The house is ventilated along its narrow dimension, which requires a larger open space between adjacent lots.

7. Along the volume of the house in its long direction, there is at least one patio or courtyard, formed in between two rooms, possibly covered with a roof, and its third side being the wall along the lot line.

10. The initial layout of the house will include at least the layout of three rooms (i.e. sala, kitchen, bedroom), plus one patio and courtyard, and the garden.

NOTE: So far, the overall house design, does not include detailed and individual patterns of house. The definition of individual house patterns will have to be accomplished during our current visit in Venezuela.

The following drawings represent overall house designs for the three types of typical lots under investigation: 1. long and narrow, 2. rectangular, and 3. square. For these three types of lots, overall house designs are shown in the context of:

a. Main Street and Square

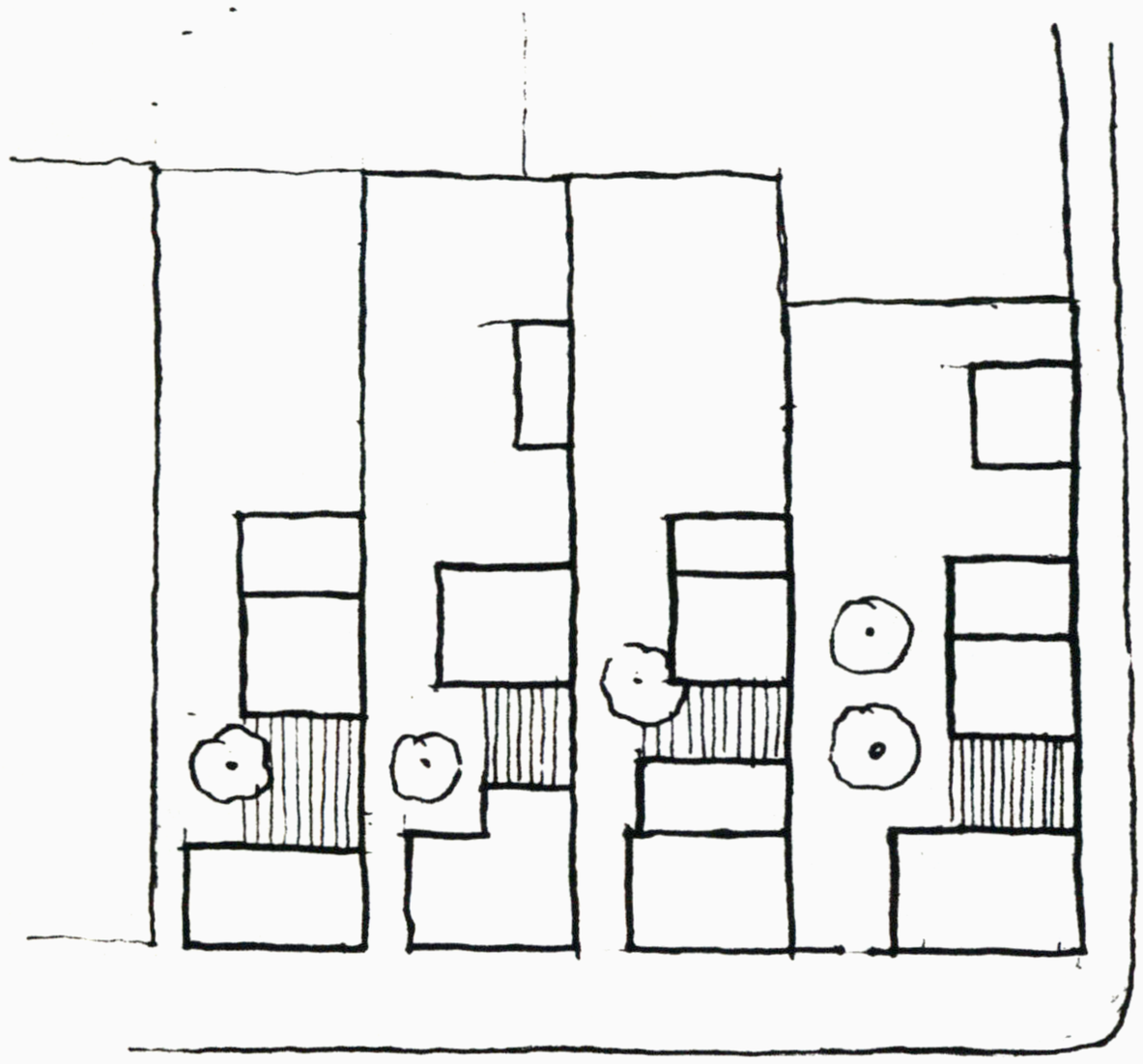
b. Vehicular Street and Pedestrian Path

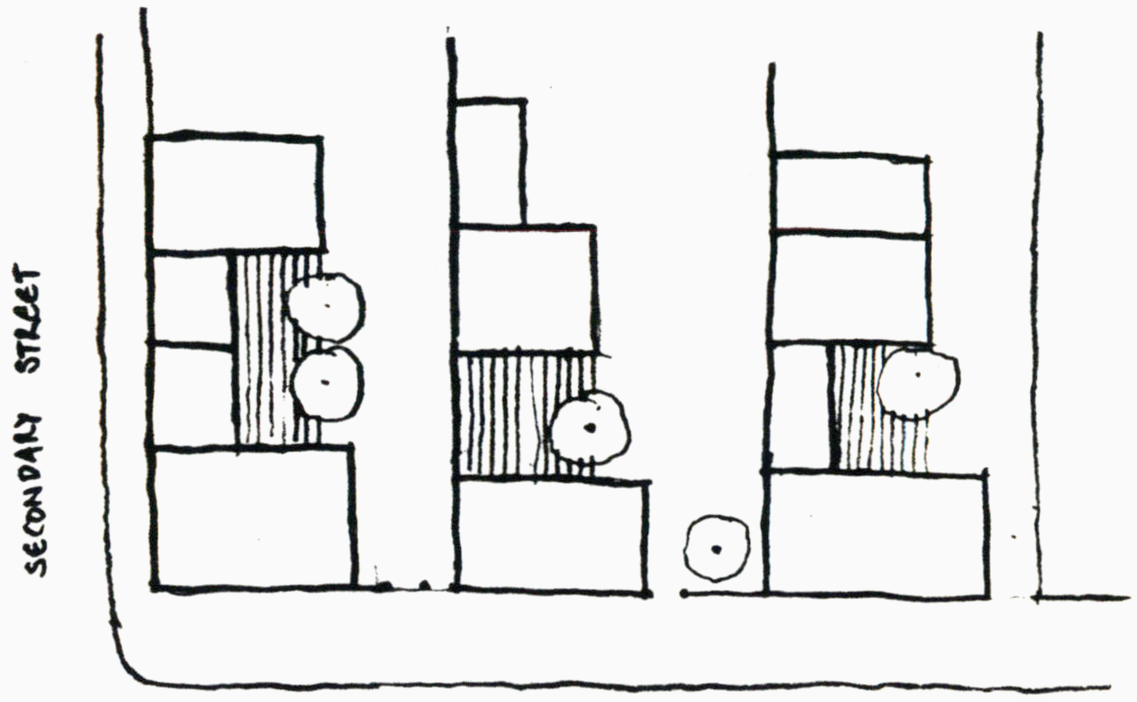
OVERALL HOUSE DESIGN FOR LONG AND NARROW LOTS

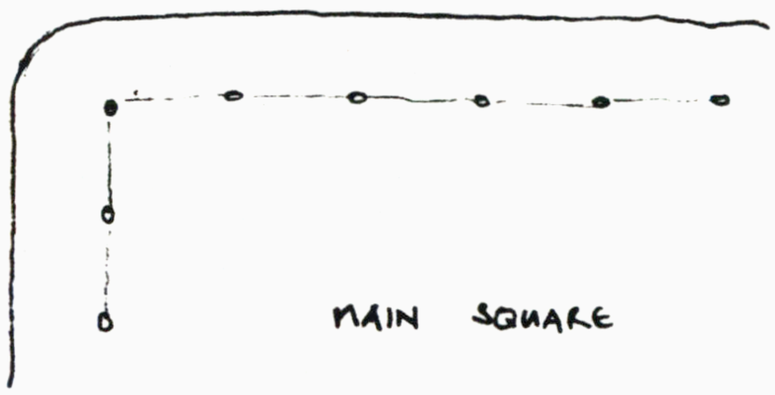
Vehicular Street and Pedestrian Path

OVERALL HOUSE DESIGN FOR LONG AND NARROW LOTS

Main Street and Main Square





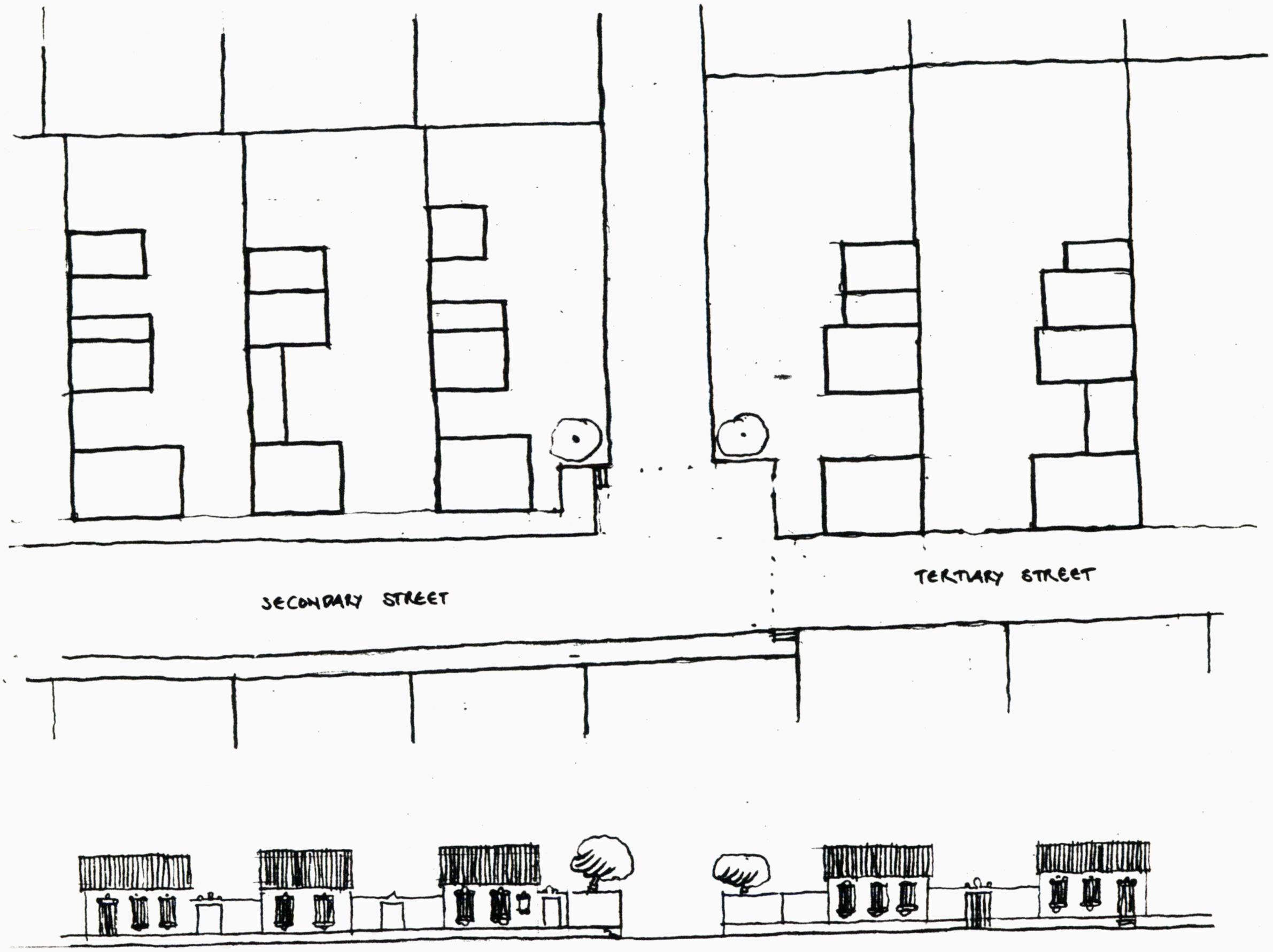


OVERALL HOUSE DESIGN FOR RECTANGULAR LOT

Main Street and Main Square

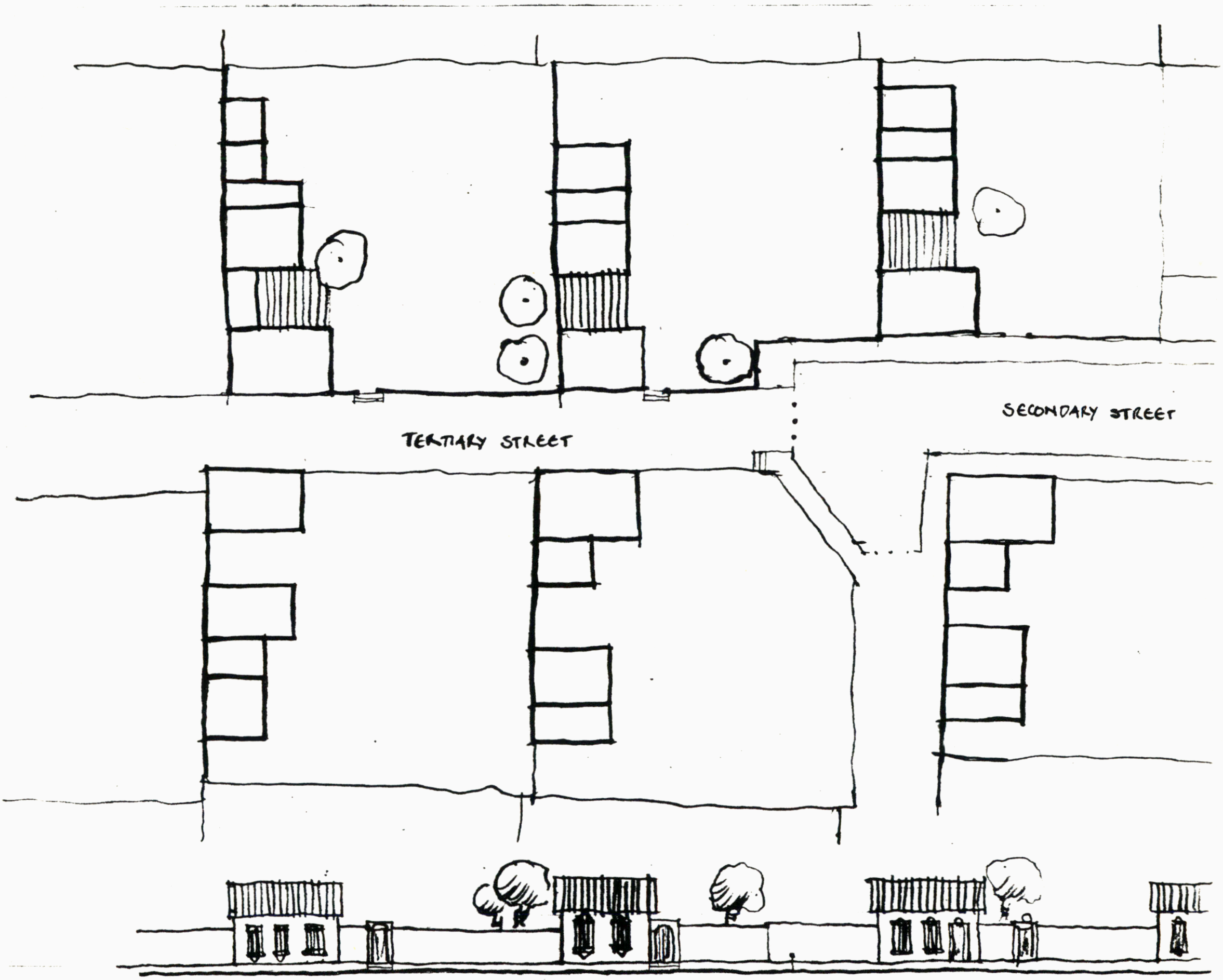
OVERALL HOUSE DESIGN FOR RECTANGULAR LOT

Vehicular Street and Pedestrian Path



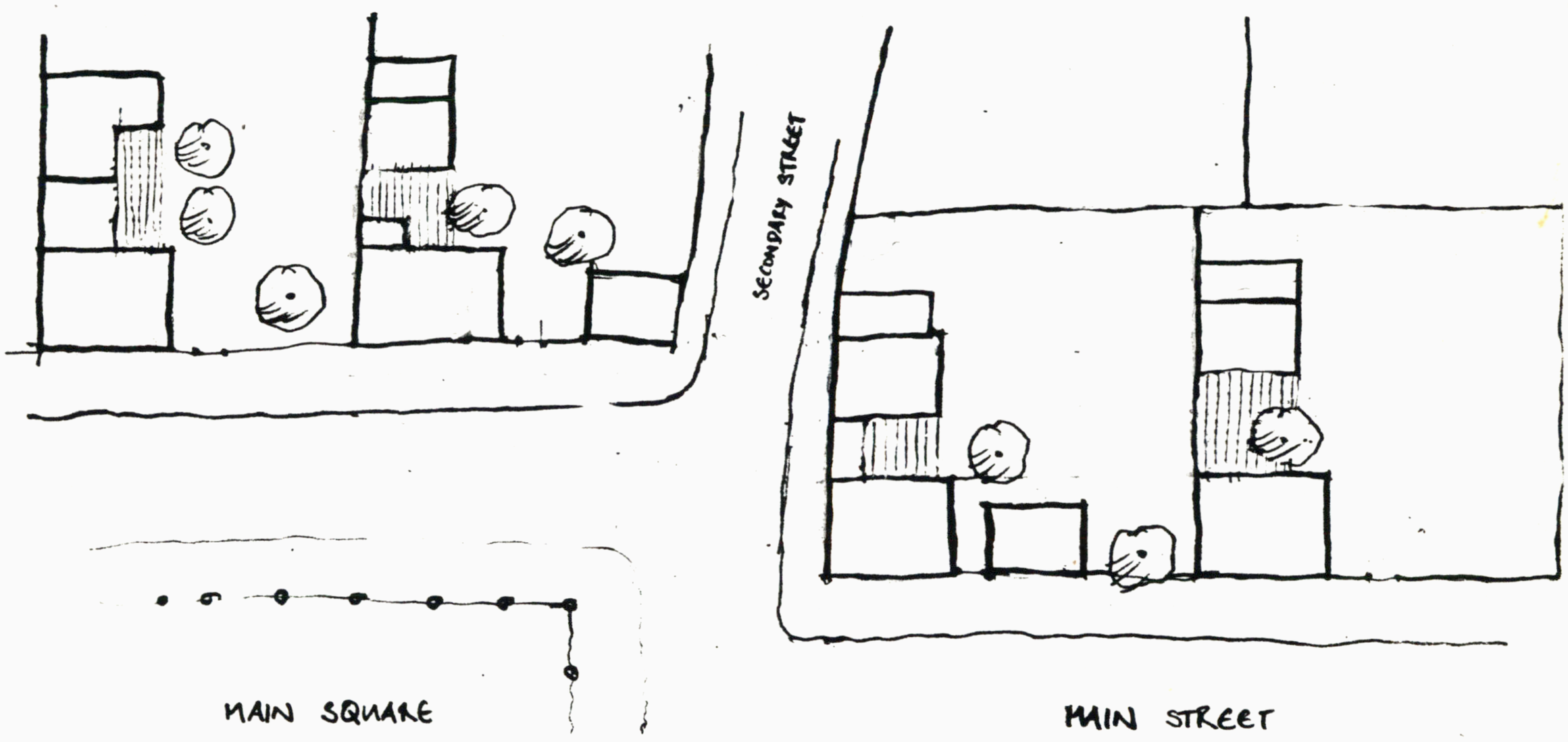
OVERALL HOUSE DESIGN FOR SQUARE LOT

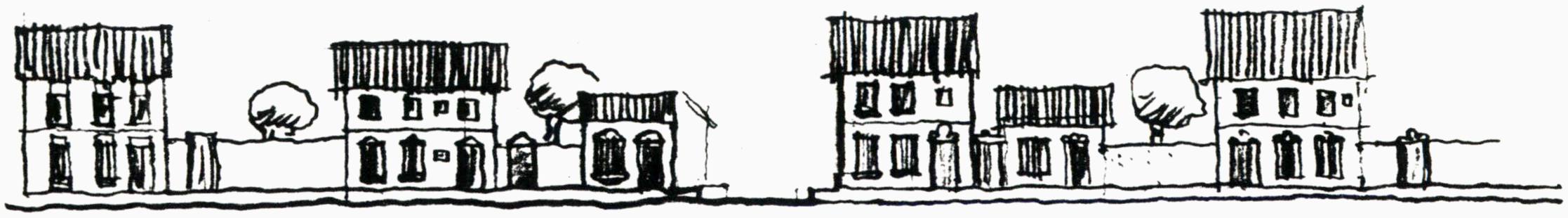
Vehicular Street and Pedestrian Path



OVERALL HOUSE DESIGN FOR SQUARE LOT

Main Street and Main Square





7. ASSUMPTIONS ABOUT THE GROWTH OF BUILDINGS AND SERVICES

1. The process of the physical development of the neighborhood is incremental on the overall, following the incremental layout and subdivision process for house lots.

2. The growth of individual houses is also incremental, based on the addition of new house increments, in the form of one room every year, depending on the financial situation of the family.

3. The houses along the main square and the main street are being completed in a much shorter time period than the ho houses on the perimeter of the neighborhood. (see average rates of growth of typical houses in section 3, point 4)

4. On the overall, the central area of the neighborhood will be completed after a short period of time (two years), while the perimeter of the neighborhood is still undergoing development.

5. The provision of services, water, sewage, electricity, paving, will also be incremental, following the development of the neighborhood. Services in the in the center of the neighborhood will be established faster, and on a more complete form, than services on the outskirts of the neighborhood.

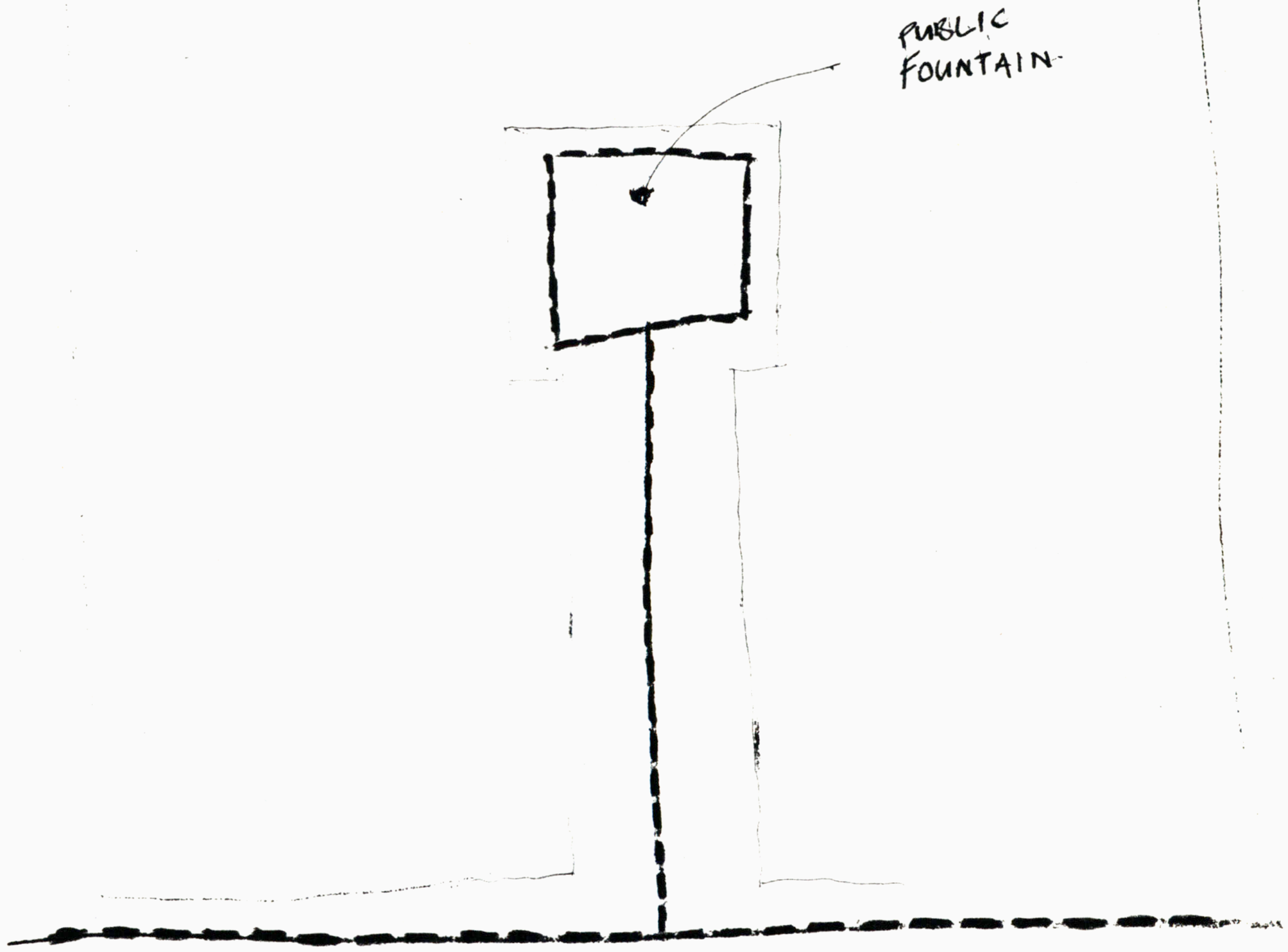
The following drawings represent the physical growth of the neighborhood. It is a simulation, based on the following assumptions, which, as we have said before, are valid only as average numbers which show the order of magnitude of things.

	1st	2nd	3rd	4th
Bs. 0-1000 ($50\ m^2$)	$16.5\ m^2$	$13\ m^2$	$10\ m^2$	$11\ m^2$
		2 1/4	1 1/4	1 years
Bs. 1000-2000 ($60\ m^2$)	$22\ m^2$	$15\ m^2$	$13\ m^2$	
		1 1/2	1 years	
Bs. 2000-3000 ($70\ m^2$)	$50\ m^2$	$20\ m^2$		
		1 1/2 years		

The text that goes with the drawings explains in more detail, what kind of increments are added in every stage of development.

DURING THE FIRST YEAR OF DEVELOPMENT

1. After the main central area is laid out and staked, public services (water and sewage) will be placed. Corpozulia will undertake the provision of this part of the services. The cost of the services will be included in the price of the lot. The first important service will be a water fountain on the public square.



2. The first increment of houses is always build along the roads.

If the house does not cover the whole width of the lot, then a wall has to be bult.

If the house is set further back in the lot, then there is always a garden front wall that shapes the boundary between the house and the street.

3. Side walls of corner lots, which define the beginnings of streets, should be placed together with the first increment of the house.

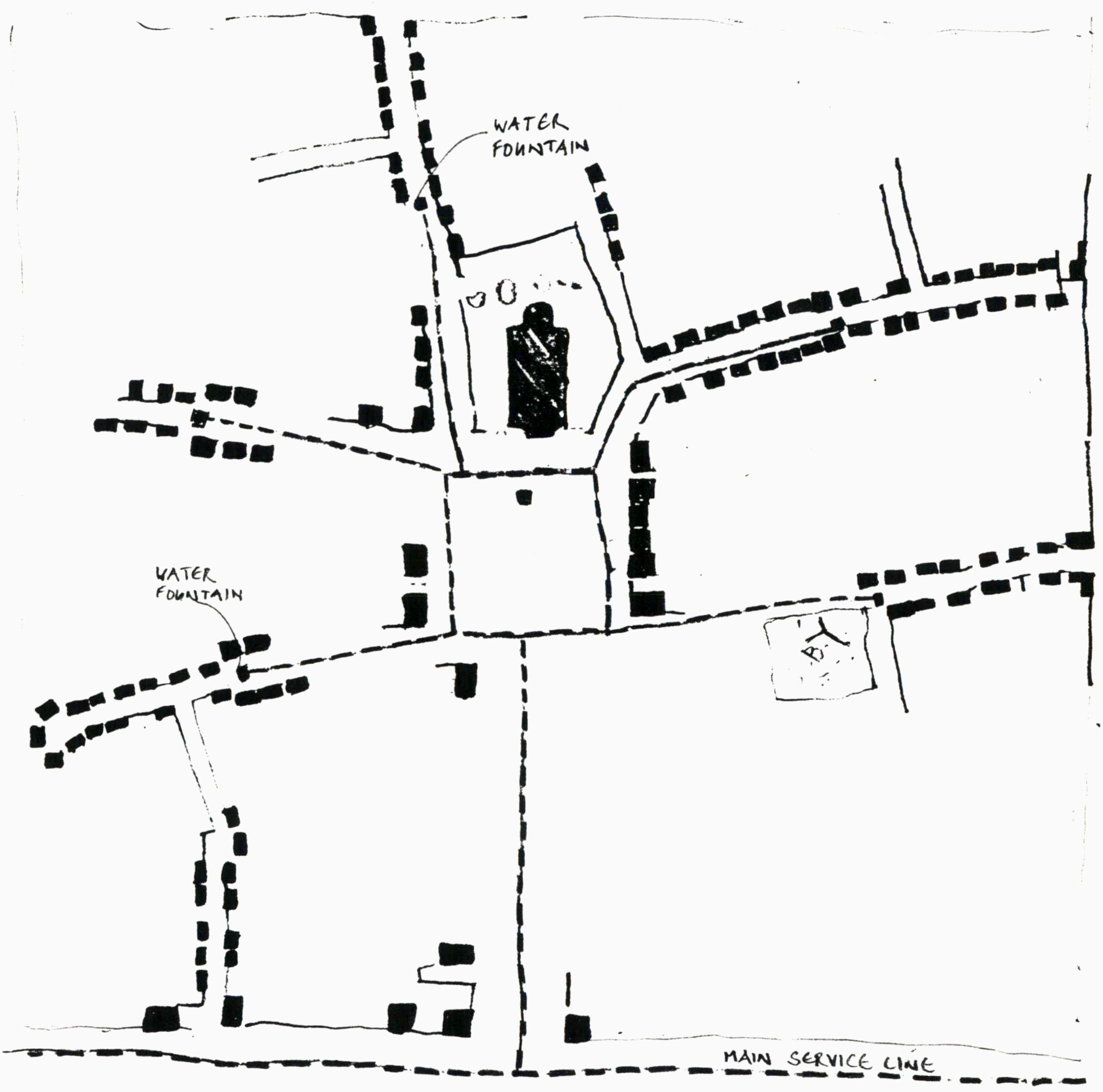
4. Within the first year of construction, all vehicular streets will be pinned down, that is their starting points and their ends.

5. Also, within the first year of construction, the service lines along the vehicular streets will be placed. Corpozulia will pay for the original provision (a sort of short term loan from Corpozulia to the families). The families will connect to the service lines whenever they have enough money,but they have to pay their share to Corpozulia of the provision of the public services within two years.

6. Roads are not paved in the begiining, after one year of construction

AFTER ONE YEAR OF CONSTRUCTION

7. At the end of every water line there is a public fountain; possibly, there is alsò a shed for dish and cloth washing. It seems that the water fountains will be major social places in the first years of the life of the neighborhood. Maybe, we can consider smaller cnters of the neighborhood at these points.



AFTER 2 1/2 YEARS OF CONSTRUCTION

8. All the land of the neighborhood is subdivided; if not, then all streets will be pinned down.

9. The main central area will be paved.

10. Every additional house increment is an individual building volume, distinct from the already existing structure of the house.

11. New increments can be attached to existing structure of house, but it should be distinct as a volume.

12. If the new increment is placed, detached from the already existing structure of the house, then it has to be placed in such a way that positive open space is created, which can function as a patio or small courtyard. This space may be covered.

13. There is always a wall connecting old and new structure along the property line.

14. If two adjacent families locate additional increments on opposite lot lines, then a wall is built along their common lot line, in particular, because of reasons of privacy.

AFTER 3 1/2 YEARS OF CONSTRUCTION

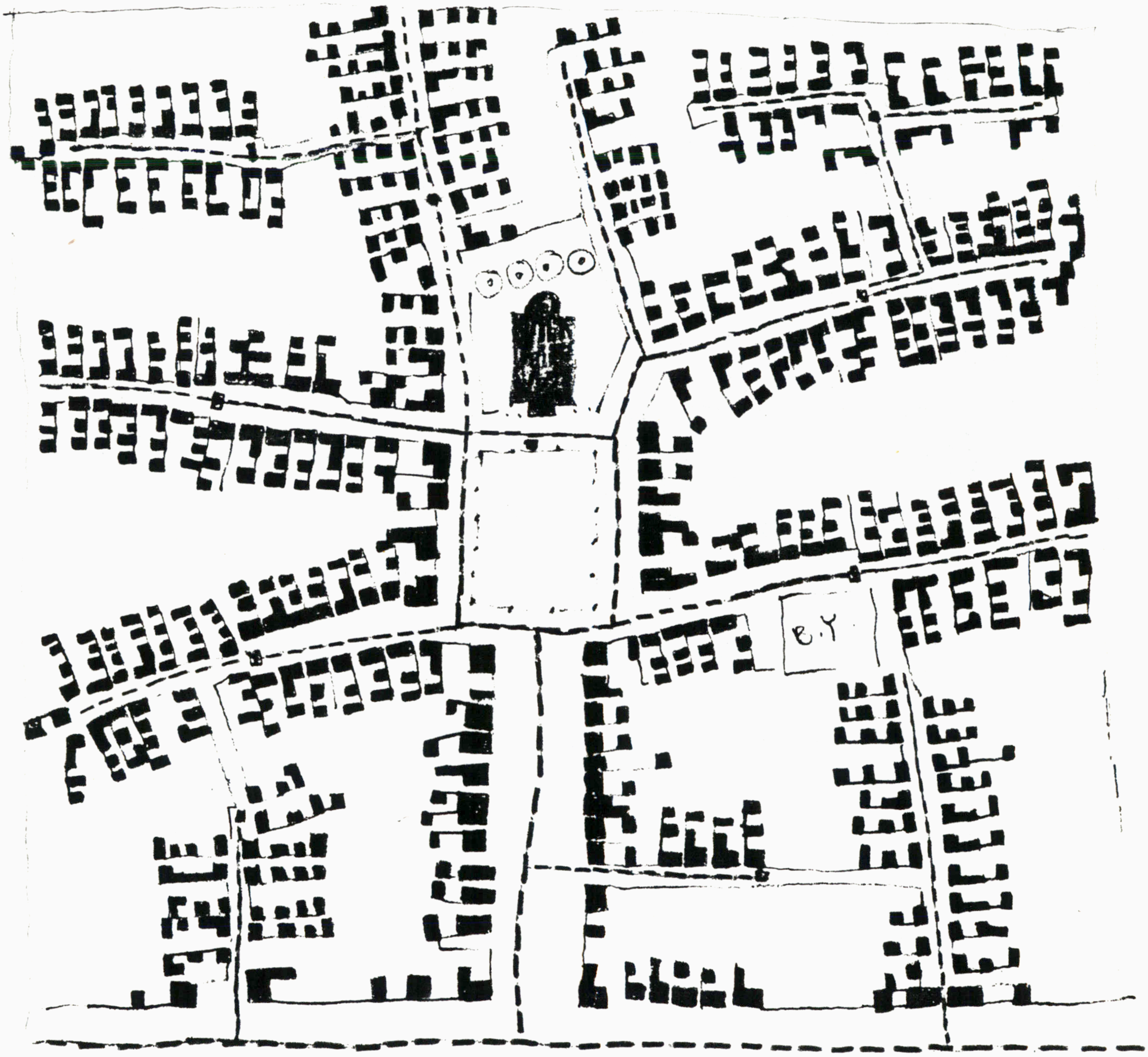
15. There will be public services along the pedestrian streets.

16. The procedure of connection to the service line, by families, will be the same as already described for the vehicular street sections (a sort of short term loan to the families, which they have to pay back within a certain period of time).

AFTER 5 1/2 YEARS OF CONSTRUCTION

17. The utility line system is complete, each lot can be served. Most of the people have already connected; the houses on the p periphery are still in the process of doing so. With more and more people connecting to the water and sewer lines, the public fountains will lose more and more their importance, in terms of water supply as well as social gathering places.

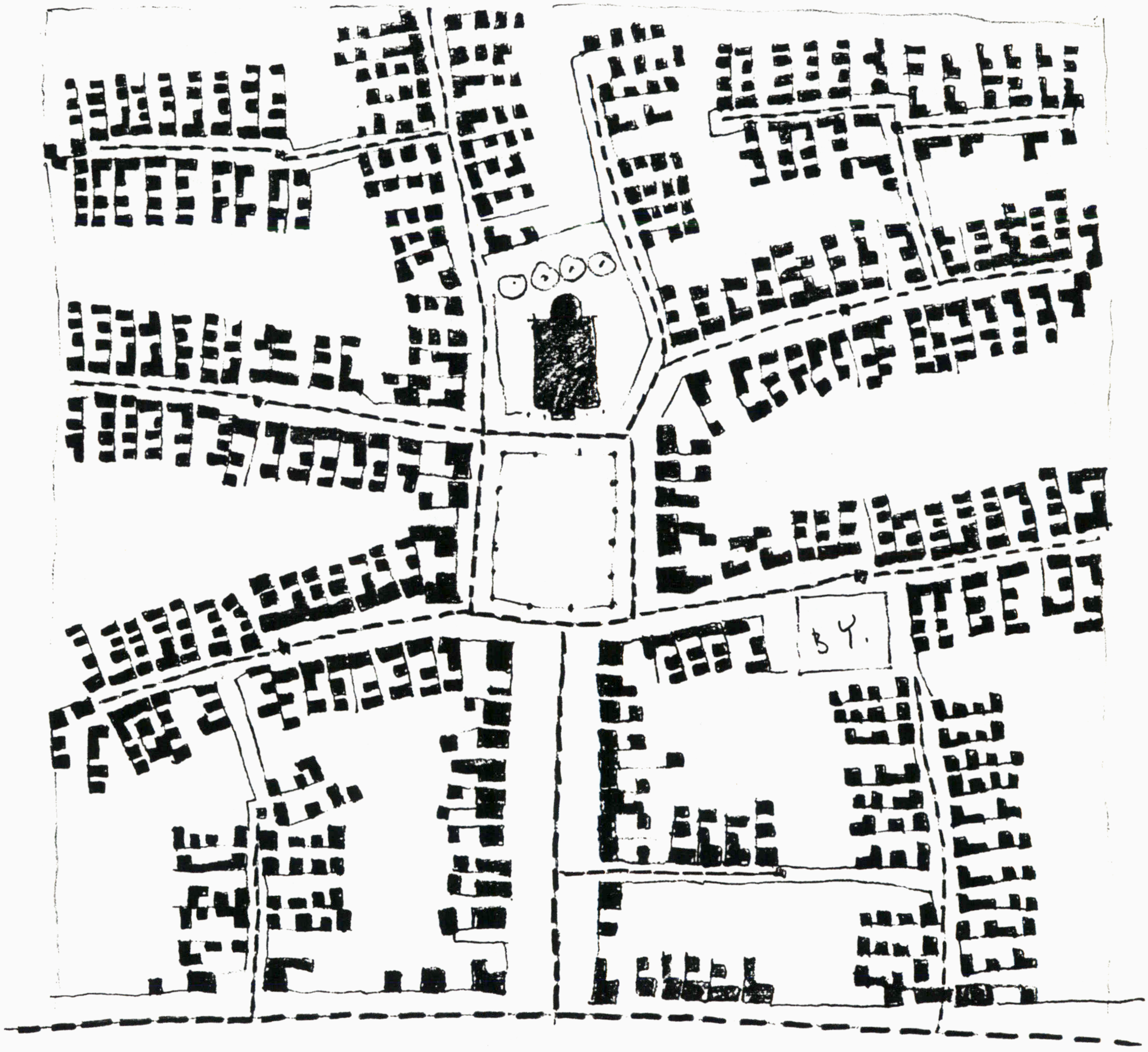
18. The vehicular streets are now being paved up to where the neighborhood fountains are located.



AFTER 6 1/2 YEARS OF CONSTRUCTION

19. All of the house construction is finished now.

20. Some of the pedestrian paths are being paved, but most of them will be paved in the future. They may have gravel as surface material now.



8. ASSUMPTIONS ABOUT CONSTRUCTION AND GROWTH OF HOUSES

1. We assume that all houses will be built according to a system of details, in general use within the neighborhood, approved by the local building department, and compatible with materials sold through the neighborhood's builders yard.

2. Probably this system of construction will be based on the use of concrete block, or brick.

3. We expect that at least fifty percent of all construction will be done by professional labor.

4. However, the system of construction will be simple enough, so that families can also use it for themselves, wherever they wish to become involved directly in the construction process.

5. The components necessary for this type of construction, will be available, on easy credit terms, at the neighborhood's builders yard, in accordance with the financing schemes defined in section 5.

6. The system of construction will allow for certain portions which are labor intensive, so that they allow helpful and beautiful details to be built into the houses, without unusual extra costs.