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AMERICAN UNIVERSITY OF  
BEIRUT

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PROJECT  
OF  
"A SUMMER COLONY IN LEBANON".

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Proposed to the American University of Beirut by :

RAYMOND S. GHOSN

as a thesis in Architecture, for the B.Sc. in C.E.

and studied under the tutورشip of:

Prof. K. YERAMIAN,

(Lafayette University, U.S.A.

Prof. of Architecture at the A.U.B.)

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PLANS ATTACHED TO IT

Project of a summer colony in Kaifoun (Lebanon)

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## I. STATEMENT OF THE PROBLEM

A group of persons decide to share the use of a piece of land in the Lebanon mountain and to organize it as a small colony for the summer seasons. The place is to consist of independant villas, (one for each family) with their private gardens and enough open areas to be used in community by all the members of the colony .

A land, having a total area of 89,130 sq.m. situated on a promontory of the village of Kaifoun, with a direct access from the main road, Souk-el-Gharb - Kaifoun - Ain Anoub is bought for the purpose.

The problem consists in planning this land, if suitable, and to design a type of villa which will meet the primary requirements, and provide for the best comfort of the associated owners .

A-. The Planning of the land should provide :

a) Adequate independant lots for villas (each villa of about 500 sq. m. including its verandahs and terraces, to occupy not more than 10% of the area of its lot).

b) Open spaces to be used as parks playgrounds and sports fields for all the members of the community .

c) Access from the main road, to the various villas.

Area of (b) and (c) together, to occupy about 30% of the whole land .

B-. The Architecture of the group of villas must show a type which can be adapted to the needs of the climate and to the surrounding

beauty of the site .

The main requirements for the planning of these villas is as follows : for the ground floor :

- a) hall
- b) library which could be used as an office when a talk for business is necessary
- c) drawing-room
- d) dining-room
- e) pantry
- f) kitchen
- g) guest-room with its small bath-room.

for the first floor :

- a) four bedrooms
- b) two bathrooms
- c) nursery
- d) hall

As accessories : a maids room, a laundry room , a garage to be placed where it is found suitable .

## II. CHOICE OF THE PROBLEM

This miniature problem of the "model village" is becoming a question of actual importance in Lebanon, (in the mountains especially) because the public is gradually feeling the need of an organized planning of its dwellings for community life. This organized planning may serve different aims :

1) The planning of a big piece of land with separate dwellings, independant by themselves but enjoying the use of common open spaces as is the case of this study .

2) The planning of separate dwellings depending of a main common building and grounds which gather in them the community, social activities and entertainments. This is the case of a hotel with its sports fields and small bungalows around it . The community center and the small dwellings are planned to form an entity and to complete one another .

3) The planning of an area to fit the biggest amount of small dwellings with the maximum of comfort and sanitation, as in the case of an industrial village with its residential quarter for the workers and their families, including open spaces, recreational buildings, cafeterias, etc.

4) The planning of a new village for summer as well as winter resort (if the place offers possibilities for winter sports) including residential dwellings, open spaces, commercial quarters with shops and markets, recreational centers, etc.

All of these aims and many others also, are different aspects of the same problem and they can offer many variations according to the place where they are carried out, to the will of the owner or group of owners, and to the idea behind such an arrangement.

But in each case the architectural design of the buildings must fit the purpose of the problem, allowing the enjoyment to the utmost of all the advantages that such an organization may provide .

It is due to the important advantages given by such a problem that people start to favour it :

From the economical point of view, it is obvious that to buy a big piece of land in bulk, reduces the cost price of its square unit (except in case of central city spots), especially if the land is not on a main road or in expensive districts. The low cost price of the land enables its owners

a) to divide it in such a manner that the lots given to the dwelling buildings be big and permit enough clearance and open spaces around them .

b) to allot parts of the land to the use of the whole group of inhabitants as for example in public gardens and forests.

c) to provide for an access from the main road to any part inside the land, thus improving its value .

From the point of view of the comfort of the group, the presence of a community permits the establishment of recreational

buildings and sports fields, for all its members (children and adults.). And in case the community is big enough to support them, commercial shops as grocers, butchers, hair-dresser, pastry shops, restaurant etc, will be available .

From the point of view of the buildings ,

- 1) Their cost price is reduced due to their uniformity, their number and the standardization of their units .
- 2) As to their beauty, it is natural that when a group of buildings is conceived as a whole, it benefits from this sense of coordination and order which is lacking and defectuous in another group which emerged independantly and without any previous study . In many cases it was found very difficult, expensive and sometimes impossible to beautify a district already built without enough restrictions and rules to insure the beauty of the place . When such a locality was growing gradually, it was difficult to foresee what it would look like once it is all built up . While in building a new district in all points according to a studied plan, taking into accounts all the requirements for the good aspect of the locality , the chances for a successful result are tremendously increased . The architect or group of architects will study each one of the plans of such buildings to act in conjunction with the others, to be the complement of the others. They will study the shape and the orientation of a building not only to the best advantage of the latter itself and of those using it but also to the best advan-

tage of all the group of buildings of which it is a unit .

The choice of one aspect of this problem as subject of my thesis, was influenced by the expected trend in the organization of residential houses into summer colonies, in the mountains of Lebanon .



### III. OUTLINE OF THE PROBLEM

#### 1-. General considerations about the terrain .

The land on which the colony is to establish, has a small facade, on the main road and is at an altitude of 650 m. above the sea level .

As can be seen on the contour map of Plate S.C.-1 , the plot of land has the shape of a pear with its axis held horizontally. The axis of the land makes an angle of  $80^{\circ}$  with the axis of the main road and is oriented North-East South-West. It occupies a total area of 89,130 sq. m. consisting of a main body, which is nearly a circle 300 m. in diameter, and a narrow stretch, about a 100m. long and 35 m. wide, which joins the main body to the road .

The contours show that the plot of land is on a hill which dominates a depression all around its main body .

The latter consists of :

- a) a central table land bounded by contour 650 and having a gentle slope of 2 cm per meter from its center to its periphery . This table land has an area of 18,900 sq.m.
- b) a ring of land of uniform width (about 70 m.), surrounding the central table between contour = 650 and the boundary line.

The part of this ring to the west of the main axis has a slope of 3 meters in 70 meters (between contours 650 and 647 on the boundary). But then the depression begins abruptly by a sharp cliff. The part of the ring to the east has a slope of 5 meters in 70 meters. This slope increases (between contours 650 and 645 on the boundary) . This slope increases gradually to continue the depression binding the western part .

The narrow stretch leading to the main road, slopes smoothly from the central table towards it with a difference of level of 3 meters in 170 meters (from contour 650 to the road).

The flank of the hill and the valley at its feet, are covered with pine trees . They offer to the eye of an observer standing on any point of the ring of the hill a carpet of variable soothing greens . In the same way the central table and the narrow stretch to the road are patched with thick bunches of pine-trees, while on the sloping ring around, the trees are less densely gathered.

Hence a big part of the periphery of the land commands a full view of gorgeous landscapes mixing harmoniously the silver blue of the sea with the red and white of the tiled houses of the village below, the green of the wavy forests and the azur of of the sky . The possibility of enjoying such a scenery is due to the hilly position of the land on a promontory .

The development of this advantage of the locality will occupy an important place in the planning of the land, the location of the villas in it, their orientation and their architecture (including plans and facades).

Are the location and the physical characteristics of this land, suitable for the problem studied here ?

The site being located near to an agglomeration has the big advantage of taking its supply of water and electricity from the mains of the village itself . In the same time the people of the community may find what they need in this neighbouring village ,

Many of the qualities which are wished to be found in the land on which such a project is to be performed are revealed by the characteristics given above and the contour map of the land under study .

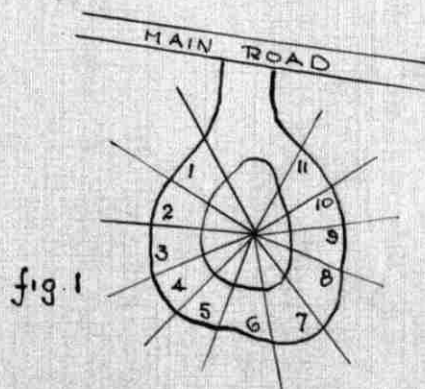
- a) Its regular shape permits an adequate division, mainly for the lots on which will be erected the villas .
- b) Its compactness adds much to its beauty by allowing every object of the location to give its share in the aspect of the whole .
- c) The regularity of its contours works in conjunction with the plainness of its shape .
- d) The gentleness of its slopes, inside its boundaries, facilitates the use and the enjoyment of the totality of the land and permits an economy in masonry in the construction of the houses .
- e) The steepness of the slopes outside its boundaries eliminates any fear of an obstruction of the panorama all around, thus permitting the location of the villas anywhere, and the enjoyment of a full view of this side of the mountains .
- f) The small slope from the central portion, to the main road, provides a very easy access to the land .

b) The planning must provide an easy access to all the houses i.e. the lots for houses should be on a private road linking them together and to the outside main road .

c) The planning will provide enough clearance around the houses and large areas for open spaces, as required .

A study of the map suggests the following idea : In order to give every villa an equal benefit of the panorama of the valley, they should be located on the periphery of the land which is occupied by the ring already referred to, <sup>The latter</sup> will be divided into lots on which the villas will be erected, while the central flat part will be used as recreational open spaces for the community, together with the stretch between the center and the main road . In this manner the bunches of trees, which adorn the central part will be left untouched and will present a charming park to the sides of the villas turned towards them .

The ring must then be divided by radial lines into lots of similar dimensions, shape and configuration, extending all of them from the central park on one side to the valley on the opposite side . The advantage of such a division is that the area left for open spaces is of a compact shape occupying the center of the land and so allowing all the lots and the houses around to profit from it equally . The flatness of the central park favours its easy use for recreational fields (tennis courts, lawns for volley ball, basket ball..etc).



g) The presence of trees everywhere on the land answers well to the spirit of the problem which is " a residential quarter for a summer colony" and increases the charm of the place .

h) The physical properties of the subsoil, where rock is found at a very shallow depth is a big economical advantage .

A small disadvantage however is that the part of the land between line L - L and the main road, does not enjoy a view on the valley due to the shape of the plot . Had this same area of land been nearly in half a circle, with the same sloping ring on the periphery all its points would have shared the view of the lovely sceneries around . But this disadvantage, in our case, is to be forgotten, compared with all the advantages procured .

## 2-. Planning of the land .

The planning of the land will be based on the use of its advantages and qualities to the utmost, constantly keeping in mind the spirit of the problem , which is : " A Summer Mountain colony for families", or better : " A vacation colony". From the preceding titles it is understood that the inhabitants of such a colony are people with much leisure time, and who resort to this place to enjoy a healthy life and beautiful panoramas . Such a consideration leads to the following directions :

a) The land will be planned in such a way that all houses on it will benefit equally of its advantages .

As for the access from the main road to the different parts of the land, a minor private road in the shape of a loop will pass along the inner boundary of the lots, thus separating the purely residential area from the community middle space and giving access to any point of one of the two, without having to cross the other. The straight part joining the central loop to the main road slopes down gently passing through the narrow stretch of forest which will be an inviting site for promenade and pic-nic for the children of the community and an impressing alley for the visitor entering into the colony /

In order to abide with the spirit of the place, the private road will be considered as a drive, following leisurely the lines of the contours .

Now that the rough division of the land into three distinct zones is decided upon, the rigorous delimitation of each zone must be fixed according to the need of the problem .

Fixation of the boundaries of the division : The built up area of each villa (including verandahs and terraces ) is 450 m<sup>2</sup> and must not exceed 10% of the area of its lot . Therefore, the minimum area of a lot is 4500 m<sup>2</sup> . Taking as their interior limit the contour 649.25, the average depth of the ring of lots is 70 meters and the average width of each lot will then be around 65 meters and the ring will hold 11 of these lots, all of which are on the circular loop .

The circular portion of the road will be along the inner boundary of the lots. This drive, with a roadway of 6.00 meters between curbs, with a paved sidewalk, 1.25 m. wide, against the wall fences

of the gardens, can hold a two-way traffic. At the junction of the two sides of the loop, a channelisation of the traffic by a safety island with green trees in its middle, avoids any danger of accidents at this point . The straight part of the drive from the center to the main road has a roadway of 7.00 meters with a sidewalk on each side of the road .

The flat area enclosed by the circular loop of the drive and used as a park, occupies, together with the drive around it, an area of 18,900 m<sup>2</sup>. The straight drive with the forests on each side, occupies 10,270 m<sup>2</sup> ; total area of roads and open spaces = 29,170 m<sup>2</sup>. The percentage of community open spaces to the total area of the land =

$$\frac{29,170}{89,130} \times 100 = 33\%$$

Had this percentage been far from the one imposed by the problem the diameter could have been reduced, thus decreasing the open middle space and increasing the depth of the ring of lots or vice-versa .

Along the curb limiting the middle park a horizontal belt, 3.00 meters wide, will be left unobstructed and without plant to be used as a parking land in case of many cars in front of one same house and also in case of a parking at night . To this effect the inner curb will be low and with rounded edge .

From the inside line of the belt, the ground will rise to about 50 cm above the road level, This change of level between the drive and the park area gives a personal character to each one of them .

3-. Planning of the villas ;

A. Ground floor ;

In planning the ground floor of the villa which is to represent the type of the colony houses, the following ideas must prevail :

a) The house should be of a compact shape, so that each room would have not more than two walls exposed to the exterior .

b) In order to give to all the reception quarter (Library, Living-Room, Dining-Room) the benefit of the valley panorama, they should occupy two adjacent sides of the house, which will be turned towards the valley .

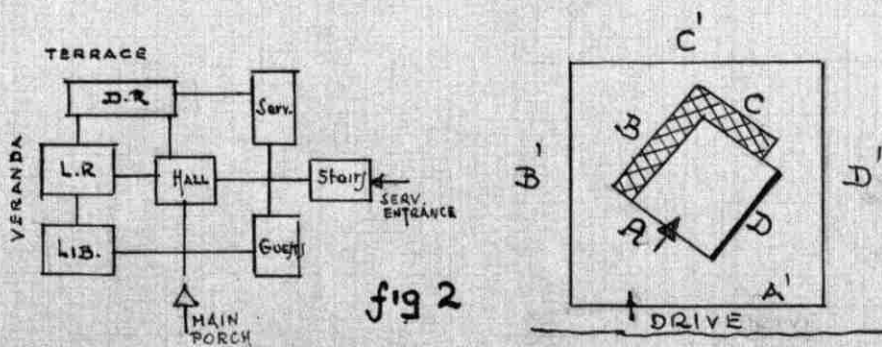
c) When stepping from the drive into the garden of a villa, the first inviting facade should be the one with the main entrance porch.

d) The remaining and least advantageous facade will hold the service quarter with the stairs leading to the upper floor .

e) The facades turned towards the valley must include enough verandahs and terraces in direct communication with the reception rooms and which will offer unequalled resting and entertaining places in the open air .

f) The library must have a direct access from the entrance door, independent of the rest of the house .

Representing schematically the house by a square with facades





A,B,C,D, and the lot by a rectangle A'B'C'D' (A' being the side on the drive and C' the side on the boundary) it is found that to turn facades B and C towards the valley, the entrance side of the house "A" will make an angle with the axis of the drive .

Using the middle portion of A for the entrance porch, and applying the division scheme of fig 2., the vestibule and the hall come behind the porch in the central part of the house; the portion in the shape of an L, on the two sides B and C will include the reception rooms, the portion on the corner of C and D will hold the service quarter with the stairs and the corner A-D will be devoted to guest accommodations ( a guest-room with its bath, a vestiaire and a cloak room).

The detail division of the ground floor into the different required items is shown on plan S.C. - 3 .

Advantages of such a division :

The rooms are grouped according to their functions, each group being independant of the other and occupying the adequate part of the house, and yet communicating with one another as directly as necessary.

a) The group of the reception rooms : (Library, L-R. and D-R.): The three rooms communicate directly with each other and likewise, everyone of them communicates with the entrance porch through the hall and vestibule. The independant access from the entrance to the Library permits it likewise to be used as an office for Business . When the wide sliding door between the L.R. and the Hall is opened, the latter becomes an integral part of the reception quarter .

b). The service quarter : (a pantry, a kitchen, a storage room, a service stair case, and the service entrance): The kitchen communicates with the D.R. through the pantry; with the hall and the stairs leading to the first floor through a corridor which minimizes the effect of the noise and smell, resulting from the cooking, on the rest of the house . With the help of the service entry, the service entrance does not open directly onto the kitchen and in this way a second entrance door, communicating directly with the stairs and the main hall, is given to the house . This secondary entrance will be used for the service and in the same time for the inhabitants of the house, mainly the children, when there is no need for them to pass by the hall and the reception quarter .

c). The guests accommodations (Lavatory and W.C., cloak room, guest-room with special bath), are grouped around a passage which opens onto the vestibule. They are thus on the way of the guest who enters or quits the house, and do not interfere with the central part of the house. The guest-room with a private bath-room (including a shower, a lavatory basin and a bidet) and a special deep closet, can be reached directly from the vestibule and also from the service corridor, offering to its user commodity and privacy . The service corridor links it directly to the service quarter, to the central hall, to the first floor and to the secondary entrance of the house . In case there is no need for a guest-room, the position of the latter entitles it to be an every day L. R. and D. R. for the family .

d) The main staircase, starting from the hall, through the service corridor on which opens each one of the groups enumerated above, can hence be reached from any one of them independantly. It separates the guest-room from the noisy service quarter. By its position near the secondary entrance to the house, it offers an access to the first floor, independant from the central hall. Same thing is possible with the service stair-case which starts near one of the kitchen doors, passes by the maids' quarter, the first floor and ends on a roof terrace .

The facades B and C, facing the valley will include an L shaped terrace, with, in its corner, some steps leading down to the garden. By covering part of this terrace in front of the wall B, we will somewhat preserve the 3 reception rooms from the direct atmospheric effect and provide a lovely shaded place for entertaining guests any time of the day. The terrace by its position becomes a part of the reception quarter but in the open air. It is a raised paved platform of the garden among green trees and dominating a valley .

#### B-. First Floor :

The disposition of the rooms in the ground floor was bound also by the adequate division of the sleeping quarter in the first floor.

In the latter a hall H is taken right above the hall of the ground floor, (see fig. 3) with the two stairs S and S' ending on it. After taking also the same room L above the L.R. of the ground floor the first floor area comes to be separated into two parts E and F in which 4 rooms and 2 bathrooms ( 2 rooms and a bath room in each one)

must be fitted. In part F the two rooms will have to come above the Library and the guest room, with the bath in between above the vestibule. A corridor between the three will group them into one apartment with one door onto the hall .

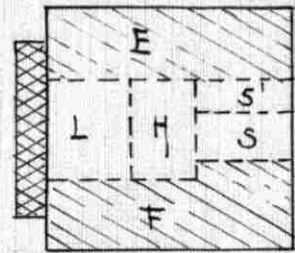


fig 3

In part E, the space above the kitchen will be left for a roof terrace. Two rooms with a bath in between, linked together by a small passage opening also onto the hall, will occupy the space above the D.R. and the pantry .

The detail division of the first floor is shown on plan S.C.-3

Advantages of such a distribution :

Facade B is taken by 3 adjacent rooms which can be provided with a common balcony, above the verandah of the ground floor, and dominating the valley .

In the same way the two rooms on facade C are linked by a balcony above the projecting pantry, and drinking nook of the ground floor .

A great part of the bed-rooms, in the first floor, is oriented towards the South-West, which is the exposition longed for, in this country, in the case of the sleeping quarter .

As regards to the relation between one room and another, this model plan of the 11 villas must suit families of different compositions .

At a first glance, the plan of the first floor shows two independent apartments (of two rooms and a bath-room each) linked together by a spacious room .

a) In case the family includes children, the middle room (3) can be occupied by the father and mother, because, aside from being spacious and opposite to a bath-room it has a door on each of apartments E and F and has thus a relation with any room of them. Room (5) would be used as a day nursery . It has the advantage of opening also onto the service staircase which leads up to a roof terrace, and down to the garden. In this way the small children occupy a special aisle of the house, moving in and out, taking meals, playing and sleeping, without ever interfering with the activity of the rest of the family .

According to their growing age, children will shift from the nursery to rooms (4), (2), (1) successively .

If not necessary as a bed-room, room (1) has a door on the hall and serves as an intimate drawing room . It has a special balcony and is near to the main stairs.

b) in case of grown up children who do not need a special care from their parents, the father and mother may occupy apartment F (either for two bedrooms with their bath or for one bed-room, one boudoir and their bath-room in between). The children would occupy apartment E, with two bedrooms and a bath<sup>in</sup> between . Room (3) would then be left as intimate drawing room, in which the children may also entertain their friends .

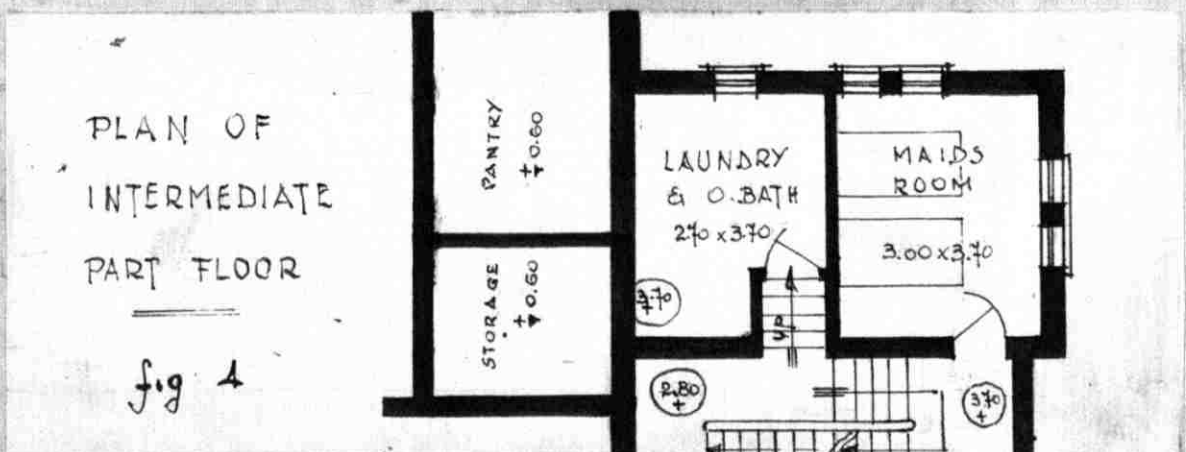
The hall, in all cases, assures the link between all the rooms and the two stairs. If properly furnished, with a fireplace in one of its corners, it constitutes a good gathering place for the family .

A point to be noticed : When the three doors separating the hall from the sleeping apartments, and the door between the nursery and the service staircase, are all closed, the five rooms communicate together and are closed to any outsider. In the same way, any one of the two apartments can be secluded from the rest of the house .

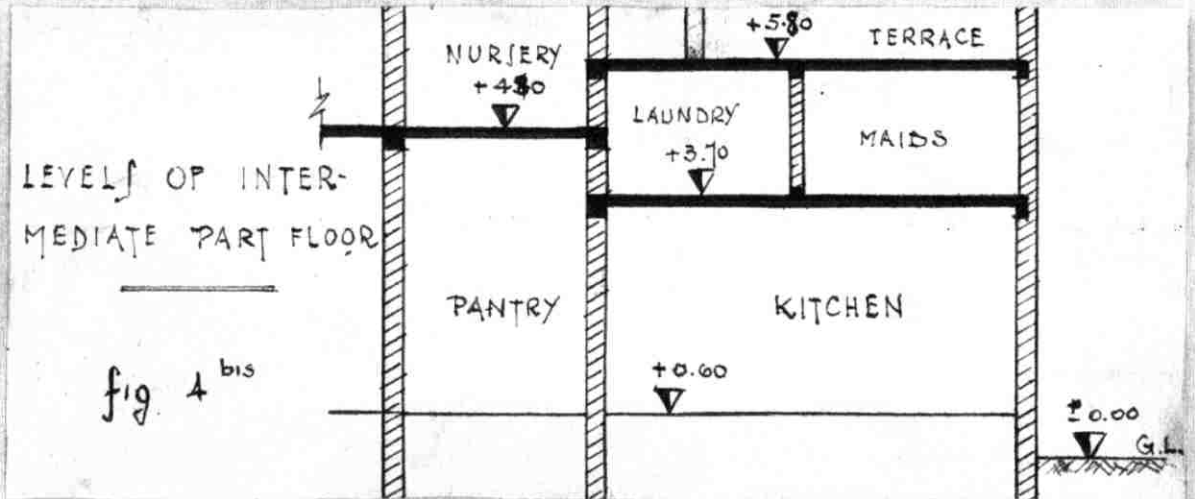
Height of floors : The clear height of the ground floor between floor level and ceiling is 4.10 m, and that of the first floor is 3.60 m where the sloping roof does not interfere .

C-. Intermediate part floor : ( figs. 4 & 4 bis )

As mentioned before, between the ground floor and the first floor, the service stairs pass by the maids' quarter which includes a bed-room and a laundry room (with a shower and a W.C.) both occupying the space above the kitchen. The kitchen will be 3.00 meters high and if the laundry room above, be 2.00 meters high, the slab covering it,



will be 1.10 m higher than the first floor, hence the need of the service stairs to extend up to this level which is used as a roof terrace for the laundry to dry. This terrace has a high parapet and may be used as a play-terrace for the children .



The available space in the attic above the main staircase and room (1) will include a reservoir for the water supply of the house, and a space for storage of unnecessary objects . It is reached by ladder from the last landing of the service stairs .

D-. Basement Floor :

The service stairs extend downwards from the ground floor to the basement in which a garage and a room for the driver, with its oriental bath, are arranged, where the slope of the ground permits it .

D-. Facades of the villas :

In the choice of the type of architecture to apply to the facades, and the type of construction, the following facts must be taken into consideration :

- a) The purpose of use of the building.
- b) The place where it is to be built and its surroundings.
- c) The climate it will have to bear.
- d) The available building materials .

From the subject of the problem "The architecture of a group of first class residential villas for a small mountain colony", the purpose of use of the building is clearly defined . This mountain colony is mainly for summer vacation . The idea suggested by it is that of rest, comfort and beauty. A point to emphasize is that the villas must form a coordinated group. Therefore, <sup>a</sup> living feature which would break the monotony caused by a repetition should be found in their architecture .

The site of this colony is on a hill covered with trees and surrounded by a green valley. This hill being at an altitude of 660 m above sea-level, cold with much rain and snow sometimes, are to be expected in winter. In summer at certain hours of the day, the heat is strongly felt .

Since the villas are to be built in the mountains where stone quarries are numerous and offer a durable material of beautiful aspect, the type of construction to be used will be that of stone masonry .



To be in accord with the preceding facts, the most suitable type of architecture to be applied to the villas of this colony is the "modern rustic type" . This type is attractive by its various features and can break the uniformity brought by repetition. It also answers to the spirit of the subject which is " a vacation colony" by its close relation to the country and summer houses.

By its non-rigidity it matches well with the ruggedness of the surroundings .

Its good adaptation to "hip-roofed" buildings increases its advantages because of the great influence that this sort of roof has on the effects of the climate in places where cold and heat are felt alternatively .Stone masonry is very adequate to this type of architecture, and they form together a combination very near to the nature of the place .

#### 4-. Planning of the central open space :

The central space, bounded by the loop of the drive, beside being a community garden, must offer possibilities of outdoor entertainments and sports, to persons of any age, mainly for the youngsters. It is in a way the club for sports of the community.

Its planning is shown on the "General Lay-Out"plan S.C.-2. It is noticeable on this plan that care was taken to leave a green belt all along the drive, beside the parking space, so that the drive be bordered by trees .

In the widest portion, a group of two tennis courts are placed

adjacently with a raised platform along two of its touching sides. This paved platform has pergolas on one side and on the other side three ping-pang tables under a covered space. On the platform, under the shaded pergola, people will sit down to watch the tennis games. Electric poles on the courts sides will induce them to organize evening games with dancing parties. They will invite also their friends from the neighbouring villages to come and share their entertainments.

On one side of the platform a space is to be arranged as a nursery for the small children. This nursery must include a big room with three side walls only, serving as a closed verandah for the days of bad weather. Sand boxes in front of it, with see-saws and swings a little further, will make the delight of the children. This nursery will group the children together and will prevent them from being among the grown ups and disturb their games.

In the space left to the south of the tennis courts a flat lawn must be prepared to be used for any sport requiring a large undisturbed area. Grown-up children will play on it foot-ball, basket ball, volley-ball badminton, etc... It cannot be said that the park is complete if a water surface is not included in it. A small pond with comfortable benches under a nearby pergola, placed in between the converging sides of the drive in the middle of trees, will give to the place an impression of serenity. It must be big enough to allow children to row on its surface in a small dinghe, thus adding a new attraction to the beauty of the place.

All the remaining space of the park, together with the narrow stretch of forest in between it and the main road, provide lovely spots sheltered by green trees.

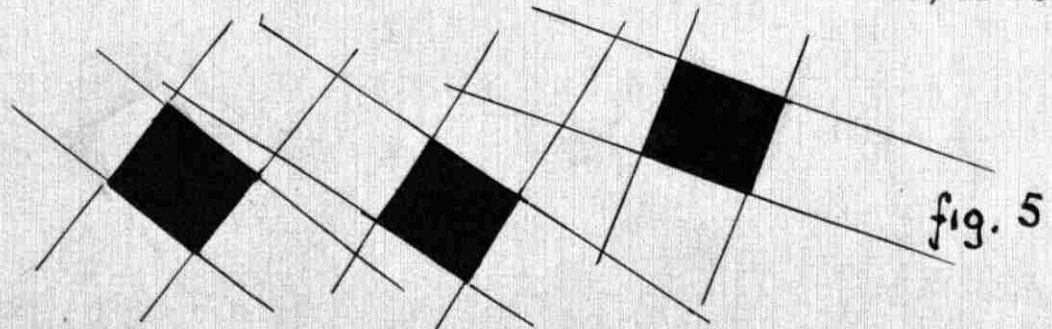
On the main road, the land is bound by a high fence with a wide gate in its middle . Near the gate, a small lodge with two rooms, a bath-room and a kitchenette will shelter the gate-keeper of the colony.

5-. Division of the lots and the location of the houses in them :

Usually the location of a building depends on the division of the lots, but in the problem here the division of the lots depended on the location of the villas .

As already stated, to give the latter a proper location, the sloping part of the land was devoted to them . Then the division of this ring into lots was made after the definite locations of the villas were decided upon . This interchange of the usual steps followed is due to the following points .

a) Since the area available for each lot is big enough, a house should be located in its lot, in such a way that it will not obstruct the view for the two adjacent ones . That means, if we



produce the four facade planes of each villa, they will not cross

any part of the two adjacent buildings. In this way the openings of the four facades of each building have an unobstructed view of all the surroundings (see fig. 5).

b) Each villa should command the maximum view possible of the sea and the valley. As it was said before, the two corner sides, which include the reception quarter, must face the sea. Then, when casting a ray from each end of these two corner facades to the obstructing corner of each of the adjacent villas, the angle formed by these two rays are the limit of the clear view of the panorama that can be enjoyed by the two corner facades facing the sea. (see produced lines of buildings on contour map S.C.-1).

The above directions explain the fact that the villas are not located in a regular way, with their corresponding sides parallel to each other or to the binding drive, that they are not all equidistant from the drive, that they are not oriented all in the same direction .

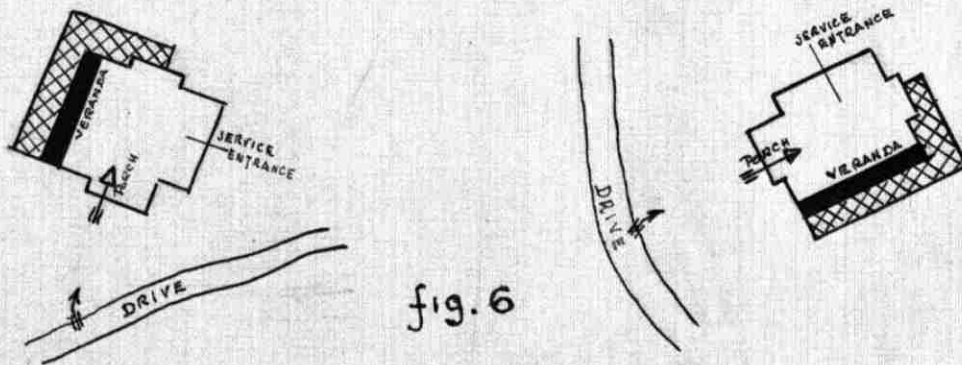
This irregularity in the locations of the villas was also found in accord with the idea of creating an agreeable variety in the display of the facades to a visitor following the drive .

Meanwhile care has been taken in most cases that the sun would not attack, in the afternoon, the side of the villa with the Library and the L. R. . The villas being located according to these requirements, in the space between the drive and the external limit, the radial boundary line separating one lot from the other is laid out

in such a way that the lots be nearly of equal areas .

The first of the two above requirements could be applied to all the villas but the second one could not fit properly lots (1) and (11) which can enjoy no view of the valley, and so the facades of their houses, with the reception quarter and terrace, were turned towards the lovely forest forming the entrance to the land.

As it is noticed on the map S.C.-2, the location plan of villas No. 2, 3, 4, 5, 6, and 11, is according to the plan shown on map S.C.-3 and discussed in the paragraph "planning of the villas" . For these villas, a visitor, when stepping from the drive into the lot, finds the entrance porch in front of him, the verandah to his left and the facade with the service entrance to the



right. In this way the verandah and the terrace are turned towards the valley except villa No. 11 with its verandah towards the forest. (see fig 6., above).

In order to expose the verandah and terrace of villas 7, 8, 9, and 10 towards the valley likewise, keeping always the entrance

porch towards the drive, the plan is rotated through  $180^{\circ}$  around its horizontal axis passing through the porch and the hall (see fig. 6). In this case a visitor would see the entrance <sup>porch ahead, the veran</sup> to the <sup>dah</sup> right and the service entrance to the left .

Driveways in the lots : The garage being placed in the basement of the house, where the slope of the ground permits it, a small driveway connects it to the private drive . This paved driveway, 3.00 meters wide, (for one way traffic) has got raised flower beds along its sides to act as curbs. It starts perpendicular to the drive and after a straight stretch turns down to reach the hind part of the house . The curve must have a minimum radius of 20 ft. according to the specifications given by the book on "Architectural Graphic Standards" by Charles Ramsey and Harold Reeve Sleeper.

In front of the garage, the driveway takes such a shape that it gives a car the possibility of making a complete turn, The specifications for such a planning, as given by the same book are shown in fig. 7.

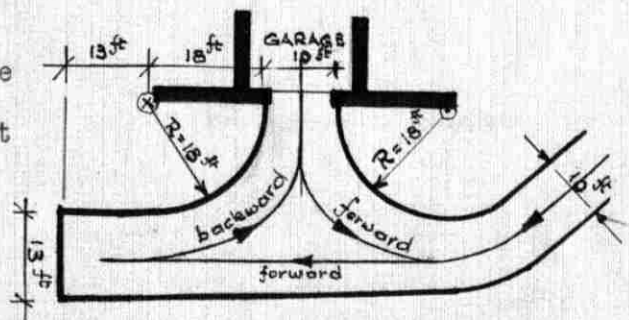


fig. 7

At the entrance to the driveway, the fence wall is rounded and the gate retreats a little bit thus breaking the monotony of a continuous fence wall and facilitating the entrance of the car to the driveway. The fence wall is low (about 80cm above the sidewalk)

just enough to mark a separation between the gardens and the drive. In the curving part of the fence a small door is opened for the people and a small pathway, 1.00 meter wide takes them directly to the main entrance porch, (if not too far from the drive). If desired, the driveway could be joined to the main entrance porch by a circular loop.

In most of the villas, the driveway passes in front of the service entrance, to which it is joined by another pathway, thus permitting the car to be reached near to an entrance door in case of emergency .

The interior stairs, from the service quarter down to the basement, provide an easy way of reaching the garage interiorly in winter, in case of heavy rain .

A small stretch opposite the service entrance, is left without curbs so that visitors cars, in case of bad weather, may be parked near it .

#### 6-. Sizes of rooms and details of the interior planning :

It is difficult to specify rigid rules for the dimensions and shapes of rooms in a villa . Everything depends on the persons who will inhabit it . Their social duties, their activities, their intimate way of living . But there are certain minimums which guide the architect in his design . For example, reception rooms can be based on the proportion of 2.50 sq. m. of floor area, per person, as a minimum allowance . In the problem here  
/. a minimum of 3.50 sq.m. per person is required, with, in case of a party or formal reception, an average total of 30 persons who

will scatter around between the hall, the L.R., the Library and the D.R. These four rooms must have therefore a total minimum area of 105 sq.m. In order to avoid too many eccentric partition walls, plan S.C.-3 shows that the Library and the L.R. have the same width and the L.R. and the hall the same length .

Beginning with the D.R., its length is considered to be governed by the length of the middle table, the clearance at each end and the width of any cupboard against the wall .(See fig.8).

Taking the case of 12 persons seated at the table, which is extended for the occasion, and allowing 70 cm for each person on the sides, 50 cm for each person at the ends, and 50cm plus 70 cm for clearance and cupboards or serving tables, the length of the room be-

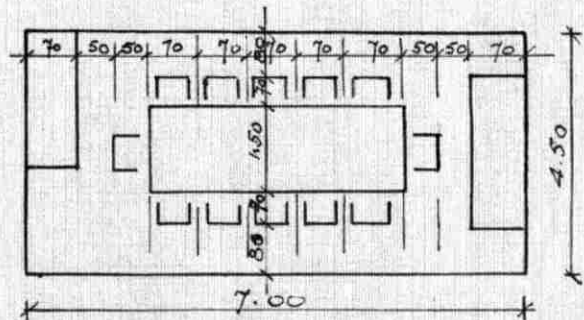


fig. 8

comes 6.90 m. If we assume a width of 1.50 m, for the table and a clearance of 1.00 meter on the sides, with no obstructions, the necessary width of the room is then 4.50 m. Therefore the gross dimensions of the D.R. can be 7.00 m x 4.50 m. When the table is folded to a length of 2.20 meters the clearance at each end increases and the room looks more spacious .

If the L.R. and library are given a width of 5.50 m. enough clearance



is left for a door to be opened from the D.R. on to the hall . The library has therefore one of its dimensions of 5.50 m. and in order to make it hold about 6 persons, its other dimension must be of 4.00 meters minimum .

The living-room 5.50 m. wide must be in a position to take 10 persons . Its length has to measure at least  $\frac{3.50 \times 10}{5.5} = 6.40$  m.

The hall, 6.40 m. long with a width of 4.00 m., holds easily 7 persons . The guest room 4.00 x 5.00 has an area of 20.00 sq.m. which exceeds the fair minimum of 16.00 sq.m. to be allotted to a bedroom. It has also the advantage of a big closet 1.30 x 1.20 built in the wall under part of the main stair landing . The special small bathroom attached to it, of 5.70 sq.m. gives enough space for a shower place 1.00 x 1.00 clear, a lavatory basin and a bidet .

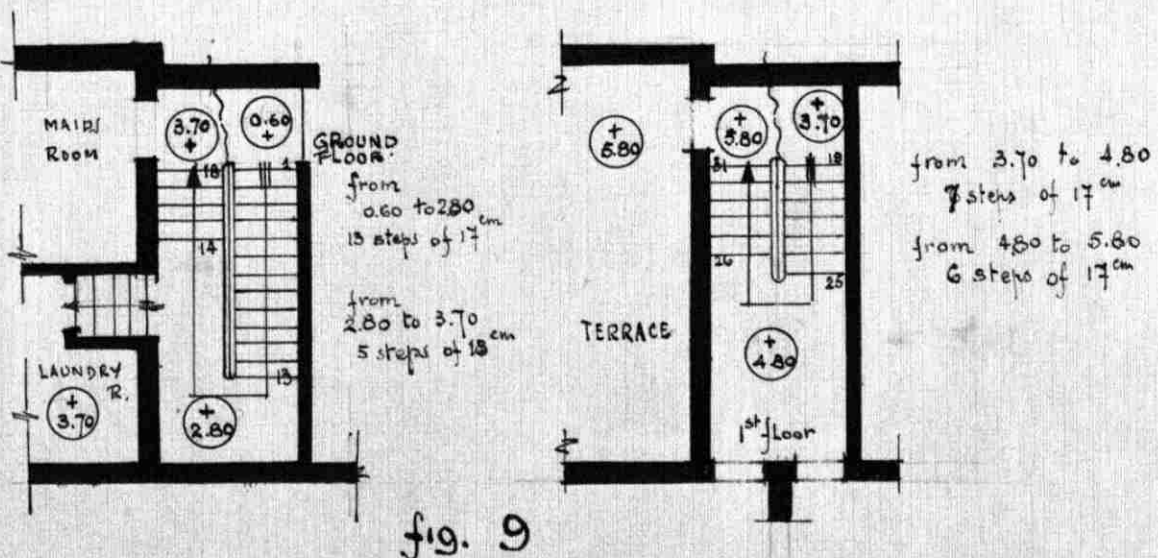
In the service quarter, a service balcony in general, is far from giving an agreeable effect . For this reason it must be hidden as much as possible from the eyes of visitors approaching the house and from people staying on the terrace . The service entrance facade being exposed sometimes to the drive, the kitchen balcony is placed on the facade of the D.R.; but the advancing part of the pantry and drinking nook provides a good corner to conceal it in a way . Another advantage of its being placed this way is that the service entrance being separated from the kitchen balcony, would not be encumbered by service accessories and can be used properly as a second agreeable entrance to the house . The small passage, 1.20 m. wide,

from which start the service stairs leading up to the first floor and down to the basement, separates this entrance from the kitchen proximity thus giving it more privacy .

In order not to expose the service entry to the Hall and also the bottom sloping side of the second flight of the main stairs, the first flight of steps of the latter is enclosed between two walls (one of them ending by a sloping rail for the second flight) and is disclosed to the hall by an arch .

The main stairs consist of 25 steps with a rise of 16.8 cm (difference of level between ground floor and first floor being 4.20 m.) and a run of 29 cm. (excluding a nose of 3cm). These stairs start at the ground floor and end at the first floor .

The service stairs start from the basement and end on the roof terrace, passing by the ground floor, the intermediate servants quarter and the first floor. It consists from the ground floor to the terrace, of 31 steps arranged in flights (as shown in fig.9) and having a run of 26 cm. (excluding a nosing of 2cm) . From the last



landing, at the level of the roof terrace, an iron tube ladder placed against the wall of the main staircase, leads to the attic.

In the first floor, the bedrooms, which correspond, in general to the ground floor rooms, have areas which exceed 16 sq.m. in all cases, mainly room (3) in which two deep built-in closets (2.00 x 1.00) could be fitted, one of them for room (2) . The closet of room (3) hides the combined ~~flues~~ of the fireplaces of the library and the L.R. of the ground floor, and in case room (3) is used as an intimate drawing-room, a fire-place would be built in the place of the closet .

By its wide opening onto the main stair-case-room, the hall benefits from the daylight and air brought in by the shutterless windows of the latter .

Every room in the first floor enjoys a balcony where the architecture of the facades allows it .

#### 7-. Details of Construction :

Masonry : The choice for the masonry, as pointed out previously fell on the limestone masonry , the latter kind of stones being available in nearby quarries .

Since, in foundations, the rocky soil is encountered at a shallow depth and since the masonry is of limestone, both being of high bearing power, it is natural that the exterior walls, as well as the main interior partitions, be meant as bearing walls . In this way there is no need of interior reinforced concrete columns .

The exterior walls are 40 cm thick up to a certain level (from foundation to 40 cm above interior floor level ) and 30 cm. thick above this height. As shown on the facades the low part of the masonry is of a different type than the one above it . It consists of big stones of average dimensions 45cm x 35cm of a "pitch face" surface finish, with a minimum embossment of 5cm . The type of masonry used in this part is that of a broken range ashlar, with recessed beads as joints . The masonry above consists of smaller stones regular in dimensions (35 x 25), of the same "pitch face" finish but with less prominent embossment (3 cm) and arranged in the ashlar range type with recessed beads joints .

The difference between these two masonries is meant for various purposes . From the stability and structural point of view it provides a foundation wall wider than the rest of the wall above it . From the aspect point of view it gives the impression of a well founded wall and in the same time its broken range arrangement makes a transition between the rugged surroundings and the regularity of the wall above .

The interior bearing partitions are 25cm thick, of the ashlar range type of masonry but without restriction as to the appearance of the stones since the two faces are to be coated by a cement plaster .

The non bearing partitions in the ground floor and the first

floor will rest on the bearing walls by means of R.C. stringers as wide as the thickness of the wall supporting them, in case of a partition wall, and as wide as half the thickness of the wall with a stone facing in case of an exterior wall, in order not to break the evenness of the masonry of the facades. These stringers have a double effect. To tie the walls together and to spread uniformly on the walls the surcharges brought by the slab. In the case of beams extending from one wall to the opposite one, a vertical groove, about 15cm deep and 25 cm wide, is left in the masonry wall, from the bottom face of the beam down to the spread foundations. This groove is then, filled with concrete with two vertical  $5/8$ " steel bars, as reinforcement. Two bars of the beam are bent down and inbedded in the concrete of the groove. In the same way, where the beam rests on the wall, against the string course, the bottom of the latter is lowered to form a sort of R.C. padstone to the end of the beam. The aim of the vertical R.C. groove is to tie the beam to the masonry which will support it. The padstone spreads the concentrated load brought by the beam.

This latter described way of tying the reinforced concrete beams to the masonry bearing walls and of relieving them from part of the beam reaction, is noticeable in buildings of stone masonry with bearing outside walls, designed and built by Prof. Yeramian specially in the case of interior R.C. columns.

In the case of exterior openings with straight soffits, a R.C. lintel of half the thickness of the wall, and the height of one stone, is poured with the facing stones forming the other half

thickness, held in place . In this way the R.C. holds the facing stone, which is not in arch shape and together with the latter which works under arch effect carries the weight of the masonry coming to the opening .

The window sills are of stone with "hammer dressed" finish .

#### IV .-. C O N C L U S I O N

It would be superfluous to recall the advantages that the organized planning of residential dwellings, into colonies, may create. The study of one aspect of the problem as done in this report and the plans attached to it, helps to realize fully their importance to those using them directly and to the general public that is affected by them, as well . Surely, the problem studied here is a little idealistic, in that it involves residences of the expensive type . But one can say that this project used on any scale, will give, relatively the same advantages .

From the study of the actual problem the following results have been obtained :

A plot of land of a compact area of 89,000 m<sup>2</sup>, connected to a main road by a long narrow stretch, which gives on the former a facade of 40 meters only, but enjoying a privileged position on a promontory hill, was considered, up to the present day, of a secondary importance due to its deep and narrow extension off side the road . The idea of a colony has turned it to a charming quarter with 11 first class villas which rendered to it the value of its position . It would have been somewhat difficult for an individual of average means to use the land alone and come out with the same result, but what could not be achieved by one person was achieved by a group .

Even if a road was built right through the land, thus raising its value by providing lots on its sides, to be used by independent individuals, the effect would not be the same as in the case of the colony planned as one whole unit in the same land .

One of the main advantages, the economical side, can now be expressed by figures . A person wishing to build in the locality, will choose a piece of land near the agglomeration where the square meter costs 6 L.L., while the cost price of the square meter of the colony land is 2 L.L. Considering that the square meter of the buildable lot is to pay for areas devoted to the community use, its price is raised to 3 L.L. If the cost of the road and the entertaining items increase it to 4 L.L., there is still a difference of 2 L.L. per square meter of owned land, which would pay the maintenance and management of the community property and leave a profit to the sharers . It is quite clear that the colony man enjoys for the same price many advantages that the independent individual has not (without an account of the actual raised value of the locality).

Taking all these previous facts into consideration, the repercussion of the Lebanon mountains of such<sup>a</sup> trend in the summer life is unbelievable .

How many of the gorgeous spots which are not approached by people, because of their distance from agglomerations or from main roads, will be appreciated to their real value . What a sight these spots will offer to those living in them as well as those passing by them . Had this system of colony been adopted only a short time



ago, many of the summer villages which have had a certain fame due to their position, landscapes, and climate, would have been saved from the unforeseen chaos and congestion that deprive their inhabitants and visitors from the enjoyment of their advantages .

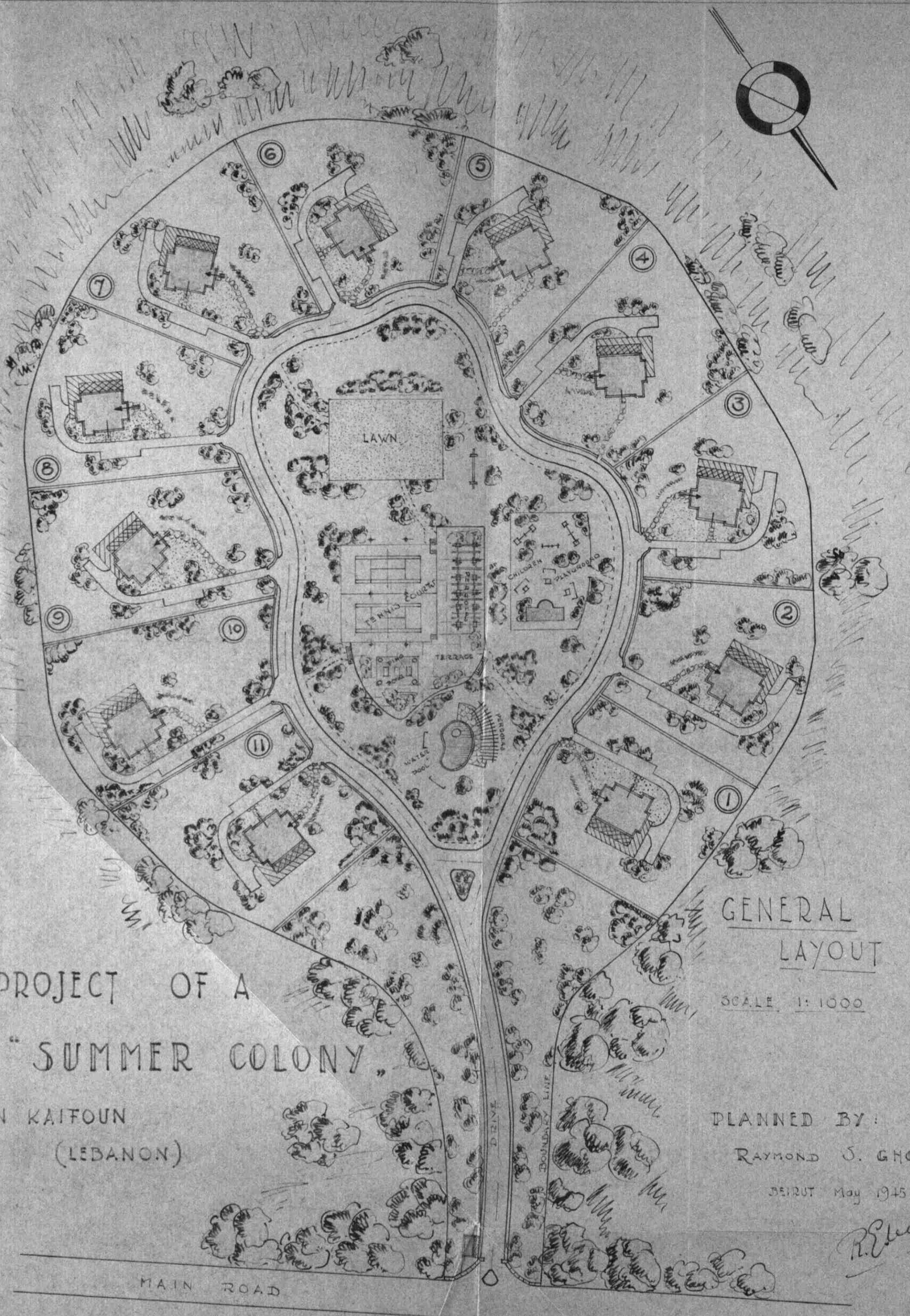
The blame for such an unfortunate evolution is not to be thrown on the individuals alone, but also on the administration in charge which was outpassed by circumstances .

It is to be hoped that the public and the responsible people will join arms in order to save, from the mountain localities, what is not yet reached by the lack of organization of the past, and to orient the future development of new localities in the direction most suitable to the natural beauty of the Lebanon mountains.

---

END.

*Algeron*



PROJECT OF A  
 "SUMMER COLONY"  
 IN KAIFOUN  
 (LEBANON)

GENERAL  
 LAYOUT —

SCALE 1:1000

PLANNED BY:  
 RAYMOND J. GHOSN  
 BEIRUT May 1945

*R. Ghosn*

MAIN ROAD

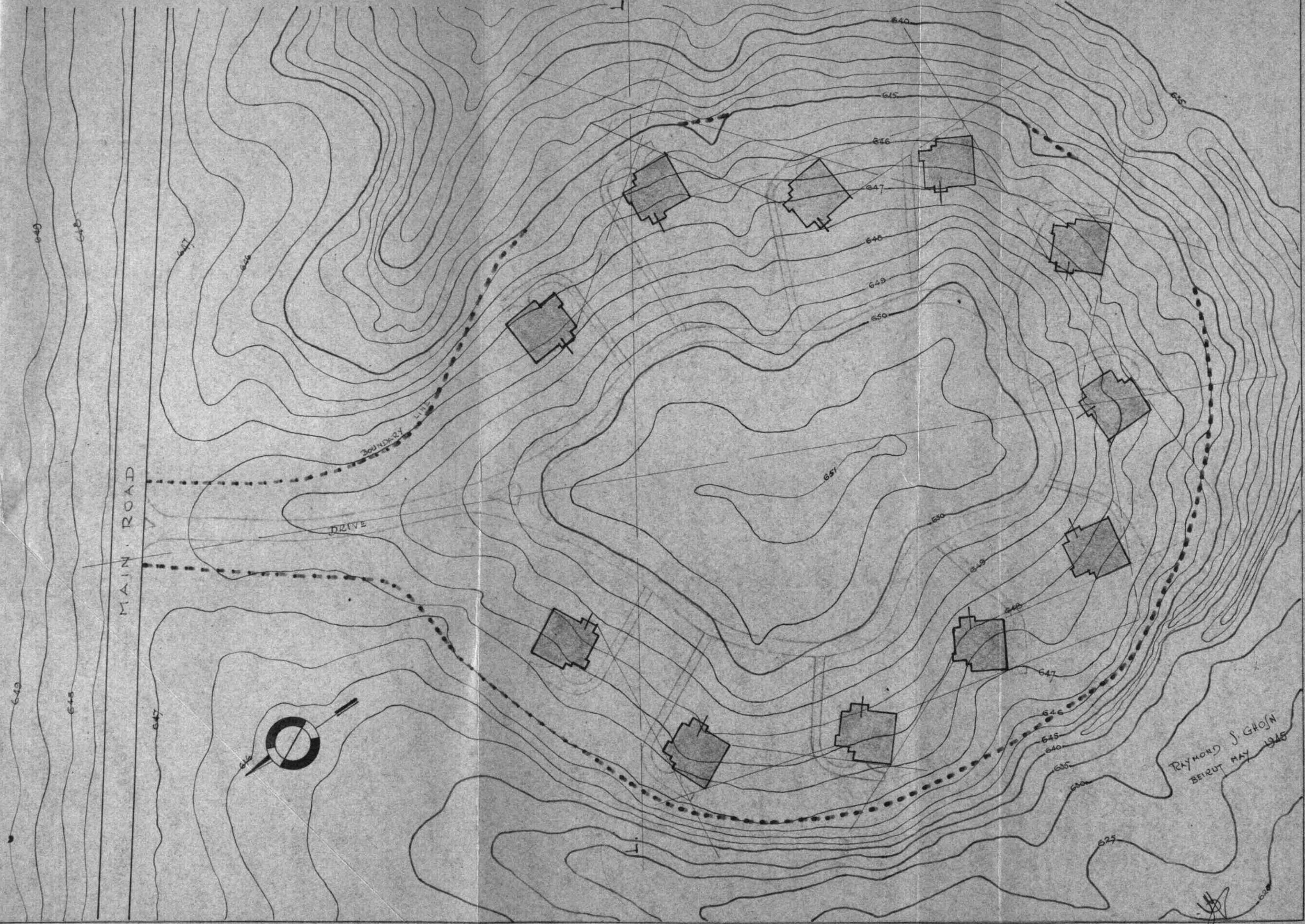
PLATE S.C.-2

PROJECT OF A "SUMMER COLONY,"  
IN KAIFOUN (LEBANON)

CONTOUR MAP OF THE LAND

SCALE 1:1000

PLATE S.C-1



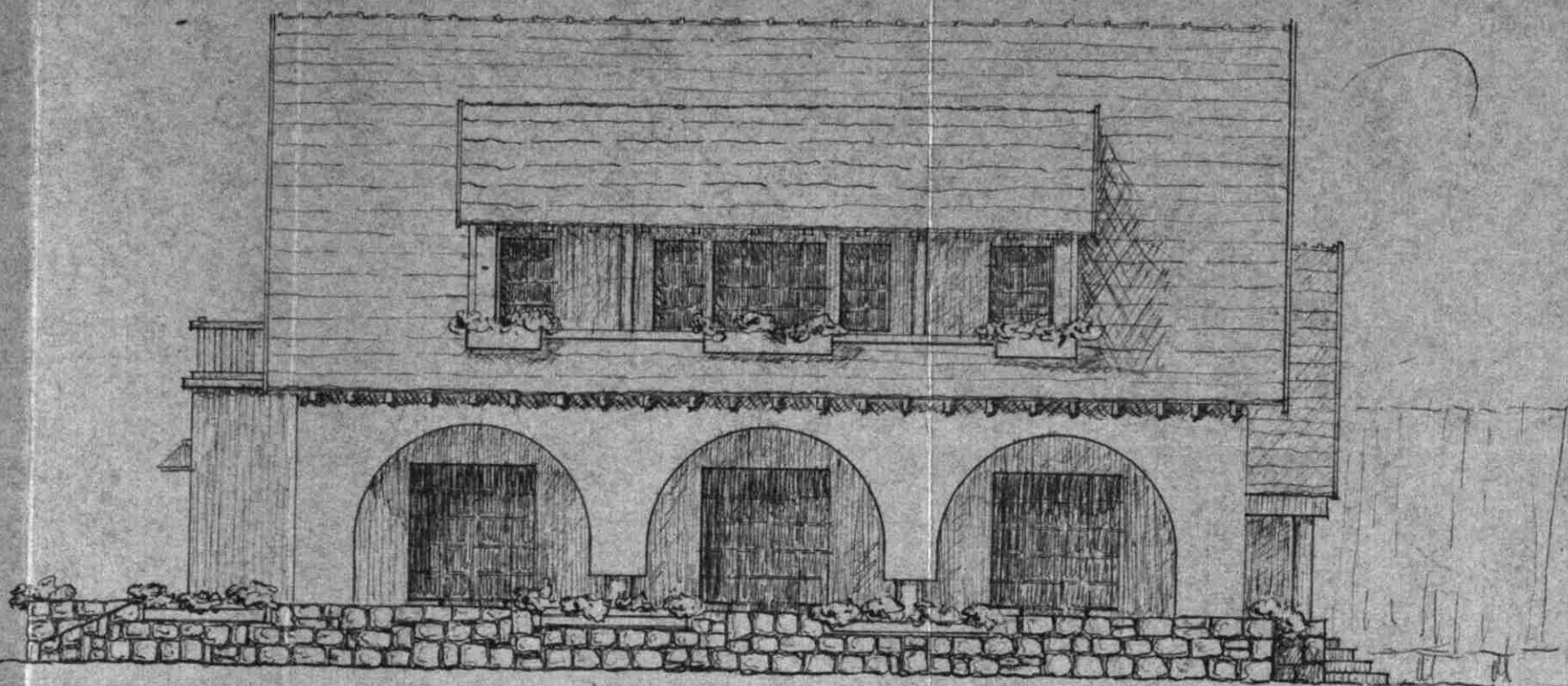
RAYMOND J. GHORN  
BEIRUT MAY 1945

PROJECT OF A  
"SUMMER COLONY"

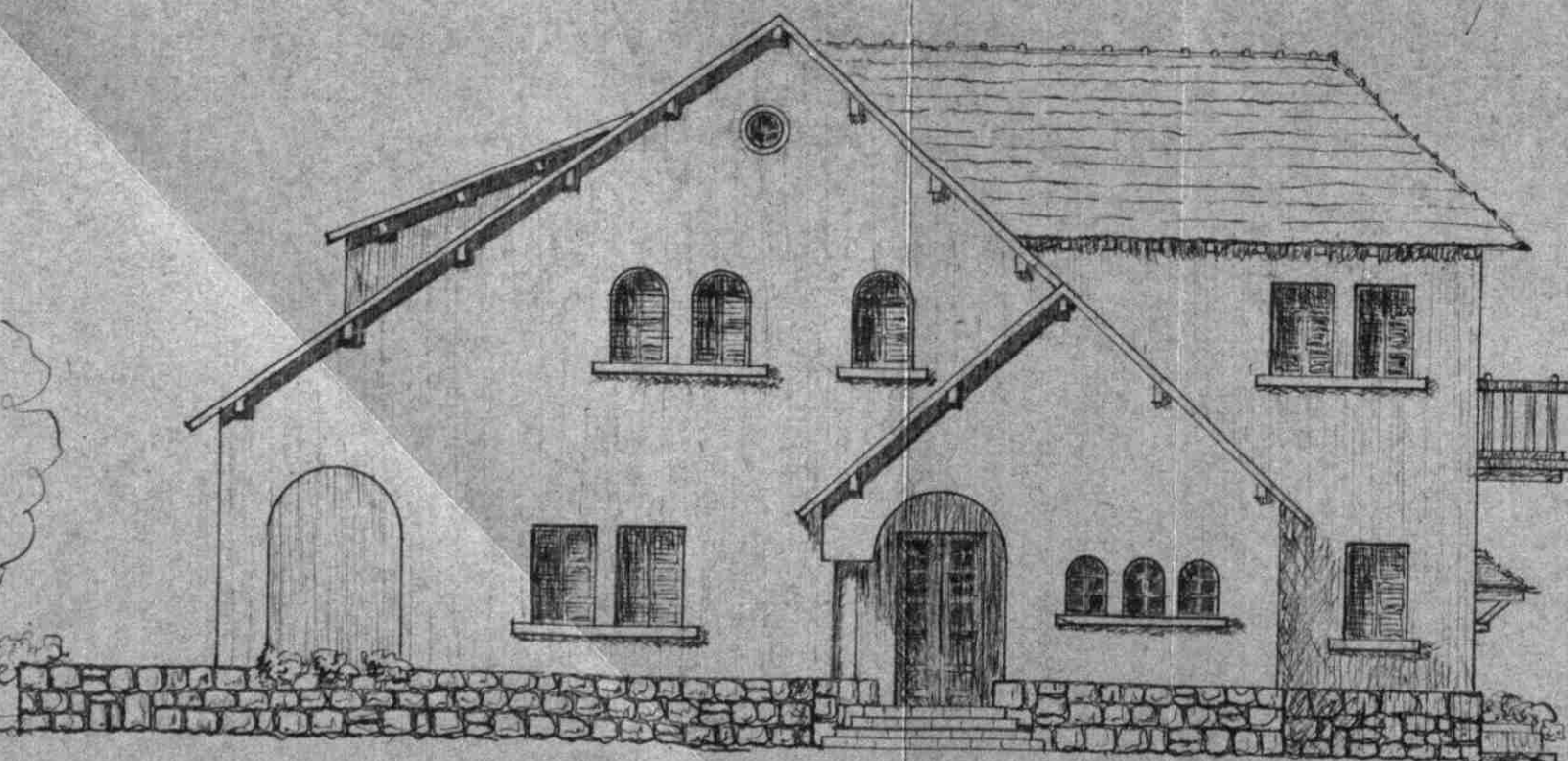
IN KAIFOUN  
(LEBANON)

2 FAÇADES  
OF THE VILLA

SCALE : 1/100



FAÇADE WITH VERANDA



FAÇADE WITH ENTRANCE PORCH

PLANNED BY :

Raymond S. GHOSN

BEIRUT May 1945

*R. Ghosn*

PLATE S.C.4

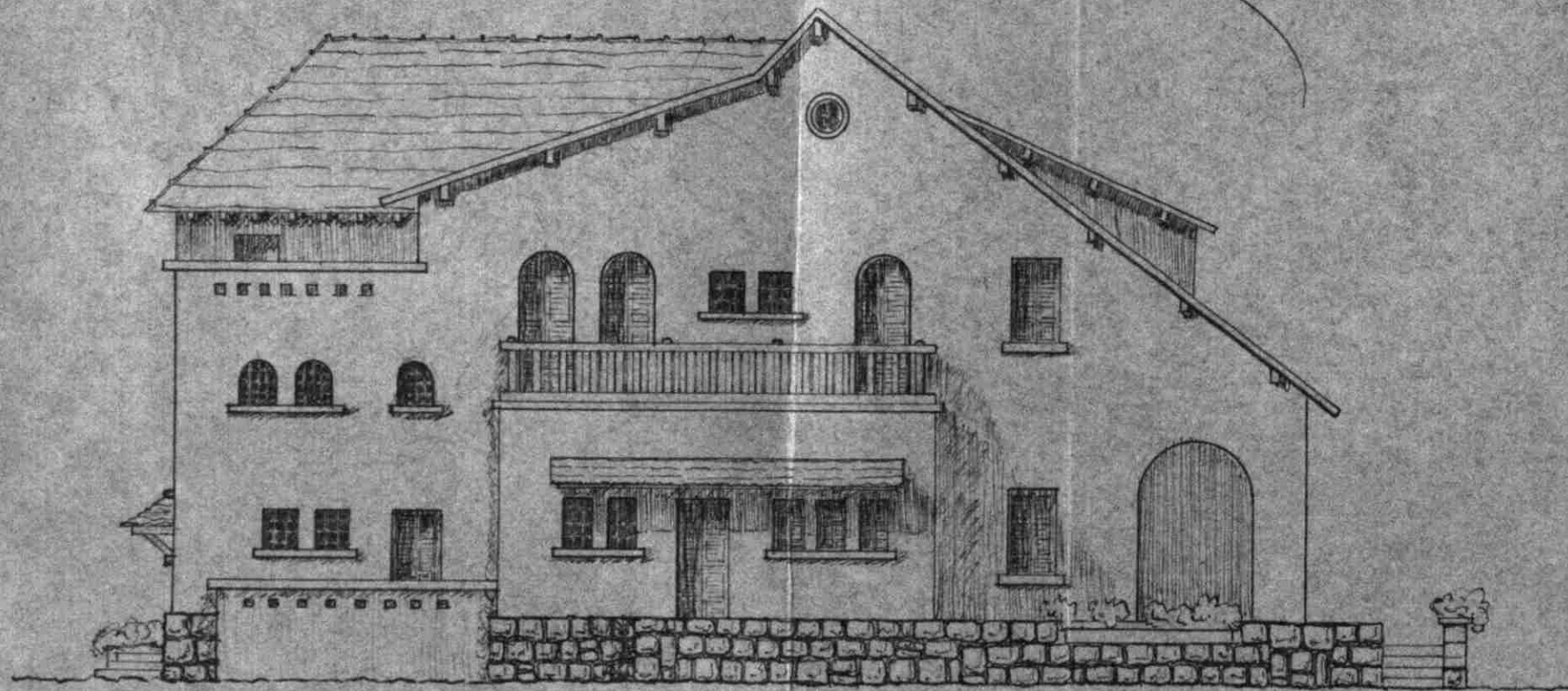


PROJECT OF A  
"SUMMER COLONY,"

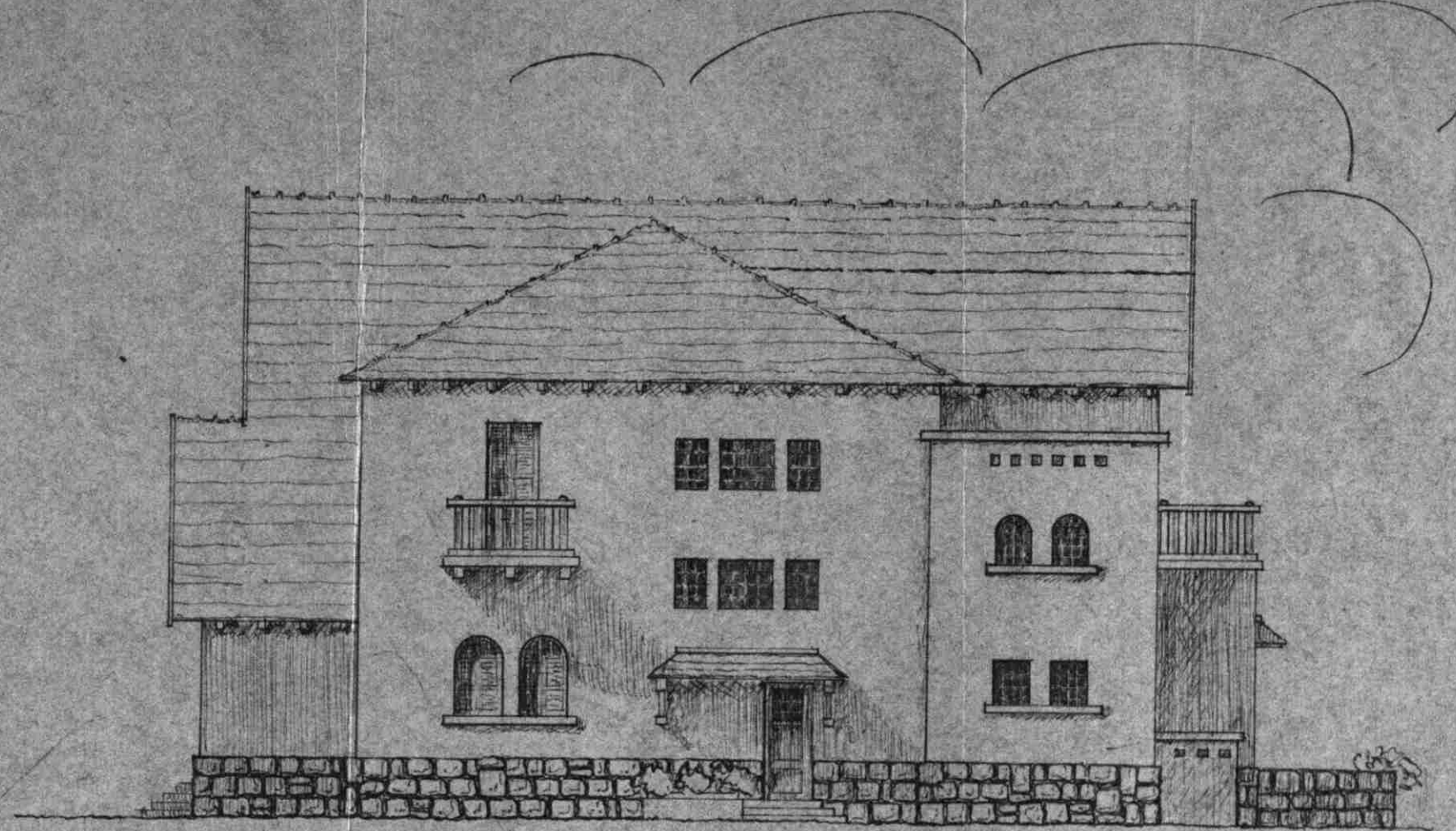
IN KAIFOUN  
(LEBANON)

2 FAÇADES  
OF THE VILLA

SCALE 1:100



FAÇADE WITH D.R. TERRACE



FAÇADE WITH SERVICE ENTRANCE

PLANNED BY:  
Raymond S. GHOSN  
BEIRUT May 1945

*R. Ghosn*

PLATE S.C-5



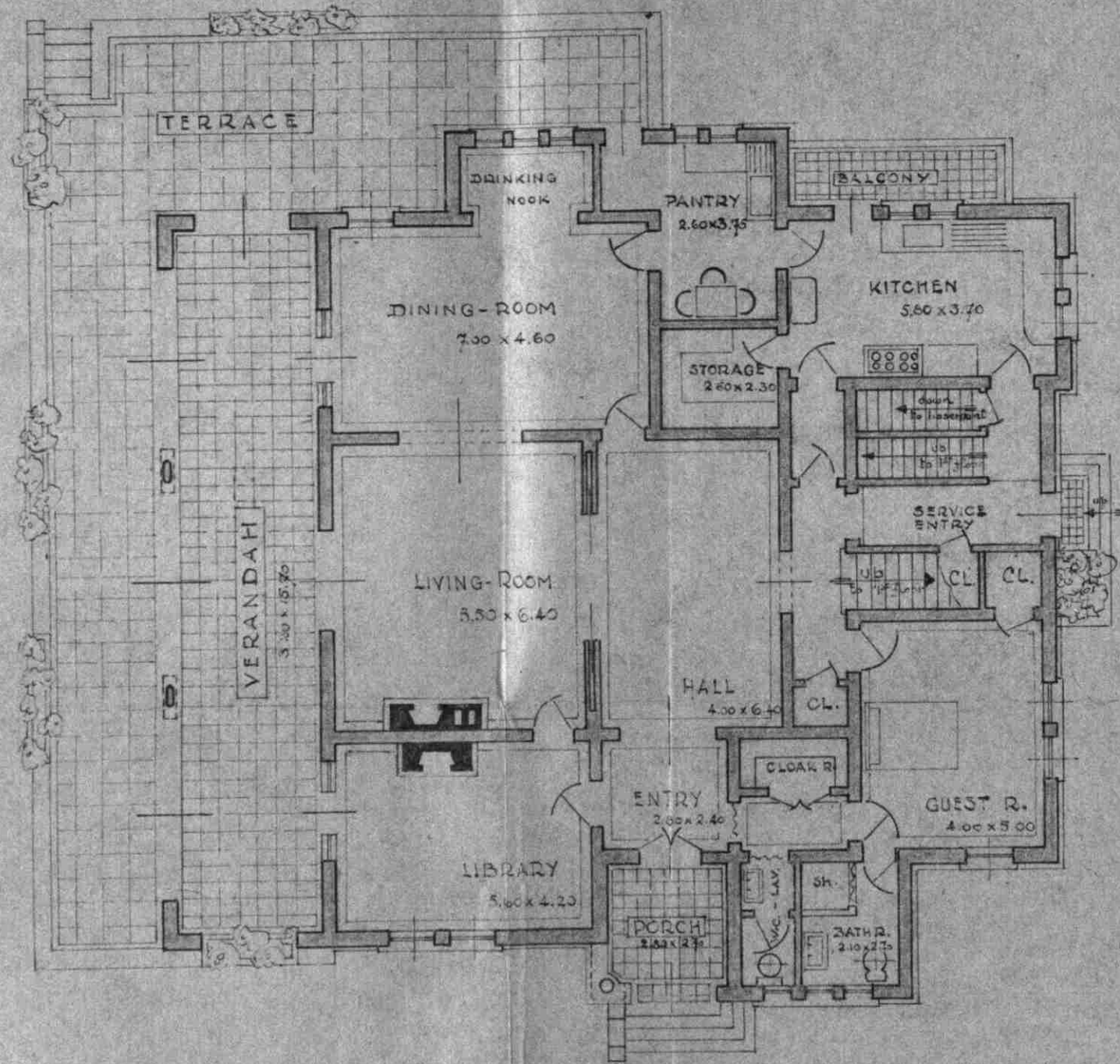
PROJECT OF A  
 "SUMMER COLONY,"

IN KAIFOUN  
 (LEBANON)

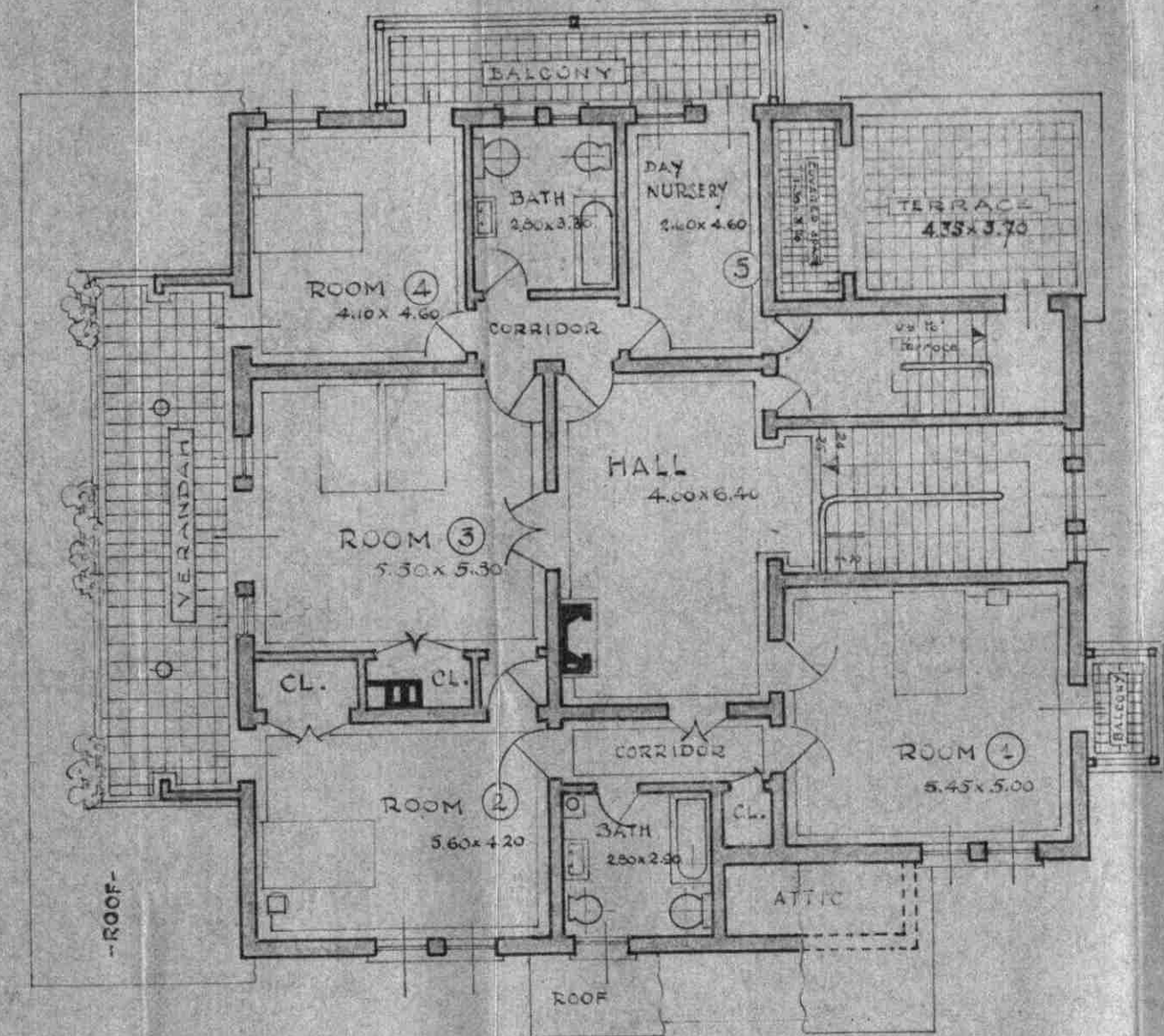
PLANS OF THE VILLA

SCALE 1:100

PLATE S.C-3



GROUND FLOOR



FIRST FLOOR

PLANNED BY:  
 RAYMOND S. GHOSN

BEIRUT May 1945

*R. Ghosn*

*[Signature]*

PROJECT OF A  
"SUMMER COLONY,"  
IN KAIFOUN  
(LEBANON)

PERSPECTIVE VIEW OF THE VILLA

BY: RAYMOND S. GHOSN  
BEIRUT MAY 1945

*R. Ghosn*

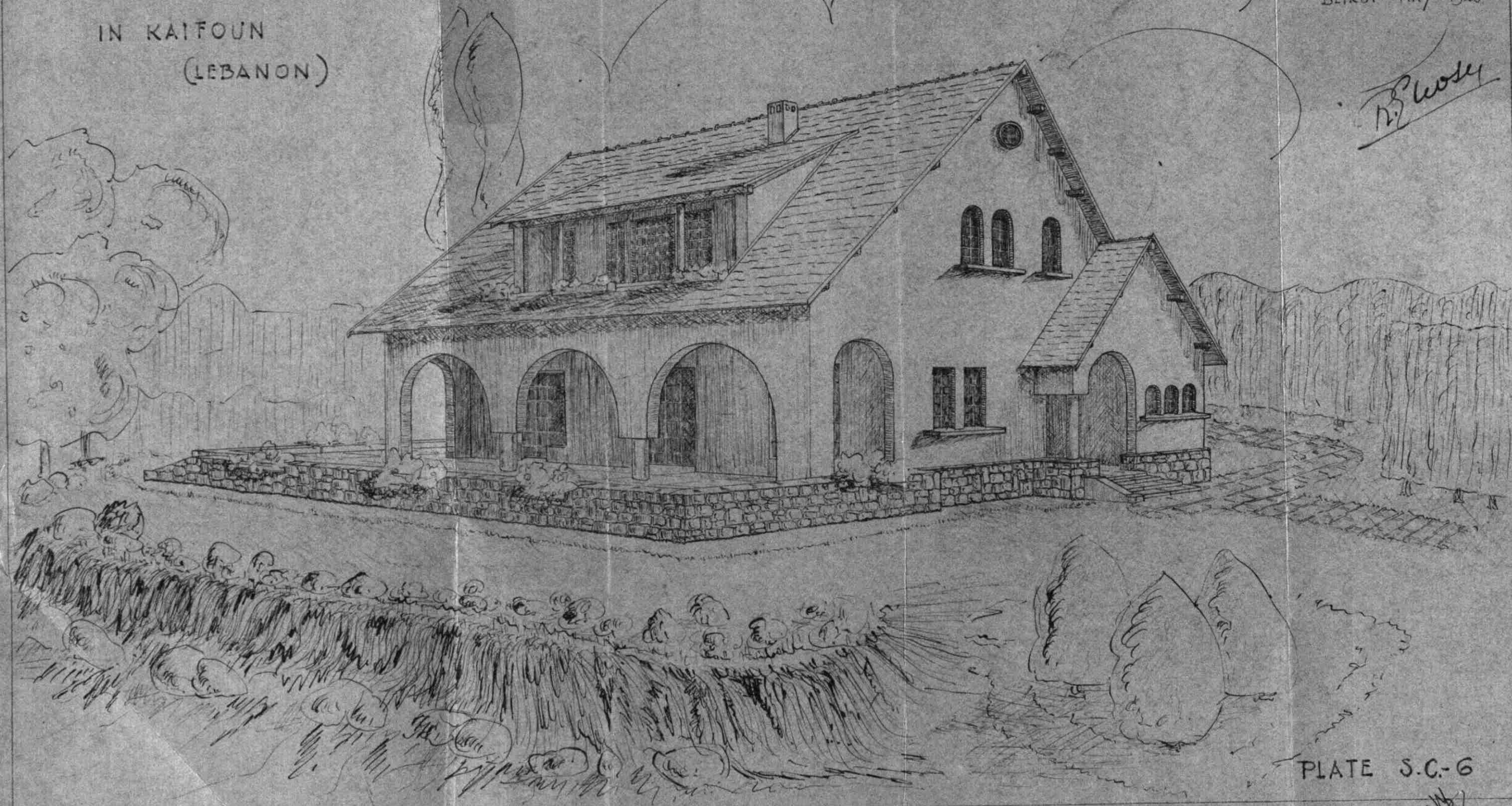


PLATE S.C.-6