additional major source in the design process.

Many physical characteristics played a role in shaping the hara. Its section is humanly scaled. The usual height of any building is not more than two floors. The width of the hara is not fixed even in one hara. It gets narrow sometimes and wide other times. Yet, it will always be enough for about three walking people, and it may be wide enough for two carts passing each other (Fig. 16, 17, 18).

Another aspect of the hara is that it is not fixed. It changes its width, the height of the surrounding buildings are not fixed, the direction of the hara constantly changes, the views therefore always change (fig. 16, 17, 18). The continuous change in the hara makes it an interesting and pleasant place to walk through.

A special element which helps this series of changes to be enjoyed by the eye is the division of spaces achieved by arches, gateways and overhead rooms covering the hara. A strong feeling of intimate spaces can be noticed when moving from one part of the hara to the other. These spaces, which are identifies by a gate from one another, increase the feeling of belonging since each one of them becomes a living room for the few houses around it.

These elements which cover parts of the hara provide two major elements:
the first is functional and the second is aesthetic. The covered areas of the
hara provide shade which is very important during the simmer. The shaded area
is like a rest area where one car can stop for a minute during the hot hours of
the day. The existence of the shaded areas provides also a beautiful contrast
between light and dark (Fig. 16).

The Arabic hara shows another important contrast. It is between the
vertical and horizontal lines (Fig. 17). While the majority of the lines run
horizontally, the minarets of the mosques or towers of the churches provide
vertical lines which catch the eye and provide a calm spot where the eye can
rest. These vertical elements are also important for orientation purposes.

In conclusion the Arabic hara is humanly scaled, provides a sense of
belonging and enjoys aesthetic characteristics. All these features help it to
be a successful urban space. Yet, two major elements are lacked in the typical
Arabic hara: color and plant materials. Designers should pay serious
attention when they work with projects of an urban design nature. Color and
plant material should be two criteria to added and emphasized in any work which
aims to improve the environment of the old Arabic hara.

The Arabic house has been mentioned earlier. It is important to mention
here that the Arabic house has a lot of potentials and room for improvement to
retain the enjoyment and pleasure usually experienced in it, while at the same
time, to utilize new ideas which would produce better houses. Some of these
ideas are: the functional and appropriate sizing of the house, the movement in
the house without a complete dependence on the patio for weather reasons and
the accommodation of the new technology for different facilities in the house
(kitchen and bathroom).

The last item of a major importance in the design is neighborhood's
garden. Each hara would have sitting facilities, and across the project there
would be small urban spaces with some playing facilities. Yet, the major
public space would be the garden. Many studies during the last few years were
directed towards a better understanding of the city's and what make it usable.
Although most of these studies were directed towards downtown areas where
businesses dominate in terms of land use, some of the findings can be utilized
in the design of any public space.

It has been found that the more variety in sitting facilities, the better it is. The size of benches is also important. Studies show that most benches are used by one person, and less by two, and much less by three people. Therefore, long benches are wasted because at any one time one to two people will use them. The way benches are arranged is also critical. They should be
FIG 16
ENTRANCE THROUGH PASSAGEWAY

FIG 17
A CALM SPOT BY
THE VERTICAL LINES

FIG 18
TOWARD WHAT EVER
IS INTERESTING

ANALYSIS OF THE CHARACTERISTICS OF THE OLD STREETS "HARA"

FIG 16,17,18
arranged so that people would have variety of choices in terms of views. Benches should be arranged also to encourage socialization. Having all benches along the line will not give good chances for starting any conversation. On the other hand having them related with some angles, benches would allow different views and would put people in a comfortable situation to socialize.

It is important to have the sitting facilities in shaded areas, otherwise nobody can use them, especially in a climate similar to that of Syria. Some of the sitting areas should be close to the children’s playing areas in order to allow direct observation. Children’s playing grounds is a major element in a residential neighborhood. The garden is the closest public place to home, and it is safe to go there since, in a superblock design, children do not have to cross the streets to reach it. Thus, the garden should be pleasant and attractive for all children, beside having an attractive place for adults. The garden will have passive areas such as the sitting places, small stage and the like. Yet, the playground for children should not be overlooked. Facilities in this area should be safe, colored, attractive, and pleasant and easily observed by parents.

The more green in the garden the better it is. Plant materials are pleasant to the eye with their beautiful forms and color. They are a good
source for shade and lawns are even good for sitting beside being pleasing to the eye. Plant materials are a major design element which can be used to form spaces, direct movement or present views.

Finally some food facilities would be of a great help to make a garden or any urban space a pleasant environment. People like to eat outdoors. They may like to have a small snack or something to drink while they are enjoying views or show, or they are involved in a conversation. Also children would love to have something to eat or drink while they are playing. Few food shops would give this satisfaction.
V. THE DESIGN

The General Concept

The idea of the project is to find a pleasant environment for a residential purpose. This environment is based on the characteristics of the old Arabic hara with the necessary modification to match the contemporary way of life. The project studies are particular cell or neighborhood of a series of similar cells. The total concept of the plan is to find a major residential service road for cars, on each side of the road there would be a sequence of superblocks (to be called neighborhood or cell). A parallel street will also have two series of superblocks. Every two, three or even four superblocks there would be a perpendicular street which would connect the two major service streets together. Thus, there would be a set of four, six or eight superblocks connected to each other with no automobile movement (Fig.19).

Each of these cells would have its independence form the other cells. Yet, the general scheme of the design will be similar. Each cell would have a major parking area and a major parking area and a major garden. The rest of the cell would be for housing units. The gardens will be arranged so that each two gardens from two cells would form one larger garden, or they can stay separated
THE PROPOSED SITE PLAN OF REPETITIVE CELLS PROVIDING
A MAJOR GARDEN AS WELL PARKING AREA

FIGURE 19
but connected. The important point is that this green node (the two gardens) would be connected with the second green node formed by the two neighboring cells. Thus a major pedestrian movement channel would be formed. Another pedestrian channel would connect the two gardens of two cells found on either side of the automobile street. By this way all would be connected together.

Parking lots of every two cells found across from each other would be located in the same area so that the entrance for all parking lots are close to each other. This arrangement would facilitate the use of any parking for any resident on either cells. Hence, in cases when one parking is overloaded, the other parking would be close and available.

The separation of vehicle movement from pedestrian movement would allow the possibility of reacquiring an Arabic environment. It would be, otherwise, extremely difficult if not impossible to bring back that environment which is originally based on pedestrian movement only.

This separation would also insure safety for children and allow them to use the road as a place for meeting and playing, very similar to the way their parents and used to enjoy their roads.

Although the general scheme shows the streets as a straight lines, this does not mean that they have to be this way. Neighborhoods can take any form,
therefore, streets can also have any shape. The total plan should take this point into consideration so that streets do not become boring.

This total view of a larger project has been presented because it is not just the site of the project which will be turned down. A much larger area around the old city and inside it is to be part of this big change. Therefore, it was essential to view the project as a part of the whole picture and not in isolation. The project will deal with one of these cells only. This cell is beside the old wall of Damascus. The only change this location would dictate on the project is the fact that the wall should be taken into consideration. The wall would be partly exposed to be viewed, especially in the garden where lighting and plant materials can be used to enhance the walls appearance.

It is possible also to use the wall in some of the houses in units. The attitudes of using the wall as part of other buildings is an old one. It is part of the heritage of the society and the importance of the wall. This growing of residential units over the wall has a symbolic meaning. It is as if the week houses seeking refuge in the powerful strong wall of the city.

The Neighborhood

The neighborhood consists of three major items: the parking lot, the garden and the residential units. The general location of each of these items
was discussed in the previous section. The difficult question is how to provide an easy access for emergency cars inside the neighborhood and a short and direct lines for utilities on one hand, and maintain an interesting environment which has the Arabic hara's characteristics on the other hand. In order to meet these two requirements a grid was used for the general scheme. The housing units were laid out according to this grid and the major pedestrian movement lines were fixed. The grid consists of cells measuring 15 x 15 meters. The houses use in the width 12-13 meters from the 15 meters grid. The 2-3 meters which are remain from each cell make the hara's width 4-6 meters (Fig. 20, 21, 22, 23, 24, 25, 26, 27, 28, 29). By this way, the houses have their services close to each other. Facilities and services can be easily planned and controlled.

Yet, in order to prevent the hara's to appear as a boring ling street two things are applied: First the hara has a limited length after which a change in direction will occur. Although the linearity of the street of the street can maintained through out several cells, at each cell there would be a house which will terminate the hara. Then it may start after that house. The second way used to make the hara more pleasant by designing the exterior walls of the houses with some bends. The total view of the hara, then, will be of a
continuous change in width and direction (Fig. 27, 28, 29). This feature of the hara is important not only to the views, but also to bring out the spirit of the old Arabic hara. Usually the hara never had straight and hard lines. Most probably it was of many changes in direction and with soft, and sometimes, curvilinear lines. The use of exterior walls with the same characteristics is, therefore, essential to the design of an Arabic house.

As it was mentioned earlier, the width of the hara would be approximately six meters. Generally, the houses consisted of two floors with the height of the building equal 1:1. This is the recommended ratio for residential roads. It may not be the ratio of the typical Arabic hara, but it not very far form it; and since this ratio (1:1) is the recommended one according to the recent studies, it seems logical to follow it if possible.

The need to widen the hara to the recommended ratio is also important to allow emergency or service vehicles to enter to the neighborhood and reach any house in it. It is important to mention that this widening is not severe, and the proposed hara will still match the ordinary Arabic hara.

The housing units are concentrated in three major subareas. Each of these subareas has its own small urban space. This space has some sitting and playing facilities to serve it. The three subareas are connected to each other
by the hara system and then lead to the parking lot at one end to the main
garden at the second. These small urban spaces function as nodes or landmarks
where people can orient themselves and relate to the environment. Without
these landmarks with their design, redundancy and similarity may appear
especially if there are many cells connected to each other, and a sense of
disorientation can be felt. This unpleasant feeling of not knowing the way, or
not being able to find the right apartment is a problem of all new designs.
The nodes or landmarks can be one way to solve this problem.

The use of plant materials and color is a major characteristic of this
project. The material which are used in the project for building the houses
are several: concrete, brick, stone, metal and glass. All of these materials
are used in several colors to add richness and variety of the hara. Color is
also used in the pavement. Different stones are used for the same purpose.
Plant materials are used in all parts of the streets and in the small urban
spaces. A pre-designed planting area will be found in form to each house so
that residents can use it. Greenery will add tremendously to the beauty of the
neighborhood.

The characteristics of the old Arabic hara is also maintained by the
change in width, the cuvelinear walls, the arches and over head rooms, the
height of the building, the arches and the different details.

One feature of the design which will remind of the old Arabic design is the pavement of the hara. As it was just mentioned, pavement will help enrich the colors of the hara. Also, the design of the pavement is based on hard lines. These hard lines will contrast the curvilinear design of the walls and help find a balance in the total design. The pavement will also give a unity for the whole design since it covers it all. It will help show the movement access and present a private entrance for each house.

The use of sitting facilities, planting areas, pavement, lighting, building details, playing facilities and similar items will give a unity to the whole project. At the same time it will allow variety and richness. Unity and variety are the two major ingredients for a successful design.

**The Parking Lot**

The number of cars each parking lot accommodates is larger than the used code in Syria. The reason for more space is to cover future necessary changes in the code. The location of the parking is chosen to be in the middle of the longer side of the cell to make the distance between the housing units and parking as short as possible.
GENERAL SITE PLANE

FIGURE 21
GENERAL GROUND FLOOR PLAN

FIGURE 23
MODEL OF THE GENERAL SITE

FIGURE 24
GROUND FLOOR OF THE CENTRAL AREA

FIGURE 26
MODEL OF THE CENTRAL AREA

FIGURE 27
ISOMETRIC OF THE CENTRAL AREA

FIGURE 28
ISOMETRIC OF THE CENTRAL AREA

FIGURE 29

63
The parking itself is divided into two major parts. These parts are separated by two rows of trees and a sidewalk. This arrangement is chosen for two reasons: first to allow easier accessibility for pedestrians from one cell to the other, especially through the access which connects the two gardens together. Second to make the parking lot appear as small as possible. The separation will show two smaller paved areas. Trees and other plant materials are used in the parking lots to enhance their visual quality.

The Garden

The design of the garden is based on the ideas mentioned previously in the theoretical background. Main items included in the design are sitting areas, playing facilities, food stands or small shops and a small stage. The design is based on hard lines to match the design of the pavement and the small urban spaces in the neighborhood. It also shows a resemblance to the design of the old Islamic gardens. The water fountain, planting beds, sitting spaces and pavement recall to mind the Islamic gardens and their atmosphere.

The garden in this studied cell is located at the wall of the city of Damascus. Therefore, a special attention was given to explore the wall to make a major attraction in the neighborhood. Plants and lights focused on the wall will enhance its appearance. The decision of using Islamic design for the
garden will be very suitable because of the close location of the two, the garden and the wall.

The House

The housing units are designed to be suitable for different kinds of families. They can accommodate families with four members to families with six or more members. The design is based on the concept of the old Arabic house. The house is formed around the patio which functions as a living room and a private garden.

The different plans shown (Figs. 30...47) provide a good idea about the possibilities available. It is important to mention that the circulation is not based on the patio as it used to be in the Arabic house. Yet, the possibility of using the patio for circulation is still available. The reason for having two options is to give the resident more flexibility and freedom in their homes. By this design, the weather will not affect their movement or bother them. The design, although giving two options for circulation, shows very minimal circulation spaces. This means the wasted spaces are as minimum as possible.

The sizes of the housing units are carefully studied in order to provide comfort and ease, at the same time, they are calculated to be economical.
Therefore the rooms are not extremely large with very high ceilings as they used to be in the old Arabic houses. Yet, they are not too small like rooms of the new apartment buildings. Facilities are also given their proper place and size. As an example, storage areas for food are given a serious attention since the food storage used to be a main space in the Arabic house. The drop of this space from the Arabic house is not a functional decision since people still practice the same old habit of storing big quantities of food for coming seasons.

The design of the houses takes into the consideration the urban fabric of the total neighborhood. As an example, the staircases are purposely pushed out of the whole building to form a vertical element in the hara. This vertical element is very essential to stop the viewer’s eye at it and rest for a while then continue the visual experience. This contrast between the continuous horizontal lines and the vertical items is very important for the visual quality of the hara.

Another example is the overhead rooms and the projected rooms are also a additional items which enhance the appearance of the hara. They form shaded areas which present a nice contrast with the light areas in the hara. Also the main elevation of the houses has part of it built by glass blocks. This unit
will allow natural light to enter the house during the day. During the night the lights used inside will reach the hara through this glassed area. This interior light will provide additional source of lighting, beside giving pleasant views.
SECOND FLOOR OF TYPE 1-2
THREE BEDROOM

SECOND FLOOR OF TYPE 1-2
FOUR BEDROOM

FIG. 32, 33
TYPE 3
TWO BEDROOM

TYPE 4
TWO BEDROOM

FIG. 34, 35
TYPE 5
ONE BED ROOM

TYPE 6
ONE BED ROOM

FIG. 36, 37
CASE # 1
USING ELECTRIC FAN

CASE # 2

CASE # 3

THE PROPOSED WAY OF VENTILATION

FIGURE 38

72
PROPOSED WINDOW WITH FANLIGHT TO INCREASE THE AIR MOVEMENT

1. Glass is fixed by nails and panels.

2. The glass is fixed by strip of wood.

3. The glass is vertical and horizontal joint.

ORNAMENTAL IRON

SCHEDULE: 1/4

1. Glass panel with decorative iron, transom, and nail.

2. Top rail of door.

3. Oak ornamental iron.

LUXURY DOOR (to be varnished)

FIGURE 39

73
PROPOSE MASHRABIAH

FIGURE 40
SUGGESTED CONSTRUCTION

FIGURE 42
Summary

This project is an experimental design to highlight the major points which should be taken into serious consideration when working with a residential project for the city of Damascus.

The city has many problems in terms of housing. The old Arabic houses are not suitable any more because of their size, design, materials and location. They require expensive maintenance, not very appropriate to the new way of life, and not easily accessible. On the other hand, the new high rise buildings also not comfortable. They do not provide privacy or comfortable spaces. Their maintenance is also difficult since nobody holds responsibility for them.

Therefore, there is a need for design which added the positive of both systems and subtract their negatives. This project proposed a solution for this problem. It studied a small neighborhood as an example. The assembly of different similar neighborhoods would form a larger neighborhood which would have all the needed services.

The studied neighborhood consisted of housing units. It has sufficient parking spaces and a public garden. The neighborhood was seen as a superblock
where cars would be parked on one side and the rest of the block would be for pedestrians. The overall design and the rest of the block would be for pedestrians. The overall design is based on a grid. This grid facilitated the movement for service and emerging vehicles and provided an easy base for the different services of the project.

Yet, the grid was not clearly shown to the residents of the project. The way the exterior walls are designed and the different housing units which blocked the hara provided an environment similar to that of the Arabic hara. The old Arabic character was maintained by the design of the houses and the pedestrian roads (hara). Houses were designed around a patio. Each unit had its own entrance from the hara and enjoyed independence. The hara was based on the old Arabic haras: it had curvilinear edges, it was free of vehicle movement, it was full of changes in directions and enjoyed contrast in light and dark and vertical lines.

Yet, the design was a duplication of the old hara. It was clear that there was room for improvement. Color and plant materials were the two major items to be emphasized in the design. They added more variety, beauty and pleasure to the environment. The section of the hara was also modified to suit the requirements of our modern life. Construction materials were also chosen
to add more variety and color.

The urban function of the hara was reemphasized by the outdoor furniture. This furniture includes the sitting areas with their different design, the planting beds, the playing facilities, the food stands and the many other street furniture. These items were used throughout the project for the purpose of encouraging the outdoor life. They added variety to the project and provided unity at the same time.

The project also had a garden. It was included in the design because children do not have any place to play. The garden and the pedestrian oriented haras provide an excellent environment for children. The garden also provided a pleasant place for the residents to enjoy nature in the city. The existence of similar green areas in each neighborhood would greatly enhance the character of the city.

The project tried to use the good ideas from the old designs and add to it those of the new. Plant materials, colors, new construction materials, new methods, and playing grounds for children we items which this project wanted to add to the old beautiful houses with their lovely patios and quiet and safe haras.
BIBLIOGRAPHY


Baedekers, Karl. Palestine and Syria, 5th ed. New York: Charles Scribner’s Sons, 1912.


Herbert, Richard EDS. The Arab City and its Character on Islamic Culture Heritage.


Salah, Lam E. Mustafa, Dr. *Al AThar Al Islamiah Fee Demashk.* Beirut: Press, 1975.


Tu-air, Kasem, ed. *Damascus, Historical Studies.* Damascus, Syria.