UNIVERSITY HOUSING AND COMMERCIAL DEVELOPMENT

ON JEANNE D'ARC STREET

AMERICAN UNIVERSITY OF BEIRUT
FACULTY OF ENGINEERING AND ARCHITECTURE
DEPARTMENT OF ARCHITECTURE . COURSE A 130
FINAL PROJECT PROGRAM AND REFERENCES
ADVISOR : DR. FUAD UTHMAN
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BY

RIMA NAMEK

CLASS OF '86

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A proposal for the development and rehabilitation of a joint property located along Jeanne d'Arc street in the Ras Beirut area is put forward in this research study. The basic context of the proposal was developed from three a priore observations of the setting, namely, (i) Jeanne d'Arc street is a vital vein within the network of commercial and business activities emanating from the Hamra sector, and within the academic and cultural context of the nearby American University of Beirut, (ii) the absence of housing facilities which serve the various needs of students and faculty within the vicinity of the university, as well as, a deficiency of complementary high level leisure set-ups which would appeal to educated citizens, particularly students, and (iii) the persistance of some structures close to the selected site which still exhibit traditional local features. Accordingly, this project consists of a mixed use of university housing and commercial leisure facilities to serve the interests of the property owners as well as the American University of Beirut.

This mixed use development is shaped with the aim of commercially and culturally revitalizing the setting. Furthermore, within this realm of rehabilitation, the project attempts to enhance the contextual character of the setting as part of the preservation and enhancement of the street character as a whole.

This interest in contextualism comes from experiencing an orderless, rapidly developing urban area in which any notion of cultural hold-on has been totally disregarded.

The Hamra sector of Beirut has been transformed, in less than half a century, from a rural garden farming land into a highly saturated metropolitan area due to an aquired educational and commercial importance. This has made it almost impossible to maintain or develop any culturally rooted characteristic architectural features. Instead monotonous undifferenciated spaces covered with stereotypical concrete blocks are predominant. Only a few localities in this district, of which Jeanne d'Arc street is one, have maintained their unique character. However these are slowly disappearing and dissolving into the current unorganized pattern of urban development. Therefore any attempt of rehabilitating and preserving the character of such localities should strongly be supported by the community and the public sector.

Having established the different parties who would play a role in shaping this project, it is assumed that a corporation of the property owners, in collaboration with AUB and the public sector represented by the municipality, would associate in developing this proposal. It should be noted here that although Jeanne d'Arc street is one of the least affected by the civil war in Beirut, nevertheless this project is only valid if the situation normalizes and the area regains its past prestige.

The main objective in designing this project is to create a complex that would be an integral part of Jeanne d'Arc street both physically and contextually and would

interpret a new language of city street architecture that would bring to passers by memories and a sence of belonging, at the same time reflecting the vitality of a modern metropolitan setting.

To sum up, the purpose of the project, in general, is to provide people, particularly young men and women with a resort of distinct recreational, cultural, and educational benifits, as well as living accommodations.

This project proposes a mixed - use development on a site located on Jeanne d'Arc Street. The site is, currently, composed of three seperate but interrelated lots, each in private ownership. Two of the lots fall on the east side of the street, while the third is located on the west side directly facing them. A comprehensive development scheme is achieved only when these lots are functionally assembled together. Since the rehabilitation of the setting is one of the main goals of this project, a recognition of the potential assets of this setting is necessary in defining the depth of the problem.

Jeanne d'Arc Street possesses a variety of assets which mark its uniqueness. Potentially the site which is located on this street has three significant assets, namely: commercial value, cultural-educational potential, and architectural charater.

Commercial value:

The location of the site in a highly commercial - business district increases its subjection to private development, especially for office and commercial structures. As a result land prices are extremely high in this area.

Cultural - Educational potential:

Due to its direct proximity to the campus of the American University of Beirut
the street is characterized by a high level of student presence. Many of the retail
and housing facilities that flank the street serve the student needs. Because of this
relationship to the University life, many of the clubs and cafés along the street often
witness cultural activities such as exhibitions, music recitals, and intellectual circles.
These features give the street an important cultural potential and an inherent link to
university education.

Architectural character:

The architectural character of the street is mainly exhibited through the survival
of 1930's traditional villas along the street and on the site itself. These are juxtaposi-
tioned with modern structures. The combination of old and new give the street an urban
town vitality and a sence of linkage with local heritage.

Based on these potential assets the following points are emphasized:
. Any project planned along this street should be economically sound.
. The program of the project should be developed in conjunction with
   AUB's relationship to and interests in the street.

. The project should enhance the character of the street, since it is one of
the few remaining cultural links in the district.

Therefore, the following assumption is made as a first step towards the realization and statement of the problem. The development of this project is to be carried out by a corporation formed of three main parties. The owners of the lots, in an attempt to develop their property, decided to form an association and approach other parties who show interest in the project, namely, the municipality and the American University of Beirut. It is through this assumption that the program of the project is set.

The interests of each of these parties are varied and important in deciding the general direction of design.

The property owner's needs:

The interest of this sector is in maximizing profit. Therefore, the type of functions proposed need to be profit oriented. Pre-commitments with certain commercial companies, or institutional establishments, such as AUB, will insure future return

and a more prestigious standard of the complex. In such cases, slight concessions, such as reduced price rates, are made on the part of the property owners.

The needs of the American University of Beirut (and possibly other educational institutions):

AUB is in need of student, faculty and other staff housing. The location of the site on Jeanne d'Arc street with its direct relation to the University and to student life, make it an ideal spot for off-campus housing and other student oriented facilities. Accordingly, AUB is ready to insure a certain number of tenants, both students and faculty, if housing facilities are provided for this purpose in the complex.

The municipality or public sectors interests:

The needs of this sector differ from the previous two. Its interests in this project comes from its establishing that Jeanne d'Arc street is one of the few remaining streets in the district where one can still observe traditional building forms amongst the new developments, and where the initial character of the street has not been totally destroyed by chaotically planned new structures. The municipality is therefore,

Ready to offer certain concessions such as reduced tax rates, service facilities, and others, provided the character of the street is preserved.

The context of this project is developed on the basis of the needs of the parties involved. A mixed use development of commercial and university facilities is provided.

Commercial facilities:

The types of commercial facilities that are chosen for this development project include retail, leisure, and cultural facilities. Such functions are chosen on the basis that they are in high demand or are lacking in Hamra district. At the same time most of these functions are youth oriented to attract the interests of university and college students. The complexes' capacity to attract a large number of people will insure financial return on the project. These facilities include: multiple movie theater, retail stores with interrelated exhibition hall(s), catering services, a leisure and health club center, and office facilities.

Housing facilities:

The larger part of the housing facilities provided in this complex are designed for students and faculty members of the AUB and possibly other colleges in the district. The remaining part is designed for private tenants. The complex will offer different types of apartments to answer the needs of the University and the private tenants.

This mix of commercial leisure facilities, and university housing facilities aims at providing this complex with a more prestigeous standpoint along the street inorder to be more attractive to the public and integrate physically with its setting and with the street life. The complex, as a place for people, should provide pedestrian spaces. This is necessary in accomplishing this physical integration.

The site of this project is located on Jeanne d'Arc street, in the Hamra

district of Ras-Beirut.

LOCATION OF THE SITE IN BEIRUT

PORT

N

■ : CENTRAL BUSINESS DISTRICT.

■ : HANRA COMMERCIAL DISTRICT.

□ : AMERICAN UNIVERSITY OF BEIRUT.

—— : MAIN ROADS LEADIND TO CITY AND CBD.

: ROADS JOINING CBD TO HANRA

0 1   5 KM
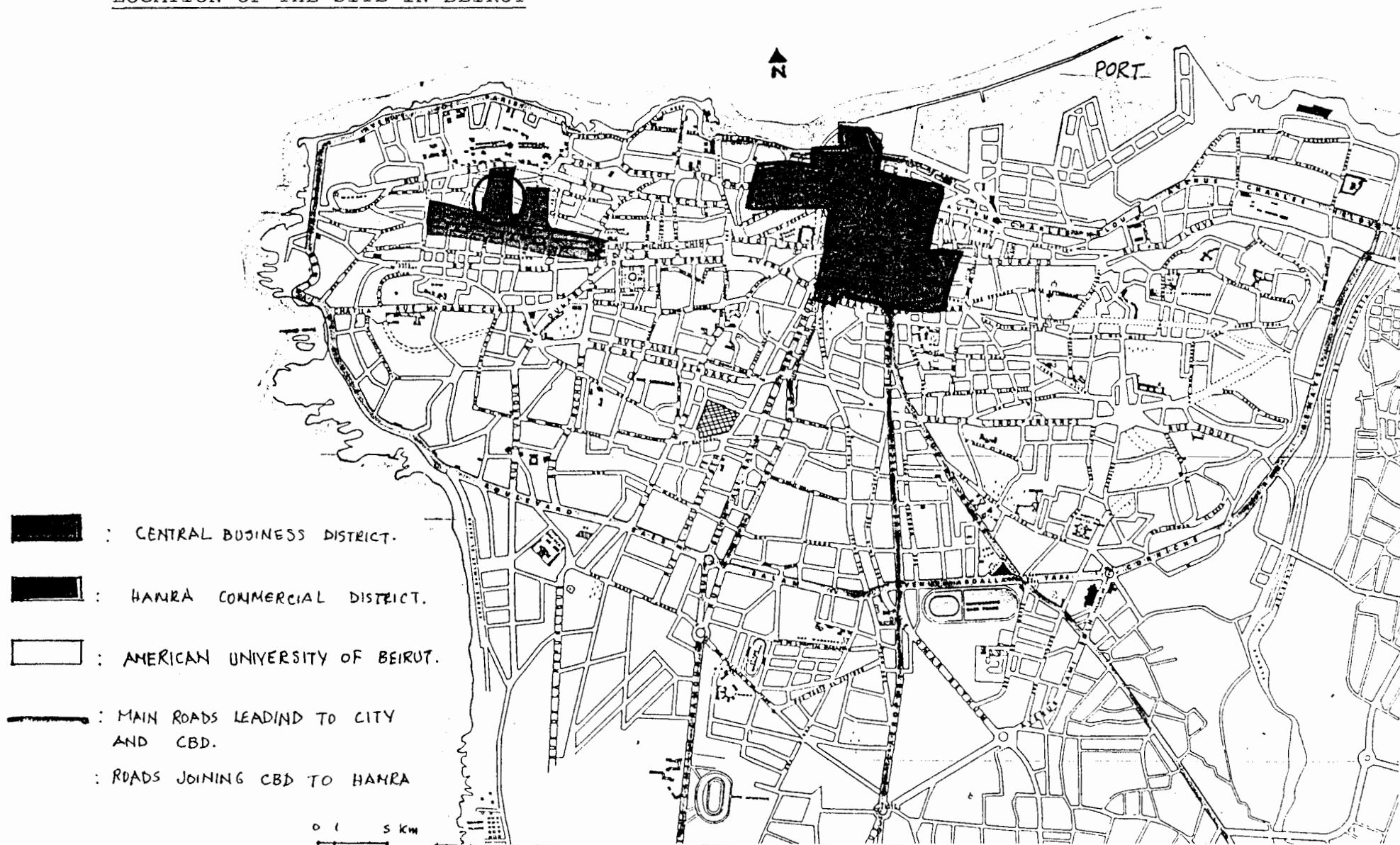
LOCATION OF THE SITE IN HAMRA DISTRICT

The site is located in a highly commercial district. It also falls within a two minute walking distance from the American University of Beirut, and therefore is within the zone of influence of the university as well. Therefore it possesses commercial value as well as cultural-educational potential.
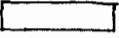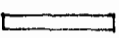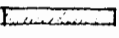
Land Use Pattern: The district is characterized with a mixed residential, commercial, and institutional land use pattern.

☐ : LOCATION OF SITE .

■ : HAMRA - CENTRA BUSINESS DISTRICT

☐ : AMERICAN UNIVERSITY OF BEIRUT

---- : ZONE OF INFLUENCE OF AUB .
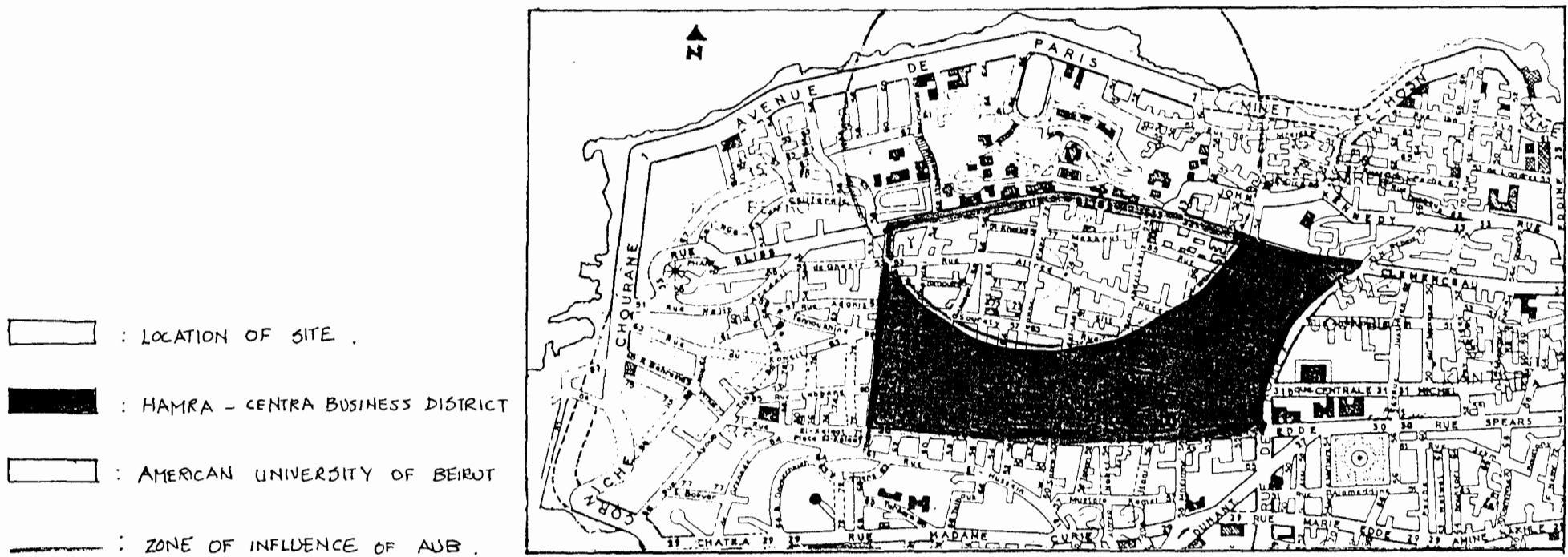
VEHICULAR TRAFFIC

The two main roads leading to the site are Jeanne d'Arc street and Sidany street. Both are one way local district roads with Jeanne d'Arc street linking the University's Bliss street to the main commercial Hamra street. These roads witness heavy traffic especially at rush hours.

1. JEANNE D'ARC STREET.

2. SIDANY STREET.

3. BLISS STREET.

4. MAKDESY STREET.

5. HAMRA STREET.

: MAIN LOCAL ROADS

: LOCATION OF SITE

: LOCAL SUB-ROADS

: ALLEY - PATHS ADJACENT TO SITE.

: DIRETION OF VEHICULAR TRAFFIC.

SCALE : 1 / 5000
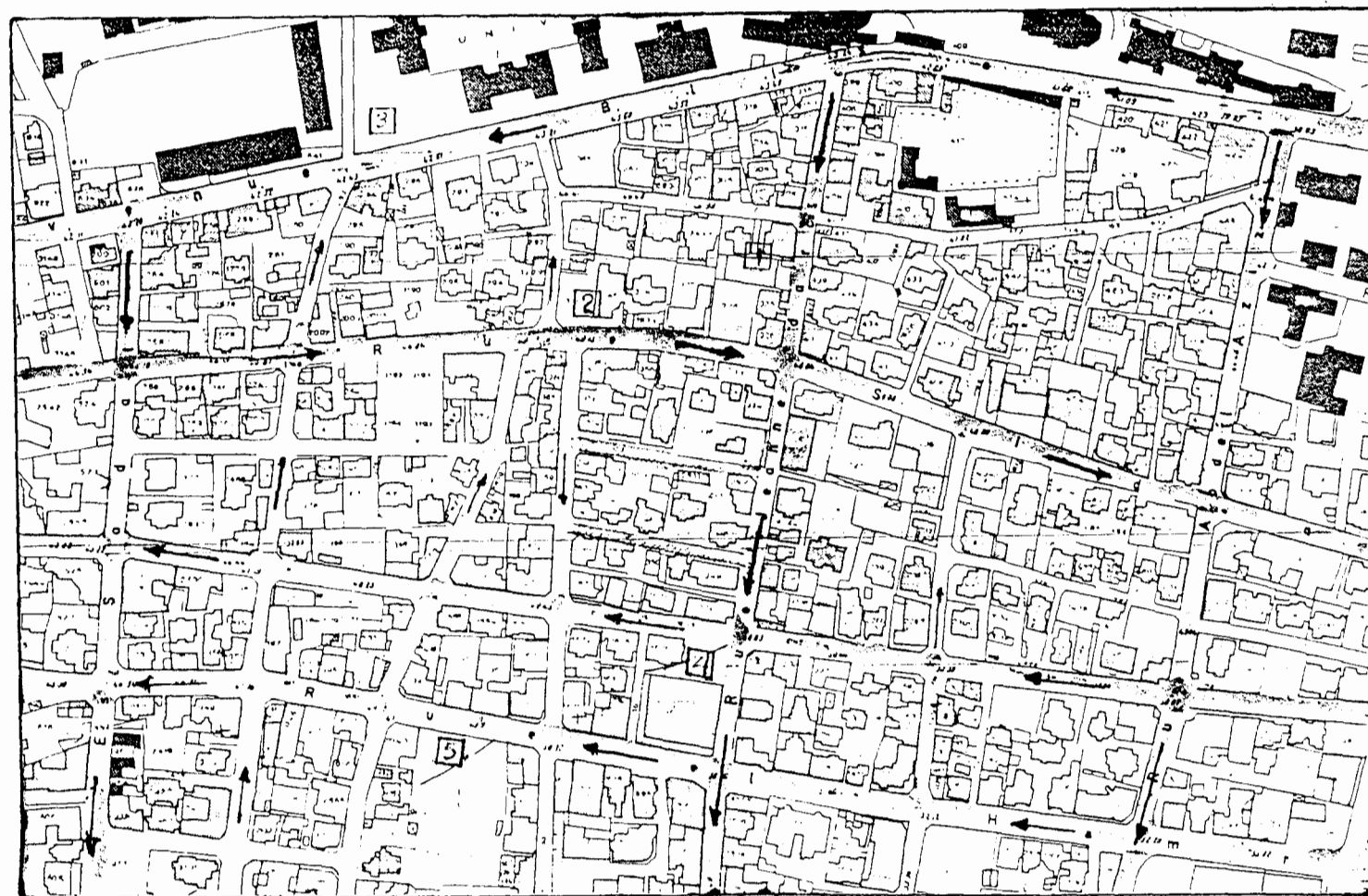
VEHICULAR TRAFFIC

JEANNE D'ARC STREET TOWARDS AUB
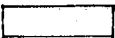

AND TOWARDS HAMRA
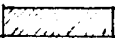
SIDANY STREET

SIDANY STREET

ALLEY-PATH ADJACENT TO SITE (LOT A)

PATH WAY FACING LOT C OF SITE

ANALYSIS OF THE IMMEDIATE SITE:

- The site, presently, consists
  of three lots: A, B, and C
  having the following areas:
  A 2630m²
  B 860m²
  C .... 6130m² 2~~

- The site is considered flat

- Sewage pipes, power supply, and
  water supply lines fall along
  Jeanne d'Arc and Sidany Streets,
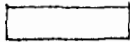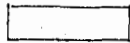 intersecting at point X and
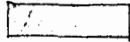 running down to Bliss street.

[ ] : THE SITE

[ ] : EXISTING BUILDINGS ON THE SITE

— : DIRECTION AND PATHWAY OF SEWAGE PIPES,

POWER SUPPLY, AND WATER SUPPLY LINES.

SCALE : 1 : 2000.
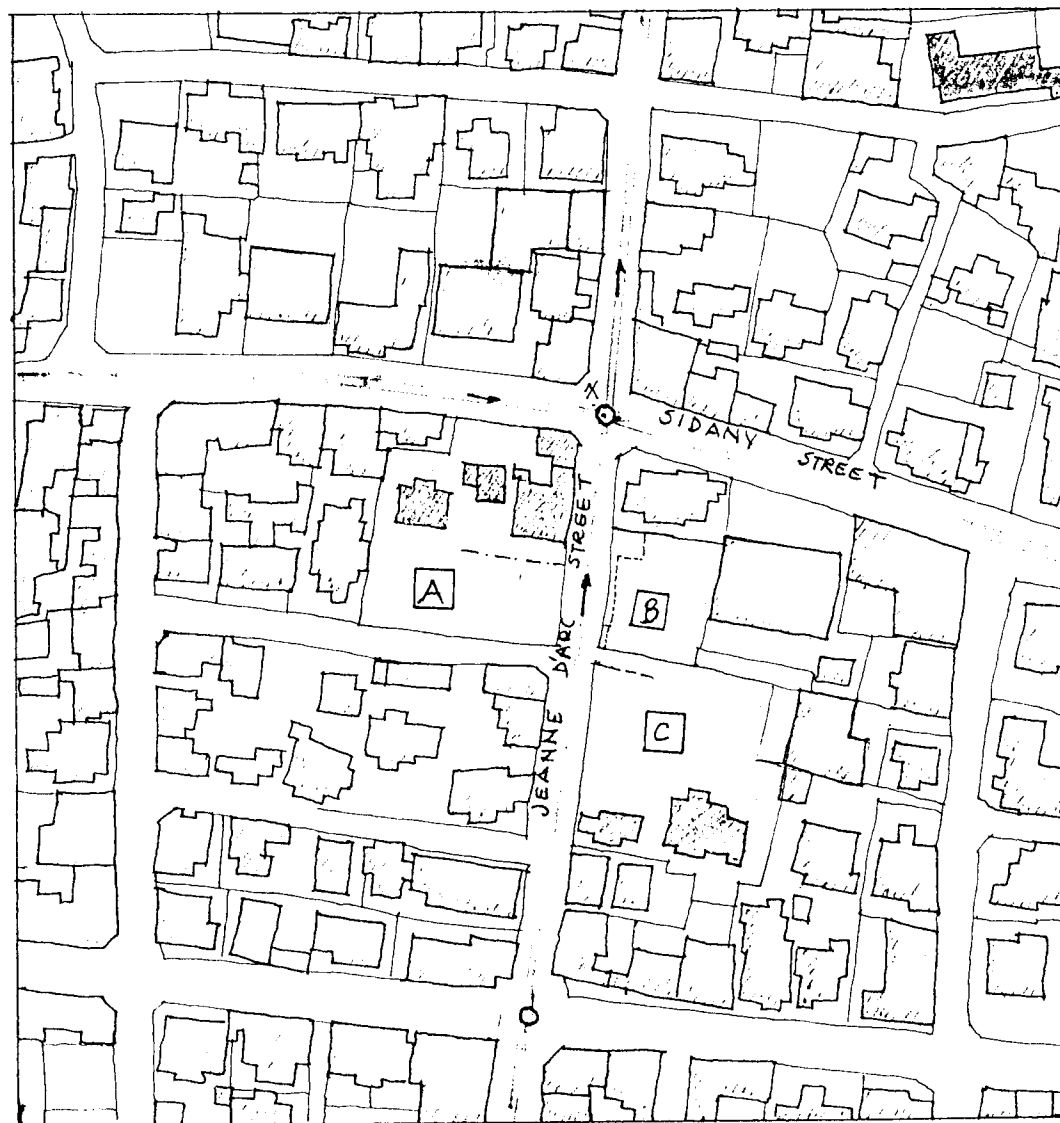
ANALYSIS OF THE IMMEDIATE SITE:

. A number of traditional villas
  and houses exist on the site,
  of which buildings (a), (b),
  and (c) will be preserved and
  integrated into the design
  since they are in relatively
  good condition. The rest will
  be demolished.

. Ecology: The ficus trees located
  on the site have become as ever
  green land mark of the area.
  Olive trees and flowering trees
  are also found and their preser-
  vation is necessary.

[ ] SITE BOUNDARY

[ ] : RESIDENTIAL WITH COMMERCIAL USE OF GROUND
      FLOOR LEVELS.

[ ] : COMMERCIAL AND OFFICE SPACE USE

[ ] : INSTITUTIONAL.

Scale : 1 : 1000
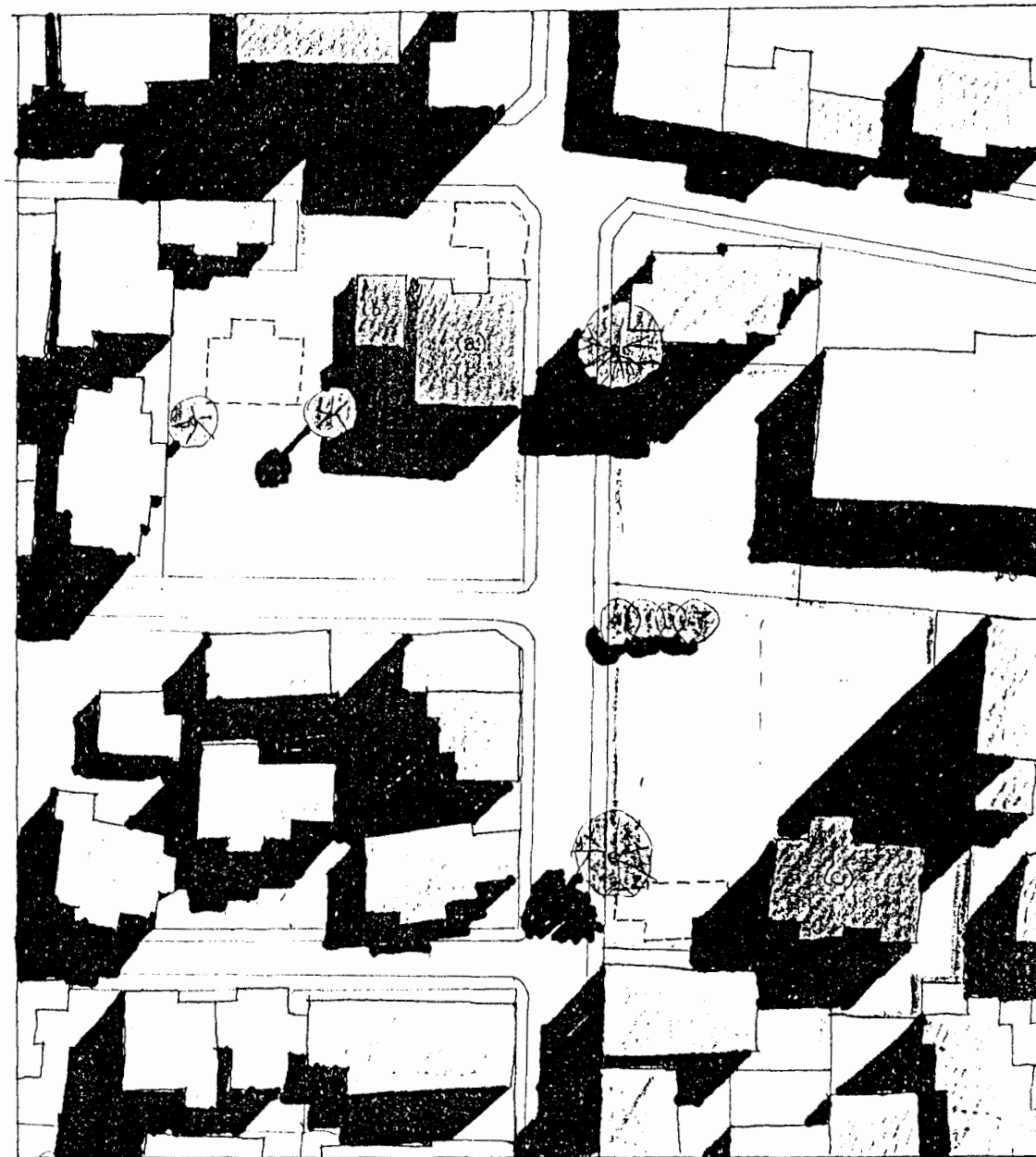
GENERALITIES ON THE IMMEDIATE SITE:

. Geology and Soil: A thin layer of
  top soil (10m in depth) bellow
  which there is bedrock.

. Cimate:
  Dominant winds are south west.
  Due to high humidity cross venti-
  lation is desirable and is best
  achieved by opening the building
  to the summer breeze from the
  south west, which is also the
  best direction for maximum solar
  heat in winter and least in Summer.

. Sources of Pollution: Noise pollu-
  tion due to cars and busy pedestrians
  must be accounted for.

Photographic Survey of the Site:

Refer to adjacent map and corres-
ponding photos.
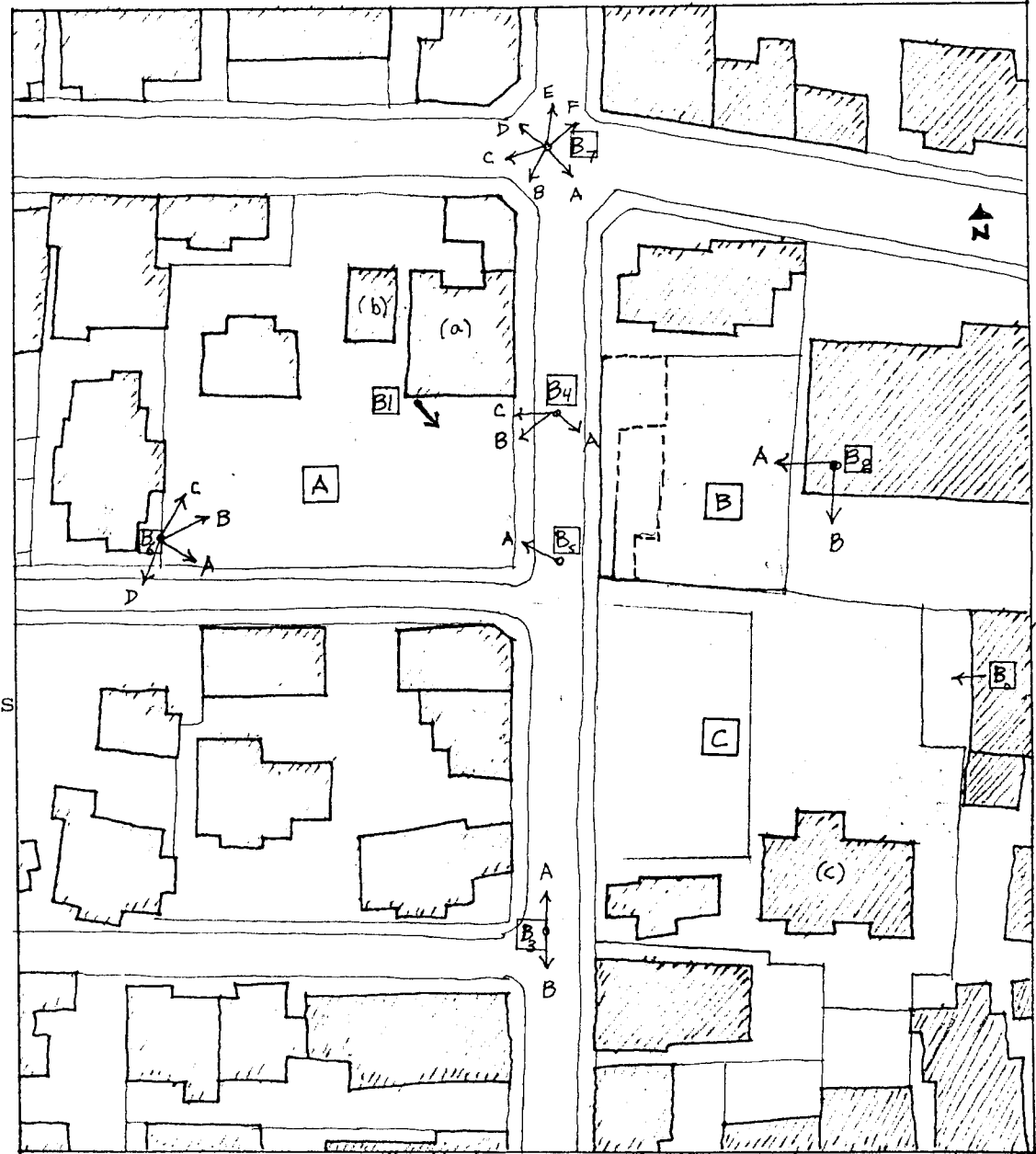
PHOTOGRAPHIC SURVEY OF THE SITE

GENERAL VIEW OF THE SITE
FROM POINT Bo.
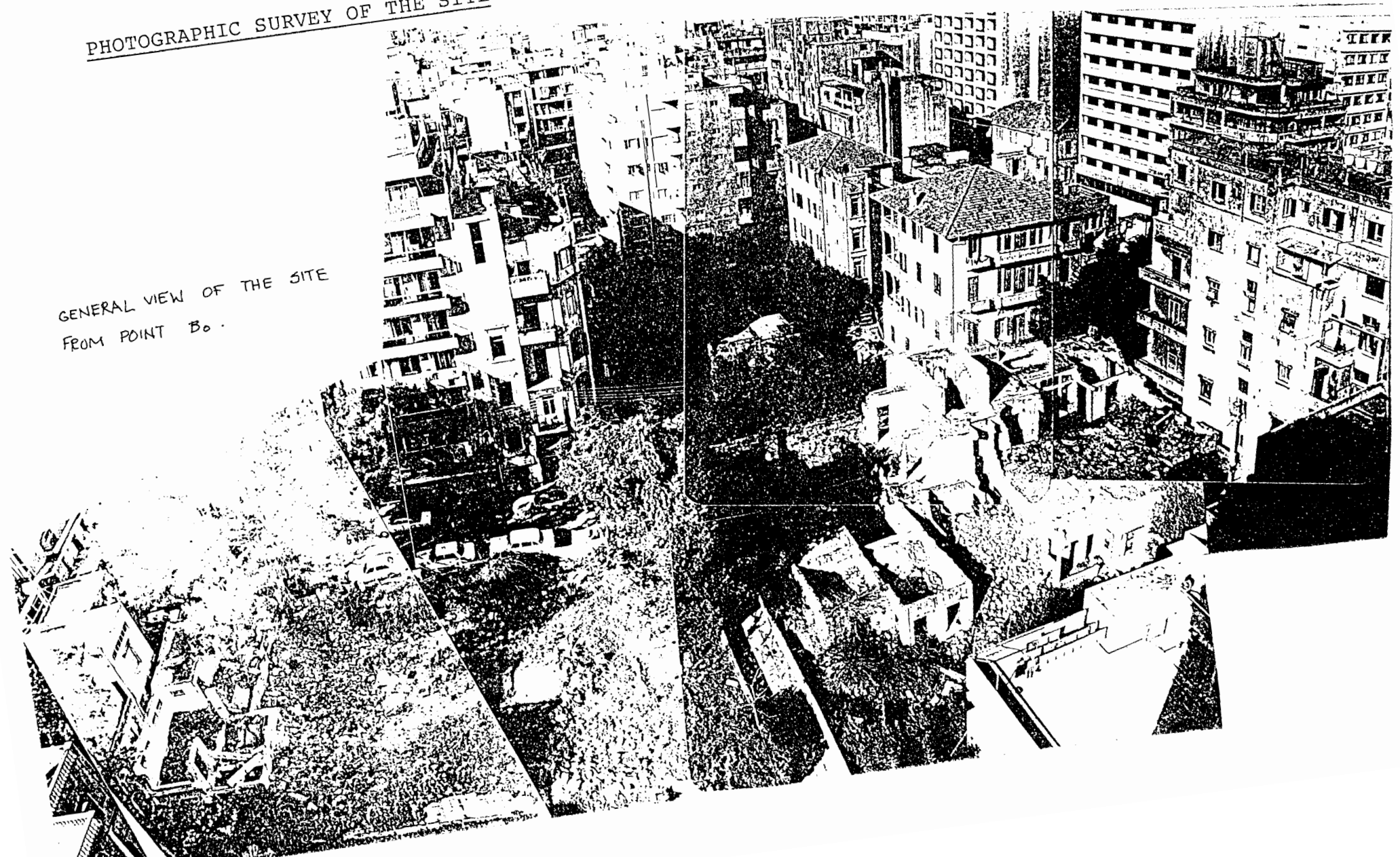
B₁ - LOT C AND ITS SURROUNDINGS

Br - A   LOT A AND   ITS   SURROUNDINGS .

B2 - B _ LOT C .

B3-A _ JEANNE D'ARC STREET
NOTE THE FICUS TREES ALONG THE STREET.

B3-B _ JEANNE D'ARC STREET TOWARDS HAMRA

B4-B. SURROUNDING YELLOW BUILDINGS (IN BAD CONDITION)

B4-A : VIEW OF LOT_C.

B4 - C

B5 - A

B6 - A

B6 - B.

B6 - C

B6-D : BACK OF LOT A

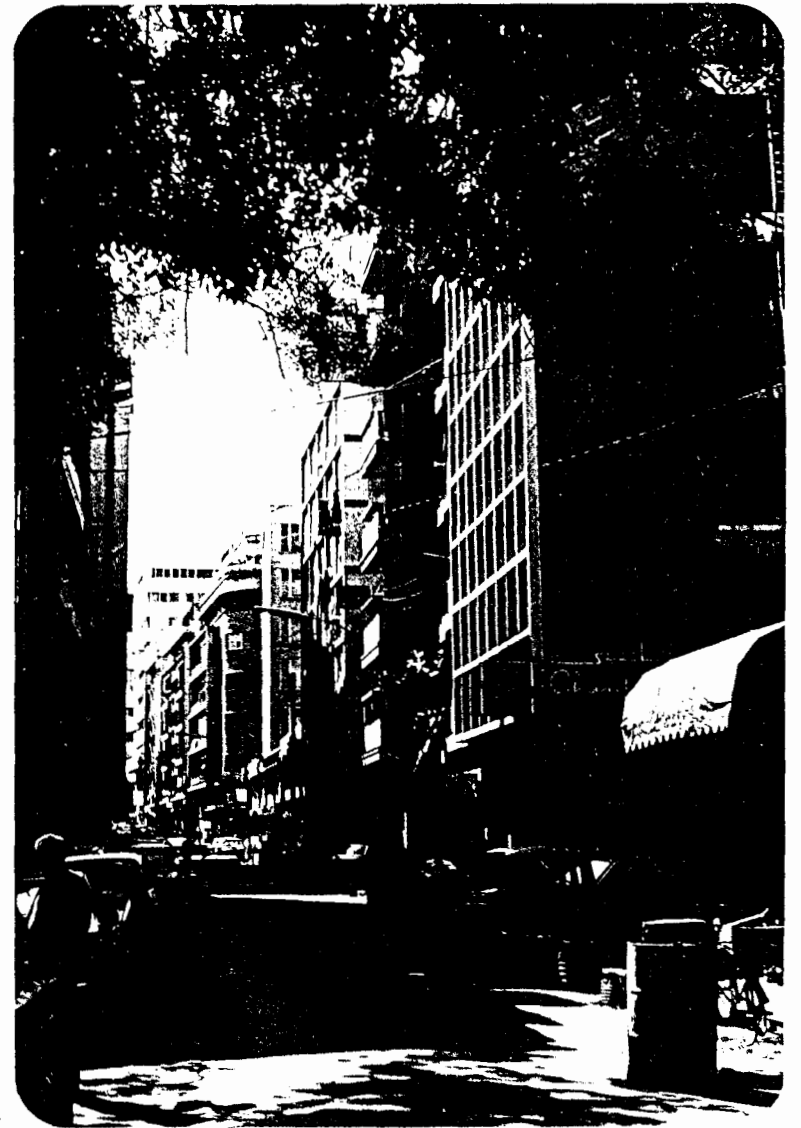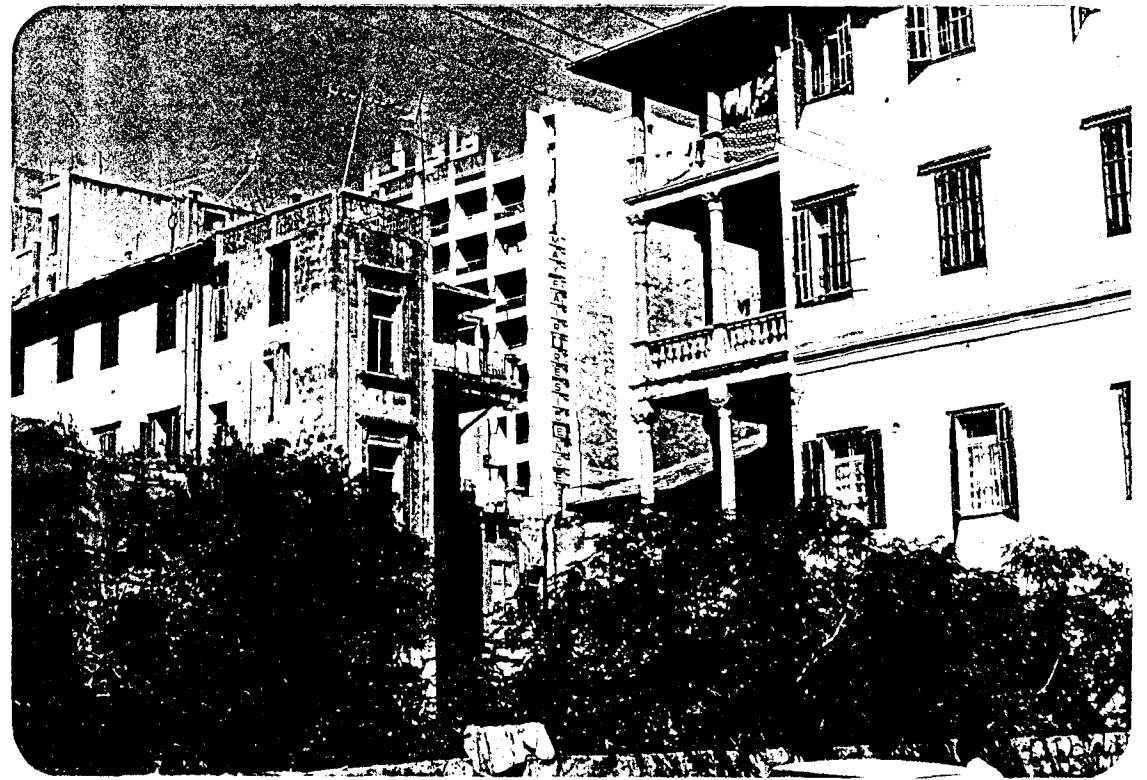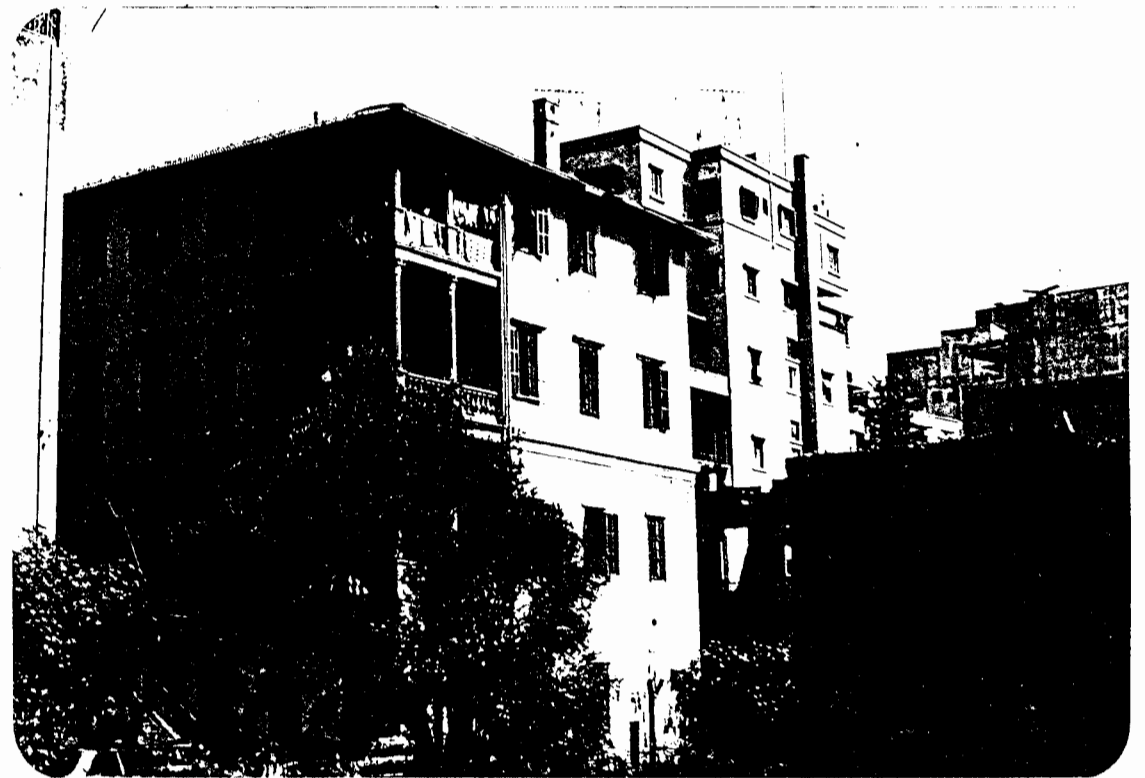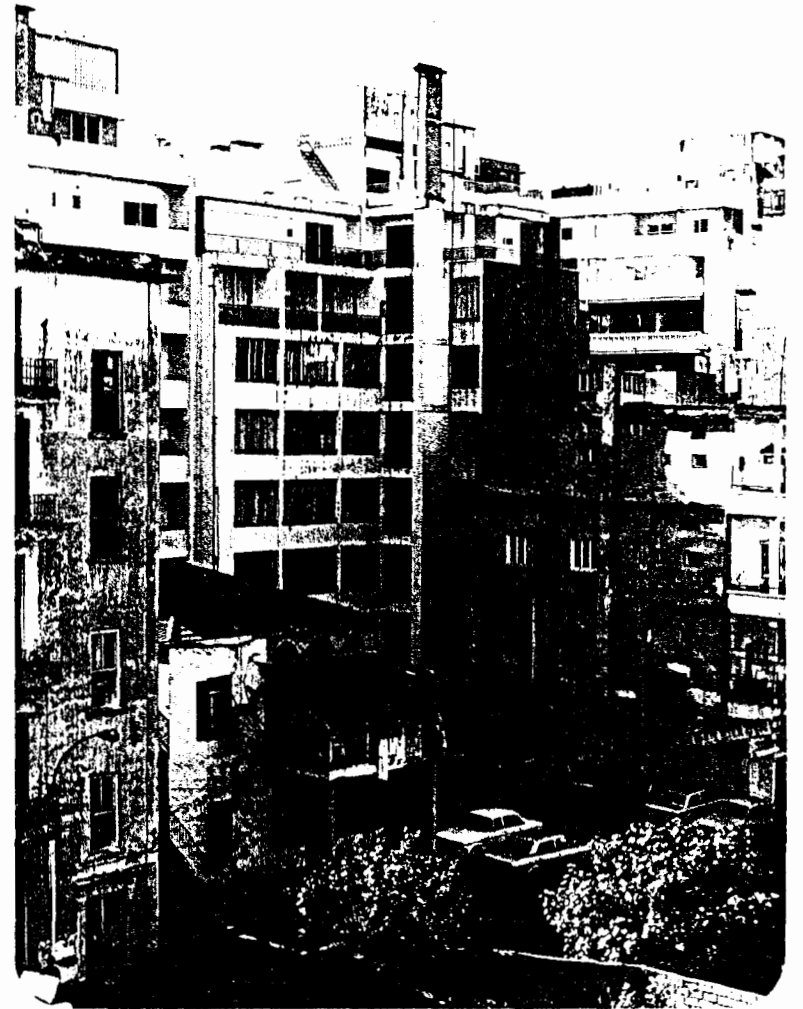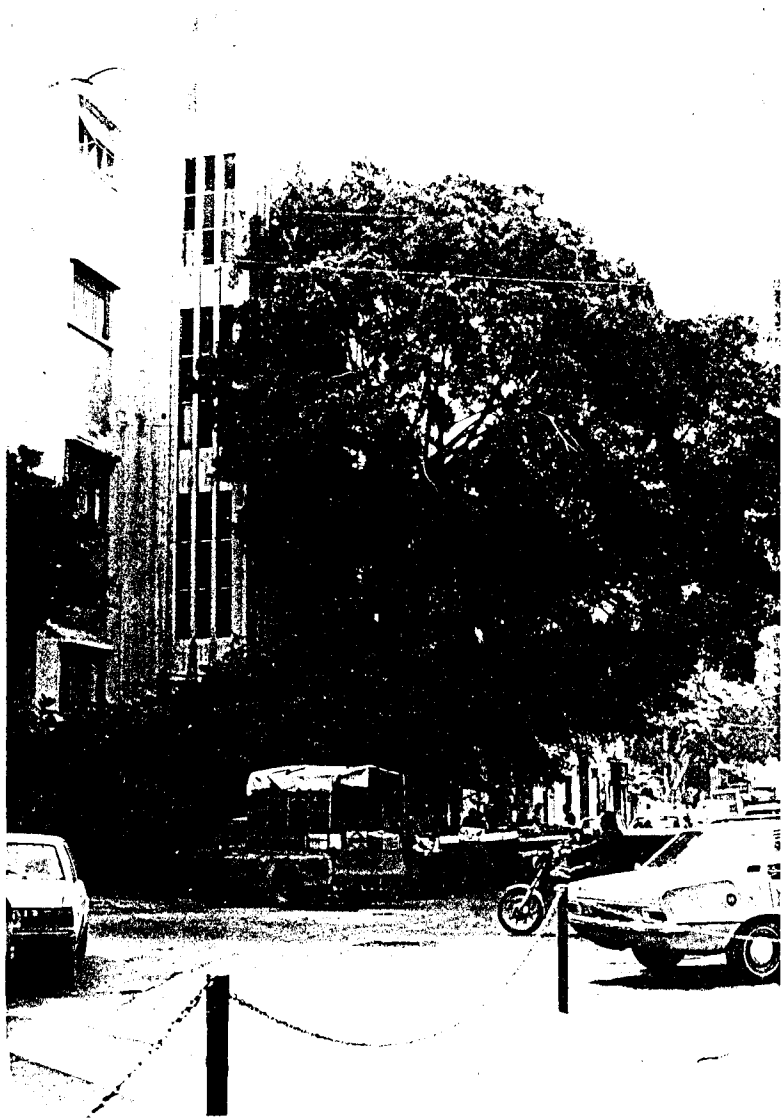B7- A
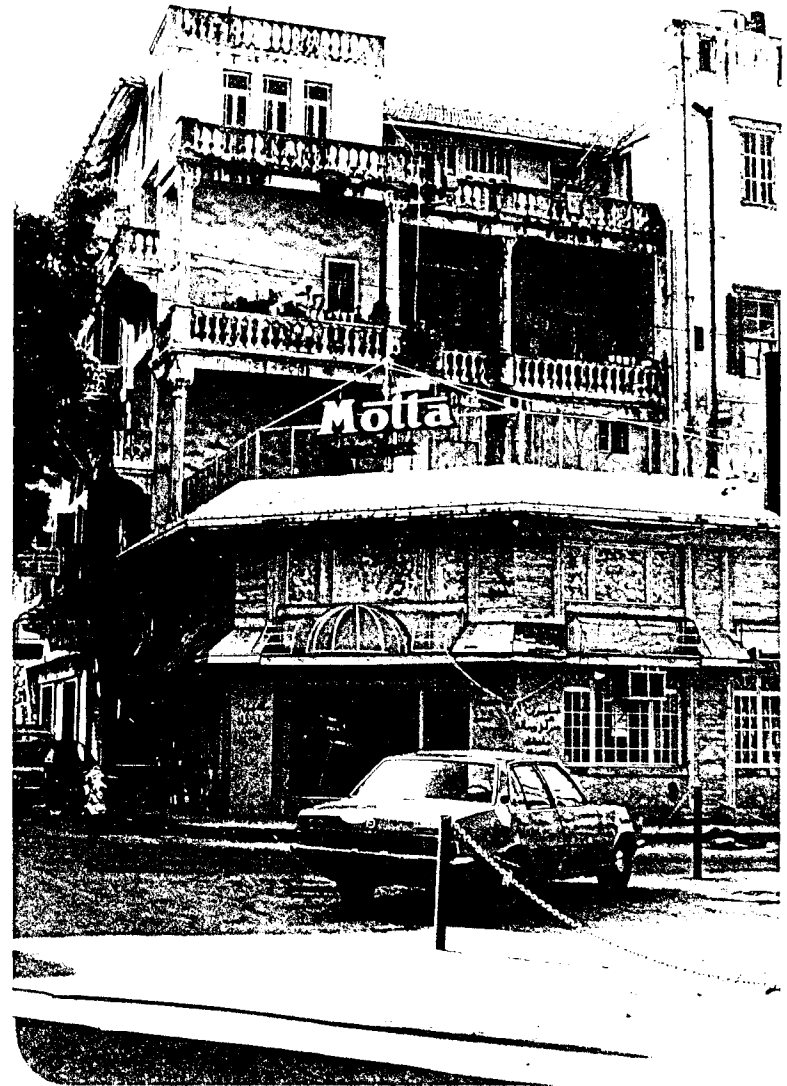
B7- B.
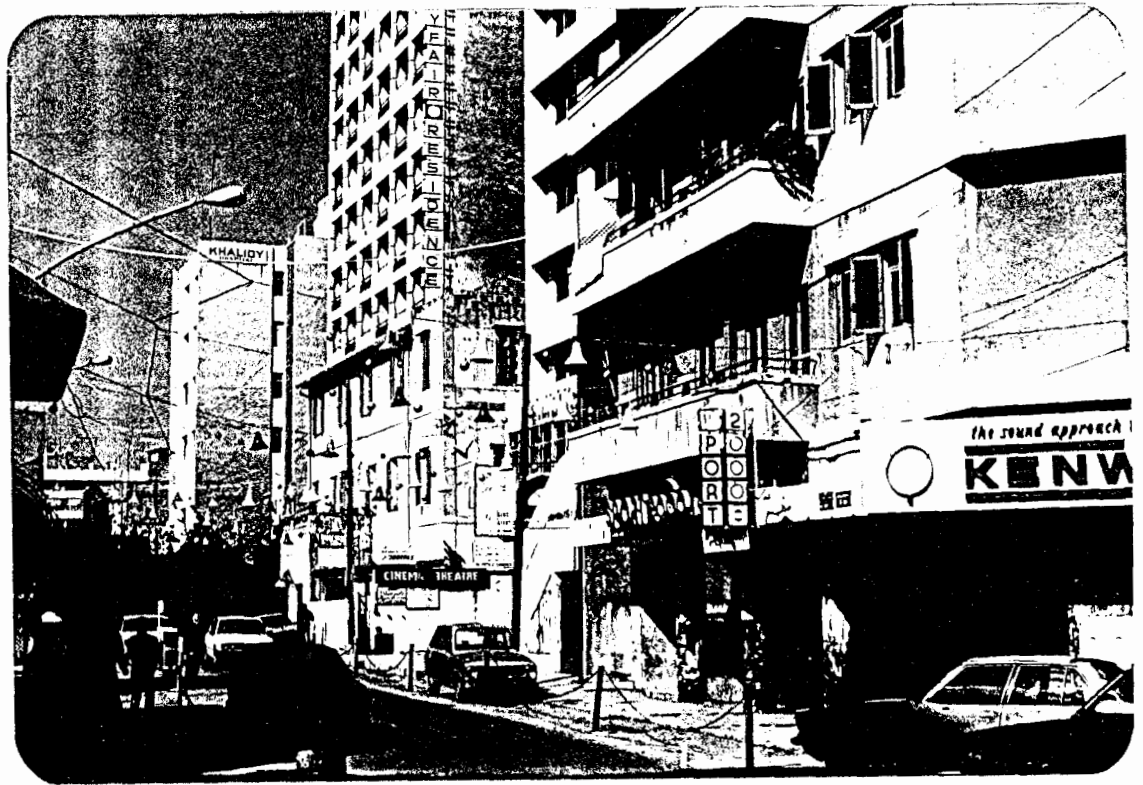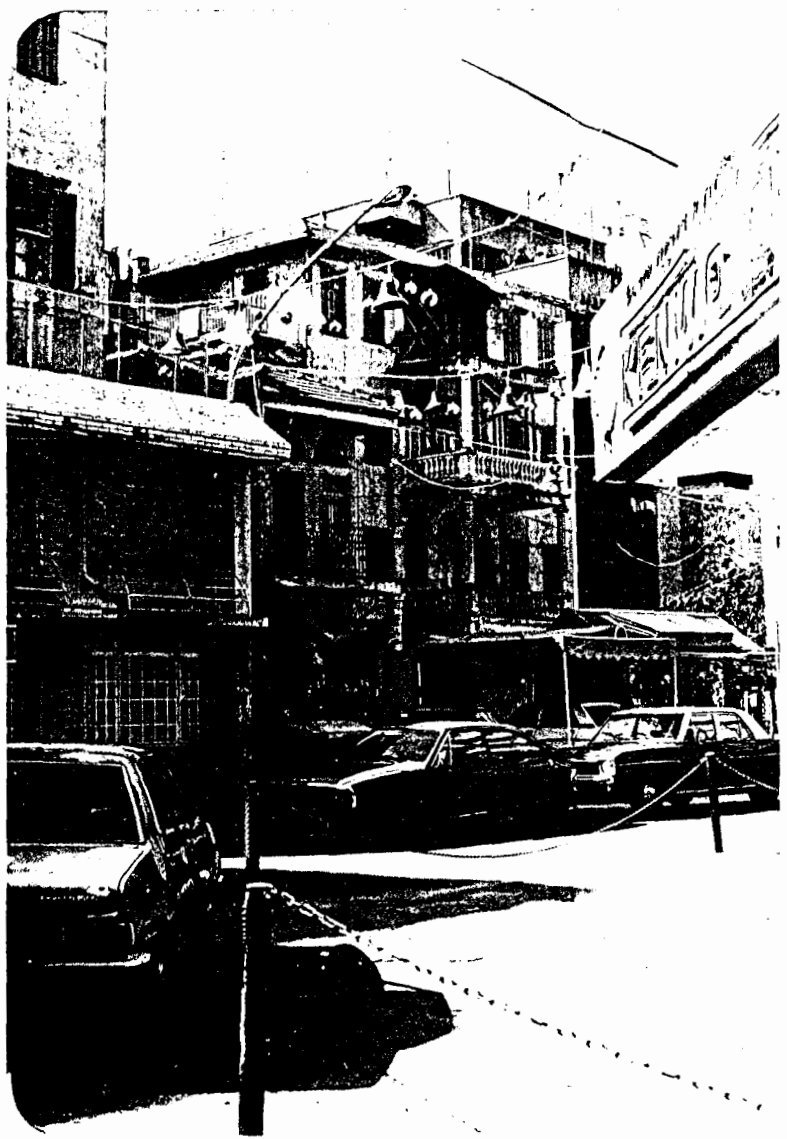
B7- D

B7- C - BUILDING IN THE REAR WILL BE DEMOLISHED
SINCE IT IS IN BAD CONDITION.

B7 - E

B7 - F

BRIEF HISTORY OF JEANNE D'ARC STREET
AND ITS RELATION TO AUB

Since the site is located along Jeanne d'Arc street a brief history of the street and its relation to the University and Hamra district is in order.

Before 1866 Ras Beirut was nothing but a garden farming area with as few as 20 to 30 farm houses and a number of sub-urban villas scattered around. The residing population did not exceed 300.

The establishment of the Syrian Protestant college (now the American University of Beirut) in 1866 was the first dramatic instance of ecological change in this area. The urban development, street patterns, ecological processes as a result of competition for space and location, and the socio-economic character of the population, are all by products of AUB's presence.

GENERAL VIEW OF BLISS STREE AND RAS BEIRUT IN THE EARLY 1920's

RAS - BEIRUT AND BLISS STREET TODAY.
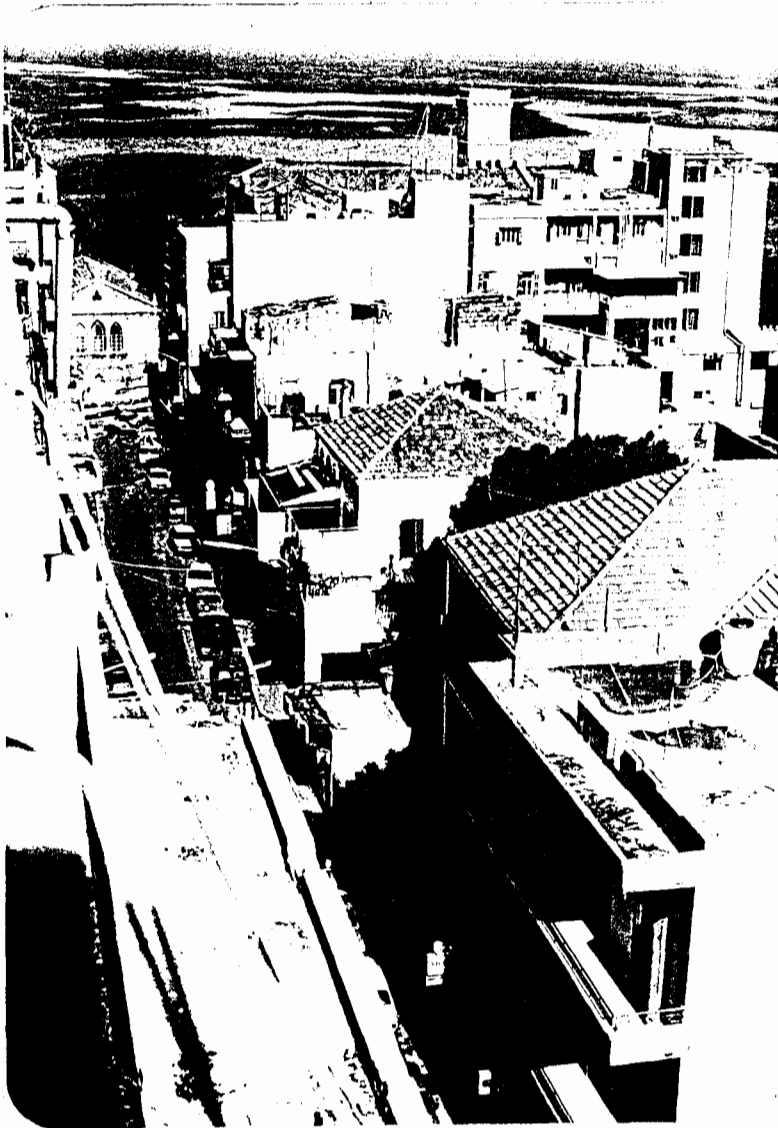
VIEW OF JEANNE D'ARC STREET AT THE PRESENT TIME.

Jeanne d'Arc street was one of the two main arteries that were laid out as regular streets radiating from the University's Bliss street in 1919, directly oriented to its Main Gate.

The street began to attract new residential constructions mainly, traditional villas with small gardens, only a few of which still remain along the street and in the district. The villas close to AUB reflected the more privileged socio-economic origins of their inhabitants who were drawn into the area by the University's presence. They were the truly urban settled group in the area, the newly emerging middle class.

Up till the 1950's Hamra district retained its communal village atmosphere. It continued to assume a horizontal sky line with the traditional villas overwhelming the urban scene.

In the 50's and due to various reasons, Hamra street began to attract commercial establishments. Under pressure, ground stories of residential buildings were converted into shops, and soon specialized buildings for offices and commercial use began to appear. By the 60's large scale urbanization had begun. The whole area had become a fashionable commercial and business center.

Today, Hamra district is an exploding metropolis. It is a highly dense and compact urban area with an incessant flow of cars and pedestrians and with narrow streets flanked with towering structures. Jeanne d'Arc street is part of this highly commercial district and exhibits these aspects. However, what gives this street its uniqueness in this busy metropolitan area is the fact that it has retained its communal village atmosphere along with an urban vitality. Due to its direct proximity, the American University has played an important role in the inducement and persistance of this communal neighborhood interaction.

SOCIO-ECONOMIC PROFILE

Social Composition:

The social composition of Hamra district in which the site of this project is located is highly molded by AUB's presence. Except for the last two years of war, the area had remained a composite of hetrogeneous ethnic and religious groups. Relative to other parts of Beirut it still is.

Although affected by the war, it can still be considered a predominantly middle class active society. From table 1 concerning the occupational status in Hamra district one can observe that the active population is characterized by a high degree of educated professionals, officials, and executives, amounting to more than 35% of the total. In the inactive population

TABLE 1:

Occupational status

Economically Active Population	N	% of total population	% of Active population
LARGE BUSINESS Bankers, industrialists, managers, contractors, proprietors of large business	51	2.6	7.9
PROFESSIONALS Doctors, engineers, pharmacists, lawyers, professors, teachers, judges, dentists, social scientists, etc.	155	8.0	24.0
OFFICIALS AND EXECUTIVES Government employees, heads of sections, army officers, employees of embassies.	31	1.6	4.8
SEMI-PROFESSIONALS Pilots, technicians, accountants, interpretors, hostesses, nurses, decorators, journalists, publishers, artists and entertainers.	69	3.6	10.7
SMALL BUSINESS Retailers, dealers, agents proprietors of repair shops, and personal services.	188	6.1	18.3
CLERKS Clerical workers, secretaries, salesmen	150	7.7	23.3
SKILLED WORKERS Tailors, hairdressers, carpenters, photographers.	44	2.3	6.8
SEMI-SKILLED Cooks, barbers, drivers, foremen, policemen.	18	0.9	2.8
UNSKILLED WORKERS Daily laborers, office boys, peddlers.	7	0.4	1.1
	713	23.2	99.7

Inactive Population	N	% of total population
STUDENTS	673	34.6
HOUSEWIVES	414	21.3
UNEMPLOYED	56	2.9
RETIRED	35	1.8
RENTIER	7	0.4
INFANTS	109	5.6
NO ANSWER	6	0.3
Total	1943	100.0

on the other hand, the student body amounts

to the highest percentage of the total,

about 30%, (Khalaf, p. 64). The presence

of the university and associated institu-

tions has been instrumental in attracting

and sustaining this large professional and

student base. In fact as much as 50% of

the total population of the district are

directly attached to the University (Khalaf,

p 67).

The presence of the University has

also affected the population Pyramid as can

be seen from diagram 1. There is a bulge

in the age groups from 20 to 30, reflecting

the large proportion of university students.

(Khalaf, p 60)

Social Status and Standard of Living

Although affected by the civil war,

Hamra district is still, relatively, a high

diagram 1 :   36

POPULATION PYRAMID OF HAMRA
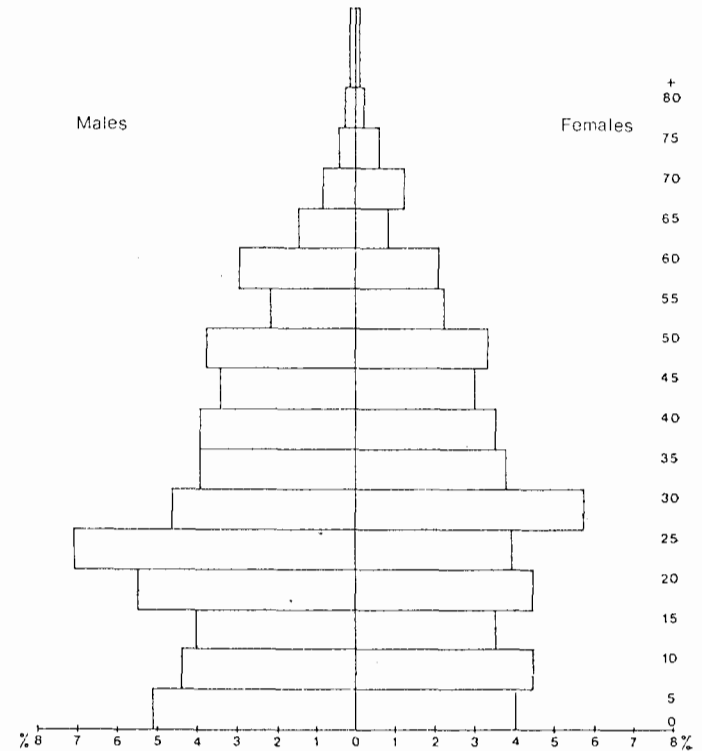
TABLE 2 :

Occupational Distribution

	Ssettled population		Floating population	
	N	%	N	%
Big business, professionals, semi-professional and executives	72	42.8	37	43.0
Small business	20	11.9	14	16.3
Clerks	18	10.7	7	8.1
Workers and craftsmen	17	10.2	2	2.3
Rentiers	5	3.0	1	1.2
Students	1	0.6	17	19.8
Housewives	15	8.9	4	4.6
Retired	11	6.5	1	1.2
None	7	4.2	2	2.3
No answer	2	1.2	1	1.2
Total	168	100.0	86	100.0

income area. The economically active population of Hamra are endowed with a consider-
able degree of socio-economic mobility and a high earning potential. The average
monthly income per family is at least double the average for Beirut as a whole (Khalaf,
p. 69). They lead a cosmopolitan life style with a good standard of living and enjoy
a comfortable quality of housing and access to recreational and shopping facilities.
They have played an important role as carriers of new ideas, opinions, and careers
relevant to social change.

Living Patterns:

Although Hamra attracts a high transient population of businessmen, executives,
college students and staff, and tourists (both Lebanese and foreigners) as can be
seen from table 2, it is far more an end station for a rather stable and settled
group. (Khalaf, p 105)

Despite the fact that the society in Hamra is considered a truly urban one,
there still exists a strong remanent of traditional values and an appreciable degree
of intimacy, integration, and survival of communal attachments. Social relations
have not been reduced like in other urban centers to superficial impersonal contacts.
There still persists a strong sence of community and of neighborhoodliness.

This district in which the site is located is also characterized by a high degree of self sufficiency as to activities of shopping, worship, visiting, leisure, schooling, work, and residence. This means that the residents of Hamra satisfy most of their material, social, and cultural needs within walking distance of their homes. This increases communal attachments making the area display characteristics of an urban village with immence vitality.

Land Use Patterns: and the type of activities on Jeanne d'Arc street.

The street, just as the whole district, is characterized by a highly mixed land use pattern based on vertical sorting rather than area functional specialization, with the ground floor and lower stories offering retail, business, and leisure facilities, and the upper floors serving either residential or office needs. The type of retail facilities that are offered along the street differ as one moves from the American University towards Hamra street (refer to the birds eye view of Jeanne d'Arc street on the following page(s)). In the lower and towards Bliss street retail facilities are more student oriented, one finds self-service restaurants, snackbars, sports wear shops, music shops, and others. As one moves towards Hamra street, a wider range of retail goods are offered ranging from fashionable ladies wear, to gift and artisanal

shops, and to more communal flower shops. In fact, this coexistance of traditional and modern acupations such as, food stalls and fast food restaurants, artisanal shops, fashionable shops, and flower shops, is one of the characterizing features of the street and the district adding to its strong communal quality.

MAKHOUL ST

SIDANY STREET
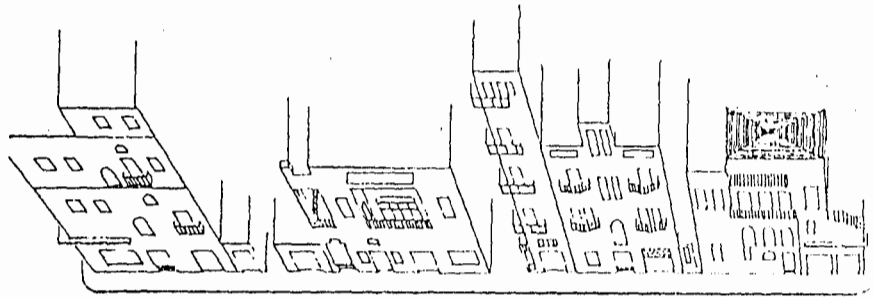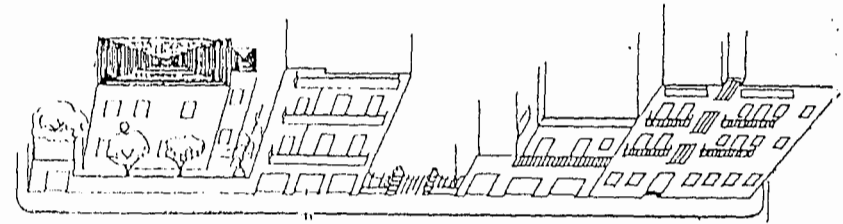
BLISS STREET

STUDENT ORIENTED FACILITIES
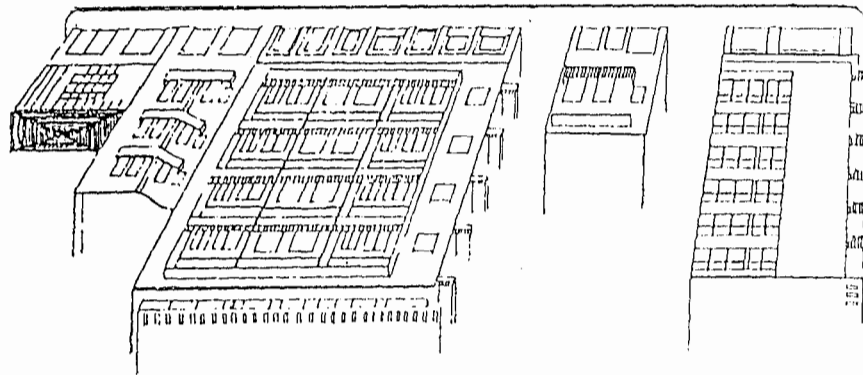
SPORTS WEAR
BOOK SHOPS
STATIONARY
CATERING SERVICES
MUSIC SHOPS
ETC.,

JEANNE D'ARC STREET

STUDENT ORIENTED FACILITIES
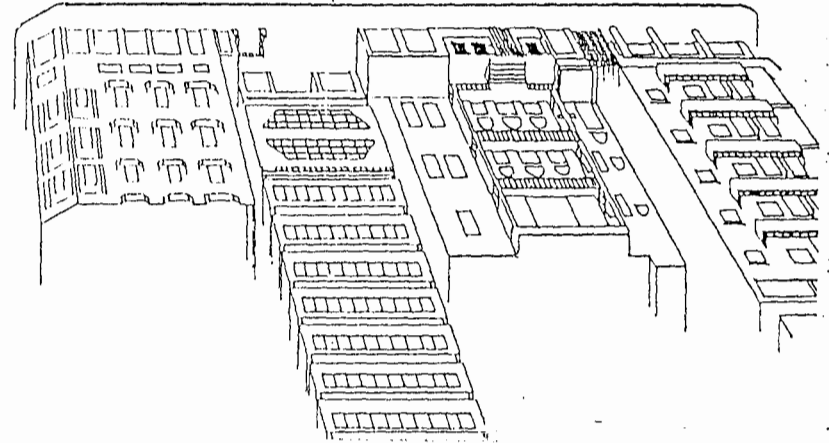
KHALIDI ST

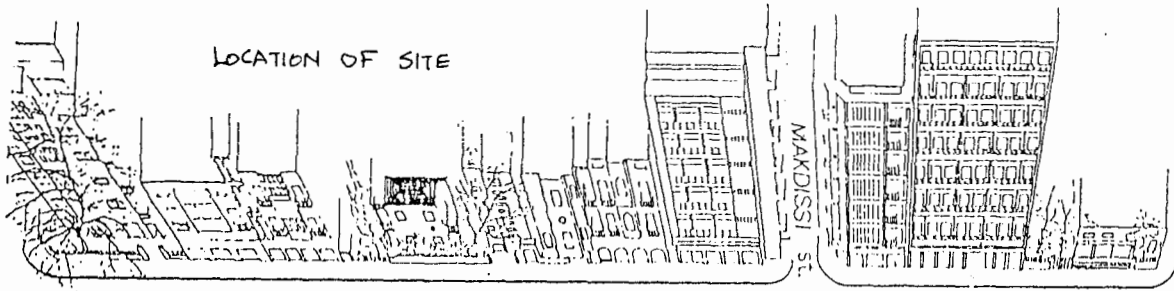ADAPTED FROM : F. GHOSN & CO. , BEIRUT DIRECTORY, 1975
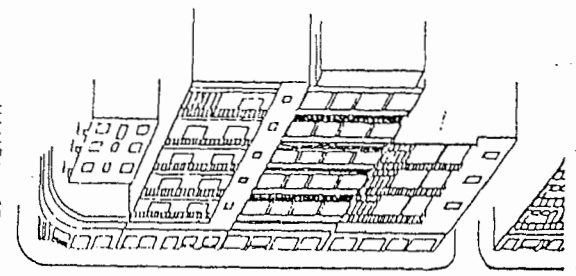
LOCATION OF SITE

MAKDISSI ST.

HAMRA ST.

FASHIONABLE RETAIL STORES

SIDANY STREET

JEANNE D'ARC STREET

FLOWER SHOPS

BASRA ST.

MAKDISSI ST.
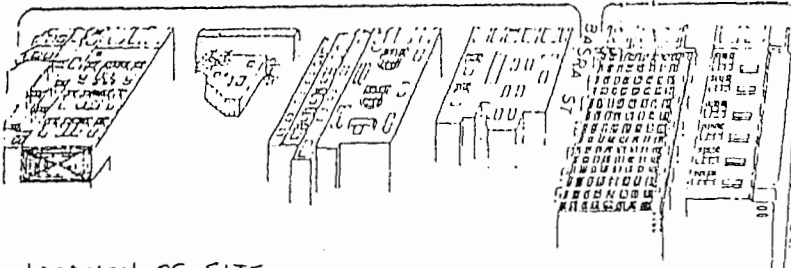
HAMRA ST.

LOCATION OF SITE
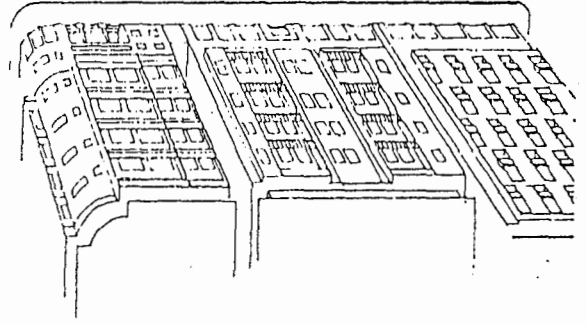
THE ARCHITECTURAL CHARACTER OF JEANNE D'ARC STREET

Visual Analysis of the Street

This analysis is concerned with determining general aspects relating to massing, composition contrasts, imagery, and other underlying visual assets which account for the special character of the street.

Massing and Composition

The street offers a variety of images as one moves along. There is an interplay in the composition and the massing of the different buildings. Instead of a continuous wall like facade all along the street, there is an interplay between high and low masses, open and enclosed spaces, views of gardens and unexpected inner spaces.

A relationship is formed between the passerby and the built structure through this variety in composition.
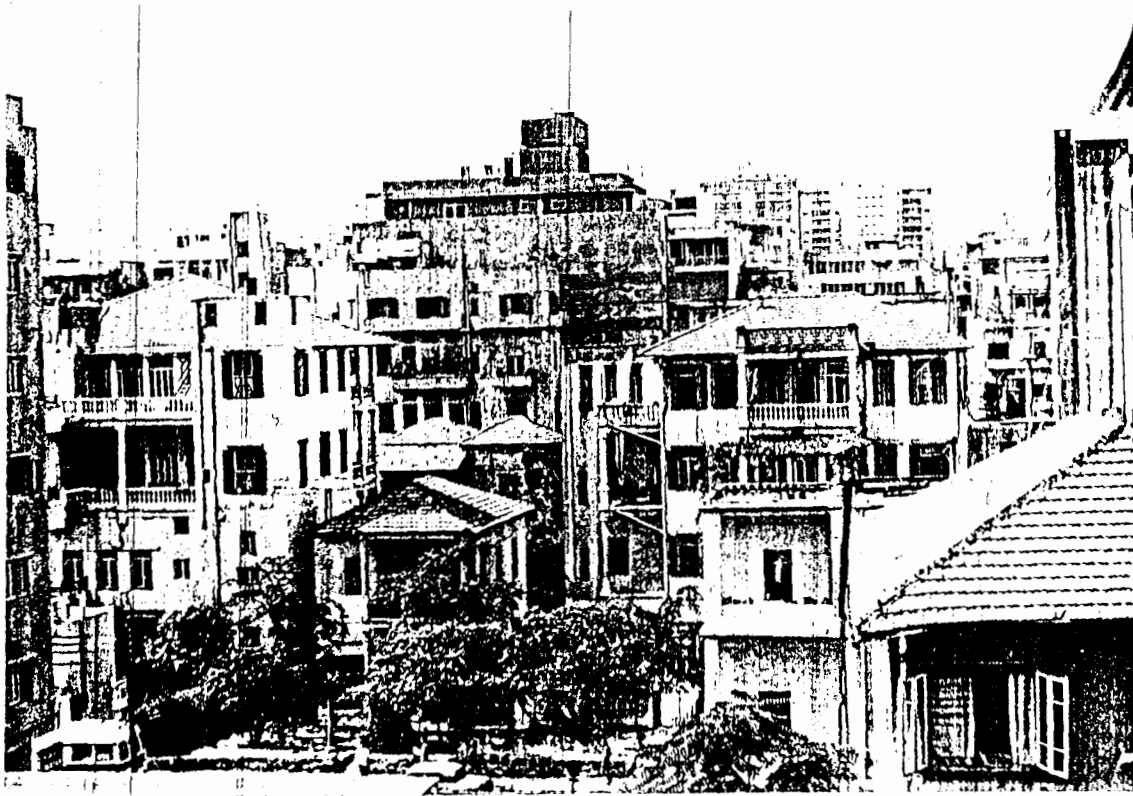
The contrast and duality of the old traditional houses and the new modern structures, adds to the vitality of the street as an urban town community.
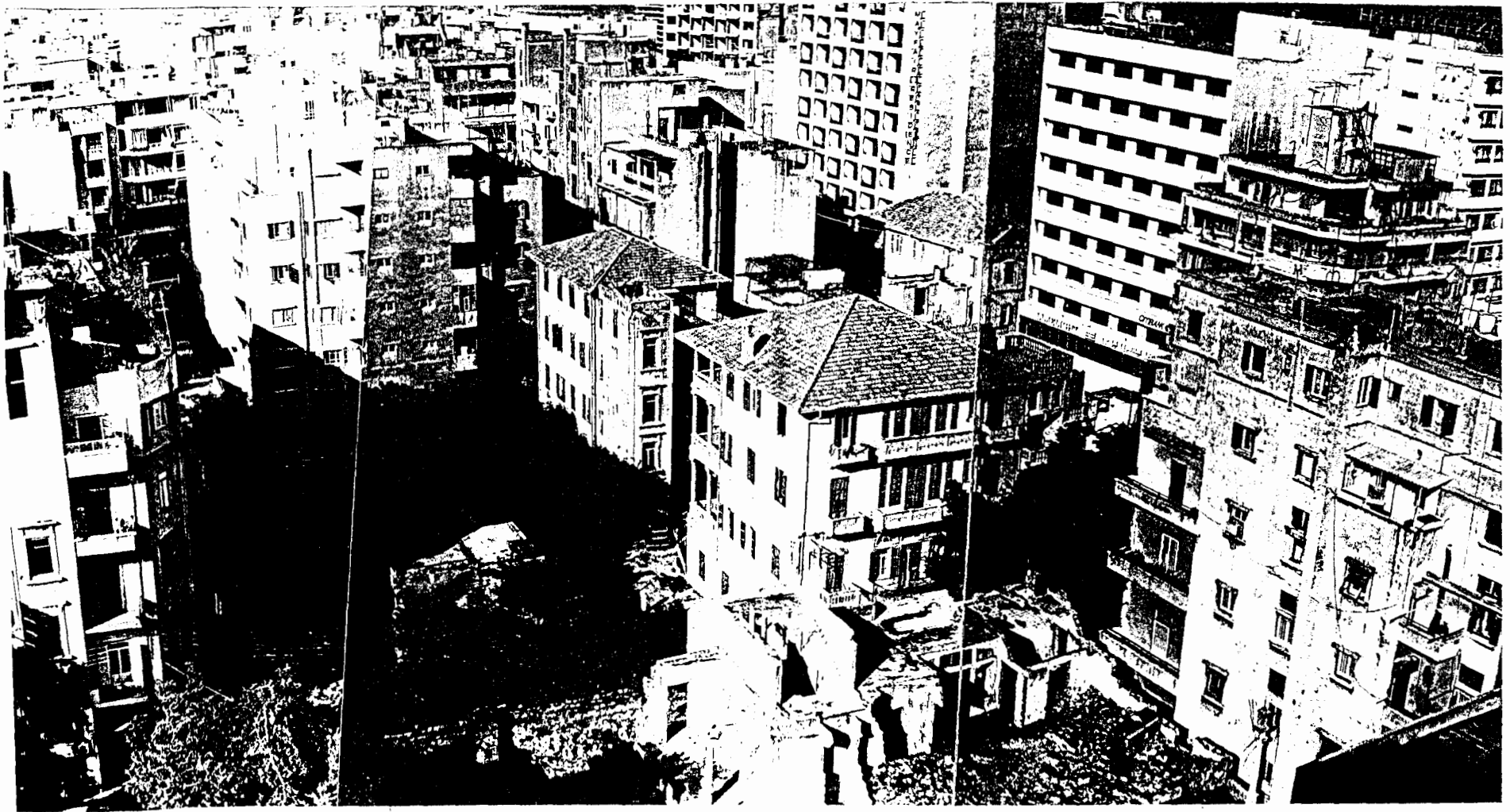
The existance of traditional building
forms give the street a sence of rootedness
and belonging. They initiate in the passerby
feelings of nostalgia and cultural belonging.
He is able to relate to his environment in
terms of signs and symbols which demonstrate
his identity.
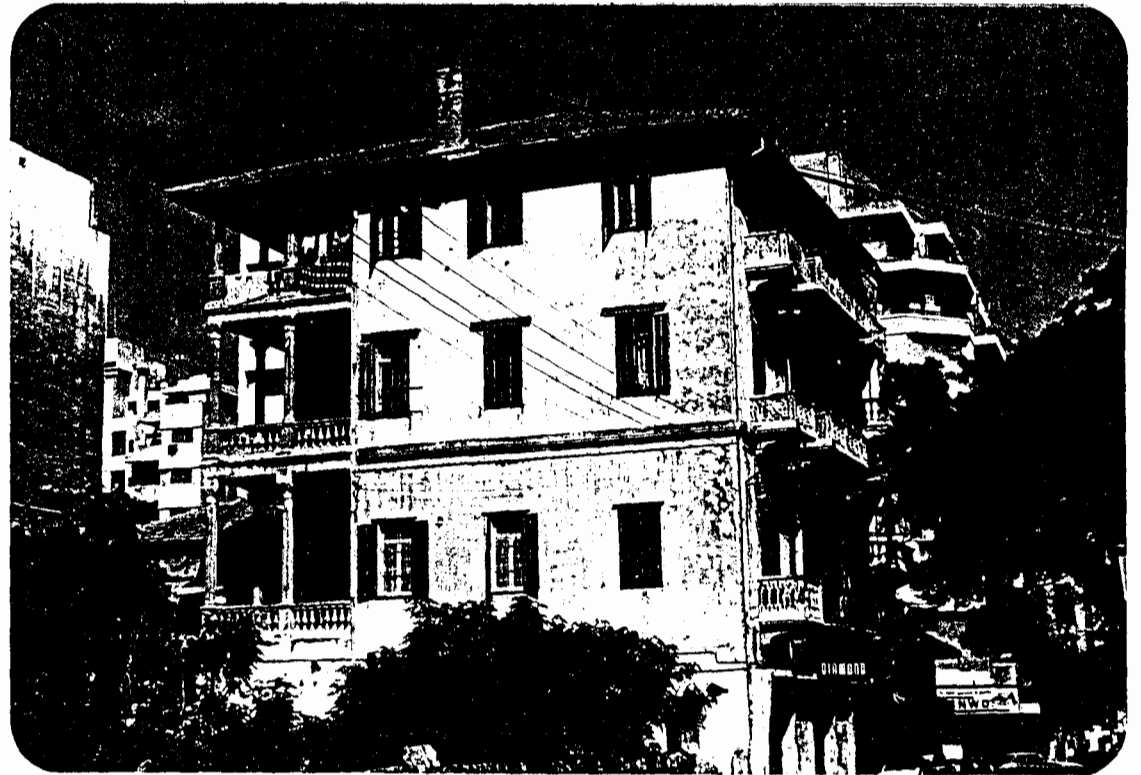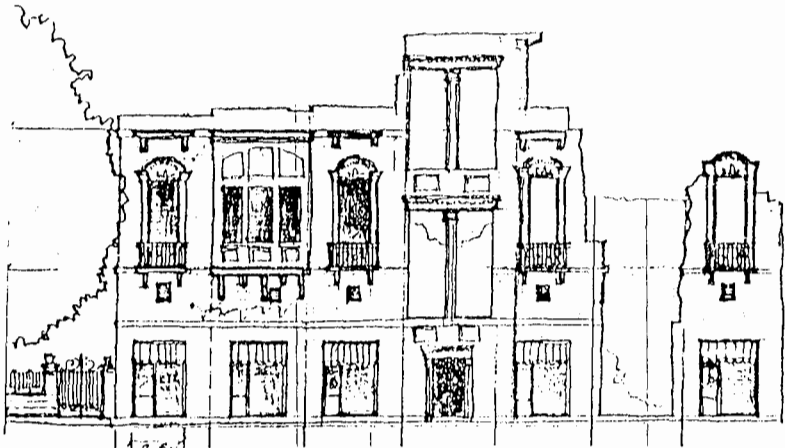
Analysis of the Traditional Villa Type

This type of building was predominant
in Beirut in the 1920's and 30's. Later
on it came to be known as the yellow
building type. It developed from the
traditional Lebanese central hall house
as a result of the need for more built
up floor area, the integration of new
standards and values of beauty and pre-
stige, the application of western motifs
in detailing the building and the intro-
duction of new construction techniques
and modulation.
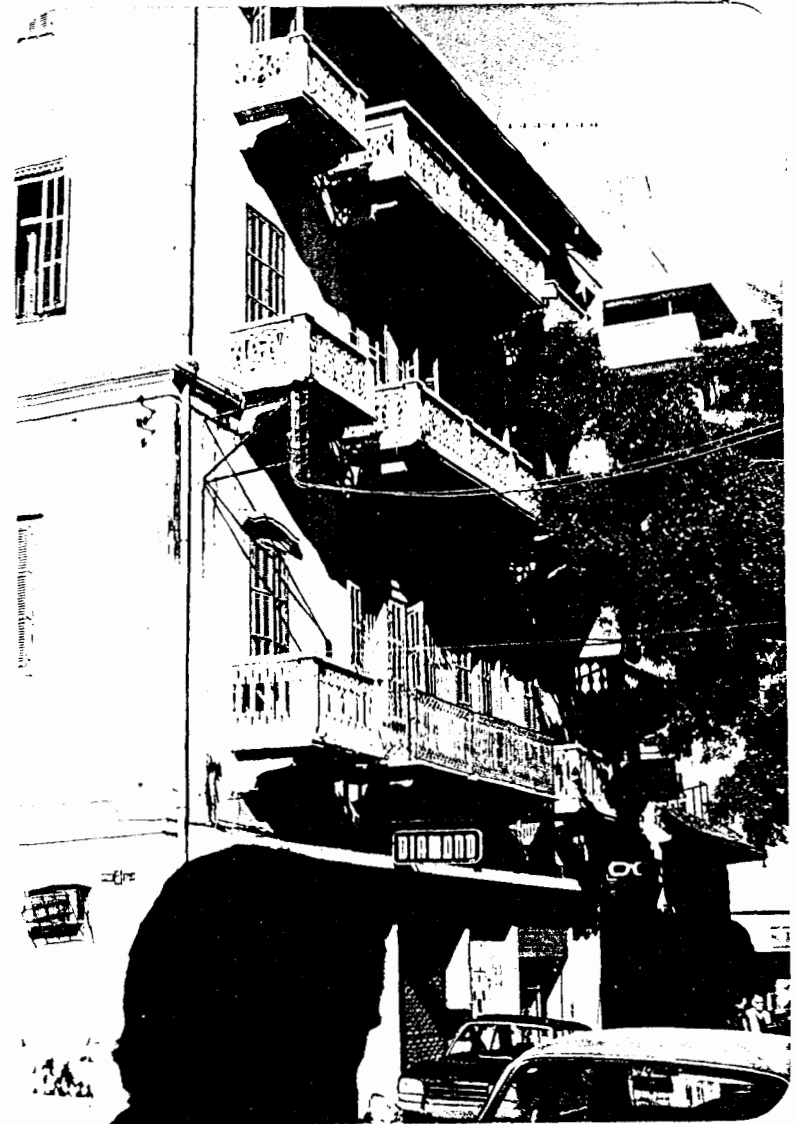
Main Characteristics of the Traditional Villa:

1. The central hall or " Dar " :

It is the strongest element in the
house. It acts as common space linking
all the different rooms around it. It is
the main element in the facade and is
given a hierarchal position since it is
a symbol of the traditional social and
family ties in the region.
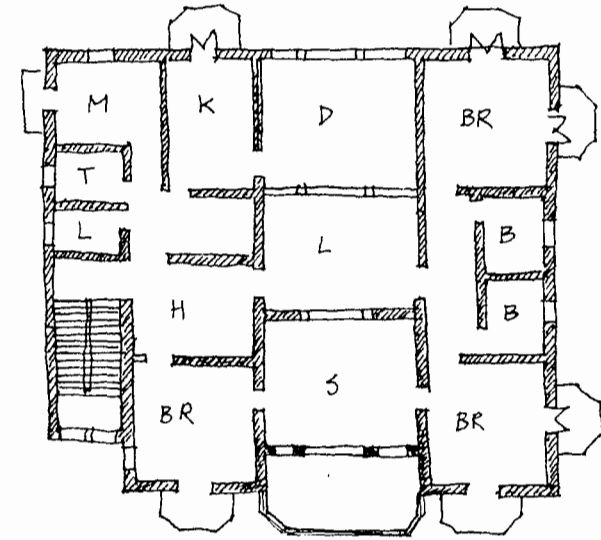
PLAN OF A TYPICAL YELLOW HOUSE

EXPRESSION OF THE CENTRAL HALL ON THE FACADE OF THREE
DIFFERENT YELLOW HOUSE TYPES .

2. The stair well: It is a major
   element in the Yellow building
   whether detached or flush with
   the facade or incorporated into
   the building.
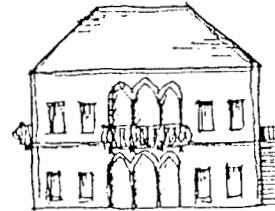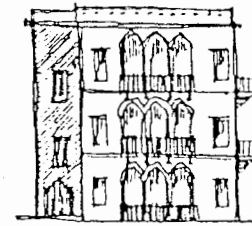
3. Treatment of the facade:
   There is a strong bilateral
   symmetry.
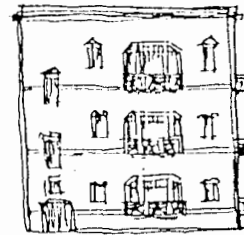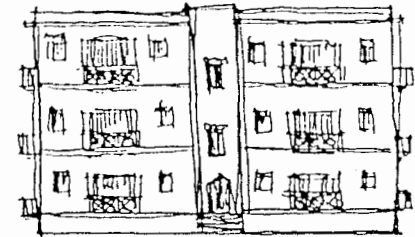
EXPRESSION OF THE STAIR CASE ON:(SI) A
TRADITIONAL LEBANESE HOUSE , (S2) YELLOW BUILDING,
AND (S4) TWO APARTMENT YELLOW HOUSE .
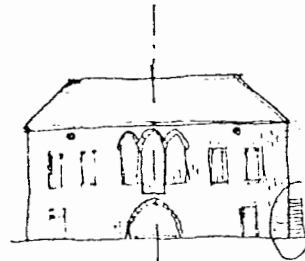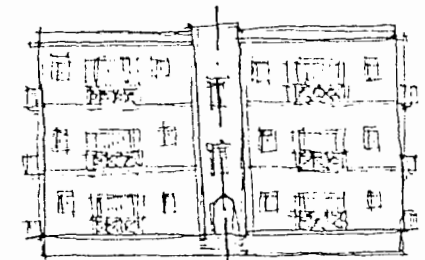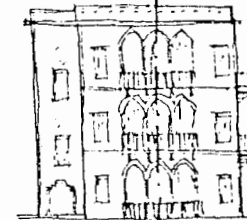
SYMMETRY IS THE MAIN ORDER IN
THE FACADE OF THE TRADITIONAL
HOUSE .

SI

S2

S3

S4

S2I

S20

Examples of Yellow Buildings

LOCATION : Saifi , GEMMAYZE
BEIRUT , 1922 .

RUE SADAT , RAS BEIRUT
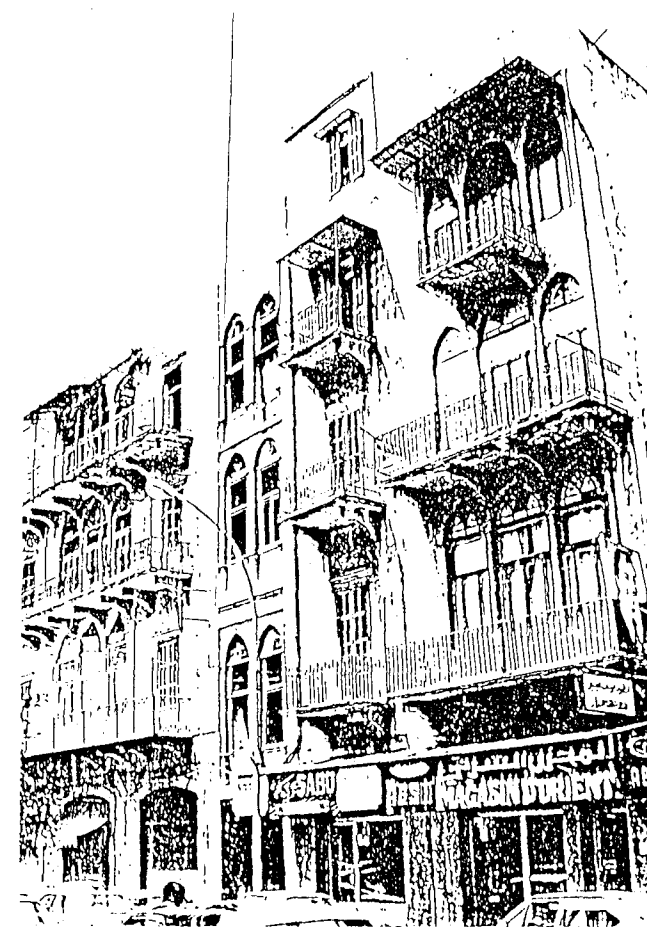
RUE PASTEUR , MAR. MIKHAEL
1922

Architectural Motifs From Yellow Buildings
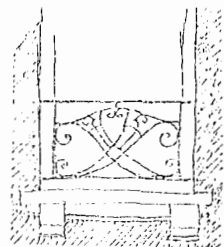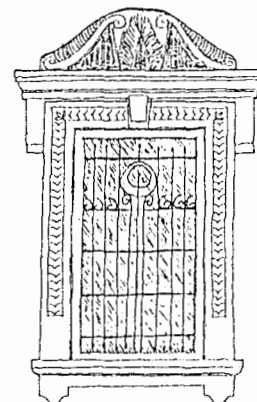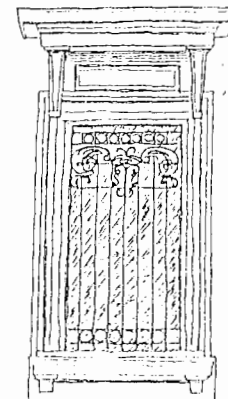
WINDOWS
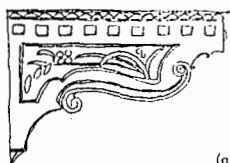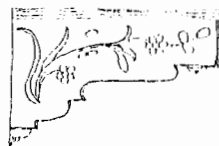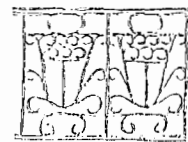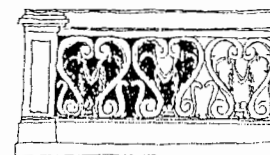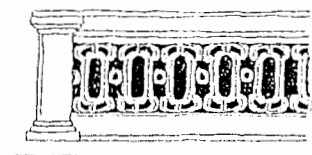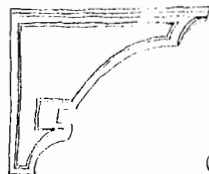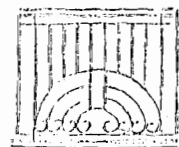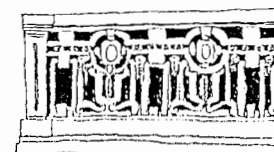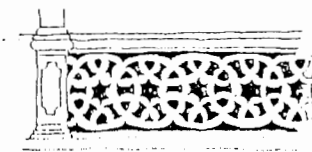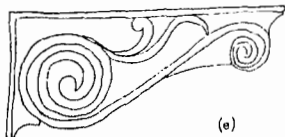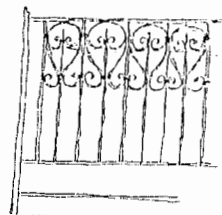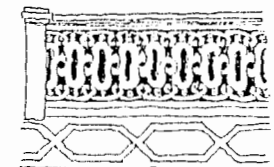
CORBELS

IRON BALUSTRADES

CONCRETE BALUSTRADES

Since the site of this project is located in Hamra district, land use controls and zoning regulations of this district are applicable on the site. However, the master plan and the land use controls for the city and the district could not be obtained from relevant municipality departments because of the circumstances prevailing in Beirut at the present time. In this context, it is assumed that the projects which have been built or are being built in the area would have adopted these constraints from recent constructions already located in the vicinity of the site.

Land Use Controls:

The site of this project falls in a district categorized under mixed commercial, residential, and institutional land use. Therefore, the site utilization must comply with these restrictions.

Indications of Plan Alterations:

Recent constructions on Jeanne d'Arc street and Sidany street show no major deviation from the present plan of the district concerning street widths and setbacks other than those inscribed in the zoning regulations. This is so, as far as any

deviation or setback that would affect the present periphery of the site. Therefore planning constraints on the site of this project are mainly determined by the going regulations.

Zoning Regulations:

The site is located in zone (3) of Greater Beirut. According to the law L 59/71, art. 16, the following planning regulations apply on the site.

1. Print on and Built up Areas:

A maximum site exploitation of 60% is allowed. The inscribed gross factor is 4. Accordingly, the following table concerning the print on and the built up areas of the individual lots and the whole site was developed:

Name of Lot	Lot A	Lot B	Lot C	Site $A + B + C$ m²
Area of lot: A	2630	860	2490	6130
Act. print on area: act. Ap = 0.6 x A	1578	516	1584	3678
Existing built area : A_E	462	—	300	762
Allowed print on area: Ap = act. Ap - A_E	1116	516	1284	2916 = 2900
Total built-up area : A_{BT}	10520	3440	10560	24520
Existing built=up area: A_{BE}	1708	—	900	2608
Allowed built-up area: $A_B = A_{BT} - A_{BE}$	8812	3440	9660	21912 = 21900

Therefore, from the 6130 m² site area, a print area of 2900 m² is allowed, and
a built up area of 21900 m², (dividing 21900/2900 will give the number of floors:
7.5 stories).

2. Building Setbacks:

The building setbacks are taken from the planned streets and from the inner boundary lines of the site.

Building setbacks from planned streets: According to the Building Code, a minimum facde setback of 6.5m is taken from the axes of planned roads of widths varying between 4.5m and 9m. For roads less than 4.5m in width, the minimum set back is 4.5m.

Building setbacks from inner boundary lines: For openings to be allowed on a facade, it needs to be setback at least 4.5m from the boundary line.

3. Height regulations:

According to the Building Code the, height and the bulk of the building are determined as shown in the adjacent diagram, where L stands for the planned width of the road, R and R´are the required setbacks from the road, and E is the setback from the inner boundary line. The building profits from this height regulation
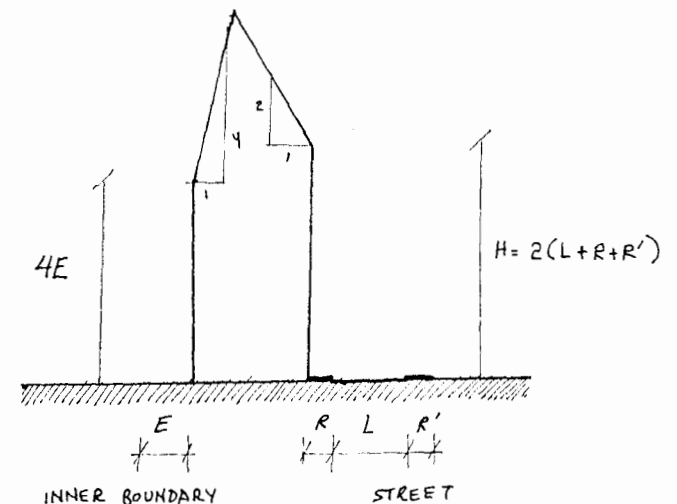
regulation as long as parking space is provided on site based on the functional needs, otherwise, the maximum building, height is $1 \frac{1}{2}$ times the width of the street.

Based on these regulations the following plan of the site was determined with the final widths of the roads and the building setbacks indicated. A working model of the site, for which photographs are included at the end of this section, was also made. The building masses are based on full site exploitation and they follow the height and bulk restrictions of the Building Code.

4.5

4.5

4.5

4.5

4.5

4.5

4.5

4.5

8m

6.5m

6.5m

4.5

6.5

9m

4.5m

4.5m

4.5

4.5

N

——— : SITE BOUNDARIES

: BUILDING SETBACK
FROM BOUNDARIES
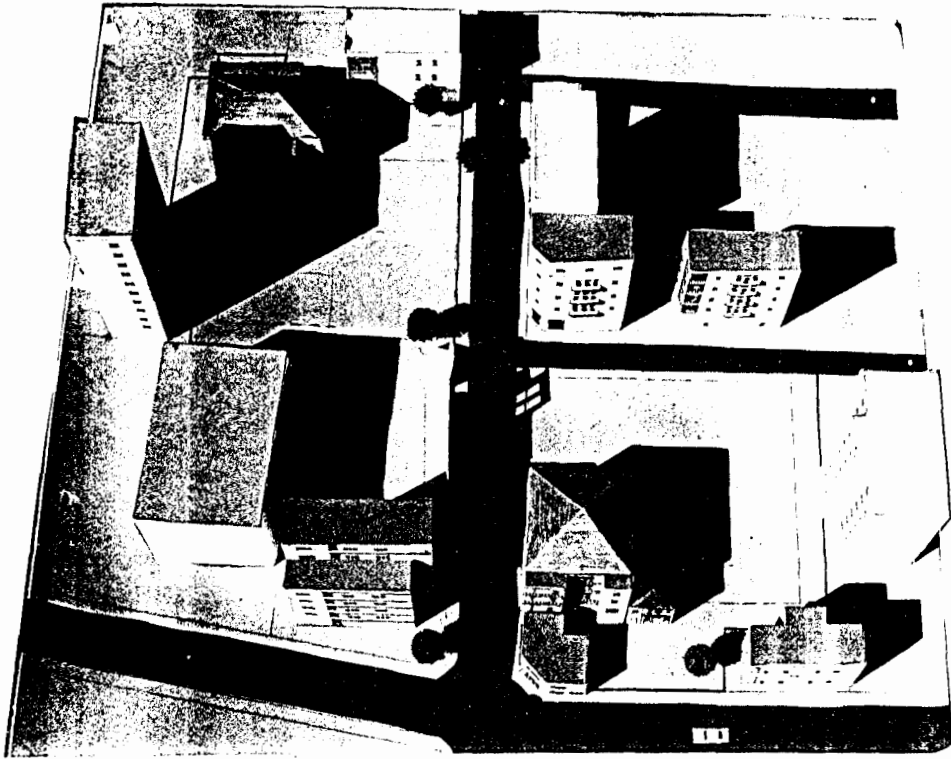
WORKING MODEL OF THE SITE :   UNEXPLOITED
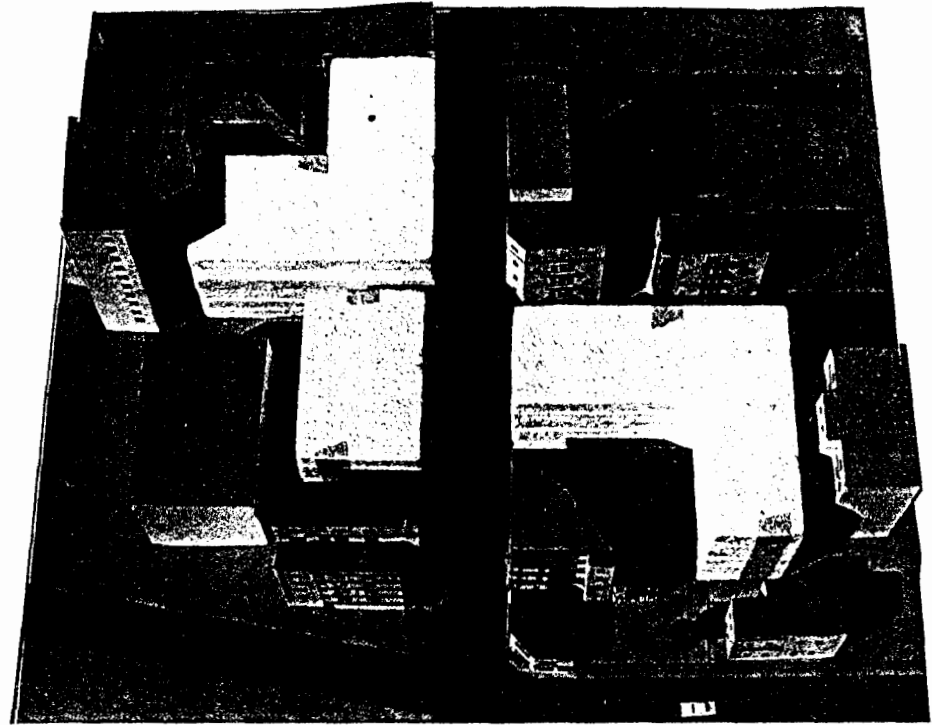
MAXIMUM EXPLOITATION
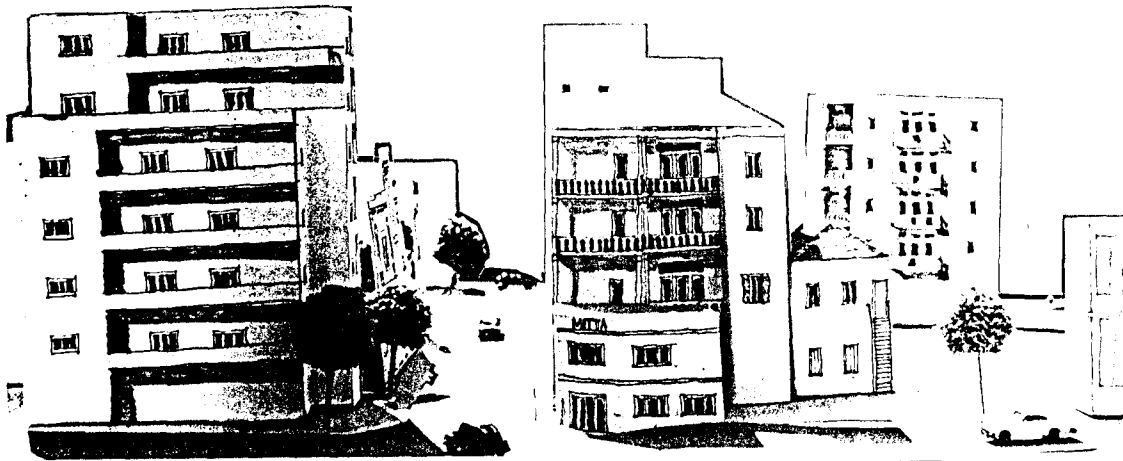
GENERAL VIEWS OF THE WORKING MODEL
OF THE SITE ON JEANNE D'ARC STREET.

Based on the interests and needs of the three main parties who are involved
in this project, namely, the property owners, the American University of Beirut,
and the municipality, two user groups can be identified: (a) the permanent or
residing users, and (b) the non-residing users.

The Permanent or Residing Users:

The permanent users include the tenants provided by the University through
its commitment with the developers. They constitute about 85% of the residing users.
These tenants fall in two main groups, students and faculty. The rest of the users
are not related to AUB but rather directly to the property owners.

1. Student users: They constitute 10% of the residing users and are composed
   of students who prefer to live off-campus because it allows them more freedom
   and independence.
      Their housing needs fall in two main categories: (a) the private room
or studio to serve one or two students, and (b) the group apartment to serve up
to four students. This last type is in higher demand since it is more economical
for students and creates for them a more pleasant social atmosphere.

Their housing accomodations should include sleeping, dressing, and socializing facilities in addition to a kitchenette and a bathroom. A well furnished common lounge for each group of studios or private apartments could be included as well.

2. University Professors and other staff: This group constitutes 15% of the residing users and is composed, mainly, of foreign faculty members. It is assumed that the members of this group are either single, or married with one child or non.

Accordingly, the housing needs of this group falls in two categories: (a) one-bedroom apartments and lofts, and (b) two-bedroom apartments. These apartments need not be furnished, however, parking facilities should be provided for each aprtment.

3. Non - university related users: This group constitutes the remaining 15% of the permanent users. It consists mainly of business men, executives, visiting tourists and other members of the transient population. These users are usually either single, or married couples, but rarely large families.

Therefore, the groups' housing needs are: (a) one bedroom apartments and lofts or suites, and (b) two bed room apartments.

Parking facilities should be provided for each apartment.

In general, the apartments and studios for all the users should be of good quality, comfortable, efficient, and pleasant. Access to open patios or outdoor terrases is desirable. The interrelationship between the different apartments especially those of the student users is important since it creates a social atmosphere.

Non-Resident Users and Common Facilities

The non-resident users consists of the general public who are attracted by the different commercial and leisure facilities that the complex offers. Since a high percentage of the general public who are attracted to Hamra district are educated professionals and university students, choosing functions that are in the interests of these groups is important. Furthermore, the area is characterized by a large young population ranging between the ages of 20 to 30, yet educational and beneficial leisure facilities that are attractive to youth are lacking in the district. Therefore, the facilities offered by this project attempt to answer the needs of these groups.

The educated public in general and young people in particular are attracted by such leisure activities as indoor sports facilities and health clubs, these being very popular nowadays. The type of activities that are most sought after are those that are easily accessible, practical, and need little expertise and preparation to be practiced and enjoyed in one's free time. Such activities as squash, bowling, billiards, and physical fittness are ideal.

Other leisure facilities that attract people in general are movie theaters. A popular type, currantly, is the multiple movie theater which features several films playing simultaneously, each for a small audience ranging from 30 to 100 viewers. This type of movie theater is given a liberal education orientation, since group discussions are often held afterwards.

Retail facilities are in high demand in Hamra district, especially when these facilities are grouped together around pedestrian spaces. Including such retail facilities, and relating them to an exhibition gallery space in which one or several exhibits are featured, increases the attractiveness of the complex. The exhibitions could be cultural, educational and promotional where such items as traditional arti-facts, light industry products, household and school equipments are displayed. Exchange seasonal exhibitions and art displays are housed, as well.

Catering services are highly demanded in this commercial area , particularly, by the University's staff and students. Such services would also liven up the complex's night life. Many types could be provided, namely, cafes, gourmét restaurants, fast food snack,local food restaurants, and sandwich stalls.

Due to the project's location in a business district, providing additional office spaces for such facilities as banks and tourist offices is also needed. Other supporting facilities that should also be provided include: a post office, money exchangers, newspaper stalls, and grocery and laundry facilities.

The general user of this complex whether residing or non residing needs to be accomodated with open pedestrian spaces. These could be either streets, or small meeting spaces with possible outdoor preformance accomodations or other.

Parking Facilities:

Parking facilities are provided based on the needs of the residing users. As for the parking requirements by the commercial and leisure facility users, only $\frac{1}{3}$

of the actual needs will be considered on the basis that the remaining will be

available in specialized parking lots or structures in the vicinity of the site,

especially since it is a commercial district. Assuming that 80% of the parking

accomodations for the residing users would not be in use during day time, then

there would be used by non-residing users to cover the needs of the commercial

facilities. It should be noted here, that due to the University's proximity and

the self sufficiency of the district, most of the residing users who are related

to AUB would not be using vehicular transport, especially students.

This profject consists of a mixed use development based on a vertical sorting of the different functions proposed. The basement is used for parking and service facilities. The ground floor level, first floor, and part of the second floor are intended for commercial uses. They house a vareity of leisure, cultural, retail, and office facilities. The upper floors are exclusively used for university housing facilities.

Site Exploitation Shemes:

Two site exploitation schemes are proposed in this project, namely, the maximum allowed and the minimum feasible site exploitation shemes. Based in the building code, the maximum built up area that is allowed on this site is 21900 m², with the print area being 2900 m². When carried to full exploitation the site may seam over built. This can be seen from the photographs on the following page of the working model that was made. Since this project is envolved with enhancing the street character and since special concessions are made to allow that, resorting to a lower exploitation of the site may be necessary. At this stage, it is difficult to determine the most suitable level of site exploitation, therefore, the maximum and minimum feasible percentages are proposed. Further envolvement in the design is necessary before the final level of exploitation is reached. For feasibility purposes, the minimum exploitation is taken as 60% of the allowed built up area, the maximum being 100%.

THE SITE UNEXPLOITED
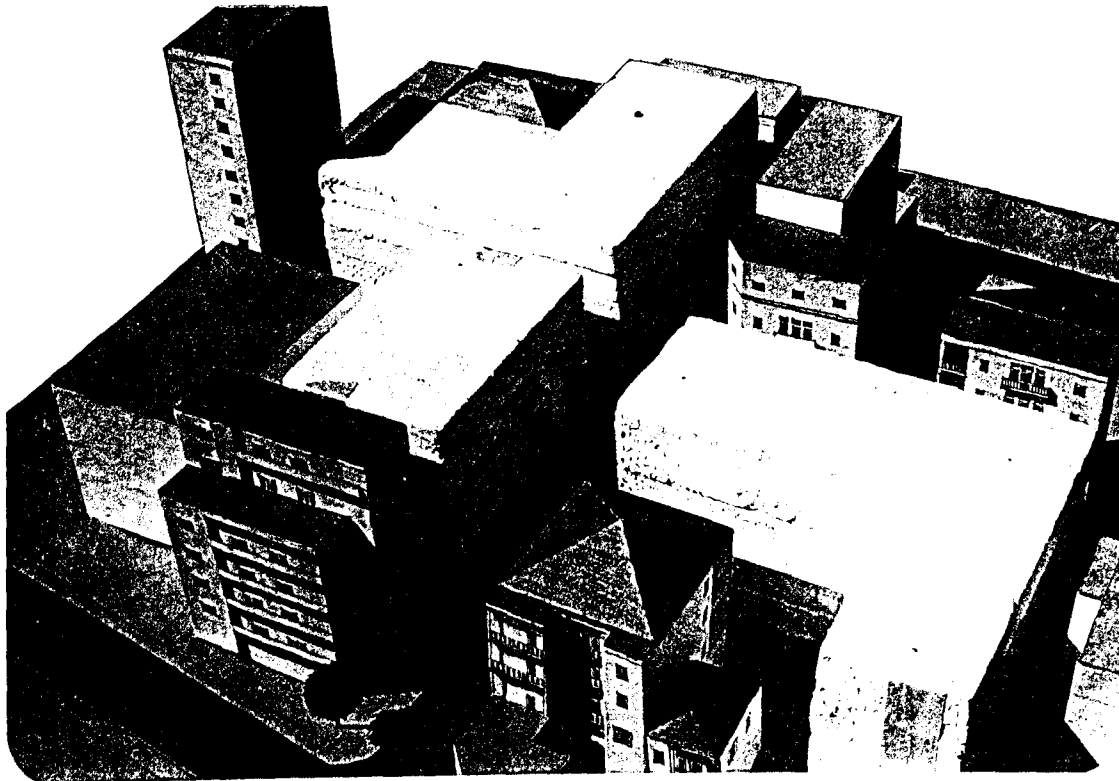
THE SITE WITH MAXIMUM EXPLOITATION
BASED ON THE BUILDING CODE.

The gross area intended for the commercial and leisure facilities is the same in both schemes. It covers the first two levels of the complex.

Therefore, area for commercial and leisure facilities = 2 x PRINT AREA

= 2 x 2900 m²

GROSS AREA = 5800 m²

This section includes the following facilities: Cross area (m²)

    leisure and health club center 1450

    multiple - movie theater 600

    retail - office facilities 2300

    exhibition - gallery space 500

    catering service facilities.................... 950

                     Total gross area: 5800 m²

For the housing section of the project, the two following schemes are proposed in determining the gross area intended for housing facilities:

> Scheme 1: is based on the maximum site exploitation;
>
> 100% of the gross built up area.
>
> Scheme 2: is based on the minimum site exploitation;
>
> 60% of the gross built up area.

Scheme 1: Maximum Exploitation

gross built up area (AG) .... 21900 (m^2)

proposed built up area (100% AG) 21900

gross area for commercial facilities 5800

gross area for additional office space.......... 1000

Gross area for housing facilities: 21900 m^2-6800 m^2 = 15100 m^2

This is devided as follows amongst the users:

1. student users :   35% of gross housing area ....5285 (m^2)
2. university faculty users:
                    35% of gross housing area.....5285

3. non-university users: 35% of gross housing area..... 4530

1. Student Housing Requirements:

        gross housing area (Ag) .... 5285 m²

        net housing area (0.75 x Ag) .... 3964 m²

Type of apartment:	A	B	C
area lapt. A (m²)	25	35	65
required % of net area P%	15%	30%	66%
net area x P%: S (m²)	594.6	1182.9	2190.2
number of apt. S/A	23.8	34	33.5
round up number of apt.	24	34	33
number of users /apt.	1	2	4
number of users	24	68	132

Therefore, the students housing requirements are: 24 type A apartment

                                                      34 type B apartment

                                                      33 type C apartment

Total number of apartments .... 91 apartment

Total number of student users........................ 224 users

2. Faculty Housing Requirements

gross housing area (Ag)......................... 5285 m²

net housing area (0.75 x Ag) .... 3964 m²

Type of apartments needed	A⁻	B⁻
area /apt A(m²)	65	110
required % of net area P%	40%	60%
net area x P% S(m²)	1585.6	2378.4
number of apt. S/A	24.4	21.6
round up number of apt.	25	21
number of users /apt.	1	1
number of users.	25	21

Therefore, faculty housing requirements are: 25 type A⁻apt.

21 type B⁻apt.

Total number of apartments   46 apt.

Total number of users   46

3. Non-University Users' Housing Requirements:

gross housing area (ag) .... 4530 m²

net housing area (0.75 x Ag) .... 3397 m²

Type of apartment	A⁻	B⁻
area /apt. A (m²)	65	110
requireed % of net area P%	50%	50%
net are x P% S(m²)	1698.5	1698.5
number of apt. S/A	26.1	15.4
round up number of apt.	26	16
number of users /apt.	1	1
number of users	26	16

Therefore, the non-university users' housing requirements are   26 type A⁻apt.

16 type B⁻apt.

Total number of apartments   42 apt.

Total number of users   42 users.

Therefore, in Scheme 1 : the total number of apartments is 179 apartments

and   the total number of users is   312 users.

Scheme 2:   Minimum Exploitation

     gross built up area (ag) .... 21900 (m^2)

     proposed built up area (60% of Ag) 13140

     gross area for commercial facilities................ 5800

Gross area for housing facilities: 13140 - 5800   =   7340 m^2

This is devided as follows amongst the users:

     1. student users :   35% of gross housing area..... 2569 (m^2)

     2. university faculty users: 35% of gross housing area.... 2569

     3. non-university users: 30% of gross housing area ... 2202

1. Student Housing Requirements

     gross housing area (Ag) .... 2569 m^2

     net housing area (0.75 x Ag) .... 1927 m^2

Type of apartment	A	B	C
area /apt. A (m²)	25	35	65
required % of net area P%	15%	30%	55%
net area x P% S(m²)	289	578.1	1059.85
number of apt. S/A	11.56	16.5	16.3
round up number of apt.	12	17	16
number of users /apt.	1	2	4
number of users	12	34	64

Therefore, student housing requirements are: 12 type A apt.

17 type B apt.

16 type C apt.

Total number of apartments   45 apt.

Total number of students   110 users.

2. Faculty Housing Requirements

gross housing area (Ag) .... 2569 m²

net housing area (0.75 x Ag) .... 1927 m²

Type of apartment	A˘	B˘
area /apt A(m²)	65	110
required % of net are P%	40%	60%
net area x P% S(m²)	770.8	1156.2
number of apt. S/A	11.8	10.5
round up number of apt.	12	10
number of user /apt.	1	1
number of users	12	10

Therefore, the faculty users' housing requirements are: 12 type A˘apt.

10 type B˘apt.

Total number of apartments   22 apt.

Total number of users   22 users.

3. Non-University users' Requirements :

gross housing area (Ag) .... 2202 m²

net housing area (0.75 x Ag) .... 1651 m²

Type of apartment	A˘	B˘
area /apt. A (m²)	65	110
required % of net area P%	50%	50%
net area x P% S(m²)	825.5	825.5
number of apt. S/A	12.7	7.5
round up number of apt.	12	8
number of users /apt.	1	1
number of users.	12	8

Therefore, the non-university users' requirements are: 12 type A˘ apt

8 type B˘ apt.

Total number of apartments   20 apt.

Total number of users   20 users.

There for, in Scheme 2:   the total number of apartments is 87 apt.

and the total number of users is   152 users.

PARKING REQUIREMENTS

A. Parking requirements for the commercial facilities (for which only $\frac{1}{3}$ of the total is considered): These are based on the standard needs.

. Gross retail and office area = 2800 m²   parking requirements: 1 space /20m²

   Parking for retail and office space = 2800/20 = 140 spaces.

. Gross leisure and health club area = 1450 m²   parking requirements: 25 spaces/1000m²

   Parking for 4-lane bowling alley = 4 x 5 spaces/lane = 20 spaces.

   Parking for remaining 1000m² = 25 spaces.

                        Total = 45 spaces.

. Parking for multiple movie threater = 1 space/5 seats x 300 seats = 60 spaces.

. Gross area for catering facilities = 950 m²   Parking requirements: 1 space/25m²

   Parking for catering facilities = 950 / 25 = 38 spaces.

. Gross area for additional office space = 1000 m²   parking requirements: 1 space/40m²

   Parking requirements = 1000/40 = 25 spaces.

   Total parking requirements for commercial facilities = 308 spaces.

Parking provided for commercial facilities = <u>102 spaces.</u>

B. Parking requirements for housing facilities (based on Scheme 1).

.Requirements for faculty apartments = 1 car/apt.

number of apt. = 46.   Therefore, parking requirements = 46 spaces.

. Requirements for student apartments:

    type A apt.: 1 car/2 apt.   parking requirements = 24 apt/2 = 12 spaces

    type B apt.: 1 car/2 apt.   ''   ''   = 34 apt/2 = 17 spaces

    type C apt.: 1 car/ apt.   ''   ''   =   = 33 spaces

                Therefore, total parking requirements   = 62 cars.

. Requirements for non-university apartments = 1 car/apt.

                Therefore, parking requirements   = 42 spaces.

Total parking requirements for housing facilities =   150 spaces.
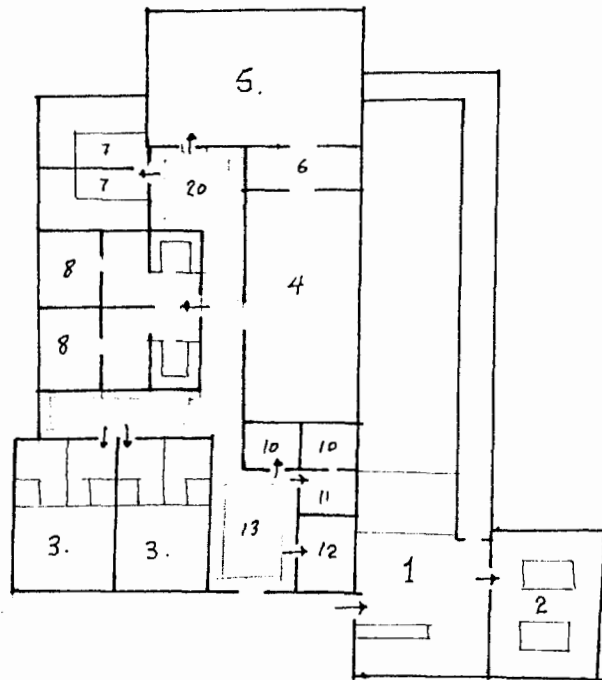
During day time 80% of these spaces would be vacant, and therefore they would cover the

commercial facilities' needs.

Therefore, total parking spaces provided = 150 spaces.

Gross area for parking = 150 spaces x 25m²/space = <u>3750 m²</u>

COMMERCIAL AND LEISURE FACILITIES

1. Leisure and Health club center: proposed functions and prototypical spaces

Leisure facilities

net area (m²)

1. 4-lane bowling alley...........................360
2. billiard room................................. 70
3. 2-squash courts = 2x62.5m² = 125m²+33m²
   (spectators) = 158

Health club facilities

4. Physical fittness gym........................ 100
5. exercise and dance studio.................... 108
6. store.. 20
7. sauna: 60m²+massage: 16m²................... 76
8. changing rms: 80m²+lockers: 24m²............ 102
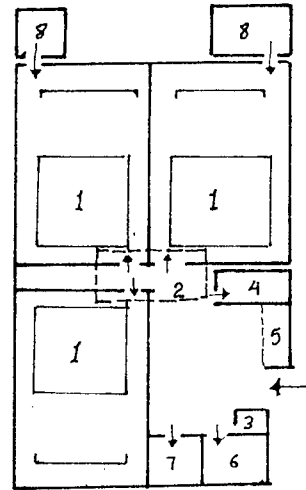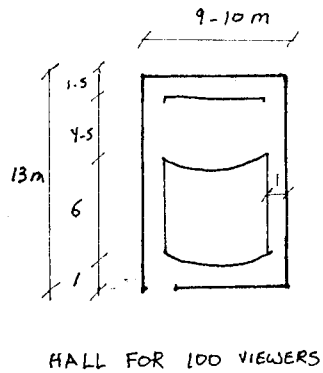9. rest room and coffe bar..................... 20

Administration and Services

10. management: 12m²+staff rm: 9m²............   21
11. lockers and wash room: 9m²+firstaid rm: 8m²   17
12. public toilets.............................   20
13. reception.................................   12

Total net area for leisure & health club center = 1089 m²

Gross area = net area x 1.33   = 1450 m²

SCALE 1:500

2. Multiple - Moview Theater: proposed functions and prototypical spaces:

Facilities	net area (m²)
1. 3-cinema halls of 100 persons/hall with the possibility of further subdivision into hall and discussion room: 3x117 m²	350

Supporting facilities

2. projection room.........................	25
3. ticket booth.............................	3
4. toilets.................................	10
5. kiosk...................................	6
6. management..............................	12
7. staff room.............................	9
8. boiler room: 10m² + plant room: 15m².....	25
Total net area	440 m²
Gross area = net area x 1.33 = 585 m²	600 m²

9-10 m

13m 1.5 4.5 6 1

HALL FOR 100 VIEWERS

8 8

1 1

2 4

1 5

3

7 6

(SCALE 1:500)

Prototypical spaces of retail and office facilities, the exhibition gallery space and the catering service facilities ARE not included in this section since these are prescriptive.

Student Housing Types

4.5m

5.5m
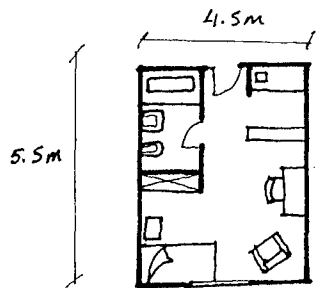
TYPE A

rm : 17.5m²
kit : 3
wc   4.5

AREA : 25m²

TYPE B

rm : 26.5m²
kit : 4
wc : 4.5

AREA : 35m²

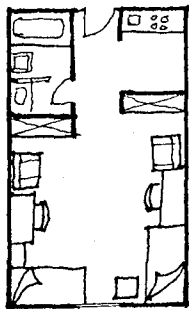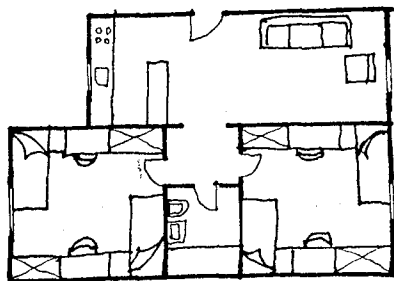TYPE C
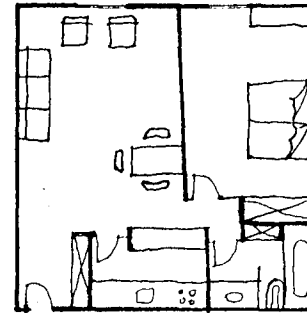
rms : 16m² x 2 + 21m² (living)
kit : 6
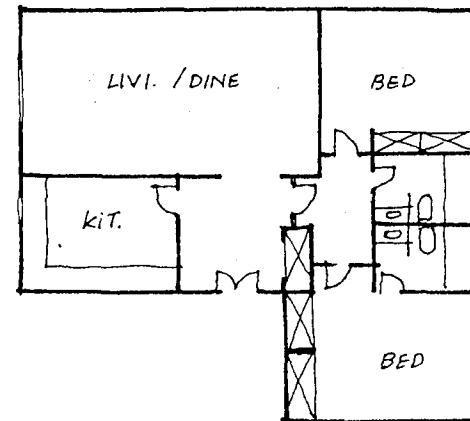wc : 6

AREA : 65m² .

Faculty and Non-University Housing Types.

TYPE A'

AREA : 65m²

TYPE B'

AREA : 110 m²

LIVI. /DINE   BED

kiT.

BED

SCALE 1: 200

The economic rationale of this project is associated with two diverse issues of the problem, namely, the feasibility of the project as a whole, and the rationality of resorting to a lower exploitation factor.

Feasibility of the Project:

The feasibility of this project is seen (i) in the light of the different functions proposed, that is, the commercial facilities and the university housing facilities, and (ii) in the interests of the parties involved in its development. The choice of commercial facilities is justified, since the project is located in a commercial district and such functions entail maximum profit. However, the feasibility of university housing facilities is in question, and must be delt with.

The decision to involve the American University of Beirut as a major party and shaping factor in the development of this project is justified by clarifying its stand point in relation to the developers. The University has no material gain from this project. It is only committing itself to insure a certain number of users for the complex's housing facilities. The reason for this being its need of more such facilities for both students and faculty, and its inability to satisfy its needs in any future project due to financial reasons. Therefore, commitment to the property owners to provide these facilities

with AUB insuring the tenants is a reasonable solution. Of course, in this case, the property owners would be opting for profit, resulting in high rents for the students and faculty members, and reducing the projects feasibility. However, a study made on furnished apartments located directly adjacent to AUB and in equally prestigious locations as the site, revealed that 30% to 50% of their tenants were directly related to AUB, either students, or AUH medical residents. In apartment buildings such as Haykal Center, West House, and Mayfair Residence, students pay the same or slightly reduced rates as the rest of the tenants. In the latter example, half the apartments are reserved to AUH residents who only pay half of the reduced rent, the second half being covered by an Alumni Association. This willingness on the part of the students to pay more for such facilities is because they are more attracted by off-campus housing, mainly due to the independency and freedom that if offers. In many cases, sharing an apartment with a group ends up with lower rent/person paid. On the other hand, the owners of such apartment buildings prefer to be committed to a certain establishment that will insure tenants and are willing to reduce rents for that purpose, especially since such a commitment also ensures a better standard for the building. For example, in the case of May Fair Residence the actual rent per month per studio is 3000 L.L., while the reduced rate for students is 2050 L.L.

The decision on percentages of students to faculty to non-university users, is based on AUB's needs and on the existing pattern in adjacent similar buildings .

. AUB's requirements are to house one faculty member for every 3 students and 2 medical residents housed. Therefore the ratio of faculty users to student users is approximatly 1:5.

. The percentage of non-university users is more or less the same as that of faculty users. The area/user needs are, therefore, also the same.

Accordingly, the following ratios are determined:

	Students	Faculty	Non-University
ratio of users	5	1	1
percentage of built-up area	35%	35%	30%

The percentage of total net area/house type for the different groups is determined on a logical needs basis.

To determine the actual feasibility of the project, the following study was made concerning the financial return on the project in a period of 10 years. Scheme 2, of minimum site exploitation (60%) is used as the basis of the study.

Initial project cost.

Land cost   : 15,000 L.L./m² x 6130 m² = 91,950,000 L.L.

Construction
  Cost   :   4000 L.L./m² x 13140 m² = 52,560,000 L.L.

Estimated project return.

rent/year/m² of commercial gross are   =   2500 L.L.

return on commercial facilities =
                    2500 LL x 5800m²   = 14,500,000 L.L.

considering a 10% running cost/year   = 1,450,000 L.L.

Therefore, net profit/year on commercial
        facilities   = 13,050,000 L.L.

Return on housing facilities:

Type of apartment	A	B	C	A˜	B˜
estimated rent/month (L.L.)	1900	2500	3500	3500	5000
number of apt.	12	17	16	24	18
return/month (L.L.)	22800	42500	56000	84000	90000

Therefore, total return/month = 295,300 L.L. = 300,000 L.L.
         total return/year   = 3,600,000 L.L.

considering a 10% running cost = 360,000 L.L. /years.

Therefore, net profit/year on residential facilities =   3,250,000 L.L.

Total net profit/year for commercial and housing
facilities   = 16,300,000 L.L.

Total net profit in 10 years   = 163,000,000 L.L.

Considering the initial building cost had been deposited is a bank with a compound interest of 10%, then money depreciation due to inflation would also have to be considered. This amounts to 10% and, therefore somewhat cancels the 10% interest.

Therefore, over a period of 10 years the net profit from the project can cover the initial cost with an excess of 18.5 million L.L.

Rational for Resorting to a Lower Site Exploitation

In the case where a lower site exploitation is found necessary in order to preserve the contextual character of the setting, the following issues are put forward as arguments to the feasibility of the project.

. Concessions in the form of reduced taxes, services, or others will be offered by the Municipality of Beirut.

. A large section of the new office structures built in Hamra district are empty and not in use presently. This is partly due to the civil war. However, when the situation normalizes in Beirut, as is the condition for this project's feasibility, issues of rehabilitation and creating more pleasant living environments will be raised (down-town area of Beirut). This project can be seen as one part of such an attempt.

. Enhancing the environment by having less exploitation does not necessarily mean less return or profit. If the complex is pleasantly integrated in the environment this could raise the value of the built structure since it would be in more demand.

. Creating a comple which allows breathing space for people will draw in more public and therefore more profit.