

Greening AUB Neighborhood Pilot Project

Project Team

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Phase I

February – September 2008

EXECUTIVE SUMMARY

“Greening AUB Neighborhood” is a pilot project that aims for sustainable lifestyles and quality environments to AUB campus surroundings. The project explores landscape design approaches that can improve the visual and environmental quality of AUB neighborhoods while engaging the community in sustainable gardening practices.

The project focuses on residential buildings in the immediate surroundings of AUB Campus. The project interdisciplinary methodology realizes the project aim through three parallel lines of inquiry:

- The first investigates the current use of plants, their suitability. Alternative plant species are researched their form, aesthetic characteristics and management requirements investigated
Outcome: **greening plant database**
- The second surveys the neighborhood to explore their potential for greening. Assessment of buildings age, character, front, back and side setbacks, windows and balconies serves as a basis for greening space typologies and the formulation of prototypical solutions
Outcome: **landscape design approach for greening**
- The third line of inquiry sets up a community survey to determine willingness of neighborhoods/households to participate in greening initiatives. The survey forms the basis for mobilizing and engaging the community
Outcome: **community gardening club**

The project recommends landscape strategies for greening which include landscape design conceptualization of greening and action for community engagement. The project outcome will serve as a basis for fund raising to sustain phase II of the project

REPORT STRUCTURE

EXECUTIVE SUMMARY

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1. BACKGROUND

The idea of this pilot project brings together two independent lines of research. The first, Greening Beirut, is an IBSAR Centre research project that aims to improve the quality of life in the inner city through innovative, sustainable and community inclusive landscape design and planning strategies¹. The second, AUB Neighborhood Initiative, aspires to overcome the institutional spatial and academic insularity of the institution through short and long term planning strategies that bridge the divide and benefit the surrounding communities². The complementarity in vision and objectives between the two projects formed the basis for this project. While the AUB Neighborhood Project provides structure and direction, the landscape-centered approach of the Greening Beirut Project offers a tangible action plan which can benefit people and environment in terms of landscape design and sustainable planting. Aligning the two initiatives in addition is more likely to secure local/international funding for implementation.

Towards this purpose, the “Greening AUB Neighborhood” was conceived as a pilot project that explores AUB neighborhood landscape and researches its potential for greening. A collaboration between AUB-IBSAR Centre for Nature Conservation and the AUB Neighborhood Initiative, the initial project proposal was discussed in December 2007 approved and funded through the Ford Foundation Grant allocated to the AUB Neighborhood Initiative for the period February-September 2008.

In this project, ‘greening’ implies landscape design and landscape horticulture practices that are sustainable spatially (rehabilitating leftover building spaces), environmentally (appropriate selection of plants used in retrofitting these spaces) and socio-culturally (by engaging and involving neighborhood community and, just as importantly, the academic community). The focused definition of greening adopted in the first phase of the project can be broadened eventually to imply ‘environmentally sustainable management and practices’, for example energy use, management of natural resources, etc..

Drawing on the academic resources of the Department of Landscape Design and Eco-Management (LDEM) and equally those of IBSAR Centre the project was to study the campus surroundings applying a landscape design and horticulture framework to identify potential sites/spaces of intervention, compile a planting palette and research sustainable management routines. The project was to propose landscape strategies for greening with recommendations for a community action plan, **Figure 1**.

¹ Jala Makhzoumi (2006) “Reclaiming Beirut nature vestiges: a holistic model for nature networks in Mediterranean coastal cities”. Research presented at the *Protected Area Management in Mediterranean Coastal Areas: the importance of Wildlife Refugia and Corridors within an Urban Industrial Landscape* Conference organized by the United Nations Industrial Development Organization, September 11-13, Tunis, Tunisia (invited presentation).

² The project is supported by AUB President’s Office, Dr Cynthia Myntti is project leader.

Underlying the project aim is the LDEM academic agenda for 'Community Based Learning'. The project would eventually engage LDEM students and utilize the departmental resources so that they may serve AUB Neighbors. In parallel, students are encouraged to apply their knowledge and skills outside the academic sphere. Working with communities will foster a spirit of volunteering and civic responsibility starting with AUB neighborhood.

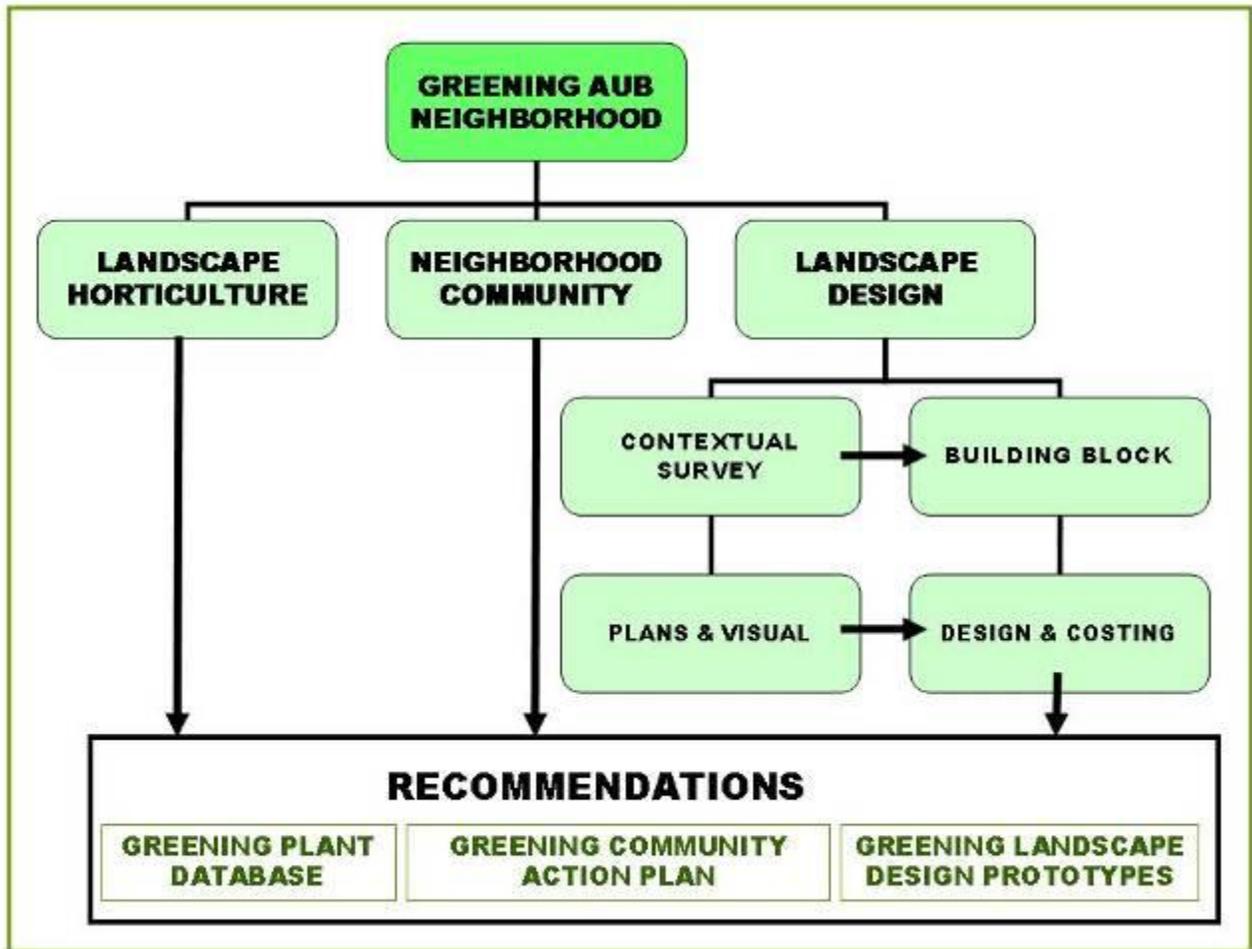


FIGURE 1 Greening AUB Neighborhood Project structure and outcome

2. THE LANDSCAPE DESIGN DIMENSION OF GREENING

2.1. SUMMARY

This component of the project includes an extensive spatial survey of AUB Campus surroundings. The survey explores potential spaces that are available for greening, i.e. rehabilitated through landscape design and planting. A single block was surveyed in detail, landscape design conceptual solutions proposed to retrofit setback, roof, and balcony spaces, a preliminary cost of retrofitting calculated. The exercise is exploratory, the aim to explore potential spaces available for greening within residential buildings.

2.2. METHOD

The methodology for this component of the Greening AUB Neighborhood pilot project is architectural and the focus spatial. The aim is to establish a conceptual framework for future landscape design interventions for greening AUB neighborhood.

The survey, conducted over the period March to July 2008, commenced with a general reconnaissance of all surroundings (eastern, western and eastern boundaries of AUB-IC campus (blocks A, B, C, D, E, F & G shown in Map 1). Because of security restrictions (Seniora residence and Marwan Hammada residence) survey of western boundaries was limited. The survey focused on the outer edges of the urban blocks, namely those that constitute the façades of streets that border the campus. The survey proceeded by estimating building form and potential greening spaces from the street. This was seen as saving time and avoiding necessary permits that would enable the team to access private residences. A datasheet was developed for the street reconnaissance, completed for all buildings surveyed (**Appendix 6.1**). The data sheet was designed to include six greening space typologies that had been identified for the project earlier.

The six greening space typologies are:

- Front Setback
- Lateral Setback
- Rear Setback
- Balconies
- Window Sills
- Roof

The findings of the survey were aggregated into graphically explicit tables (Maps 2-5) and summarized on the block plans for blocks A to G (Maps 6-12). The information provided for each building within these blocks includes:

- Photographic image of each building within the block
- Building number

- Indication of each of the six greening space typologies (available or not)
- Building Plan (potential greening spaces indicated in green)
- Building Section (to indicate profile, balconies, window sills, etc.
- Number of floors
- Estimated size of space for each of the six greening space typologies

A second survey was undertaken to establish in depth assessment of a single block. Block A, defined by Bliss Street to the north and Makhoul-Khalid to the south, was selected for this purpose. The entire block was surveyed (Maps 15-17). Photographic images stitched for the block façade (Maps 13-14).

A single building was selected in Block A, analyzed in detail and prototypical conceptual solutions proposed for each greening space typology. The latter include balcony (Map 18), semi-closed balcony (Map 19), window sill (Map 20) and the building roof (Map 21). Photographic images are proposed for the building before and after greening (Map 22) and initial unit cost estimate for the proposed solutions (Map 23).

2.3. OUTCOME/FINDINGS

AUB neighborhood is experiencing accelerated transformation as older buildings are being replaced by new ones. Rising real estate values account for the transformation. Within this dynamic context, greening by retrofitting existing residential buildings is seen as a viable way of upgrading visually and environmentally AUB neighborhood (**Appendix 6.2**).

A summary of findings from the Block A is presented in **Table 1**. The figures point to key differences in the greening space typologies between old and new buildings. This invariably influences proposed greening interventions which differ considerably depending on the building age and architecture. In Block A for example, four buildings were identified as old, i.e. constructed before 1975 (A2, A12, A13 and A15). The remaining buildings were constructed in the later and one building, A6, built after 2000. Older buildings will especially benefit from greening, partly because earlier architectural typologies were more generous with outdoor spaces (balconies and window planters), but also because the buildings are in a state of neglect. Greening will add a much needed patina to older building and contribute to upgrade their facades and improve the visual quality of the neighborhood. In contrast, new buildings will not require upgrading. In any case, apart from ground floor setback, their outdoor spaces, balconies, are enclosed in glass, which appears to be the prevailing trend in the last decade. Still these buildings provide considerable front setback, for example Building A6 offers the largest setback, 200 square meters followed by A3, 160 square meters.

The aim of this pilot project was to explore whether and in which ways neighborhood greening is to proceed. The survey and proposed landscape design conceptual solutions illustrate that far from finality, landscape design interventions with the aim of greening are possible. We recommend that these landscape design scenarios are developed for

residential buildings and for alternative neighborhood sites in phase II of the project (see section 5 of this report).

Bldg.	Age			Typology Areas					Plot sizes % distribution in decreasing order
	before 1975	between 1975-1995	after 1995	front setback /sqm	lateral setbacks / sqm	balconies /sqm	window sills / lm	roof /sqm	
A1				55	40	18	55	220	A7
A2				12	0	15	24	150	A8
A3				160	100	150	100	450	A3
A4				15	10	60	25	130	A14
A5				15	0	60	30	160	A6
A6				200	0	120	100	400	
A7				12	40	200	180	750	A11-12
A8				9	0	200	200	600	A1
A9				18	0	0	40	170	A9
A10				16	0	25	20	100	A5
A11				20	0				A2
A12				19	0	200	100	240	A13
A13				12	0	30	8	150	A4
A14				60	10	300	100	400	A10
A15				10	0	4	6	90	A15

Total Area for Each
 Typology 633 200 1382 988 4010

TABLE 1 Summary statistics for Block A

3. THE LANDSCAPE HORTICULTURE DIMENSION OF GREENING

3.1. SUMMARY

An extensive search was conducted to develop a database of information that would be useful to the greening efforts that were initiated through this project by focusing on information that is relevant to environmental conditions in Ras Beirut. A total of 95 plants were selected for this purpose and the collected information constitutes a baseline for future information dissemination and greening activities.

3.2. METHOD

A plant database was developed based on extensive review of the literature and input of local experts (Dr. Salma Talhouk, Ms. Basma Darwiche, Mr. George Battikha, and Ms. Rania Nasrallah). The purpose behind this research was to identify and document information about a broad range of plants suitable for Ras Beirut conditions and consisting either of native species or ornamental plants that have relatively low care requirements, are tolerant to heat, drought and poor water quality, easily propagated and or relatively affordable. The selected format was revised to include simple information that is readily understood and useful. The entries include common English and Scientific names and where possible Arabic names commonly used in Lebanon. The final size (height and spread) and growth rate of the plant is described as well as interests that the plant offers such as flowering season and whether flowers are scented. Maintenance information include tolerance to poor water quality, low humidity, sun exposure, feeding needs, repotting needs, pruning needs, Water quality, Water quantity, Feeding, Humidity, Sunshine exposure, Repotting, Pruning, Propagation, Easy or difficult, Problems, Figure 2 Sample datasheet

3.3. OUTCOME

The plant database consists of a total of 95 plant species (**Appendix 6.3.**). The comprehensive information compiled for each plant enables appropriate use of these plants in greening, namely in the six spatial typologies identified in part 2 above. In Phase II of the Greening AUB Neighborhood project, we would like to propose that the plant database be developed to include images and requirements for sunlight (number of sunlight hours) to ensure their sustainable greening and minimize management.

Marjoram (perennial shrub)

Lebanese name:	مردكوش
Latin name:	<i>Origanum majorana</i> , or <i>Majorana hortensis</i>
Common name:	Sweet marjoram
Size: Height at maturity:	80 cm.
Spread at maturity:	40 cm.
Growth rate:	Medium
Flowering season:	White blossoms from June-August
Scent:	Minty, aromatic, sweet citrus and pine flavors of flowers and foliage
Water quality:	Slightly tolerant to salt water irrigation
Water quantity:	2-3 times per week from June till Oct., once per week after Oct.
Feeding:	Slow release fert. of equal amounts of NPK every 6 months
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day)
Repotting:	Every 2-3 years in Feb.
Pruning:	Yearly cut back in Feb.
Propagation:	By seeds, division of roots, cuttings or layering in soil in Feb.
Easy or difficult:	Easy
Problems:	

FIGURE 2 Sample sheet from the Greening Plant Database

4. THE COMMUNITY DIMENTION OF GREENING

4.1. SUMMARY

A field survey was conducted to develop an understanding of residents' interest in greening activities. The findings revealed various levels of interests among residents. These have been summarized below and they point to the fact that AUB can easily benefit both its students and community by starting activities which will have a positive influence and may constitute a model for academic institutions to support urban greening in their immediate vicinity.

4.2. METHOD

A questionnaire was prepared by Salma Talhouk, Basma Darwiche, and Jala Makhzoumi and finalized after inputs from the following AUB members (Cynthia Mintti (neighborhood initiative), Jad Chaaban (economics), and Tamer Amin (education) (**Appendix 6.4**). A list of targeted residents living in the area defined by the project was compiled based on input from Cynthia Mintti, Salma and Rabi Talhouk, and Jala Makhzoumi). Afterwards, Ms. Basma Darwiche organized several meetings with two sophomore students enrolled in the LDEM program (Naghham Tabaja and Nada Hakim) to prepare for the field survey. Field work was completed in three weeks.

Total persons **contacted** (by phone and e-mails): 45
Total persons that did not respond (to phone calls and e-mails): 4
Total persons **interviewed**: 16
Total number of persons who expressed interest persons out of those interviewed: 15
Total number of person not interested out of those interviewed: 1
Total persons **e-mailed**: 25
Total persons replied (to date): 2
Total persons waiting for their reply: 23

Five respondents offered to sponsor the project with money, their names are:

- Loulwah Abdel Baki
- Samira Maghdessian
- Hala Sayegh
- Sami Kortass
- Dr. Nabil Fleihan

Seven respondents offered to support the project with their time, their names are:

- Claire Lenden
- Mona Hallak
- Dr. Rami Zureik
- Hana Alameddin

- Leila Bssat
- Rima Afifi
- Maha Nasrallah

Seven respondents recommended forming adjacent buildings' committees or street committees to work for buildings and street planting. These persons are:

- Hala Sayegh
- Sami Kortass
- Samira Maghdessian
- Claire Lenden
- Loulwah Abdel Baki
- Dr. Nabil Fleihan
- Leila Bsot

Data entry method:

Each question was tabulated with all answers as one variable vs. the contacted persons as the other variable. Hence each question data was presented in a table in Access sheets for analysis, where the cells of the contacts are linked to the corresponding person details.

4.3. OUTCOME/ FINDINGS

AUB's neighborhood residents grow plants on their balconies and inside their apartments. Most live in buildings with a managed landscape at the entrance but roof gardens are not common.

Residents were interested in plants for aesthetic reasons including color and smell, and some were after other functional values including edible plants as well as using plants for creating shade, privacy, or a relaxing environment.

The residents usual purchase their plants from local flower shops in Ras Beirut but some prefer to target landscape nurseries outside Beirut and very few rely on landscape companies to obtain their plants. The willingness to pay for plant purchase ranged widely with an estimated yearly budget ranging from \$40 up to \$5000.

When asked about their opinion about ways to involve the neighborhood responses varied and included the need to encourage people to grow plants in all possible public and private areas (including roofs, balconies, buildings and shops entrances, streets, and side walks), while others indicated that there is a need to spread awareness to protect existing green areas and prevent cutting of trees. Only three persons were pessimistic regarding this issue and indicated that there are other priorities to work on.

Respondents to our survey came up with many suggestions on ways to engage the community. They expressed the need to make information and support readily available on landscape design and on plant care and maintenance. One suggestion was made to start with kids and encourage them to plant and care for trees and plants. Other suggestions

included involving the media to help promote awareness about planting, and to activate the role of the municipality to ensure that there is proper compliance to existing laws. It was not clear, however, to the respondents which organizations would assist in the greening of neighborhood. One person mentioned a private landscape company while another mentioned the Ministry of Agriculture and/or the municipality.

When asked about priority learning themes residents indicated that they wanted to know more about how to select and care for plants and about plant names. But they were equally interested in learning which plants would be tolerant to heat, poor water quality, and 'tough' conditions. Two persons gave priority to organic gardening, one considered roof gardening as a learning priority, and one person was mostly interested in learning about herbs and spices plants.

With respect to learning venues, most respondents preferred to get the information through a dedicated website and regular maintenance visits to their houses. Some preferred booklets, and showed interest in attending occasional workshops at AUB (free or for a fee), annual exhibition at AUB, and plants sales events. Very few showed interest in volunteering in projects or programs or in attending continuing education courses for a fee.

Most did not have the time to be involved in greening projects but were interested in being kept informed of AUB's gardening activities. Many were interested and willing to receive AUB students at their residences for plants maintenance. Some were interested in participating in gardening activities, and supporting the project financially. Very few showed interest in helping in fundraising for the activities, one person was ready to play a role in educating children, and another was willing to offer to teach landscaping as related to our project.

Most residents indicated that they were available year round.

Other suggested ideas:

- Companies like Malik offer to plant the street next to his shop and adds his name for advertising. (By Leila Bssat).
- Municipality laws should be applied as to have a certain percentage out of the total construction area designated for planting. (By Mona Hallak).
- Contests among buildings or streets for the best planting.
- Greening should be supported by media.
- Sponsors from banks and big companies.
- Offering courses to teach landscape design for streets.
- Planting one tree per roof for all buildings. (By Dr. Nabil Fleihan).

5. RECOMMENDATIONS

Immediate measures to promote the findings/outcome of the Greening AUB Neighborhood pilot project to:

- The AUB community and individuals from the neighborhood, for example those that were interviewed for the social survey and had expressed their interest to be involved and/or fund, schools, local shop owners etc.
- A larger audience within and outside the institution through posters, brochures (Arabic and English).
- Address potential funders for the implementation of neighborhood greening

Future Action

In Phase I (February – September 2008) the Greening AUB Neighborhood Project was *exploratory*, its aim to research the neighborhood as a landscape, the physical setting, potential spaces available for greening, current plant palette and the people. We would recommend that the project continue to Phase II (February 2009 – September 2010), whereby its approach would be *action oriented*, the aim to develop and begin application of an action plan to green the neighborhood. This aim is elaborated in the following recommendations for action.

Two sets of future action are proposed:

- (a) Steps to rehabilitate the neighborhood through landscape design strategies
- (b) Steps to initiate and engage neighborhood communities in greening activities

(a) Strategies to Rehabilitate the Neighborhood landscape

The modular designs proposed in Phase I will need to be fine tuned through application to select case studies. The process entails preparation of implementation drawings for greening individual buildings, provision/construction of containers, where and when necessary, selection of planting and articulation of management routines through ongoing involvement and engagement with the residents.

Two approaches are recommended in the selection of buildings to retrofit:

- Segments of a street, for example Makhoul, which retains the 'neighborhood spirit' and will have an impact in view of the continuity of proposed interventions
- A single residential building, focusing on those whose residents expressed their willingness to participate in the Greening AUB Neighborhood project. This will ensure greater success for the program proposed.

Whichever approach is selected, the landscape design will proceed through a survey of those building, identification of greening space typologies that are to be retrofitted, detailed designs and 3D imaging, implementation drawings including irrigation and drainage (where and when required), planting selection and costing of implementation.

We would like to propose a broadening of ‘neighborhood greening’ in Phase II to include:

- Temporary landscape interventions that take place on the neighborhood streets. These interventions can include plant sale, organic foods, plant related crafts and activities and art and education performances
- Schools and other public, semi-public spaces
Schools in the neighborhoods are compact with little or no plants. The challenge is to undertake innovative greening of the schoolyards by engaging the school and LDEM students in greening activities.
- Streetscape is an important component of greening that was not explored by the pilot project. Accepting that the space is public and generally managed by the municipality, there is considerable room for efficient and innovative approaches to landscaping them.
- Set up these interventions as design studio projects (LDEM, Architecture and Graphic Design students). The program will seek to engage students, the community and participants to participate in community projects such as beautifying urban open areas, roadsides, schools, nursing homes, and any other place that needs greening.

(b) Engaging the Neighborhood, Bridging the academic-community divide

The focus here is the intangible dimension of greening, people, equally of neighborhood communities and the academic one. Encouraging greening necessitates engaging communities in gardening activities and adopting gardening as a hobby amongst others. Currently gardening is not a popular hobby in Lebanon. An investigation on existing gardening programs was performed to develop an understanding of the extent of community engagement in such program and develop a role for AUB in promoting gardening and greening. Desk research was conducted and information of websites was screened to develop an understanding of the extent of community engagement and identify aspects that may be applicable to AUB (**Appendix 6.5**).

Accordingly, a “Community Gardening Club” program is proposed which will serve as an umbrella for engaging local communities in greening. We would also like to propose that the students, faculty and resources of the Landscape Design and Ecosystem Management Department (**LDEM**) serve respectively as the facilitator and platform for the Community Gardening Club project. The purpose of the program is to transform the LDEM section of the Green House Area (GHA) into an open space for students and neighbors to learn about

greening or simply relax and enjoy the environment provided by the greening program. The program is long term and aims to enable students to interact with community members by learning and teaching how to care for plants, to select and purchase gardening materials available locally, to set up compost, to assist in the design of a site, and conduct community workshops for those interested in engaging in greening activities. The ultimate purpose is twofold: to benefit the neighborhood community; and to provide LDEM students with experiential, 'community based' learning by encouraging them to get involved with the community and help in greening activities.

Community Outreach: AUB Green House Area³

AUB Green House Area (GHA) will serve as a locus for the Community Gardening program, providing, the Department of Landscape Design and Ecosystem Management will provide the administrative umbrella, students and faculty the agents for carrying out the strategies proposed for community greening.

Membership in the Community Gardening program will include AUB students, neighboring community and alumni who fall into any of the following categories: landscape horticulturists, amateur gardeners, plant lovers, professional growers, botanists, nature lovers, photographers, and artists, as well as anyone that is just starting to be fascinated about plants. Benefits from the membership includes internship opportunities for students, newsletter, access to information about seed and plant availability in the market, helpful advice, events, lectures, and shows. If the program becomes popular the program could offer members special rates.

Community Outreach: Virtual Greening Network

Community Gardening will ensure communication by posting information about greening but also about sustainability themed events. It will solicit community and youth participation for generation of ideas and feedback about greening projects around campus and in the neighborhood. Accepting that the Green House Area can't reach all community members and that it cannot fulfill the project mission, a "Greening Website" will be launched and supported by the LDEM (Students and Faculty) which will provide access to the plant database, follow up on questions and answers, announce lectures and activities.

Management of the program is envisaged through events organized on a monthly basis at the greenhouse area by the department, greenhouse manager and a team of students and professional volunteers to offer the best advice on growing and planting issues. The events

³ The Green House Area proved successful in providing a venue for adult learning of gardening as part of AUB Office for Continued Education in 2007, "Landscape Gardening for the Home". The experience can be replicated albeit within the setting of the LDEM students and interested faculty.

for spring 2009 will be a practical month by month look at what can be done for your house and garden plants and what you can purchase for your balcony. One meeting per month will be organized starting February 2009 till June 2009.

Short term outcome of the Community Gardening program includes the following:

- Actions of students and community participants will transform physically the greenhouse area into well cared for, environmentally revitalized and productive open space. The philosophy of the LDEM Greening Program is to encourage and highlight the joy and rewards of greening.
- The project will provide students with the opportunity to meet alumni engaged in the landscape horticulture sector, they will get to know active professionals in the industry, and learn about future prospects of urban greening.
- The project will help teach participants what grows well in their houses, on their balconies, rooftops or building entrances and will a wide variety of horticulture topics. Monthly programs may include native plants, ornamental grasses, roses, container gardening, vegetable gardening, etc.

Long term program outcomes includes the following:

- The program long term objectives are to promote interest in gardening for entertainment and enjoyment, to work with youth to interest them in gardening, to stimulate community greening
- The long term plan is to transform the greenhouse area into a networking place where students can provide professional assistance based on the expertise they derive through their participation in the LDEM activities. Organized events through which students and participants offer horticultural and environmental workshops.

6. APPENDICES

6.1. URBAN LANDSCAPE SURVEY INFORMATION SHEET

AMERICAN UNIVERSITY OF BEIRUT: GREENING THE NEIGHBORHOOD PROJECT

Name:

Date:

Location: (from maps)

Building Reference (from maps)

Bldg. _____ Street _____

Photo name taken from position/orientation (reference on plan)

Data collection:

Private Semi-Private Public Institutional

Ownership

Building Use: Residential Commercial Industrial Institutional

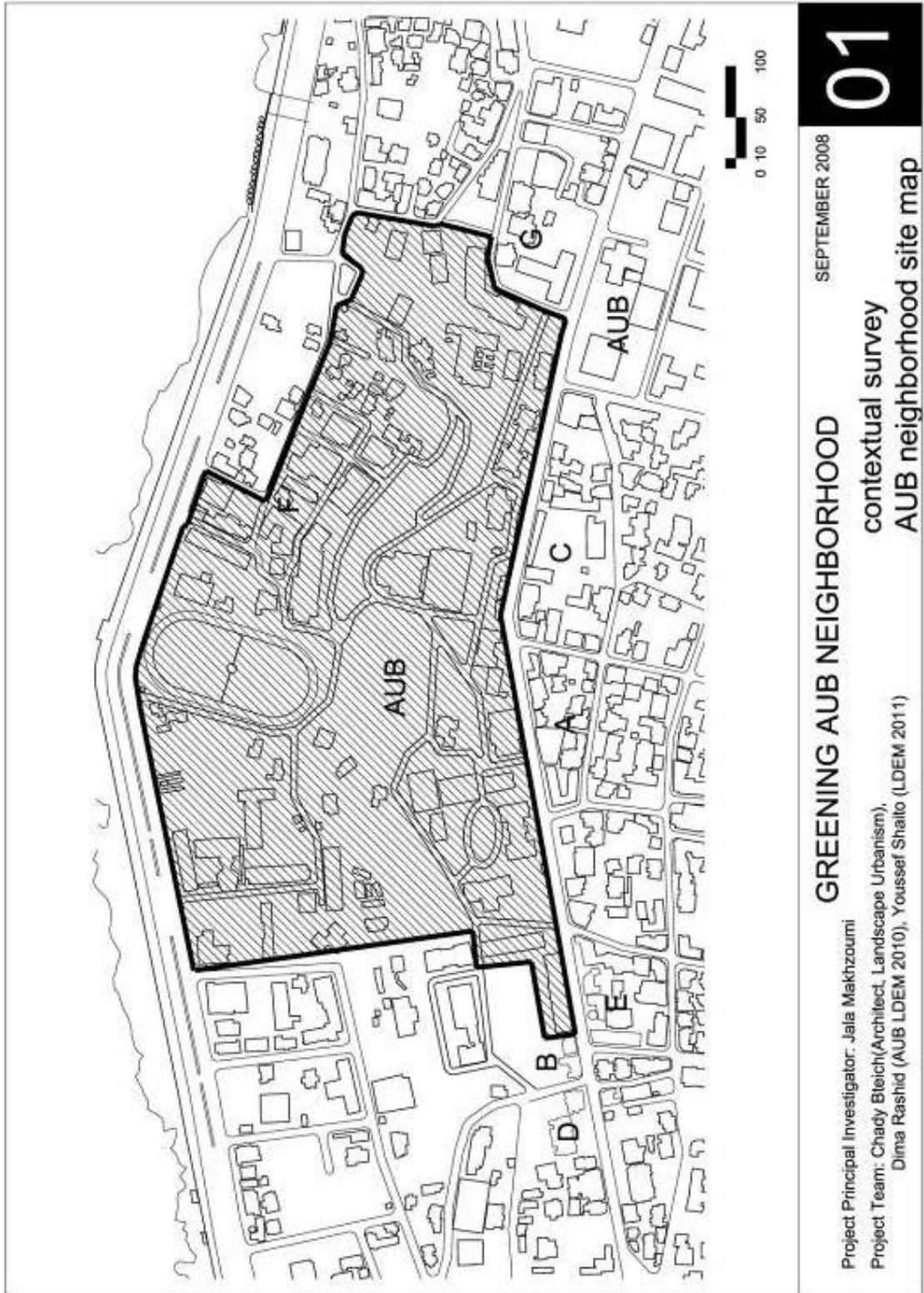
Age of building

Number of floors

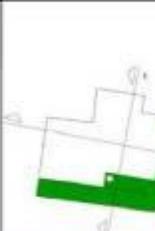
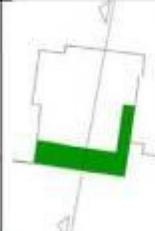
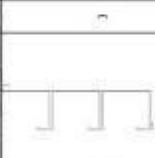
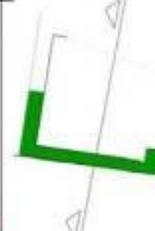
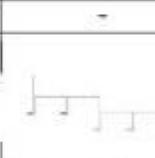
Sketch:

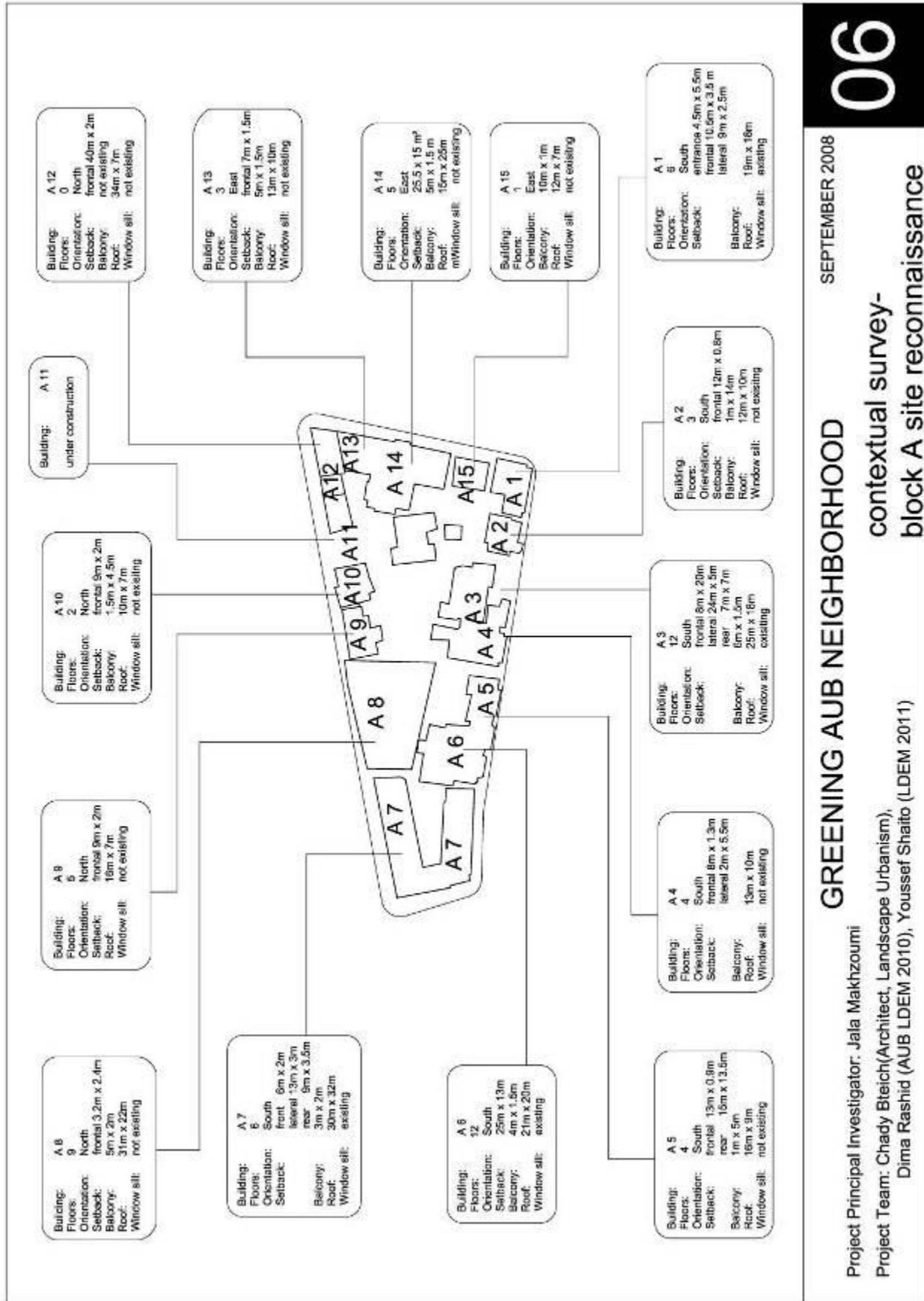
- Building Form
- Front-Side Setbacks
- Entrance
- Balconies
- Roof
- Windows

6.2. LANDSCAPE DESIGN NEIGHBORHOOD SURVEY AND CONCEPTUAL GREENING PROPOSAL



Data Sheet

BLOCK A	Photo	Building Number	Available Space							Illustrated available space	Building Section	Floor to Ceiling Height	Space Availability							Roof
			Front SB	Lateral SB	Rear SB	Balcony	Roof	Window SH	Front SB				Lateral SB	Rear SB	Balcony Area	Roof	Window SH	Front SB	Lateral SB	
		A1	Existing	Existing	Non-Existing	Existing	Existing	Existing	Existing			4,565.2 m ²	10,562 m ²	962.8 m ²		South		Yes	18x18 m ²	
		A2	Square	Non-Existing	Non-Existing	Existing	Existing	Non-Existing	Non-Existing			12,808 m ²			South	1x14 m ²	No	12x10 m ²		
		A3	Existing	Existing	Existing	Existing	Existing	Existing	Existing			8,626 m ²	246.5 m ²	7x7 m ²	South		Yes	25x18 m ²		
		A4	Slab-on	Existing	Non-Existing	Existing	Existing	Non-Existing	Non-Existing			8,615 m ²	263.5 m ²		South		No	13x10 m ²		



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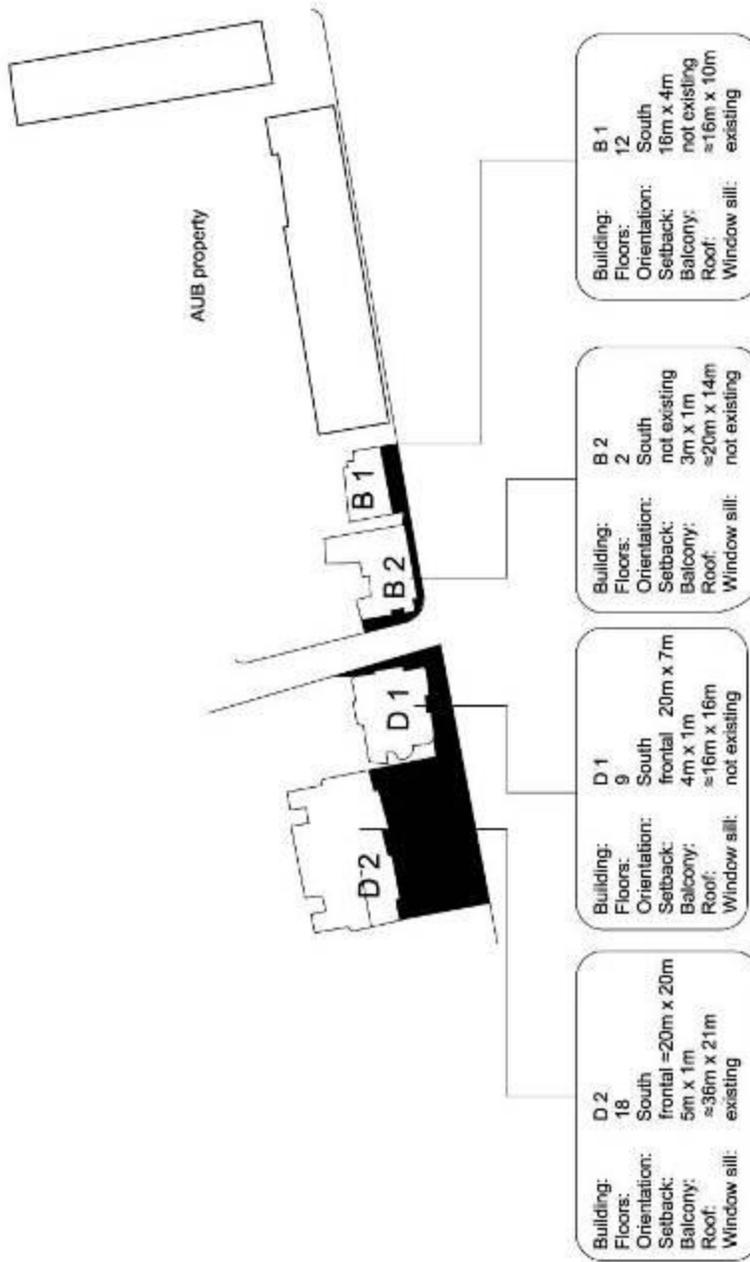
GREENING AUB NEIGHBORHOOD

contextual survey-
block A site reconnaissance

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Bleich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

06



SEPTEMBER 2008

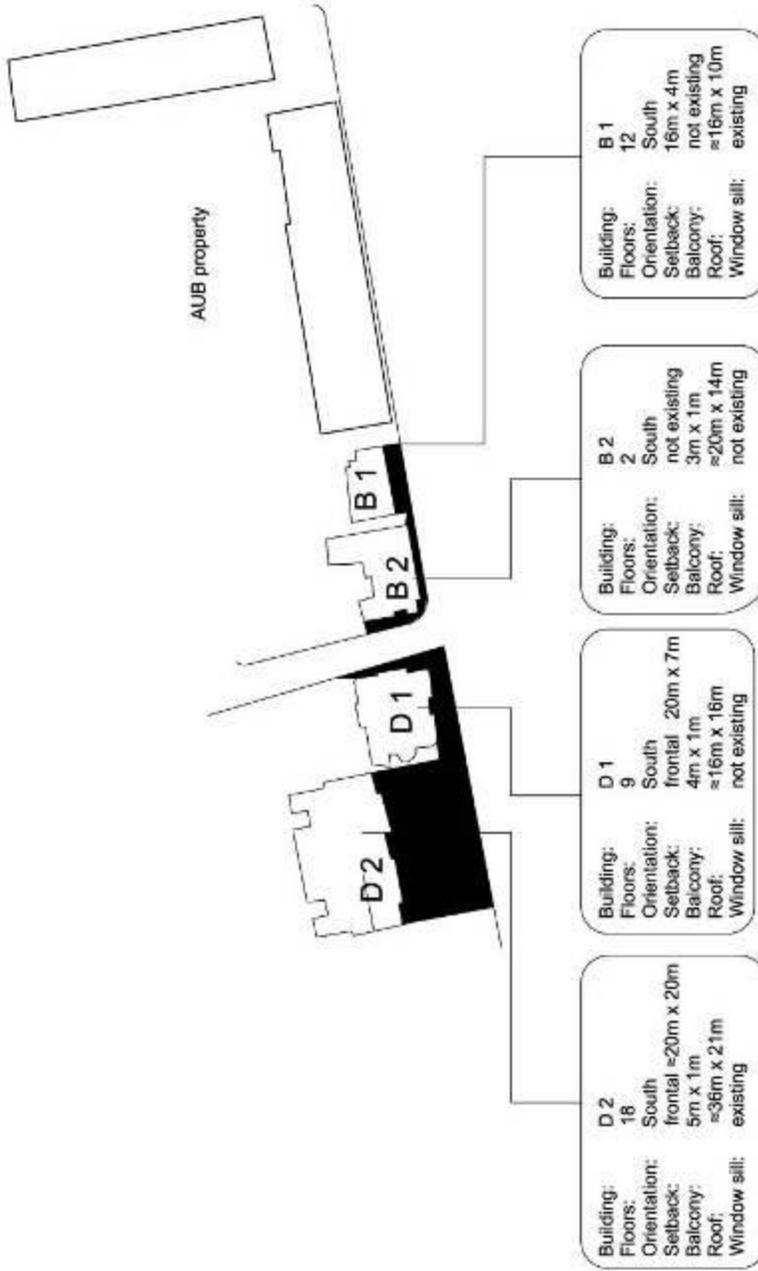
GREENING AUB NEIGHBORHOOD

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Bleich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

contextual survey-
block B site reconnaissance

07



SEPTEMBER 2008

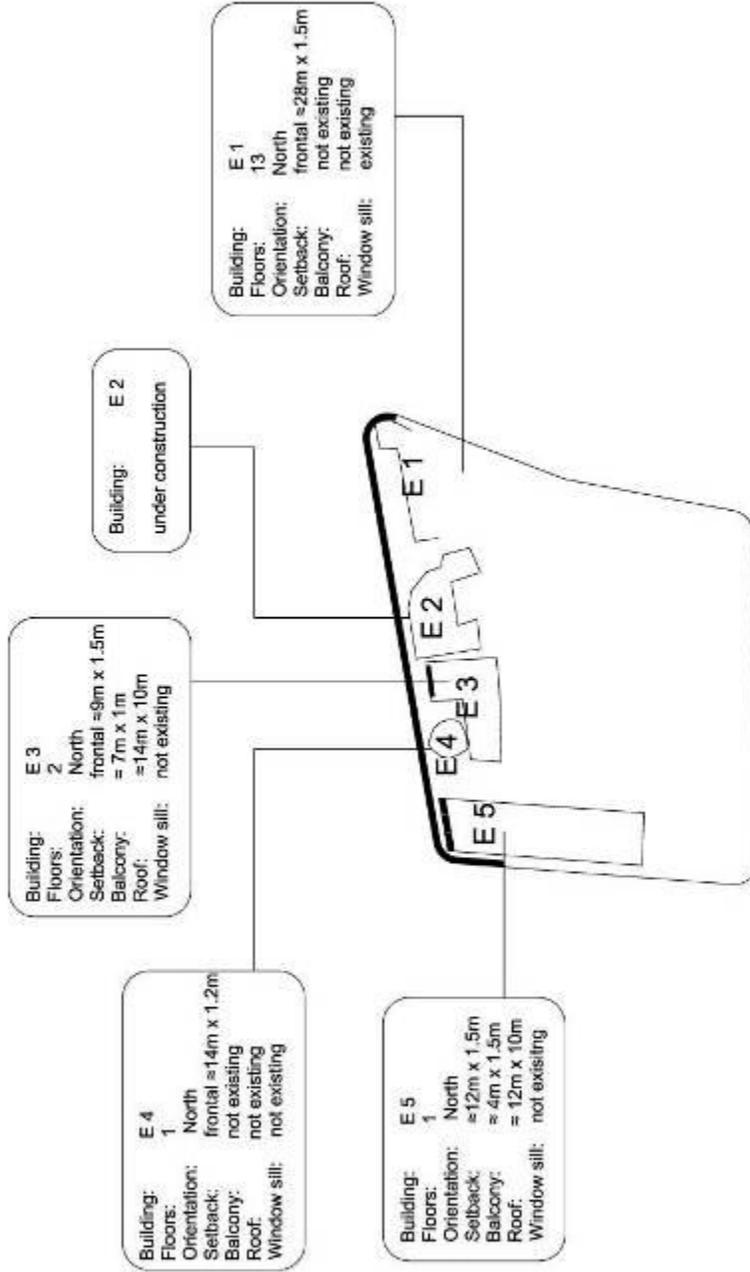
GREENING AUB NEIGHBORHOOD

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Breich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

contextual survey-
block D site reconnaissance

09



SEPTEMBER 2008

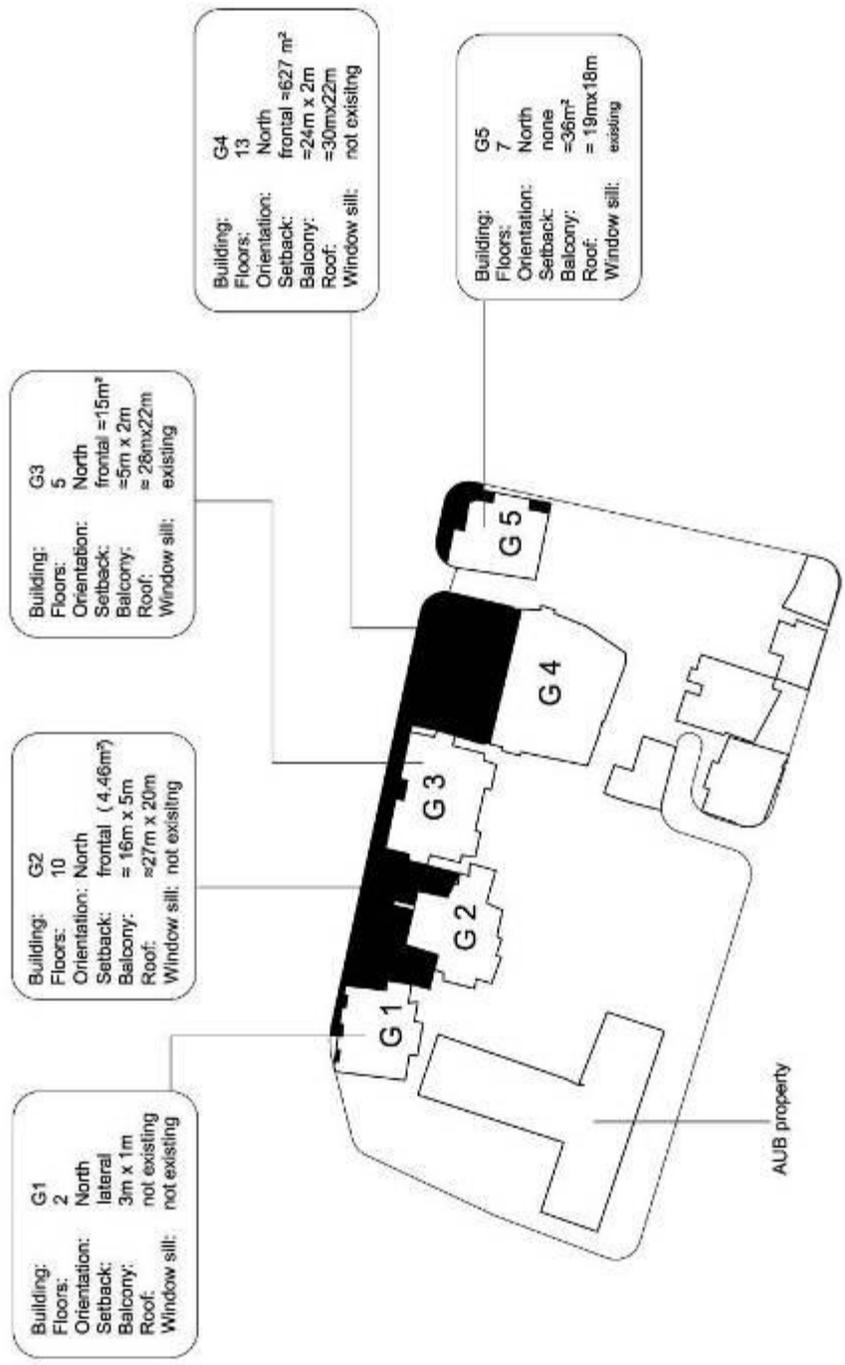
GREENING AUB NEIGHBORHOOD

contextual survey-
 block E site reconnaissance

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Breich(Architect, Landscape Urbanism),

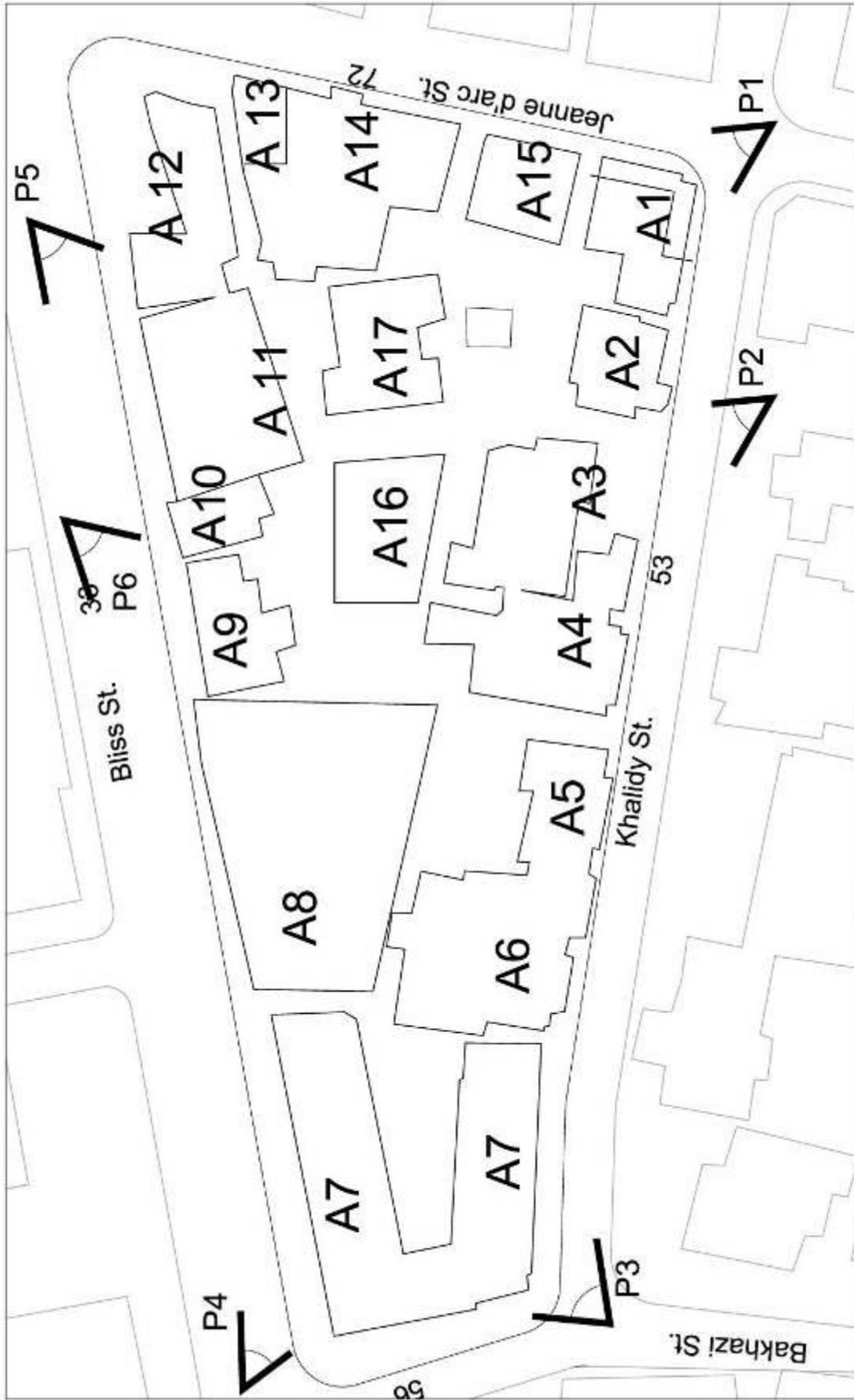
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



GREENING AUB NEIGHBORHOOD

contextual survey-
block G site reconnaissance

Project Principal Investigator: Jala Makhzoumi
 Project Team: Chady Bleich(Architect, Landscape Urbanism),
 Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



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GREENING AUB NEIGHBORHOOD
 block survey
 site map block A

Project Principal Investigator: Jala Makhzoumi
 Project Team: Chady Bteich(Architect, Landscape Urbanism),
 Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



view P1: jeanne d'arc / khalidy streets



view P3: khalidy street



view P2: khalidy street

GREENING AUB NEIGHBORHOOD

Project Principal Investigator: Jala Makhzoumi
Project Team: Chady Bteich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shalito (LDEM 2011)

block survey
visual survey

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view P4: bliss street



view P6: bliss street



view P5: bliss street

GREENING AUB NEIGHBORHOOD

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Bteich(Architect, Landscape Urbanism),

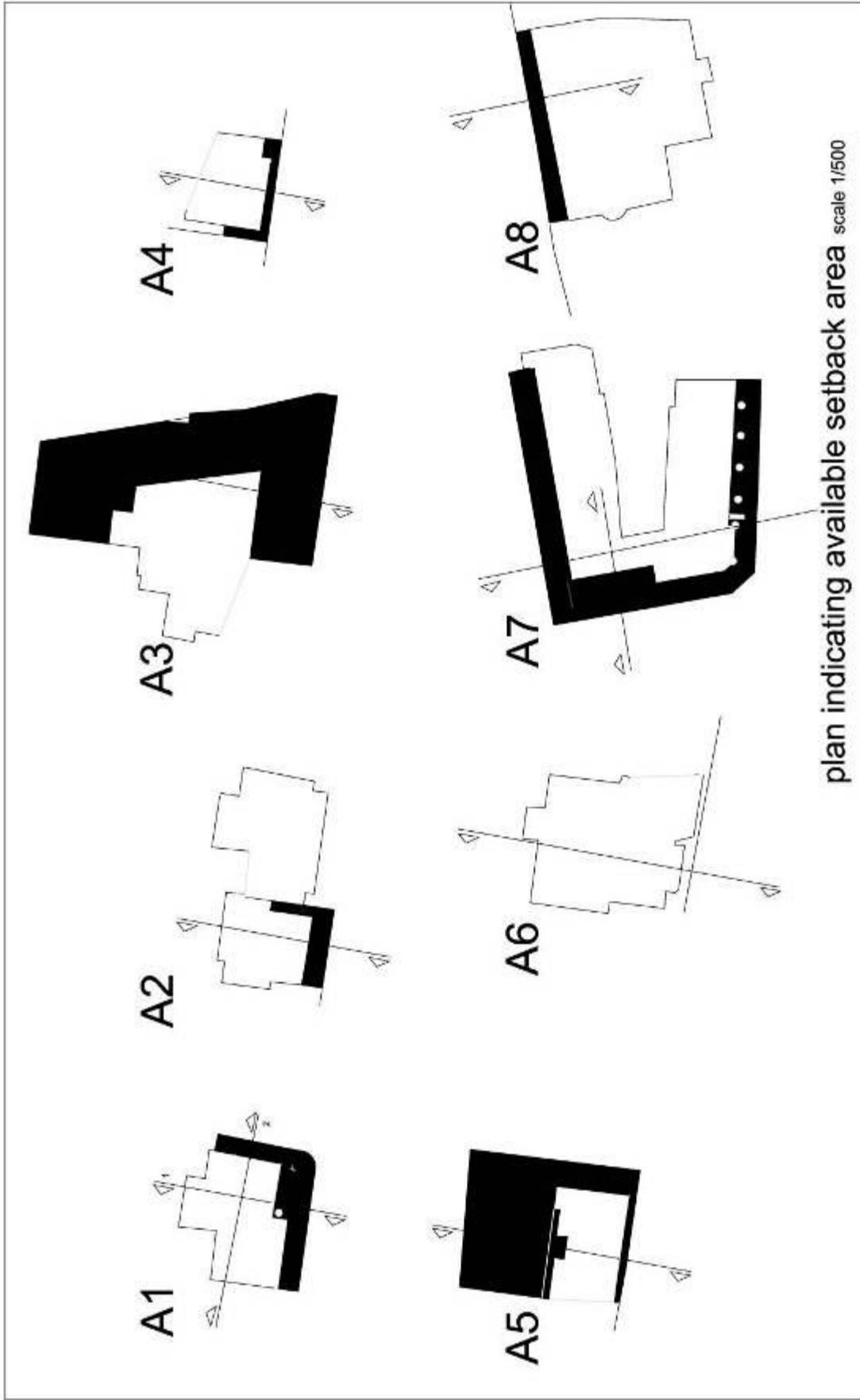
Dimas Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

block survey

visual survey

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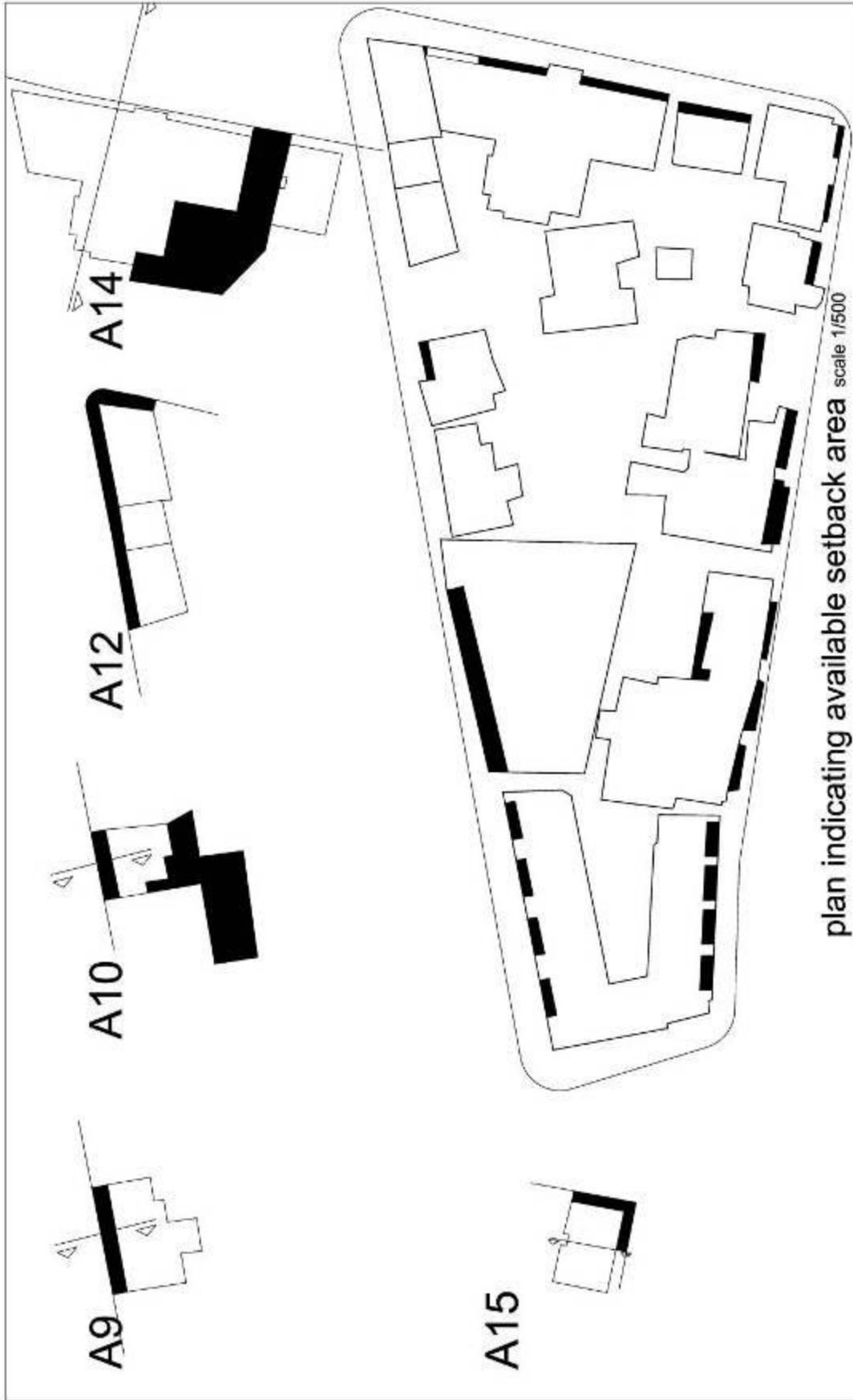


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GREENING AUB NEIGHBORHOOD

block survey
2D spatial survey

Project Principal Investigator: Jala Makhzoumi
Project Team: Chady Bteich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



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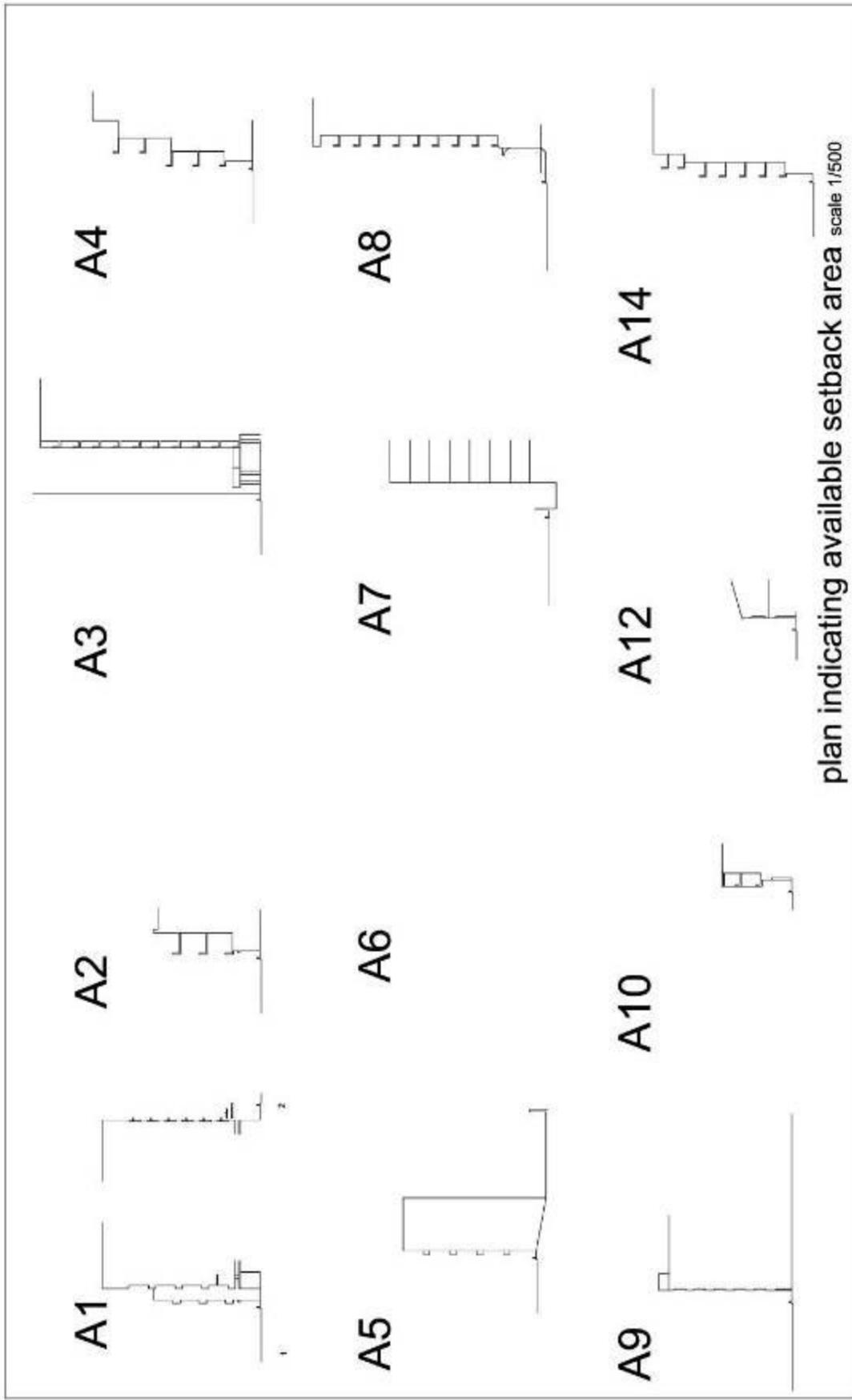
block survey

2D spatial survey

Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Bleich(Architect, Landscape Urbanism),

Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



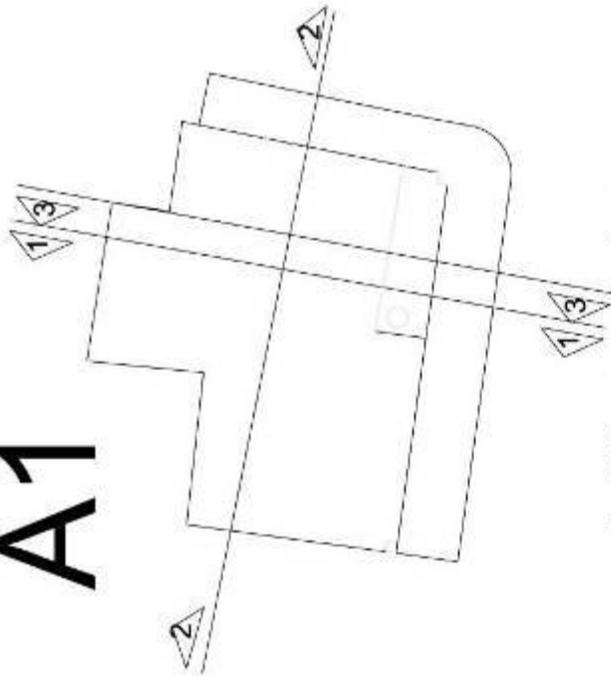
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 Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

GREENING AUB NEIGHBORHOOD
 building survey

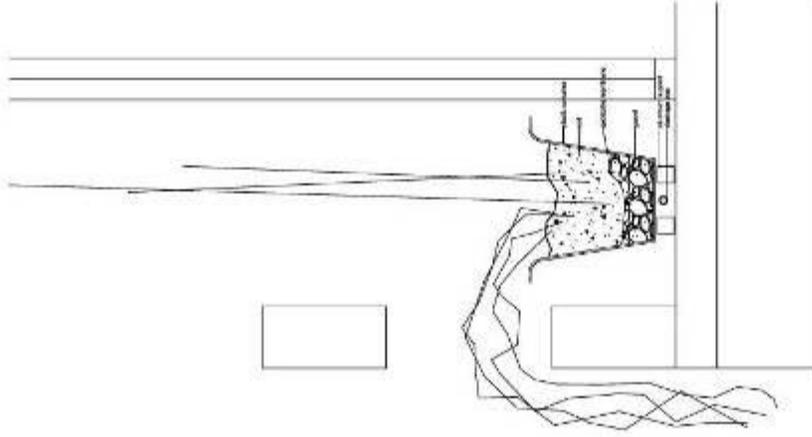
SEPTEMBER 2008

17

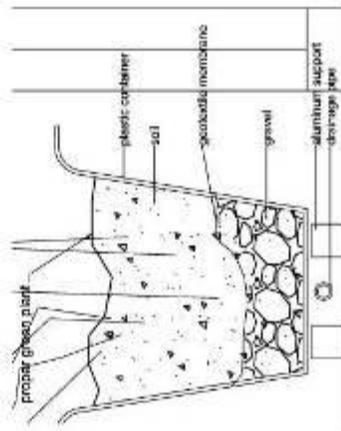
A1



building mass plan scale 1/200



section scale 1/10



detail scale 1/5

balcony

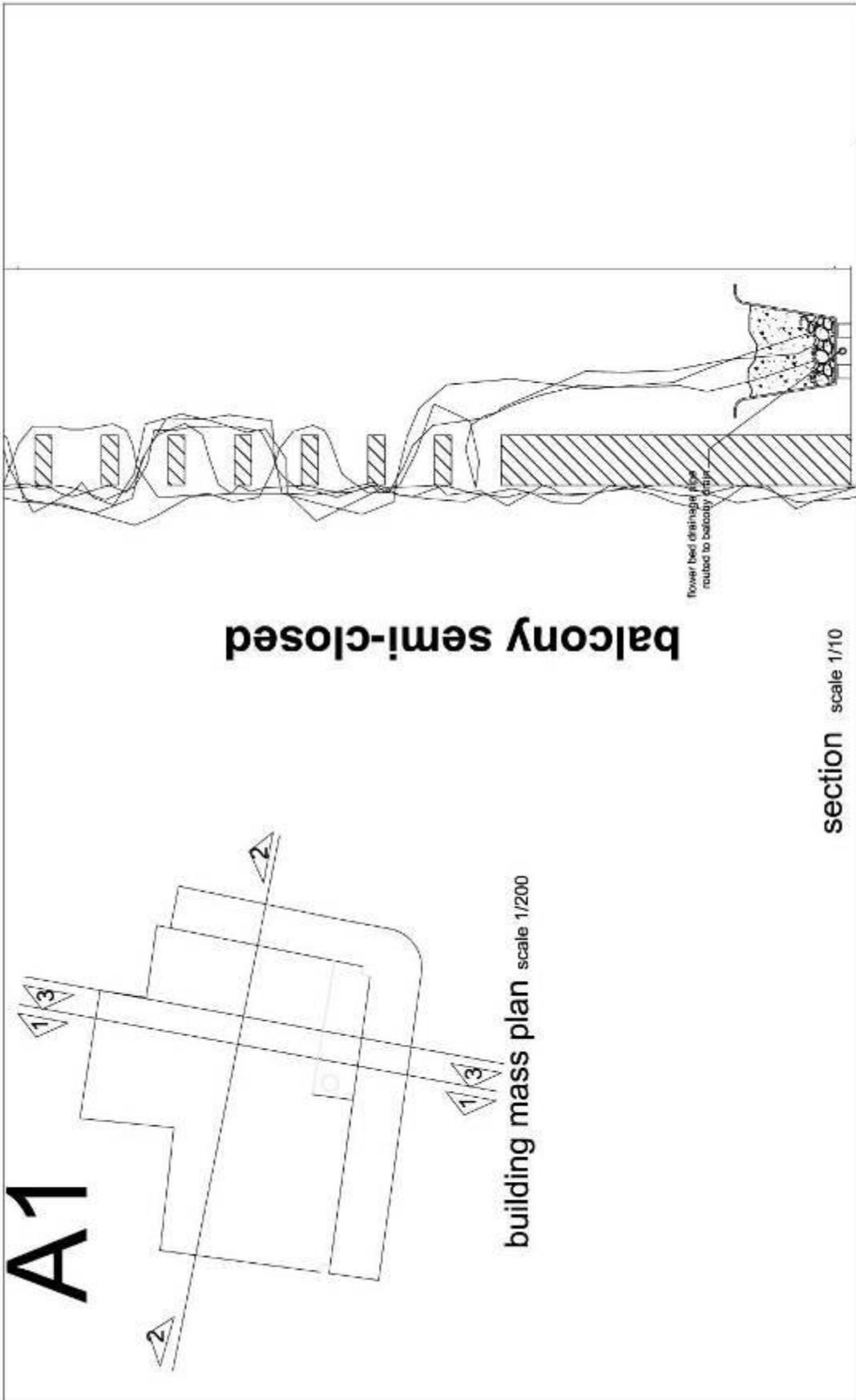
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GREENING AUB NEIGHBORHOOD

modular spaces design

18

Project Principal Investigator: Jala Makhzoumi
Project Team: Chady Beich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



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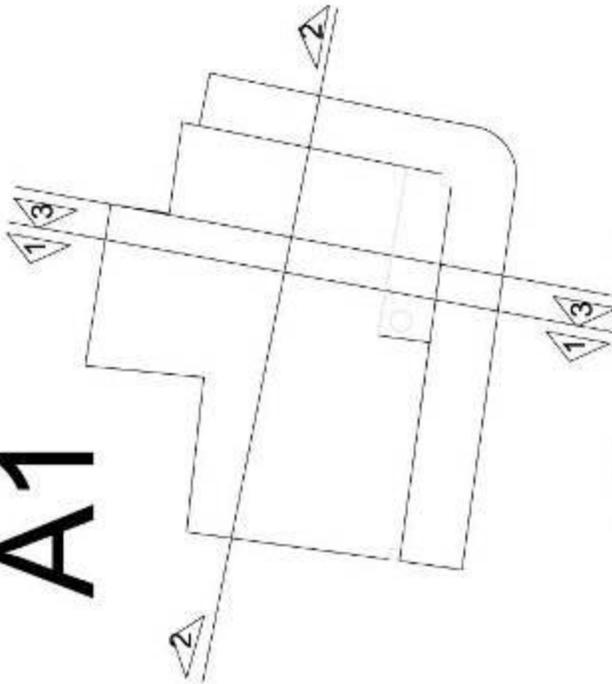
GREENING AUB NEIGHBORHOOD

modular spaces design

Project Principal Investigator: Jala Makhzoumi

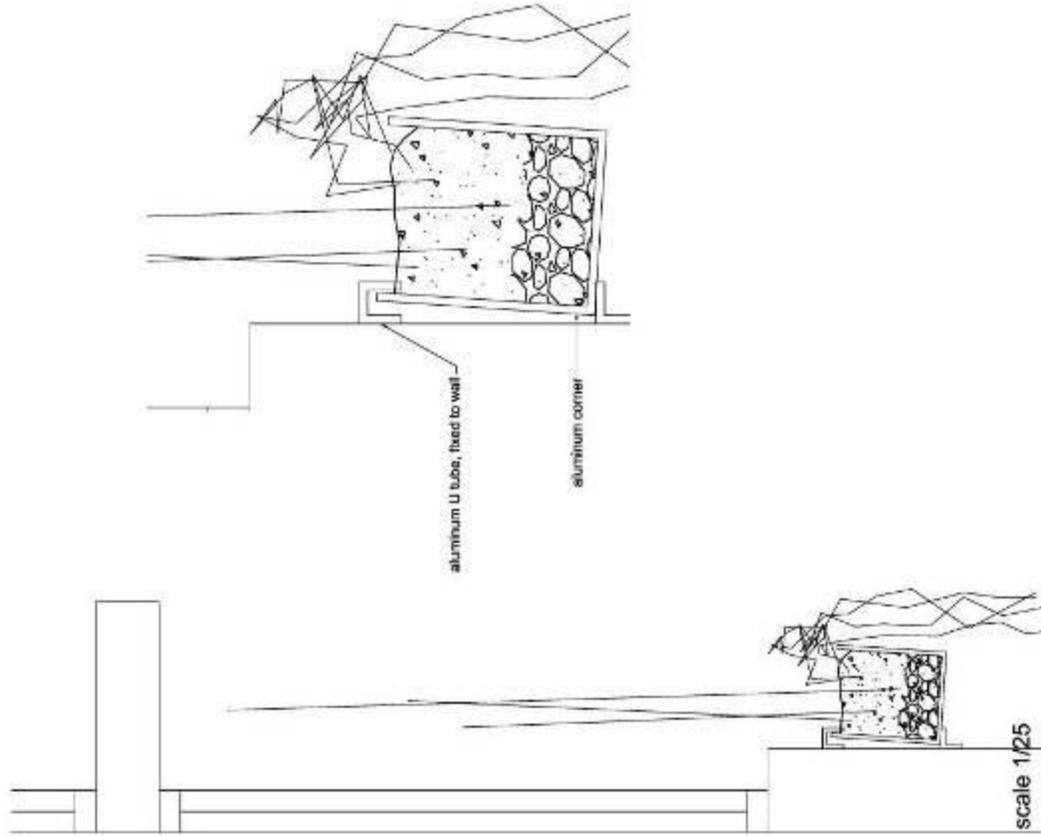
Project Team: Chady Bleich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)

A1



building mass plan scale 1/200

window sill



section scale 1/25

SEPTEMBER 2008

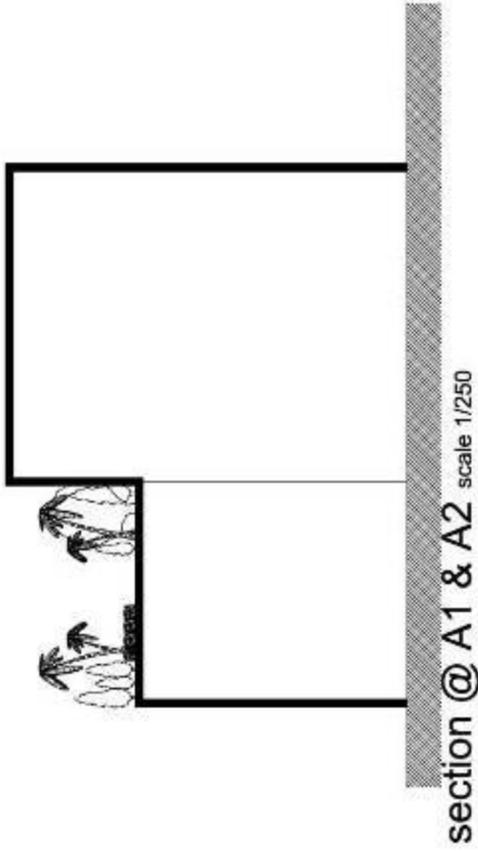
GREENING AUB NEIGHBORHOOD

modular spaces design

20

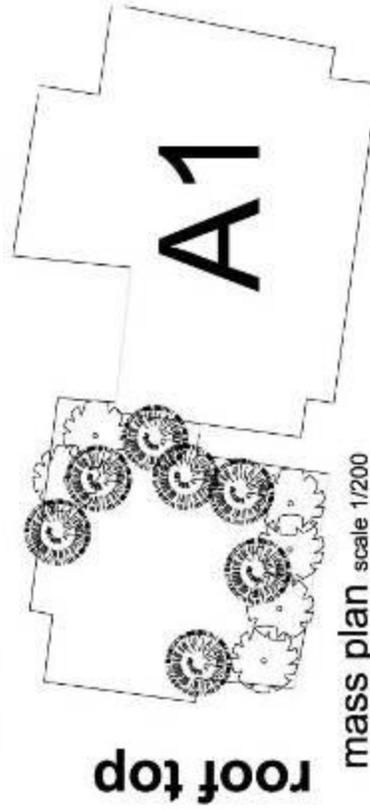
Project Principal Investigator: Jala Makhzoumi

Project Team: Chady Bteich(Architect, Landscape Urbanism),
Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



section @ A1 & A2 scale 1/250

A2



roof top

mass plan scale 1/200



existing situation



proposed intervention

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SEPTEMBER 2008

modular spaces design

Project Principal Investigator: Jala Makhzoumi
 Project Team: Chady Bteich(Architect, Landscape Urbanism),
 Dima Rashid (AUB LDEM 2010), Youssef Shaito (LDEM 2011)



existing situation



proposed intervention

GREENING AUB NEIGHBORHOOD

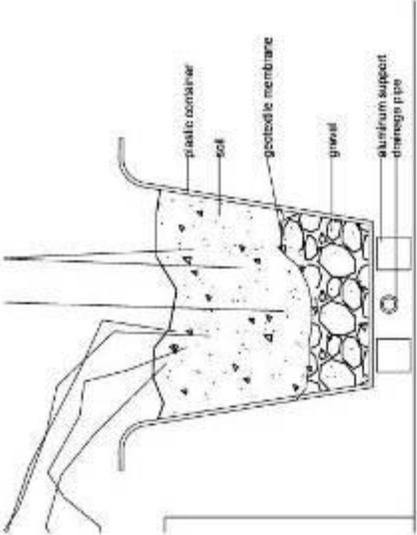
SEPTEMBER 2008

modular spaces design

Project Principal Investigator: Jala Makhzoumi

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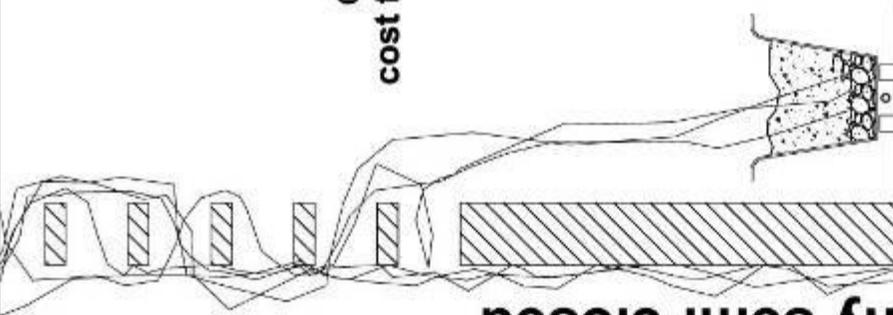


detail @ flower bed scale 1/5

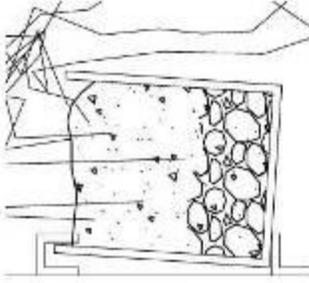
the cost of the 1 linear meter of balcony structural component :

- plastic container: 25\$
- soil & grave & geotextile membrane: 10\$
- aluminum support: 5\$
- drainage pipe: 15\$
- Total cost: 45\$**

balcony semi-closed

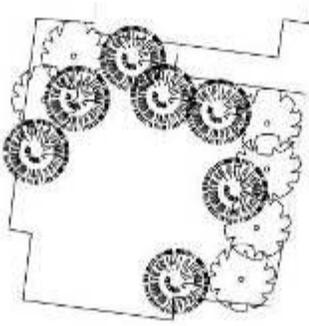


cost for wall structural metal mesh /m² 35\$



detail @ window sill scale 1/5

cost for window sill flower bed /lm 55\$



cost for roof top garden /m² 125\$

6.3. PLANT DATABASE

The plant database was developed by selecting plant species that are adapted to Beirut conditions and production protocols were collected from the literature and revised based personal experience to be applicable to Beirut conditions. The database will be fine tuned and published as a book and post on the LDEM greening website.

Aralia elegantissima

(shrub)

Lebanese name:	أراليا أو عشبة بري
Latin name:	Dizygotheca elegantissima
Common name:	Aralia, Paper plant
Size: Height at maturity:	120 cm.
Spread at maturity:	46 cm.
Growth rate:	Rapid, doubles it's height in a year, 30 cm. per year
Flowering season:	Non-flowering
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate - not drought tolerant/ Twice per week in summer, once per week in winter.
Feeding:	Fertilize twice per month from May till October with liquid feeding rich in Nitrogen
Humidity:	Likes to be sprayed daily with soft drinking water
Sunshine exposure:	Lots of light if indoors and no direct sunshine if outdoors
Repotting:	Every into a slightly bigger pot between December and January
Pruning:	After repotting cut ungainly stems
Propagation:	Seed or cutting in soil in spring
Easy or Difficult:	Needs attention- not easy
Problems:	Leaves dry and brittle/ too hot or dry, move to a cooler place, water and spray. Leaves droop/ soil water logged, reduce watering Leaves drop/ Too hot or cold and low humidity, check temperature and spray
Aesthetic value:	Bronz color foliage, good for contrast with others.

Asparagus sprengeri
(hanging and groundcover shrub)

Lebanese name:	هليون
Latin name:	<i>Asparagus sprengeri</i>
Common name:	Asparagus
Size: Height at maturity:	45-50 cm.
Spread at maturity:	30 cm.
Growth rate:	12 or more new fronds per season
Flowering season:	Insignificant flowers but attractive red berries
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate- not drought tolerant/ water 2-3 times per week in summer, once per week in winter
Feeding:	Twice per month in spring/ add half the amount of dose of liquid feeding rich with Nitrogen from June till October
Humidity:	Likes high humidity and spraying with soft drinking water daily
Sunshine exposure:	Indoor and outdoor/ shade and sun
Repotting:	Likes to be pot bound, wait till the roots come out of the pot
Pruning:	No need, just grooming
Propagation:	Seed or division in soil in April
Easy or difficult:	Easy but not drought tolerant
Problems:	Leaves yellow and spines drop/ Too hot or too dry and or lack of food/light Scaly insects/ Remove or spray with insecticide Spidermites/ Spray with insecticide Leaflets drop if outside/ too cold, adjust temperature.

Begonia semperflorens

(annual shrub)

Lebanese name:	بيغونيا
Latin name:	<i>Begonia semperflorens</i>
Common name:	Begonia, wax begonia
Size: Height at maturity:	35 cm.
Spread at maturity:	25 cm.
Growth rate:	Fast, 20 cm. per season
Flowering season:	Summer, May till November
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate to low, sensitive to overwatering/ once a week in Summer and once in 10 days in winter.
Feeding:	Twice per month from May till Oct. with liquid feeding rich with Nitrogen
Humidity:	Normal room humidity, do not spray flowers
Sunshine exposure:	Lots of light if indoors and no direct sunshine if outdoors, shade
Repotting:	Only once in February-March since annual and roots are very delicate
Pruning:	If straggly, prune to 4 cm. and it will regrow
Propagation:	Seed in soil in May , leaf and stem tip cuttings in soil from May till August
Easy or difficult:	Easy if well aerated
Problems:	Leaves dry and droopy/ Too hot or dry, water and move to a cooler place Leaves yellow and limp/ Too cold and wet, Dry out and keep in warmer room. Leaf spots and black/ Bacterial wilt, use systemic fungicides Leaf white patches/ Mildew, use systemic fungicide Leaf brown black patches with rotting/ Botrytis, use fungicide and aerate more. Leaf yellow rings or mottling/ Virus, incurable throw away. Crown rot/ overwatering, reduce watering Leaf and flower rot/ do not spray water on foliage
Aesthetic value:	Nice flowering beds in summer outdoors in shade and nice room plants (after flowering) colorful flowers surrounded by a collar of glossy green foliage Mass color in flower beds, leaves either green or brown.

Bouganvillea glabra and Bouganvillea spectabilis

(Climber Shrub or ground cover)

Lebanese name:	الجميلة أو الجهنمية أو المجنونة
Latin name:	<i>Bouganvillea glabra and Bouganvillea spectabilis</i>
Common name:	Bouganvillea
Size: Height at maturity:	3-4 m.
Spread at maturity:	1.5 m.
Growth rate:	30-45 cm. every season
Flowering season:	Summer/ April till November
Scent:	None
Water quality:	likes lime hard water, salt water tolerant
Water quantity:	2-3 times a week in summer, once per week in winter
Feeding:	Half the recommended dosage of liquid feeding rich with Nitrogen twice per month from April till Nov.
Humidity:	Likes spraying 2-3 times per week before flowering, never spray the flowers
Sunshine exposure:	Needs sunshine to flower, lots of light when used indoors
Repotting:	Every winter, like to be pot bound
Pruning:	Only a little if out of shape
Propagation:	Only by experts by young cuttings in soil in spring
Easy or difficult:	Easy
Problems:	Stunted growth/ drainage problem No flowers/ Too dark or overwatering Leaves falling/ normal in winter, needs more sunlight in summer Leaves and flowers dry and fall/ Too hot or dry, water and spray, Leaves yellow/ too wet, dry Mildew/ too damp, aerate/ Mealy bugs/ Systemic fungicide Spidermites/ Spray with acaricide/ Scale insects/ Systemic insecticide
Aesthetic value:	Profusely flowering shrub or small tree in summer

Chlorophytum

(perennial groundcover and hanging shrub)

Lebanese name:	العنكبوت
Latin name:	<i>Chlorophytum comosum variegatum</i>
Common name:	Spider plant
Size: Height at maturity:	50 cm.
Spread at maturity:	50 cm.
Growth rate:	Fast
Flowering season:	Insignificant
Scent:	None
Water quality:	soft drinking water
Water quantity:	Drought tolerant/ 2-3 times per week in summer once per week in winter
Feeding:	Twice per month from June till Oct. with liquid feeding rich with nitrogen
Humidity:	Likes spraying with drinking water daily but not under the sunshine
Sunshine exposure:	Low light tolerant, outdoor in shade or full sunlight
Repotting:	Twice a year
Pruning:	Only of damaged leaves
Propagation:	By young plantlets in soil or in water in summer
Easy or difficult:	Very easy
Problems:	Spidermites/ spray acaricide Weak dry leaves/ too hot Transparent mushy leaves/ too cold Center rotting/ overwatering, dry Brown leaf tips/ Too dry or sunny
Aesthetic value:	Nice hanging basket indoor plant and attractive outdoor summer bedding, evergreen with rhizomes.

***Cissus* spp.**

(groundcover and hanging shrub)

Lebanese name:	سيسوس او حلوق
Latin name:	<i>Cissus antartica</i>
Common name:	Cissus, Kangaroo vine
Size: Height at maturity:	300-350 cm.
Spread at maturity:	23 cm. diameter in a pot
Growth rate:	1 m. per year
Flowering season:	Non-flowering
Scent:	None
Water quality:	soft drinking water
Water quantity:	Sensitive to overwatering, moderate/ twice a week in summer once ever 14 days in winter
Feeding:	Twice per month with liquid food rich with Nitrogen from June till Oct.
Humidity:	Like weekly spray in summer
Sunshine exposure:	No direct sunlight
Repotting:	Once or twice a year
Pruning:	Pinch out tips in summer to get a dense and bushy foliage
Propagation:	By young stem tips with a bud and two leaves in compost and sand from May till july
Easy or difficult:	Easy and tolerant
Problems:	Leaf drop no growth/ too cold Leaf brown patches/ overwatering Spidermites/ use acaricide Greenfly/ use systemic insecticide Leaves shrivel/ too hot and dry
Aesthetic value:	Climber with tendrils, hanging basket, trellis

Citrus spp.
(shrub)

Lebanese name:	حمضيات
Latin name:	<i>Citrus mitis, citrofortunella microcarpa</i>
Common name:	Calamondin orange, Mandarin*cumquat
Size: Height at maturity:	1 m.
Spread at maturity:	50 cm.
Growth rate:	Very slow 10 cm. per year
Flowering season:	Should be outdoors to allow pollination to flower from June till September
Scent:	Strong perfume
Water quality:	Lime hard water lovers/ salt water tolerant
Water quantity:	Daily in summer and every 10 days in winter
Feeding:	Twice per month with liquid food rich with Nitrogen from June till Oct.
Humidity:	Likes daily spray
Sunshine exposure:	Needs direct sunshine to flower
Repotting:	Every spring
Pruning:	No need, only of too long branches and out of shape
Propagation:	Only by specialists by cutting, grafting or pips in soil in spring
Easy or difficult:	Moderately easy
Problems:	Leaves drop/ Too wet or too dry or too cold Lanky growth/ Too hot and poor ventilation Leaves curl with brown tips/ Cold Mealy bugs/ Systemic insecticide/ Scale insects/ Systemic insecticide Leaf yellow mottling, leaf hopper/ Systemic insecticide Whiteflies/ special insecticide/Sooty mould/ Systemic fungicide
Aesthetic value:	Lovely scented white flowering and bearing edible fruits shrub

Codiaeum variegatum pictum
(shrub)

Lebanese name:	كروتون
Latin name:	<i>Codiaeum variegatum pictum</i>
Common name:	Croton
Size: Height at maturity:	1 m.
Spread at maturity:	1 m.
Growth rate:	25 cm. per year per stem
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderately/ 2-3 times a week in summer and every 5 days in winter
Feeding:	Twice per month with liquid food rich with Nitrogen from June till October
Humidity:	Likes daily spraying but not in direct sunlight
Sunshine exposure:	Very high light if indoors
Repotting:	Once in January-March
Pruning:	Only of leggy plants in spring
Propagation:	By stem tip cutting in soil in spring
Easy or difficult:	Needs experience
Problems:	Bottom leaves drop/ Too dry and too cold Leaves dull/ low light Scorched brown leaves/ Direct sunlight on wet leaves Leaves shrivel/ too hot or too dry Leaves droop and collapse, stem rotting/ overwatering Spidermites/ systemic insecticide Scale insects/ systemic insecticide Mealy bugs/ Systemic insecticide
Aesthetic value:	Popular colored evergreen foliage shrub

Cyperus diffuses

(shrub)

Lebanese name:

Latin name: *Cyperus diffuses, C. alternifolius, C. papyrus*

Common name: Dwarf Umbrella plant

Size: Height at maturity: 1-2.4 m.

Spread at maturity: 0.46 m.

Growth rate: 6 new leaves per year

Flowering season: Summer/ June-Oct.

Scent: None

Water quality: soft drinking water

Water quantity: Keep wet all times/ daily all year, you can keep pot stand in water

Feeding: Once per month with liquid food rich with Nitrogen from June till Oct.

Humidity: Spray daily

Sunshine exposure: High light level if indoor and shaded outdoor

Repotting: Once every spring, likes to be pot bound

Pruning: Only clean dead leaves

Propagation: By seeds or plant division in soil in spring

Easy or difficult: Easy

Problems: Leaves yellow or brown/ Dry, water
Leaves dead and yellow stem/ too cold, cut back
Leaves dull/ low light
Greenfly/ systemic insecticide
Whitefly/ special insecticide

Aesthetic value: Grass-like plant live in ponds or boggy ground

Dieffenbachia amoena
(shrub)

Lebanese name:

Latin name: *Dieffenbachia amoena, D. maculata*

Common name: Dieffenbachia, Dumb cane

Size: Height at maturity: 120 cm.
Spread at maturity: 60-70 cm.

Growth rate: Fast, 46 cm. per year

Flowering season: Insignificant

Scent: None

Water quality: Soft drinking water/ sensitive to salty water

Water quantity: Moderate/ 2-3 times a week from May till Oct. and once a week from Nov. till Apr.

Feeding: Once per month with liquid food rich with Nitrogen from May till Oct.

Humidity: Moderate, spray twice a week with drinking water

Sunshine exposure: High light if indoors and shaded if outdoors

Repotting: Once every spring

Pruning: If straggly cut down to 10 cm.

Propagation: By new shoots or rooted top cuttings and stem sections in compost in summer

Easy or difficult: Difficult

Problems: Lower leaves drop/ too cold
Lower leaves yellow/ overwatered
Leaves and stem rot/ spraying water in cold
Leaves small/ low light/ Mealy bugs/ systemic insecticide/ Spidermites

Aesthetic value: White and green thick leaves

Remark: It has poisonous sap which causes paralysis of the tongue and affects speech that's why they call it dumb cane

Ficus spp.

Lebanese name:	فيكوس
Latin name:	<i>Ficus benjamina, f.diversifolia, f.australis, f.nitida, f.rubiginosa or f.deltoidea</i>
Common name:	Ficus
Size: Height at maturity:	5-6 m.
Spread at maturity:	0.8- 1 m.
Growth rate:	46 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate to low/ twice per week in summer and once per week in winter
Feeding:	Once per month with liquid food rich with Nitrogen from May till Oct.
Humidity:	Likes daily spraying with soft drinking water
Sunshine exposure:	Only <i>F. diversifolia</i> is low light tolerant, all ficus need high light level, but shade tolerant if outside.
Repotting:	Once every spring
Pruning:	For shaping in spring
Propagation:	Stem tip cuttings in soil or air layering in spring
Easy or difficult:	Easy
Problems:	Leaves drop/ insufficient light and water Scale insects/ systemic insecticide Leaves yellow/ overwatering Spidermites/ acaricide
Aesthetic value:	Filling bushes or small trees used for hedges, screens, topiary, street trees

Ficus pumila

(groundcover, hanging or climbing shrub)

Lebanese name:	
Latin name:	<i>Ficus pumila, f.repens</i>
Common name:	creeping ficus, climbing fig
Size: Height at maturity:	120 cm. long
Spread at maturity:	20 cm.
Growth rate:	40 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	soft drinking water
Water quantity:	Moderate/ 2-3 times in summer and once a week in winter
Feeding:	Twice per month with liquid food rich with Nitrogen from May till Oct.
Humidity:	Likes spraying daily in summer and every other day in winter
Sunshine exposure:	Prefers shade
Repotting:	Once every winter
Pruning:	For shaping in spring
Propagation:	By stem tip cutting in soil in spring
Easy or difficult:	Easy with care
Problems:	Leaves yellow and drop/ overwatering Mealy bugs/ Systemic insecticide Leaves dry/ too dry Scale insects/ systemic insecticide Spidermites/ acaricide
Aesthetic value:	Climbing, trailing, ground cover and hanging baskets

Gardenia jasminoides
(shrub)

Lebanese name:	غار دينيا
Latin name:	<i>Gardenia jasminoides</i>
Common name:	Gardenia
Size: Height at maturity:	1.2 m.
Spread at maturity:	1 m.
Growth rate:	Slow 15 cm. per year
Flowering season:	May till September
Scent:	Beautiful heavy perfume
Water quality:	Lime free soft drinking water/ sensitive to salt water
Water quantity:	Moderate/ 3 times per week in summer and once a week in winter
Feeding:	Twice per month with half the dosage of liquid feeding rich with Nitrogen from May till September
Humidity:	Likes daily spraying but not on flowers
Sunshine exposure:	Partial sunshine (avoid strong sunshine in mid summer)
Repotting:	In spring only if needed
Pruning:	Clipping back after flowering, shaping, and pinching for branching
Propagation:	By young stem tip cutting in compost in early spring
Easy or difficult:	Difficult
Problems:	Aborted flowers/ low humidity Mealy bugs/ systemic insecticide Interveinal chlorosis/ Iron deficiency Spidermites/ acaricide Leaves pale/ low light Scale insects/ systemic insecticide
Aesthetic value:	Attractive green glossy shrub with beautiful white flowers Should be grafted on <i>G. Thumbergiana</i> to prevent yellowing

Hedera helix

(groundcover, hanging or climbing shrub)

Lebanese name:	قسوس أو لبلاب أو حبل المساكين
Latin name:	<i>Hedera helix, hedera canariensis</i>
Common name:	Ivy
Size: Height at maturity:	60 cm., H. canariensis 200 cm.
Spread at maturity:	46 cm.
Growth rate:	Fast, 46 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate to low/ once a week in summer and every 10 days in winter
Feeding:	Liquid food rich with Nitrogen from May till Oct. once a week
Humidity:	Likes weekly spraying with drinking water
Sunshine exposure:	Likes high level of light but outdoors shade and direct sunshine
Repotting:	Every spring
Pruning:	Nip out leading shoots to increase bushiness
Propagation:	By young stem tip cutting in soil in spring
Easy or difficult:	Very easy
Problems:	Leaves pale/ strong sunshine Leaves black/ overwatering Leaves dry/ too hot and dry Spidermites/ systemic insecticide Thrips/ systemic insecticide Greenfly/ systemic insecticide Scale insects/ systemic insecticide sooty mould/ systemic insecticide
Aesthetic value:	Hanging baskets, ground cover...

Hibiscus rosa sinensis

(shrub)

Lebanese name:	حب المسك أو عنبر بول
Latin name:	<i>Hibiscus rosa sinensis</i>
Common name:	Hibiscus or China rose
Size: Height at maturity:	3.5 m.
Spread at maturity:	2.5 m.
Growth rate:	Very fast, double the size in one season
Flowering season:	May till Nov.
Scent:	None
Water quality:	soft drinking water
Water quantity:	Moderate, sensitive to overwatering/ twice a week in summer once per week in winter
Feeding:	Twice per month from May till Oct. with liquid food rich with Nitrogen
Humidity:	Likes daily spraying in summer and every other day in winter
Sunshine exposure:	Needs direct sunshine to flower
Repotting:	In spring, likes to be pot bound
Pruning:	Prune vigorously every spring
Propagation:	By cuttings in soil in spring
Easy or difficult:	Easy but sensitive to overwatering
Problems:	Leaves drop/ overwatering Buds drop/ low humidity, spray Greenfly/ systemic insecticide Plant wilting/ Too hot and dry
Aesthetic value:	Nice popular flowering outdoor evergreen shrub, small tree and used as a hedge or specimen plant for its glossy leaves and single or double flower

Impatiens petersiana

Lebanese name:	بها
Latin name:	<i>Impatiens petersiana</i>
Common name:	Impatiens
Size: Height at maturity:	38 cm.
Spread at maturity:	30 cm.
Growth rate:	Fast 25 cm per year
Flowering season:	May till Nov.
Scent:	None
Water quality:	Soft drinking water
Water quantity:	2-3 times in summer and once every 10 days in winter when it is sensitive to overwatering
Feeding:	Weekly dilute liquid food rich with Nitrogen from May till Oct.
Humidity:	No spraying is recommended, does not like humid atmosphere as it is sensitive to rot
Sunshine exposure:	High light level and direct sunshine
Repotting:	Once a year, they like to be pot bound
Pruning:	In summer
Propagation:	By stem tip cuttings in soil or in water in spring
Easy or difficult:	Easy
Problems:	Leaves drop / too cold Fungus/ Fungicide Whitefly/ systemic insecticide Greenfly and sooty mould/ systemic insecticide Spidermites/ acaricide
Aesthetic value:	Attractive outdoor flowering bedding annual or biennial

Jasminum officinalis, polyanthum

(climber shrub)

Lebanese name:	ياسمين
Latin name:	<i>Jasminum officinalis, polyanthum</i>
Common name:	Jasmine
Size: Height at maturity:	300 cm.
Spread at maturity:	80 cm.
Growth rate:	Fast
Flowering season:	Officinalis May till Oct., Polyanthum Jan. till March
Scent:	Sweet perfume
Water quality:	Soft drinking water
Water quantity:	Moderate every 5 days from Jan. till May, every other day from June till Oct.
Feeding:	Twice per month with liquid food rich with nitrogen from June till October
Humidity:	Likes spraying 3 times per week but not while flowering.
Sunshine exposure:	Needs sunshine to flower but sensitive to strong mid summer sunshine
Repotting:	In spring
Pruning:	Pinch out growth buds in spring to get more bushy plant
Propagation:	By stem tip cuttings in soil in spring or autumn
Easy or difficult:	Difficult
Problems:	Leaves dry up/ too dry and strong sunshine Flower buds fail to open/ Insufficient light Flower buds brown/ Too hot and dry, increase humidity Spidermites/ acaricide Greenfly/ systemic insecticide
Aesthetic value:	Attractive scented flowering climber Semi deciduous

Kalanchoe blossfeldiana

(shrub groundcover)

Lebanese name:

Latin name: *Kalanchoe blossfeldiana*

Common name: Kalanchoe

Size: Height at maturity: 30 cm.

Spread at maturity: 30 cm.

Growth rate: Fast

Flowering season: Nov.-March

Scent: None

Water quality: Soft drinking water

Water quantity: Moderate to low/ once a week in summer and once every two weeks in winter

Feeding: Once per month with liquid food rich with Nitrogen, Phosphorus and Potassium from November till March (during flowering season) from June till Oct.

Humidity: Do not like spraying, tolerant to low humidity

Sunshine exposure: Needs sunshine to flower but sensitive to hot midsummer sunshine, semi-shade

Repotting: In spring

Pruning: Only cleaning of dead flowers and leaves

Propagation: By seeds in soil in March and April and stem tip cuttings in soil in May and June

Easy or difficult: Easy

Problems: Leaves black and mildew/ water on leaves, use sulphur
Leaves droop/ overwatering
Small leaves after flowering/ needs repotting

Aesthetic value: Nice colorful flowering pot plant and used in bedding

Monstera deliciosa
(shrub)

Lebanese name:	يردروم
Latin name:	<i>Monstera deliciosa</i> ,
Common name:	Monstera
Size: Height at maturity:	230 cm.
Spread at maturity:	60 cm.
Growth rate:	Slow, 1 or 2 leaves per year
Flowering season:	Insignificant but from June till Sep. it gives yellow flower which produces an edible fruit
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Moderate to low/ once per week in summer and every two weeks in winter
Feeding:	Once per month with liquid food rich with Nitrogen, Phosphorus and Potassium from June till Oct.
Humidity:	Likes spraying regularly with soft drinking water
Sunshine exposure:	High to medium light level indoor and shade if outdoor
Repotting:	Once every spring
Pruning:	No need
Propagation:	By stem tip cuttings in early summer in water
Easy or difficult:	Very easy
Problems:	Leaf black patches/ too cold Leaves yellow then brown/ overwatering Leaves scorches/ strong sunshine Spidermites/ acaricide
Aesthetic value:	Indoor green foliage pot plant

Nephrolepis cordifolia

(hanging shrub)

Lebanese name:	فوجير أو خنشارة
Latin name:	<i>Nephrolepis cordifolia</i> , <i>N. exaltata</i>
Common name:	Fougere, Ferns
Size: Height at maturity:	Fronde 76 cm. long
Spread at maturity:	70 cm.
Growth rate:	Very fast.
Flowering season:	Non flowering
Scent:	None
Water quality:	Sensitive to salt water, use soft drinking water
Water quantity:	2-3 times per week from June till October, one time per week from Oct. till May
Feeding:	twice per month liquid food rich with Nitrogen from June till Oct.
Humidity:	Spray daily with soft drinking water all year round
Sunshine exposure:	Prefers shady places and not direct sunlight, high light level if indoors
Repotting:	Every spring
Pruning:	No need, just grooming
Propagation:	By runners or stolons in soil in spring
Easy or difficult:	Very easy
Problems:	Leaves brittle and drop/ Dry soil and atmosphere Foliage withered/ sprayed with leaf shine Poor growth/ needs repotting or feeding
Aesthetic value:	Popular suits both modern and traditional styles pot plants and hanging baskets

Nerium oleander
(shrub)

Lebanese name:	دفلة
Latin name:	<i>Nerium oleander</i>
Common name:	Nerium
Size: Height at maturity:	3 m.
Spread at maturity:	2 m.
Growth rate:	Fast 30 cm. per year
Flowering season:	May till Oct.
Scent:	None
Water quality:	Sensitive to salt water, use soft drinking water
Water quantity:	every other day in summer, once every 10 days in winter
Feeding:	Once per month from June till Oct. liquid food rich with Nitrogen
Humidity:	Spraying with water is not essential
Sunshine exposure:	Needs full sunshine to flower and flourish, indoors only temporary after flowering at high light level
Repotting:	Every 2-3 years in big pots in Dec. to February
Pruning:	After flowering cut back hard to encourage bushiness, take side shoots below flower buds
Propagation:	By seeds in water in April, stem tip cuttings in soil in spring
Easy or difficult:	Very easy but not in low light places
Problems:	Flower buds do not open/ too cold Fails to produce flowers or buds/ no enough sunshine Lanky growth with no flowers/ too hot Mealy bugs and scale insects/ systemic insecticide
Aesthetic value:	Popular willow like foliage but poisonous leaves and flowers even fatal

Geranium zonale

(hanging and groundcover shrub)

العتر أو الغرنوقي أو القرنية أو خبيزة

Lebanese name:

Latin name:

Geranium zonale, G. peltatum

Common name:

Geranium

Size: Height at maturity:

50 cm.

Spread at maturity:

40 cm.

Growth rate:

30 cm. per year

Flowering season:

April till Sep.

Scent:

Flowers unscented, leaves scented when crushed

Water quality:

Soft drinking water

Water quantity:

2-3 times per week from May till Oct., once every 10 days
from Oct. till Apr.

Feeding:

Twice per month liquid food from May till Oct.

Humidity:

Likes dry atmosphere, spraying causes rotting

Sunshine exposure:

Needs direct sunshine to flower, avoid strong
midsummer sunshine

Repotting:

Likes to be pot bound

Pruning:

Cut back in Feb.

Propagation:

By seeds in soil in spring or stem tip cuttings in soil
in early spring or late summer

Easy or difficult:

Easy

Problems:

Few flowers and abundant foliage/ decrease nitrogen fertilization

Etiolation/ low light

Stem bases rot/ overwatering

Mass of distorted leaves and shoots at ground level/ bacteria, incurable

Whitefly/ systemic insecticide

Yellow leaves with brown blotches/ thirsty

Distorted leaves with pale yellow concentric rings/ virus, incurable

Red tinge on stems and foliage/ too cold

Aesthetic value:

Popular attractive temporary indoor house plant and good for gardens and
beddings, trailing variety peltatum good for window boxes and hanging
baskets

Philodendron bipinnatifidum

(shrub)

Lebanese name:	
Latin name:	<i>Philodendron bipinnatifidum</i>
Common name:	Philodendron
Size: Height at maturity:	1 m.
Spread at maturity:	1 m.
Growth rate:	Quickly, double their leaves number in a year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Twice per week from June till Oct., once per week from Nov. till May
Feeding:	Twice per month from May till Oct. liquid food rich with Nitrogen
Humidity:	Weekly spray with soft drinking water
Sunshine exposure:	No direct sunshine but high light level, shade or semi-shade
Repotting:	Only upon need when the plant top gets heavy for the pot
Pruning:	Just grooming
Propagation:	Seeds in soil in spring, or by mature leaves in soil in early summer but not easy
Easy or difficult:	Easy
Problems:	Leaves drop/ thirsty Foliage dull and stop growing/ too cold Lower leaves yellow and drop/ overwatering Leaves pale and no new growth/ needs fertilization or repotting Leaves brown or black rings or marginal scorching/ Plt. touching a window in winter, water on leaves in direct sun, leaves touching light bulb
Aesthetic value:	Very common bush, at sea level used indoors as well

Rhoicissus rhomboidea

(groundcover, hanging and climbing shrub)

Lebanese name:	
Latin name:	<i>Rhoicissus rhomboidea</i>
Common name:	Cissus or grape ivy
Size: Height at maturity:	3.5 m.
Spread at maturity:	0.45 m.
Growth rate:	Fast 1 m. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Twice per week from June till Oct., once every two weeks from Nov. till May
Feeding:	Twice per month from June till Oct. liquid food rich with Nitrogen
Humidity:	Weekly spray in summer
Sunshine exposure:	No direct sun, but lots of light
Repotting:	Once per year
Pruning:	Pinch out leading growths for a more bushy plant
Propagation:	By young tip shoots with a growing point and two leaves in soil in spring
Easy or difficult:	Easy
Problems:	Leaves droopy and fall/ overwatering Leaves curl, dry and drop/ thirsty and dry atmosphere Leaves pale and not growing/ needs feeding or repotting Spidermites/ acaricide Greenfly/ systemic insecticide
Aesthetic value:	Good climbing and hanging baskets and trellis plants

Sansevieria trifasciata

(shrub)

حرق أو دنق أو لسان الحما

Lebanese name:

Latin name:

Sansevieria trifasciata

Common name:

Mother in Law's tongue

Size: Height at maturity:

1 m.

Spread at maturity:

12 leaves in a pot/ 0.5 m.

Growth rate:

2-3 new leaves per year

Flowering season:

One flower stem in summer

Scent:

Delicate perfume

Water quality:

Soft drinking water

Water quantity:

Every 10 days from June till Oct. and every three weeks from Nov. till May, sensitive to overwatering

Feeding:

Every three weeks from June till Oct. liquid food rich with Nitrogen

Humidity:

No spraying, they like dry atmosphere

Sunshine exposure:

From full sunshine to moderate light level indoors

Repotting:

Once every 2 years, like to be pot bound

Pruning:

Just grooming

Propagation:

By plant division in soil in spring, and leaf cutting in soil in summer

Easy or difficult:

Very easy, but do not overwater

Problems:

Leaf base rot/ overwatering

Leaf edge damage/ unstable in the pot, stabilize in a bigger pot

Leaves brown patches/ overwatering

Leaves pale/ low light level

Mealy bugs/ systemic insecticide

Schefflera arboricola

(shrub)

شفليرا

Lebanese name:	
Latin name:	<i>Schefflera arboricola, actinophylla</i>
Common name:	Schefflera or umbrella tree
Size: Height at maturity:	3.5 m.
Spread at maturity:	1.4 m.
Growth rate:	Moderate, 30 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	2-3 times from June till Oct., once a week from Nov. till May
Feeding:	Twice per month half the dosage of liquid food rich with Nitrogen from June till Oct.
Humidity:	Spray 2-3 times per week
Sunshine exposure:	No direct sunshine, but high light level if indoors, shade and semi-shade if outdoors
Repotting:	Every other year in spring
Pruning:	Cut back tips for more branching only of arboricola variety
Propagation:	By seeds in propagator, possible to root pruned cuttings in water
Easy or difficult:	Easy
Problems:	Scale insects, greenfly and mealy bugs/ systemic insecticide Spidermites/ acaricide Etiation/ Too hot and dark Leaves pale and yellow/ need feeding
Aesthetic value:	Excellent house plant specimen Excellent filler in exotic settings Cold tolerant up to 800 m. elevation

Scindapsus aureus
(hanging and climber shrub)

Lebanese name:	
Latin name:	<i>Scindapsus aureus</i>
Common name:	Scindapsus or devil ivy
Size: Height at maturity:	4.5 m.
Spread at maturity:	0.3 m. on a cane
Growth rate:	46 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Every 5 days from June till Oct. and once per week from Nov. till May/ sensitive to overwatering
Feeding:	Once per month all year round with half the dosage of liquid food rich with Nitrogen
Humidity:	Spray with soft drinking water 2-3 times per week from June till Oct.
Sunshine exposure:	Not in direct sunshine but needs high light level, semi-shade if outdoors
Repotting:	Every other year
Pruning:	Prune back the leading growths in April or May for a more bushy plant
Propagation:	By stem tip cutting in water or soil in spring
Easy or difficult:	Medium to easy
Problems:	Leaves pale/ Direct sunshine Leaves brown spots and black edges/ Too cold and wet Leaves green/ insufficient light Spidermites/ acaricide
Aesthetic value:	Climbing houseplant with aerial roots that cling on moss pole or cane as trailing or in hanging baskets

Stephanotis floribunda

(climbing shub)

Lebanese name:	
Latin name:	<i>Stephanotis floribunda</i>
Common name:	Stephanotis, Madagascar Jasmine
Size: Height at maturity:	Over 6 m.
Spread at maturity:	Hanged on a wire in a pot or climbing 0.35 m.
Growth rate:	60 cm. per year
Flowering season:	May till Oct.
Scent:	Beautiful lily like perfume
Water quality:	Lime free i.e. soft drinking water, not salt water tolerant
Water quantity:	Twice per week from June till Oct., once per week from Nov. till May with soft drinking water
Feeding:	Once per month from Apr. till Nov. with half the dosage of liquid food rich with Nitrogen, Phosphorus and Potassium.
Humidity:	Spray daily in summer with soft drinking water but not on flowers
Sunshine exposure:	Lots of light but avoid direct mid summer hot sunshine, shade
Repotting:	When young repot twice per year, after 2 years repot every spring
Pruning:	Cut back leading growths that are too straggly or lose their leaves in spring, side shoots should be shortened to 8 cm.
Propagation:	By lateral stem tip cuttings from last year wood in summer in soil in propagator
Easy or difficult:	Difficult
Problems:	Young leaves yellow/ Chlorosis from lime water, add iron and use lime free drinking water Flower buds shrivel/ too dry Scale insects, mealy bugs/ systemic insecticide Spidermites/ acaricide Flower buds drop/ plant moved from it's place Leaves yellow/ too dark
Aesthetic value:	Evergreen climber and trailing white flowering fragrant plant with attractive green leaves up a cane or around a wire, not tolerant to cold.

Yucca elephantips
(shrub)

Lebanese name:	يوكا
Latin name:	<i>Yucca elephantips</i>
Common name:	Yucca
Size: Height at maturity:	3 m.
Spread at maturity:	0.5 m.
Growth rate:	Slow 30 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water, slightly tolerant to salty water
Water quantity:	Once per week from June till Oct. and once every 10 days from Nov. till May, drought tolerant
Feeding:	Once per month half the dosage of liquid food rich with Nitrogen from June till Oct.
Humidity:	Weekly spray from June till Oct., tolerant to dry and humid conditions
Sunshine exposure:	Sunny outdoor plant in summer, and high light level when indoors
Repotting:	When young once a year, after 3 or 4 years just change top soil
Pruning:	Just grooming of dead leaves
Propagation:	By root stock division, rooting offsets or by portions of stems and canes in soil in propagating beds in spring
Easy or difficult:	Easy if lots of light
Problems:	Leaves yellow/ insufficient light Leaves grey mould/ Botrytis, dust with sulphur Scaly insects/ systemic insecticide
Aesthetic value:	Popular, attractive, unusual plants with their stark brown upright stem, exotic plants used in Xerophytic compositions

Crassula argentea
(shrub)

صبارة

Lebanese name:	
Latin name:	<i>Crassula argentea</i>
Common name:	Crassula
Size: Height at maturity:	1 m.
Spread at maturity:	45 cm.
Growth rate:	Slow
Flowering season:	Insignificant
Scent:	None
Water quality:	Slightly tolerant to salty water
Water quantity:	Twice per week from June till Oct., once per month from Nov. till May
Feeding:	Twice per month from June till Oct. with high nitrate based liquid or spray fertilizer
Humidity:	Like dry atmosphere, you can just clean once per month in summer
Sunshine exposure:	Full sunlight outdoors and high light level if indoors
Repotting:	Every 3 years
Pruning:	Cut out diseased parts and put sulphur on the wounds
Propagation:	By stem tip cutting in soil in spring
Easy or difficult:	Very easy
Problems:	Plants black and rotten at the base/ overwatering Plants shrivel up and lose firmness/ thirsty Mealy bugs/ systemic insecticide Plant discolored, wilt and die/ root mealy bugs, water with systemic insecticide
Aesthetic value:	Common evergreen attractive grey branching shrub and popular pot houseplant

Carissa grandiflora
(groundcover and hanging shrub)

عرم أو أمير ياسر أو كاريسا

Lebanese name:	
Latin name:	<i>Carissa grandiflora</i> , <i>C. prostrata</i>
Common name:	Carissa, natal plum
Size: Height at maturity:	125 cm.
Spread at maturity:	75 cm.
Growth rate:	Medium 20 cm. per year
Flowering season:	June till Oct.
Scent:	Jasmine like scented white flowers
Water quality:	Tolerant to salt water irrigation
Water quantity:	2-3 times per week from June till Oct., once per week from Nov. till May, drought tolerant
Feeding:	Every three months with slow release fertilizer from May till Oct.
Humidity:	Medium, spray once a week with drinking water, do well in low and high relative humidity
Sunshine exposure:	Needs half a day of direct sunshine, can be found as indoor bonsai but needs lots of light, do well in semi-shade
Repotting:	Only when the roots fill the soil in early spring
Pruning:	Just for shaping to get an upright or hanging growth
Propagation:	By stem cuttings in soil at any time better in March
Easy or difficult:	Very easy
Problems:	Scale insects/ systemic insecticide Leaves and stem browning/ thirsty and dry
Aesthetic value:	Beautiful balcony or garden plant with glossy leaves and white scented flowers that produce very decorative egg shaped fruits can be used as hanging, groundcover, low hedge, shrub or indoor bonsai but needs pruning to get these shapes Tolerant to salt wind

Lantana camara

(groundcover and hanging shrub)

لانتانا أو حشف أو زيبب أصفر

Lebanese name:

Latin name:

Lantana camara

Common name:

Lantana, yellow sage

Size: Height at maturity:

30 cm.

Spread at maturity:

45 cm.

Growth rate:

15 cm. per year

Flowering season:

May till Nov.

Scent:

Lovely fragrant clusters of small flowers

Water quality:

Slightly tolerant to salty water irrigation

Water quantity:

Water 2-3 times per week from June till Oct., once per week from Nov. till May

Feeding:

Twice per month from June till Oct. with liquid food

Humidity:

Extra humidity, spray weekly in summer

Sunshine exposure:

Needs direct sunshine to flower, high light level when temporarily indoors

Repotting:

When necessary if the roots fill the pot in Feb.

Pruning:

Just pinching back to improve the shape

Propagation:

By cuttings of non-flowering stems in soil in summer

Easy or difficult:

Fairly easy

Problems:

Whiteflies/ systemic insecticides

Aesthetic value:

Low growing flowering shrub can be used as temporary indoor pot plant, outdoor hanging, groundcover, low hedge or shrub

Jasminum sambac

(shrub)

Lebanese name:	فل
Latin name:	<i>Jasminum sambac</i>
Common name:	Maid of Orleans, Arabian Jasmine
Size: Height at maturity:	45 cm.
Spread at maturity:	40 cm.
Growth rate:	20 cm. per year
Flowering season:	June till Oct.
Scent:	Beautiful intensely fragrant
Water quality:	Soft drinking water
Water quantity:	2-3 times per week from May till Nov., once per week from Dec. till Apr.
Feeding:	Twice per month from May till Nov. with liquid food
Humidity:	Medium, spray once per week in summer
Sunshine exposure:	Needs direct full sunshine to flower and when temporarily indoors needs lots of light
Repotting:	Jan.- Feb.
Pruning:	Prune the weak and dead stems back in spring upon repotting
Propagation:	By tip cuttings in soil in summer and fall
Easy or difficult:	Fairly easy
Problems:	Whiteflies/ systemic insecticide
Aesthetic value:	Highly desirable intensely scented flowering evergreen plant and temporary indoor

Plumbago capensis

(hanging shrub)

Lebanese name:	
Latin name:	<i>Plumbago articulata, capensis</i>
Common name:	Blue Jasmine
Size: Height at maturity:	1.2 m.
Spread at maturity:	1 m.
Growth rate:	Very fast
Flowering season:	April-Nov.
Scent:	None
Water quality:	Slightly tolerant to salt water irrigation
Water quantity:	2-3 times per week from Apr. till Nov., once every week from Dec. till May
Feeding:	Twice per month from Apr. till Nov. with liquid food
Humidity:	Moderate, spray weekly
Sunshine exposure:	Needs direct sunshine to flower, temporary indoors after flowering with lots of light
Repotting:	Every spring in Feb.
Pruning:	Cut back severely in winter for reshaping, pinch out old flowering shoots in April or May to flower all summer
Propagation:	By cuttings 7.5 cm.long in soil in spring, or seeds sown in Feb.-March
Easy or difficult:	Fairly easy
Problems:	
Aesthetic value:	Spreading evergreen shrub with white (alba var.) or blue long lasting flowers

Euonymus japonica
(shrub)

عرقية الراهب أو مرجان

Lebanese name:	
Latin name:	<i>Euonymus japonica</i>
Common name:	Euonymus
Size: Height at maturity:	120 cm.
Spread at maturity:	50 cm.
Growth rate:	20 cm. per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Twice per week from June till Oct., once per week from Nov. till May
Feeding:	Twice per month from June till Oct. with liquid food rich with Nitrogen
Humidity:	Moderate to low
Sunshine exposure:	Four hours of sun per day, can do well in shade and high light level if temporary indoors
Repotting:	Every year in Dec.-Jan.
Pruning:	No need
Propagation:	By tip cuttings in soil in spring but difficult
Easy or difficult:	Fairly easy
Problems:	Powdery mildew/ fungicide
Aesthetic value:	Green or variegated shrubs with glossy leathery green leaves Excellent for pot plants used in contrasts in leaves color and in hedges

Punica granatum nana
(shrub)

رمانة

Lebanese name:	
Latin name:	<i>Punica granatum nana</i>
Common name:	Dwarf Pomegranate
Size: Height at maturity:	1-1.8 m.
Spread at maturity:	60 cm.
Growth rate:	Fast 30 cm. per year
Flowering season:	May till Oct.
Scent:	None
Water quality:	soft drinking water
Water quantity:	2-3 times per week from May till Oct., once every 10 days from Nov. till April
Feeding:	Twice per month from May till Oct. with liquid food
Humidity:	Moderate spray weekly
Sunshine exposure:	Needs some direct sunshine
Repotting:	When the roots are crowded in Dec.-Jan.
Pruning:	Occasional pinching and trimming for shaping
Propagation:	By stem cuttings in soil in summer
Easy or difficult:	Fairly easy
Problems:	
Aesthetic value:	Dwarf Pomegranate shrub with bright red flowers and edible fruits used in small hedges and as a pot plant

Phoenix robilini
(shrub)

Lebanese name:	
Latin name:	<i>Phoenix robilini</i>
Common name:	Phoenix, miniature date palm
Size: Height at maturity:	200 cm.
Spread at maturity:	120-140 cm.
Growth rate:	Slow
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Twice per week from June till Oct., once per week from Nov. till May
Feeding:	Once per month from June till Oct. with liquid food rich with Nitrogen
Humidity:	
Sunshine exposure:	Bright high light level with some direct sunshine
Repotting:	Only when fine roots appear on the surface in Feb. with care not to cut these fine roots
Pruning:	Just remove suckers and extra stems to keep symmetrical shape
Propagation:	By the detached sucker or seed but very difficult
Easy or difficult:	Difficult
Problems:	Spidermites/ acaricide Mealy bugs/ systemic insecticide Root and crown rot/ overwatering
Aesthetic value:	Highly desirable indoor small palm with graceful, delicate and arching fronds

Cycas revoluta

(shrub)

Lebanese name:	
Latin name:	<i>Cycas revoluta</i>
Common name:	Sago plant
Size: Height at maturity:	90 cm.
Spread at maturity:	120 cm.
Growth rate:	Slow, one row of leaves per year
Flowering season:	Insignificant
Scent:	None
Water quality:	Slightly tolerant to salty water irrigation
Water quantity:	1-2 times per week from June till Oct., once every week to 10 days from Nov. till May
Feeding:	Once per month from June till Oct. with liquid food rich with Nitrogen
Humidity:	Can tolerate low humidity, no need to spray
Sunshine exposure:	Direct sunshine or shade but high light level if indoors
Repotting:	Very slow, once every 3-4 years
Pruning:	No need, you can remove suckers for propagation
Propagation:	By seeds or suckers but very difficult
Easy or difficult:	Easy
Problems:	Mealy bugs/ systemic insecticide Root and trunk rot/ overwatering
Aesthetic value:	Handsome palmlike or fernlike houseplant

Chamaerops humilis

(shrub)

Lebanese name:

دوم

Latin name:

Chamaerops humilis

Common name:

Chamaerops humilis, European Fan Palm

Size: Height at

maturity:

120 cm.

Spread at

maturity:

150 cm.

Growth rate:

Slow

Flowering season:

Insignificant

Scent:

None

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

Drought tolerant, once per week from June till Oct., once
ever 10 days from Nov. till May

Feeding:

Once per month liquid food rich with Nitrogen from June till Oct.

Humidity:

Can tolerate low humidity, no need to spray or just for washing

Sunshine exposure:

Needs some direct sunshine

Repotting:

Slow growing, once every 2-3 years in Feb.

Pruning:

No need

Propagation:

By seeds.

Easy or difficult:

Very easy

Problems:

Aesthetic value:

Sturdy European multi trunk native fan shaped palm, the cultivar *elegans* has
smaller silvery grey leaves

The cultivar *excelsa* has one trunk deeply divided fan

Washingtonia filifera
(shrub)

Lebanese name:	
Latin name:	<i>Washingtonia filifera</i>
Common name:	Washingtonia or desert fan palm
Size: Height at maturity:	120-150 cm.
Spread at maturity:	120 cm.
Growth rate:	Slow
Flowering season:	Insignificant
Scent:	None
Water quality:	Tolerant to salty water irrigation
Water quantity:	Twice per week from June till Oct., once every week from Nov. till May
Feeding:	Twice per month from June till Oct. liquid food rich with Nitrogen
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Needs some direct sunshine, can thrive just well in bright light shade
Repotting:	Every 2-3 years when the roots appear on the soil in Feb.
Pruning:	No need
Propagation:	Difficult only by experts by seeds
Easy or difficult:	Very easy
Problems:	Thin pale leaves/ low light
Aesthetic value:	Handsome fan leaf plant for large space, fine hairs are a distinctive feature for Washingtonia

Beaucarnea recurvata

(shrub)

Lebanese name:	
Latin name:	<i>Beaucarnea recurvata</i>
Common name:	Ponytail, Nolina
Size: Height at maturity:	1-1.5 m.
Spread at maturity:	0.7-0.8 m.
Growth rate:	Slow
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	Once per week from June till Oct., once every 10 days from Nov. till May
Feeding:	Once per month from June till Oct. liquid food rich with Nitrogen
Humidity:	Spray once per week
Sunshine exposure:	No need, can tolerate complete shade but high light level
Repotting:	Every 3-4 years in Feb., likes to be pot bound
Pruning:	No need, just remove offsets grown at the base of the plant
Propagation:	By offsets in soil in spring and summer
Easy or difficult:	Very easy
Problems:	Stem soften and rot/ overwatering Thin pale leaves/ low light
Aesthetic value:	Interesting with their decorative trunks and onion or ponytail shaped leaves

Coleus blumei

(shrub)

نجدة أو سجاد

Lebanese name:	
Latin name:	<i>Coleus blumei</i>
Common name:	Coleus, Painted Nettle
Size: Height at maturity:	1 m.
Spread at maturity:	0.6 m.
Growth rate:	Very fast
Flowering season:	Insignificant
Scent:	None
Water quality:	Soft drinking water
Water quantity:	2-3 times per week from June till Oct., once per week from Nov. till May
Feeding:	Twice per month from March till Oct. liquid food rich with Nitrogen
Humidity:	Spray 2-3 times per week
Sunshine exposure:	No direct sunshine is needed if outdoors with high light level if indoors
Repotting:	Do not like to be pot bound, when the roots fill the soil any time of the year
Pruning:	Pinching out the young growing tips often to keep the plant bushy
Propagation:	By tip cuttings in soil in summer
Easy or difficult:	Easy
Problems:	Mealy bugs/ systemic insecticide
Aesthetic value:	These are hundreds of cultivars of nicely colored foliage houseplants

Sansevieria trifasciata
(shrub)

Lebanese name:	حرق أو دنق أو لسان الحما
Latin name:	<i>Sansevieria trifasciata</i>
Common name:	Mother in Law's tongue
Size: Height at maturity:	1 m.
Spread at maturity:	12 leaves in a pot/ 0.5 m.
Growth rate:	2-3 new leaves per year
Flowering season:	One flower stem in summer
Scent:	Delicate perfume
Water quality:	Soft drinking water
Water quantity:	Every 10 days from June till Oct. and every three weeks from Nov. till May, sensitive to overwatering
Feeding:	Every three weeks from June till Oct. liquid food rich with Nitrogen
Humidity:	No spraying, they like dry atmosphere
Sunshine exposure:	From full sunshine to moderate light level indoors
Repotting:	Once every 2 years, like to be pot bound
Pruning:	Just grooming
Propagation:	By plant division in soil in spring, and leaf cutting in soil in summer
Easy or difficult:	Very easy, but do not overwater
Problems:	Leaf base rot/ overwatering Leaf edge damage/ unstable in the pot, stabilize in a bigger pot Leaves brown patches/ overwatering Leaves pale/ low light level Mealy bugs/ systemic insecticide
Aesthetic value:	Hardy houseplants if not overwatered with sword-like leaves

Coleus blumei
(shrub)

Lebanese name:

نجدة أو سجاد

Latin name: *Coleus blumei*

Common name: Coleus, Painted Nettle

Size: Height at maturity: 1 m.
Spread at maturity: 0.6 m.

Growth rate: Very fast

Flowering season: Insignificant

Scent: None

Water quality: Soft drinking water

Water quantity: 2-3 times per week from June till Oct., once per week from Nov. till May

Feeding: Twice per month from March till Oct. liquid food rich with Nitrogen

Humidity: Spray 2-3 times per week

Sunshine exposure: No direct sunshine is needed if outdoors with high light level if indoors

Repotting: Do not like to be pot bound, when the roots fill the soil any time of the year

Pruning: Pinching out the young growing tips often to keep the plant bushy

Propagation: By tip cuttings in soil in summer

Easy or difficult: Easy

Problems: Mealy bugs/ systemic insecticide

Aesthetic value: These are hundreds of cultivars of nicely colored foliage houseplants

Trachelospermum jasminoides

(hanging and climbing shrub)

Lebanese name:

ياسمين

Latin name:

Trachelospermum jasminoides

Common name:

Star Jasmine

Size: Height at maturity:

2.4 m.

Spread at maturity:

1 m.

Growth rate:

Slow

Flowering season:

Spring, April-June

Scent:

Fragrant sweet smelling

Water quality:

Soft drinking water

Water quantity:

Twice per week from June till Oct., Once per week from Nov. till May

Feeding:

Every 2-3 months with slow release fertilizer

Humidity:

Sunshine exposure:

Minimum of 4 hours of direct sunshine, can not tolerate shade or low light

Repotting:

Do not like to be pot bound, repot every winter or spring

Pruning:

Just continuous pinching to keep it shrub, or leave it vining but needs support

Propagation:

By cuttings in soil in Oct.

Easy or difficult:

Easy

Problems:

Aesthetic value:

Fragrant shrubby vines with sweet smelling star shaped white flowers, used also as ground cover.

Schefflera arboricola
(shrub)

Lebanese name:

Latin name: *Schefflera arboricola*

Common name: Schefflera, Australian Umbrella tree

Size: Height at maturity: 1.8 m.

Spread at maturity: 1 m.

Growth rate: Medium

Flowering season: Insignificant

Scent: None

Water quality: Soft drinking water

Water quantity: Twice per week from June till Oct., Once per week from Nov. till May

Feeding: Monthly liquid food rich with Nitrogen from April-October

Humidity: Likes spraying 2-3 times per week

Sunshine exposure: Some direct sunshine is needed and high light, shade tolerant but not of low light

Repotting: When necessary i.e. when the roots fill the soil, every two years in Feb.

Pruning: Pinch out growing tips from time to time to keep the plant bushy

Propagation: By air layering by experts

Easy or difficult: Easy

Problems: Spidermites/ acaricide

Aesthetic value: Popular umbrella like green foliage, can be found in yellow and green variegated color variety called *Heptapleurum arboricola* but a little shorter with common name of dwarf Schefflera

Similar in shape and requirements to *Brassaia actinophylla* but with bigger leaves

Pachyphytum oviferum
(shrub, cactus and succulents)

كأكتوس أو صبير

Lebanese name:

Latin name:

Pachyphytum oviferum

Common name:

Moontone cactus

Size: Height at maturity:

30 cm.

Spread at maturity:

40 cm.

Growth rate:

Slow

Flowering season:

Insignificant

Scent:

None

Water quality:

Soft drinking water

Water quantity:

Once per week from June till Oct., Once every ten days from Nov. till May, drought tolerant

Feeding:

Never fertilize

Humidity:

No need to spray

Sunshine exposure:

Needs 4 hours of direct sunshine per day, Intolerant to low light level

Repotting:

In Feb.-March

Pruning:

No need

Propagation:

By stem tip cuttings in soil in Feb.-March

Easy or difficult:

Very easy

Problems:

Wilt and rot/ overwatering and low light

Aesthetic value:

Succulent low plant with glaucous leaves tinged with lavender

Schlumbergera bridgesii
(shrub, cactus)

Lebanese name:

كأكتوس أو صبير

Latin name:

Schlumbergera bridgesii

Common name:

Christmas Cactus

Size: Height at maturity:

30 cm.

Spread at maturity:

30 cm.

Growth rate:

Slow

Flowering season:

Winter, Nov.-Jan.

Scent:

None

Water quality:

Soft drinking water

Water quantity:

2-3 times per week from May till Dec., once per week from Jan. till April

Feeding:

Twice per month liquid food from Oct.-Jan., once per month Feb.-Sep.

Humidity:

Likes spraying once per week

Sunshine exposure:

No direct sunshine, just high light level; Special needs:
Needs to be placed outdoors in Sep. and Oct. to set buds

Repotting:

In Feb.

Pruning:

No need

Propagation:

By stem cuttings in the soil in Feb.

Easy or difficult:

Difficult

Problems:

Wilt and rot/ overwatering and low light

Aesthetic value:

Winter blooming indoor cactus

Aloe arborescens
(shrub)

Lebanese name:		صبارة
Latin name:	<i>Aloe arborescens</i>	
Common name:	Aloe vera	
Size: Height at maturity:	200 cm.	
Spread at maturity:	50 cm.	
Growth rate:	Slow	
Flowering season:	Late winter, Dec.-Jan	
Scent:	Unscented	
Water quality:	Tolerant to salt water irrigation	
Water quantity:	Once per week from June till Oct., Once every ten days from Nov. till May	
Feeding:	Once every three months slow release fertilizer	
Humidity:	No need to spray with water	
Sunshine exposure:	Shade tolerant but high light level	
Repotting:	Once every 2-3 years in March	
Pruning:	No need, just remove lower dead leaves	
Propagation:	By shoots growing at the base of the plant in soil in March	
Easy or difficult:	Easy	
Problems:		
Aesthetic value:	Succulent with heavily striped leaves, it's juice is used as a soothing ointment for burns	

Rosemarinus officinalis
(shrub)

Lebanese name:	روزماري أو أكليل الجبل أو حصالبان
Latin name:	<i>Rosemarinus officinalis</i>
Common name:	Rosemary
Size: Height at maturity:	1.8 m.
Spread at maturity:	1.5 m.
Growth rate:	Fast
Flowering season:	Spring, March-June
Scent:	Strong fragrant flowers and even leaves which have pungent pine like fragrance
Water quality:	Slightly tolerant to salty water
Water quantity:	Drought tolerant, twice per week from May till Oct., once per week from Nov. till Apr.
Feeding:	Every 2-3 months with slow release fertilizer
Humidity:	No need to spray, tolerant to dry atmosphere
Sunshine exposure:	Needs 6 hours of direct sunshine
Repotting:	Yearly in Feb.
Pruning:	After flowering Sep.
Propagation:	By cuttings of branches tips in soil in Sep.
Easy or difficult:	Easy
Problems:	Powdery mildew, Botrytis/ Fungicide Aphids, mealy bugs/ systemic insecticide Acarose/ acaricide/ Root rot/ overwatering
Aesthetic value:	Mediterranean perennial succulent woody evergreen scented shrub used as medicinal and aromatic herb can be used as low hedge or specimen, the prostrata variety is low-growing and spreading can be used in hanging baskets or ground cover..

Gazania rigens
(grouncover, shrub)

Lebanese name:

Latin name: *Gazania rigens*

Common name: Gazania, treasure flower

Size: Height at maturity: 30 cm.

Spread at maturity: 20 cm.

Growth rate: Medium

Flowering season: Repeatedly flowering from May till Oct.

Scent: None

Water quality: Slightly tolerant to salt water irrigation

Water quantity: 1-2 times per week from May till Oct., once per week from Nov. till Apr., drought tolerant

Feeding: Every 2-3 months with slow release fertilizer

Humidity: No need to spray, does not like high humidity

Sunshine exposure: Full sun i.e. min. of 4-6 hours of direct sunshine to flower, temporary indoors only after flowering

Repotting: Every spring in March

Pruning: No need just heading off for more clumping

Propagation: By seeds in soil in Feb.- March or by cuttings in soil in September

Easy or difficult: Easy

Problems: Mealy bugs/ systemic insecticides
Powdery mildew/ systemic fungicide
Leaf spots/ Bacterial of fungal, aerate and use fungicide

Aesthetic value: Tropical daisy-like flowering annual or tender perennial good for Xeriscaping and groundcover
Attracts bees and butterflies and poisonous if ingested

Vinca major
(hanging and trailing shrub)

ونكة صغيرة أو قصاب مصري

Lebanese name:

Latin name:

Vinca major

Common name:

Large periwinkle

Size: Height at maturity:

30 cm.

Spread at maturity:

50 cm. and can spread indefinitely

Growth rate:

Fast

Flowering season:

May till Oct.

Scent:

None

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

2-3 times per week in summer, once per week in winter

Feeding:

Twice per month from May till Oct. liquid food

Humidity:

No need to spray, do not like high humidity

Sunshine exposure:

Full sun (4-6 hrs) for more flowering to partial shade for more foliage

Repotting:

Yearly in Jan.

Pruning:

No need just to limit growth

Propagation:

By cuttings or rooted shoots in soil in Sep.

Easy or difficult:

Easy

Problems:

Blight, shoots wilt and die/ aerate and use fungicide
Root and stem rot/ overwatering

Aesthetic value:

Perennial flowering trailing for hanging baskets and groundcover, the minor variety is green with smaller leaves with max. ht. and spread of 30 cm., more hardy and shade tolerant
Poisonous if ingested

Russelia equisetiformis
(hanging shrub)

Lebanese name:

Latin name: *Russelia equisetiformis*

Common name: Firecraker plant, coral plant, fountain plant

Size: Height at maturity: 1.8 m. branches length but hanging
Spread at maturity: 90 cm.

Growth rate: Fast

Flowering season: May till Nov.

Scent: None

Water quality: Salt water tolerant

Water quantity: 2-3 times per week from May till Nov., once per week from Dec. till Apr.

Feeding: Twice per month from May till Nov. liquid food

Humidity: No need to spray

Sunshine exposure: Full direct sunshine to flower, partial shade and temporary indoors

Repotting: Yearly in March

Pruning: No need

Propagation: By seeds in soil in spring or by tip cuttings or divisions in soil in March

Easy or difficult: Easy

Problems: Chewing insects/ systemic insecticide
Nematodes/ water with systemic insecticide
Mites/ acaricide

Aesthetic value: Tropical perennial flowering subshrub for hanging baskets, specimen, raised beds and trellis
Attracts butterflies, birds and insects

Alyssum maritimum
(annual groundcover)

ألوسن

Lebanese name:

Latin name:

Alyssum maritimum, Lobularia maritima

Common name:

Sweet Alyssum

Size: Height at maturity:

30 cm.

Spread at maturity:

20 cm.

Growth rate:

Medium

Flowering season:

May till August

Scent:

Delicate fragrance like warm honey

Water quality:

Soft drinking water

Water quantity:

2 times per week from May till Oct., once per week from Nov. till Apr., sensitive to overwatering

Feeding:

Once per month from May till Oct. liquid food

Humidity:

No need to spray

Sunshine exposure:

Full direct sunshine (4-6 hrs.) to flower, partial shade tolerant

Repotting:

In February

Pruning:

Cut back in Nov. to keep for next year

Propagation:

By seeds in Feb.

Easy or difficult:

Easy

Problems:

Foliage rot/ overwatering

Aesthetic value:

Mediterranean herbaceous fragrant flowering annual or perennial used in mass plantation, ground cover and borders

Petunia hybrida
(annual groundcover and hanging)

بيتونيا

Lebanese name:

Latin name:

Petunia hybrida

Common name:

Petunia

Size: Height at maturity:

30 cm.

Spread at maturity:

20 cm.

Growth rate:

Medium

Flowering season:

April till Nov.

Scent:

None

Water quality:

soft drinking water

Water quantity:

One-two times per week from April till Oct., once every 10 days from Nov. till March, drought tolerant

Feeding:

Once per month well balanced liquid food from Apr. till Oct.

Humidity:

Do not like spraying, low humidity tolerant

Sunshine exposure:

Full direct sunshine i.e. 4-6 hours per day to flower, partial shade tolerant and temporary indoor after flowering

Repotting:

In Feb.

Pruning:

Cut back in Nov. to keep for next year

Propagation:

By seeds in Feb.-Jan.

Easy or difficult:

Easy

Problems:

Aphids and slugs/ systemic insecticide
Petal blight/ water on foliage, fungicide
Viruses/ Systemic insecticide
Foliage wilt and crown rot/ overwatering

Aesthetic value:

Flowering annuals or perennials used as pot plants, borders, hanging baskets and groundcover or mass flowering beds

Dahlia pinnata

(annual or perennial groundcover, shrub)

داليا

Lebanese name:

Latin name:

Dahlia pinnata

Common name:

Dahlia

Size: Height at maturity:

30-100 cm. depending on the variety

Spread at maturity:

25-50cm.

Growth rate:

Medium

Flowering season:

May till Oct.

Scent:

None

Water quality:

Soft drinking water

Water quantity:

1-2 times per week from May till Oct., once per week from Nov. till Apr.

Feeding:

Twice per month liquid food hi. with P and K from May till Oct.

Humidity:

No spraying is needed, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs.), partial shade tolerant esp. in mid.hot summer

Repotting:

In Dec.- Jan.

Pruning:

Tip pinching and cutting back for more bushiness

Propagation:

By tuber and tuber division in Feb.-March

Easy or difficult:

Medium

Problems:

Bacterial wilt and crown gall/ bacteria, untreatable

Mosaic and ring spot virus/ systemic insecticide

Leaf spot, foliage wilt and rot, blight and powdery mildew/ fungus, overwatering and hi. Humidity/ aerate, reduce watering, and use fungicide

Aesthetic value:

Popular bushy tuberous perennial flowering pot and garden plant

Viola*wittrockiana
(annual groundcover)

Lebanese name:

Latin name: *Viola*wittrockiana*

Common name: Pansies

Size: Height at maturity: 20 cm.

Spread at maturity: 20 cm.

Growth rate: Medium

Flowering season: Dec.-March and sometimes till June

Scent: fragrant

Water quality: Soft drinking water

Water quantity: Twice per week from March till Nov., once per week from Dec. till Feb., sensitive to overwatering

Feeding: Either every 2-3 months slow release fert. Or monthly liquid food well balanced

Humidity: No need to spray, can tolerate low humidity

Sunshine exposure: Some direct sunshine to flower (2 hrs. per day), partial shade tolerant

Repotting: In Feb.

Pruning: No need

Propagation: By seeds in soil in August-Sep.

Easy or difficult: Medium

Problems: Root rot and leaf wilting/ overwatering
Leaf spots/ water on foliage and fungus
Powdery mildew/ spray fungicide
Aphids and slugs/ systemic insecticide
Spidermites/ acaricide

Aesthetic value: Popular colorful fragrant annual blooms for pots, planters and window boxes and mass color beds

Pittosporum tobira

(shrub)

Latin name:	<i>Pittosporum tobira</i> , <i>Pittosporum tobira nana</i>
Common name:	Japanese mockorange, tobira
Size: Height at maturity:	3.6 m., nana var.: 1 m.
Spread at maturity:	1.6 m., nana var. 1 m.
Growth rate:	Slow to moderate
Flowering season:	May-July
Scent:	Orange flower scent
Water quality:	Salt water tolerant
Water quantity:	Moderate to drought tolerant, 1-2 times per week from June till Oct., once per week from Nov. till May
Feeding:	Every 2-3 months slow release fertilizer of equal amounts of N,P, and K during growing season
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Tolerant to full direct sunshine to shade, do best in partial sun
Repotting:	Yearly in Dec.-Jan.
Pruning:	Pinching, thinning, shearing and rejuvenating for shaping or for more compact or bushy shape in Feb.
Propagation:	By seeds or cuttings in soil in Feb.
Easy or difficult:	Very easy
Problems:	Aphids, leafhoppers, mealy bugs and cottony cushiony scale insects/ systemic Root knot nematodes/ water with systemic insecticide Fungal leaf spots/fungicide
Aesthetic value:	Popular hardy evergreen shrub that can be used as a specimen, hedge or trimmed Bonsai shaped tree, excellent for drift planting Variegated variety has silvery and creamish color

Feijoa sellowiana
(shrub)

Latin name:	<i>Feijoa sellowiana</i>
Common name:	Pineapple guava, or Guavasteen
Size: Height at maturity:	3 m.
Spread at maturity:	1 m.
Growth rate:	Slow
Flowering season:	April till June
Scent:	None, but the fruit emits strong long lasting perfume
Water quality:	Slightly tolerant to salty water and wind
Water quantity:	Slightly drought tolerant, but needs adequate water for good fruit production, 2-3 times per week from April till Nov., once per week after Dec.
Feeding:	Every 2-3 months slow release fert. with equal amounts of NPK
Humidity:	no need to spray, likes low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day), tolerant to partial shade only.
Repotting:	Every 2-3 years in Dec.-Jan.
Pruning:	Light pruning in Oct.
Propagation:	By seeds by experts only, by branch tip cuttings in soil in Oct.
Easy or difficult:	Medium
Problems:	Fungal leaf spots and blight/ fungicide Root rot/ overwatering, decrease watering and water with fungicide Scale insects, leaf worms, sooty mold and fruit flies/ systemic
Aesthetic value:	Evergreen fruit shrub or small tree with green and silvery foliage used as a specimen or hedge, Very showy flowers and edible fruit Excellent for foliage color contrast or as a filler plant

Ocimum basilicum
(annual shrub)

حبثق

Lebanese name:	
Latin name:	<i>Ocimum basilicum</i>
Common name:	Sweet basil, common basil
Size: Height at maturity:	60 cm.
Spread at maturity:	40 cm.
Growth rate:	Fast
Flowering season:	May-June
Scent:	Strong fragrance
Water quality:	Soft drinking water
Water quantity:	Moderate, 2-3 times per week from April till Oct., once per week after Nov.
Feeding:	Every 2-3 months slow release fertilizer with equal amounts of NPK from April till Oct.
Humidity:	No need to spray, likes low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs.) to partial shade
Repotting:	No need
Pruning:	Pinching off immature flower stems for more leaf production
Propagation:	By seeds in soil in spring, by cuttings in water in Oct.
Easy or difficult:	Medium
Problems:	Low leaves yellowing/ needs more sunshine and less fert. Fungal wilt, damping off and leaf spots/ reduce watering and humidity
Aesthetic value:	Tender low growing perennial strongly aromatic herb used for food consumption medicinal purposes and aromatic oils

Origanum vulgare
(perennial shrub)

Lebanese name:

زعترا أو أوريغانو

Latin name:

Origanum vulgare (libanoticum, syriacum)

Common name:

Oregano

Size: Height at maturity:

60 cm.

Spread at maturity:

45 cm.

Growth rate:

Fast

Flowering season:

June- Sep.

Scent:

Very strong scent

Water quality:

Soft drinking water

Water quantity:

Slightly drought tolerant to moderate, 2-3 times per week from May till Oct., once per week after Nov.

Feeding:

Every 2-3 months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs.) to partial shade

Repotting:

In feb.

Pruning:

Tip pinching off in May for more bushiness

Propagation:

By seeds in soil in Feb. or by tip cuttings in water in Oct.

Easy or difficult:

Easy

Problems:

Root rot/ overwatering

Aesthetic value:

Mediterranean perennial strongly scented edible and medicinal herb used as ground cover, pot plants or low borders

Salvia officinalis
(shrub)

قصعين

Lebanese name:	
Latin name:	<i>Salvia officinalis</i>
Common name:	Common Sage
Size: Height at maturity:	1 m.
Spread at maturity:	50 cm.
Growth rate:	Fast
Flowering season:	May-July
Scent:	Strongly scented
Water quality:	Soft drinking water
Water quantity:	Moderate, 2-3 times per week from May ill Oct., once per week after Nov.
Feeding:	Every 2-3 months slow release fertilizer with equal amounts of NPK
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs.) to partial shade
Repotting:	In Dec.-Jan.
Pruning:	Pinching out fowering tips for more bushiness in May
Propagation:	By seeds in soil in Feb. or tip cuttings in soil Oct.
Easy or difficult:	Easy
Problems:	Plant wilt and rot/ overwatering
Aesthetic value:	Mediterranean aromatic low bushy herbaceous annual or perennial used for medicinal, culinary and aromatic purposes

Ligustrum Lucidum
(shrub)

Lebanese name:

نوار أبيض أو فغو أو ياسم

Latin name:

Ligustrum lucidum

Common name:

Wax-leaf Ligustrum, glossy privet

Size: Height at maturity:

3-4 m.

Spread at maturity:

1-2 m.

Growth rate:

Fast

Flowering season:

August-Sep.

Scent:

None

Water quality:

Moderate tolerance to salty water

Water quantity:

Moderately drought tolerant, twice per week from June till Oct., once per week after Nov.

Feeding:

Every 2-3 months slow release fert. With equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs.) to partial and even complete shade tolerance

Repotting:

Yearly in Dec.-Jan.

Pruning:

For shaping in Feb.

Propagation:

By seeds in soil in Feb. and by soft wood cuttings in soil in Nov.-Dec.

Easy or difficult:

Very easy and hardy

Problems:

Root rot/ overwatering
Scale insects, whiteflies, sooty mold and nematodes/ systemic insectide

Aesthetic value:

Popular evergreen shrub or small tree used as a specimen or hedge; highly pollution tolerant.
Leaves used for medicinal purposes, shoots are toxic
The variegated variety has yellow and green foliage also used in topiary forms

Ligustrum japonicum
(shrub)

تروان

Lebanese name:	
Latin name:	<i>Ligustrum japonicum</i>
Common name:	Japanese privet, Japanese Ligustrum
Size: Height at maturity:	4-6 m.
Spread at maturity:	3 m.
Growth rate:	Fast
Flowering season:	March-April
Scent:	Scented but unpleasant
Water quality:	Moderately tolerant to salty water
Water quantity:	Slightly drought tolerant, Twice per week from June till Oct., once per week after Oct.
Feeding:	Every 2-3 months slow release fertilizer of equal amounts of NPK from March till Oct.
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full sunshine to shade
Repotting:	Yearly in Dec.-Jan.
Pruning:	For shaping in Feb.
Propagation:	By seeds in Feb., by tip cuttings in Nov.-Dec.
Easy or difficult:	Very easy and hardy
Problems:	Thrips and nematodes/ systemic insecticide Mites/ Miticides
Aesthetic value:	Semi-evergreen shrub or small tree used as a specimen or low hedge Rotundifolium variety is variegated, slow growing and dwarf (1.5 m.)

Eleagnus pungens maculata
(shrub)

Lebanese name:	زقوم أو زيزفون أو نقد
Latin name:	<i>Eleagnus pungens maculata, variegata (yellow variegated)</i>
Common name:	Eleagnus, thorny olive
Size: Height at maturity:	3 m.
Spread at maturity:	1.5 m.
Growth rate:	Fast
Flowering season:	Oct.-Nov., not showy
Scent:	Like Lemon or Gardenia
Water quality:	Salt water tolerant
Water quantity:	Drought tolerant, once every week from June till Oct., once every 10 days after Oct.
Feeding:	Every 2-3 months slow release fert. with equal amounts of NPK
Humidity:	No need to spray
Sunshine exposure:	Full direct sunshine (4-6 hrs.) to partial shade
Repotting:	every 2-3 years in Feb.
Pruning:	Yearly in Dec.-Feb.
Propagation:	By semi-ripe cuttings 7-10 cm. in soil in June
Easy or difficult:	Easy
Problems:	Aphids/ systemic insecticide Plant fusarium wilting/ Fungus,overwatering/ Reduce watering and use systemic fungicide
Aesthetic value:	Evergreen frost hardy shrub used as a specimen or hedge, scented sweet like Gardenia

Dodonea viscosa

(shrub)

Lebanese name:

Latin name: *Dodonea viscosa*

Common name: Dodonea

Size: Height at maturity: 3 m.

Spread at maturity: 1.5 m.

Growth rate: Medium to fast

Flowering season: Insignificant, Feb.-Oct.

Scent: None

Water quality: tolerant to salt water

Water quantity: Drought tolerant, once per week from June till Oct., Once every 10 days after Oct.

Feeding: Every 2-3 months slow release fert. Of equal amounts of NPK

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs.)

Repotting: Every 2 years in Dec.-Jan.

Pruning: Yearly in Feb.

Propagation: By seeds in soil in Feb., by semi-ripe wood cuttings in soil in July-Aug.

Easy or difficult: Very easy

Problems:

Aesthetic value: Evergreen shrub salt wind tolerant, pollution tolerant, used for hedges and screens

Toxic foliage, used for medicinal purposes

Dracaena draco

(shrub)

Lebanese name:

قاطر أو دم الثعبان

Latin name:

Dracaena draco

Common name:

Dragon tree, drago

Size: Height at maturity:

1.5 m.

Spread at maturity:

70 cm.

Growth rate:

Very slow

Flowering season:

April-June

Scent:

None

Water quality:

Salt water tolerant

Water quantity:

Drought tolerant, once per week from June till Oct., once every 10 days after Oct.

Feeding:

Once per month liquid food rich with equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs.) to partial shade tolerance

Repotting:

Every 2-3 years

Pruning:

None

Propagation:

By seeds and cuttings in soil in spring only by experts

Easy or difficult:

Very easy

Problems:

Aesthetic value:

Tropical perennial evergreen with showy foliage used as a specimen in Xeriscaping with red poisonous sap

Buxus sempervrens
(shrub)

عشق أو بقس

Lebanese name:

Latin name:

Buxus sempervrens

Common name:

Buxus

Size: Height at maturity:

3 m.

Spread at maturity:

1 m.

Growth rate:

Very slow

Flowering season:

March- May, insignificant

Scent:

Fragrant but not showy

Water quality:

Soft drinking water

Water quantity:

3 times per week from June till Oct., once per week after Oct.(very shallow rooted)

Feeding:

Every 2-3 months slow release fertilizer of equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs.) to partial shade

Repotting:

Every 2-3 years in Dec.-Jan.

Pruning:

In Feb.

Propagation:

By seeds in soil in Feb. or by semi-ripe tip cuttings in soil in April-July

Easy or difficult:

Medium

Problems:

Foliar burn in harsh winters/ cold injury, try to protect
Leaf minor and nematodes/systemic insecticide
Mites/ miticides

Aesthetic value:

Evergreen shrub with sweet smelling foliage used as a specimen topiary plant or hedge, can be pruned to different shapes used in formal plantation

Dracaena indivisa
(shrub)

Lebanese name:

Latin name: *Dracaena indivisa*

Common name: Dracaena indivisa

Size: height at maturity: 1-2.5 m depending if head or branched
Spread at maturity: 1 m.

Growth rate: Very slow

Flowering season: Insignificant

Scent: None

Water quality: Tolerant to salty water

Water quantity: Slightly drought tolerant, once per week from June till Oct., once every 10 days after Oct.

Feeding: Monthly liquid of equal amounts of NPK from June till Oct.

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Every 2-3 years in Dec.-Jan.

Pruning: No need, just removing old damaged leaves

Propagation: By seeds in soil in Feb.

Easy or difficult: Medium

Problems: Spidermites/ acaricide
Thrips/ systemic insecticide
Crown rot/ overwatering

Aesthetic value: Evergreen perennial shrub with showy spike like leaves used as a specimen

Strelizia reginae
(shrub)

عصفور الجنة

Lebanese name:	
Latin name:	<i>Strelizia reginae</i>
Common name:	Birds of Paradise
Size: Height at maturity:	1.5 m.
Spread at maturity:	1 m.
Growth rate:	Slow
Flowering season:	February-June, very showy and long lasting flowers
Scent:	None
Water quality:	Mildly tolerant to salty water
Water quantity:	Drought tolerant, 1-2 times per week from May-Nov., once per week after Nov.
Feeding:	Once per month from June till Oct. with liquid food high in N and K, and with well balanced slow release fert. Every 2-3 months after Oct.
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day) to semi-shade
Repotting:	Every 2-3 years in Nov.-Dec.
Pruning:	Just cutting old leaves and flowers
Propagation:	By seeds or clump division in soil in Feb. only by experts
Easy or difficult:	Medium
Problems:	Fungus/ overwatering or extra humidity, use systemic fungicide and reduce humidity and watering Scale insects and grasshoppers/ systemic insecticide
Aesthetic value:	Exotic tropical evergreen flowering shrub or stemless perennial tolerant to salty wind used as a specimen, low hedge and in mass plantation or exotic composition

Strelizia augusta

(shrub or small tree)

Lebanese name:

Latin name: *Strelizia augusta*

Common name: White big birds of paradise

Size: Height at maturity: 4 m.

Spread at maturity: 2 m.

Growth rate: Slow

Flowering season: Feb.-June, big showy flowers

Scent: None

Water quality: Slightly tolerant to salty water

Water quantity: Drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.

Feeding: Once per month with liquid food hi with N and K from June till Oct., every 2-3 months slow release fert. well balanced after Oct.

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs.per day) to partial shade

Repotting: Every 2-3 years in Dec.-Jan.

Pruning: Just removing old leaves and flowers

Propagation: By seeds or clump division in soil in Feb.

Easy or difficult: Medium

Problems: Fungus/ overwatering or extra humidity, use systemic fungicide and reduce humidity and watering
Scale insects and grasshoppers/ systemic insecticide

Aesthetic value: Exotic tropical perennial evergreen shrub with no stem, tolerant to salty wind used as a specimen and as an accent for entrances or composition

Opuntia
(cactus shrub)

تين شوكي

Lebanese name:

Latin name:

Opuntia cacti, O. ficus-indica

Common name:

Cactus

Size: Height at maturity:
Spread at maturity:

60 cm.

40 cm.

Growth rate:

Very slow

Flowering season:

April-July

Scent:

None

Water quality:

Slightly tolerant to salty water irrigation

Water quantity:

Drought tolerant, once per week from March till Nov., once per month after Nov.

Feeding:

Once per month from March till Nov. liquid food of equal amounts of NPK, no need after Nov.

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day) to flower to shade tolerance but high light level

Repotting:

Every 2-3 years in Feb.

Pruning:

No need

Propagation:

By seeds and cuttings in Feb.

Easy or difficult:

Easy

Problems:

Rotting/ overwatering with low light level

Aesthetic value:

Desert succulent herbaceous perennial flowering cactus shrub for rock gardens, mixed borders and pot plants

Cleistocactus
(cactus shrub)

Lebanese name:

Latin name: *Cleistocactus*

Common name: Columnar cacti

Size: Height at maturity: 3 m.
Spread at maturity: 0.7 m.

Growth rate: Slow

Flowering season: May- July

Scent: None

Water quality: Slightly tolerant to salty water

Water quantity: Drought tolerant, once per week from June till Nov.,
once per month after Nov.

Feeding: Once per month with liquid food of equal amounts of NPK from June till Nov.
only

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to flower to partial shade tolerance

Repotting: Every 2-3 years in Feb.

Pruning: No need

Propagation: By seeds or cuttings in soil in Feb.

Easy or difficult: Feb.

Problems: Rotting/ overwatering, low light level

Aesthetic value: Popular succulent cactus tolerant to salty wind

Lonicera japonica
(hanging and climber shrub)

سلطان الجبل أو ماطر شلبة أو العويشقة

Lebanese name:

Latin name:

Lonicera japonica

Common name:

Japanese honeysuckle

Size: Height at maturity:

9 m.

Spread at maturity:

5 m.

Growth rate:

Fast

Flowering season:

May-August

Scent:

Strong sweet fragrance

Water quality:

Slightly tolerant to salty water

Water quantity:

Slightly drought tolerant to moderate, 2-3 times per week from May till Nov., once per week after Nov.

Feeding:

Every 2-3 months well balanced equal amounts of NPK slow release fertilizer

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full sunshine (4-6 hrs per day) to partial shade, tolerant to complete shade but will not flower

Repotting:

Yearly in Dec.-Jan.

Pruning:

Prune back in Feb. to encourage flowering and prevent build up of woody growth

Propagation:

By cuttings in soil in Feb., and by seeds and layering in soil in spring by experts.

Easy or difficult:

Easy

Problems:

Spidermites/ miticides

Aesthetic value:

Semievergreen perennial fragrant flowering vine, prostrate or trailing groundcover used also as screen plants on trellises or pergolas, slightly tolerant to salty wind

Has medicinal uses, popular sources for bees and butterflies

Might become invasive, do not plant near shrubs and trees.

73. *Chamaerops excelsa* (shrub)

Lebanese name:

Latin name: *Trachycarpus fortunei*, *Chamaerops excelsa*

Common name: *Chamaerops excelsa*, Chinese windmill palm, Chusan palm

Size: Height at maturity: 5 m.

Spread at maturity: 1 m.

Growth rate: Slow

Flowering season: June-Sep.

Scent: Sweet

Water quality: Tolerant to salt water irrigation

Water quantity: Drought tolerant, once per week from June till Oct., once every 10 days after Oct.

Feeding: Every 2-3 months slow release fert. Of equal amounts of NPK

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Every 2-3 years in Feb.

Pruning: Just removing old dried leaves from Feb.-Oct.

Propagation: By seeds in soil from Sep.-May by experts, by pop up suckers in Apr.-May by experts

Easy or difficult: Very easy

Problems: Rot/ overwatering

Aesthetic value: Exotic mediterranean hardy evergreen palm tolerant to salt wind with palmate fan shaped green leaves deeply divided

Rosa spp.
(shrub , climber)

الورد

Lebanese name:	
Latin name:	<i>Rosa spp</i>
Common name:	Roses
Size: Height at maturity:	Shrub: 0.8 m., climbing: 2-5 m.
Spread at maturity:	0.6 m.
Growth rate:	Medium
Flowering season:	March till Nov. depending on the var., very showy
Scent:	Strong beautiful scent depending on var.
Water quality:	Soft drinking water
Water quantity:	Moderately, 2-3 times per week from May till Nov., once per week after Nov.
Feeding:	Once every 2-3 months slow release fert.of equal amounts of NPK from Feb. till Oct.
Humidity:	No need
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day)
Repotting:	Every 3 years in Dec.-Jan.
Pruning:	Yearly hard pruning in Feb. 1 cm. above a vegetative bud, and all the year deheading and grooming
Propagation:	By cuttings in soil in Feb.
Easy or difficult:	Medium
Problems:	Rust, black spots, powderymildew ,wilt and stem canker/ fungus, use systemic fungicide Aphids, thrips and nematodes/ systemic insecticide Spidermites/ miticides Crowngall/ bacteria, discard
Aesthetic value:	Popular flowering deciduous shrub or climber with lots of species and varieties

Phormium tenax
(shrub)

كتان زيلندة الجديدة

Lebanese name:

Latin name:

Phormium tenax

Common name:

Phormium, New zealandFlax

Size: Height at maturity:

3 m.

Spread at maturity:

1.8 m.

Growth rate:

Medium

Flowering season:

June-July

Scent:

Strong nectar attracts birds

Water quality:

Tolerant to salt water irrigation

Water quantity:

Slightly drought tolerant, 2 times per week from June till Oct., once per week after Oct.

Feeding:

Every six months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day) to semi shade

Repotting:

Every 2-3 years in Feb.

Pruning:

Just removing old damaged leaves

Propagation:

By seeds in soil in Feb. by experts, or by divisions in soil in Feb.

Easy or difficult:

Medium

Problems:

rot and wilt/ overwatering

Mealy bugs in leaves at soil level

Aesthetic value:

Herbaceous evergreen perennial half hardy, tolerant to salt wind used as dramatic and contrasting sword like leaves attracts birds

Gynerium sagittatum
(shrub)

المكنسة

Lebanese name:

Latin name:

Gynerium sagittatum, *G. argenteum*, *Cortaderia selloana*

Common name:

Gynerium, pampass grass

Size: Height at maturity:

5 m.

Spread at maturity:

1.5 m.

Growth rate:

medium

Flowering season:

August-Oct. soft plumes

Scent:

none

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

Drought tolerant, once per week from June till Oct., once every 10 days after Oct.

Feeding:

Every 2-3 months slow release fert. Of equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting:

Every 2-3 years in Feb.

Pruning:

Just removing old dried leaves or thinning

Propagation:

By seeds and vegetative cuttings in soil in Feb.

Easy or difficult:

Easy

Problems:

Aesthetic value:

Popular perennial hardy and tolerant to salt wind

Agave attenuata
(shrub)

صبارة

Lebanese name:	
Latin name:	<i>Agave attenuata</i>
Common name:	Fox tail Agave
Size: Height at maturity:	1.5 m.
Spread at maturity:	70 cm.
Growth rate:	Slow
Flowering season:	May-August, very long flower
Scent:	None
Water quality:	Tolerant to salt water irrigation
Water quantity:	Drought tolerant, once per week from June till Oct., once every 10 days after Oct.
Feeding:	Every 6 months slow release fert. of equal amounts of NPK
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day) to complete shade tolerance
Repotting:	Every 2-3 years in Feb.
Pruning:	No need, tolerant to low humidity
Propagation:	By seeds, cuttings or suckers in soil in Feb.
Easy or difficult:	Very easy
Problems:	Snails/ use systemic insecticide
Aesthetic value:	Popular hardy evergreen succulent tolerant to salt wind, poisonous foliage, exotic plant

Malvaviscus penduliflorum
(shrub)

Lebanese name:	
Latin name:	<i>Malvaviscus penduliflorum, M. arboreus</i>
Common name:	sleeping hibiscus
Size: Height at maturity:	3 m.
Spread at maturity:	1 m.
Growth rate:	Fast
Flowering season:	May-Nov., conspicuous
Scent:	Strong nectar
Water quality:	Soft drinking water, slightly tolerant to salty water
Water quantity:	Slightly drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.
Feeding:	Every 3 months slow release fert. of equal amounts of NPK
Humidity:	No need to spray
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day) to flower and temporary or semi-shade shade only
Repotting:	Every 1-2 years in Dec.-Jan.
Pruning:	Every Feb. prune to half
Propagation:	By seeds and divisions in soil in Feb. by experts, by cuttings in soil at anytime of the year
Easy or difficult:	Medium
Problems:	Aphids, mealy bugs and thrips/ systemic insecticide wilt and rot/ overwatering
Aesthetic value:	Tropical popular tender flowering perennial evergreen shrub used as a specimen or hedge attracts birds and butterflies

Callistemon laevis

(shrub)

Lebanese name:

Latin name:

Callistemon laevis, *Callistemon citrinus*, *C. lanceolatis*

Common name:

Bottle brush

Size: Height at maturity:

2.4 m. for *laevis* var., 3.4 m for *lanceolatis*

Spread at maturity:

1.6 m.

Growth rate:

Medium

Flowering season:

March till Sep., very showy

Scent:

None

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

Slightly drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.

Feeding:

Every 6 months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (6 hrs. per day) to partial shade

Repotting:

Every 2-3 years in Dec.-Jan.

Pruning:

Annually in Feb.

Propagation:

By seeds in soil in Feb. by experts,

Easy or difficult:

Easy

Problems:

Aesthetic value:

Evergreen tropical flowering shrub or small tree
Lemon scented foliage attracts bees, birds and butterflies
Slightly tolerant to salty wind

Myoporum
(shrub)

Lebanese name:

Latin name: *Myoporum laetum, Myoporum serratum*

Common name: Myoporum, ficus maritima

Size: Height at maturity: 3 m.
Spread at maturity: 1.5 m.

Growth rate: Fast

Flowering season: March

Scent: None

Water quality: Tolerant to salty water

Water quantity: Slightly drought tolerant, 1-2 times per week from June till Nov., once per week after Nov.

Feeding: Every 3 months slow release fert.of equal amounts of NPK

Humidity: No need to spray, tolerant to low and high humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Every 1-2 years in Feb.

Pruning: Yearly in Feb.

Propagation: By seeds or cuttings in soil in Feb.

Easy or difficult: Easy

Problems: Spidermires/ miticides

Aesthetic value: Evergreen perennial shrub or small tree tolerant to salt wind
M. laetum filler shrub, *M. serratum* excellent for hedges and low screens for privacy

Lagerstroemia indica
(shrub)

الحنة

Lebanese name:

Latin name:

Lagerstroemia indica

Common name:

crape myrtle

Size: Height at maturity:

3 m.

Spread at maturity:

1.5 m.

Growth rate:

Fast

Flowering season:

June till Oct., showy clusters

Scent:

None

Water quality:

Soft drinking water

Water quantity:

Drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.

Feeding:

Every 2-3 months slow release fert. of equal amounts of NPK

Humidity:

Avoid spraying, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day)

Repotting:

Yearly in Feb. prune back only dense branches and crossing limbs

Pruning:

Yearly in Dec.-Jan.

Propagation:

By seeds in soil in Feb., by hard wood cuttings in soil in Feb., by soft wood cuttings in soil in June-Sep.

Easy or difficult:

very easy

Problems:

Aphids and sootymolds/ systemic insecticide
Fungal leaf spots and powdery mildew/ fungicides
Aphids and scales/ systemic insecticide

Aesthetic value:

Deciduous herbaceous perennial flowering shrub or small tree used as a specimen and street planting or border tolerant to salty wind and pollution

Weigelia
(shrub)

Lebanese name:

Latin name: *Weigelia florida*

Common name: Weigelia

Size: Height at maturity: 1.5 m.

Spread at maturity: 1.5 m.

Growth rate: Fast

Flowering season: May-July, some varieties again in Aug.-Sep.

Scent: Fragrant

Water quality: Soft drinking water

Water quantity: Drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.

Feeding: Every 3-4 months slow release fert. of equal amounts of NPK

Humidity: No need to spray

Sunshine exposure: full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Yearly in Dec.-Jan.

Pruning: Branch tip pruning yearly in Feb. and in July after flowering

Propagation: By tender branch tip cuttings in soil in August

Easy or difficult: Medium

Problems: Aphids and cochineals/ systemic insecticide
Fungus/ Fungicide

Aesthetic value: Deciduous perennial showy flowering shrub pollution tolerant used for borders and hedges

Wisteria sinensis
(climber)

Lebanese name:

Latin name: *Wisteria sinensis*, *Wisteria floribunda*

Common name: Wisteria

Size: Height at maturity: 9 m.

Spread at maturity: 1 m.

Growth rate: Fast

Flowering season: March-May, showy clusters

Scent: Fragrant

Water quality: Slightly tolerant to salty water

Water quantity: Slightly drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.

Feeding: Every 2-3 months slow release fert. of equal amounts of NPK

Humidity: No need, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Sensitive to repotting, Try to have it in the desired pot size

Pruning: Every year prune side shoots and later secondary shoots in Feb., remove suckers at the base of the plant

Propagation: By seeds in soil in Feb., by root cuttings in soil in Feb., by layering and grafting by experts

Easy or difficult: Easy

Problems: Aphids and scale insects/ systemic insecticide
Powdery mildew/ Systemic fungicide
Spidermites/ miticides

Aesthetic value: Deciduous Flowering vine used in pergolas or fences

Myrtus communis
(shrub)

حمبلاس أو مرسين

Lebanese name:

Latin name:

Myrtus communis

Common name:

True myrtle, common Myrtle

Size: Height at maturity:
Spread at maturity:

3 m.
2 m.

Growth rate:

Moderately fast

Flowering season:

June-Sep., showy star-shaped flowers

Scent:

Fragrant flowers and aromatic foliage

Water quality:

Soft drinking water

Water quantity:

Drought tolerant, once per week from June till Oct., once every 10 days in winter

Feeding:

Once per month well balanced liquid food, or every 6 months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to low light level

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting:

Yearly in Dec.-Jan.

Pruning:

Yearly trimming in Feb.

Propagation:

By seeds and layering by experts and by soft wood cuttings in soil in Feb.

Easy or difficult:

Easy

Problems:

Chlorosis/ overwatering
Mottled leaves by thrips/ systemic insecticide

Aesthetic value:

Mediterranean evergreen herbaceous shrub with scented leaves, fruits and flowers are used for aroma and medicinal purposes, in cooking, planted as a hedge or specimen

Spartium junceum
(shrub)

رتم أو ست خديجة أو بفسقان

Lebanese name:

Latin name:

Spartium junceum

Common name:

Spanish broom, weavers broom

Size: Height at maturity:

3 m.

Spread at maturity:

2.5 m.

Growth rate:

Fast

Flowering season:

May- Oct.

Scent:

Fragrant like orange

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

Drought resistant, once per week from June till Nov., once every 10 days afer Nov.

Feeding:

Every 2-3 months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to dry conditions

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day), cannot tolerate full shade

Repotting:

Roots are very sensitive to repotting, try to plant it in the final pot size you want, or in Dec.-Jan.

Pruning:

Trimming every Feb.

Propagation:

By seeds and stump sprouting in soil in Feb.

Easy or difficult:

Easy

Problems:

Aphids/ systemic insecticide in a mlid dosage
Sensitive to pesticide application

Aesthetic value:

Mediterranean perennial evergreen shrub, flowers give yellow dye, all plant parts are poisonous used for medicinal purposes, tolerant to salty wind and pollution

Mathiola incana
(annual or biennial shrub)

Lebanese name:

منتور

Latin name: *Mathiola incana*

Common name: Mathiola, hoary stock

Size: Height at maturity: 35 cm.

Spread at maturity: 35 cm.

Growth rate: Medium

Flowering season: April-Sep.

Scent: Sweet scent

Water quality: Soft drinking water

Water quantity: 2-3 times per week from June till Oct., once per week after Oct.

Feeding: Every 2-3 months slow release fert. of equal amounts of NPK

Humidity: No need to spray

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: In Feb. if biennial

Pruning: No need

Propagation: By seeds in soil in Feb.

Easy or difficult: Medium

Problems: Aphids/ systemic insecticide

Aesthetic value: Mediterranean flowering annual or perennial

Laurus nobilis
(shrub or small tree)

غار أو رند

Lebanese name:

Latin name:

Laurus nobilis

Common name:

Sweet Bay, Laurel

Size: Height at maturity:

3 m.

Spread at maturity:

1 m.

Growth rate:

Slow

Flowering season:

March-June

Scent:

Foliage is scented

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

Drought tolerant only after establishment i.e. after 2 years, 1-2 times per week from June till Oct., once every week after Oct.

Feeding:

Every 3-4 months slow release fert. of equal amounts of NPK

Humidity:

No need to spray, tolerant to dry conditions

Sunshine exposure:

Partial shade is best i.e. 2 hrs. of direct sunshine

Repotting:

Every 2-3 years in Feb.

Pruning:

Yearly in Feb. prune to shape

Propagation:

By suckers or semi hard green tip shoot cuttings, seeds and layering in soil in Feb. only by experts

Easy or difficult:

Medium

Problems:

Scale insects and caterpillars/ systemic insecticide

Powdery mildew and leaf spots/ systemic fungicide

Aesthetic value:

Mediterranean evergreen shrub or small tree, aromatic foliage used in food and medicinal purposes used as a hedge or specimen, hardy and slightly tolerant to salt wind topiary shapes

Thevetia peruviana
(shrub)

Lebanese name:		دفل أصفر
Latin name:	<i>Thevetia peruviana</i> , <i>Thevetia nereifolia</i>	
Common name:	Yellow Oleander, lucky nut	
Size: Height at maturity:	3.6 m.	
Spread at maturity:	2.4 m.	
Growth rate:	Fast	
Flowering season:	Repeatedly from May till Oct., flowers are showy yellow	
Scent:	Fragrant	
Water quality:	Slightly tolerant to salt water irrigation	
Water quantity:	2-3 times per week from June till Oct., 1-2 times per week after Oct.	
Feeding:	Every 3-4 months slow release fert. of equal amounts of NPK	
Humidity:	No need to spray, prefers low humidity	
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day) to partial shade	
Repotting:	Every 1-2 years in Feb.	
Pruning:	Yearly in Dec.-Jan.	
Propagation:	By seeds and cuttings in soil in Feb.	
Easy or difficult:	Easy	
Problems:	Mealy bugs, caterpillars, aphids and scale insects/ systemic insecticide Leaf spots/ systemic fungicide	
Aesthetic value:	Evergreen tropical exotic tender perennial small tree or shrub poisonous attractive to bees, butterflies and birds Semi hardy	

Olea europaea
(small tree)

زيتون

Lebanese name:	
Latin name:	<i>Olea europaea</i>
Common name:	Olive
Size: Height at maturity:	4 m.
Spread at maturity:	3 m.
Growth rate:	Slow
Flowering season:	March-Oct., flowering- fruit ripening
Scent:	Fragrant
Water quality:	Slightly tolerant to salt water irrigation
Water quantity:	Drought tolerant, 1-2 times per week from June till Oct., once every week after Oct.
Feeding:	Every 6 months slow release fert. of equal amounts of NPK
Humidity:	No need, tolerant to dry conditions
Sunshine exposure:	Full direct sunshine(4-6 hrs. per day), cannot tolerate full shade
Repotting:	Every 2-3 years in Dec.-Jan.
Pruning:	Regularly in Feb. remove dried branches and basal suckers, pruned branches will affect fruit bearing in that year
Propagation:	By seeds and soft tip cuttings and layering in soil in Feb. by experts
Easy or difficult:	Medium
Problems:	Black scale bug, olive fruit fly, mediterranean fruit fly and caterpillars/ systemic insecticide; Tumor growth on the shoots/ bacterial, remove damaged parts Cycloconium fungus/ systemic fungicide/ Rot and wilt/ overwatering
Aesthetic value:	Mediterranean perennial attractive evergreen half hardy with edible fruits, used also in producing olive oil, soap, medicinal uses and others.. salt wind tolerant, used as a specimen and lives very long, roots might be invasive.

Vibernum tinus
(shrub)

أفلوس

Lebanese name:

Latin name: *Vibernum tinus*

Common name: Vibernum

Size: Height at maturity: 3 m.

Spread at maturity: 3 m.

Growth rate: Medium

Flowering season: March-June

Scent: Frgarant

Water quality: Slightly tolerant to salt water irrigation

Water quantity: Slightly drought tolerant, 2-3 times per week from May till Oct., once per week after Oct.

Feeding: Every 3-4 months slow release fert. of equal amounts of NPK

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day), to partial shade tolerance

Repotting: Every 2-3 years in Feb.

Pruning: Moderately in Feb.

Propagation: By soft wood cuttings in soil in Feb.

Easy or difficult: Easy

Problems: aphids and weevils/ systemic insecticide

Wilt, leaf spots, rust, downy mildew and grey mold/ systemic fungicide

Aesthetic value: Mediterranean popular evergreen flowering shrub used as a specimen or border

Variegatum variety has creamish and green leaves

Eating it's fruit cause stomach problems

Slightly tolerant to salty wind

Cestrum nocturnum

(Shrub or small tree)

Lebanese name:	كولونيا أو ياسمين الليل
Latin name:	<i>Cestrum nocturnum</i>
Common name:	Night blooming Cestrum, Colonia
Size: Height at maturity:	3 m.
Spread at maturity:	1.8 m.
Growth rate:	Fast
Flowering season:	Repeatedly from May-Oct.
Scent:	Strongly scented especially at night
Water quality:	Soft drinking water
Water quantity:	2-3 times per week from June till Oct., once per week after Oct.
Feeding:	Every 2-3 months slow release fert. of equal amounts of NPK
Humidity:	No need to spray, tolerant to low humidity
Sunshine exposure:	Full direct sunshine (4-6 hrs. per day) to partial shade tolerance
Repotting:	Yearly in Feb.
Pruning:	Yearly trimming back in Dec.-Jan.
Propagation:	By seeds, stem cuttings and air layering in soil in Feb.
Easy or difficult:	Medium
Problems:	Caterpillars/ systemic insecticide
Aesthetic value:	Evergreen tropical exotic popular tender perennial flowering shrub, all plant parts are poisonous used as a specimen or hedge, not hardy and not salt wind tolerant

Styrax officinalis
(shrub)

Lebanese name:

Latin name: *Styrax officinalis*

Common name: Styrax officinalis, snowdrop bush

Size: Height at maturity: 3 m.

Spread at maturity: 2 m.

Growth rate: Slow

Flowering season: May-Aug.

Scent: Scented

Water quality: Slightly tolerant to salty water

Water quantity: Slightly drought tolerant once established, 2-3 times per week from June till Oct., once every week after Oct.

Feeding: Every 3-4 months slow release fert. Of equal amounts of NPK

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Every 2-3 years in Dec.-Jan.

Pruning: If needed in Feb.

Propagation: By seeds, half ripe cuttings and layering in soil in Feb. by experts

Easy or difficult: Medium

Problems:

Aesthetic value: Mediterranean deciduous flowering hardy herbaceous shrub, salt wind tolerant
Has edible, medicinal and fragrant uses

Mini carnation
(perennial groundcover shrub)

أرنفل صيني

Lebanese name:	
Latin name:	<i>Dianthus caryophyllus nana, D. chinensis</i>
Common name:	Mini carnation, Chinese carnation
Size: Height at maturity:	30 cm.
Spread at maturity:	30 cm.
Growth rate:	Medium
Flowering season:	Unpredictable and sometimes repeatedly from March till Nov.
Scent:	Fragrant
Water quality:	Soft drinking water
Water quantity:	2-3 times per week from May till Nov., once per week after Nov.
Feeding:	Every 3-4 months slow release fert. of equal amounts of NPK
Humidity:	No need to spray, does not like water on foliage, tolerant to dry conditions
Sunshine exposure:	Partial direct sunshine (2-4 hrs. per day) for flowering, temporary indoor after flowering
Repotting:	Yearly in Dec.-Jan.
Pruning:	Dead heading to extend bloom time
Propagation:	By seeds in soil in spring in Feb. by experts
Easy or difficult:	Easy
Problems:	Rot and wilt/ overwatering Spidermites/ acaricide
Aesthetic value:	Mediterranean flowering annual or perennial used as a pot plant, low border or low ground cover not hardy

Erica manipuliflora
(shrub)

Lebanese name:

Latin name: *Erica manipuliflora*

Common name: Winter heath

Size: Height at maturity: 1m.

Spread at maturity: 1m.

Growth rate: Fast

Flowering season: Aug-Nov.

Scent: Fragrant foliage

Water quality: Slightly tolerant to salt water irrigation

Water quantity: 2-3 times per week from June till Oct., once per week after Oct.

Feeding: Monthly from June till Oct. with liquid fert. of equal amounts of NPK, every 2-3 months after Oct.

Humidity: No need to spray, tolerant to low humidity

Sunshine exposure: Full direct sunshine (4-6 hrs. per day) to partial shade

Repotting: Yearly in Dec.-Jan

Pruning: Yearly in Feb.

Propagation: By cuttings and layering in soil in Feb.

Easy or difficult: Medium

Problems:

Aesthetic value: Mediterranean evergreen flowering perennial shrub, used as a pot plant or low hedge or ground cover

Origanum majorana
(perennial shrub)

مردكوش

Lebanese name:

Latin name:

Origanum majorana, or *Majorana hortensis*

Common name:

Sweet marjoram

Size: Height at maturity:

80 cm.

Spread at maturity:

40 cm.

Growth rate:

Medium

Flowering season:

White blossoms from June-August

Scent:

Minty, aromatic, sweet citrus and pine flavors of flowers and foliage

Water quality:

Slightly tolerant to salt water irrigation

Water quantity:

2-3 times per week from June till Oct., once per week after Oct.

Feeding:

Slow release fert. of equal amounts of NPK every 6 months

Humidity:

No need to spray, tolerant to low humidity

Sunshine exposure:

Full direct sunshine (4-6 hrs. per day)

Repotting:

Every 2-3 years in Feb.

Pruning:

Yearly cut back in Feb.

Propagation:

By seeds, division of roots, cuttings or layering in soil in Feb.

Easy or difficult:

Easy

Problems:

Aesthetic value:

Mediterranean perennial or annual herb used in culinary, medicinal, cosmetics, dyes and perfumes purposes.

Harvest leaves before flowering in June so that they will not become bitter or keep on trimming flower heads

Santolina Chamaecyparissus
(groundcover shrub)

Lebanese name:		قيسون أو بابوني
Latin name:	<i>Santolina Chamaecyparissus</i>	
Common name:	Gray Santolina, cotton lavender	
Size: Height at maturity:	45 cm.	
Spread at maturity:	30 cm.	
Growth rate:	Slow to moderate	
Flowering season:	June-Aug.	
Scent:	fragrant foliage	
Water quality:	Slightly tolerant to salt water irrigation	
Water quantity:	Drought tolerant, 1-2 times per week from June till Oct., once per week after Oct.	
Feeding:	Every 6 months slow release fert. of equal amounts of NPK.	
Humidity:	No need to spray, tolerant to low humidity	
Sunshine exposure:	full direct sunshine (4-6 hrs. per day) to partial shade	
Repotting:	Every 2-3 years in Dec.-Jan.	
Pruning:	Yearly shearing in Feb.	
Propagation:	By stem cuttings and layering in soil in Feb.	
Easy or difficult:	Medium	
Problems:		
Aesthetic value:	Mediterranean perennial evergreen aromatic flowering shrub used for dried flowers used in rock gardens, low hedges, small beds, or ground cover tolerant to salt wind	

6.4. SOCIAL SURVEY

AMERICAN UNIVERSITY OF BEIRUT: GREENING THE NEIGHBORHOOD PROJECT

BACKGROUND:

THE AUB NEIGHBORHOOD INITIATIVE

The AUB Neighborhood Initiative encourages faculty, students and staff to become more engaged with Ras Beirut: Sharing the university's cultural and intellectual programs; producing knowledge for local problem-solving; and partnering with others to enhance the economic and cultural life of the neighborhood. The Neighborhood Initiative sees AUB's engagement with the neighborhood as beneficial for all.

GREENING THE NEIGHBORHOOD

Greening the Neighborhood, is one of AUB's Neighborhood Initiative projects organized by the newly established Department of landscape design and eco-management and AUB's center IBSAR (www.ibsar.org). This project aims to promote new ways of designing and managing indoor and outdoor spaces that can be planted. It is seen as very important to involve the community as much as possible so that whatever the project achieves is likely to last. In this project, AUB faculty and students will work with local residents to help them develop effective gardening habits in their homes and semi-private spaces nearby and promote the use of native plants. The project will also explore the use of empty lots and semi-public spaces for community activities that are educational, recreational and/or economically productive.

WE THANK YOU FOR TAKING THE TIME TO ANSWER THE FOLLOWING QUESTIONS WHICH WILL HELP OUR STUDENTS ASSESS YOUR INTEREST IN A PLANNED 'STUDENTS-NEIGHBORS GARDENING' PROJECT

A. We would like to know about your current gardening practices

A.1 Do you currently grow plants *(please check all that apply)*

1. *In your homes*
2. *On your balconies,*
3. *On roofs,*
4. *At the entrance to your buildings,*
5. *At the entrance to your apartment*
6. *I do not currently grow plants*

A.2 What are the most important reasons for growing plants in or near your apartment?
(please rank in order of importance)

1. *To beautify,*

2. *To create more privacy,*
3. *To create shade,*
4. *Because of their color or smell,*
5. *To grow herbs or food plants for consumption*
6. *Other: _____*

A.3 From where do you purchase your plants? *(please check all that apply)*

1. *I don't buy them I get them from extended family or friends,*
2. *From a mashtal (nursery) outside Beirut (which one)*
3. *From a plant shop in Beirut (which one)*
4. *From a landscape company*

A.4 Approximately how much do you spend in a year on plant purchases or on hiring a company/individual to care for your plants?

B. We would like to know about your opinion about greening Ras Beirut

B.1 What could residents and businesses of the neighborhood do to make our part of the city greener?

B.2 What types of assistance would be most helpful to promote greening Beirut?

B.3 Are there governmental, non-governmental or commercial organizations that provide this assistance to you already or that you know of?

C. We would like to know about your interest in our project

C.1 Would you like to know more about: *(please rank in order of importance)*

1. How to care for house and balcony plants
2. How to select plants, to know the names of plants, and their gardening needs
3. Green roofs
4. How to support the environment by selecting native plants
5. How to select plants that do not need much water, can tolerate brackish water and other tough conditions
6. Plants for balconies that are edible or can be used as spices or herbs
7. Organic agriculture
8. Other: specify _____

C.2 If AUB were to share information, what would be the form you are most interested in? *(please rank in order of importance)*

1. Booklets
2. Website including information and updates for Ras Beirut
3. Annual educational exhibition at AUB
4. Occasional workshops at AUB (free or for a fee)
5. Courses through continuing education at AUB (for a fee)
6. Student outreach workers that hold regular visit and show me how to care for my plants (students or others)
7. Participate in the project to learn and become a Gardening/Greening program volunteer
8. Plant sale events

C.3 Would you be interested, as a neighbor, to participate in our project if: as part of an AUB course, students would pay regular visits to you to help you care for your plants? (free or for a fee)

C.4 Would you be interested, as a neighbor, to participate in our project if: as part of an AUB course, students would invite you to campus for gardening education activities? (free or for a fee)

C.5 What role would you want to play if such an activity was initiated? (*please rank in order of importance*)

1. I have time and interest to participate by receiving students participating in the student-neighborhood gardening activities
2. I have time and interest to participate by attending the occasional gardening activities on campus
3. I do not have time but would like to be kept informed of the project activities
4. I do not have time but would like to become a member supporting financially the project activities
5. I have time and interest to help in coordinating and fundraising for this activity
6. I would be willing to participate as follows: _____

C.6 Which months of the year do you live in Ras Beirut?

Contact information

Name:

Gender:

Occupation:

Address:

Tel. #:

E-mail:

6.5. REFERENCES ON COMMUNITY GARDENING

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