



Guide to Species Selection for Amman Public Open Spaces (POS)

Trees and Shrubs

Implemented by

giz Deutsche Gesellschaft
für Internationale
Zusammenarbeit (GIZ) GmbH

In cooperation with

  Greater
Amman
Municipality

Published by the

Deutsche Gesellschaft für
Internationale Zusammenarbeit (GIZ) GmbH

Registered offices

Bonn and Eschborn, Germany
'Improving Living Conditions in Disadvantaged Areas in Amman' (ILCA)
13 Mohamed Baseem Al-Khammash St., Sweifieh
P.O. Box 92 62 38, Amman 11190, Jordan
Phone +962 6 5868090
Fax +962 6 5819863
giz-jordanien@giz.de
<https://www.giz.de/>

As at

July 2021

Printed by

Issam Press
Amman

Design

Yousef Abedrabbo
Zeena Al Jaajaa, Rawan Abdeljalil
Amman

Photo credits

All photographs used in this publication remain the property of the original copyright holder. Photographs should not be reproduced or used in other contexts without written permission from the copyright holder.
Any photos listing a Creative Commons license were sourced through Flickr and may correspond to usernames of individuals, not their actual names.

List of photographers in alphabetical order

aaron_nikon_photography (pp. 77 - CC BY-SA 2.0 License), Ahmad El Oqlah (pp. 64, 106, 66, 67, 69, 70, 71, 74, 75, 76, 79, 80, 83, 85, 86, 87, 88, 89, 90, 92, 95, 96, 97, 99, 102, 103, 107, 108, 109, 116, 117, 118, 120, 122, 124), Alwyn Ladell (pp. 114 - CC BY-NC-ND 2.0 License), amadej2008 (pp. 117 - CC BY-NC-SA 2.0 License), Andreas Rockstein (pp. 82, 91, 123 - CC BY-SA 2.0 License), anro0002 (pp. 78 - CC BY-SA 2.0 License), Babij (pp. 124 - CC BY-SA 2.0 License), Blumenbiene (pp. 64, 78 - CC BY 2.0 License), Bri Weldon (pp. 115, 116 - CC-BY 2.0 License), Carl Lewis (pp. 119 - CC-BY 2.0 License), Cerlin Ng (pp. 87- CC BY-NC-SA 2.0 License), David Illig (pp. 64 - CC BY-NC-SA 2.0 License), David Stanley (pp. 81 - CC-BY 2.0 License), Deema Assaf (pp. 106, 72, 73, 74, 76, 77, 93, 94, 120), douneika (pp. 77, 113 - CC BY-NC-SA 2.0 License), Duy Thuong Ngo (pp. 121 - CC BY-ND 2.0 License), F.D. Richards (pp. 111 - CC BY-SA 2.0 License), Eric Heupel (pp. 115- CC BY-NC 2.0 License), floresyplantas.net (pp. 76 - CC BY-NC-SA 2.0 License), Forest and Kim Star (pp. 68, 85,101, 109, 110, 116, 118 - CC-BY 2.0 License), Franco Folini (pp. 123 - CC BY-SA 2.0 License), jacilluch (pp. 74- CC BY-SA 2.0 License), Jean-Pol GRANDMONT (pp. 80, 98 - CC BY-SA 3.0 License), kaiyanwong223 (pp.68 - CC BY-NC-SA 2.0 License), Leonora Enking (pp. 65, 108 - CC BY-SA 2.0 License), Lotus Johnson (pp. 111 - CC BY-NC 2.0 License), Martin LaBar (pp. 65, 69, 92 - CC BY-NC 2.0 License), Mauro Halpern (pp. 68- CC BY 2.0 License), Megan Hansen (pp. 115 - CC BY-SA 2.0 License), Mick Talbot (pp. 100 - CC-BY 2.0 License), Nicholas Turland (pp. 117- CC BY-NC-ND 2.0 License), olive.titus (pp. 100 - CC PDM 1.0 License), Paul Asman and Jill Lenoble (pp. 87 - CC-BY 2.0 License), Peter Stenzel (pp. 64- CC BY-ND 2.0 License), Photos of the Past (pp. 90 CC BY-NC 2.0 License), Plant Image Library (pp. 71 - CC BY-SA 2.0 License), Radu Chibzii (pp. 78 - CC BY-SA 2.0 License), Rob Thurman (pp. 84 - CC BY 2.0 License), Salomé Bielsa (pp. 69, 97 - CC BY-NC-SA 2.0 License), Tatiana Gerus (pp. 114 - CC BY-SA 2.0 License), Tatters (pp. 85- CC BY 2.0 License), Teresa Grau Ros (pp. 81 -CC BY-SA 2.0 License), Tony Rodd (pp. 70 - CC BY-NC-SA 2.0 License), Versageek (pp. 98 - CC BY-SA 2.0 License), Wendy Cutler (pp. 64 -CC-BY 2.0 License), Wildlife Travel (pp. 71- CC BY-NC 2.0 License), Xiostales (pp. 89 -CC BY-NC-ND 2.0 License), Zeena Al Jaajaa (pp. 75, 81, 84, 86, 91, 110, 111, 112, 113, 119, 121, 125)

Text

Zeena Al Jaajaa, Ahmad El Oqlah

GIZ is responsible for the content of this publication.

The views and the presentation of the material expressed in this publication do not necessarily reflect those of the GIZ, the government of Germany or other participating organizations.

Reproduction of this publication for educational or other non-commercial purposes is authorized without prior written permission from the copyright holder as long as the appropriate credit or citation is provided.

On behalf of the

German Federal Ministry for Economic Cooperation and Development (BMZ)

Guide to Species Selection for Amman Public Open Spaces (POS)

Trees and Shrubs

OVERVIEW

Public open spaces (POS) that are well-studied and planned provide a wide range of environmental, social, and economic benefits. Cities like **Amman**, which are characterised by special climatic conditions, distinct topography, and specific types of urban POS, require a careful selection and placement strategy for plants followed by a well-thought-out maintenance program. Having the factors mentioned above as a base, the planting of trees and shrubs becomes an investment in our cities, environment, and future generations.

In partnership with the Ministry of Environment (MoEnv) and the Greater Amman Municipality (GAM), this guidebook has been prepared on behalf of the 'Improving Living Conditions in disadvantaged areas of Amman' (ILCA) project implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). The guidebook has been formulated for city officials who have an interest in POS design, landscape architects and designers, architects, urban designers, and other practitioners in the region. The guidebook includes information about more than 60 species and their potential use for POS design in Amman, including their morphological characteristics, environmental tolerance, benefits, and aesthetical characteristics. The guidebook provides readers with a set of practical recommendations on how to select the right species for the right location to enhance their benefits for the POS.

This publication is the result of rigorous research, interviews, and an in-depth study and evaluation of international, regional, and local guidelines and case studies. The information laid out in this guidebook is also driven by hands-on and extensive experience in designing public and private spaces in Amman and life-long expertise in botany and native flora in Jordan.

The guidebook introduces criteria for plant selection when designing POS in Amman and a list of profiles of trees and shrubs based on these criteria. The guidebook is user-friendly and interactive, where one can easily match the type of open space with the most suitable species based on their characteristics.

We hope that this guide will encourage discussion about how best to design and develop POS in Amman so that they are sustainable and inclusive. We also hope that this will influence how plants are perceived in cities, in terms of their environmental benefits, aesthetic value, and functions, especially in the context of Amman. This guidebook may introduce nurseries to adaptable species and encourage them to increase the propagation of native species based on the list of profiles made available.

This guidebook is well-researched, practical, and easy-to-use. However, it is always important to seek help and support from specialized professionals in the fields of landscape architecture, horticulture, irrigation, and agriculture. It is also recommended to seek advice from experts before selecting plants that are edible or medicinal.

AUTHORS

Zeena Al Jaajaa is the Manager and Main Designer of the design department at Sabel Landscape Architecture: Urban Design and City Planning. With more than 14 years of experience in designing private and public spaces in Jordan and the Middle East; she has extensive knowledge of holistic and creative design solutions. Zeena holds an MSc in Urban Design and City Planning from University College London (UCL) and a BSc in Landscape Design and Ecosystem Management with a Diploma in Agricultural Engineering from the American University of Beirut (AUB). Her current research focuses on inclusive public spaces, the influence of nature and gardens on child development, healing gardens, and xeriscape design. Zeena is a speaker and mobilizer. She is active in regional and international platforms and has co-founded the International Federation of Landscape Architects Middle East Region (IFLA ME). Zeena is also the co-founder of the Jordanian Association of Landscape Architects (JALA). Zeena co-lead many environmental campaigns in Lebanon and Jordan and gave various lectures on xeriscape gardens and sustainable design in educational institutions in Amman. She has also published articles related to landscape design and ecology in local Jordanian magazines. She often attends and participates as a panel speaker in regional and international conferences for sustainable landscape and urban design.





Dr Ahmad El-Oqlah earned his PhD from Istanbul University where he studied pistachio biodiversity. He started as a Research Officer in the Ministry of Agriculture after which then he joined Yarmouk University (1981- 2017). Dr El-Oqlah is the author of many scientific papers in topics that include biodiversity, flora, vegetation, forest ecology, and desertification. He co-authored the Plant Red List of Jordan published in 2017 and the Plants of Jordan: an Annotated Checklist (2016). In addition to his accomplishments as a researcher, Dr El-Oqlah has earned a reputation as an outstanding classroom teacher with a strong commitment to improving university-level education. He served in different national and international committees working with biodiversity, desertification, and agricultural strategies. Dr El-Oqlah is an active member of several societies, including the Desertification Society of Jordan and the Jordanian Environmental Society. He helped establish several nature reserves in Jordan such as the Dana Reserve. He established several herbaria such as the Department of Biological Sciences Herbarium at Yarmouk University. He served as Director of the Jordan Natural History Museum which he also helped found.

ENDORSEMENT

Just like the rest of the world, Jordan is witnessing the negative impacts of climate change on humans and the environment. This is expected to intensify in the coming years and will create significant pressure on infrastructure, livelihoods, and vulnerable populations in Jordan.

In light of the increase in extreme weather events such as heatwaves, droughts, and floods, the Ministry of Environment (MoEnv) views climate change as one of the critical issues of our time. These times require taking concrete steps in order to intensify our adaptation capabilities to anticipate future impacts. Human impacts on nature and the environment are becoming increasingly evident. This is reaching a point where the threat of placing increased pressure on biological systems can become irreversible. Urban planning and landscape design are important measures in the advancement of people and their cultures. We find that urban planning can provide a healthy, safe and attractive residential environment that is in harmony with nature.

One of the biggest challenges facing planning administrations is balancing the needs of ecosystems and humans. Various human practices contribute to creating an imbalance in the resilience of these systems, and this is often caused by the introduction of invasive species into the system. This can create various harmful effects including the exploitation of natural resources and endangering local biodiversity and native organisms.

At the MoEnv, we are working to enhance our environmental management in line with international agreements. With cities being major culprits for environmental degradation and greenhouse gas emissions, it is important to adhere to the principles of sustainable development and to ensure environmental protection and the sustainability of resources and biodiversity. This guidebook provides recommendations on selecting the right species for the city of Amman in order to realize both the environmental and aesthetic benefits of plants for human well-being and the environment.

Through the partnership and cooperation between the MoEnv, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and the Greater Amman Municipality (GAM) under the ILCA project, we look forward to planning and implementing the rehabilitation of green open spaces in Amman in a way that would achieve wide environmental, social and economic benefits.

His Excellency Mr. Nabil Masarweh

-

Minister of Environment





As a part of the project Improving Living Conditions in disadvantaged areas in Amman (ILCA), a comprehensive guide of plant species selection has been prepared as a collaborative effort between the Greater Amman Municipality, GIZ, and the Ministry of Environment, and as a part of the unique cooperation between the Federal Government of Germany and the Government of Jordan.

The limited open spaces in the city of Amman require that we approach landscape design and greening efforts with deliberation. In light of these circumstances and to account for Jordan's unique climate and water scarcity challenges, special consideration must be given to the plants we select in order to maximize the potential environmental, economic and social benefits of greening.

This guidebook includes comprehensive and scientific information about a large number of trees and shrubs that are suitable for Amman. This includes information on their morphological and aesthetic characteristics, as well as their environmental tolerances and benefits. It also provides practical recommendations on selecting the right species for a diverse array of public open spaces depending on the intended qualities and benefits, taking into consideration the special characteristics of Amman, especially its climate and urban typologies.

We are looking forward to seeing the results of applying these agricultural patterns on the ground, and to continue this fruitful cooperation with all the relevant authorities.

His Excellency Dr. Yousef Shawarbeh

-

Mayor of Amman

GIZ has been working in the Hashemite Kingdom of Jordan on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) for over four decades, solidifying our German-Jordanian development cooperation. Through this close and dedicated partnership for sustainable development significant progress towards Jordan's UN 2030 Agenda and the Paris Agreement objectives have been achieved.

We recognise that cities are at the forefront of achieving sustainability goals, as their large CO₂ emissions make them both a driver of, and a solution to, climate change. Together with the Jordanian Ministry of the Environment and Greater Amman Municipality - we focus on urban planning and layout options that are linked to reducing the city's carbon footprint. One simple yet powerful way of building more sustainable and resilient cities is "greening", the strategic planting of adapted trees and shrubs. Urban greenery helps cool the air and absorb CO₂, thereby combatting urban ills and improving quality of life for Amman's residents.

We hope that this guidebook will localise action and inspire Amman's urban authorities and residents to take informed decisions that help improve the environment; it offers expertise on tree and shrub species selected for their environmental benefits, and approaches to systematic planting. Indeed, appropriate selection of vegetation in urban planning is an inexpensive, simple, yet impactful measure to transform the way we design green spaces, making our cities more resilient and part of the solution.

Mrs. Elisabeth Girrba

-

Country Director GIZ Jordan & Lebanon



ACKNOWLEDGMENTS

We want to express our gratitude towards those who have supported us throughout the preparation of this guidebook.

Thank you to horticulture and agriculture expert Hassan Al Jaajaa who we interviewed to understand the fundamental tolerances and preferences of plant species in Amman. The support and expertise of Wessam Al Khatib were instrumental in putting together the list of plants in Amman. We would also like to thank Mohamad Al Jaajaa for lending us his knowledge about planting and irrigation based on his experience of implementing projects in private and public spaces in Amman. Also, thank you to Katharina Manecke for her support and faith that this guidebook will be an added value to the dialogue surrounding plant selection in Amman, especially when designing POS. Thank you to Rawan Abdeljalil for the many brainstorming sessions that led to creating the graphics and shaping the style of the guidebook. Thank you also to Laila Mushahwar for editing and proofreading the guidebook and making the technical information more accessible to the general reader. Thank you to Ali Attari for reviewing the publication and for providing valuable feedback. Thank you to Dr. Khaled Abu Laila for providing technical input on various plant profiles.

CONTENTS

The guidebook is made up of four main parts. **Part I** emphasizes the benefits of the strategic selection and placement of plants and a general criteria for selecting plants for POS in cities. **Part II** introduces the context of Amman and the criteria for plant selection when designing a POS in the city. **Part III** focuses on basic planting, irrigation, and maintenance principles based on observations of POS in Amman.

Part IV lists a sample of profiles of trees and shrubs based on the criteria for plant selection in Amman with the aid of graphics.

	PART I- INTRODUCTION
15	Benefits of Strategic Planting in Urban POS
17	Criteria of Plant Selection for POS
	<hr/>
	PART II- AMMAN
24	Climate
27	Types of POS
39	Environmental Benefits
42	Aesthetics of POS
	<hr/>
	PART III- BASIC PRINCIPLES
49	Planting
51	Irrigation
52	Maintenance
	<hr/>
	PART IV- PLANT PROFILES
57	Interpreting the Profile
59	Key to Plant Profiles
62	Trees
104	Shrubs
	<hr/>
126	GLOSSARY
128	REFERENCES



PART I

INTRODUCTION

Benefits of Strategic Planting in Urban POS

Being strategic about where certain species are planted benefits cities **environmentally, economically, and socially**. This is essential for the sustainability of cities because it helps combat environmental degradation, such as an increase in the urban heat island effect (UHI), pollution, and soil erosion.

ENVIRONMENTAL

How plants are selected and distributed influences our environment, which, in turn, affects our health, as humans, and the health of other living organisms. Plants **purify the air** and improve its quality by capturing and filtering airborne pollutants and dust and absorbing gaseous pollutants such as carbon dioxide, sulphur dioxide, and nitrous oxide. Plants can turn carbon dioxide into oxygen through photosynthesis. During this process, carbon sequestration occurs where carbon is stored in the plant biomass, such as its trunk, branches, foliage, and roots, and eventually in the soil. Plants **mitigate climate change** by reducing the UHI effect in cities, and by capturing greenhouse gases when they store carbon dioxide in their tissues. Also, plants **minimise stormwater runoff, soil erosion, and potential flash floods** by slowing water down through their canopies, leaf surface, and roots, increasing infiltration, and absorbing it. Plants **filter pollutants** in water and soil and improve their quality. Trees specifically help to **decrease noise pollution** by absorbing and deflecting sound. Trees also help with reducing wind speeds. They provide **shade for POS and buildings** for cooler summers and more **comfortable microclimates**. Apart from their potential to provide a **source of food** for residents, plants also **enhance biodiversity** by providing habitat, shelter, nesting areas, and food for wildlife.

ECONOMIC

The economy as a whole, and individuals benefit from best practices in allocating plants in cities. According to London's Urban Forest, a guide published by the City of London, the property value of land increases by 7-15% when it is planted, and this goes proportionally with the age of the plants. Plants **attract customers** to commercial areas, which **increases commercial activity**. Having plants near or around the workplace **improves the productivity** of employees because nature makes employees happier and healthier. Designing POS with suitable plants **can lower the cost of healthcare, maintenance, and infrastructure** because it improves the health of local populations and helps in creating shade and managing

SOCIAL

Plants that are carefully placed in urban spaces flourish to **create memorable places** for city dwellers. POS can become **meeting points** and **landmarks**, increasing the **sense of place** and help in **forming a local identity**. This is especially the case when the design takes into consideration aesthetics. POS **foster social cohesion** by bringing together people from diverse backgrounds in the same spaces. Successful public spaces are associated with **reduced violence and crime rates** in cities. The impact that some trees have, such as shading, wind breaks, and decreasing high summer temperature make more **comfortable microclimates** and **attract users** to POS. Connecting to nature physically and visually in cities **reduces stress, speeds healing, supports emotional and spiritual wellbeing**, and improves **physical health** by encouraging people to walk, exercise, and join outdoor activities.

Criteria of Plant Selection for POS

HOW TO SELECT PLANTS





- 1 **Climate & Microclimate** 
- 2 **Environmental Benefits** 
- 3 **Types of POS** 
- 4 **Aesthetics** 

Figure 1.2.1: Criteria of Plant Selection

Four general selection criteria are recommended when choosing plants for urban POS; climate and microclimate, POS type, environmental benefits, and aesthetics. **Climate and microclimate** are major factors affecting the survival of the selected plant. It is important to understand the difference between the climate of an area and the microclimate of a distinctive space within this area; both of which are characterised by various sets of atmospheric characteristics such as temperature, humidity, sunshine, winds, etc. The microclimate could refer to a small space of a few square metres or less, or a space of many square kilometres. Features of a landscape, whether they are natural or human-made, can create a specific microclimate for that space.

The term microclimate is related to comfort. Landscape architects, urban designers, and planners aim to create comfortable microclimates when designing urban POS and selecting plants for them. An important factor that affects climate, microclimate, and ecology, including vegetation, **is altitude (height above sea level)**. Altitude levels affect temperature, humidity, rainfall, winds, etc., which is why in this guidebook they are represented in **altitude zones**.

There are many types of **POS in cities**, and plants should support the **purpose** of these types rather than disrupt their **function**. Plants can have **spatial roles** in POS design and **improve microclimates**; they can screen harsh winds, direct friendly breeze, add a visual separation, block intense sun rays, direct pedestrian movement, define spaces, etc. Understanding the different characteristics of each type of POS when selecting plants increases the use of the space and reduces its maintenance costs. Examples of types of POS in cities are district parks and plazas, neighbourhood parks, streets, including sidewalks, cul-de-sacs, pocket parks, and urban forests.

Plants can combat and alleviate the negative impacts of climate change and urban sprawl through their many **environmental benefits**. It is vital to understand the context of the space before selecting the plants. Environmental benefits, such as filtering pollutants, holding soil, reducing the UHI effect, and introducing shelter for wildlife, are maximised when **placing the right type of tree in the suitable POS type**. Environmental benefits are related to the **physical features of plants**, such as leaf shape, crown form (top part of the tree that grows from the main trunk), classification of evergreen or deciduous, and root system. Selecting plants with specific environmental benefits will bring more balance to our ecosystems and allow for more liveable urban microclimates.

To create pleasant views and increase the **aesthetic** value of POS, the selection of plants and their combinations should depend on the **final overall appearance**. Plants have **physical features**, such as colour, texture, size, form, leaf shape, etc. Paying attention to these features helps us set the **atmosphere** that we want. We can set a formal or an informal atmosphere, create a soft or a coarse look, provide a calming or exciting atmosphere, and introduce a full **visual screen** or a semi-transparent one. Plants with specific aesthetical features can act as a backdrop for scenery in the urban environment, and a single powerful plant statement (specimen plant) can **highlight a specific space or landmark** in an urban setting. Understanding the behaviour of growth in plants will also help you decide how to combine plants with architectural elements in the urban space. Some plants experience **seasonal changes** that provide **distinctive** and **pleasant views** in POS, such as the change of leaf colour during autumn, bare dramatic branches during winter, and the blooming of flowers in spring.



PART III

AMMAN

The **Greater Amman Municipality (GAM)** also known as **Amman** lies in the north-west of the country and is the administrative capital of **Amman Governorate**. According to the Department of Statistics, at the end of 2019, approximately 3.8 million out of a total of 9,523 of Jordan's population reside in the 22 districts of Amman, making it the most populated city in Jordan. The four general selection criteria for plants in POS, which are climate and microclimate, type of POS, environmental benefits, and aesthetics, are elaborated on in relation to the **context of Amman**, which will guide the reader on how to select trees and shrubs for POS in Amman.

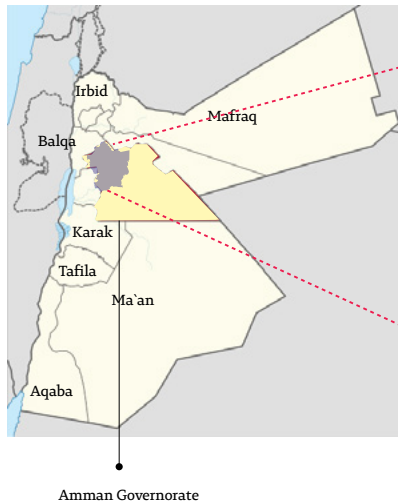


Figure 2.1.1: Hashemite Kingdom of Jordan

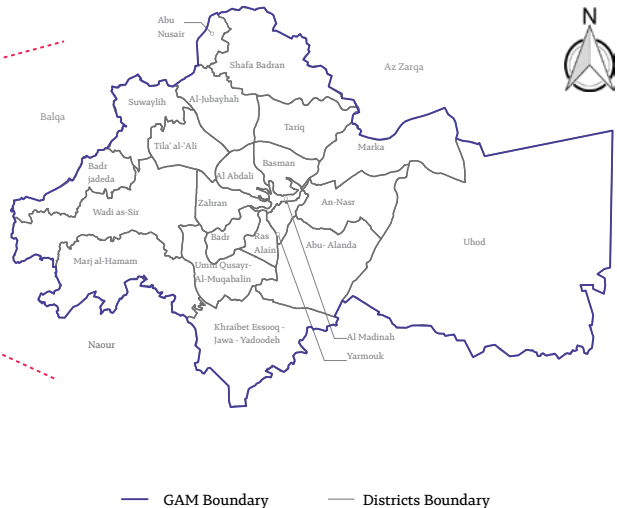


Figure 2.1.2: Amman (GAM) Districts

Climate

AMMAN ALTITUDE ZONES

According to Köppen climate classification, Amman is considered a semi-arid area with various **climates and altitudes**. The city is made up of **19 hills and several valleys**. In some northern and western districts with an average altitude of 1000 m, snow could fall while it will be raining in other districts, such as Al Madina (city centre), which has an altitude of 776 m. **Altitude is an important factor when selecting plants for POS in cities because each plant thrives in certain altitudes**. The map below shows the altitude zones of Amman by district. Refer to Part IV: Plant Profiles to find the suitable altitude for each plant on the list.

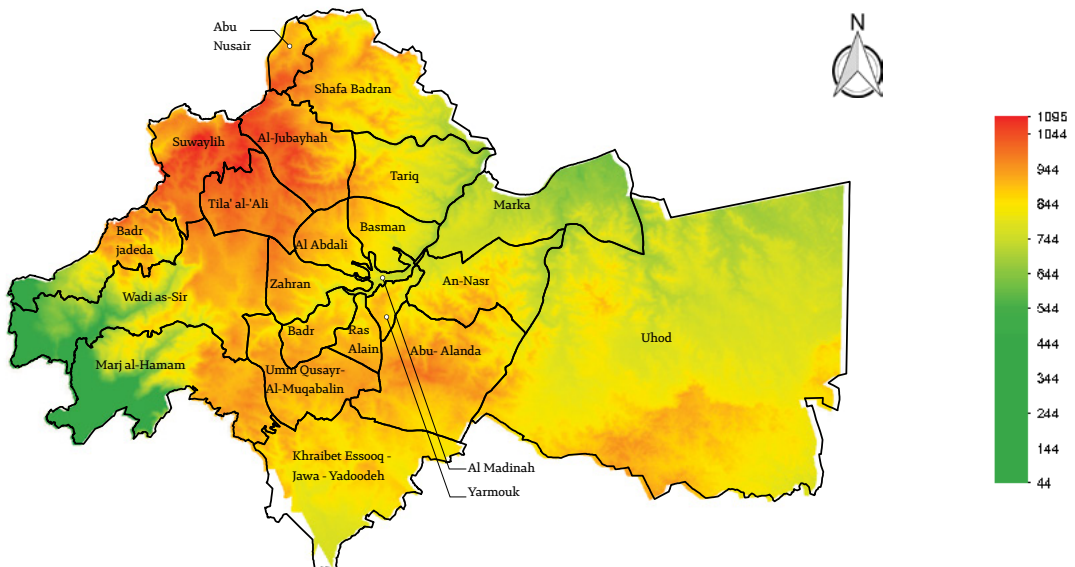


Figure 2.1.3: Altitude Zones of Amman

COMFORTABLE MICROCLIMATE

Summers are hot and breezy with possible one or two heatwaves. Springs are short and warm while in winters, there is occasional snow-fall once or twice a year and thick fog. Intense solar radiation (300 days of sunshine) and continuous wind and breeze coming from the north-west affects the use of public spaces during each season. North-west winds carry cold winds and dust in various seasons. **Blocking these winds** can create a better microclimate for POS in autumn and winter and **filter the dust** and **absorb any pollutants**, especially in areas where there is traffic. Trees that **provide shade** will make POS more comfortable during the day by sheltering users from the sun and lowering the temperature of the ground. Considering the **classification of plants**, their **morphological characteristics**, and their **environmental benefits** when designing the POS can improve the microclimate of that space. Depending on **crown density**, **evergreen trees** with broad leaves can **block sun rays** while deciduous trees allow users to enjoy the **winter sun**. Taking into consideration their mature sizes, when columnar, pyramidal, and oval-shaped crown forms of trees or shrubs are placed in the right location in POS, they can **screen cold winds in the winter**.

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

Crown Form (Shrubs)



Rounded



Oval



Pyramidal



Irregular

Crown Density



Dense



Moderate



Light

CLASSIFICATION AND ALTITUDE

Evergreen

Deciduous

Altitude
Zone

ENVIRONMENTAL BENEFITS



Wind Screen



Air Purification

ORNAMENTAL QUALITIES

Leaf Shape



Broad



Heart



Lobed



Narrow



Needle

Figure 2.1.4: Features Affecting Microclimate

TOLERANCES AND PREFERENCES OF PLANTS IN AMMAN

Amman is located in the third most water-scarce country in the world and is characterised by low precipitation, which means that the plants you select must be able to **withstand drought**. The drought period can last 8 months, from end of March to November. Soil in Amman is **calcareous**, and water has a **high pH level** because they both contain CaCO_3 . This means that we must avoid using plants that require acidic and sandy soil in POS, and the preferred **pH of soil** should be naturally **high**. Excessive pumping of groundwater over years of drought makes irrigation water slightly saline since groundwater reservoirs might not be able to replenish with freshwater in time. In that case, trees and shrubs that **withstand salinity** in soil and water are best to use. Amman's humidity is low, which means that you must select plants that tolerate **low humidity**.

ENVIRONMENTAL TOLERANCE

Salinity Tolerance



Tolerant



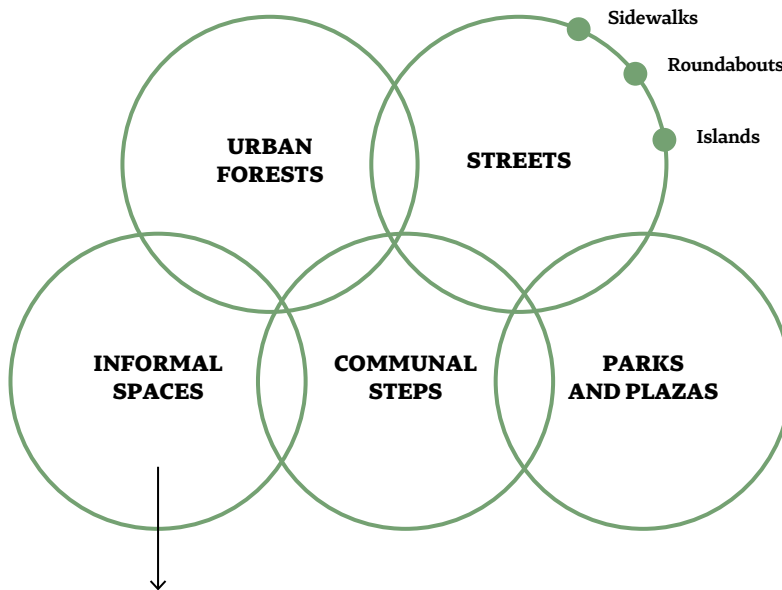
Intolerant

Figure 2.1.5: Tolerance to Salinity

Types of POS

POS in Amman can be divided into five main categories; **streets**, public parks and plazas, **communal steps**, urban forests, and informal spaces (**harat** in Arabic). These types can be found in commercial areas or residential neighbourhoods. The main human activity on streets (side-walks, roundabouts, islands) and communal steps is walking; however, some accessible **roundabouts** in some areas of Amman are treated as parks. Urban forests, public parks, and plazas are spaces for people to linger. **Urban forests** are spaces with woody trees where people hike and have picnics with family and friends. **Public parks** can include playgrounds, seating spaces, paths, outdoor amphitheatres, functional and cultural buildings, and sports fields. **Plazas and squares** are

large or small flat multipurpose open spaces found between buildings, streets, or parks, and might include simple seating, paved areas, monuments, and shade trees. **Informal spaces** are often found in residential areas and are interpreted by the community as gathering spaces. Examples of informal spaces are street dead-ends, house border wall edges, empty land, small pockets, etc.



In our guidebook, informal spaces are excluded because they are continuously changing and being appropriated by the community, with no spatial limits.

Figure 2.2.1: Types of POS in Amman

ACCESSIBILITY AND MOVEMENT

Movement patterns in urban POS require trees with **crown forms** that are round or spreading to provide as much **shade** as possible for pedestrians to be **able to walk** comfortably and withstand the heat of Amman. Drooping and weeping trees with weak branches should be avoided because they may cause facial or eye injuries. The trunks of trees should

be **straight, without branches**, and at a **standard height** of 2-2.5 m before the crown of the tree begins. Avoid using shrubs on sidewalks because they disrupt movement and discourage people from walking in the city. Shrubs, however, can be used together with shade trees in POS such as parks where there is more space, less foot traffic, and people are sitting rather than rushing or passing by. Shrubs with low spreading crown forms are recommended for plazas and squares because they do not disrupt accessibility and movement or create visual screens. Consider **visual accessibility for drivers** when choosing trees and shrubs for roundabouts and street islands. The height of the selected shrub should be deliberate as well as the trunk height of trees for drivers to be able to see passed them, especially at intersections. Constantly pruning shrubs and hedges on street islands and roundabouts to keep them from growing too high is possible. However, this is not recommended because it is too costly and time-consuming.

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

Crown Form (Shrubs)



Rounded



Oval



Pyramidal



Irregular

Figure 2.2.2: Features Affecting Accessibility and Movement


Tree

Crown
Trunk



(2-2.5 m)

Shrub



Height less than 1m for clear
visual accessibility for drivers

Figure 2.2.3: Recommended for Sidewalks, Roundabouts, and Islands

SPACE DEFINITION

Trees and shrubs can help **define a space**. They can act as outdoor walls, fences, screens, covers or shelters, and borders for pathways. Shrubs can outline the space, **separate functions**, and hedges, which are shrubs that are trimmed to look like fences or barriers, can help **direct movement** in a park. Thorny hedges, for example, can signal **'no entry' to spaces**. Placing trees with columnar crown forms, shrubs with pyramidal forms, and hedges with the right height, distribution, and in the right locations in parks will screen wind, noise, or an undesirable view. Whether the view is slightly or fully blocked depends on the density of the crown form, i.e. the density of the leaves. It is best to select evergreen trees and shrubs to block a certain view throughout the year.

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

Crown Form (Shrubs)



Rounded



Oval



Pyramidal



Irregular

Crown Density



Dense



Moderate



Light

CLASSIFICATION AND ALTITUDE

Evergreen

Deciduous

ENVIRONMENTAL BENEFITS



Wind Screen

SPECIAL FEATURES



Suitable for Hedge

ISSUES TO BE AWARE OF



Thorny

Figure 2.2.4: Features that Help with Space Definition

SAFETY

We must consider **safety** when selecting trees and shrubs for urban POS. It is important to avoid plants that are **poisonous, thorny** or **spiky**, especially when people have access to them. Brushing or falling into these types of shrubs can be dangerous and very painful. Having trees that **litter**, such as ones with pods, cones, and fruits is not a good idea for spaces that have a lot of movement on them, such as sidewalks and communal steps because they will need constant cleaning and maintenance and because slippery debris disrupt movement. Slippery debris are especially dangerous to children, people with special needs, and the elderly because they might trip or be injured. Paved or tiled areas in urban POS should not have trees with **invasive or shallow roots** (surface roots) so as not to break the pavement and ruin underground infrastructure. However, trees and shrubs with invasive or shallow roots can be introduced to urban forests and areas in parks with no tiling. **Steep slopes**, especially those found on the sides of communal steps require selecting trees and shrubs with invasive or shallow roots to hold soil and prevent soil erosion and water runoff. Avoid using plants that are **prone to diseases** or attract insects and pests, especially near seating areas. Also, avoid plants with invasive potential that could threaten the survival of other plants in the same space. **Invasive potential** in plants may be the result of easy seed dispersal, not only an aggressive root system.



Thorny
Littering

Invasive Potential
Spiky

Figure 2.2.5: Features that Support Safety

TOLERANCES

Tolerance here means the plant's ability to withstand or recover from certain natural or human-made conditions. It is important to consider the tolerances of plants when selecting them for POS in cities because how each plant adjusts in these conditions determines whether it will thrive in that space. Urban POS are often found near structures that form shade. Buildings can shade sidewalks, communal steps, plazas, and parks. Trees in parks can also make shade for smaller trees or shrubs. It is vital to choose trees and shrubs that are **shade-tolerant** when this is the case. Trees selected for POS that are near polluted industrial areas and heavy traffic should be **tolerant to pollution**. Aim for **long** and **medium-age** lifetime for trees and shrubs in POS to reduce the need to uproot and replace plants. It is a good idea to select **native trees** for urban forests because they can thrive with minimal maintenance, are inherently adapted to the current environmental conditions of semi-arid Jordan, and have a long lifetime. It is also good practice to select shade-tolerant **native shrubs** to place under native trees in urban forests. It is preferred to choose plants that are **fast-growing** in urban POS that are crowded because they take less time to grow into their mature size and are less prone to vandalism by slow-growing plants.

CLASSIFICATION AND ALTITUDE

Native

Adaptive

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Tolerant



Moderately Tolerant



Intolerant

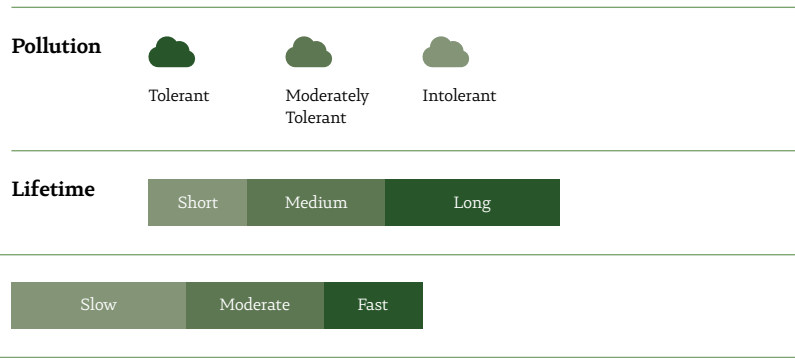


Figure 2.2.6: Types of Tolerances to Consider

SPECIAL FEATURES

Some trees and shrubs have **special features**, such as having colourful flowers or being edible, medicinal, or fragrant. These features can **support the theme or function** of the POS, such as healing and sensory gardens, playgrounds, etc. However, be aware that some trees and shrubs have unpleasant odours during the flowering season.



Figure 2.2.7: Special Features That Support Theme or Function

The summary table below lists the recommended characteristics of trees and shrubs for each type of POS mentioned in this section.

POS	TREES	SHRUBS
STREETSCAPE Sidewalks	<p>Use round or spreading crown form, shade trees with a clear and upright trunk of 2-2.5 m.</p> <p>Use fast-growing trees.</p> <p>Refrain from invasive and shallow roots.</p> <p>Must not litter slippery fruits, pods, and cones.</p> <p>Do not use drooping and weak branches.</p> <p>Use species tolerant of air pollution.</p> <p>Aim for species with long and medium-age lifetime.</p> <p>Be aware of hardpans which affect the health of the roots.</p>	No shrubs on sidewalks.
Islands	<p>Consider trunk height for visual access of drivers.</p> <p>Use fast-growing trees.</p> <p>Use trees tolerant of air pollution.</p> <p>Aim for species with long and medium-age lifetime.</p> <p>Be aware of hardpans which affect the health of the roots.</p>	Consider shrub height for visual access of drivers.

POS

TREES

SHRUBS

Roundabouts

Consider trunk height for visual access of drivers.

Consider shrub height for visual access of drivers.

Use fast-growing trees.

No use of poisonous and thorny species in accessible roundabouts.

Use species tolerant of air pollution.

Use shade trees with a clear upright trunk of 2-2.5 m in accessible roundabouts.

Accessible roundabouts with tiling or pavement should not have trees with invasive and shallow roots.

Accessible roundabouts should have species that do not litter slippery cones, seed pods, and fruits.

Accessible roundabouts should not have drooping and weak branches.

Aim for species with long and medium-age lifetime.

Be aware of hardpans and edges which affect the health of the roots.

Parks

Use round or spreading crown form, shade trees with a clear and upright trunk of 2-2.5 m on pathways.

Refrain from plants prone to diseases, especially near seating spaces.

Do not use trees with drooping or weak branches on pathways.

Do not use harmful invasive plants near other sensitive plants.

Use shade-tolerant species when spaces have shade.

No use of species with thorns unless wanting to block access or close off an area.

POS

TREES

SHRUBS

Do not use invasive and shallow roots in tiled areas.

Consider edible, medicinal, or fragrant species for special purpose parks.

Use evergreen, pyramidal crown form trees for wind, visual, and noise screening.

Refrain from plants prone to diseases, especially near seating spaces.

Do not use harmful invasive plants near other sensitive plants.

No use of poisonous species.

Use species that are tolerant of air pollution near industrial areas.

Aim for species with long and medium-age lifetime.

Be aware of hardpans and edges which affect the health of the roots.

Use species that are tolerant of air pollution near industrial areas.

Use shrubs and hedges to outline space and separate functions.

Use evergreen, pyramidal crown form shrubs and hedges for wind, visual, and noise screening.

Refrain from using poisonous and thorny shrubs in playgrounds.

Plazas and Squares

Use round or spreading crown forms, shade trees with clear and upright trunks of 2-2.5 m.

Use fast-growing trees.

Refrain from invasive and shallow roots.

Species must not litter fruits, leaves, pods, and cones.

Do not use drooping and weak branches.

Use shrubs with low spreading form.

POS

TREES

SHRUBS

Urban Forests

Use native trees with long life spans to minimise maintenance.

No restriction on crown form.

No restriction on use of invasive and shallow roots.

Do not use harmful invasive plants near other sensitive plants.

Use native shrub species.

Use shade-tolerant species.

Do not use harmful invasive plants near other sensitive plants.

Communal Stairs

Use round or spreading crown forms, shade trees with clear and upright trunks of 2-2.5 m.

Use shade-tolerant species when there is shade from buildings.

Refrain from invasive roots and shallow roots in stair planters as they could break through the steps.

Use invasive and shallow roots on steep slopes around stairs to hold the soil.

Refrain from plants prone to diseases.

Aim for species with long and medium-age lifetime.

Be aware of hardpans and edges which affect the health of the roots.

Avoid planting shrubs on steps.

Use invasive and shallow roots on natural steep slopes around steps to hold the soil.

Figure 2.2.8: Recommended Characteristics of Trees and Shrubs for POS of Amman

Environmental Benefits

ENVIRONMENTAL BENEFITS FOR AMMAN






- 1 **Combat Soil Erosion** 
- 2 **Air Purification** 
- 3 **Enhance Local Biodiversity** 
- 4 **Wind Screen** 
- 5 **Lowers the UHI effect** 

Figure 2.3.1: Environmental Benefits in Amman

Jordan is scarce in water resources, but flash floods have occurred over the last three years in the winter season in Amman. An increase in areas of greenery and vegetation can mitigate flooding. **Combating soil erosion** is very relevant to Amman's hilly nature, where there are many steep slopes around communal steps. Soil erosion causes loss of nutrients from the eroded topsoil. Soil erosion also leads to the pollution of waterways because the soil carries pesticides and fertilizers. Soil erosion may also endanger lives because of possible mud and landslides. Placing trees and shrubs that have **invasive, shallow, and fibrous roots** is required to **stabilize slopes** by **binding** loose soil and **improving drainage**. Tree **crowns** and shrubs with dense round **forms** can disrupt the impact of heavy rain from washing away the soil. The **transpiration process** in plants, in which water is absorbed from the soil through the roots and evaporates through the pores of leaves, prevents soil from getting too saturated and leading to water runoff.

An increase in the population of Amman in the last decade means that there are more cars and more pollution. Trees and shrubs that **withstand pollution** are more likely to **purify the air** from pollutants so place these species in POS near industrial areas and traffic. **Plants absorb CO₂ and release oxygen** into the air. Trees and shrubs **disperse dust** by holding it on their leaves and branches. Trees with large spreading, round, and weeping crown forms **alleviate the UHI Effect** and give a cooling effect in cities such as Amman. Placing deciduous trees on tiled areas can **block the sun** in the summer and **allow the sun to reach the POS in the winter**. Evergreen trees and shrubs with pyramidal and oval crown forms help **screen cold winds** in the POS of Amman, protecting other plants that are sensitive to cold winds and encouraging people to continue using the spaces in fall and winter.

It is recommended to use both **native** and specific types of **adaptable** species when designing POS to **enhance biodiversity**. Trees and shrubs that are native to Amman provide a **nurturing habitat** for native fauna and support the **restoration of local ecosystems**. Planting specific types of adaptable species of trees and shrubs, on the other hand, may **attract wildlife** such as birds or butterflies. Adaptable **fruit-bearing** trees and shrubs, for example, attract birds, and nectar-bearing flowers are appealing to hummingbirds and butterflies.

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

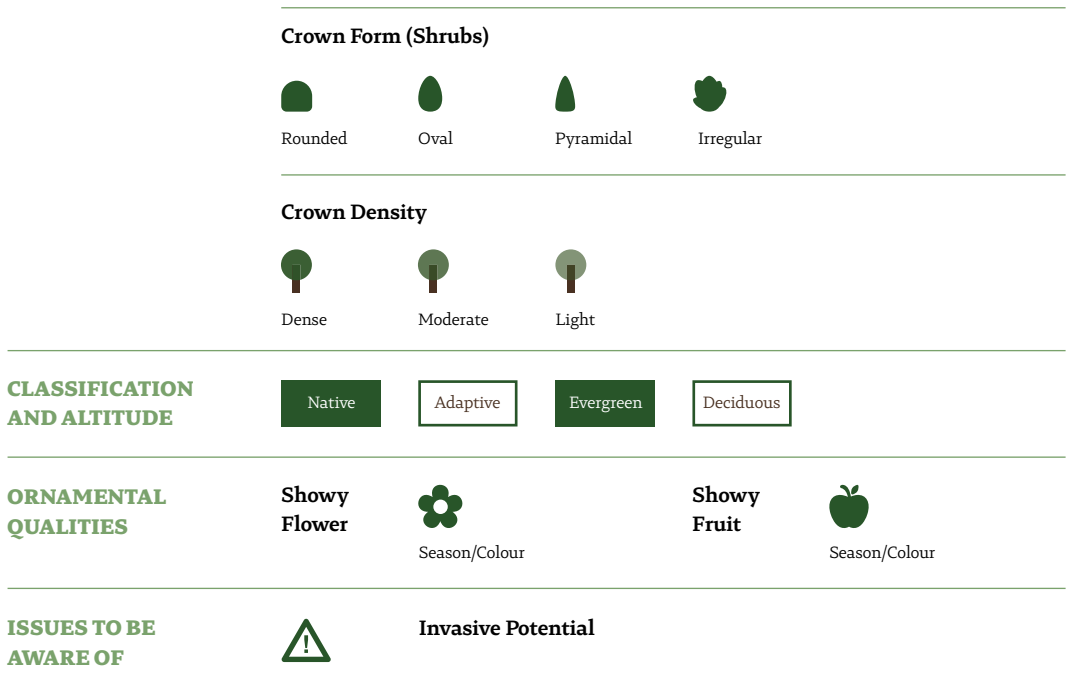


Figure 2.3.2: Characteristics that Benefit the Environment in Amman

Aesthetics of POS

People respond positively to **attractive** and **well-maintained** POS in the city. Creating a **theme** and an **identity** for a POS can make people **attached** to that space and want to preserve and protect it. Applying a number of **visual principles** can create memorable POS in Amman for communities and visitors (see figure 2.3.3). Paying attention to blooming colour/shape, texture of leaves, crown form, density of crown form, and mature size of trees and shrubs helps in creating an appealing setting for all types of POS in Amman. Creating **visual identities** for sidewalks by using species with special aesthetic features encourages people to walk in the city. Some **specimens** can provide a historical connection to the surrounding community's identity and culture as **visual focal points** in parks and roundabouts.

Understanding the **form and mature size** of plants helps in creating the intended look without the need for constant pruning and shaping. However, some shrubs can be adapted into small trees or climbers/vines by continuously pruning and adjusting them. **Colour** is not only related to flowers; it is related to fruits, leaves across the different seasons, trunks, branches, and pods. Consider using flowers with **different blooming seasons** to keep the POS interesting throughout the year. Pay attention to the density, shape, and **texture** of foliage to set the tone and level of formality, softness, or neutrality for the space. Some shapes of leaves are coarse in texture, while others are fine. Avoid using too many types of plants, especially when they do not fit together, because the appearance of the landscape will be too busy and not pleasing. Selecting the right combination of plants will strengthen the connection between the space and its users in Amman and in defining those spaces and enhancing their physical, cultural, and social identities.

AESTHETICS FOR AMMAN

1 COLOUR

SPECIAL FEATURES



Interesting Bloom Colour/Shape



Unusual Foliage

ORNAMENTAL QUALITIES



Showy Flower



Showy Fruit

2 FORM

MORPHOLOGICAL CHARACTERISTICS

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

Crown Form (Shrubs)



Rounded



Oval



Pyramidal



Irregular

SPECIAL FEATURES



Can be Adapted into a Tree



Can be Adapted into a Climber/Vine



Suitable for Hedge

CLASSIFICATION AND ALTITUDE

Evergreen

Deciduous

3 TEXTURE

MORPHOLOGICAL CHARACTERISTICS

Crown Density



Dense



Moderate



Light

Leaf Shape



Broad



Heart



Lobed



Narrow



Needle

SPECIAL FEATURES



Interesting Bloom
Colour/Shape



Carries Pods/
Cones

4 SIZE

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Figure 2.3.3: Characteristics that Affect Aesthetics





PART III

BASIC PRINCIPLES

When pursuing successful and sustainable POS, a number of principles are recommended in the context of Amman, and they should be applied with support or supervision from experienced professionals.

Planting

CHOICE OF NURSERY TREES/SHRUBS

Shape, health, and proportion of plant to container size are the three main factors to consider. Look for evenly-spaced branches with proportionate angles for trees and shrubs. Select strong, upright trunks for trees and a group of upright stems for shrubs. Do not select plants with weeds, pests, or markings. Balled and burlapped trees or shrubs should feel solid, not broken and dry. Avoid selecting rootbound and potbound roots because they hinder the absorption of nutrients and water.

PLANT SPACING

There should be proper spacing between trees and shrubs, and this should depend on the mature size of the plants. It is best to plant trees one-half their spread from each other or other structures to make maintenance easier and reduce extra costs. Placing plants too close to each other will cause competition for sunlight, soil nutrients, water, and air, and encourages diseases. Meditated spacing between plants can also make sure that the plants are growing correctly and playing their intended roles as part of the POS.

ROOT-BALL AND PLANT PIT

For trees and shrubs to grow into their mature size, there needs to be a planting hole with a minimum of 150 cm diameter x 150 cm depth for trees and a minimum of 60 cm diameter x 60 cm depth for shrubs. The planting hole should contain loose soil filtered from rocks, debris, and no hardpan or underground passing utilities. Backfill these holes with soil to reach a pit 2-3 times wider than the size of the root ball of the plant, but the exact height of it. Remove the container by tapping lightly or cutting the fabric from balled and burlapped plants to protect the soil around the roots. Place the plant in the middle of the hole and hold it straight and vertical at the trunk flare. Put back the soil, compact lightly, and water generously to eliminate air pockets which otherwise will dry out the roots. After planting, form a water-holding basin around the hole. When planting on a slope, form a berm on the

downhill side of the plant instead. Adding a mulch layer of 5-12 cm, in a 90 cm diameter around the trunk will help in holding moisture, moderating soil temperature extremes, and reducing grass and weed competition.

SOIL MIX

Test the soil at the site to decide whether or not to import soil for the POS. In Amman, aim for soil with a pH level of 7-7.8 for proper absorption of nutrients, and for the soil to be 30% sand for aeration purposes. Organic matter, such as organic amendments, peat moss, compost, leaf mould, and animal manure, should make up 10-15% of the soil. Organic matter helps in improving water holding capacity and provides nutrients and habitat for beneficial organisms in the soil. Make sure the imported soil or backfilling soil is free of roots, clods and stones larger than 2.5 cm, noxious weeds sticks, and other litter. Soil should not be infested with plant disease organisms, nematodes or other undesirable insects and insect eggs. The soil should also be free from chemicals that are harmful to plant and animal life.

PLANT PROTECTION

Consider the expected foot traffic around the plant when designing the space to make sure that the plant is protected. Risks to plants in the context of Amman include grazing, vandalism, and unintentional damages that cause soil compaction. When anticipating vandalism or grazing in a space, surround the plants with a fence. Fences can be removed once the trunk height reaches 2 m. Damages occur on narrow sidewalks when passersby walk too close to the pit or tree trunk. Install tree grates as an extension to the available walking area. Grates should be permeable for air, sunlight, and water, and should be cleaned periodically.

STAKING AND GUYING

Staking and guying, which means attaching stick(s) and/or cables to support the trunk of the tree, should only be considered in windy areas, and when the tree size is too small and cannot withstand the

wind. Do not install the sticks or cables at the root ball. The material used should be wide, smooth, non-abrasive, and flexible. Stakes should not be installed too tightly that there is no trunk movement at all as it will result in a smaller trunk, insufficient taper, and a less sturdy root system. Keep the staking and guying until the tree is well established, usually until the next growing season.

Irrigation

IRRIGATION SYSTEMS

Jordan goes through periods of drought and has limited water resources. Designing and implementing irrigation systems in POS of Amman is essential to cut down on water, cost, and effort compared to manual watering. Irrigation systems are also crucial for the proper and uniform growth of the plants and can save a minimum of 50% of water versus manual watering. Water can be delivered to the root zone of the plants at certain times of the day or night, reducing the chance of runoff or evaporation.

BEWARE OF VANDALISM

In areas where vandalism is expected, emitters and PE (polyethylene) pipes should not be visible. This can be attained by completely covering them with mulch, or a specific type of sub-surface emitter should be used. This will also limit the risk of stray animals damaging the pipes to find water to drink.

DESIGN FOR MATURE SIZE

When designing the irrigation network, the mature size of the plant should determine how much water is needed. This will save the costs of replacing an installed network when water needs increase. Lower pressure and flow that are required at the initial stages of the plant's life can be attained by pressure regulators and solenoid valves (electromechanically operated valves) with flow control.

Maintenance

Maintenance is mandatory for a healthy and aesthetically pleasing landscape. While plant species chosen should be low-maintenance and drought-tolerant, regular maintenance at different intensities is still required. Apart from that, irrigation systems should be checked every year or whenever it is needed.

SAFE PESTICIDES AND INSECTICIDES

Carry out pest control only when it is deemed necessary for the healthy continuity of the plant. If a plant is infected, mechanical treatments and organic pesticides and insecticides should be considered before moving forward with chemical ones. All chemicals used should be safe for use and approved by the Ministry of Agriculture.

PRUNING OPERATION

All trees and shrubs shall be pruned to remove dead or damaged branches, maintain the natural form of the plant, and create the effect intended by the landscape architect or designer. Except for desired hedges, or to conform to design intent, all pruning and thinning of plants shall be done to retain their natural shapes. Pruning reduces the risk of storm damage on people or structures. Pruning also increases the penetration of sunlight and proper air circulation. Look for rubbing, closed spaced branches, sucker growths, and branch stubs, especially on sidewalks. Refrain from pruning newly planted shrubs before they get established as it interferes with their ability to withstand the transplant shock.

FERTILIZERS

As in the case of pesticides and insecticides, fertilizers should be applied when deemed necessary. Organic fertilizers made from mined rock minerals and natural plant and animal materials should be given priority over chemical fertilizers, given that all procedures and materials should abide by the rules and regulations of the Ministry of Agriculture. Note that soil tests are recommended before the application of any additives to evaluate the available elements in the soil and make sure the salinity level is not too high for the healthy growth of plants.

BASIC PRINCIPLES

ZERO WASTE POLICY

A sustainable approach should always be at the centre of maintenance operations. The debris produced from plants is mainly organic and can be extremely useful. Pruned or fallen leaves and thin stems may be composted in a central station, producing compost juice and organic matter that can be reapplied to different planting beds which lowers the cost of fertilizers and needed additives. Sucker growths that are rooted can be dug and replanted elsewhere. Big branches and dead trees may be cut and used as timber.



PART IV

PLANT PROFILES

Interpreting The Profile

The plant profiles in this section contain a list of **tree** and **shrub** species that are suitable for **POS in Amman**. The species have been chosen based on the four general selection criteria in Amman (see part II). Each profile includes the most suitable types of POS based on the morphological characteristics, classification, growth rate, special features, ornamental qualities, and environmental benefits of each species. The profile also includes characteristics of the species to be aware of before placing them in POS (elaborated in part II). The most suitable altitudinal zones for each plant are also recommended in each profile. Keep in mind that native plants in the list have been photographed in the wild. The plants will have a different appearance when they are in a nursery, i.e. trees will have clear trunks and shrubs will have well-kept crown forms.

TYPES OF POS

The type of POS that suits the species.

CLASSIFICATION AND ALTITUDE

Classification for the species, such as native or adaptable, evergreen or deciduous, and the preferred altitude zone for the species.

MORPHOLOGICAL CHARACTERISTICS

The various characteristics of the species, such as mature size, crown form, and crown density.

GROWTH RATE

The growth rate of the species so that an informed decision can be made about where to place it. For example, it is best to select fast-growing plants for crowded areas and slow-growing plants for urban forests.

NATURAL HABITAT

The origin of the species, whether it is native or adaptable.

ENVIRONMENTAL TOLERANCE

The tolerances of the species, such as being tolerant to shade, pollution, and salinity, and its expected lifetime depending on where it is placed in the POS.

ORNAMENTAL QUALITIES

Specific characteristics that the species may have in certain seasons, such as bloom colour, distinct fruiting, and leaf shape.

ENVIRONMENTAL BENEFITS

Environmental benefits of the plant, such as air purification, wind screening, enhancing biodiversity, combating soil erosion, and lowering the UHI effect.

SPECIAL FEATURES

The special features of the species, such as colour, unusual colour and texture of foliage, or if the plant carries pods or cones (the latter may be dangerous in areas with heavy circulation). Some species may be fragrant, edible, or medicinal. This category will also indicate which shrubs are most suitable to be turned into hedges and which ones can be adapted into trees or climbers/vines.

ISSUES TO BE AWARE OF

The characteristics of trees and shrubs that can jeopardize safety in a POS (unless they are placed in that space for a specific reason). Species with thorns, for example, can be used to block entry to a space. Species with invasive potential are only acceptable in vast green areas and steep slopes. Species which litter are not preferred on paved circulation areas.

DISCLAIMER:

The plant species included are meant for public open spaces within urbanized areas of Greater Amman. Planting these species on the edges of the city could lead to unwanted outcomes such as competition with local native plant species. It is always advised to consult an expert when making decisions about which species to plant.

Key To Plant Profiles

POS Types

Sidewalks	Non-Accessible Roundabouts	Accessible Roundabouts	Streets Islands	Urban Forests
Parks	Squares and Plazas	Communal Steps		

CLASSIFICATION AND ALTITUDE

Native	Adaptive	Evergreen	Deciduous	Altitude Zone
--------	----------	-----------	-----------	---------------

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Height (H)
Spread (S)

Crown Form (Trees)



Rounded



Spreading



Columnar



Oval



Pyramidal



Weeping

Crown Form (Shrubs)



Rounded



Oval



Pyramidal



Irregular

Crown Density



Dense



Moderate



Light

GROWTH RATE

Slow	Moderate	Fast
less than 30.5cm/year	from 30.5 to 61cm/year	more than 61cm/year

TREES

NATURAL HABITAT



ENVIRONMENTAL TOLERANCE

Shade Tolerance



Tolerant



Moderately Tolerant



Intolerant

Pollution



Tolerant



Moderately Tolerant



Intolerant

Salinity Tolerance



Tolerant



Intolerant

Lifetime



25-50 yrs

From 50-100 yrs

More than 100 yrs

ORNAMENTAL QUALITIES

Showy Flower



Season Colour

Showy Fruit



Season Colour

Leaf Shape



Broad



Heart



Lobed



Narrow



Needle

ENVIRONMENTAL BENEFITS



Wind Screen



Air Purification



Enhance Biodiversity



Combat Soil Erosion



Lowers the UHI Effect

**SPECIAL
FEATURES**



Medicinal



Unusual
Foliage



Fragrant



Edible



Can be
Adapted
into a Tree



Interesting
Bloom
Colour/Shape



Carries
Pods/Cones



Suitable for
Hedge



Can be
Adapted into a
Climber/Vine

**ISSUES TO BE
AWARE OF**



Thorny
Littering

Invasive Potential
Spiky

TREES

SCIENTIFIC NAME:

Acer
negundo

COMMON NAME:

Box Elder

ARABIC NAME:

آسر، قيقب مانيتوبا



RECOMMENDED
POS TYPE

Parks
Non-Accessible Roundabouts

CLASSIFICATION
AND ALTITUDE

Adaptive

Deciduous

Altitude
Zone 500-1000

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 20 m
S: 6 m

Crown
Form
(Trees)



Rounded

Crown
Density



Dense

GROWTH RATE

Moderate

LIFETIME

Short

NATURAL
HABITAT



North America

ISSUES TO BE
AWARE OF



Littering
Invasive Potential

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Tolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Red Green

Leaf
Shape



Lobed

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion



Lowers the
UHI Effect

SPECIAL
FEATURES



Medicinal



Edible



Carries
Pods/Cones



Unusual
Foliage



Interesting
Bloom
Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:

Albizia julibrissin

COMMON NAME:

Silk tree, Pink Silk tree

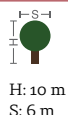
ARABIC NAME:

ألبيزيا زهرة الحرير

**RECOMMENDED POS TYPE**Streets Islands
Parks
Non-Accessible Roundabouts
Accessible Roundabouts
Squares and Plazas**CLASSIFICATION AND ALTITUDE**

Adaptive

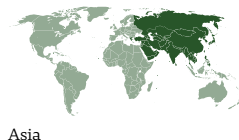
Deciduous

Altitude Zone
500-1000**MORPHOLOGICAL CHARACTERISTICS****Mature Size****Crown Form (Trees)****Crown Density****GROWTH RATE**

Fast

LIFETIME

Long

NATURAL HABITAT

Asia

ISSUES TO BE AWARE OFLittering
Invasive Potential**ENVIRONMENTAL TOLERANCE****Shade Tolerance**

Intolerant

Pollution

Tolerant

Salinity Tolerance

Tolerant

ORNAMENTAL QUALITIES**Showy Flower**Summer
Pink**Leaf Shape**

Narrow

ENVIRONMENTAL BENEFITSAir
PurificationEnhance
BiodiversityCombat
Soil ErosionLowers the
UHI Effect**SPECIAL FEATURES**

Medicinal



Edible

Carries
Pods/ConesUnusual
FoliageInteresting
Bloom
Colour/Shape

TREES

SCIENTIFIC NAME:

Amygdalus korschinskii

COMMON NAME:

Wild Almond, Common Almond

ARABIC NAME:

الوز كورشنسكي



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native Deciduous

Altitude Zone 500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 5 m
S: 2 m

Crown Form (Trees)



Rounded Irregular

Crown Density



Light

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Asia, Medditeranian

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Showy Fruit



Summer Green

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Unusual Foliage



Interesting Bloom Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:

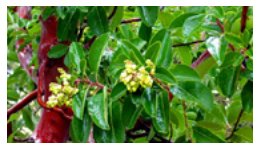
Arbutus
andrachne

COMMON NAME:

Strawberry tree

ARABIC NAME:

قطب, قيقب



**RECOMMENDED
POS TYPE**

Urban Forests
Parks

**CLASSIFICATION
AND ALTITUDE**

Native

Evergreen

Altitude
Zone

600-1000

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 10 m
S: 3 m

**Crown
Form
(Trees)**



Rounded

**Crown
Density**



Moderate

GROWTH RATE

Slow

LIFETIME

Medium

**NATURAL
HABITAT**



Mediterranean

**ISSUES TO BE
AWARE OF**



Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Intolerant

Pollution



Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Winter
White

**Showy
Fruit**



Winter
Red

**Leaf
Shape**



Broad

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion



Lowers the
UHI Effect



Wind
Screen

**SPECIAL
FEATURES**



Medicinal



Edible



Interesting
Bloom
Colour/Shape

TREES

SCIENTIFIC NAME:

Bauhinia
variegata

COMMON NAME:

Orchid tree

ARABIC NAME:

خف الجمل



RECOMMENDED
POS TYPE

Parks
Non-Accessible Roundabouts
Accessible Roundabouts
Squares and Plazas

CLASSIFICATION
AND ALTITUDE

Adaptive

Deciduous

Altitude
Zone 300-1000

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 13 m
S: 4 m

Crown
Form
(Trees)



Spreading

Crown
Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL
HABITAT



Asia

ISSUES TO BE
AWARE OF



Littering
Invasive Potential

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Tolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
White, Pink

Leaf
Shape



Heart

ENVIRONMENTAL
BENEFITS



Air
Purification



Combat
Soil Erosion



Lowers the
UHI Effect

SPECIAL
FEATURES



Medicinal



Edible



Carries
Pods/Cones



Unusual
Foliage



Interesting
Bloom
Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:

Brachychiton populneus

COMMON NAME:

Kurrajong, Bottle tree

ARABIC NAME:

براكيتون



RECOMMENDED POS TYPE

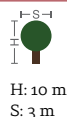
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Adaptive	Evergreen
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



ISSUES TO BE AWARE OF

Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Moderately Tolerant

Pollution

Tolerant

Salinity Tolerance

Tolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring Creamy

Leaf Shape

Narrow

ENVIRONMENTAL BENEFITS

Air Purification

Wind Screen

Enhance Biodiversity

Lowers the UHI Effect

SPECIAL FEATURES

Unusual Foliage

Interesting Bloom Colour/Shape

Carries Pods/Cones

Edible

TREES

SCIENTIFIC NAME:

Casuarina cunninghamiana

COMMON NAME:

River She-oak, Horsetail tree

ARABIC NAME:

كزوارينا كانيغهامية



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone 300-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 35 m
S: 10 m

Crown Form (Trees)



Oval

Crown Density



Light

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Australia

ISSUES TO BE AWARE OF



Littering Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Red

Leaf Shape



Needle

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Interesting Bloom Colour/Shape



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

Cedrus libani

COMMON NAME:

Cedar of Lebanon

ARABIC NAME:

أرز لبناني



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

600-1100

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 30 m
S: 10 m

Crown Form (Trees)



Pyramidal

Crown Density



Moderate

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Medditeranian, Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Tolerant

Pollution



Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Brown

Leaf Shape



Needle

ENVIRONMENTAL BENEFITS



Air
Purification



Enhance
Biodiversity



Wind
Screen



Combat
Soil Erosion



Lowers the
UHI Effect

SPECIAL FEATURES



Medicinal



Fragrant



Unusual
Foliage



Carries
Pods/Cones

TREES

SCIENTIFIC NAME:

Celtis australis

COMMON NAME:

Mediterranean Hackberry

ARABIC NAME:

الميس



RECOMMENDED POS TYPE

Sidewalks
Non-Accessible Roundabouts
Accessible Roundabouts
Streets Islands
Urban Forests
Parks
Squares and Plazas
Communal Steps

CLASSIFICATION AND ALTITUDE

Native	Deciduous
Altitude Zone	500-1200

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 15-23 m
S: 10-15 m

Crown Form (Trees)



Round

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Moderately Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Yellow

Showy Fruit



Summer Black

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Medicinal



Edible

PLANT PROFILES

SCIENTIFIC NAME:

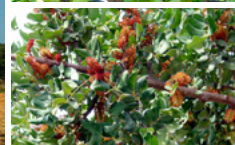
Ceratonia siliqua

COMMON NAME:

Carob

ARABIC NAME:

الخروب



RECOMMENDED POS TYPE

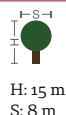
Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native	Evergreen
Altitude Zone	200-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Medditeranian, Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Pollution



Salinity Tolerance



ORNAMENTAL QUALITIES

Showy Flower



Showy Fruit



Leaf Shape



ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Fragrant



Edible



Interesting Bloom
Colour/Shape



Carries Pods/Cones

TREES

SCIENTIFIC NAME:

Cercis
siliquastrum

COMMON NAME:

Red Bud

ARABIC NAME:

زمزيق



RECOMMENDED
POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts
Streets Islands
Accessible Roundabouts

CLASSIFICATION
AND ALTITUDE

Native	Deciduous
Altitude Zone	300-1000

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 8 m
S: 4 m

Crown
Form
(Trees)



Rounded

Crown
Density



Light

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL
HABITAT



Asia, Medditeranian

ISSUES TO BE
AWARE OF



Littering

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Intolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Pink

Leaf
Shape



Heart

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

SPECIAL
FEATURES



Unusual
Foliage



Edible



Interesting
Bloom
Colour/Shape



Carries
Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:
Cupressus sempervirens

COMMON NAME:
 Mediterranean Cypress

ARABIC NAME:
 سرو هرمي



RECOMMENDED POS TYPE

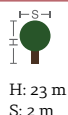
Urban Forests
 Parks

CLASSIFICATION AND ALTITUDE

Native	Evergreen
Altitude Zone	400-1100

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



ISSUES TO BE AWARE OF

Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Intolerant

Pollution

Tolerant

Salinity Tolerance

Tolerant

ORNAMENTAL QUALITIES

Leaf Shape

Needle

ENVIRONMENTAL BENEFITS

Air Purification	Enhance Biodiversity	Lowers the UHI Effect	Combat Soil Erosion	Wind Screen

SPECIAL FEATURES

Medicinal	Fragrant	Carries Pods/Cones

TREES

SCIENTIFIC NAME:

Crataegus
aronia

COMMON NAME:

Spiny Hawthorn

ARABIC NAME:

زعرور



RECOMMENDED
POS TYPE

Non-Accessible Roundabouts
Urban Forests

CLASSIFICATION
AND ALTITUDE

Native

Deciduous

Altitude
Zone

200-800

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 7 m
S: 3 m

Crown
Form
(Trees)



Rounded

Crown
Density



Dense

GROWTH RATE

Slow

LIFETIME

Long

NATURAL
HABITAT



Asia, Mediterranean

ISSUES TO BE
AWARE OF



Thorny
Littering

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Intolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
White

Showy
Fruit



Summer
Yellow

Leaf
Shape



Lobed

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

SPECIAL
FEATURES



Medicinal



Edible



Interesting
Bloom
Colour/Shape



Fragrant



Unusual
Foliage

PLANT PROFILES

SCIENTIFIC NAME:

Crataegus azarolus

COMMON NAME:

Hawthorn

ARABIC NAME:

زعرور أحمر، حزور



RECOMMENDED POS TYPE

Urban Forests
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native	Deciduous
Altitude Zone	600-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



ISSUES TO BE AWARE OF

Thorny
Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Moderately Tolerant

Pollution

Tolerant

Salinity Tolerance

Intolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring
White

Showy Fruit

Spring
Red

Leaf Shape

Lobed

ENVIRONMENTAL BENEFITS

Air Purification

Enhance Biodiversity

Lowers the UHI Effect

Combat Soil Erosion

SPECIAL FEATURES

Medicinal

Edible

Interesting Bloom Colour/Shape

Fragrant

Unusual Foliage

SCIENTIFIC NAME:

Elaeagnus angustifolia

COMMON NAME:

Russian Olive

ARABIC NAME:

زيزفون



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Street Islands
Urban Forests

CLASSIFICATION AND ALTITUDE

Adaptive

Deciduous

Altitude Zone

0-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 7 m
S: 4 m

Crown Form (Trees)



Rounded

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Europe, North America

ISSUES TO BE AWARE OF



Thorny
Littering
Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Yellow

Showy Fruit



Summer
Yellow

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

SPECIAL FEATURES



Medicinal



Edible



Interesting
Bloom
Colour/Shape



Fragrant



Unusual
Foliage

SCIENTIFIC NAME:
**Eucalyptus
 camaldulensis**

COMMON NAME:
 Red River Gum

ARABIC NAME:
 كينا



**RECOMMENDED
 POS TYPE**

Non-Accessible Roundabouts
 Parks

**CLASSIFICATION
 AND ALTITUDE**

Adaptive

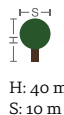
Evergreen

Altitude
 Zone

0-1000

**MORPHOLOGICAL
 CHARACTERISTICS**

**Mature
 Size**



**Crown
 Form
 (Trees)**



**Crown
 Density**



GROWTH RATE

Fast

LIFETIME

Long

**NATURAL
 HABITAT**



**ISSUES TO BE
 AWARE OF**



Littering

**ENVIRONMENTAL
 TOLERANCE**

**Shade
 Tolerance**



Pollution



**Salinity
 Tolerance**



**ORNAMENTAL
 QUALITIES**

**Showy
 Flower**



**Leaf
 Shape**



**ENVIRONMENTAL
 BENEFITS**



Air
 Purification



Wind
 Screen



Lowers the
 UHI Effect

**SPECIAL
 FEATURES**



Medicinal



Fragrant



Interesting
 Bloom
 Colour/Shape



Carries
 Pods/Cones

TREES

SCIENTIFIC NAME:

Fraxinus syriaca

COMMON NAME:

Syrian Ash-tree

ARABIC NAME:

الدردار



RECOMMENDED POS TYPE

Sidewalks
Non-Accessible Roundabouts
Accessible Roundabouts
Streets Islands
Urban Forests
Parks
Squares and Plazas

CLASSIFICATION AND ALTITUDE

Native

Deciduous

Altitude Zone

500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 20 m
S: 5 m

Crown Form (Trees)



Rounded

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Medium

NATURAL HABITAT



Asia, Mediterranean

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Green

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect

SPECIAL FEATURES



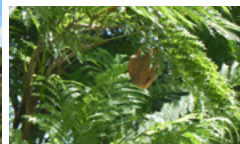
Edible

PLANT PROFILES

SCIENTIFIC NAME:
Jacaranda
mimosifolia

COMMON NAME:
 Jacaranda

ARABIC NAME:
 جاکرندا



RECOMMENDED POS TYPE

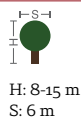
Non-Accessible Roundabouts
 Parks

CLASSIFICATION AND ALTITUDE

Adaptive	Deciduous
Altitude Zone	300-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Fast

LIFETIME

Medium

NATURAL HABITAT

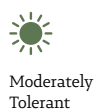


ISSUES TO BE AWARE OF



ENVIRONMENTAL TOLERANCE

Shade Tolerance



Pollution



Salinity Tolerance



ORNAMENTAL QUALITIES

Showy Flower



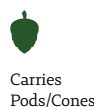
Leaf Shape



ENVIRONMENTAL BENEFITS



SPECIAL FEATURES



TREES

SCIENTIFIC NAME:

Juglans regia

COMMON NAME:

Persian Walnut, Carpathian Walnut

ARABIC NAME:

جوز شائع



RECOMMENDED POS TYPE

Non-Accessible Roundabouts Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Deciduous

Altitude Zone 500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 25 m S: 15 m

Crown Form (Trees)



Rounded

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Europe

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Moderately Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Yellow

Showy Fruit



Summer Green, Brown

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Medicinal



Edible



Carries Pods/Cones



Fragrant

PLANT PROFILES

SCIENTIFIC NAME:

Juniperus turbinata

(previously Juniperus phoenicea)

COMMON NAME:

Phoenicean Juniper

ARABIC NAME:

عرعر فينيقي



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Urban Forests
Parks

CLASSIFICATION AND ALTITUDE

Native	Evergreen
Altitude Zone	600-1100

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 8 m
S: 5 m

Crown Form (Trees)



Irregular Spreading

Crown Density



Dense

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ISSUES TO BE AWARE OF



Littering
Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Brown

Leaf Shape



Needle

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Fragrant



Carries Pods/Cones



Unusual Foliage

TREES

SCIENTIFIC NAME:

Magnolia grandiflora

COMMON NAME:

Magnolia

ARABIC NAME:

ماغنوليا



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

0-200

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 25 m
S: 5 m

Crown Form (Trees)



Pyramidal

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



North America

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Intolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Creamy

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Enhance Biodiversity



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Edible



Interesting Bloom Colour/Shape



Fragrant



Unusual Foliage



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

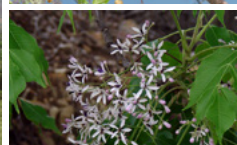
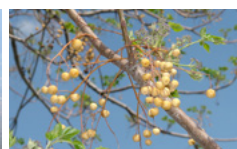
Melia azedarach

COMMON NAME:

China Berry

ARABIC NAME:

ززلخت



**RECOMMENDED
POS TYPE**

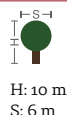
Non-Accessible Roundabouts
Sidewalks
Streets Islands
Parks

**CLASSIFICATION
AND ALTITUDE**

Adaptive	Deciduous
Altitude Zone	500-1000

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



**Crown
Form
(Trees)**



**Crown
Density**



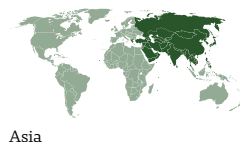
GROWTH RATE

Fast

LIFETIME

Long

**NATURAL
HABITAT**



**ISSUES TO BE
AWARE OF**

Littering
Invasive Potential

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**

Tolerant

Pollution

Tolerant

**Salinity
Tolerance**

Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**

Spring
Purple

**Showy
Fruit**

Spring
Yellow

**Leaf
Shape**

Narrow

**ENVIRONMENTAL
BENEFITS**

Air
Purification

Enhance
Biodiversity

Lowers the
UHI Effect

Combat
Soil Erosion

**SPECIAL
FEATURES**

Medicinal

Interesting
Bloom
Colour/Shape

TREES

SCIENTIFIC NAME:

Pinus halapensis

COMMON NAME:

Aleppo Pine

ARABIC NAME:

صنوبر حليبي



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Parks
Urban Forests

CLASSIFICATION AND ALTITUDE

Native	Evergreen
Altitude Zone	200-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 20 m
S: 7 m

Crown Form (Trees)



Pyramidal

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ISSUES TO BE AWARE OF



Littering
Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Brown, yellow

Leaf Shape



Needle

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Fragrant



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

Pinus pinea

COMMON NAME:

Umbrella Pine

ARABIC NAME:

صنوبر مثمر، برميل



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Adaptive	Evergreen
Altitude Zone	400-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



ISSUES TO BE AWARE OF

Littering
Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Intolerant

Pollution

Tolerant

Salinity Tolerance

Tolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring
Brown, Yellow

Leaf Shape

Needle

ENVIRONMENTAL BENEFITS

Air Purification

Enhance Biodiversity

Wind Screen

Combat Soil Erosion

Lowers the UHI Effect

SPECIAL FEATURES

Medicinal

Unusual Foliage

Fragrant

Edible

Carries Pods/Cones

SCIENTIFIC NAME:

Pistacia atlantica

COMMON NAME:

Atlantic Pistacia

ARABIC NAME:

البطم الأطلسي



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Urban Forests
Parks
Squares and Plazas

CLASSIFICATION AND ALTITUDE

Native	Deciduous
Altitude Zone	0-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 7 m
S: 8 m

Crown Form (Trees)



Spreading

Crown Density



Dense

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Africa

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Red, Pink

Showy Fruit



Summer
Red

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Medicinal



Interesting Bloom
Colour/Shape



Fragrant



Edible

SCIENTIFIC NAME:

Pistacia palaestina

COMMON NAME:

Palestinian Pistacia

ARABIC NAME:

البطم الفلسطيني

**RECOMMENDED
POS TYPE**

Non-Accessible Roundabouts
Urban Forests
Parks

**CLASSIFICATION
AND ALTITUDE**

Native

Deciduous

Altitude
Zone

400-1000

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 8 m
S: 5 m

**Crown
Form
(Trees)**



Spreading

**Crown
Density**



Dense

GROWTH RATE

Slow

LIFETIME

Medium

**NATURAL
HABITAT**

Asia, Mediterranean

**ISSUES TO BE
AWARE OF**

Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Intolerant

Pollution



Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
Red

**Showy
Fruit**



Summer
Red

**Leaf
Shape**



Broad

**ENVIRONMENTAL
BENEFITS**

Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

**SPECIAL
FEATURES**

Medicinal



Interesting
Bloom
Colour/Shape



Fragrant



Edible

TREES

SCIENTIFIC NAME:

Platanus orientalis

COMMON NAME:

Oriental Plane

ARABIC NAME:

دلب، شنار



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native

Deciduous

Altitude Zone

300-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 25 m
S: 8-10 m

Crown Form (Trees)



Oval

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Red

Leaf Shape



Lobed

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Unusual Foliage



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

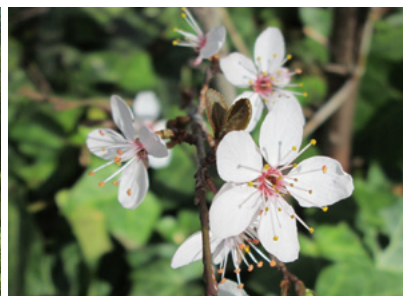
Prunus cerasifera

COMMON NAME:

Purple Leaf Plum, Cherry Plum

ARABIC NAME:

برونس احمر، خوځ كرزى



RECOMMENDED POS TYPE

Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Adaptive	Deciduous
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size

H: 8 m
S: 3 m

Crown Form (Trees)

Rounded

Crown Density

Moderate

GROWTH RATE

Moderate

LIFETIME

Short

NATURAL HABITAT

Asia, Europe

ISSUES TO BE AWARE OF

Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Tolerant

Pollution

Tolerant

Salinity Tolerance

Intolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring Pink

Showy Fruit

Summer Red

Leaf Shape

Broad

ENVIRONMENTAL BENEFITS

Air Purification

Enhance Biodiversity

Lowers the UHI Effect

SPECIAL FEATURES

Medicinal

Edible

Interesting Bloom Colour/Shape

Unusual Foliage

Fragrant

TREES

SCIENTIFIC NAME:

Pyrus calleryana

COMMON NAME:

Ornamental Pear

ARABIC NAME:

إجاص زينة



RECOMMENDED POS TYPE

Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Adaptive	Deciduous
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 15 m
S: 3 m

Crown Form (Trees)



Pyramidal

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Littering
Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Showy Fruit



Summer Brown

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Edible



Interesting Bloom Colour/Shape



Fragrant



Unusual Foliage

PLANT PROFILES

SCIENTIFIC NAME:

Pyrus syriaca

COMMON NAME:

Syrian Pear

ARABIC NAME:

إجاص بري

**RECOMMENDED POS TYPE**Urban Forests
Parks
Non-Accessible Roundabouts**CLASSIFICATION AND ALTITUDE**

Native

Deciduous

Altitude Zone

200-800

MORPHOLOGICAL CHARACTERISTICS**Mature Size****Crown Form (Trees)**

Rounded

Crown Density

Moderate

GROWTH RATE

Moderate

LIFETIME

Short

NATURAL HABITAT

Asia, Europe

ISSUES TO BE AWARE OF

Littering

ENVIRONMENTAL TOLERANCE**Shade Tolerance**

Intolerant

Pollution

Tolerant

Salinity Tolerance

Intolerant

ORNAMENTAL QUALITIES**Showy Flower**

Spring White

Showy Fruit

Summer Green

Leaf Shape

Narrow

ENVIRONMENTAL BENEFITS

Air Purification



Enhance Biodiversity



Lowers the UHI Effect

SPECIAL FEATURES

Edible



Interesting Bloom Colour/Shape



Fragrant

TREES

SCIENTIFIC NAME:

Quercus
infectoria

COMMON NAME:

Aleppo oak

ARABIC NAME:

بلوط صبغي



RECOMMENDED
POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION
AND ALTITUDE

Native	Deciduous
Altitude Zone	800-1000

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 6 m
S: 5 m

Crown
Form
(Trees)



Rounded

Crown
Density



Dense

GROWTH RATE

Slow

LIFETIME

Medium

NATURAL
HABITAT



Asia, Medditeranian

ISSUES TO BE
AWARE OF



Littering

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Intolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Green

Leaf
Shape



Broad

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

SPECIAL
FEATURES



Medicinal



Unusual
Foliage



Edible



Carries
Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

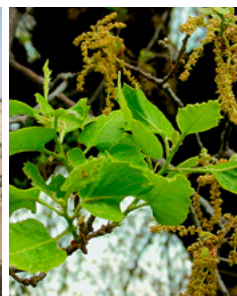
Quercus ithaburensis

COMMON NAME:

Mount Tabor Oak

ARABIC NAME:

سنديان طابوري



**RECOMMENDED
POS TYPE**

Urban Forests
Parks
Non-Accessible Roundabouts

**CLASSIFICATION
AND ALTITUDE**

Native

Deciduous

Altitude
Zone

300-800

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



**Crown
Form
(Trees)**



**Crown
Density**



GROWTH RATE

Moderate

LIFETIME

Long

**NATURAL
HABITAT**



Asia, Mediterranean

**ISSUES TO BE
AWARE OF**



Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Tolerant

**Salinity
Tolerance**



Intolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
Yellow

**Leaf
Shape**



Broad

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Lowers the
UHI Effect



Combat
Soil Erosion

**SPECIAL
FEATURES**



Medicinal



Edible



Interesting
Bloom
Colour/Shape



Carries
Pods/Cones

SCIENTIFIC NAME:

Quercus calliprinos

COMMON NAME:

Palestine Oak

ARABIC NAME:

بلوط قلابريني، سندان



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native	Evergreen
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 8 m
S: 5 m

Crown Form (Trees)



Rounded

Crown Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Yellow

Showy Fruit



Summer Brown

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Edible



Interesting Bloom Colour/Shape



Carries Pods/Cones

SCIENTIFIC NAME:

Schinus
molle

COMMON NAME:

Pepper tree

ARABIC NAME:

فلغل كذاب، فلغل



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

0-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size

H: 15 m
S: 8 m

Crown Form (Trees)

Weeping

Crown Density

Dense

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



South America

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Moderately Tolerant

Pollution

Tolerant

Salinity Tolerance

Tolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring White

Showy Fruit

Spring Red

Leaf Shape

Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Wind Screen



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Edible



Interesting Bloom Colour/Shape



Unusual Foliage

TREES

SCIENTIFIC NAME:

Styphnolobium japonicum

(previously Sophora japonica)

COMMON NAME:

Japanese Pagoda tree

ARABIC NAME:

سيفورا



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Deciduous

Altitude Zone 300-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 20 m
S: 7 m

Crown Form (Trees)



Weeping

Crown Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Medicinal



Edible



Interesting Bloom Colour/Shape



Fragrant



Unusual Foliage



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

Styrax officinalis

COMMON NAME:

Official Storex

ARABIC NAME:

العبر



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native	Deciduous
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Crown Density



GROWTH RATE

Moderate

LIFETIME

Medium

NATURAL HABITAT



ISSUES TO BE AWARE OF

Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance

Moderately Tolerant

Pollution

Tolerant

Salinity Tolerance

Intolerant

ORNAMENTAL QUALITIES

Showy Flower

Spring White

Showy Fruit

Summer Green, Yellow

Leaf Shape

Broad

ENVIRONMENTAL BENEFITS

Air Purification

Enhance Biodiversity

Lowers the UHI Effect

Combat Soil Erosion

SPECIAL FEATURES

Medicinal

Fragrant

Interesting Bloom Colour/Shape

Edible

TREES

SCIENTIFIC NAME:

Ulmus campestris

COMMON NAME:

English Elm

ARABIC NAME:

ألمص



RECOMMENDED POS TYPE

Sidewalks
Non-Accessible Roundabouts
Accessible Roundabouts
Streets Islands
Parks
Squares and Plazas
Communal Steps

CLASSIFICATION AND ALTITUDE

Adaptive	Deciduous
Altitude Zone	500-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 30 m
S: 8 m

Crown Form (Trees)



Oval

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Europe

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Moderately Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Creamy

Showy Fruit



Summer Green, Brown

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Lowers the UHI Effect



Combat Soil Erosion

SPECIAL FEATURES



Medicinal



Interesting Bloom Colour/Shape



Carries Pods/Cones

PLANT PROFILES

SCIENTIFIC NAME:

Tamarix aphylla

COMMON NAME:

Athel Tamarisk, Salt Cedar

ARABIC NAME:

الاثل



**RECOMMENDED
POS TYPE**

Parks

**CLASSIFICATION
AND ALTITUDE**

Native

Evergreen

Altitude
Zone

0-500

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



**Crown
Form
(Trees)**



Spreading

**Crown
Density**



Moderate

GROWTH RATE

Fast

LIFETIME

Long

**NATURAL
HABITAT**



Asia

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Intolerant

Pollution



Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
Pink

**Leaf
Shape**



Needle

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Wind
Screen



Combat
Soil Erosion



Lowers the
UHI Effect

**SPECIAL
FEATURES**



Unusual
Foliage



Edible



Interesting
Bloom
Colour/Shape

TREES

SCIENTIFIC NAME:

Tamarix nilotica

COMMON NAME:

Nile Tamarisk

ARABIC NAME:

الطرفه، الأثل



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Native

Evergreen

Altitude Zone

0-500

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 4 m
S: 3 m

Crown Form (Trees)



Spreading

Crown Density



Moderate

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Africa

ISSUES TO BE AWARE OF



Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring Pink

Leaf Shape



Needle

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Unusual Foliage



Edible



Interesting Bloom Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:
Ziziphus
spina-christi

COMMON NAME:
 Christ's Thorn Jujube

ARABIC NAME:
 السدر، النبق



RECOMMENDED POS TYPE

Urban Forests
 Parks

CLASSIFICATION AND ALTITUDE

Native

Evergreen

Altitude Zone

0-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Trees)



Weeping

Crown Density



Dense

GROWTH RATE

Fast

LIFETIME

Long

NATURAL HABITAT



Asia, Africa

ISSUES TO BE AWARE OF



Thorny
 Littering
 Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Intolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Fall
 Yellow

Showy Fruit



Summer
 Yellow, Brown

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air
 Purification



Enhance
 Biodiversity



Wind
 Screen



Combat
 Soil Erosion



Lowers the
 UHI Effect

SPECIAL FEATURES



Medicinal



Edible

SHRUBS

SHRUBS

SCIENTIFIC NAME:

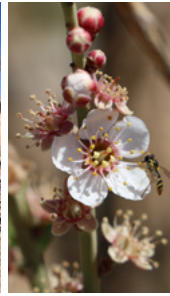
Amygdalus arabica

COMMON NAME:

Arabic Almond

ARABIC NAME:

اللوز العربي



RECOMMENDED POS TYPE

Urban Forests
Parks
Non-Accessible Roundabouts

CLASSIFICATION AND ALTITUDE

Native Deciduous

Altitude Zone 200-600

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 3 m
S: 2 m

Crown Form (Shrubs)



Rounded

Crown Density



Dense

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Showy Fruit



Summer Green

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Combat Soil Erosion



Lowers the UHI Effect

SPECIAL FEATURES



Medicinal



Interesting Bloom Colour/Shape



Unusual Foliage



Can be Adapted into a Tree

PLANT PROFILES

SCIENTIFIC NAME:

Clematis cirrhosa

COMMON NAME:

Fern-leaved Clematis

ARABIC NAME:

العنابا



**RECOMMENDED
POS TYPE**

Urban Forests
Parks

**CLASSIFICATION
AND ALTITUDE**

Native

Evergreen

Altitude
Zone

400-700

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 4 m
S: 4 m

**Crown
Form
(Shrubs)**



Irregular

**Crown
Density**



Dense

GROWTH RATE

Fast

LIFETIME

Medium

**NATURAL
HABITAT**



Asia, Mediterranean

**ISSUES TO BE
AWARE OF**



Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Tolerant

**Salinity
Tolerance**



Intolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Winter
White

**Leaf
Shape**



Narrow

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion



Lowers the
UHI Effect



Wind
Screen

**SPECIAL
FEATURES**



Medicinal



Edible



Can be
Adapted into a
Climber/Vine



Interesting
Bloom
Colour/Shape

SCIENTIFIC NAME:
Cotoneaster
horizontalis

COMMON NAME:
 Cotoneaster

ARABIC NAME:
 العرقد، كوتنياستر، غرنق



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Deciduous

Altitude Zone

400-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 1 m
 S: 1.5 m

Crown Form (Shrubs)



Irregular

Crown Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
 White, Red

Showy Fruit



Spring
 Red

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Combat Soil Erosion

SPECIAL FEATURES



Fragrant



Interesting Bloom
 Colour/Shape



Suitable for Hedge

SCIENTIFIC NAME:

Dodonaea
viscosa

COMMON NAME:

Dodonaea, Hopbush

ARABIC NAME:

ديونيا



**RECOMMENDED
POS TYPE**

Parks

**CLASSIFICATION
AND ALTITUDE**

Adaptive

Evergreen

Altitude
Zone

200-1200

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 3 m
S: 2 m

**Crown
Form
(Shrubs)**



Irregular

**Crown
Density**



Dense

GROWTH RATE

Moderate

LIFETIME

Long

**NATURAL
HABITAT**



Asia

**ISSUES TO BE
AWARE OF**



Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
Yellow, Pink

**Leaf
Shape**



Narrow

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Wind
Screen

**SPECIAL
FEATURES**



Medicinal



Can be
Adapted
into a Tree



Interesting
Bloom
Colour/Shape



Suitable for
Hedge



Carries
Pods/Cones

SHRUBS

SCIENTIFIC NAME:

Hibiscus rosa-sinensis

COMMON NAME:

Chinese hibiscus, Tropical hibiscus

ARABIC NAME:

الخطمي الوردي الصيني، كركديه



RECOMMENDED
POS TYPE

Parks

CLASSIFICATION
AND ALTITUDE

Adaptive

Evergreen

Altitude
Zone

0-700

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 4 m
S: 2 m

Crown
Form
(Shrubs)



Rounded

Crown
Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Short

NATURAL
HABITAT



Asia

ISSUES TO BE
AWARE OF



Littering

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Intolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Year Round
Red

Leaf
Shape



Broad

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Wind
Screen

SPECIAL
FEATURES



Medicinal



Edible



Carries
Pods/Cones



Interesting
Bloom
Colour/Shape



Suitable for
Hedge



Can be
Adapted
into a Tree

PLANT PROFILES

SCIENTIFIC NAME:

Hibiscus syriacus

COMMON NAME:

Hibiscus

ARABIC NAME:

الخطمي السوري



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Deciduous

Altitude Zone

0-700

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Shrubs)



Oval

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Short

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Summer
Diverse

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity



Wind Screen

SPECIAL FEATURES



Carries Pods/Cones



Suitable for Hedge



Interesting Bloom Colour/Shape



Edible



Medicinal



Can be Adapted into a Tree

SHRUBS

SCIENTIFIC NAME:

Jasminum grandiflorum

COMMON NAME:

White Jasmine

ARABIC NAME:

ياسمين أبيض، ياسمين بلدي



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Accessible Roundabouts
Parks
Squares and Plazas
Communal Steps

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

0-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: Creeping 0.8 m
Climbing 4 m

Crown Form (Shrubs)



Rounded

Crown Density



Dense

GROWTH RATE

Slow

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Enhance Biodiversity

SPECIAL FEATURES



Medicinal



Fragrant



Can be Adapted into a Climber/Vine



Edible



Interesting Bloom Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:

Laurus nobilis

COMMON NAME:

Bay Leaf, Laurel

ARABIC NAME:

غار



RECOMMENDED POS TYPE

Parks
Urban Forests
Squares and Plazas

CLASSIFICATION AND ALTITUDE

Native

Evergreen

Altitude Zone

0-600

MORPHOLOGICAL CHARACTERISTICS

Mature Size



Crown Form (Shrubs)



Crown Density



GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Mediterranean

ISSUES TO BE AWARE OF



Littering

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring
Yellow

Showy Fruit



Spring
Black

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Wind Screen



Enhance Biodiversity

SPECIAL FEATURES



Medicinal



Fragrant



Edible



Can be Adapted into a Tree



Suitable for Hedge

SHRUBS

SCIENTIFIC NAME:

Lavatera
trimestris

COMMON NAME:

Annual Mallow

ARABIC NAME:

خبيزة لافاتيرا



RECOMMENDED
POS TYPE

Parks
Urban Forests

CLASSIFICATION
AND ALTITUDE

Native

Evergreen

Altitude
Zone

300-800

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 1 m
S: 0.5 m

Crown
Form
(Shrubs)



Irregular

Crown
Density



Dense

GROWTH RATE

Fast

LIFETIME

Short

NATURAL
HABITAT



Asia, Mediterranean, Europe

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Intolerant

Pollution



Tolerant

Salinity
Tolerance



Tolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
White, Pink

Leaf
Shape



Lobed

ENVIRONMENTAL
BENEFITS



Air
Purification



Combat
Soil Erosion



Enhance
Biodiversity

SPECIAL
FEATURES



Unusual
Foliage



Interesting
Bloom
Colour/Shape



Fragrant



Suitable for
Hedge

PLANT PROFILES

SCIENTIFIC NAME:

Ligustrum japonicum

COMMON NAME:

Japanese Privet

ARABIC NAME:

لوجستروم



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

400-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 4 m
S: 2 m

Crown Form (Shrubs)



Rounded Irregular

Crown Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia

ISSUES TO BE AWARE OF



Invasive Potential

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Summer White

Showy Fruit



Spring Purple, Blue, Black

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Wind Screen



Enhance Biodiversity

SPECIAL FEATURES



Medicinal



Can be Adapted into a Tree



Suitable for Hedge



Interesting Bloom Colour/Shape

SHRUBS

SCIENTIFIC NAME:

Myrtus communis

COMMON NAME:

Common Myrtle

ARABIC NAME:

أنس



RECOMMENDED POS TYPE

Urban Forests
Parks

CLASSIFICATION AND ALTITUDE

Native

Evergreen

Altitude Zone

0-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 3 m
S: 2 m

Crown Form (Shrubs)



Rounded

Crown Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL HABITAT



Asia, Mediterranean

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Tolerant

Pollution



Moderately Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Summer White

Showy Fruit



Summer Blue

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Air Purification



Combat Soil Erosion



Enhance Biodiversity



Wind Screen

SPECIAL FEATURES



Medicinal



Fragrant



Edible



Suitable for Hedge

PLANT PROFILES

SCIENTIFIC NAME:

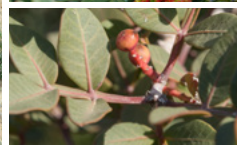
Pistacia lentiscus

COMMON NAME:

Mastic tree

ARABIC NAME:

بطم العلكة، السريس

**RECOMMENDED
POS TYPE**Parks
Urban Forests**CLASSIFICATION
AND ALTITUDE**

Native

Evergreen

Altitude
Zone

0-800

**MORPHOLOGICAL
CHARACTERISTICS****Mature
Size**H: 4 m
S: 2 m**Crown
Form
(Shrubs)**

Rounded

**Crown
Density**

Dense

GROWTH RATE

Slow

LIFETIME

Long

**NATURAL
HABITAT**

Asia, Mediterranean

**ENVIRONMENTAL
TOLERANCE****Shade
Tolerance**

Intolerant

Pollution

Tolerant

**Salinity
Tolerance**

Tolerant

**ORNAMENTAL
QUALITIES****Showy
Flower**Spring
Red**Showy
Fruit**Spring
Red**Leaf
Shape**

Narrow

**ENVIRONMENTAL
BENEFITS**Air
PurificationCombat
Soil ErosionEnhance
BiodiversityWind
Screen**SPECIAL
FEATURES**

Medicinal



Fragrant



Edible

Can be
Adapted
into a TreeSuitable for
HedgeInteresting
Bloom
Colour/Shape

SHRUBS

SCIENTIFIC NAME:

Pittosporum tobira

COMMON NAME:

Pittosporum

ARABIC NAME:

بتوسبورم



RECOMMENDED POS TYPE

Parks

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

0-1000

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: 3 m
S: 2 m

Crown Form (Shrubs)



Rounded

Crown Density



Moderate

GROWTH RATE

Moderate

LIFETIME

Medium

NATURAL HABITAT



Asia

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Tolerant

Salinity Tolerance



Tolerant

ORNAMENTAL QUALITIES

Showy Flower



Spring White

Leaf Shape



Broad

ENVIRONMENTAL BENEFITS



Air Purification



Wind Screen



Combat Soil Erosion

SPECIAL FEATURES



Unusual Foliage



Fragrant



Suitable for Hedge



Can be Adapted into a Tree

PLANT PROFILES

SCIENTIFIC NAME:

Plumbago auriculata/capensis

COMMON NAME:

Plumbago

ARABIC NAME:

ياسمين أزرق



RECOMMENDED POS TYPE

Non-Accessible Roundabouts
Accessible Roundabouts
Parks
Squares and Plazas
Communal Steps

CLASSIFICATION AND ALTITUDE

Adaptive

Evergreen

Altitude Zone

0-800

MORPHOLOGICAL CHARACTERISTICS

Mature Size



H: Creeping 0.8 m S: 2 m
Climbing 3 m

Crown Form (Shrubs)



Rounded

Crown Density



Dense

GROWTH RATE

Fast

LIFETIME

Short

NATURAL HABITAT



Asia, Africa

ENVIRONMENTAL TOLERANCE

Shade Tolerance



Moderately Tolerant

Pollution



Moderately Tolerant

Salinity Tolerance



Intolerant

ORNAMENTAL QUALITIES

Showy Flower



Year Round Blue

Leaf Shape



Narrow

ENVIRONMENTAL BENEFITS



Enhance Biodiversity



Air Purification

SPECIAL FEATURES



Medicinal



Interesting Bloom Colour/Shape



Can be Adapted into a Climber/Vine



Suitable for Hedge

SHRUBS

SCIENTIFIC NAME:

Rhus
coriaria

COMMON NAME:

Sumac

ARABIC NAME:

سماق



RECOMMENDED
POS TYPE

Urban Forests
Parks

CLASSIFICATION
AND ALTITUDE

Native

Deciduous

Altitude
Zone

400-800

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 4 m
S: 2 m

Crown
Form
(Shrubs)



Rounded

Crown
Density



Dense

GROWTH RATE

Fast

LIFETIME

Short

NATURAL
HABITAT



Asia, Europe

ISSUES TO BE
AWARE OF



Littering

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Moderately
Tolerant

Pollution



Tolerant

Salinity
Tolerance



Tolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Yellow

Showy
Fruit



Spring
Red

Leaf
Shape



Narrow

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion

SPECIAL
FEATURES



Medicinal



Fragrant



Edible



Can be
Adapted
into a Tree



Unusual
Foliage



Interesting
Bloom
Colour/Shape

PLANT PROFILES

SCIENTIFIC NAME:

Rosa
spp.

COMMON NAME:

Rose

ARABIC NAME:

الورد الجوري



**RECOMMENDED
POS TYPE**

Parks

**CLASSIFICATION
AND ALTITUDE**

Native

Deciduous

Altitude
Zone

200-1200

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 2 m
S: 1 m

**Crown
Form
(Shrubs)**



Irregular

**Crown
Density**



Moderate

GROWTH RATE

Fast

LIFETIME

Medium

**NATURAL
HABITAT**



Asia, Europe

**ISSUES TO BE
AWARE OF**



Thorny

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Moderately
Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
Diverse

**Leaf
Shape**



Broad

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity

**SPECIAL
FEATURES**



Medicinal



Fragrant



Interesting
Bloom
Colour/Shape



Edible



Can be
Adapted
into a Tree



Carries
Pods/Cones

SHRUBS

SCIENTIFIC NAME:
Rosmarinus officinalis

COMMON NAME:
Rosemary

ARABIC NAME:
الحصلبان، إكليل الجبل



RECOMMENDED
POS TYPE

Parks
Communal Steps

CLASSIFICATION
AND ALTITUDE

Adaptive

Evergreen

Altitude
Zone

200-1200

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 1 m
S: 0.5 m

Crown
Form
(Shrubs)



Irregular

Crown
Density



Dense

GROWTH RATE

Fast

LIFETIME

Short

NATURAL
HABITAT



Asia, Mediterranean

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Tolerant

Pollution



Tolerant

Salinity
Tolerance



Tolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Violet

Showy
Fruit



Spring
Black

Leaf
Shape



Needle

ENVIRONMENTAL
BENEFITS



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion

SPECIAL
FEATURES



Medicinal



Fragrant



Interesting
Bloom
Colour/Shape



Edible



Suitable for
Hedge



Unusual
Foliage

PLANT PROFILES

SCIENTIFIC NAME:

**Sambucus
nigra**

COMMON NAME:

Elderberry

ARABIC NAME:

بيلسان



**RECOMMENDED
POS TYPE**

Urban Forests
Parks

**CLASSIFICATION
AND ALTITUDE**

Native

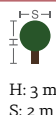
Deciduous

Altitude
Zone

500-800

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



**Crown
Form
(Shrubs)**



**Crown
Density**



GROWTH RATE

Fast

LIFETIME

Short

**NATURAL
HABITAT**



Asia, Europe

**ISSUES TO BE
AWARE OF**



Littering

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Tolerant

**Salinity
Tolerance**



Intolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
White

**Showy
Fruit**



Spring
White

**Leaf
Shape**



Narrow

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Enhance
Biodiversity



Combat
Soil Erosion

**SPECIAL
FEATURES**



Medicinal



Fragrant



Edible



Can be
Adapted
into a Tree



Interesting
Bloom
Colour/Shape

SCIENTIFIC NAME:

Thuja
orientalis

COMMON NAME:

Oriental Arborvitae

ARABIC NAME:

ثويا



RECOMMENDED
POS TYPE

Parks

CLASSIFICATION
AND ALTITUDE

Adaptive

Evergreen

Altitude
Zone

0-1000

MORPHOLOGICAL
CHARACTERISTICS

Mature
Size



H: 6 m
S: 2 m

Crown
Form
(Shrubs)



Pyramidal

Crown
Density



Dense

GROWTH RATE

Moderate

LIFETIME

Long

NATURAL
HABITAT



Asia

ENVIRONMENTAL
TOLERANCE

Shade
Tolerance



Tolerant

Pollution



Tolerant

Salinity
Tolerance



Intolerant

ORNAMENTAL
QUALITIES

Showy
Flower



Spring
Blue

Leaf
Shape



Needle

ENVIRONMENTAL
BENEFITS



Air
Purification



Wind
Screen

SPECIAL
FEATURES



Medicinal



Fragrant



Carries
Pods/Cones



Suitable for
Hedge

SCIENTIFIC NAME:

Yucca
aloifolia

COMMON NAME:

Yucca

ARABIC NAME:

يوكا



**RECOMMENDED
POS TYPE**

Parks

**CLASSIFICATION
AND ALTITUDE**

Adaptive

Evergreen

Altitude
Zone

0-1000

**MORPHOLOGICAL
CHARACTERISTICS**

**Mature
Size**



H: 5 m

S: Single Stem 1 m
Multi Stem 3.5 m

**Crown
Form
(Shrubs)**



Irregular

**Crown
Density**



Moderate

GROWTH RATE

Moderate

LIFETIME

Short

**NATURAL
HABITAT**



North America

**ISSUES TO BE
AWARE OF**



Spiky

**ENVIRONMENTAL
TOLERANCE**

**Shade
Tolerance**



Moderately
Tolerant

Pollution



Tolerant

**Salinity
Tolerance**



Tolerant

**ORNAMENTAL
QUALITIES**

**Showy
Flower**



Spring
White

**Leaf
Shape**



Narrow

**ENVIRONMENTAL
BENEFITS**



Air
Purification



Combat
Soil Erosion



Enhance
Biodiversity

**SPECIAL
FEATURES**



Fragrant



Medicinal



Unusual
Foliage



Edible



Can be
Adapted
into a Tree



Interesting
Bloom
Colour/Shape

GLOSSARY

Branch Stubs: A short piece (snag) remaining on a trunk or stem when the branch is pruned, broken, or dead.

Burlapped and Balled Plants: Transplants that are sold to the consumer after they have already been planted for a certain period, dug up, and wrapped with a burlap cover (woven fabric) and secured through a string or wire. Balled refers to having a ball-shaped root wrapped with soil.

Groundwater: Water that is found underground between sand, rocks, and soil. 97% of the freshwater in the world comes from groundwater, and is used for drinking, agriculture, industrial processes, and to recharge lakes, rivers, and wetlands. However, groundwater resources are threatened with mismanagement and human-made and natural contamination.

Hardpan: Hard impervious layer of clay, subsoil, or bedrock below the soil, which is resistant to drainage and root growth.

Hedge: A group of shrubs in the same space that are aligned and trimmed to look like a fence or a barrier.

Invasive Plants: Non-native plant species that can spread out of control and displace other plants. The same characteristic applies to native plants but scientists, in that case, call them aggressive plants. Invasive plants can spread through seeds carried by birds, wind, or humans, or through their aggressive root systems, and this is likely to lead to economic and environmental harm or harm to human health.

Plazas and Squares: Open public areas in a city or town that are used for gatherings. It could be a multipurpose space to include public events during the year or recreation, such as sitting, interacting, relaxing, and enjoying the day. These spaces are often surrounded by buildings, shops, offices or the intersection of two or more streets. The design of these spaces often includes trees, seating benches, monuments, fountains, etc.

Potbound and Rootbound: Potbound roots become densely tangled where there is no space to grow. They begin growing in circles to become rootbound, and most of the time, they become interlaced with the container.

Water Runoff: Flow of water over the surface of the soil when soil is saturated and unable to absorb more water.

Soil Erosion: The natural displacement and wearing of the top layer of soil, usually caused by water and air. Displacement can also be caused by tilling in farming.

Sucker Growths: A sucker is a plant growth that develops at the base of the plant, or below the ground. Sucker growths are not desired because they absorb energy that is meant for the plant and can generate multiple roots that disrupt the host plant. Suckers can be removed by hand or by cutting them with a sharp tool. Rooted suckers can be dug up and planted elsewhere.

Transpiration: The process of water movement through roots, stems, and out to the atmosphere through leaves.

Tree Grate: Metallic permeable installation placed at the base of the tree at the same level of the pavement to protect its roots from damage by pedestrians.

Trunk Flare: The base of the plant where the trunk expands from the root ball.

Urban Heat Island Effect (UHI): The elevated temperature in cities compared to their surrounding areas can be explained by the urban heat island effect. The thermal properties and the geometry of the built environment result in higher heat absorption due to the materials used in urban surfaces. This explains why temperatures in the urban core are often significantly higher than the natural surroundings. The UHI effect can be accelerated by industrial activities, domestic heating, and motorized transportation. Negative impacts of the UHI effect include higher air pollution levels, greenhouse gases, and human health risks and discomfort, such as exhaustion, heat strokes, cramps, headaches, respiratory problems, and heat-related mortality. Increased energy consumption for cooling during summer is also a disadvantage of the UHI effect.

REFERENCES

- A. John Arnfield. (2019). Koppen climate classification | Description, Map, & Chart. In Encyclopædia Britannica. <https://www.britannica.com/science/Koppen-climate-classification>
- Alam, H., Khattak, J. Z., Ppoyil, S. B., Kurup, S. S., & Ksiksi, T. S. (2017). Landscaping with native plants in the UAE: A review. *Emirates Journal of Food and Agriculture*, 729. <https://doi.org/10.9755/ejfa.2017.v29.i10.319>
- Al Jaajaa, Z. 2019. Inclusive Public Spaces, The Case of Al Hashemite Plaza and Public Parks in Amman Downtown, Jordan
- Aljabri. H. 2014. The Planning and Urban Design of Livable Public Open Spaces in Oman: Case Study of Muscat
- Al Junaidi, M. (2005). أهم أشجار وشجيرات الوطن العربي البرية وفوائدها البيئية والاقتصادية والطبية (The Most Important Trees and Shrubs in the Arab World and their Environmental, Economic, and Medicinal Benefits). n.p.:n.p.
- Al Junaidi, M. 1999. Wild Plants of Jordan
- Aloqlah A. 1986. Poisonous Plants of Jordan. Yarmouk University. Jordan
- Aloqlah A. 2019. Forest Trees and Shrubs of Jordan. In press. Amman. Jordan
- arborpod. (2017). Best Practices - Staking a Tree [YouTube Video]. In YouTube. https://www.youtube.com/watch?time_continue=4&v=q3NNs5A4knk&feature=emb_logo
- AUB. (2020) . Retrieved 26 September 2020, from <https://landscapeplant.aub.edu.lb>
- Barnhardt . B. 2013. Guide: Streetscape Elements
- Birds and Blooms. (2020). Retrieved 26 September 2020, <https://www.birdsandblooms.com/>
- Cejka, J., & al-Aamiry, S. 1982. Trees and shrubs for landscape use in Jordan and neighbouring countries. Wiesbaden: Selden & Tamm.
- City of Vancouver. (2011). Street Tree Guidelines for Public Realm [Ebook]. City of Vancouver.
- Cooperative Extension Services. (1998). Staking and Guying Newly Planted Trees [Ebook].
- CSBE. 2004. Water-Conserving Gardens: A User's Manual. Amman. Jordan
- Development Bureau. street tree selection guide [Ebook]. Hong Kong.
- Domskey , I. Right Tree, Right Place: Selection and Applications
- Eisenhower, J. Guidelines for Planting Right Tree, Right Place in Arizona
- Floridata. (2020). Retrieved 26 September 2020, from <https://floridata.com>
- Guide:Streetscape Elements [Review of Guide:Streetscape Elements]. Nacto.Org; Better Streets San Francisco. https://nacto.org/wp-content/uploads/2015/04/streetscape_elements_san_francisco.pdf
- hardpan. (n.d.). The Free Dictionary. Retrieved September 26, 2020, from <https://www.thefreedictionary.com/hardpan>

- Hirons, A., & Sjöman, A. 2019. Tree species selection for green infrastructure.
- Hooker, S 1875, The flora of British India. Free academy
- How to Plant Containerized Trees. (n.d.). Www.Arborday.Org. Retrieved September 26, 2020, from <https://www.arborday.org/trees/planting/containerized.cfm>
- How to Prevent Soil Erosion Using Trees. (2018, April 29). Trees Unlimited. <https://treesunlimitednj.com/how-to-prevent-soil-erosion-using-trees/>
- How to select the best trees for sidewalks and tree grates. (2019, August 14). Reliance Foundry Co. Ltd. <https://www.reliance-foundry.com/blog/best-trees-for-streets-and-tree-grates#gref>
- How to Space and Plant Freestanding Shrubs. Reader's Digest. <https://www.readersdigest.ca/home-garden/gardening/how-space-and-plant-freestanding-shrubs/>
- Invasive Plants. (n.d.). Www.Fs.Fed.Us. <https://www.fs.fed.us/wildflowers/invasives/>
- Invasive Species Compendium. (2019). Cabi.Org. <https://www.cabi.org/isc/>
- Invasive Species Compendium. (2020). Retrieved 26 September 2020, from <https://www.cabi.org/isc/>
- Jaajaa, H.(2019), Interview with Zeena Jaajaa, Fundamentals of Plant Selection Criteria - Horticulture.
- Jaajaa, M.(2019), Interview with Zeena Jaajaa, Planting Techniques and Irrigation.
- Jordan River Foundation (JFR). (2002). الأشجار التاريخية في الاردن. (Historical Trees in Jordan).
- Kanwar, K., Dhamala, M. K., & Maskey-Byanju, R. (2016). Air pollution tolerance index: An approach towards the effective green belt around Kathmandu metropolitan city, Nepal. Nepal Journal of Environmental Science, 4, 23–29. <https://doi.org/10.3126/njes.v4i0.22721>
- Khalifeh, S. (1980). الأشجار والشجيرات بالمملكة العربية السعودية (Trees and Shrubs in the Kingdom of Saudi Arabia). Riyadh: El Khaled Offset Printing Press
- Lillo A et al., 2000. Arboles de Madrid. Comunidad de Madrid. Spain.
- Nikita. (2013, April 22). Difference between Plaza and Square. Wwww. Differencebetween.Info. <http://www.differencebetween.info/difference-between-plaza-and-square>
- Oracle. (n.d.). Department of Statistics. <http://dosweb.dos.gov.jo/>
- Planting a Tree. (n.d.). Wwww.Treesaregood.Org. <https://www.treesaregood.org/treeowner/plantingatree>
- Plants For A Future. (2020) . Retrieved 26 September 2020, from <https://pfaf.org/user/Default.aspx>
- Potter R, K Darmame, N Barham, S Nortcliff 2007. An Introduction to the Urban Geography of Amman, Jordan. Geographical Paper No.182

- San Francisco Urban Forest Plan
- Schmid, R. 2002. Review of Flora of Pakistan, Vols. 202 –206.
- Service, F. (2016). Carbon Sequestration. Fs.Fed.Us. <https://www.fs.fed.us/ecosystemservices/carbon.shtml>
- Simon & Schuster's. 1977. Guide to Trees
- Taifour H and Aloqlah A. 2017. Annotated Checklist of the Vascular Plants of Jordan, RBG.
- The Plant List. (2013). Theplantlist.Org. <http://www.theplantlist.org/>
- The Pros and Cons of Balled-and-Burlapped Plants. (n.d.). The Spruce. Retrieved September 26, 2020, from <https://www.thespruce.com/balled-and-burlapped-plants-2131008>
- The Trees and Design Action Group, 2008. No Trees No Future
- Town and Country Planning Organisation Government of India, 2014. Urban Greening Guideline
- Trees and Design Action Groub. 2011. The canopy
- Useful Temperate Plants. (2019). Theferns.Info. <http://temperate.theferns.info/>
- Useful Temperate Plants. (2020). Retrieved 26 September 2020, from <http://temperate.theferns.info/>
- Washington State University. (2020). SPACING OF LANDSCAPE PLANTS [Ebook]. Washington.Royal Botanic Gardens, Kew | Kew. (2020). Retrieved 26 September 2020, from <https://www.kew.org/>
- What is an Invasive Plant? (n.d.). https://www.envirothonpa.org/wp-content/uploads/2015/10/3-6-o_What-is-an-Invasive-Plant.pdf
- What is Groundwater. (2019). Groundwater.Org. <https://www.groundwater.org/get-informed/basics/groundwater.html>
- Why Its Important to Choose a Healthy Plant Before You Take It Home. (n.d.). The Spruce. <https://www.thespruce.com/how-to-choose-healthy-plants-1402467>
- Wright, J. J. (2011). What Happens if Plants Are Planted Too Close Together? | eHow. EHow. https://www.ehow.com/info_8792906_happens-plants-planted-close-together.html
- (ISA) . 2011. Proper Mulching Techniques
- Hancock, N. (2016, December 27). Safe Drinking Water Foundation. Safe Drinking Water Foundation. <https://www.safewater.org/fact-sheets-1/2017/1/23/groundwater>
- Microclimate. (n.d.). Science.Jrank.Org. <https://science.jrank.org/pages/4304/Microclimate.html>

