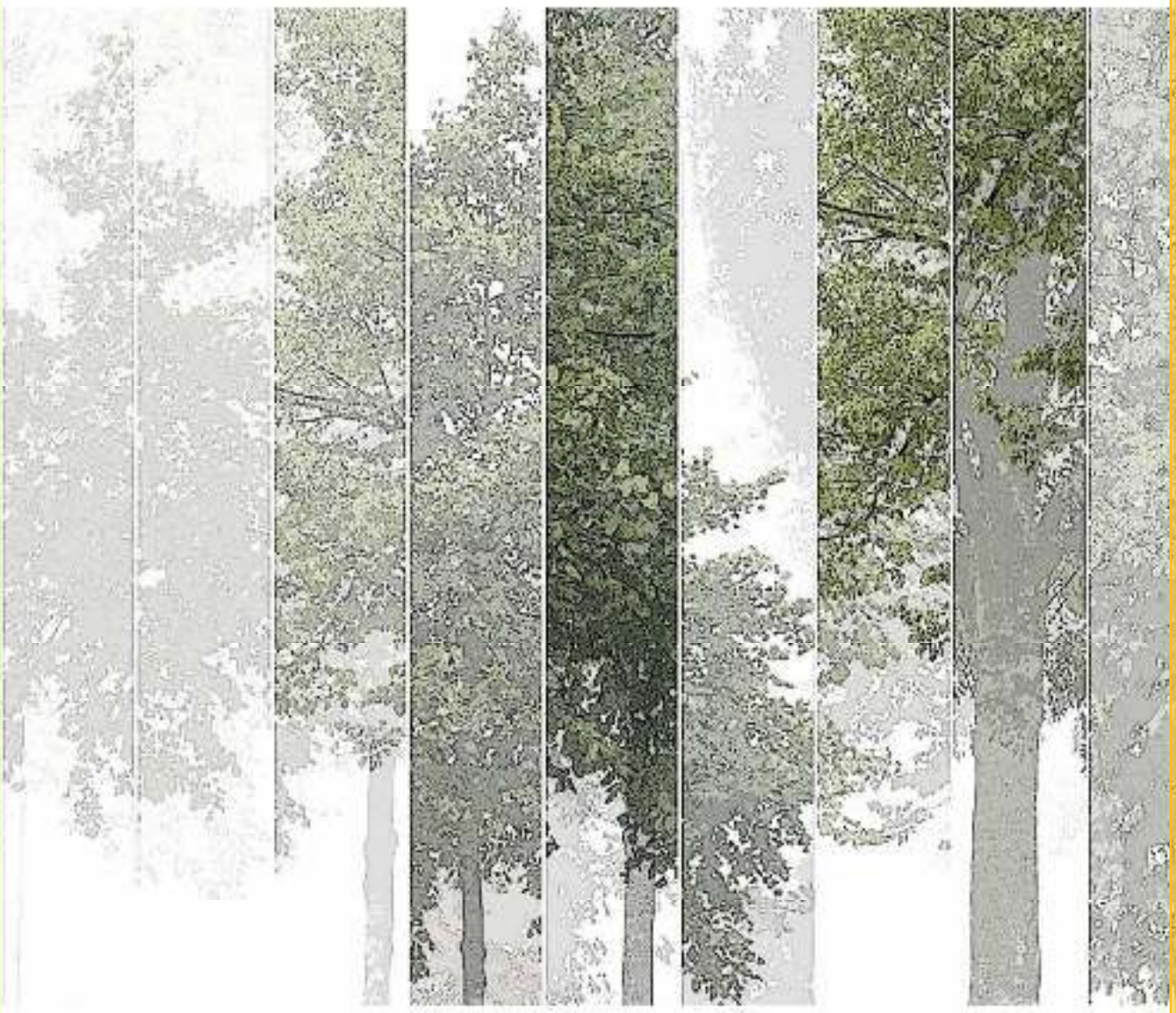


LANDSCAPE DESIGN

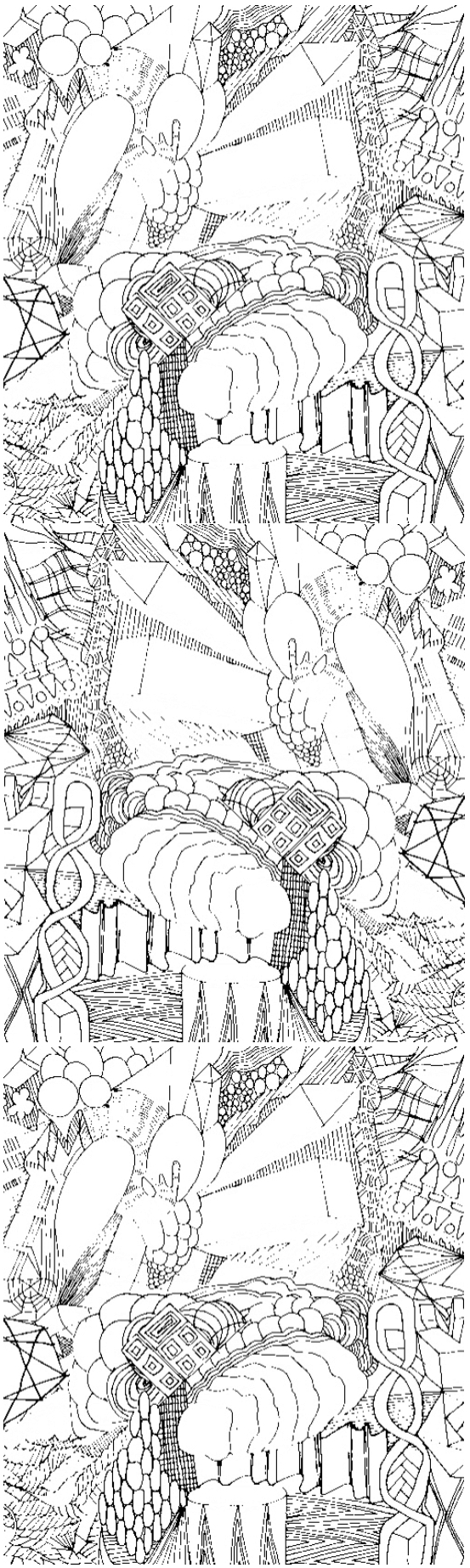
Mohd Shafrizal bin Md Hassan

Nurul Aqilah binti Johar

L A N D S C A P E DESIGN

Mohd Shafrizal bin Md Hassan

Nurul Aqilah binti Johar



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ACKNOWLEDMENT

We are very grateful to Allah SWT because, with HIS permission, this e-book Landscape Design (Beginner) is successfully produced. This e-book is published as a guide and reference for lecturer and Architecture students who want to learn on landscape design. Hopefully, this e-book can be used to the best advantage by all lecturer and students.

Thank you.

PREFACE

In this e-book, we design and develop an interactive e-book landscape design guidance for beginners to teach or learned about the function of landscape design in architecture till the cost estimation. This book contains lessons on planning, design, culture and environment. It provides knowledge on both theoretical and practical aspect in basic landscape design. Thus, it explains softscape and hardscape character in developing the design ideas embedded with digital and entrepreneurial skills. The effectiveness of these teaching and learning approaches can be seen at the end of each chapter. Furthermore, lecturers can assess and identify students' level of understanding through their work. Thus, the student can continue it until they fully understand the lesson without feeling tired or bored. Special thanks to e-learning PMM for countless effort in completing this e-book project.

TABLE OF

CONTENTS

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CHAPTER 01

INTRODUCTION TO LANDSCAPE DESIGN

1.0 INTRODUCTION TO LANDSCAPE DESIGN

1.1 Know the function of landscape design in architecture.

1.1.1 Describe briefly on planning, design, culture and environment

1.2 Understand the function of landscape elements.

1.2.1 Identify the softscape elements

1.2.2 Identify the hardscape elements

1.3 Apply softscape and hardscape.

1.3.1 Sketch types of softscape elements

a. Types of plant materials

b. Plants function and usage

c. Natural elements

1.3.2 Sketch types of hardscape elements

a. Types of man made components

b. Hardscape function and usage

1.4 Analyze the softscape and hardscape in basic landscape design.

1.4.1 Interpret landscape elements in design and environment.

Islam encourages its followers to plant, maintain and conserve plants since its importance to mankind is undeniable. It was reported by al-Bukhari that the Prophet (s.a.w) said:

There is no one among the muslims who planted a tree or bred a seed and later on their fruits were eaten by birds, men and animal, except one will rewarded with sadaqah reward.

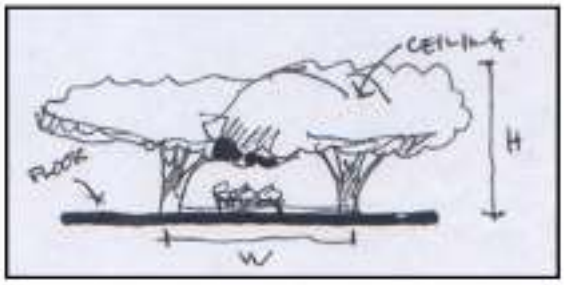
Al-Bukhari,Sahih al-Bukhari tr. Muhammad Muhsin Khan, 983, 3:66

Four major functional uses of plants are recognized:

- **ARCHITECTURAL** – structural characteristics
- **ENGINEERING** – structural characteristics
- **CLIMATIC CONTROL** – structural characteristics
- **AESTHETIC** – scenic/visual values

Height : the overall height and the height of the canopy.

Width : the width and spread of the canopy will determine whether a single plant can achieve the intended purpose or if more than one are needed.



[architectural]

Plant characteristics

When plants are used in architectural way, certain characteristics will determine how successfully they can be used, and the different purposes for which they will be most suitable.

Columnar trees may give a sense of formality

Picturesque tree with prominent branches to create a sculptural effect

Density : the opacity or transparency of the plant; depend upon the number, size, shape, colour and movement of the foliage.

Volume : the space occupied and created by the plant, or the area that is associated with it.

[architectural elements]

The primary architectural elements are walls, ceilings or floors, but there are other possibilities.

For eg. It is also possible to create windows, arches and tunnels.

Topiary allows the creation of sculptural forms through careful cutting and trimming. However, it is important to remember that plants are living things so the architectural effects achieved may not be as ordered or coherent as those found in a normal structure.

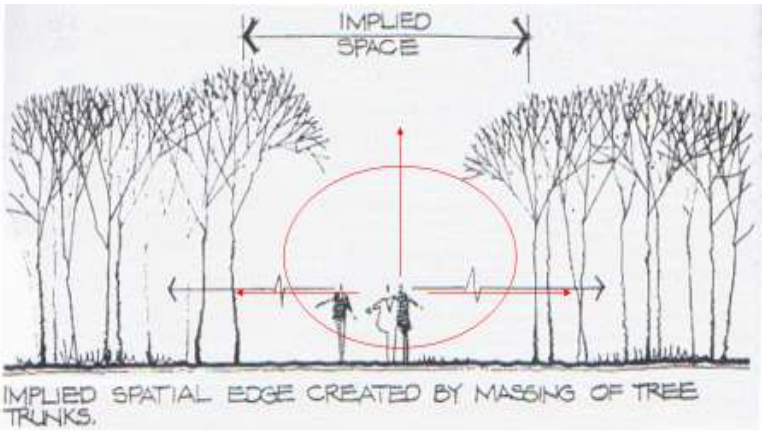
Walls can be created through:

Screens: give total enclosure and cannot be seen or walked through

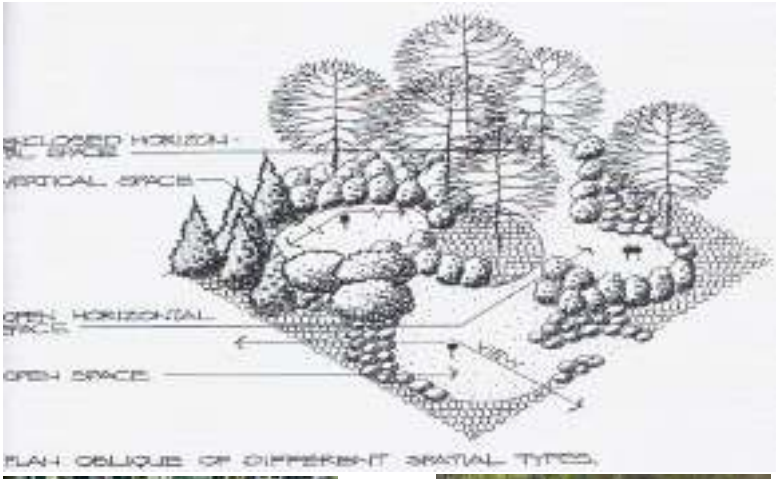
Baffles: essentially a light screen that can be partially seen through but does not allow movement. Use as an alternative to a barrier when physical, but not visual separation is required

Trunks: can form a symbolic wall that defines a space without any physical or visual separation

Fences: combination with climbing plants, creates an effective screen



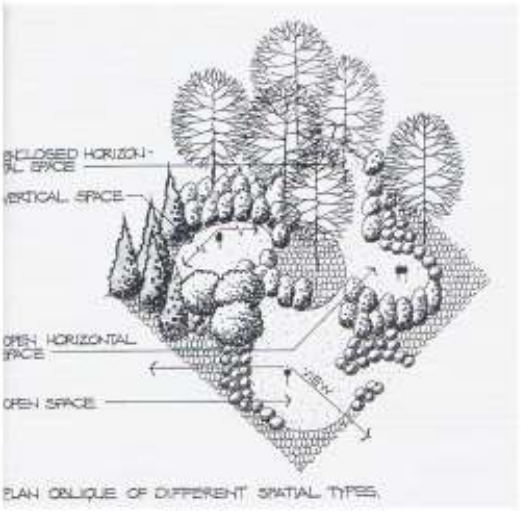
IMPLIED SPATIAL EDGE CREATED BY MASSING OF TREE TRUNKS.



PLAN OBLIQUE OF DIFFERENT SPATIAL TYPES.

Spatial Articulation

Various ways articulate spaces for human uses



Floors are created by groundcovers.

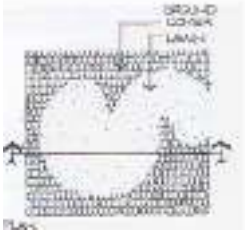
Generally the groundcovers are classified into:

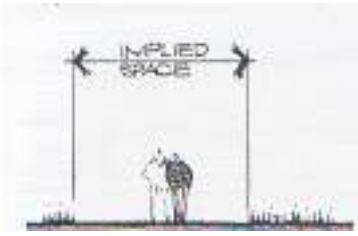
1. **True floor to walk on**
2. **A floor just to look at**

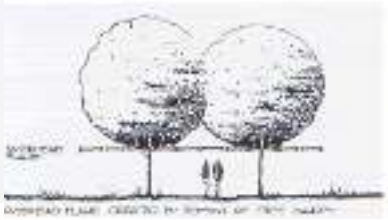
Ceilings are primarily created by:

Canopies: which allows movement beneath them

Pergolas: combination of plants on a structure







[engineering]

1. Erosion Control

Plant roots hold the soil particles together.

Its foliage reduces the impact of rainfall, which minimize the rate of soil erosion.

The contribution for each type of plant toward erosion varies according to:

i) **Growing habits**
ii) **Texture and density of foliage**
iii) **Root system**

➡ Trees anchor deeply into the soil and hold the slope while groundcovers grow laterally on the soil, prevent from blown by wind or wash away by water.

➡ Plant with dense foliage is more effective in reducing the impact of rainfall or flowing water than a loose canopied species.

2. Glare Control

Primarily glare from sky is caused through the scattering of light by particles of dust in the air. Glare also occurs from car headlights and spotlights used to illuminate facades.

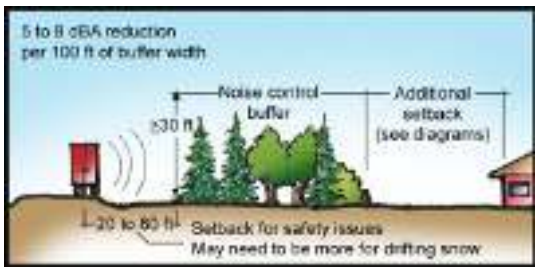
Glare can be prevented through careful planting to screen the source of the glare is substantially needed around building with glass facades.

3. Pedestrian Movement

Careful use of hedges and barriers is an effective means of controlling pedestrian movement, and directing people away from areas that are prohibited.

4. Noise Control

Plants can reduce noise levels by absorbing or deflecting the sound. The most effective part of the plant is its trunk or branches. Dense foliage absorbs or deflects more effectively than loose foliage. The reduction of noise levels proportion according to the depth of the vegetation barrier.



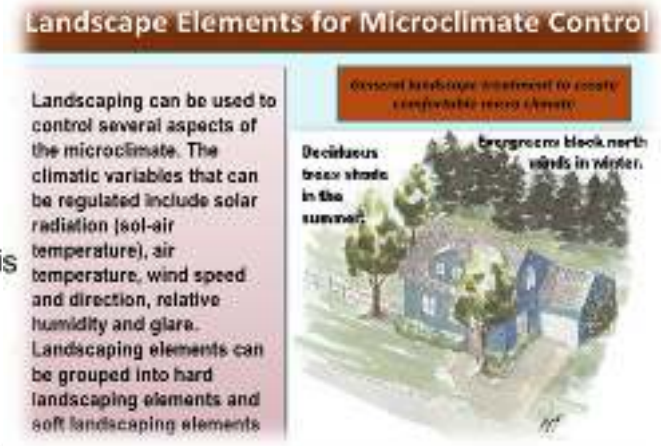
5. Air Pollution

Plants can particularly affect air pollution levels.

They **filter** particles of dust from the air and actually **absorb pollutant gases**. NASA research has consistently shown that living, green and flowering plants can remove several toxic chemicals from the air in the building interiors.

[climatic control]

Improvement in the **microclimate** of an area can be achieved through sensible planting



1. Solar Radiation

Plants reflect some solar radiation, absorb some for photosynthesis and allow some to be transmitted through their leaves. Their most important contribution to microclimate is their **shade**, which cools the air.

2. Temperature Control

Temperature control is related directly to **shade** and the amount of solar radiation a surface is exposed to. Heat gain of paved surfaces or building surfaces or building facades is significantly reduced through shading, which results in less heat reradiate later in the day and lowering air conditioning costs because **less heat is transmitted through the walls of the building to the interior.**

Direct heating effects on surface can be more dramatic; unshaded bare soil can be as much as 10°C warmer than shaded soil, and **grass is typically 3-5°C cooler than shaded soil**. Plants are cooler than the surrounding air because **water evaporates from their leaves, reducing the temperature.**

3. Wind Control

The best shape appears to be one where there is gradual increase in the direction of the prevailing wind, and where the windbreak is **5-10 rows of trees deep**.

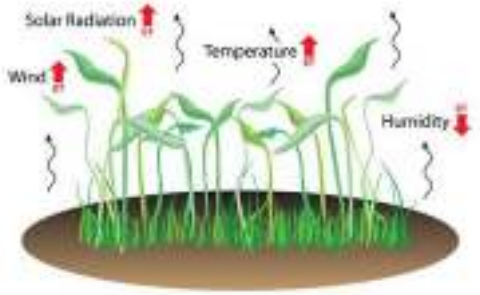
4. Rainfall and Humidity

Dense tree canopies can intercept as much as 60% of the rain that falls on them especially if the rain is light.

Significant increases in the level of bioclimatic comfort can be achieved through the use of plants to **reduce air temperature and increase humidity.**

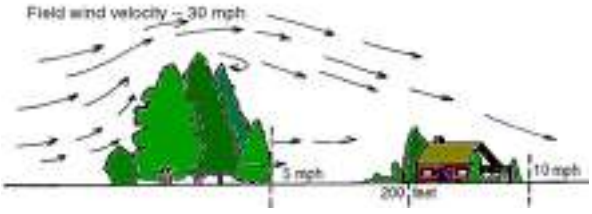
Sol-Air Temperature Control

- The use of ventilated shading provided by trees, shrubs and climbers reduces
  - solar radiation reaching ground and wall surfaces
  - reduction of air, ground and surface temperature



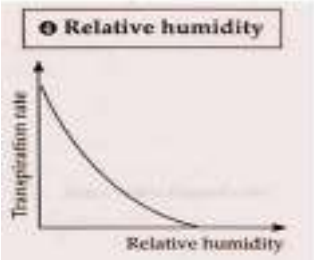
Control of Air Velocity and Wind Speed

- Plants are used to
  - induces air movement under and around trees
  - increase the velocity of stagnant and slow-moving air
  - reduce wind speed
  - filter dust



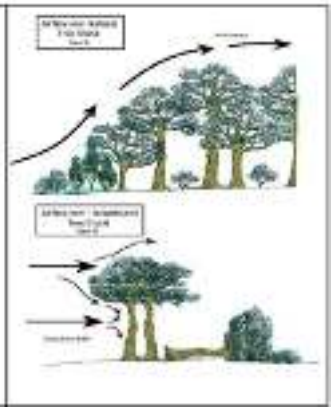
Humidity Control

- Increases relative humidity while reducing air temperature
  - Water evaporating from the surfaces
  - water evaporating from the leaves

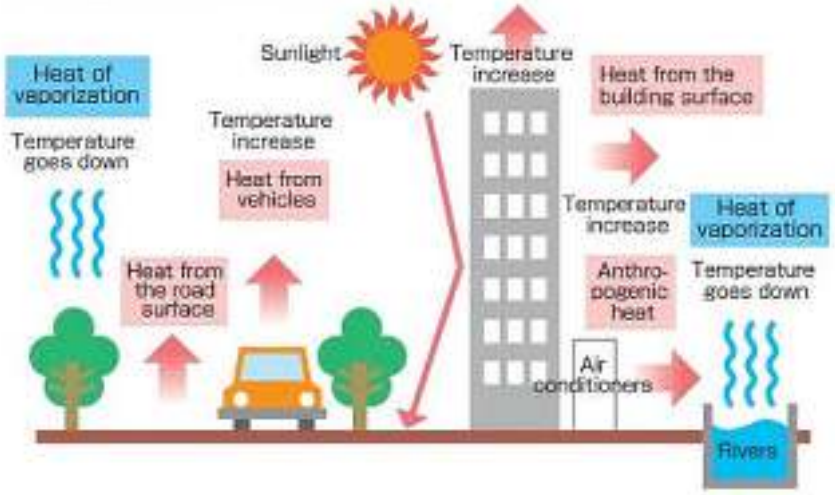


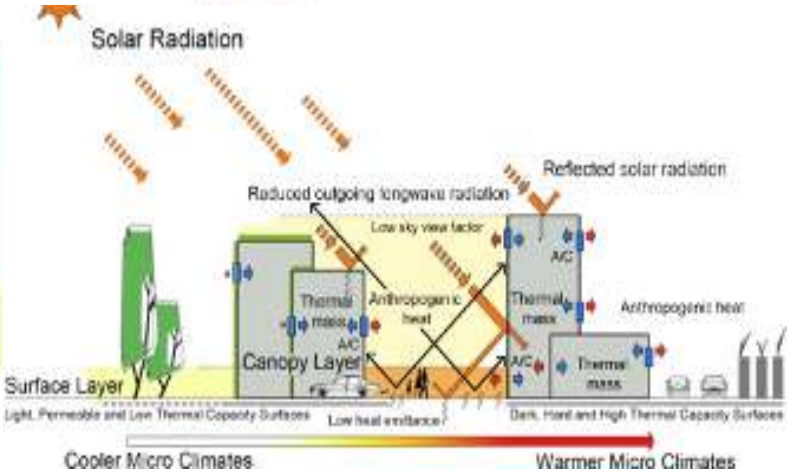
Control of Wind Direction

- Fences, walls, hedges and trees can be combined to form an obstruction that will deflect the wind above the building.
- Trees make channel air flow towards living space.
- Larger groups of trees can also be used to channel the wind in a particular direction.



●How the Heat Island Phenomenon occurs

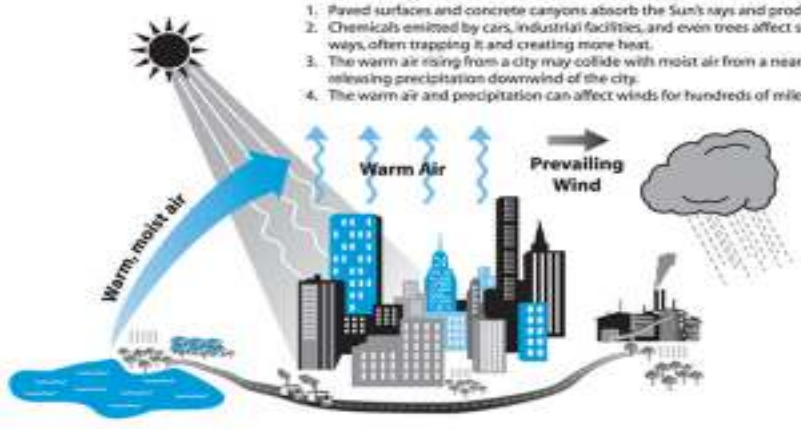




Urban Heat Island Effect

Urban areas influence the atmosphere through a number of processes:

1. Paved surfaces and concrete canyons absorb the Sun's rays and produce heat.
2. Chemicals emitted by cars, industrial facilities, and even trees affect sunshine in different ways, often trapping it and creating more heat.
3. The warm air rising from a city may collide with moist air from a nearby body of water, releasing precipitation downwind of the city.
4. The warm air and precipitation can affect winds for hundreds of miles.

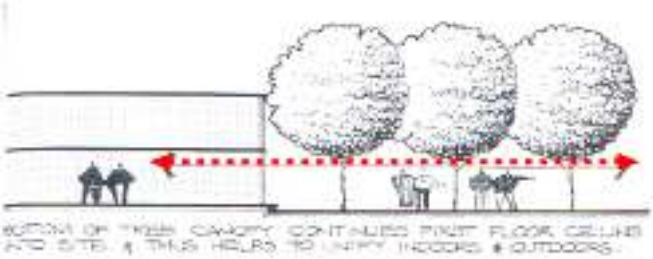


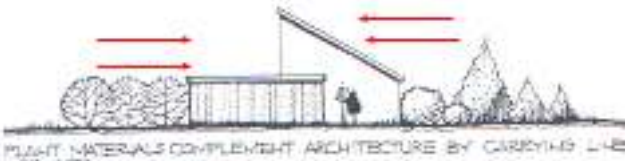
[aesthetic]

One of the main functions of plants is **decorative**, although this is far from the only function and value in design. Obviously, **form, colour and texture** are important in determining aesthetic value, but other qualities should not be ignored.

Qualities to be considered:

accent and contrast
silhouettes and reflection
smell
softening effect
unifying effect





Plants can frame a view


HARD LANDSCAPE Elements








What is hard landscape?

- Elements that are designed and built to fulfill the functions of landscape as well as enhancing it. **The effect is spontaneous and quick.**
- The floor and walls of an outdoor space
- **Includes pavements and walls, comprised of concrete, masonry materials, and raw materials like stone and gravel**
- **everything but plant material is considered hardscape**

Introduction

The basic of structural integration in Landscape Design is to create spaces, sequence and furnishing the space.

Spaces that are created are linked in sequence by route hence furnishing the space.

Functions of Hard Landscape

a) To cater the needs which could not be accommodated by soft landscape elements

b) To provide complimentary effect and to enhance the aesthetic of soft landscape



THE SHORE, SEREMBAN

Types of Hard Landscape

a) Static Hardscape.
elements that are used only to fulfill the function without reaction from the elements or the users.

b) Interactive Hardscape.
Elements that are able to give reactions to users or vice versa.

Physical and visual barrier affects the physical & psychological in controlling the movement of men, vehicles and animals. Indirectly, physical barrier functions as climate, sound and pollution control. Examples of physical barriers are:

- Water barrier – drainage ditch, moat (defensive ditch around castles), stream
- Landform – steep embankment 1:4 gradient

Man-made structures – bollard/fence/safety railing/retaining structures/example of visual barriers are solid wall and fences

railing/retaining structures/example of visual barriers are solid wall and fences

Man-made structures – bollard/fence /safety railing/retaining structures/example of visual barriers are solid wall and fences


THE SHORE, SEREMBAN

2. Special Surfaces

Special surfaces are added features that functions to indicate activities, event, safety, maintenance capabilities and etc.

a) paving/pavement (gravel, cobbles, tarmac, paving units eg. bricks and pebbles)

Special surfaces are added features that functions to indicate activities, event, safety, maintenance capabilities and etc.

a) paving/pavement (gravel, cobbles, tarmac, paving units eg. bricks and pebbles)

b) Pedestrian walkway made of timber

4. Furnishings

Structures that are added to spaces, to enhance and make complete the spaces

- Seating
- Dustbin
- Lighting
- Signage
- Telephone booth
- Focal elements: sculpture, fountain
- Shelters

Planter

Lighting

Signage

3. Linkages

Linkages or circulation systems are a combination of linear connectors/circulation paths, traffic generators and events along the connectors.

Entrances design

Crossings design

Steps design

Gateway/Archway design

Organize information to produce a landscape design for a small landscape project using digital design tools.

<u>Chap 1 : Introduction To Landscape Architecture.</u>

At the end of this chapter, students will be able to know:-

a. Function of landscape design in Architecture.

b. Function of Landscape elements.

c. Applying softscape & hardscape.

d. Interpret on softscape & hardscape in landscape design.

<u>Task</u> :

1) Find 5 types of softscape categories (consist of flower, leaf or fruit).

2) Find 5 types of hardscape elements.

<u>Requirements:</u>

a) Softscape

- **Botanical & Common Name.**
- **Picture.**
- **Function.**

b) Hardscape

- **Name/Category & Place.**
- **Function.**
- **Material.**

Tutorial 1...

Answer Tutorial 1...

5 DIFFERENCES BETWEEN HARDSCAPE AND SOFTSCAPE…

There are two main components of landscape design: **hardscape and softscape**. Hardscape refers to permanent, solid elements like walkways, walls, and patios. Softscape includes living elements that change over time, such as plants, trees, flowers, and soil. Outdoor living space provides an oasis to enjoy life. The outdoor design should include both hardscape and softscape elements to make it a comfortable place. The difference between the two is quite simple. Hardscaping elements are non-living things such as pavers, rocks, concrete, fences, gates, fountains, and more. Softscape elements are living things such as grasses, flowers, groundcovers, shrubs, and trees.

4 MAJOR FUNCTIONAL USES OF PLANTS ARE CATEGORIZED:

a	e	s	t	h	e	t	i	c	q	b	c	s
o	r	f	h	b	a	d	t	j	u	n	t	q
e	k	c	i	i	m	a	t	i	c	b	m	o
n	t	e	h	w	d	f	f	d	o	a	n	r
g	m	m	a	i	h	j	g	r	m	z	f	t
	g	l	g	j	t	k	e	k	t	t	g	h
n	r	i	b	j	k	e	j	t	r	p	j	j
e	w	j	c	a	d	l	c	g	o	l	r	p
e	e	h	b	v	j	g	k	t	l	y	z	w
r	a	r	q	d	t	s	a	b	u	e	a	s
	c	f	a	c	v	m	l	c		r	i	h
n	z	d	s	f	r	y	i	g	h	u	a	m
g	g	y	v	b	f	r	s	f	d	s	w	i

CHAPTER 02

BASIC OF LANDSCAPE DESIGN

2.0 Basic of Landscape Design

2.1 Organize landscape design for small project using digital design tools.

2.1.1 Describe the elements and principles of design.

2.1.2 Identify the context of space planning in landscape design.

2.1.3 Show the aesthetic use of plant material.

2.1.4 Display the characteristics of a design theme.

2.1.5 Organize design theme to a small space garden.

2.1.6 Construct final presentation drawing using 3D digital tools to convey design idea in small landscape project.

DEFINITION

As a landscape designer we should have at the very least a basic understanding of the principles of landscape design when we creating our own landscape design.

These principles will help you generate ideas and increase your creativity.

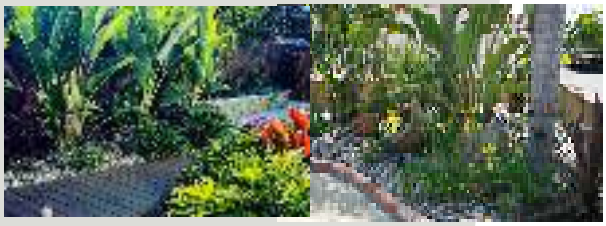
It just guideline to create your new design idea.

PRICIPLE

- Unity
- Simplicity
- Balance
- Color
- Line
- Proportion
- Repetition

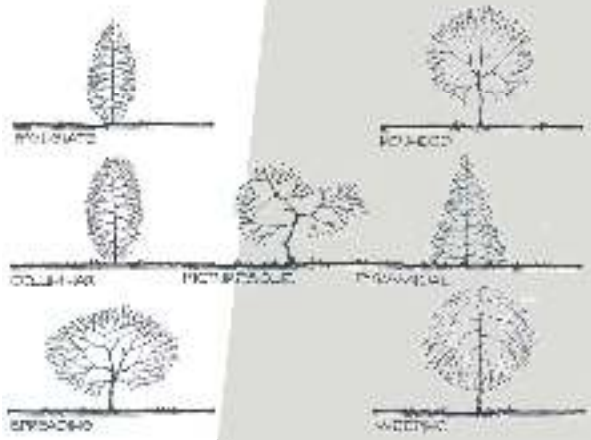
PLANT CHARACTER

- Plant Size
- Plant Form
- Plant Color
- Plant Texture
- Foliage Type




Fastigate
Weeping
Columnar
PLANT FORM
Pyramidal
Spreading/
Horizontal
Round/
Globular


TREE FORMS
ROUND
SPREADING
PYRAMIDAL
OVAL
CONICAL
VASE
COLUMNAR
OPEN
WEEPING
IRREGULAR



PLANT COLOR

a) Most Notable Visual Characteristic.

b) Effect Directly On Feeling & Mood Of An Outdoor Space.

c) Used To Reinforce Function Of Plant Size & Form.

<u>Colour</u>

Leaf, foliage, flower, inflorescence, fruits.

<u>Psychological Effect Of Colors.</u>

Warm colors – Exciting, inspiring, arousing, passionate.

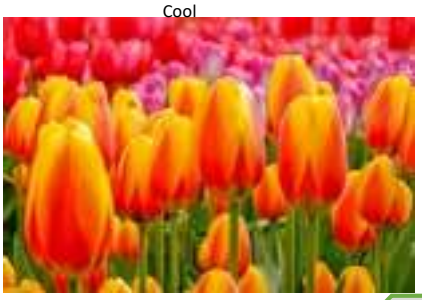
Cool colors – Relaxing, Cooling, calming, quiet, soothing, depressing.

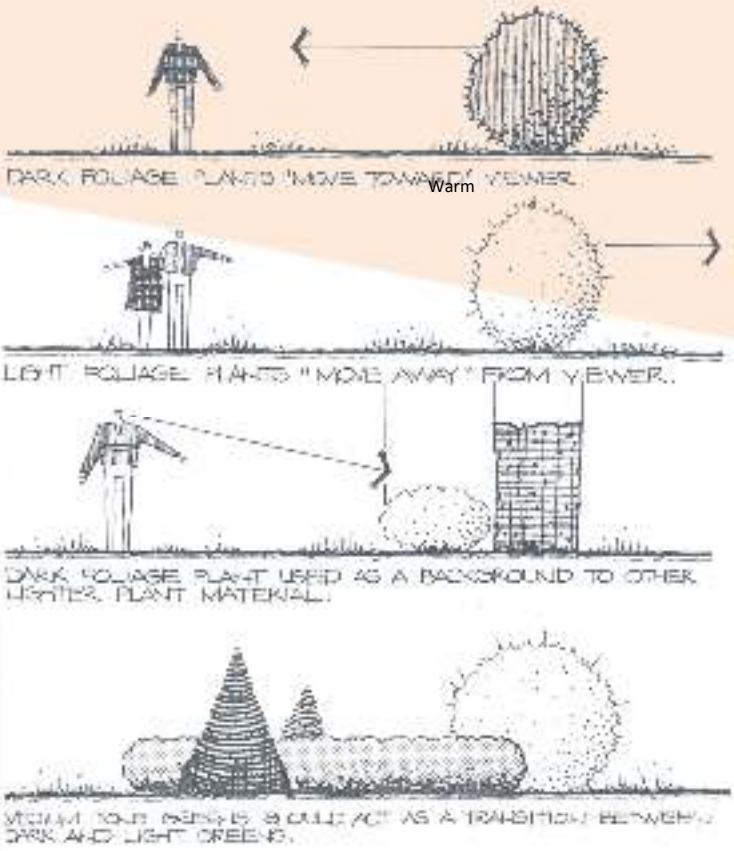
<u>Colors and symbolism.</u>

- Yellow – royal, gold, auspicious.
- White - truth, purity, virginity.
- Red – fire, blood, courage, good fortune, happiness.
- Green – fertility, abundance, environment.

Warm

Cool



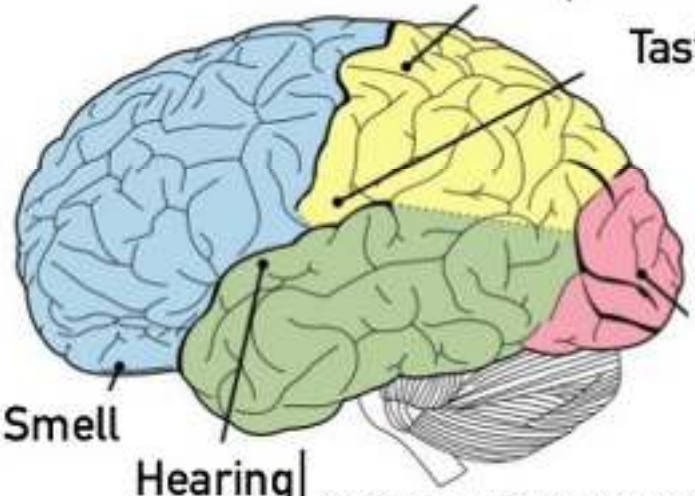


Your Brain and 5 Senses

A sense is a physiological capacity of organisms that provides data for perception. The nervous system has a specific sensory system or organ, dedicated to each sense.

Touch also called tactition (adjectival form: tactile) or mechanoreception, is a perception resulting from activation of neural receptors, generally in the skin including hair follicles, but also in the tongue, throat, and mucosa.

Taste (or, the more formal term, gustation) is one of the traditional five senses. It refers to the capability to detect the taste of substances such as food, certain minerals, and poisons, etc.



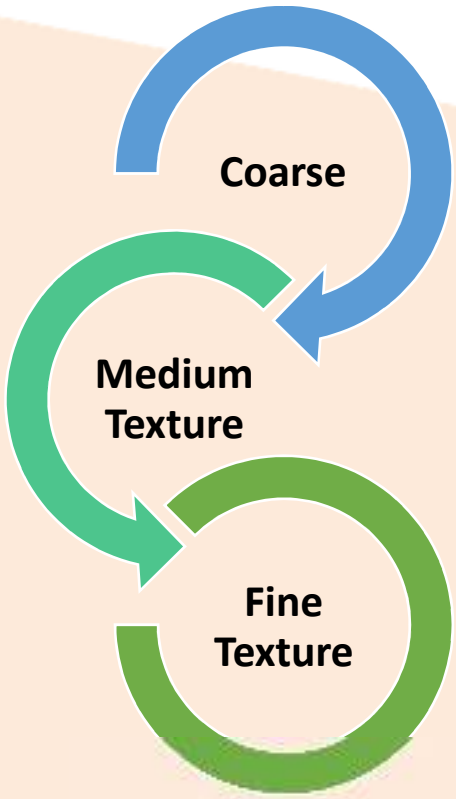
Smell or olfaction (adjectival form: olfactory) is the other "chemical" sense. Unlike taste, there are hundreds of olfactory receptors (388 according to one source[9]), each binding to a particular molecular feature.

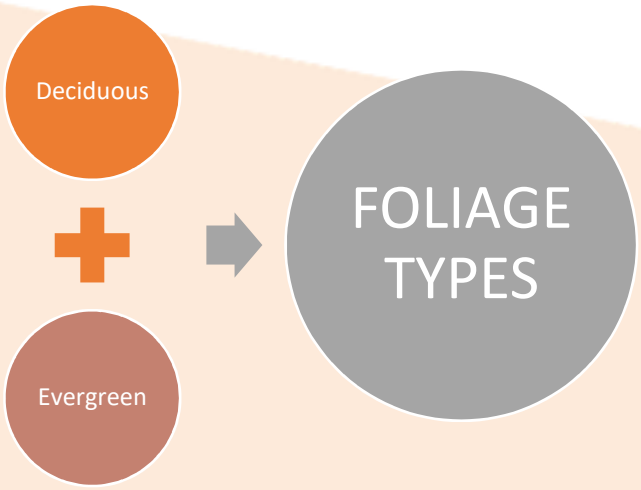
Hearing (adjectival form: auditory) is the sense of sound perception. Hearing is all about vibration.

Vision is the capability of the eye(s) to focus and detect images of visible light on photoreceptors in the retina of each eye that generates electrical nerve impulses for varying colors, hues, and brightness.

Espresso

PLANT TEXTURE





Deciduous vs Evergreen

Deciduous

a) It loses its leaves in certain time and regains them in certain period.

b) Generally the leaves are thin, flat and found in numerous shapes or sizes.

c) One significant function is to emphasize the season.

Evergreen

a) The plant that retain its leaves throughout the year.

b) The leaves are permanently green, static & stable.

c) One of the choice to provide permanent, no changing screening, and privacy control throughout the year.

IN CONCLUSION all this element are basic to the landscape design.

They make landscape more interesting & meaningful from the visual & its function. Its not just for aesthetic value.

To enhance creativity of our landscape design, all these basic principles can be used as our guideline.

Creativity are limitless.

CHAPTER 03

COST ESTIMATION

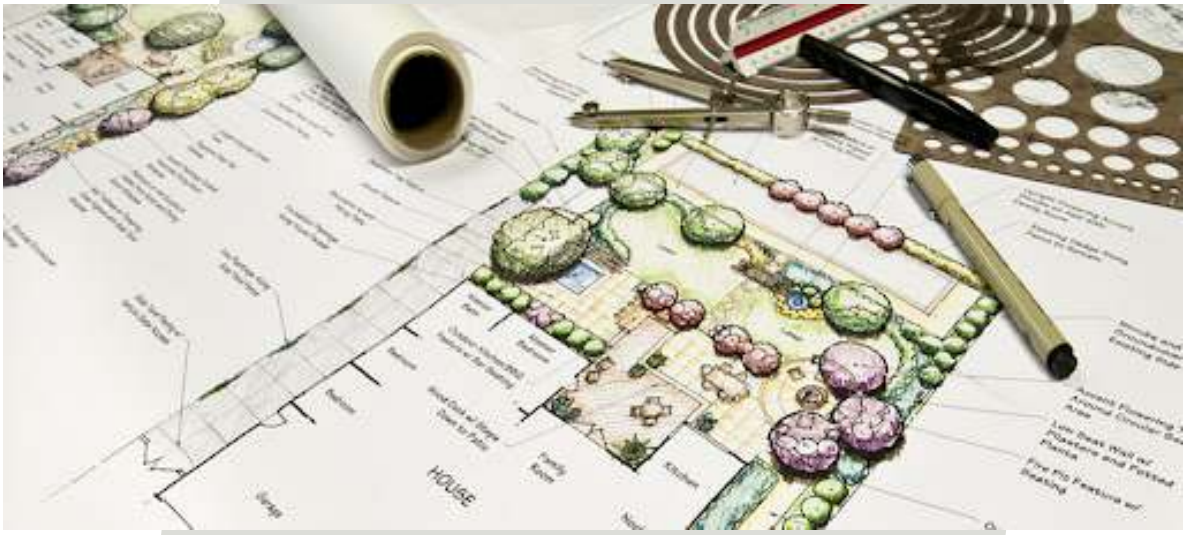
3.0 Cost Estimation

3.1 Propose cost estimation for small landscape project based on landscape plan.

3.1.1 Describe the usage of cost estimation.

3.1.2 Discuss the details cost estimation for landscape design.

3.1.3 Justify cost estimation of landscape project based on landscape design proposal.



HOW MUCH DOES A LANDSCAPE COST?

For example, **you are the client**, what are the things you need to know about a landscape cost…

Definition of Terms:

- **Landscape** - all the visible features of an area of countryside or land, often considered in terms of their aesthetic appeal.
- **Cost** - (of an object or an action) require the payment of (a specified sum of money) before it can be acquired or done.
- **Landscape Design** – Landscape design is an independent profession and a design and art tradition, practised by landscape designers, combining nature and culture.

The cost of a landscape design has many variables. A few of them are fairly obvious, such as:

- the size of your property
- elements you want to include in the design (patio, water feature, fire pit, arbor, outdoor kitchen, landscape lighting, etc.)
- fees charged by the landscape designer or landscape architect

Other, not so obvious factors, that determine the cost of your landscape design may also include:

- your existing space and the existing features
- the topography of your site
- your location
- if you have a site plan or other measurements of your property
- the degree of detail that is needed on the plan
- the expertise of the landscape designer or landscape architect

Determine the price of extra materials.

- Generally speaking, **the more time and expertise that goes into the planning and design of a landscape, the more the landscape design will cost.** Understanding how much time goes into the a landscape design can be difficult for many homeowners to understand.

Allow selling cost…

- Once you know how much the materials will cost, you can determine what you need to charge the client.
- In most cases, multiply the landscaper's cost by 115% to determine the selling cost.

Add in the expanse of labor.

- Determine your time on the landscaping job comparing the needs of this job with previous jobs.
- Calculate the cost of labor by multiplying the hourly wages by the number of man-hours.

Add all expenses together for a bidding price.

Subtract the bidding price from the company cost to determine profit.

What is Cost Estimation?

a) An approximation of the probable cost of a product, program, or project, calculated on the basis of available information.

b) Process of predicting the cost of a facility through quantitative analysis of the work required by the design documents.

Terms in Cost Estimation.

Preliminaries- part of the tender documents prepared by (or on behalf of) the client.

Contingency – Emergency cases. Usually 5% from overall cost estimation.

Provisional – Sub to the contractor. Not dependent by consultant.

ITEM	TASK DESCRIPTION	QTY	UNIT	RATE	KSHS.
A	**GROUND PREPARATION**				
i	Ground definitions in making up of working levels and disposal of arisings	17,721	SM		
ii	Supply well decomposed farm yard manure to be mixed with the topsoil averagely 150mm for lawn areas and to use in backfilling of planting pits	268	CM		
B	**LAWN GRASS**				
	Supply,sort and plant in 100mm centre to centre Kikuyu spngs lawn grass on the defined area	12,405	SM		
C	**INSTALLATION OF GROUNDCOVERS):**				
	Pits excavation for Groundcovers				
	Excavate circular pits, average 300mm diameter, commencing at existing ground level but not exceeding 0.5 metres depth average 350mm deep and spread arisings evenly around	713	CM		
	Backfilling of Planting pits				
	Backfill excavated planting pits with Approved imported Red soil mixed with farmyard manure at the ratio 4:1, 350mm deep	713	CM		
	Planting of Groundcovers				
	Supply, plant, weed, water and tend well the under-mentioned Assorted species of groundcovers till handing over;				
i	*CUPHEA (Cuphea ignea)*	600	NO		
ii	*Helichrysum petiolare*	180	NO		
iii	*PURPLE LANTANA (Lantana sellowii 'pink')*	1,600	NO		
iv	*WHITE LANTANA (Lantana sellowii 'white')*	1,600	NO		
LI1	**Total carried to Collection**				

PROPOSED LANDSCAPE WORKS FOR PROPOSED 2 BLOKS OF 21 & 23 STOREY SERVICE APARTMENT AT LOT PT 12382 AND PT 6521, TAMAN BUKIT SEGAR, MUKIM AMPANG, DAERAH HULU LANGAT, SELANGOR DARUL

	LANDSCAPING WORKS				
	Podium (Level 9)				
1	**- Softlandscape Works**				
A	***Work On Site***				
	Site Preparation	L/S			2,500.00
B	***Hole Excavation***				
1	Trees & Palms	Nos	145	18.00	2,610.00
2	Shrubs	Nos	2850	1.50	4,275.00
3	Turfing	m^2	0	1.00	0.00
C	***Soil Mixture***				
1	Trees & Palms		145	40.00	5,800.00
2	Shrubs	m^3	892	40.00	35,680.00
3	Turfing	m^3	0	40.00	0.00
4	Turfing sand beding	m^3	0	80.00	0.00
D	***Trees Staking***				
1	Trees / Palms	Nos	145	15.00	2,175.00
E	***Mulching***				
1	Trees & Palms	Nos	145	5.00	725.00
2	Shrubs	Nos	2,950	1.00	2,950.00
F	***Root Barrier & Dewatering***				
1	Supply & install Horizontal floor drainage	m^2	1,000	60.00	60,000.00
2	Supply & install Vertical floor drainage	m^2	300	60.00	18,000.00
G	***Trees / Palms***				
1	Feature Tree / Palms	NOS		15,000.00	0.00
2	Medium Tree / Palms	NOS	45	380.00	17,100.00
3	Small Tree / Palms	NOS	100	220.00	22,000.00
H	***Shrubs***				
1	Advance Shrubs	NOS	100	60.00	6,000.00
2	Medium Shrubs	NOS	350	15.00	5,250.00
3	Small Shrubs	NOS	2500	6.00	15,000.00
I	**Turfing & earth mound**				
1	Axonopus compressus (closed Turfing-roll form)	m^2		8.00	0.00
	Sub-Total				***200,065.00***
J	**Maintenance**				
	To provide standard & typical maintenance	Month	24	2,500.00	60,000.00
	Sub-Total				***60,000.00***
K	**- Hard-landscape Works (Provisional Sum)**				
	- Timber Deck	m^2	750	500.00	375,000.00
	- Turf Lawn	m^2	100	280.00	28,000.00
	- Jogging Trail	m^2		160.00	0.00
	- Shower stall	no.	1	5,000.00	5,000.00
	- Vertical Green Wall	LS			18,000.00
	Sub-Total				***426,000.00***
	Total Carried To Summary				**686,065.00**

PROPOSED LANDSCAPE WORKS FOR PROPOSED 2 BLOKS OF 21 & 23 STOREY SERVICE APARTMENT AT LOT PT 12382 AND PT 6521, TAMAN BUKIT SEGAR, MUKIM AMPANG, DAERAH HULU LANGAT, SELANGOR DARUL

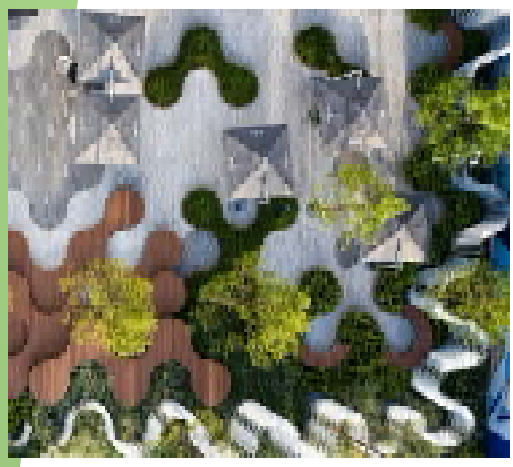
	LANDSCAPING WORKS				
1	**Podium (Level 8)** **- Softlandscape Works**				
A	***Work On Site***				
	Site Preparation	L/S			2,500.00
B	***Hole Excavation***				
1	Trees & Palms	Nos	291	18.00	5,238.00
2	Shrubs	Nos	4100	1.50	6,150.00
3	Turfing	m^2	0	1.00	0.00
C	***Soil Mixture***				
1	Trees & Palms	m^3	291	40.00	11,640.00
2	Shrubs	m^3	892	40.00	35,680.00
3	Turfing	m^3	0	40.00	0.00
4	Turfing sand beding	m^3	0	80.00	0.00
D	***Trees Staking***				
1	Trees / Palms	Nos	291	15.00	4,365.00
E	***Mulching***				
1	Trees & Palms	Nos	291	5.00	1,455.00
2	Shrubs	Nos	4,200	1.00	4,200.00
F	***Root Barrier & Dewatering***				
1	Supply & install Horizontal floor drainage	m^2	2,100	60.00	126,000.00
2	Supply & install Vertical floor drainage	m^2	300	60.00	18,000.00
G	***Trees / Palms***				
1	Feature Tree / Palms	NOS	1	15,000.00	15,000.00
2	Medium Tree / Palms	NOS	150	380.00	57,000.00
3	Small Tree / Palms	NOS	140	220.00	30,800.00
H	***Shrubs***				
1	Advance Shrubs	NOS	100	60.00	6,000.00
2	Medium Shrubs	NOS	600	15.00	9,000.00
3	Small Shrubs	NOS	3500	6.00	21,000.00
I	**Turfing & earth mound**				
1	Axonopus compressus (closed Turfing-roll form)	m^2		8.00	0.00
	Sub-Total				***354,028.00***
J	**Maintenance**				
	To provide standard & typical maintenance	Month	24	2,500.00	60,000.00
	Sub-Total				***60,000.00***
K	**- Hard-landscape Works (Provisional Sum)**				
	- Timber Deck	m^2	850	500.00	425,000.00
	- Turf Lawn	m^2	800	280.00	224,000.00
	- Reflexology Corner	m^2	9	500.00	1,800.00
	- Jogging Trail	m^2	144	160.00	23,040.00
	- Concrete Banding	LS			25,000.00
	- Precast Stepping stone	LS			15,000.00
	- BB-Q Terrace	unit	1	15,000.00	15,000.00
	- Feature Play-structure and equipments c/w rubber mat	LS			100,000.00
	- Feature custom made Garden Swing	no.	2	7,000.00	14,000.00
	- Shower stall	no.	1	5,000.00	5,000.00
	- Vertical Green Wall	LS			30,000.00
	Sub-Total				***877,840.00***
	Total Carried To Summary				**1,291,868.00**

PROPOSED LANDSCAPE WORKS FOR PROPOSED 2 BLOKS OF 21 & 23 STOREY SERVICE APARTMENT AT LOT PT 12382 AND PT 6521, TAMAN BUKIT SEGAR, MUKIM AMPANG, DAERAH HULU LANGAT, SELANGOR DARUL

Landscape Works Cost Estimation (Overall)

Date: 28th June 2012

	DESCRIPTION	UNIT	QTY	RATE	TOTAL
A	**Preliminaries**				15,000.00
B	**Ground Level**				627,100.00
C	**Podium (Level 8)**				1,231,868.00
D	**Podium (Level 9)**				626,065.00
E	**Softscape Maintenance**				180,000.00
F	**Contingency** (about 5 %)				50,000.00
	Sub-Total				**2,730,033.00**
G	**Provisional**				
1	Light fittings	LS			300,000.00
2	Swimming Finishes	LS			350,000.00
3	2 Swimming Pools, Reflecting Feature Pond, Yoga Deck Pond, Feature Pond, & Chillax Deck Pond Filtration system & fitting	LS			600,000.00
4	Swimming Exercise Equipment & rain shower	LS			50,000.00
5	Hydrogym equipment	unit	4	20,000.00	80,000.00
5	Irrigation Tap Point	LS			35,000.00
6	Automatic Watering System for plants	LS			45,000.00
7	Level 8 Corridoor paving finishes	LS			85,000.00
8	Garden Furniture: seats, tables, Sundeck Chairs & Sofa	LS			60,000.00
9	Mini Race Car Track	LS			15,000.00
10	Planter Walls Plastering C/W Spray Tiles & Groove Lines	LS			30,000.00
	Sub-Total				**1,650,000.00**
	Grand-Total				**4,380,033.00**



Organize an appropriate landscape design layout with cost estimation for a small area.

Project

Chapter 2 & 3 : Basic Landscape Design & Cost Estimation.

TASK Landscape Design Layout : Landscape Interior (Studio).

Produce a Project (of T2&T3) consists of:

a. Introduction on Landscape Design Interior of selected (05 nos of Architecture Studio, Jabatan Kejuruteraan Awam, Politeknik Merlimau.)

b. A3 size (with appropriate scale) :-

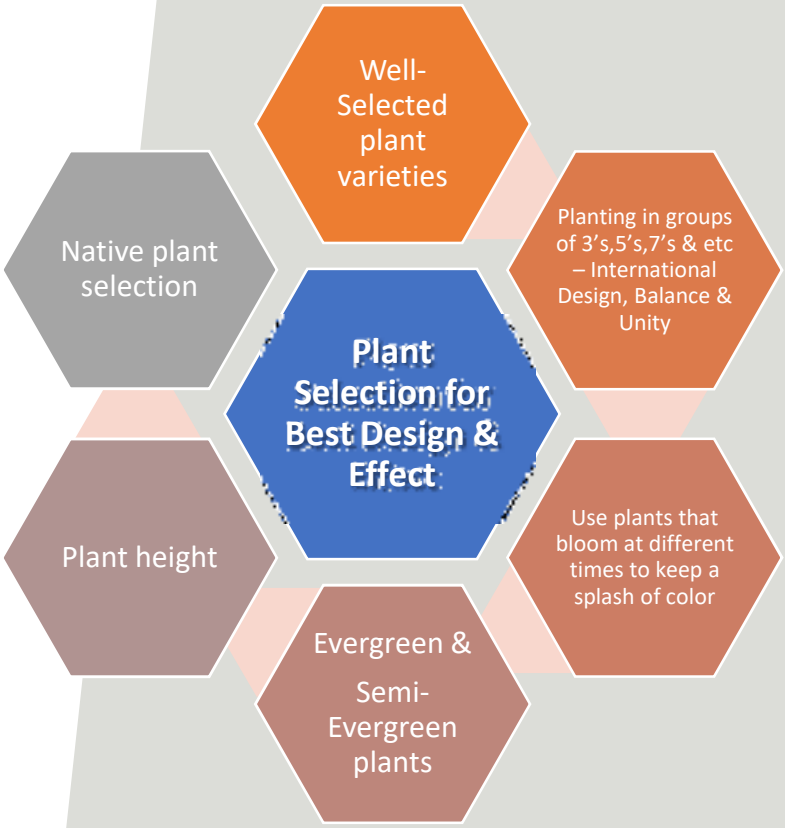
- Introduction.
- Concept & Idea of development.
- Key Plan, Location Plan & Master Plan.
- Section x 1 ; Elevations x 2 ; Perspectives x 4.

c. **Cost estimation : Includes Description, Quantity and price.**

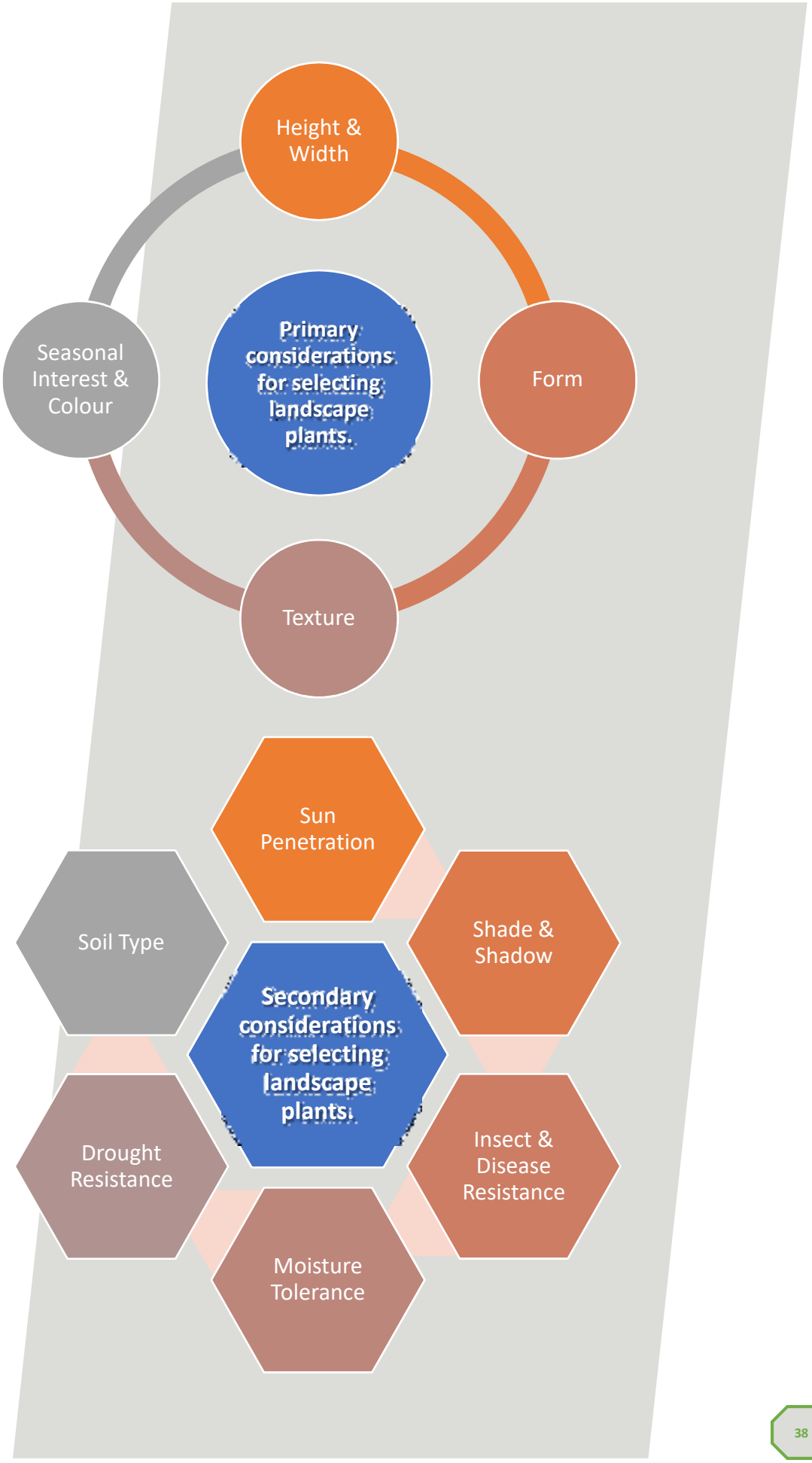
Tutorial 2...

Answer Tutorial 2...

CONCLUSION



In conclusion, the art of landscape design lies in the seamless fusion of architecture and environment, transcending aesthetics to become a harmonious symphony between the man-made and the natural. Through an understanding of genius loci, architectural framing, lines, and form, landscape architects weave enchanting outdoor spaces that celebrate the spirit of each place. Embracing sustainability and inviting human interaction, these designs not only captivate the eye but also enrich our lives, reminding us of our profound connection to the natural world. In the other hand, proper plant selection is one of the most important 'secrets' in successful landscaping. There are also elements that can be used with purpose such as screening, shade, erosion control, dividing, focal points, noise control and etc. In addition by choosing the right plants for the right place and purpose is helpful for professional looking, working and manageable landscaping. Finally, to show the value of landscape design, we need to highlight the benefits that the design offers to our audience and the wider society. Benefits can include the functional, aesthetic, environmental, social, economic, or cultural outcomes or advantages of the design.


Height & Width
Seasonal Interest & Colour
Primary considerations for selecting landscape plants.
Form
Texture
Sun Penetration
Soil Type
Shade & Shadow
Secondary considerations for selecting landscape plants.
Drought Resistance
Insect & Disease Resistance
Moisture Tolerance

REFERENCES

Chen, L., Ang, W. F., Ng, A., Teo, J., & Tang, J. (2015). 1001 Garden Plants in Singapore. National Parks.

Negara, J. L. (2008). Garis Panduan Landskap Negara, Edisi 2. Kuala Lumpur. Kementerian Perumahan Dan Kerajaan Tempatan.

Holden, R., & Liversedge, J. (2014). Landscape architecture: an introduction. Laurence King Publishing.

Cook, T. W., & VanDerZanden, A. M. (2011). Sustainable landscape management: design, construction, and maintenance.

Wiley. Wilk, S. (2014). Construction and design manual: drawing for landscape architects. DOM Publishers.

LANDSCAPE DESIGN

Landscape Design is a part of a subject for architecture student. This book are developed as a guide and reference for lecturer and architecture students who want to learn on landscape design for beginner. Hopefully, this e-book can be used in class or any lesson for a great cause.

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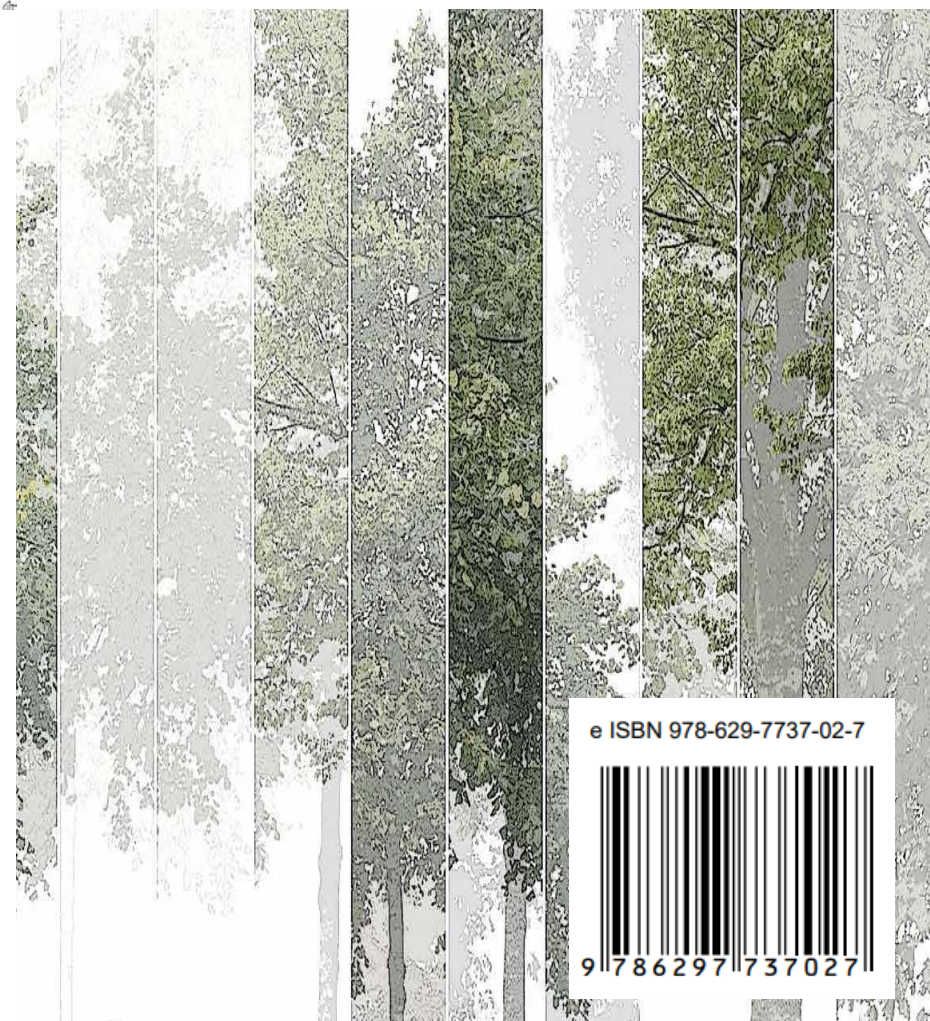

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