



Myanmar Green Building Society: What is Green Building ?

MGBS Chairperson Prof. Dr. Swe Swe Aye

VENUE: Function Hall , Federation of Myanmar Engineering Society

08 Oct. 2022



The Myanmar Green Building Society (MGBS) was founded in 2019 with the mission to reduce the negative impacts of buildings on our environment.

MGBS has joined hands with like-minded organizations locally and Internationally and has committed its efforts to promoting a green building industry in Myanmar. We aim to support the delivery of green buildings and green spaces to create green cities for future generations.



* This movement began when the Green Building Committee (GBC) was established in 2014 as one of the technical committees of Building Engineering Institute (BEI).

* As the GBC grew, its work expanded to include a wide range of services, including supporting the preparation of Green Building Standards for nationwide application.



* This growing demand on GBC's skills required greater capacity, and so, MGBS was formed as an independent organization capable of driving the green agenda forward quickly and effectively.

* MGBS brings together an increasing number of professionals from various disciplines: Architects, Engineers, Environmentalists, along with commercial companies and investors in the country's infrastructure; together we are committed to transform our industry into a green building industry.



* (MGBS) is an emerging organization that pursuing the movement of green buildings and sustainable development.

* Together with GBC, will be leading on awareness raising, knowledge sharing, training and setting the standards of responsible and efficient built environment as part of the Myanmar National Building Code (MNBC 2016, 2020).



OBJECTIVES

- To serve and promote the design and construction practices of GREEN building design and constructions.
- To organize such as forum, seminar, workshop and other activities for research, education, design, construction, testing, manufacturing and operations related to building industry.
- To develop and implement the programs, trainings and activities to enhance technology transfer, business practices and professional activities, the advancement of the design and construction of green buildings and provide a means for coordination and communication with the local programs.
- To develop guidelines, specifications and code of practices in building sectors



1. GREEN BLDG. MOVEMENT / ACTIVITIES:

Upgrading young architects and Engineers for the professional development, such as:

- Drafting of Green Chapter in MNBC
- Workshop/ Seminars: Local/ Abroad,
- CPD and activities, etc.
- Addresses and responds to issues or recommendations in the field of building architecture/ green practice.
- Field Trips –Local

2. LINKAGE WITH OTHER TECHNICAL COMMITTEE

- To act as the point of contact between the Executive Committee and their related Technical Committees.



MNBC 2020- Part 2 - Architecture and Urban Design

Chapter 2.12

Green Building

2.12.1

Introduction

2.12.2

Criteria for green buildings in Myanmar

2.12.3

Environmental sustainability Aspects

2.12.4

Rating System for Green Building

2.12.5

Method of Evaluation

2.12.6

Clauses of Implementation



Myanmar Green Building Society - "MGBS"

GREEN BUILDING CRITERIA , Myanmar.

(Ref. MNBC part II, 2020; Chapter 2.12.2.3)

Sustainable Site

- * Protection of Environment & natural landscape
- * Climate change

Efficient consumption of Energy, water and Natural resources management

- * Energy Efficiency:-Building Envelope Design (Passive)
- * Air Conditioning Efficiency
- * Lighting Efficiency
- * Usage of Renewable Energy
- * Water Efficiency

Indoor Environment & Materials

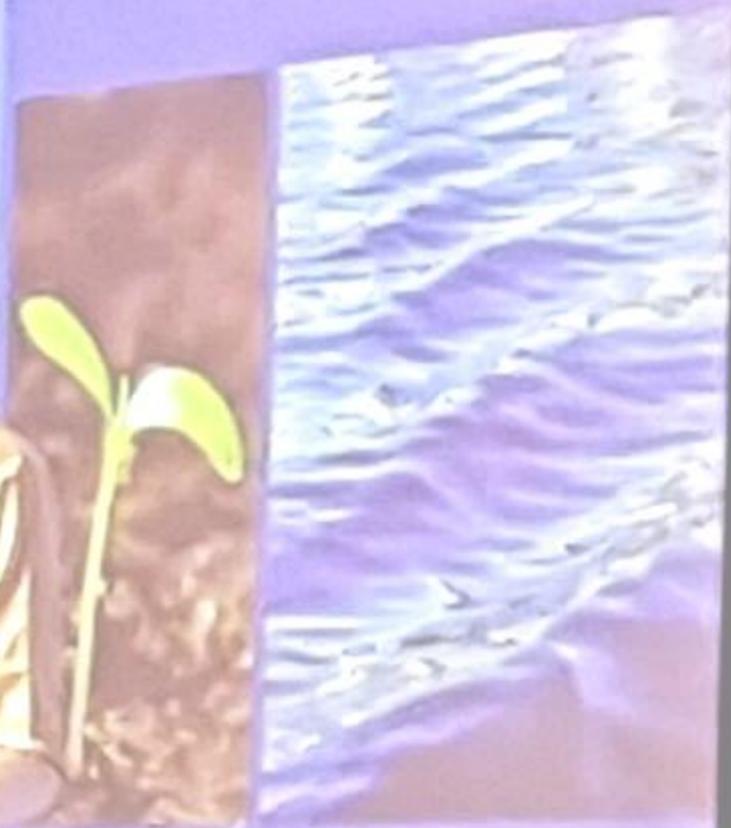
Innovative Architecture & Identity

Social sustainability & Humanities for communities



Myanmar Infrastructure Summit 2017

Myanmar National
Code and Green
Advances in



MYANMAR
INFRASTRUCTURE SUMMIT

MYANMAR
INFRASTRUCTURE
SUMMIT 2017



MOU SIGNING CEREMONY
FOR MYANMAR GREEN BUILDING SOCIETY
BETWEEN GBC-BEI & HKMCC

15 Dec 2017
MYANMAR ENGINEERING SOCIETY (MES)
CONFERENCE ROOM, YANGON MYANMAR
10.00am - 11.30am





MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is made on 15th December, 2017, under the laws of the Republic of the Union of Myanmar between the Green Building Committee (BEI) of the Myanmar Engineering Society (a registered Myanmar NGO referred hereto as Party A) of Hlaing University Campus, Hlaing Township, Yangon, Myanmar and the Hong Kong Myanmar Chamber of Commerce Limited (a registered NGO in Hong Kong referred hereto as Party B) of Green House, 4/F., 483D-E Castle Peak Road, Lai Chi Kok, Kowloon, Hong Kong.

Whereas, Party A is determined to establish a new global sustainable Myanmar NGO namely, the "Myanmar Green Building Society (MGBS)" in the City of Yangon in Myanmar. Its main objectives are to transform and leapfrog the newest green building technologies and know-how with international standards, practices and code of conduct into Myanmar.

To assist in upgrading its current construction industry standard with vocational training programs of different levels to its various professional buildings, architectural and engineering service industries. Whereas Party B hereby is willing to offer free assistance to Party A in formulating and establishing this new MGBS in Yangon with a Green open mindset.

Whereas Party B will support Party A to use its best endeavor to engage the Hong Kong Green Building Council as the official mentoring partners of MGBS so as to enlist MGBS as a new full member of the World Green Building Council Limited in the United Kingdom. Furthermore, Party B will also assist in introducing and referring various international green professional institutions to MGBS such as, the BEAM Society of Hong Kong, World Green Organization, ARUP and the Construction Industry Council of Hong Kong.

These institutions can also help the new MGBS in launching Community Engagement Programs, new work place and personal safety standards that conform with comprehensive vocational training courses. For the avoidance of doubt and misunderstanding, both Party A and Party B now agree to sign this MOU in good faith based on this aforesaid principles and understanding.

Agreed and signed by Party A For and On Behalf of the Green Building Committee, Building Engineering Institute (GBC-BEI), Myanmar Engineering Society.

U Nyunt Maung San, Chairman (Building Engineering Institute, Myanmar Engineering Society, BEI-MES)
Prof. Dr. Swe Swe Aye, Chairperson (Green Building Committee, Building Engineering Institute, GBC-BEI)

Agreed and signed by Party B For and On Behalf of the Hong Kong Myanmar Chamber of Commerce Limited.

Albert Oung, Chairman (Hong Kong Myanmar Chamber of Commerce Limited)



MYANMAR ENGINEERING SOCIETY





PRESENTATION OF FUJITA CORPORATION, JAPAN AT MES

22-03-2017







 မြန်မာနိုင်ငံစိမ်းလန်းမှုဆိုင်ရာအဆောက်အအုံအသင်း
Myanmar Green Building Society (MGBS)
 နှစ်ပတ်လည်အသင်းအားခွဲညှိ ညှိနှောခံ

"Together we strive to achieve our goals to promote Green Building Industry and Sustainable Environment in Myanmar"

ဗဟို





WHAT IS GREEN BUILDING?



- **Green building** (also known as **green construction** or **sustainable building**) refers to both a structure and the using of processes that are environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and demolition.
- It's an integrated process that focusses on the relationship between the built environment and the natural environment.



- Due to the global warming and climate change, buildings can have negative impacts on the surrounding as well as on the people.
- With the development of Green Building, it can reduce those negative impacts. **“Architectural design concept, effective utilization of energy and water use, healthy indoor air quality, smart materials selection, and the building effects on its site and its environment”** are the key considerations for the design and development of green building.



The common objective of green buildings is to reduce the overall impact of the built environment on human health and the natural environment by:

- Efficiently using energy, water, and other resources
- Protecting occupant health and improving employee productivity
- Reducing waste, pollution and environmental degradation



FIVE KEY AREAS FOR GREEN BUILDINGS :

- Sustainable site planning
- Safeguarding water and water efficiency, managing waste water
- Energy efficiency and renewable energy
- Conservation of materials and resources
- Indoor environmental quality and health

Green Buildings and Benefits

What is Green Building?



Saving energy, water and natural resources without compromising human comfort, Safety and productivity!!

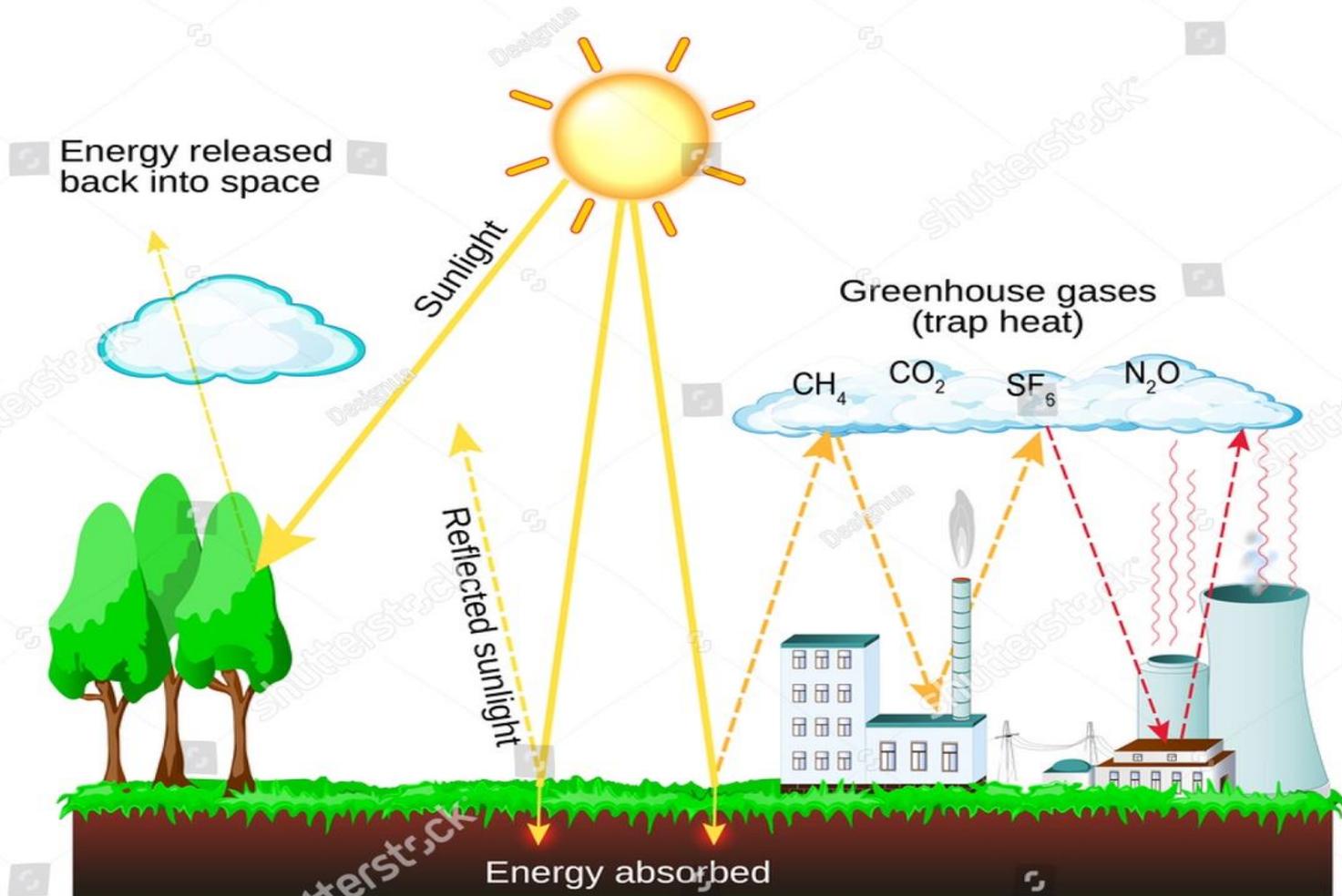
SUSTAINABLE SITE PLANNING



Triple Bottom Line:
Environment
Society
Economy

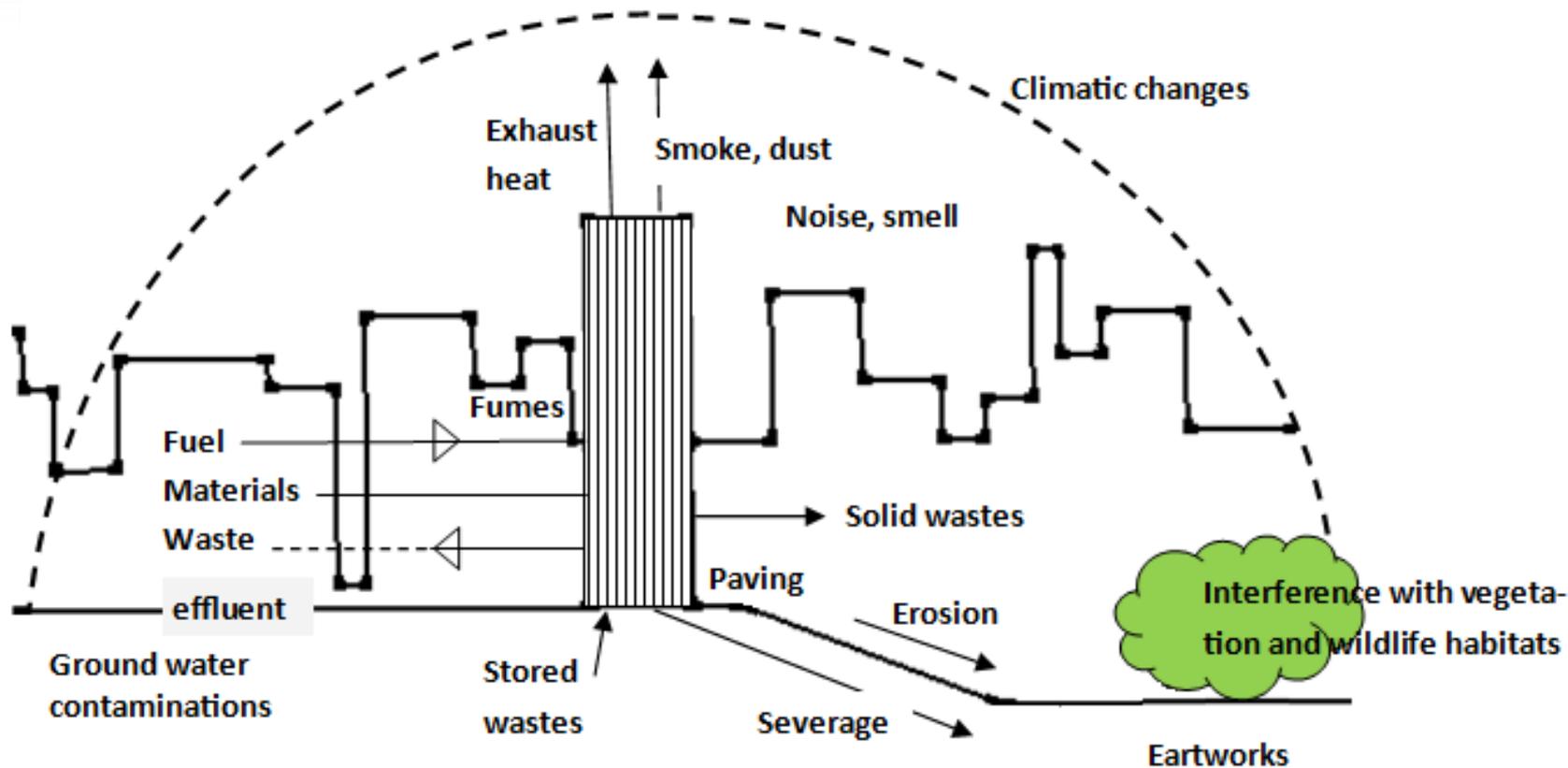


Greenhouse effect



Building environment impacts on it's surround

(Source: Yeang, The Green Skyscraper, 2000)





GREEN BUILDINGS ARE DESIGNED TO:

The basic approach towards good passive design is

**to orientate,
to shade,
to insulate,
to ventilate and
to daylight buildings.**

The steps towards Energy Efficient buildings are:

PASSIVE MEASURES

Clause 4 :

Architectural and
Passive Design Strategy

Clause 5 :

Building Envelope



ACTIVE MEASURES

Clause 6 : Lighting

Clause 7

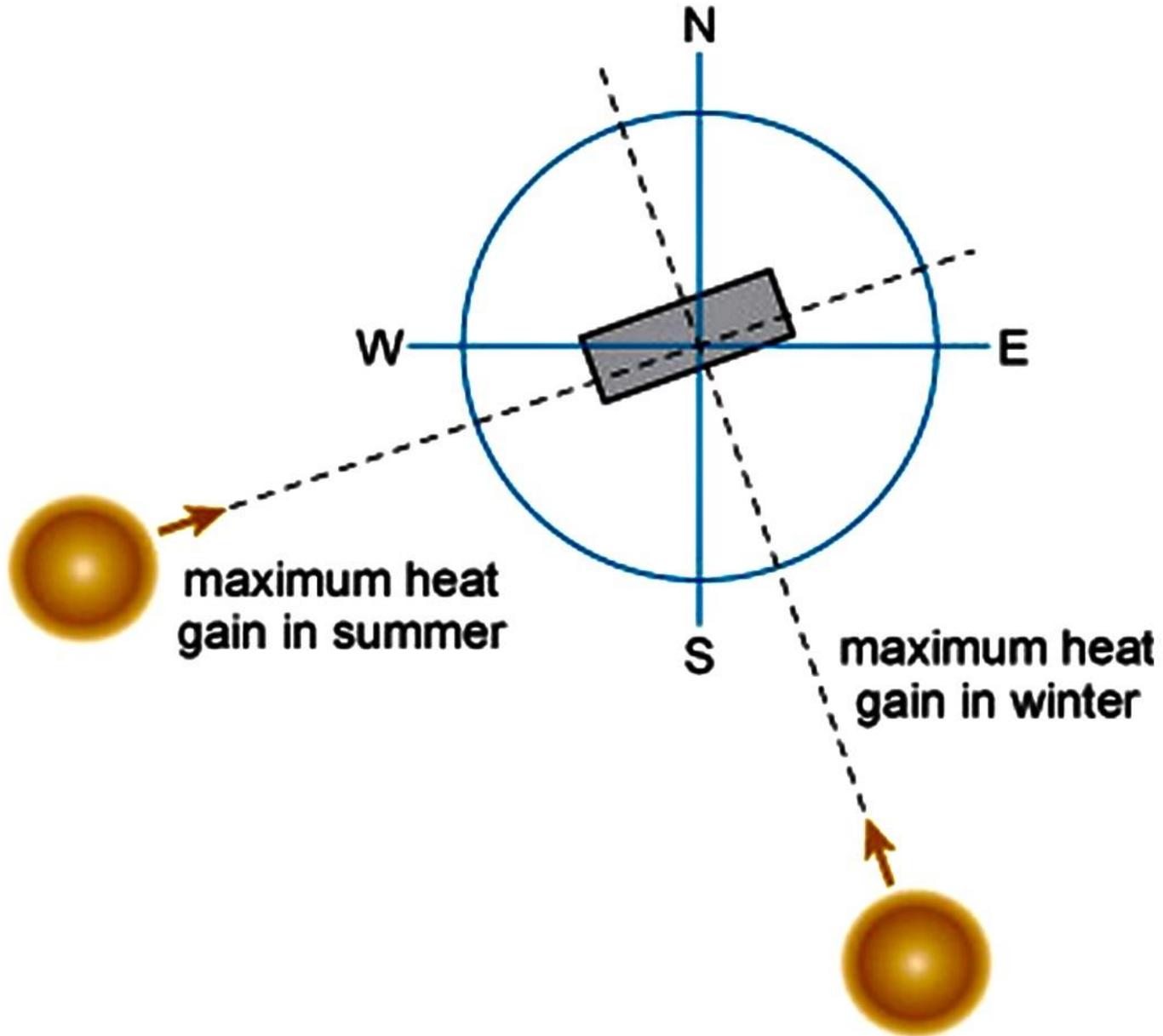
Power System and Distribution System

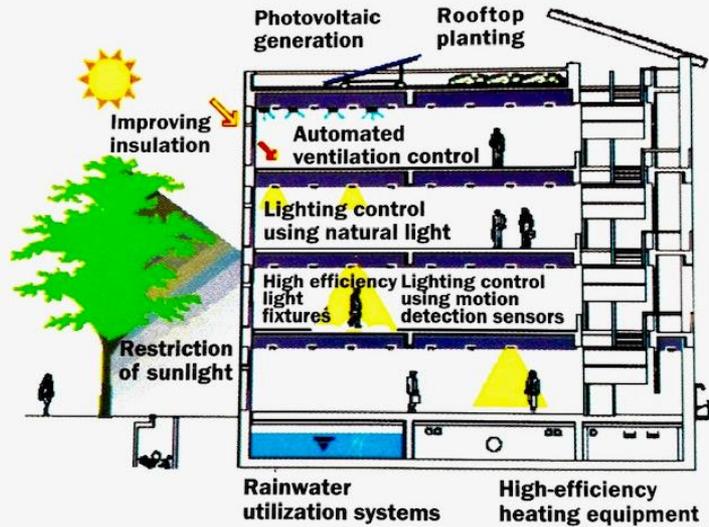
Clause 8

Air Cond and Mech Ventilation System

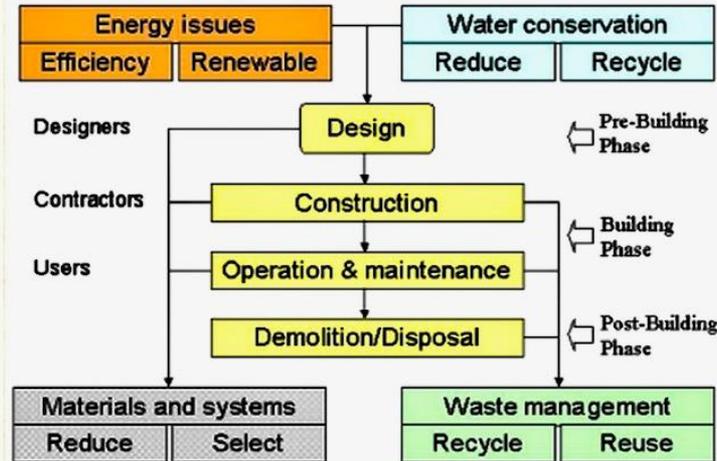
Clause 9

Energy Management Control System





Typical cross section of green building ©www.e-comena.org



Green building design and construction stages

BUILDING FACADE

OBJECTIVE

Use the design of visible building facades to create/reinforce neighborhood identity and a richer pedestrian environment.

The basic approach towards good passive design is

to orientate,
to shade,
to insulate,
to ventilate and
to daylight buildings.



**Building
Envelope**



Building Envelope

A building envelope is everything that separates the internal building from the external environment, including the roof, doors, windows, floors and walls.

Good insulation in the walls, high-efficiency windows, & sufficiently sealed gaps increase the effectiveness of the envelope.

Green buildings are designed for Building Envelope

CONCEPT OF OTTV MS1525:2007 Clause 5.2.2

The formula for the OTTV of any given wall orientation is as follows:

$$OTTV_i = 15\alpha(1 - WWR) U_w + 6(WWR) U_f + (194 \times CF \times WWR \times SC)$$

OTTV =

Heat Conduction through Walls	+	Heat Conduction through Windows	+	Solar Heat Gain through Windows
--	---	--	---	--



ENERGY EFFICIENCY

* Energy Efficiency is the use of less energy to perform the same task or produce the same result; using less energy to heat, cool and energy-efficient manufacturing
Use less energy to produce goods.

* Green buildings often include measures to reduce energy consumption – both the embodied energy required to extract, process, transport and install building materials and operating energy to provide services such as heating and power for equipment.



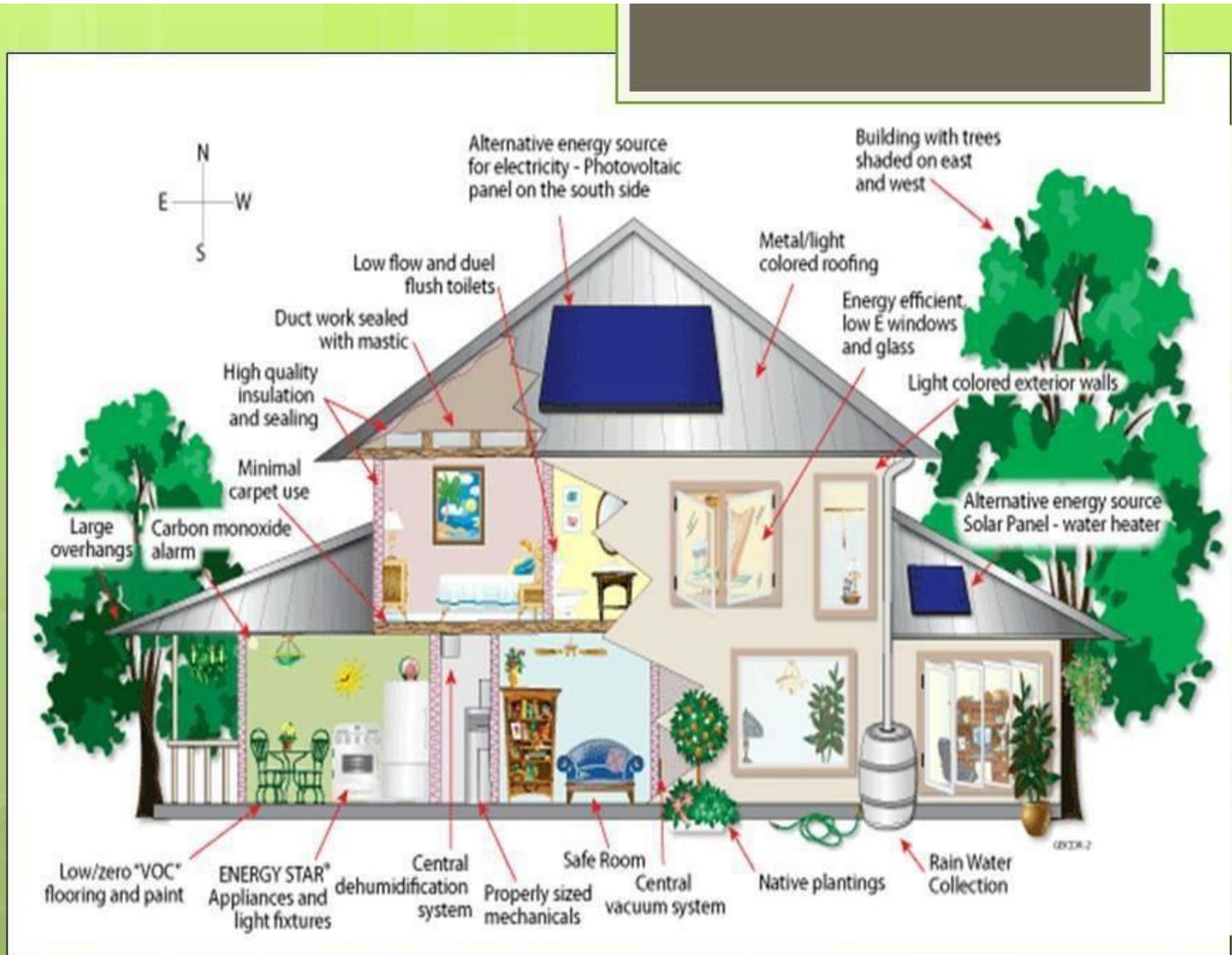
- It often emphasizes taking advantage of renewable resources, e.g., using sunlight through passive solar, active solar, and photovoltaic equipment, and using plants and trees through green roofs, rain gardens, and reduction of rainwater run-off



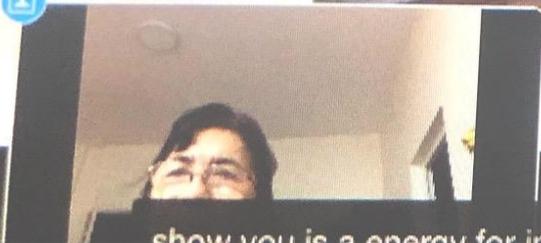
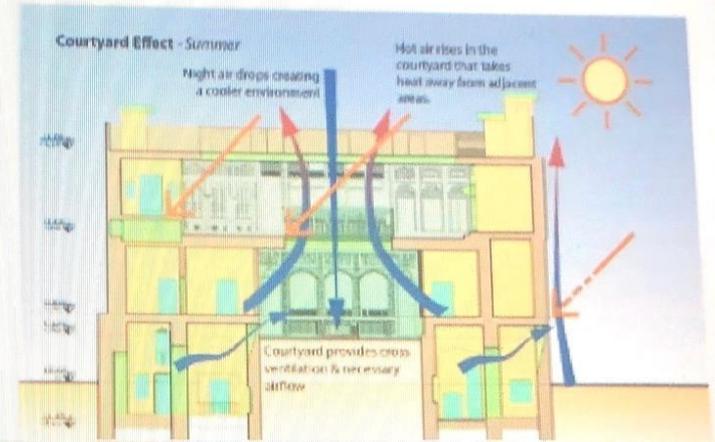
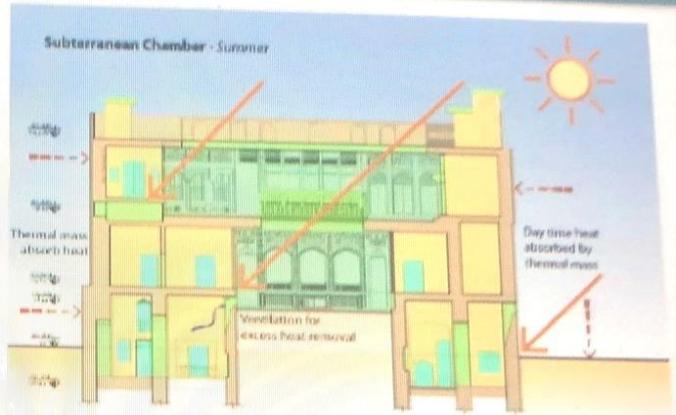
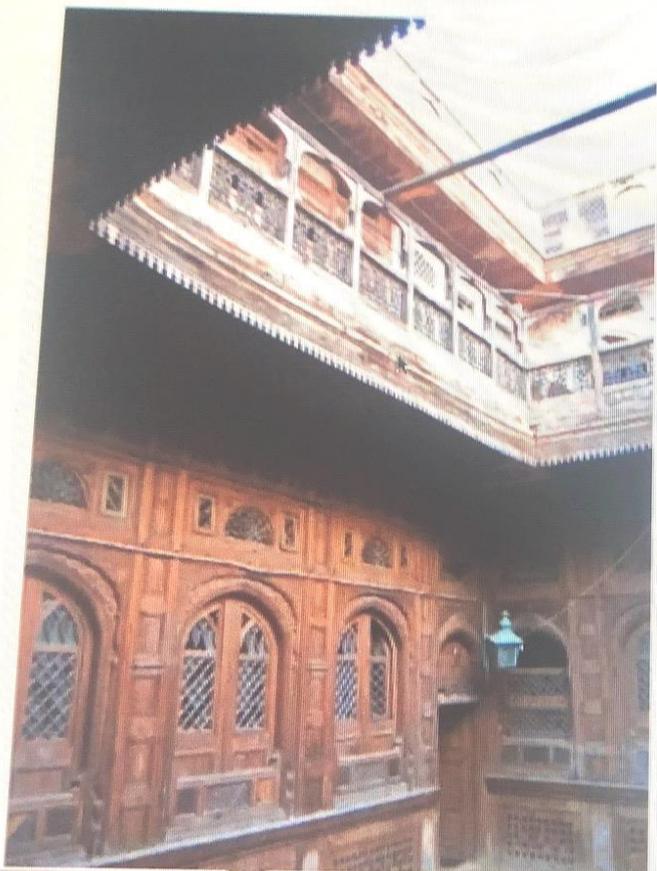
GOALS OF GREEN BUILDING

1. Life cycle assessment
2. Siting and structure design efficiency
3. Energy efficiency
4. Water efficiency
5. Materials efficiency
6. Indoor environmental quality enhancement
7. Operations and maintenance optimization
8. Waste reduction





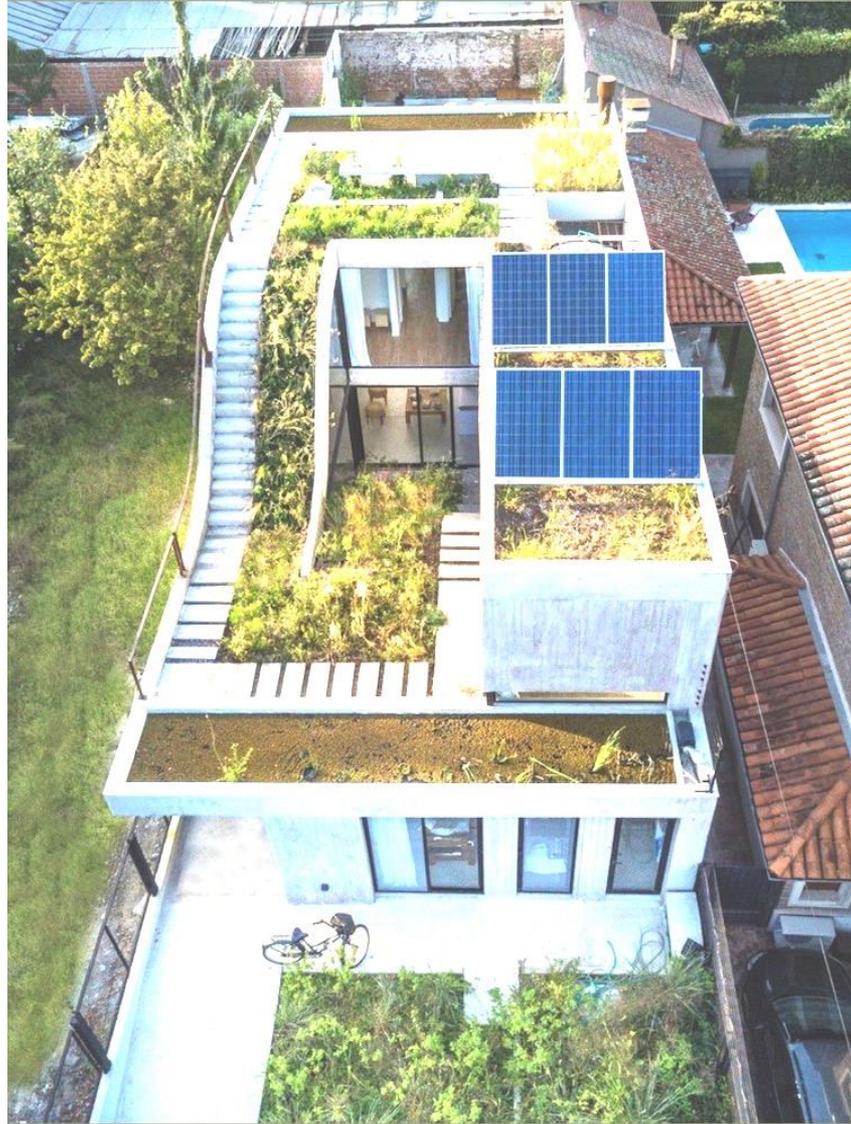
ZERO ENERGY IMPROVED MICRO CLIMATE



show you is a energy for improve microclimate



Roof Top garden & Solar Panels



Rooftop Rain Water Harvesting

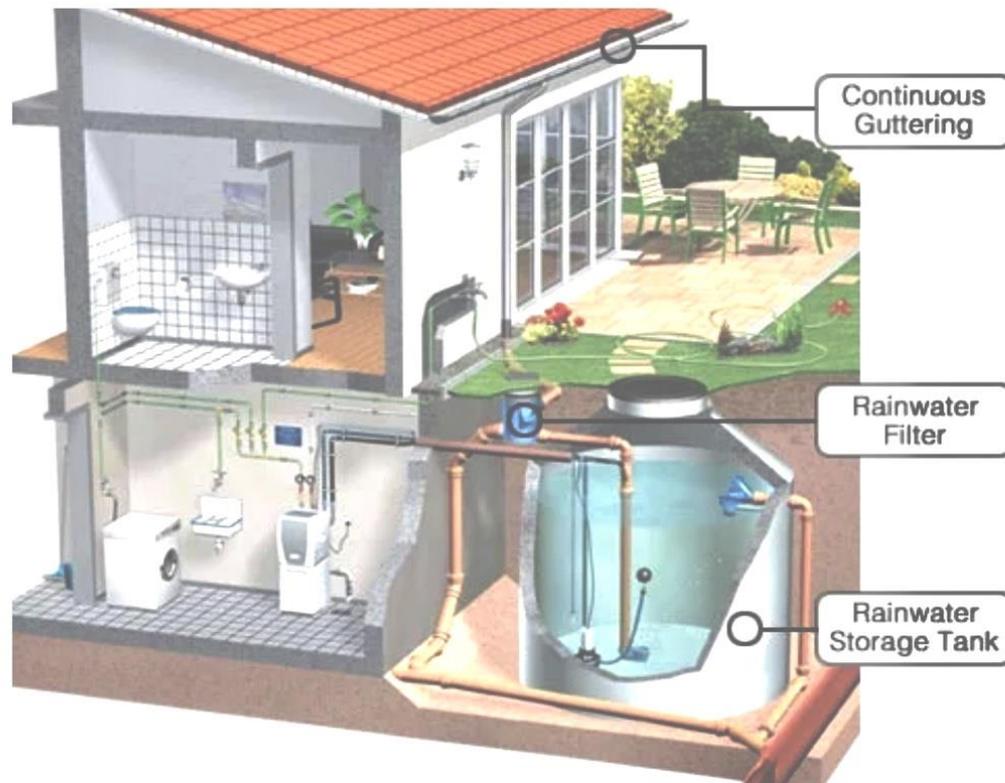


Image Via www.nirmaljal.net.in





**Together we strive to achieve our goals
to promoting :
Green Building Industry
&
Sustainable Environment in Myanmar**

THANK YOU