

Green Building

20__ 2nd Term

Green Architecture

Green building (also known as green construction or sustainable building) refers to a structure and using process that is environmentally responsible and resource-efficient throughout a building's life-cycle: from siting to design, construction, operation, maintenance, renovation, and demolition. This practice expands and complements the classical building design concerns of economy, utility, durability, and comfort.

Although new technologies are constantly being developed to complement current practices in creating greener structures, the common objective is that green buildings are designed 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

A similar concept is natural building, which is usually on a smaller scale and tends to focus on the use of natural materials that are available locally. Other related topics include sustainable design and green architecture. Sustainability may be defined as meeting the needs of present generations without compromising the ability of future generations to meet their needs. Green building does not specifically address the issue of the retrofitting existing homes.

A 2009 report by the U.S. General Services Administration found 12 sustainably designed buildings cost less to operate and have excellent energy performance. In addition, occupants were more satisfied with the overall building than those in typical commercial buildings.

Objectives

Students will:

- 1) Learn what "green" means.
- 2) Learn the vocabulary of green architecture
- 3) Identify man-made and natural products used in green architecture
- 4) Create a list of things that they can do at home and at school to create a more "green" environment.

PROCEDURES/METHODOLOGY:

The procedures for providing this experience with multiple disciplines will be achieved through the following.

- A class on the introduction of sustainable design will be offering. Readings will include: Ian McHarg, John Lyle, Buckminster Fuller, Peter Calthorpe, and Kevin Lynch.
- Students will use case as a means of developing assessment techniques for the evaluation of existing conditions and the suitability of their design proposal.
- Students will be made reports and presented about the green building case study.

EVALUATION CRITERIA:

Mid-term Exams 20% / Final term Exams 20% / Presentation 20% / Report 20% / Attendance 20%

A+	Superior Creative and well organized statement based on various references Moderate amount and smart summary Reference arrangement
A	Excellent A partly sufficient above criteria
B	Good Sufficient on class Bored description
C	Acceptable
D	Minimum
F	Failing

Vocabulary:

Architecture (n) The art, science and practice of designing and building structures that serve our needs, such as houses, schools, office buildings, theatres etc.

The word "architecture" comes from the Latin word "architectura" and from the Greek "arkitekton" which means a master builder, chief builder or carpenter.

Architect (n) A person who designs buildings and advises in their construction. An architect uses mathematics, science, art, technology social sciences, politics and history to design structures for our use.

Green Architecture. (n) The design of spaces and places that respects the natural environment resources in our environment. The word "green" is used to describe

something that is ecologically or environmentally friendly.

Natural resource. (n) Industrial materials and capacities such as mineral deposits, water power, and solar power supplied by nature that we use.

Conserve. (v) To keep in a safe or sound state. To avoid wasteful or destructive use of natural resources.

Recycle. (v) To pass through a series of changes or treatments. To process things such as glass, plastics and metals in order to make new things that we use.

Renewable Materials. (n) Natural materials that can be rapidly replaced in the environment such as fast growing trees, bamboo and agricultural products.

Renewable Energy. (n) Energy derived from sources that do not deplete natural resources such as solar power, wind power and geothermal energy.

Solar Energy. (n) Energy derived from the sun that we can use for our energy needs.

Geothermal Energy. (n) Energy derived from sources in the earth like steam or water power that we can use for energy

Class Policy

Class will open one time a week:

Attendance is required at all class meetings. Unexcused absences can result in the lowering of final grades or failure.

Course References

Green Building Fundamentals (2nd Edition), Mike Montoya, 2009, Prentice Hall

친환경건축의 이해, 대한건축학회, 기문당

친환경건축의 이해, 함정도, 노정선, 기문당

Student Submittal

Please upload the assignment files on the report board of Green Architecture in the website archis.jnu.ac.kr before 2 days on class. File size should be under 5Mbyte.

Preliminary Final Term Schedule

WK	Date	Topic	Contents	Assignment
1		Briefing		
2		Fundamentals	Changing our Definitions of Grow and Progress Resource Consumption and Environmental Pollution Sustainability in Architecture	Case study / Domestic Green Building
3		Principles of Sustainable Design	Principle 1: Economy of Resources	Case study / Foreign Green Building
4			Principle 2: Life Cycle Design	
5			Principle 3: Humane Design	Case study / Domestic Green Village or City
6		Methods for Achieving Sustainable Design	Economy of Resources Energy Conservation	
7			Economy of Resources Water Conservation	Case study / Foreign Green Village or City
8			Economy of Resources Materials Conservation	
9				Mid-Term Exams
10			Life Cycle Design Pre-Building Phase	Case study / Domestic Green Building Certification
11			Life Cycle Design Building Phase	
12			Life Cycle Design Post-Building Phase	Case study / Foreign Green Building Certification
13			Humane Design Preservation for Natural Conditions	
14			Humane Design Urban Design and Site Planning. Design for Human Comfort	Case study / Future Building
15				Final Term Exams