

CLIMATE AND SITE ANALYSIS

- An **Environmental site analysis** is the gateway to energy conscious **design** and **environmental** responsive architecture.
- each two students will grouping to analyse and work on one of the Residential complexes (Cities)in Erbil city or any other city in Iraq

GOAL:

To become aware of energy efficient designs and construction that will save energy, cost less to operate and have less of a negative impact on the natural environment.

OBJECTIVES:

The student will demonstrate how knowledge of the natural environment and site details can affect the design process in building an energy efficient structure by conducting a site analysis.

- Gather information from online resources and field survey covering the following topics:

- **Sun analysis for the site which include**

1. Sky dome and Sun path diagram
2. Orientation
3. solar gain(orientation of the space with regard to heat gain))
4. Calculate the space between houses " if available "

- **Light analysis for a single house**

1. Ratio of the window size to floor area, type of window
2. Shading devices analysis for one house(I-Type of shading device used , ii. Material of shading device, iii.Drawing of HSA, VSA for shading devise on the windows)
3. Draw "shading mask on shadow angle protractor" of the shading devices.

- **Thermal analysis of building material**

1. building material(all the material that used in the building floor, roof, wall)
2. material of doors and windows
3. any insulation material if available

- **Wind analysis**

1. site analysis (if there strategies to Protect from the cold winter winds)

2. site analysis (if there any strategies for hot & dry summer)
3. building analysis in term of wind design (room and partitions and functions)
 - Heat gain calculation by Occupants for one house
 - Heat gain calculation by ventilation (see lect.8)
 - ***Define the main problem and suggest environmental solution for (building material, design, elevation shading devices)***
 - *you can suggest renewable analysis for your house*

-Each item should be present in A3 size paper (outcome 10-15 Maximum)

-Any presentation style is acceptable