

# Arch 357 architectural design with climate

## Assignment - 2

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Think about your design. Based on the parameters that you gathered from the site and the list of clues listed below, prepare a report of your design strategies.

1. sun-facing windows (size, shape, percent of south facade)
2. shading of sun-facing windows (how much, when required)
3. envelope openings for ventilation (size, shape, orientation, height, operability)
4. roof shape (flat vs. pitched, overhangs)
5. wall and roof surface treatment (color, reflectivity, absorptivity)
6. envelope insulation (amount, location) and envelope heat capacity
7. internal thermal mass (high mass or low mass, location)
8. building shape (compact, linear, detached, courtyard), (one story or multi)
9. orientation to wind (show your wind direction - north is up) (Single vs. Double)
10. orientation of main rooms to sun (North is up)
11. location/orientation of exterior spaces (patios, verandas, interior courts)
12. one other aspect unique to your project

The main structure of the report will be;

- a. *An introduction part:* describes the site and your main design concept. Consider the micro-climatic specifications of the site and briefly explain (sketch) the conditions of building groups considering solar and wind potential of the site.
- b. *Concept details part:* list and briefly explain which passive systems are combined during design of the buildings; briefly explain (sketch) how are the systems operate during day/night, in winter and summer.
- c. *Discussion part:* your opinions on the concept and expected energy saving potential of the buildings.

The reports will be delivered at 22 December 2015 as a pdf file. Please send documents to [gharputlugil@cankaya.edu.tr](mailto:gharputlugil@cankaya.edu.tr)

Good Luck!