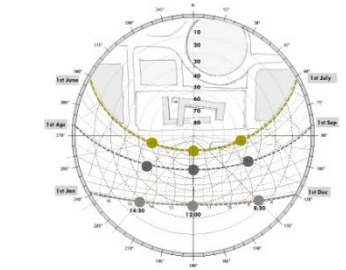
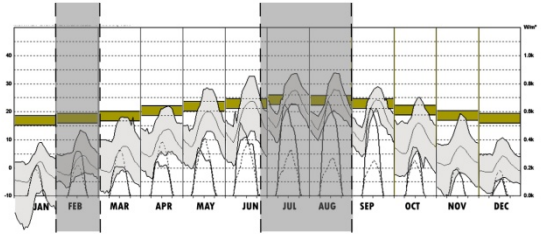
Gaziantep School of Tomorrow
UK 1st PRIZE

Context Analysis



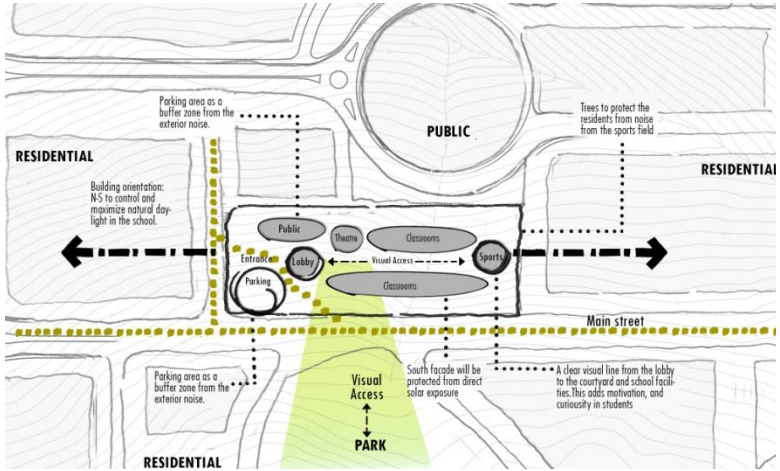
	8:30		12:00		2:30	
	Altitude	Azimuth	Altitude	Azimuth	Altitude	Azimuth
SUMMER	45	105	75	180	55	260
EQUINOX	35	115	55	180	40	236
WINTER	15	135	30	180	22	220

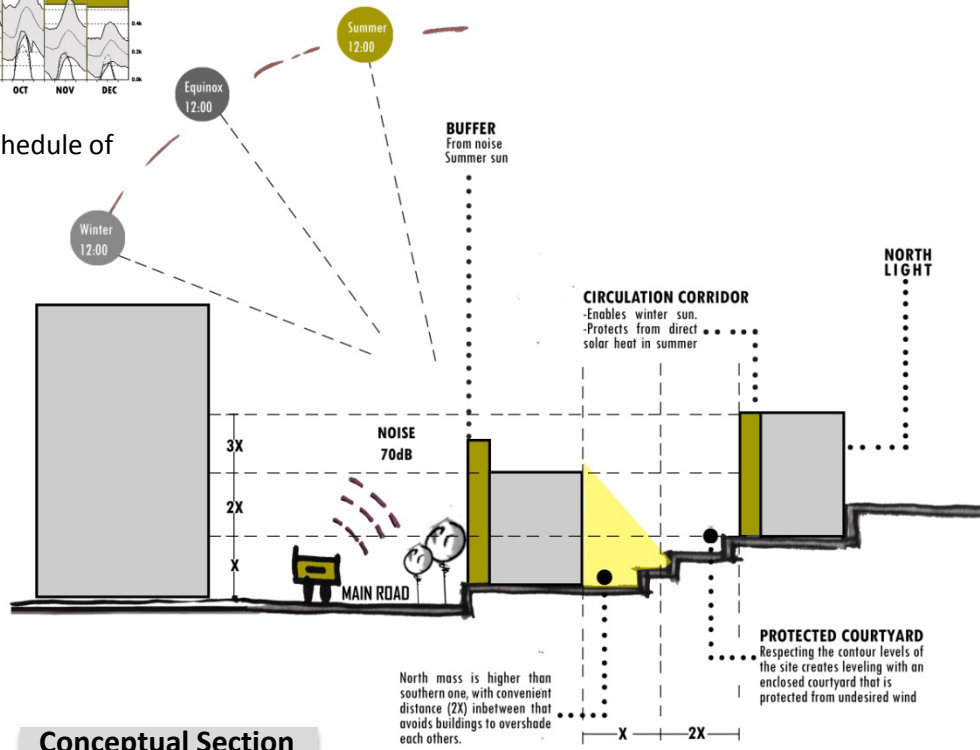
Sun path Diagram



In reference to the students' schedule of attendance

Monthly Diurnal Averages





Conceptual Section

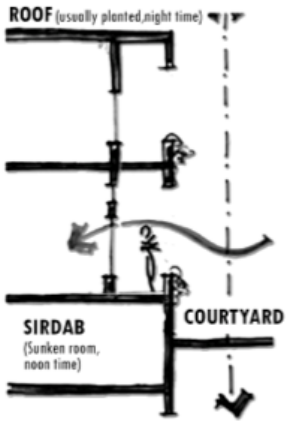
Concept

¨You can not simply put something new into a place, you have to absorb what you see around you, that exists on the land and then use that knowledge along with the contemporary thinking to interpret what you see¨

Tadao Ando

ENVIRONMENTAL MOVEMENT IN TURKISH BUILDINGS

The concept is derived from **traditional Turkish culture and architecture**. Buildings respond to the environment by vertical and horizontal movements according to the season



Horizontal Movement (seasonally)

Diagram represents the vertical and horizontal circulation within the project (red)

Vertical Movement (time of day)

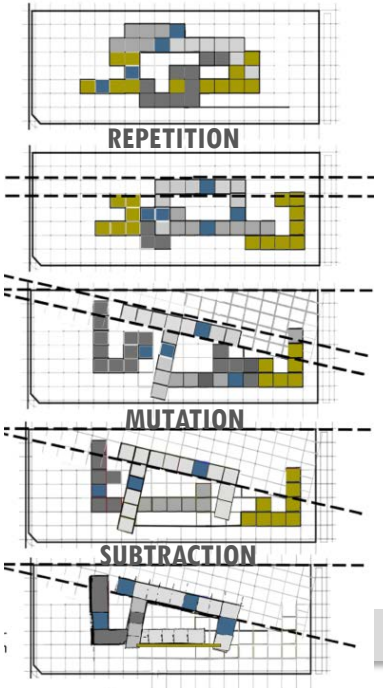
TAKHTABOUSH
Covered outdoor seating separates garden and courtyard
Allows ventilation by convection

MASHRABIYA
A projecting window enclosed with carved wood latti
various environmental benefits regarding ventilation

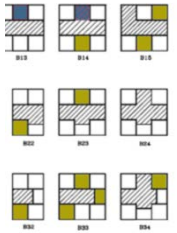
EVYAN A covered protected outdoor area for seating. Accessed from the courtyard

SHAPE GRAMMAR IN TURKISH HOUSES

The compositions of these houses are based on spatial relations in plan elements and types which provide the basis for a parametric shape grammar.



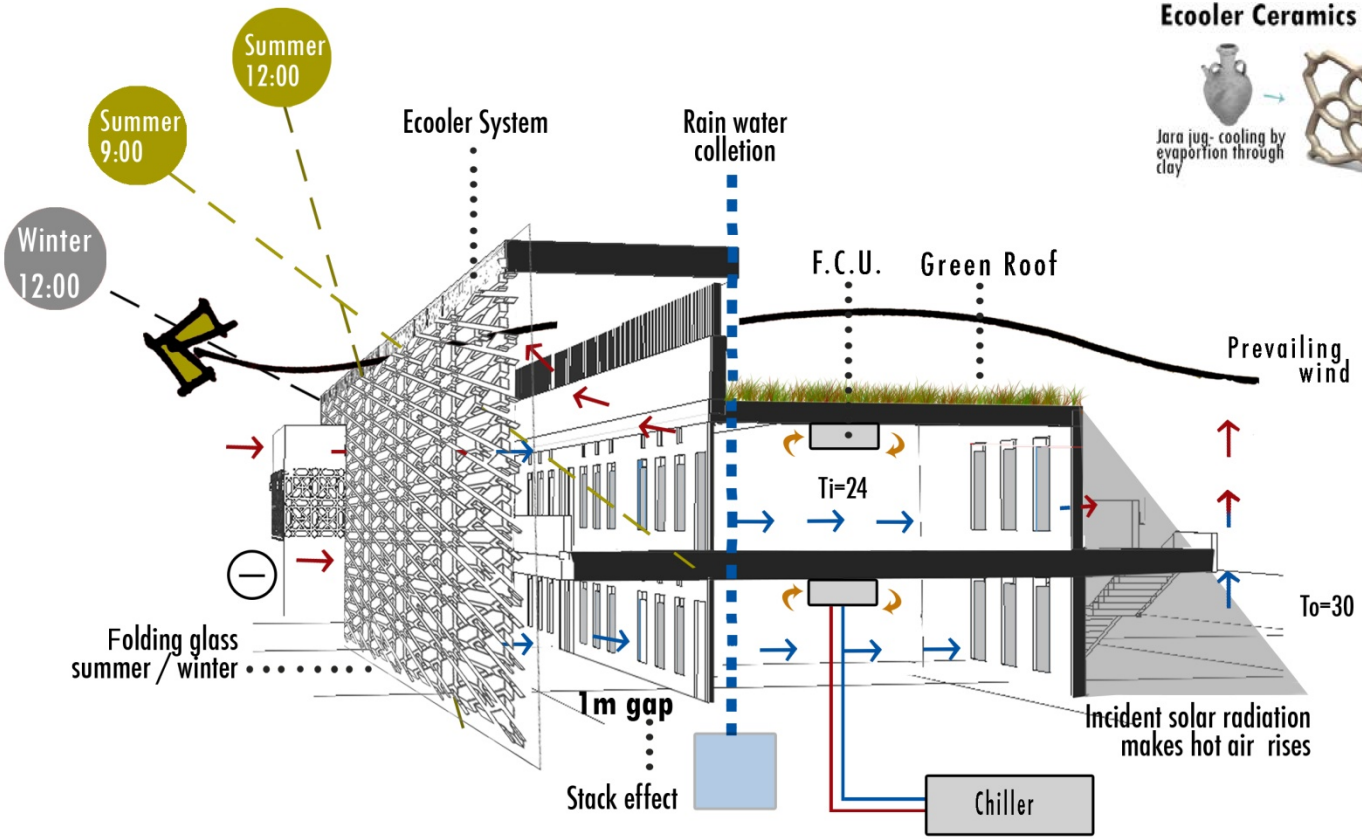
Parametric shape grammar of Traditional Turkish Houses (Eldem)

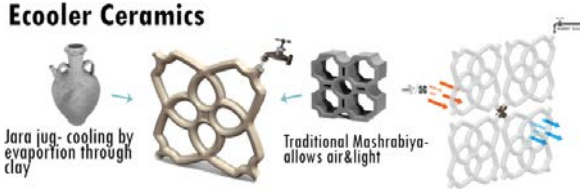


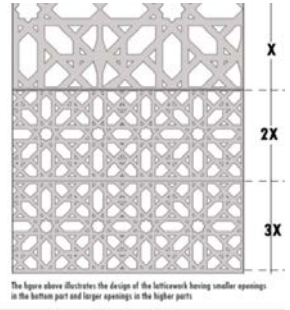
The shape rule schemata are used for characterizing formal compositional aspects of the Turkish historic style

SHAPE CONFIGURATION

Environmental Strategies

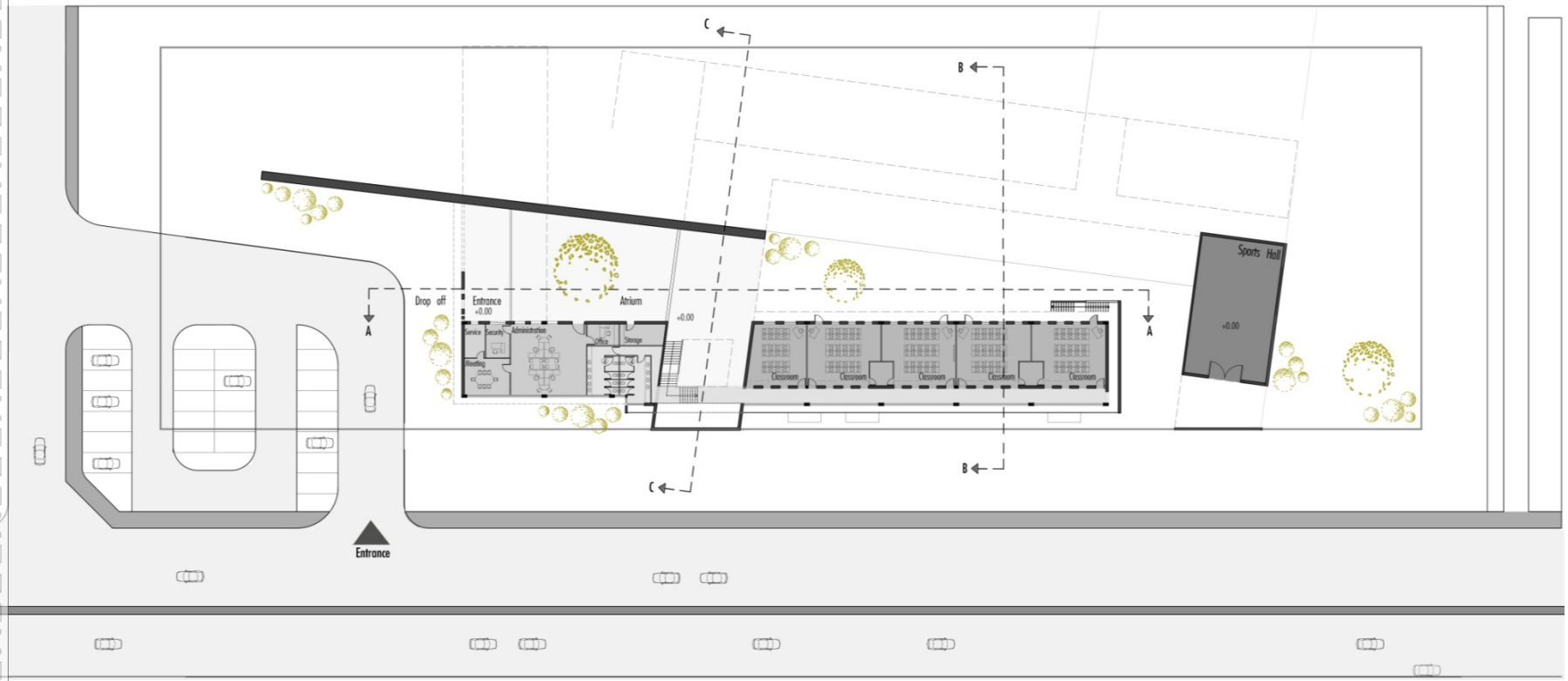






Mashrabiya detail

Plans

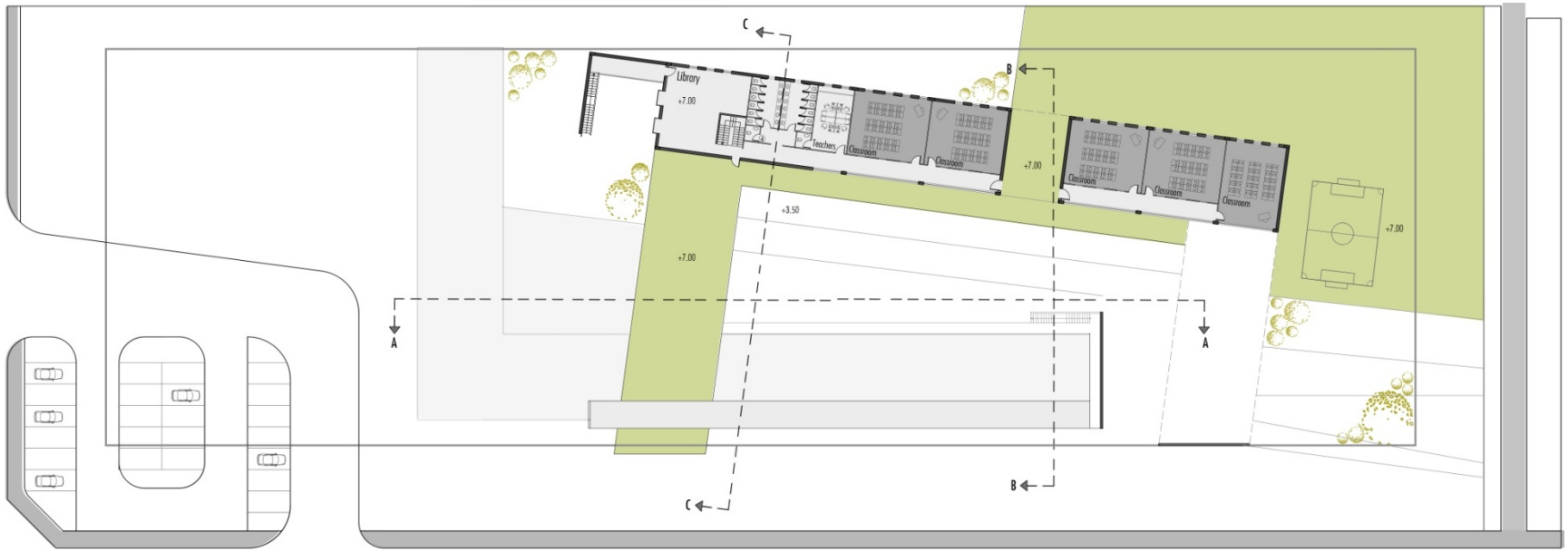


Ground floor / NTS

Plans

First floor / NTS

Plans



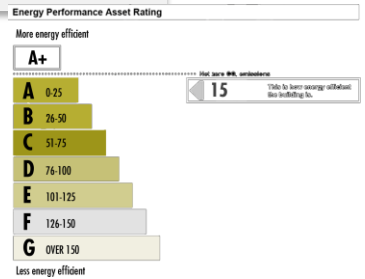
Second floor / NTS

Performance Analysis

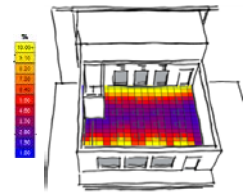
ENERGY DEMAND CALCULATIONS

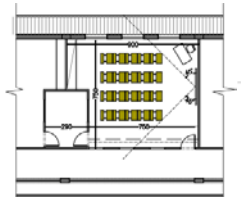
ENERGY DEMAND CALCULATION
TRACE™ 700

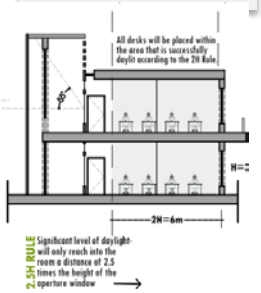
1	**Location**	Gaziantep, Turkey
	Summer Design dry bulb	37°C
	Summer Design wet bulb	27°C
	Winter Design dry bulb	0°C
	Carbon Dioxide Level	400 ppm
	Design simulation period	January - December
	Facility Type	School
2	**Area**	
a	Total condition area	3,142 m^2
b	Thermal Envelop area	7,909 m^2
3	**Construction U-values**	
a	Exterior wall	0.1 watt/m^2K
b	Roof	0.1 watt/m^2K
c	Partitions	0.1 watt/m^2K
d	Floor	0.1 watt/m^2K
4	Glazing U-valu	0.1 watt/m^2K
5	Window U-value	0.8 watt/m^2K
6	Thermal Bridge Free	YES
7	Air Tight	YES
8	Ventilation	Heat Recovery System
10	Indoor Air Quality Standard	ASHRAE Std62.1-2004/2007
11	**Calculation**	
a	Total Cooling Load	206 kW
b	Total Heating Load	68 kW



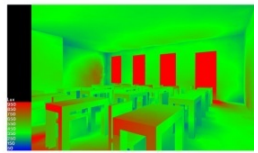
DAYLIGHT





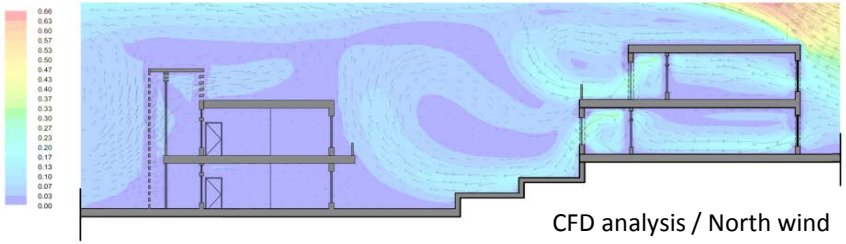


Skylight	South Glazing	North Glazing	Total Glazing	DF% (avg)	DF% (min)	Illuminance (lux)	Uniformity Ratio
0.6mx7.5m	4(1mx2m)	3(1mx1.7m) 3(0.5mx0.5m)	18.25 m2	5.79%	1.22%	433.2 lux	0.21

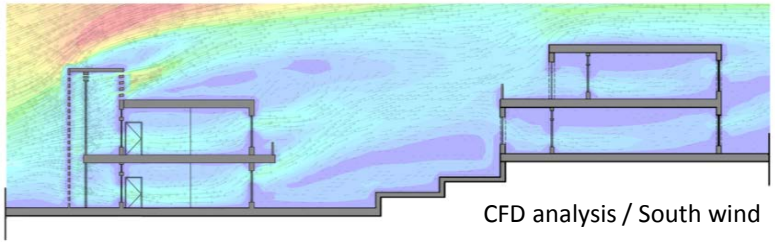


Radiance - Daylight Analysis

NATURAL VENTILATTION



CFD analysis / North wind



CFD analysis / South wind

Thank you