Tugas UAS Topik Khusus | Auliya Maula Alqadrie 25218009

LOKASI

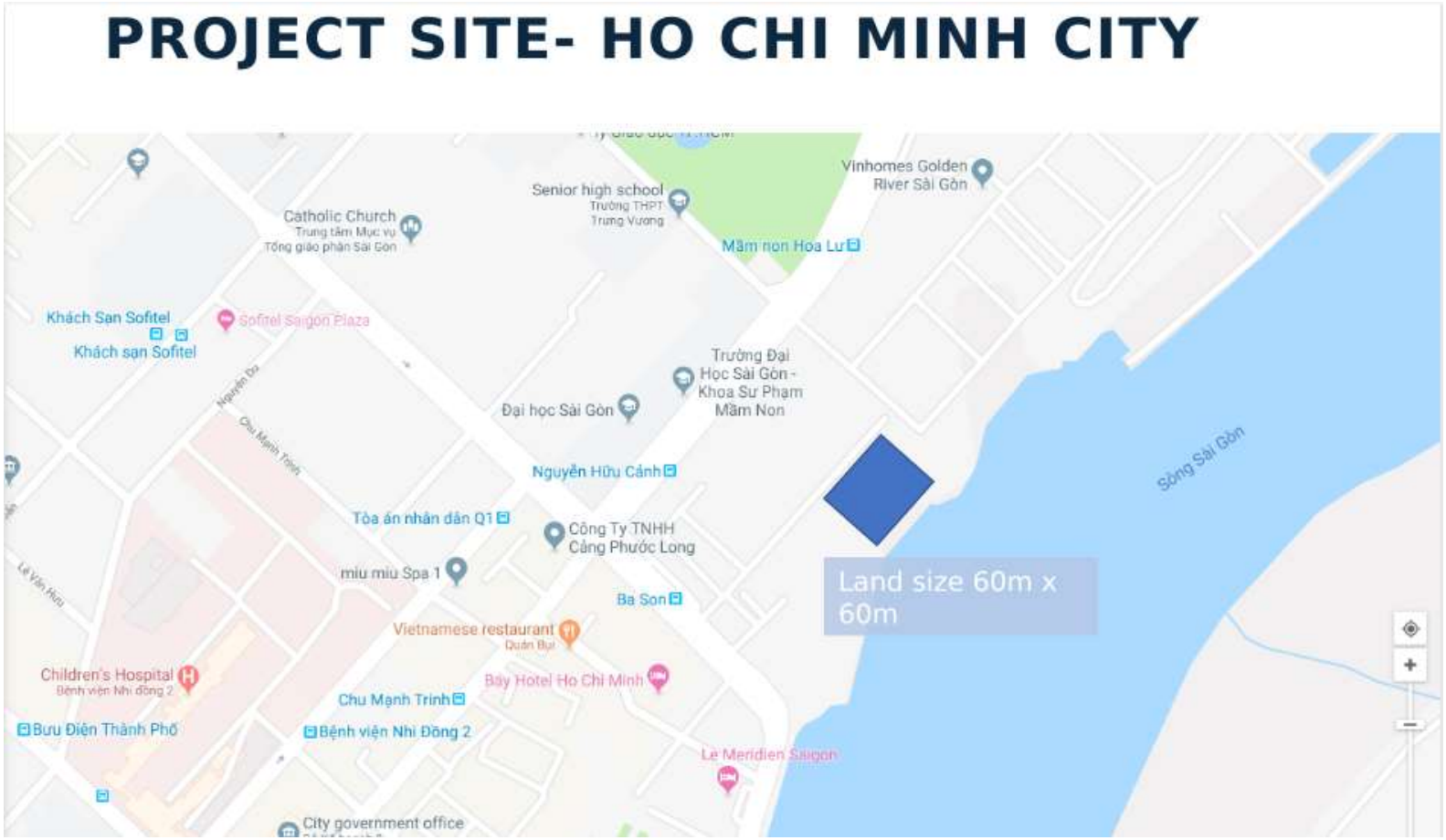
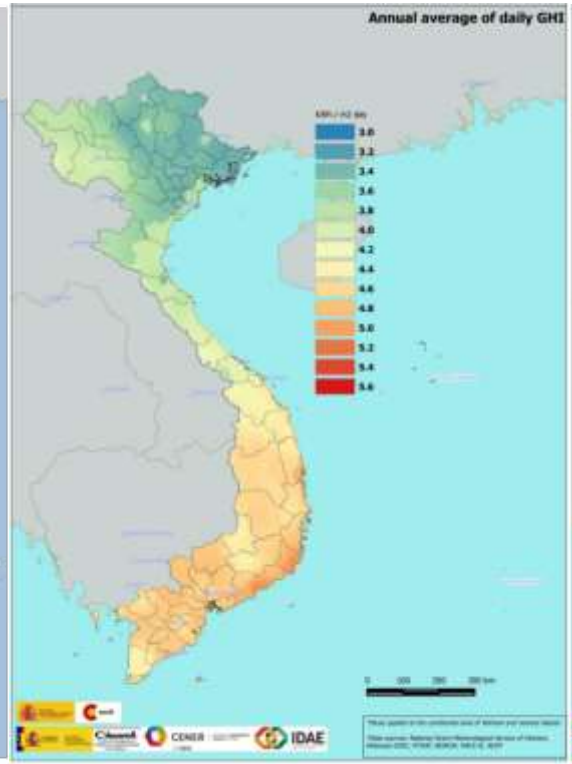
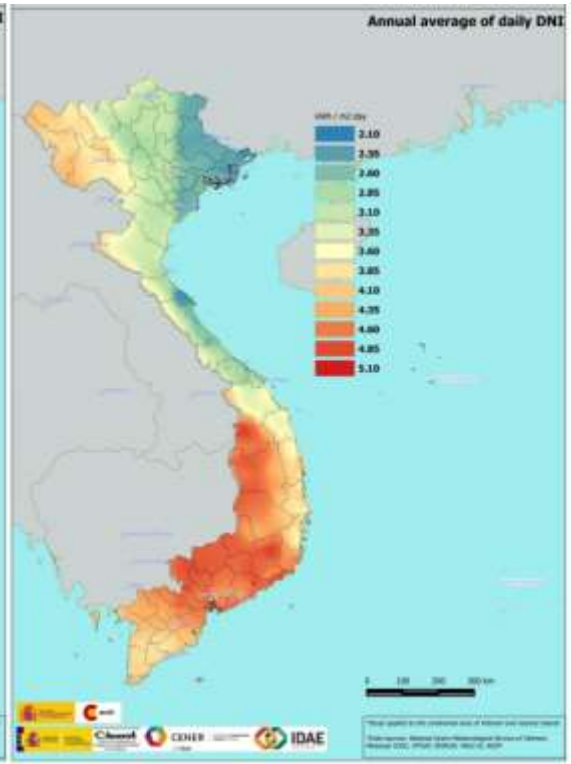
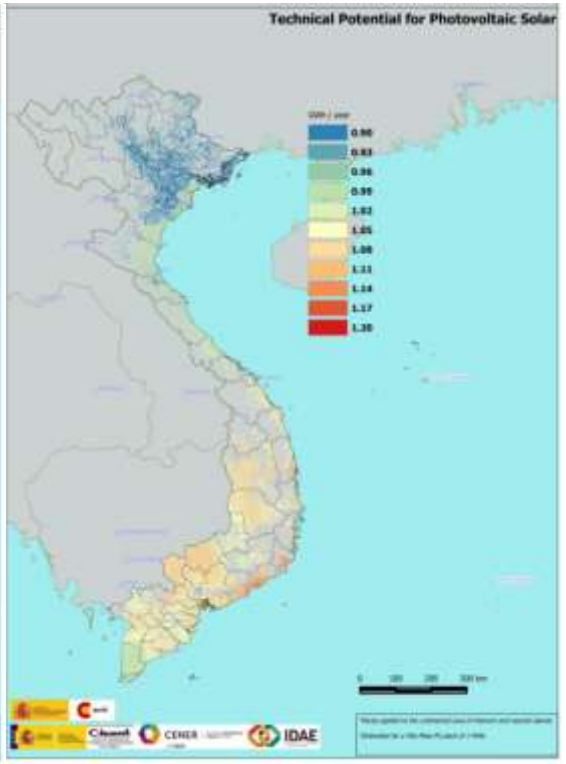

PROJECT SITE- HO CHI MINH CITY
Vinhomes Golden River Sài Gòn
Senior high school
Trường THPT Trưng Vương
Catholic Church
Trung tâm Mục vụ Tổng giáo phận Sài Gòn
Mầm non Hoa Lư
Khách Sạn Sofitel
Sofitel Saigon Plaza
Khách sạn Sofitel
Trường Đại Học Sài Gòn - Khoa Sư Phạm Mầm Non
Đại học Sài Gòn
Nguyễn Hữu Cảnh
Tòa án nhân dân Q1
Công Ty TNHH Cảng Phước Long
miu miu Spa 1
Ba Son
Vietnamese restaurant
Children's Hospital
Bệnh viện Nhi đồng 2
Bảy Hotel Ho Chi Minh
Chu Mạnh Trinh
Bưu Điện Thành Phố
Bệnh viện Nhi Đồng 2
Le Meridien Saigon
City government office
Sông Sài Gòn
Land size 60m x 60m

Fig. 1 Climatic zones in Vietnam according to Köppen-Geiger Climatic chart.







Data Iklim dan Potensi

In order to promote renewable energy, the government of Vietnam has approved the Master Plan for renewable Energy development for the period up to 2015, with vision towards 2025 (Khanh Toan et al., 2011).

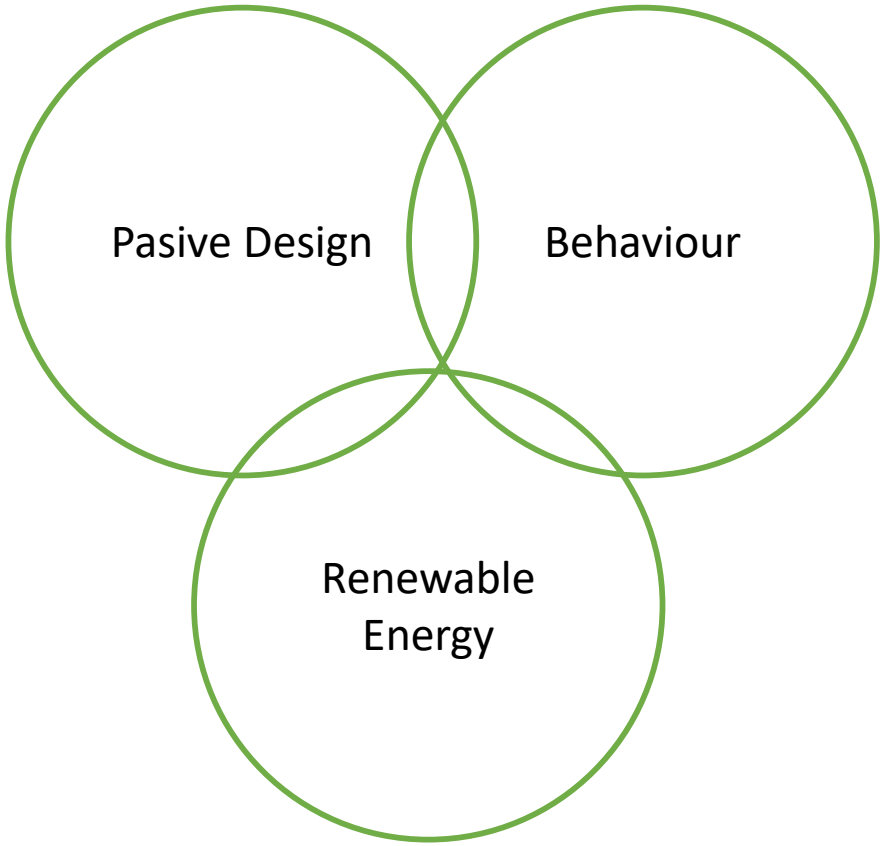
Vietnam is considered a nation with high solar potential, especially in the central and southern area of the country. Solar energy intensity on the average could reach 5 kWh / m2

Residential, 100 units for low income families (4 person/unit)

Pendekatan

- Daylighting
- Natural Ventilation
- Photovoltage

-Daylighting
-Natural Ventilation

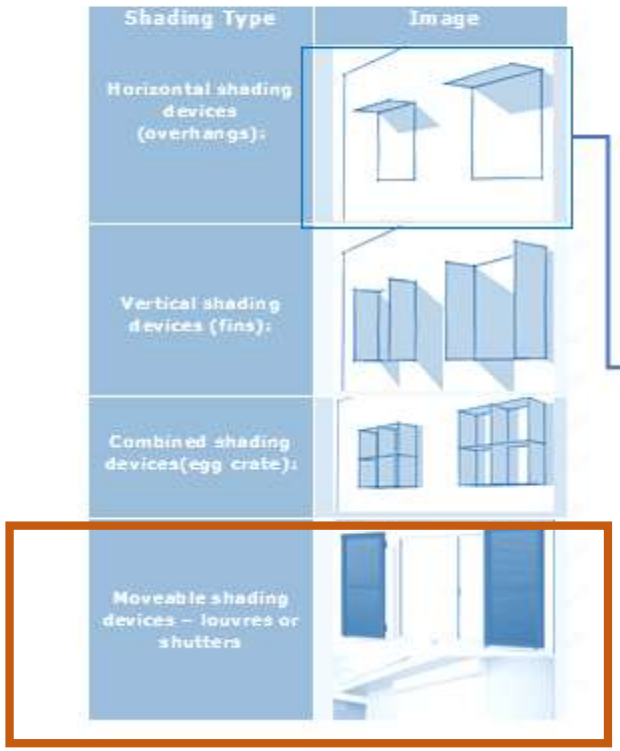


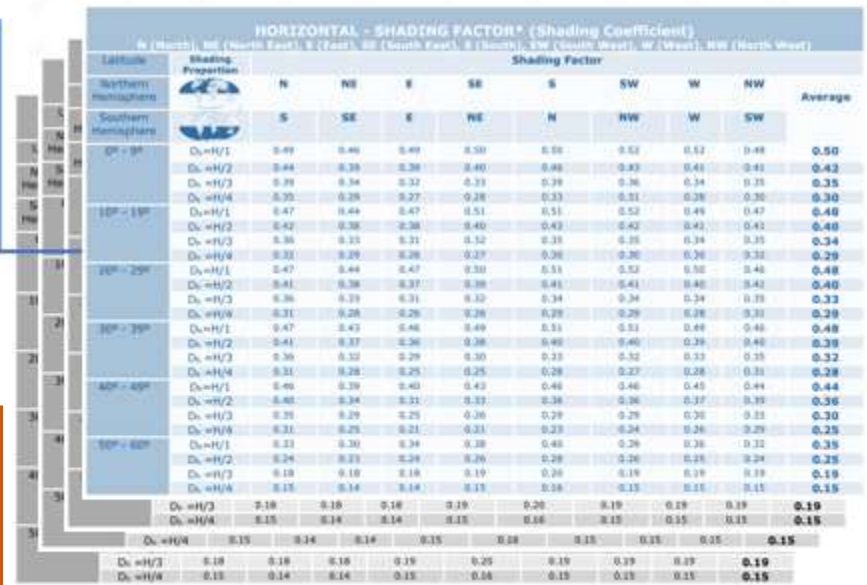
-Smart Meters

-PV

SHADING DEVICES

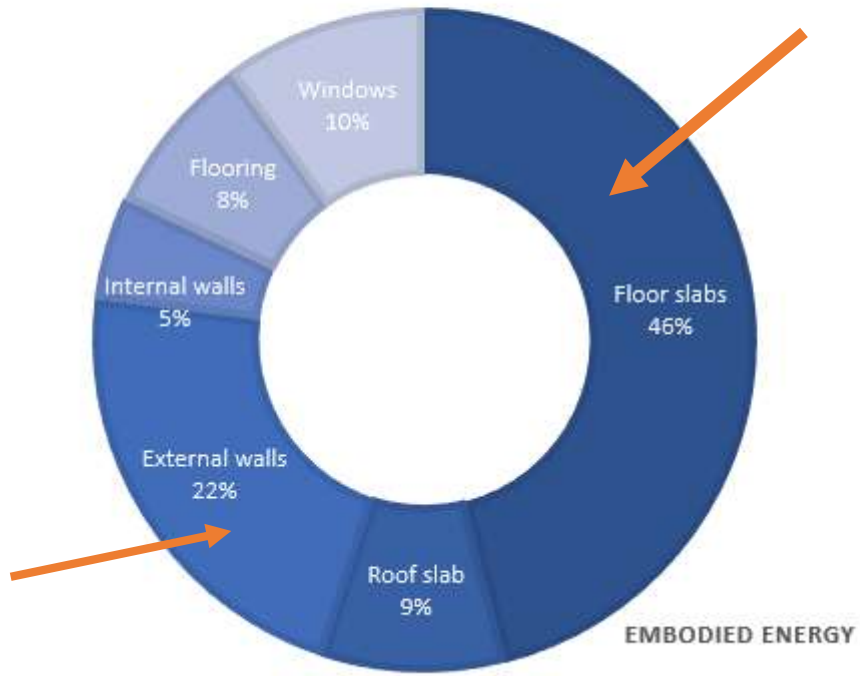
The EDGE User Guide (available free to download) can be used as a handy reference tool to estimate the impact of shading on windows located on different orientations of the walls, for different latitudes.





SELECT MATERIALS WITH LOW EMBODIED ENERGY

Select options that are practical and realistic depending on the city or country where the project is located and the materials that are available, as well as the size and scale of the building.



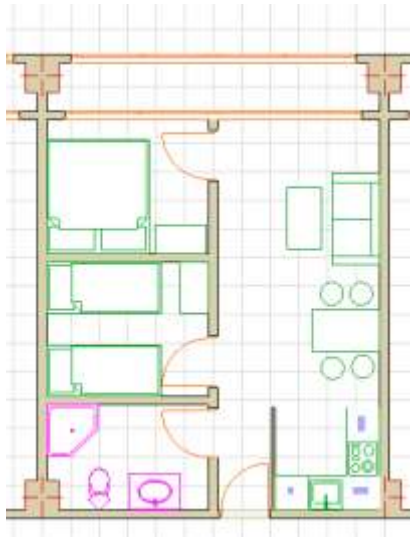
	EMBODIED ENERGY	
MATERIAL	MJ/kg	MJ/m3
Aggregate	0.10	150
Straw bale	0.24	31
Soil-cement	0.42	819
Stone (local)	0.79	2030
Concrete block	0.94	2350
Concrete (30 Mpa)	1.3	3180
Concrete precast	2.0	2780
Lumber	2.5	1380
Brick	2.5	5170
Cellulose insulation	3.3	112
Gypsum wallboard	6.1	5890
Particle board	8.0	4400
Aluminum (recycled)	8.1	21870
Steel (recycled)	8.9	37210
Shingles (asphalt)	9.0	4930
Plywood	10.4	5720
Mineral wool insulation	14.6	139
Glass	15.9	37550
Fiberglass insulation	30.3	970
Steel	32.0	251200
Zinc	51.0	371280
Brass	62.0	519560
PVC	70.0	93620
Copper	70.6	631164
Paint	93.3	117500
Linoleum	116	150930
Polystyrene Insulation	117	3770
Carpet (synthetic)	148	84900
Aluminum	227	515700

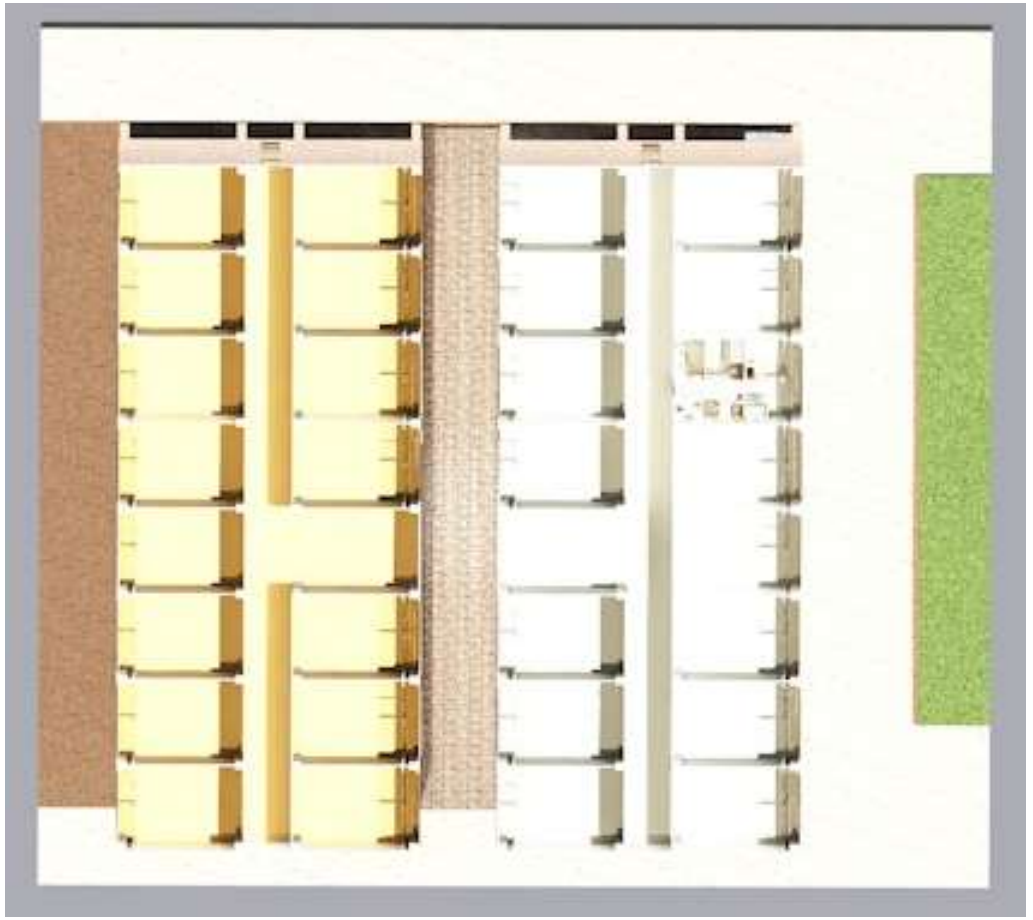
Unit

Residential, 100 units for low income families (4 person/unit)

Ukuran unit: 6m x 8m tipe 48

Terdapat dua kamar tidur, satu kamar mandi, dapur, ruang tengah, area makan, dan teras.





RESULTS												
	Final Energy Use	128.58	kWh/Month/Unit	Operational CO_2 Savings	0.86	tCO_2/Year...	Base Case Utility Cost	564481.61	VND/Month...	Incremental Cost	22,256,041.	VND/...
	Final Water Use	8.66	kL/Month/Unit	Embodied Energy Savings	27631.02	MJ/Unit	Utility Cost Reduction	224,494.64	VND/Month...	Payback in Years	8.26	Yrs.

Cooling Energy -10%
Lighting -23%
Shower -8,2%
Kitchen –12,1%
Floor Slab -10%
Walls External -3%