Improving the efficiency of low-income housing in Cambodia by adapting parametric house design models to accommodate for different environmental conditions

CAMBODIA

RESEARCH

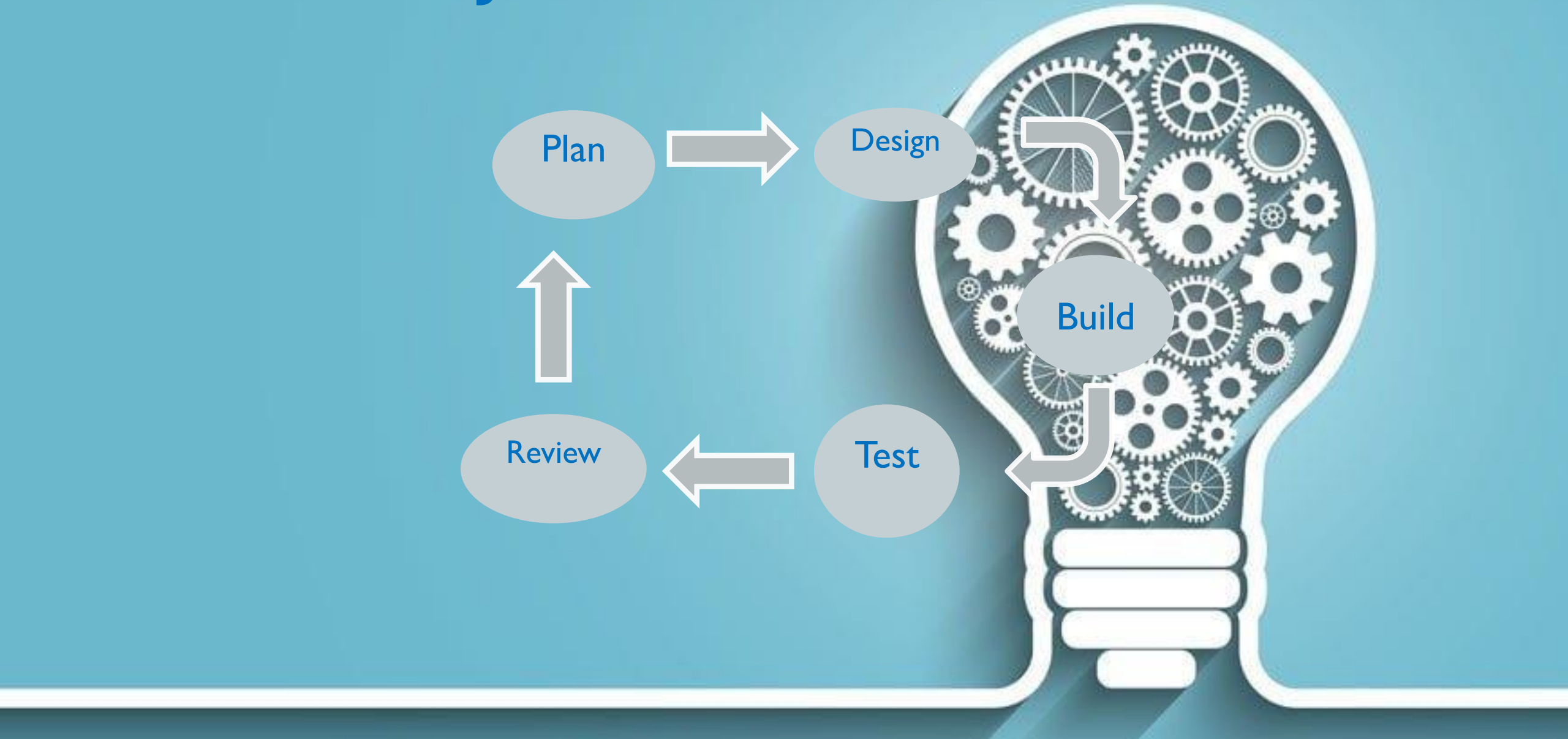
BACKGROUND

RESEARCH AIMS
RESEARCH QUESTIONS

PROJECT OBJECTIVES

- Provide safe and comfortable houses
- Completed automated modelling
- Save drawing time for architects

PROJECT METHODOLOGY

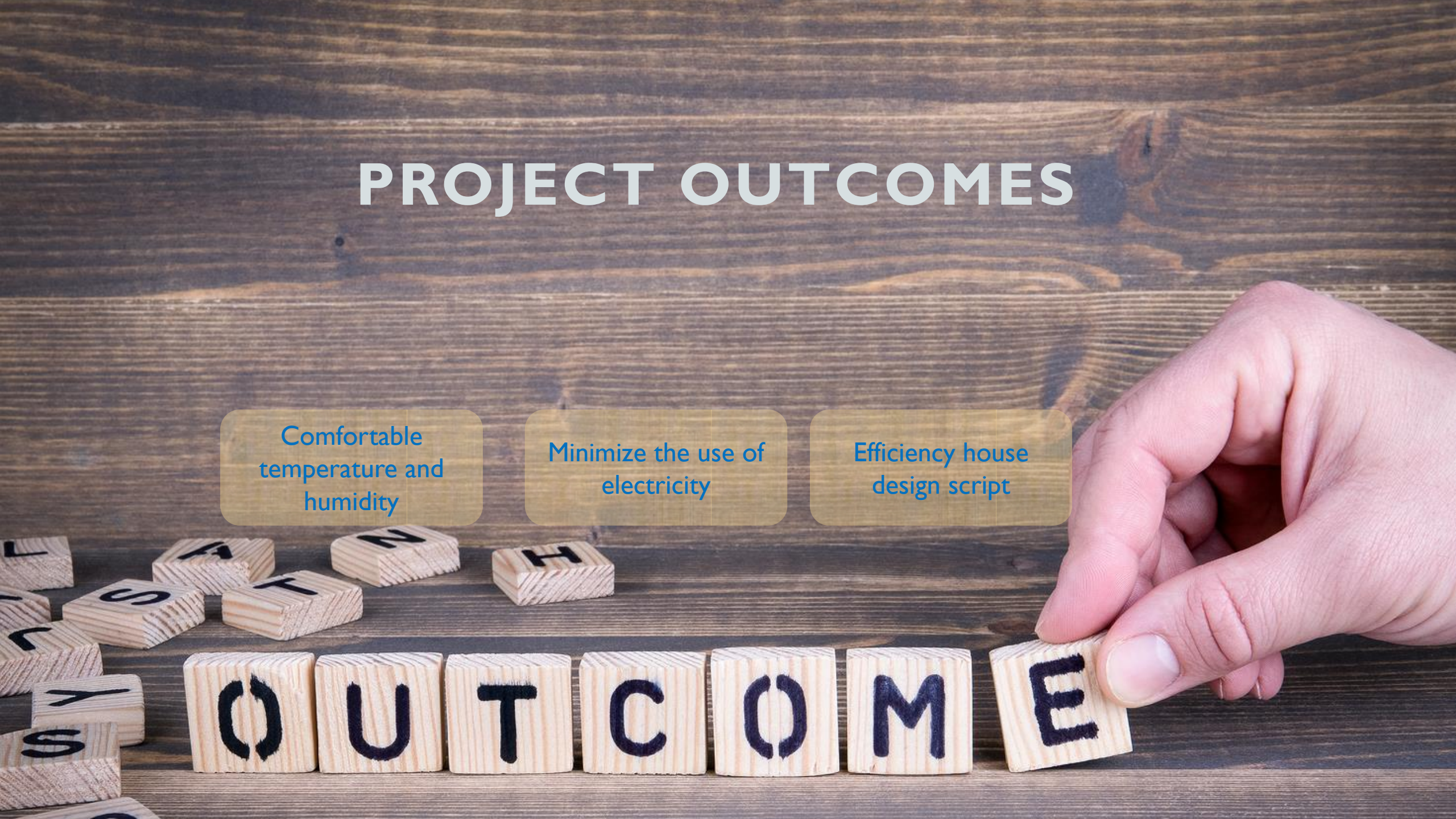


PROJECT OUTCOMES

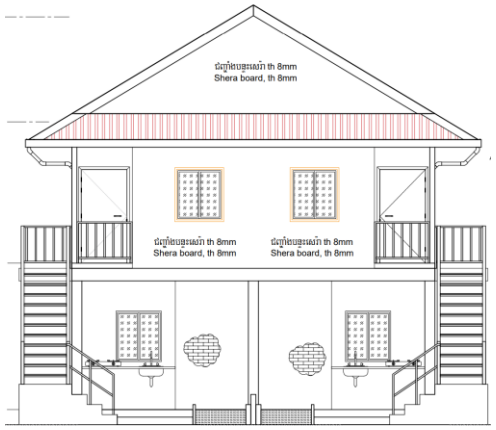
Comfortable temperature and humidity

Minimize the use of electricity

Efficiency house design script



WORKFLOW


ជញ្ជាំងបន្ទះស៊ីម៉ង់ th 8mm
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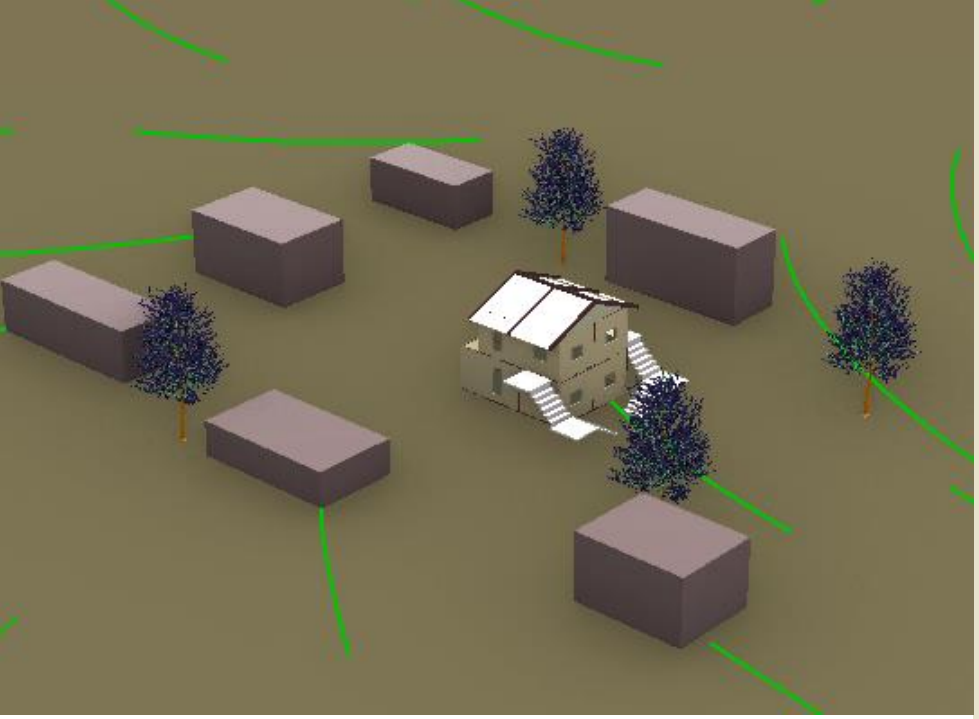
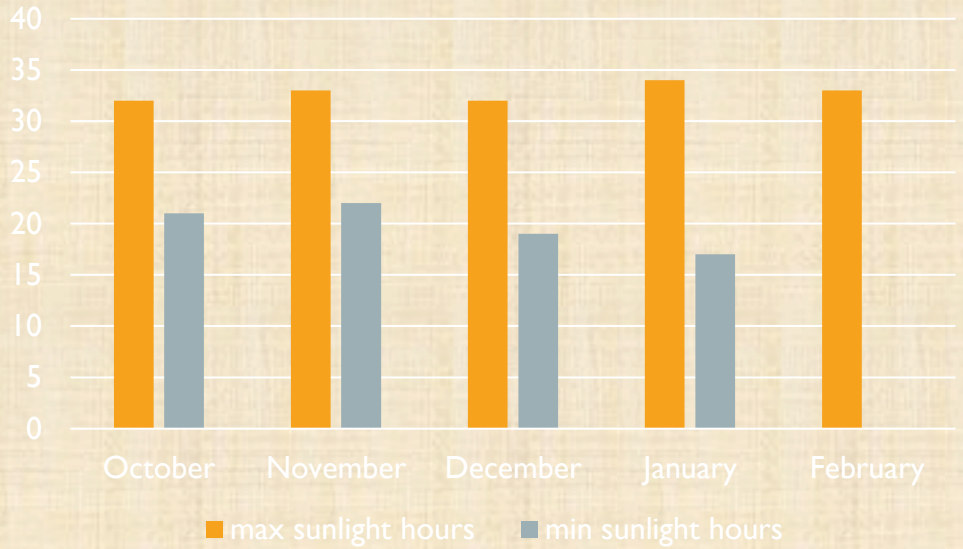
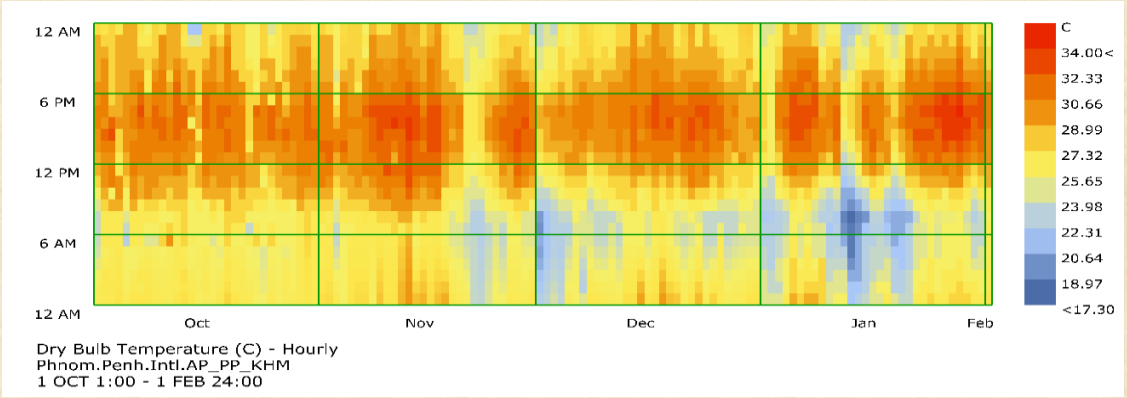


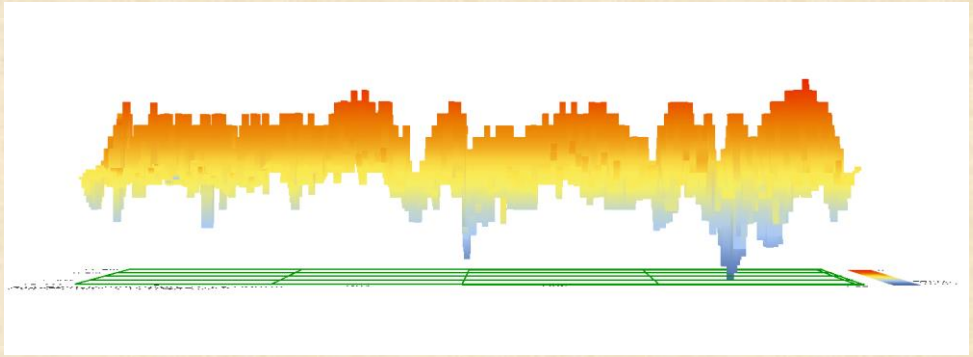
LOCATION OF THE HOUSE ON TERRAIN

Sunlight Analysis in cool season (October to February)

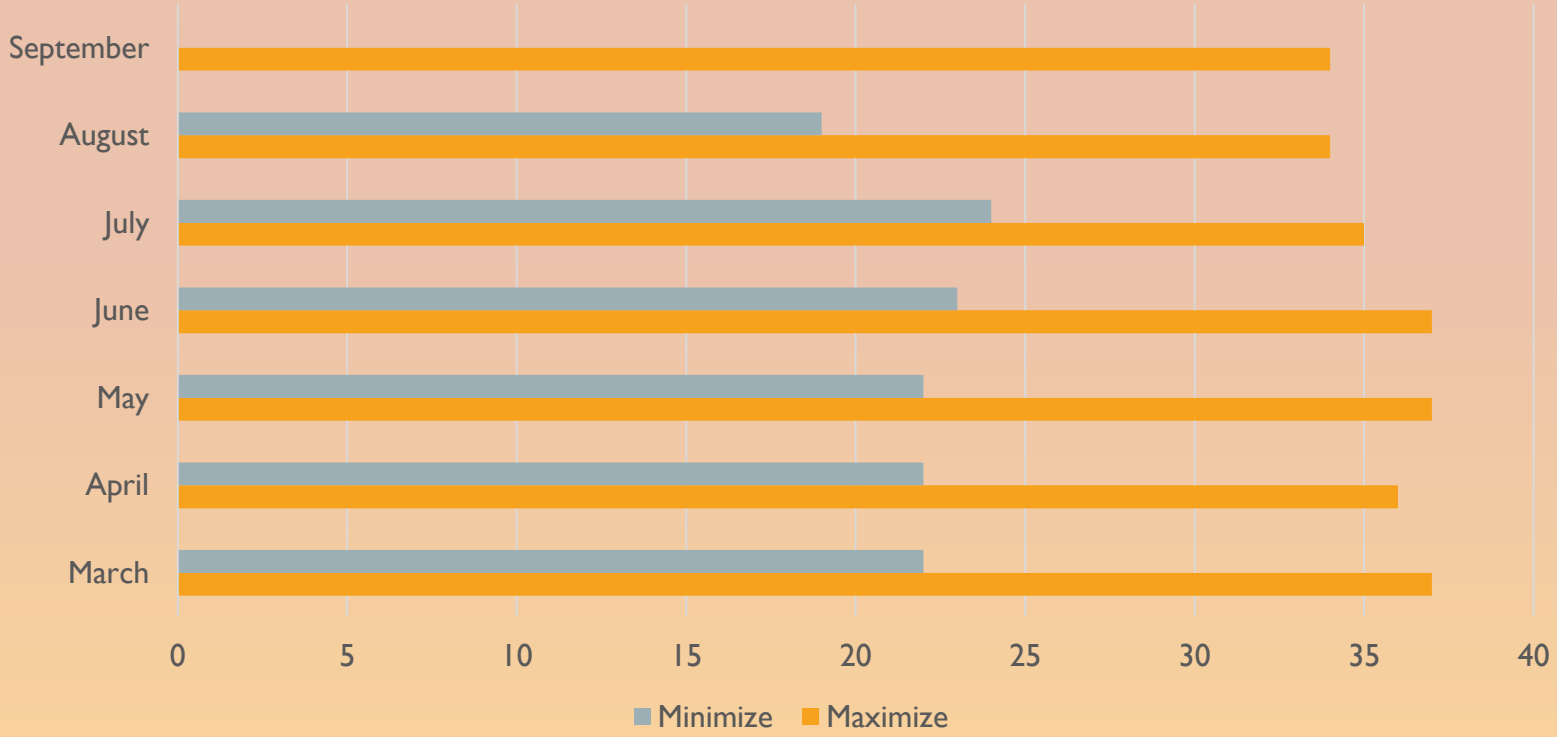
Maximize	Minimize
34	17
Jan	Jan

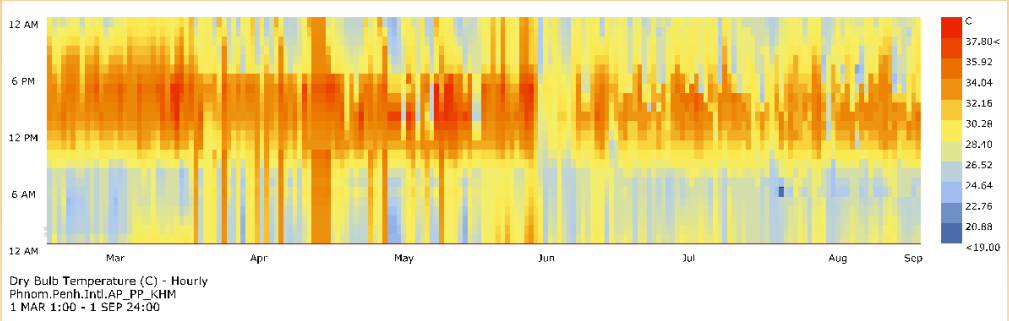






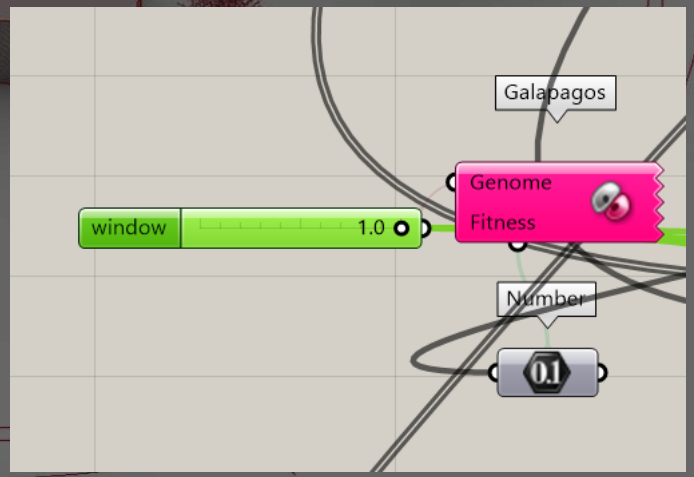
Sunlight Analysis in HOT season(march to September)

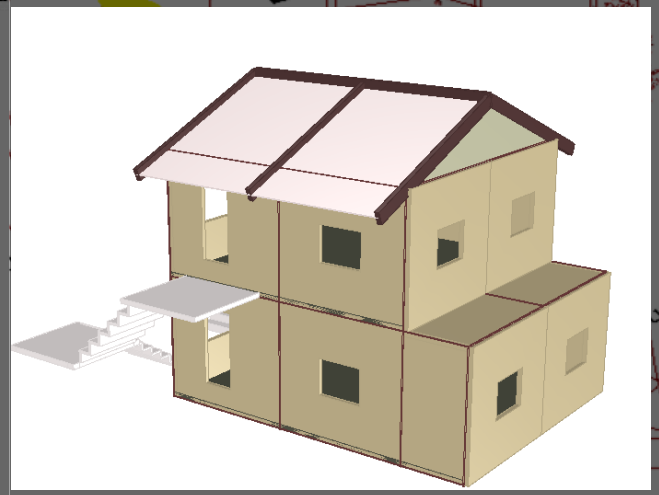




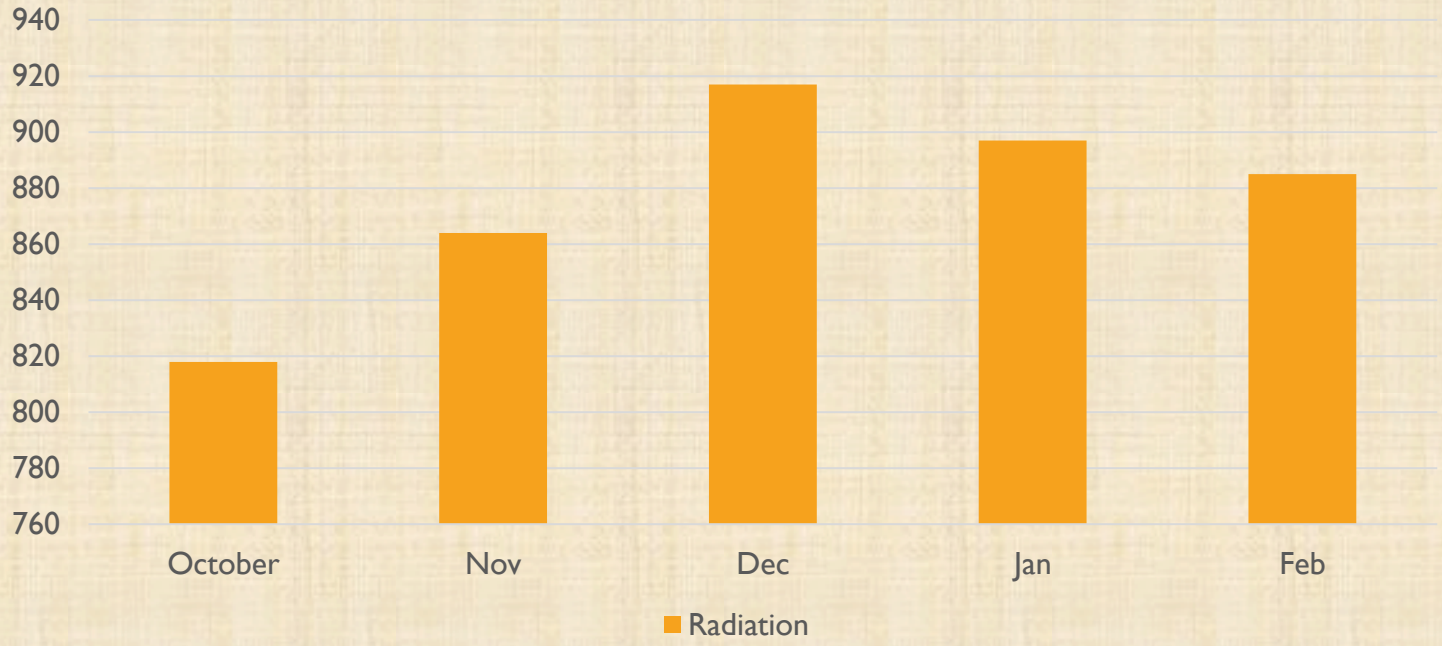
Maximize	Minimize
37	19
May	April

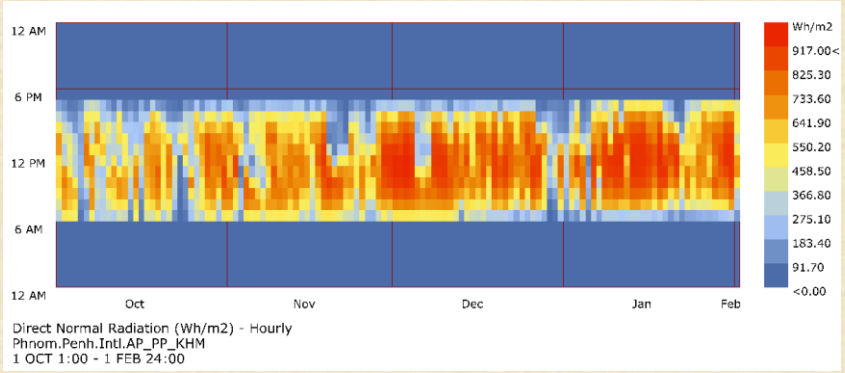
SUNLIGHT HOURS ANALYSIS





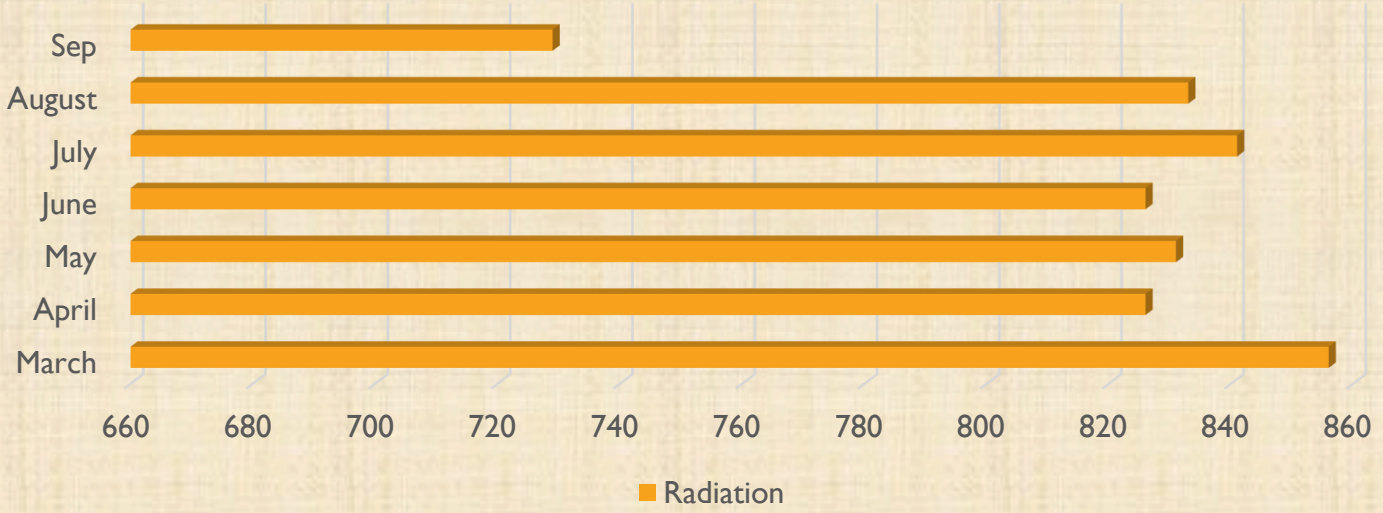
Maximize radiation in cool season (October to February)

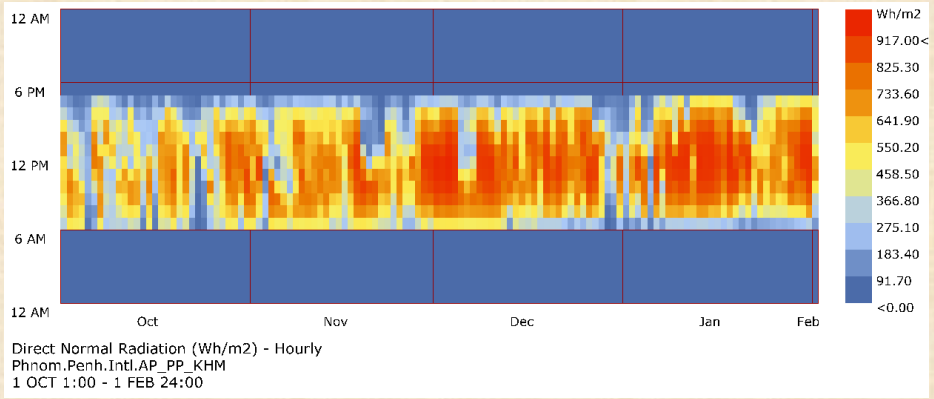




Maximize radiation
917(wh/m2)
December

Maximize radiation in HOT season (March to September)

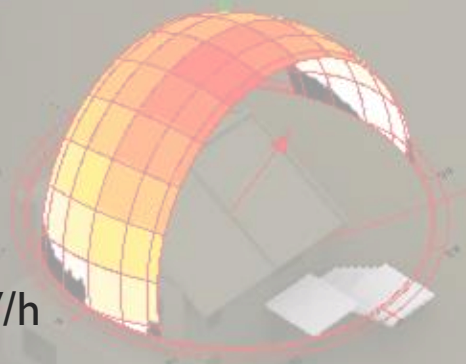




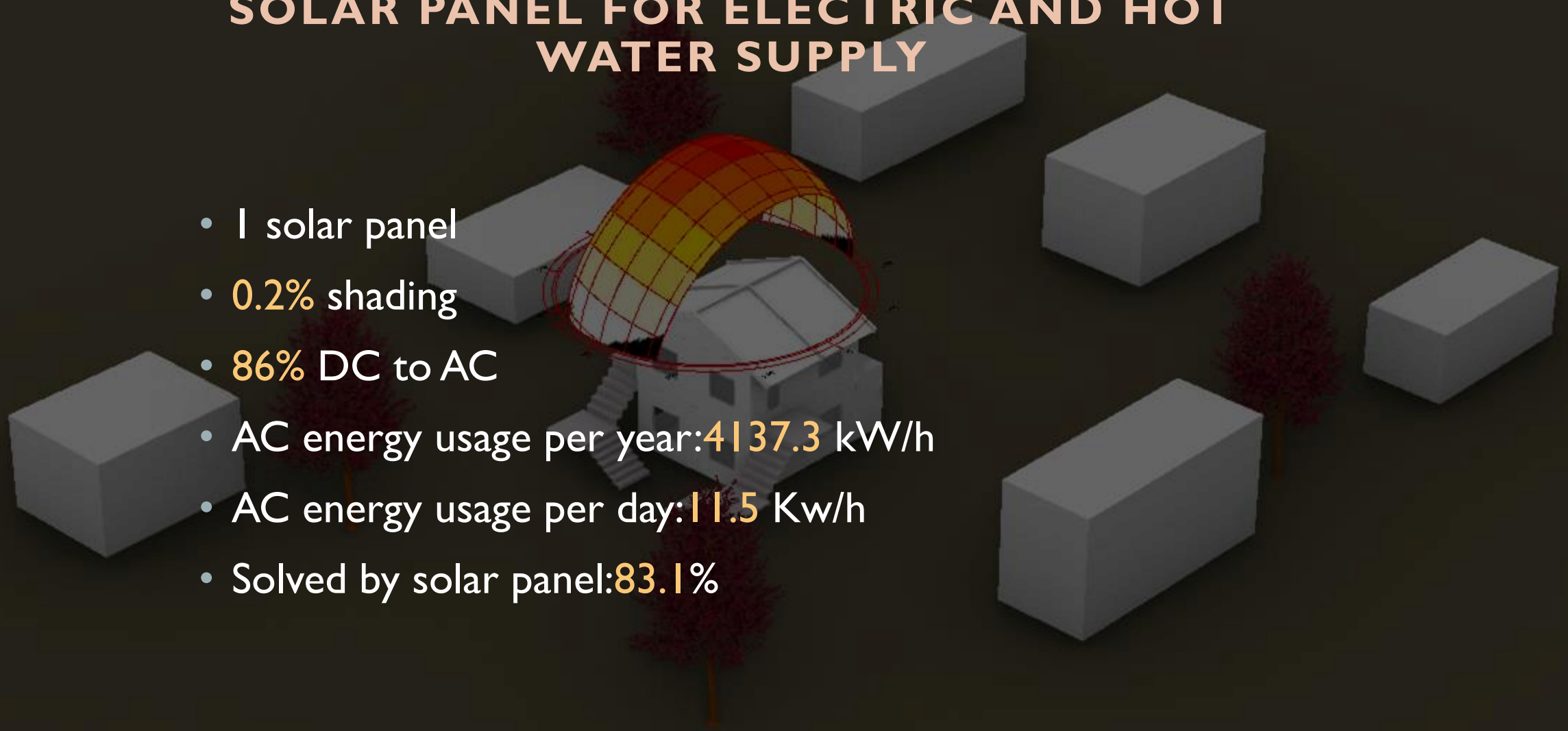
Max radiation
856(wh/m2)
March

SOLAR PANEL FOR ELECTRIC AND HOT WATER SUPPLY

- 1 solar panel
- 0.3% shading
- 84.5% DC to AC
- AC energy usage per year:4047.4 kW/h
- AC energy usage per day:11.1 Kw/h
- Solved by solar panel:81%



SOLAR PANEL FOR ELECTRIC AND HOT WATER SUPPLY



- 1 solar panel
- 0.2% shading
- 86% DC to AC
- AC energy usage per year:4137.3 kW/h
- AC energy usage per day:11.5 Kw/h
- Solved by solar panel:83.1%

3D MODEL VIEW:

SIMPLY SCAN THE QR CODE

SCAN ME


CONCLUSIO

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TANK YOU FOR WATCHING

CREATED BY JEFFREY SONG

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