



NAME: Edison Cadmilema ARCH3551 Final Take home Exam S2021 Prof. Azaroff
3551 Final Vocabulary Quiz:

Answer all of the vocabulary in each section as listed and complete both sketches 2A and 2B. All answers shall be HAND written, complete sentences to receive full credit. Once complete the pages shall be scanned and photographed then emailed in by the end of class on May 25th, 2021

Section 1 Vocabulary Answer ALL of the following questions

TROMBE WALL

Trombe wall is a wall painted dark to absorb thermal energy and covered with glass on the outside

RECYCLED WATER

Recycled water is water that already used, but taking that water and making reusable again

BIO SOLIDS

Bio solids is waste from the sewer treatment that is processed and used as fertilizer

DRAINAGE SWALE

It is ~~and~~ a drain in the surface to slow and control flow of water and prevent flooding

COMBINED STORM WATER OVERFLOW EVENT (CSO)

It is a time period where facilities can't handle flows that over take the design capacity

RAMMED EARTH

Rammed earth is known to use raw materials to build constructing foundations

GRAY WATER

is water generated in streams without fecal contamination.

BLACK WATER

is water which is wastewater from bathrooms and toilets that contain fecal matter

GROUND WATER

is water present beneath earth's surface rock and soil pore spaces

CO-GENERATION

is the combination of heat and power to generate electricity and useful heat

AQUIFER

aquifer is an underground layer of water bearing permeable rock, rock fractures or unconsolidated materials

PART 2A: Answer the following questions in complete sentences. Sketch your answer in a diagram with explanation.

Provide and illustrate two methods by which Architects/Engineers can control the quantity and quality of water that exits a building or site before it joins the municipal sewer system? Describe each in YOUR OWN WORDS!!!!

Water is very important as most of our body is $\frac{2}{3}$ water, without it we are dead. We also use it to clean ourselves.

Quality control - to check particles present and pathogen properties

Quantity Control - inspecting of effectiveness and safe flow in the drain of the capacity

We waste too much water which will cause harm and if we are not careful it will contaminate us.

We need - Conservation and pretreatment

Section 2

3551 Final Vocabulary Quiz: Answer and complete ALL of the following nine definitions.

MACROCLIMATE	macroclimate is patterns of the global, regional and landscape level
MICROCLIMATE	microclimate is fine patterns of community organisms.
MESOCLIMATE	mesoclimate is the climate at intermediate geographic scale such as downtown, district, park, and farms
SIRR Report	Sirr report is a long term sustainability plan. it includes on how to build communities affected by hurricane sandy
DRY BULB TEMPERATURE	Dry bulb temperature is temperature of air measured by a thermometer freely exposed to the air but shielded from radiation and moisture
RESILIENT	resilient is the will to be able to recover quickly
RELATIVE HUMIDITY	relative humidity tells how much water vapor is in the air
DEGREE DAYS (HEATING & COOLING)	degree days is used to calculate, to plan planting crops and management of pests
BIOCLIMATIC CHART	it is a chart in effectiveness and selection of the passive cooling. The charts are based on the typical dry bulb temperature.

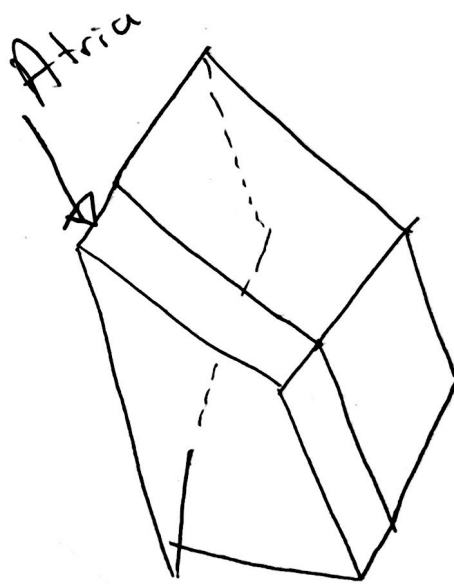
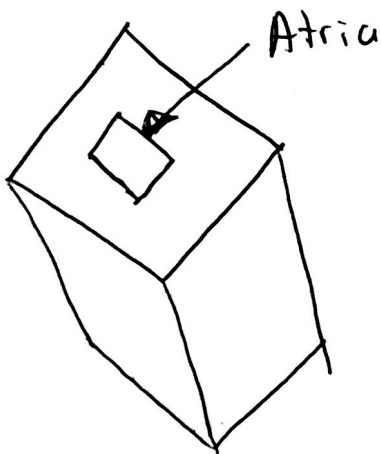
PART 2B: Answer the following questions in words and Sketch format.

Sketch 2 examples of Atria and the advantages or qualities they bring to a project. Be specific in your description and use graphics such as arrows to show how the Atria work.

Atria is defined in a shape and open to elements and located in the center of the building

Advantages

- 1) natural lighting
- 2) aesthetic space
- 3) increasing inhabitants
- 4) socialization and interactions



Section 3

3551 Final Vocabulary Quiz: Answer ALL of the vocabulary in section 3 with complete sentences.

1. LEED

Leadership in energy and environmental design is a green building certification program

2. What is Cradle to Cradle mean?

Cradle to cradle mean is design biometric approach to the design of products and system that models human industry

3. Frankenstein products

Frankenstein products is a product made of two or more components, which was apart or recycled

4. Renewable Resource vs Non-Renewable Resource

Renewable is a product under what condition can be used and non-renewable has a limited life to it

5. Circular economy and give an example

is a model of production which involves reusing all material and products as many times. Example Recycling plastic.

6. Passive Solar Systems

is a passive solar that collect sun and retains that stored heat as thermal mass

7. Active solar Systems

is a system which collect solar radiation and convert it in a form of heat to water, air, or other fluid

8. Carbon Emissions

Carbon emissions is the release of CO₂ by animals and plants.

9. GHG

Greenhouse gas or gases in earth's atmosphere that trap heat mainly water vapor, carbon dioxide, methane

10. Superfund Site

Superfund site or polluted locations in the USA requiring long-term to clean up

11. Brownfield

Brownfield is a land that is not being used and could be contaminated

12. Urban Infill

Urban infill is the use of land within built-up area

13. Ecological Footprint

is a person's environment showed as the amount of land required to sustain their uses

14. Define Lux and Lumens

Lux gives the illuminance on a certain surface

Lumens is the amount of light emitted by a light source

15. Building Commissioning

building commissioning is a plan that makes sure that the building performs according to the design intent

16. R Value / U Value

R value is the combined effect of thermal conductivity

U-value is thermal transmittance

17. I.C.F.'s

I.C.F. is insulating concrete form or isolated concrete form is a system framework usually with rigid thermal insulation

18. Heat Island Effect

It's an area where it's way hotter than it's supposed to be due to human activity

19. Low 'E'

low E refers to a surface condition that emits low levels of radiant thermal energy in windows

20. Fritted Glazing

fritted glazing is finely porous glass through which gas can pass the glass

21. S.I.P's

S.I.P. is two types of wood sandwiching some type of insulation

22. SRI

SRI is a plan that wants financial and social/environmental good to bring about social change

23. upcycle

upcycle is a creative use of un-wanted products, waste into new materials.

24. Energy Audit

energy audit is an inspection survey and a analysis of energy flows conservation in a building

25. Solar Heat

the use of sunlight to heat water or air.

26. Geothermal Heat-Pumps
a source of pump used to heat/cool a building by exchanging heat with the ground

27. Building Management Systems
is a computer based system that controls and monitors mechanical and electrical equipment

28. Commissioning
Commissioning is making sure system is working fine, tested operational, and taken good care of

29. Eco Efficient
eco-efficient is to pollute less and by eating less meat which will help the earth

30. Renewable Energy - Distributed Generation
renewable energy is energy collected from renewable resources. distributed generation is electrical generation and storage.

31. Direct solar gain systems list 2 advantages
- gain passive solar homes are the easiest to implement
- designs have low environmental impact

32. Direct solar gain systems list 2 dis-advantages
- To much can make the home cold at night
- To little thermal can cause the house to overheat

33. Indirect solar gain systems list 2 advantages
- energy delivery to space is more control
- less impact on the overall building design

34. Indirect solar gain systems list 2 disadvantages
- Heat losses are increased
- to not overheat during the summer, a wall must be shaded

35. Eco Effective
eco-effective is doing the right thing but it's long term

36. What does DFE stand for?
DFE is Design for the environment

37. What does BFE stand for?
BFE stands for Base Flood Elevation

38. Define Freeboard

Freeboard is to determine the level at which structures lowest floor must be elevated or flood proofed

39. What does the cherry tree represent in our readings?

It represents temporary or fading nature in everyone's life. It means short term

40. Who was Rachel Carson and name two of her contributions to sustainability

Rachel Carson was a renowned marine biologist. She was a aquatic biologist and launched contemporary environmental

41. Who was Ian McEwan and name one of his major contributions to sustainability

Ian McEwan was a Scottish landscape, known for his book about ecological planning

42. What does 80 x 50 stand for?

80x50 means reducing greenhouse gases by 80% and by year ~~2000~~ 2050

43. Biomass

Biomass is renewable organic material that comes from plants and animals. Biomass contains stored chemical energy from the sun

44. Name 3 SDGs

3 SDGs is ensure health and well being for all, more research and development, and increased health financing.

3A. Sketch the following (Extra Credit)

Sketch or diagram a Passive Hot Water heating system and an Active Hot Water heating system. Describe in your own words the way in each system works in detail. How does the system heat water? How does the system maintain heated water?