

Arch 463
ECS
Fall 98

Name _____

Quiz #1

"Spuds R Us"

For this problem you are the designer for the AIAS Spud Feast Booth. The AIAS intends to make its presence known on the 100% corner on campus, and will sell spuds and drinks daily from the new booth. The booth should provide comfort for the occupant, but it should also look cool.

Design Guidelines. The booth will be used for year-round hawking of spuds to enrich the AIAS coffers. The structure will consist of four 4x4 corner posts that support the roof structure and the walls' infill panels. The 10' tall posts will be placed at the corners of a 12' x 8' rectangle. The concrete slab floor aligns with the cardinal directions.

Because of the site chosen for the booth, the counter and pass-through make up the north wall. The counter is 42" high, solid, insulated wall below and open above. The key to the design is to use passive design techniques to provide optimum comfort for the booth occupant, working behind the counter. Choose an appropriate in-fill panel for East, West, and South wall orientations and for the roof.

Kit-of-Parts. No two skin elements (wall or roof) should be the same material. Your choices for in-fill panels are limited to the following:

Walls: brick, glass block, corrugated steel, straw bale, sliding shoji panel, or cedar lattice.

Roof: pyramidal skylight, corrugated steel, thatched

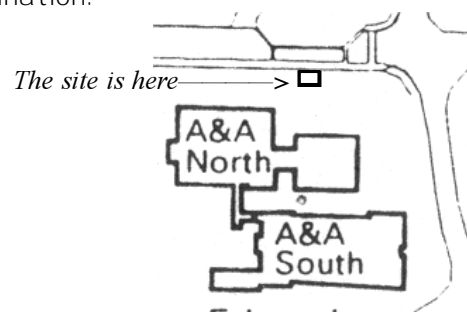
Climate Context. The site is located in a temperate climate zone in the Northern Hemisphere. Prevailing winds dominate the autumn, winter, and spring weather, but thermal breezes dominate the summer conditions.

Site Context. The site is bordered by some serious trees on the east (coniferous) and south (deciduous). For this problem the site is approximately flat and level.

Equipment. The booth is equipped with a small oven for baking the spuds and a refrigerator for cooling the beverages. There is one electric lamp for general illumination.



The site is located adjacent to the sidewalk north of the AAS/AAN complex (indicated by the circle above).



Grading note: Each response is worth one point.

1. For each season explain the environmental forces (sun, wind, heat) and microclimatic conditions on the site and discuss appropriate architectural responses.

Fall/Spring

Winter

Summer

2. Design and draw a spud booth that meets the guidelines on page one. Sketch a section and an elevation of each design facade (a plan view of the roof) and explain its role in response to the climate. Remember that your choices for in-fill panels are limited to the following:

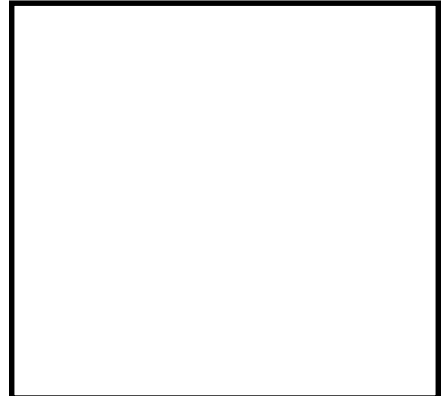
Walls: brick, glass block, corrugated steel, straw bale, sliding shoji panel, or cedar lattice.

Roof: pyramidal skylight, corrugated steel, thatched

Roof



East



South



West



3. Explain how your design can provide comfort for the occupant for each season.

Fall/Spring

Winter

Summer