

Arch 464
ECS
Spring 2001

Name _____

Quiz #2

"Sidelighting Only"

For this problem you are the daylighting consultant for a small dotcom which is fleeing California's rolling blackouts and is intent on leasing office space in a central core, glass curtain-wall high-rise in Boise. The dotcom CEO wants to assure the highest productivity from her staff by providing high quality daylighting to the office.

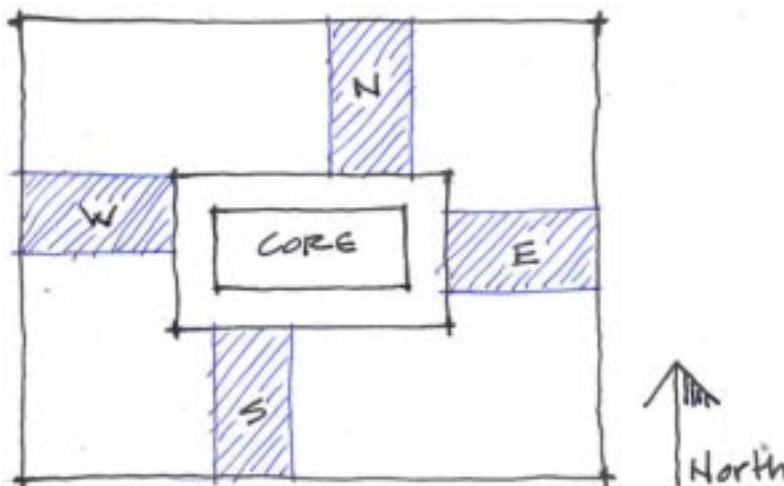
She has the choice of four available 20' x 40' office spaces with a twelve-foot floor to ceiling height on the thirteenth floor. The 20' wall is the only exterior wall in any of the office spaces and office access is through the opposite 20' wall. Each of the available office spaces' window walls face a different cardinal direction, i.e. north, east, south, and west. The office program is simple:

reception	200 sq.ft.	receptionist's station + seating for three visitors
principal's offices	2 @ 150 sq.ft.	desk + seating for one guest
open office	300 sq.ft.	three built-in workstations

Each employee is equipped with a computer with a flat screen and a good 5-wheel swivel chair. The firm intends to use only four 8' x 5' high partition walls to separate the spaces.

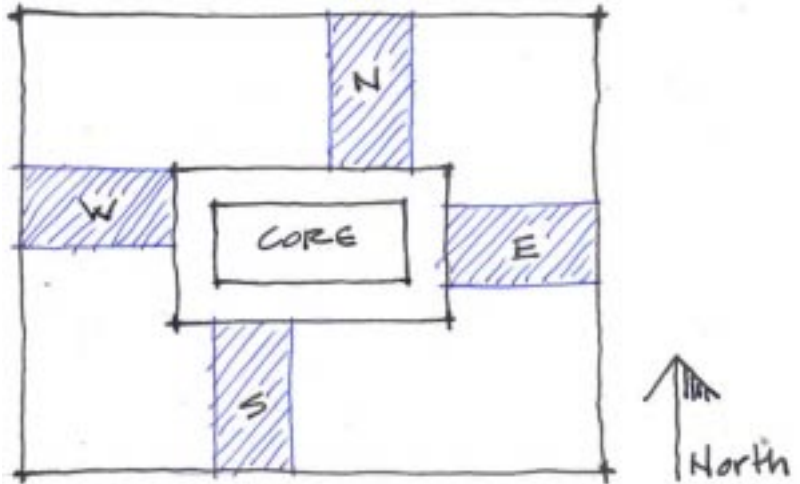
Boise is located about at about 44° North Latitude. The sun ascends to 69° above the horizon at solar noon on the summer solstice. The climate is primarily dry and clear. Winter days are short with low sun angles and summer days are long and bright.

READ THE ENTIRE QUIZ BEFORE YOU BEGIN!



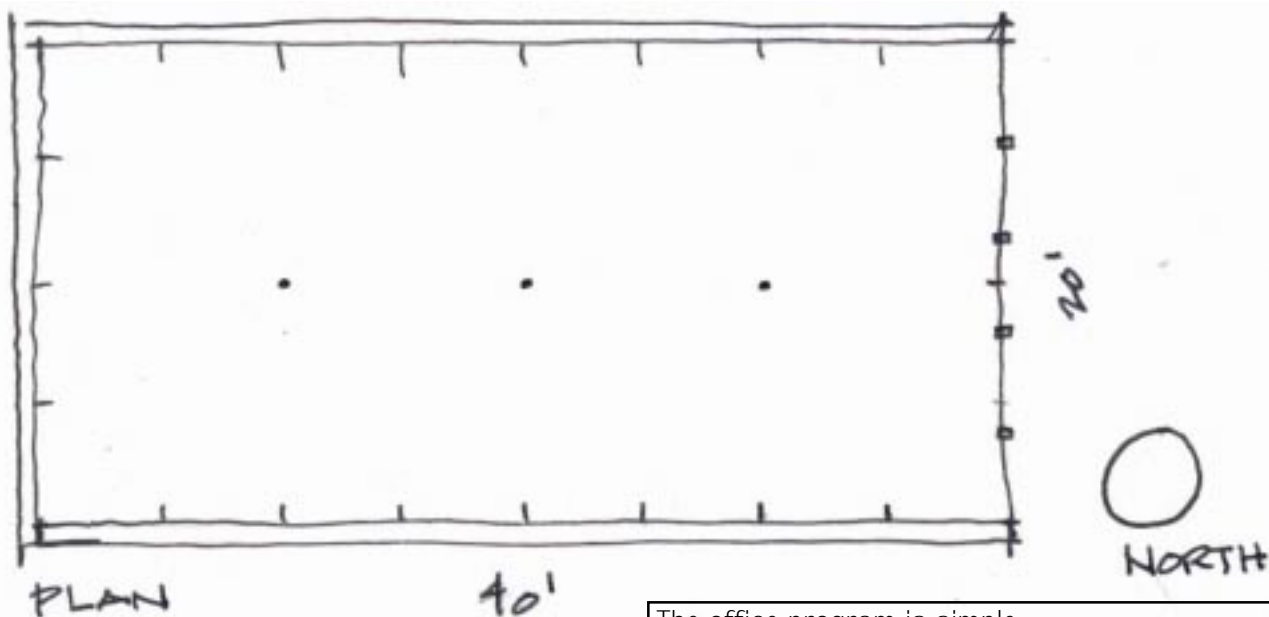
Thirteenth Floor plan with available 20' x 40' office spaces.

- 4 pts. 1. Choose the best office orientation (N, E, S, or W facing glazing) for your daylighting scheme. Explain your choice.



Thirteenth floor plan.

- 4 pts. 2. Design the office space, showing your proposed furnishing scenario. Explain your rationale for the design in terms of lighting considerations.



Office plan. Indicate north.

The office program is simple:

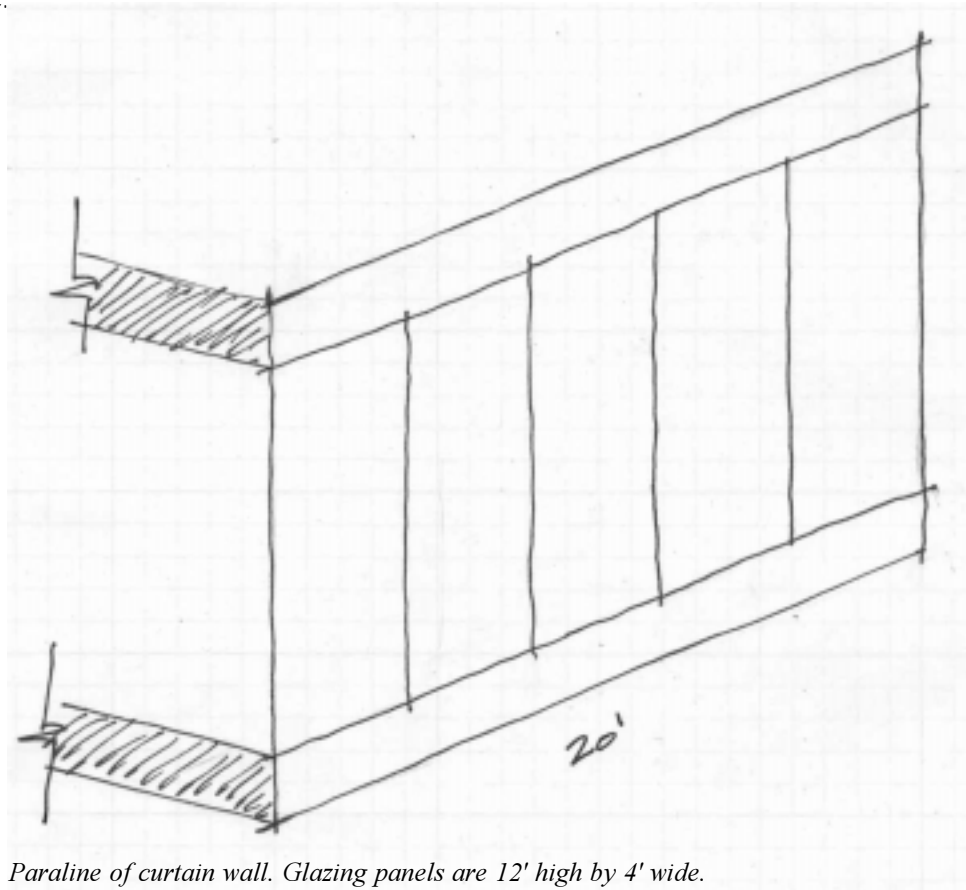
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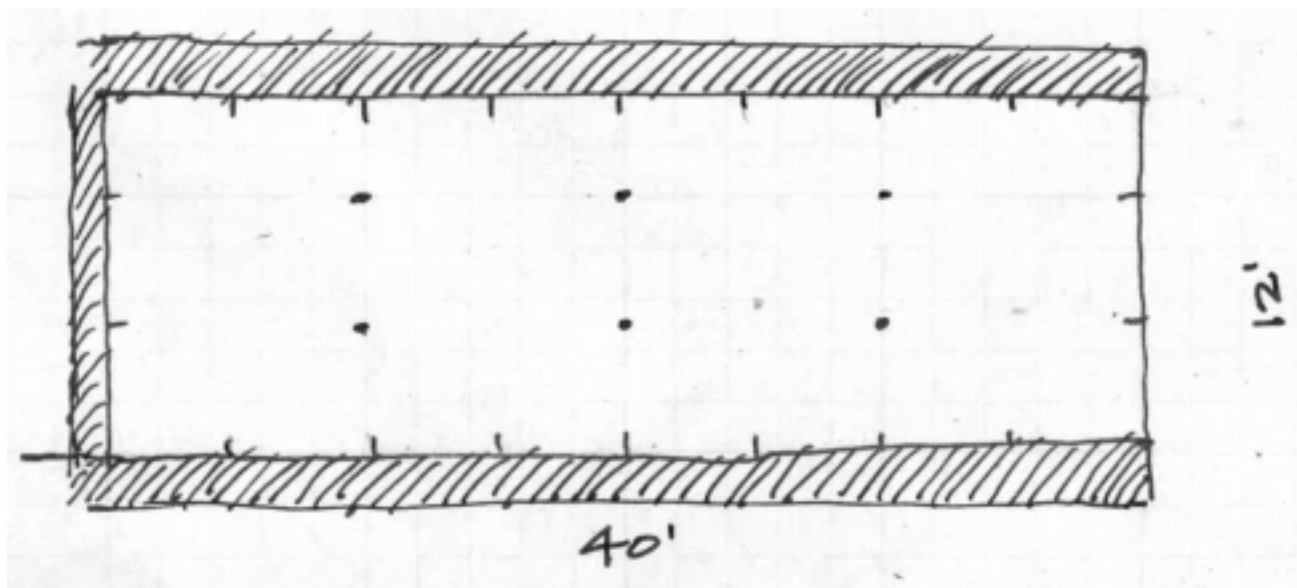
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Each employee is equipped with a computer with a flat screen and a good 5-wheel swivel chair. The firm intends to use only four 8' x 5' high partition walls to separate the spaces.

- 2 pts. 3. Design the curtain wall components for the office. You may use opaque insulated glazing, clear low-e glazing, light shelves, and/or interior shading devices. Explain the role of each component in the daylighting scheme.



- 2 pts. 4. Show the expected daylight distribution in section. Indicate the work plane location and the effectively daylighted zone. Indicate where task lights will be needed and when they should be used.



Section through office. Ceiling height is 12'; grid ticks are 5'.