

Arch 464
ECS
Spring 2006

Name _____

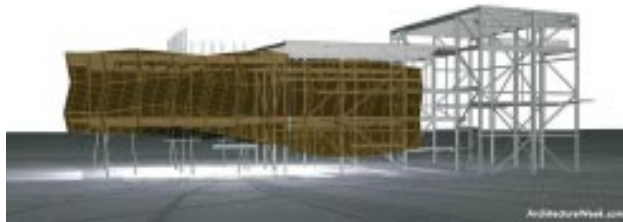
Quiz #1

"Dancing in the Light"

For this problem you are the daylighting consultant for Gould Evens Associates who are designing the Stevie Eller Dance Theatre at the University of Arizona. Your focus for this problem is to improve the daylighting in the second-floor practice studio.

The architects have asked you to critique the existing conditions and to recommend a scheme for improving the daylighting in the space by adding skylighting. The practice studio has shaded windows on the East and South facades and no skylights. The south glass is protected by a large overhang and the east glass is protected by "wire screens which display a free and easy movement as they dance across the building. The screens of scrim are elaborately constructed, held away from the dance studio's glass walls, offering protection from the elements and shade from the brutal desert sun. From below, one gets the impression of standing behind a chorus line on stage."

Tucson is at 32 degrees north latitude and has an arid climate with mild winters and hot summers.



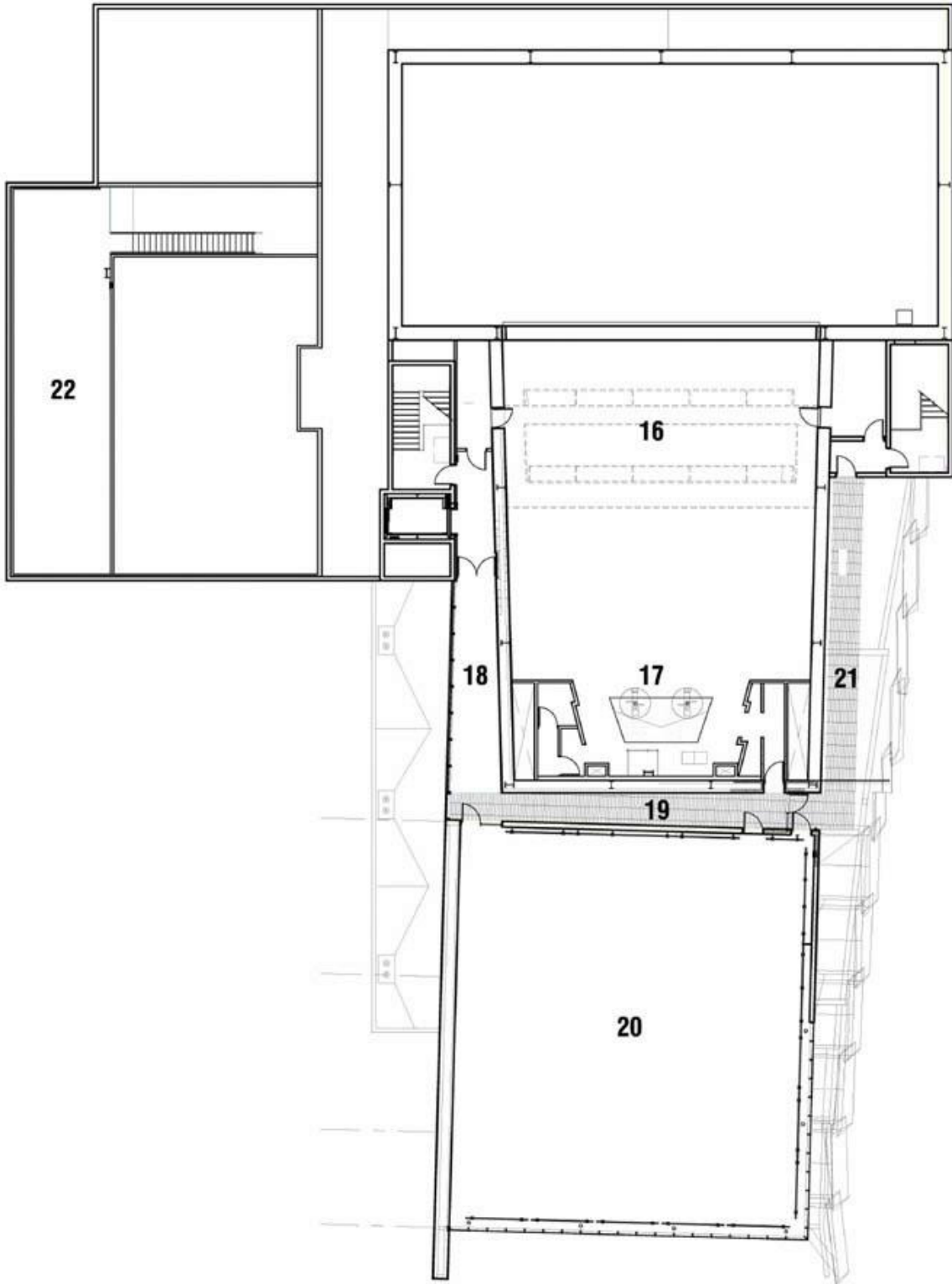
The wire screen on the east facade is inspired by dancers and choreography.



The wire screen is held away from the building and provides filtered shade from the morning sun.



Seen from the southwest, the second floor dance studio seems to cantilever over the landscape .



- 16 CATWALKS
- 17 FOLLOW SPOT LOCATION
- 18 DANCE CORRIDOR
- 19 UPPER LOBBY CRACK
- 20 DANCE STUDIO
- 21 CATWALK EGRESS
- 22 STORAGE

FLOOR 2

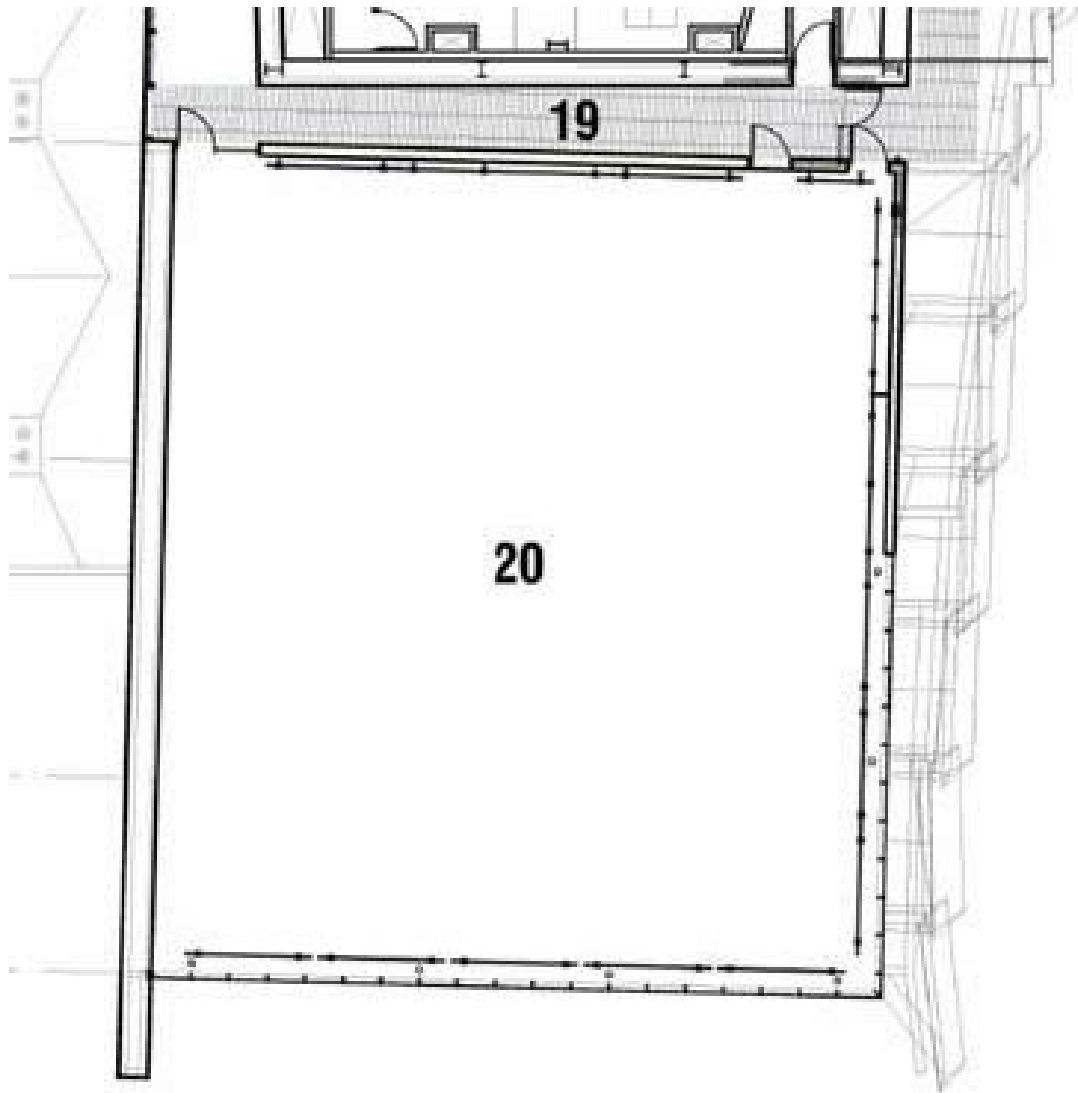
The Dance Studio (20) features apertures on the east and south only.

1. Describe **three** lighting and comfort problems posed by the proposed design.

3 pts

2. **Show** where you would place skylights to improve the lighting in the studio. **Graphically describe** (draw) on the plan below the expected distribution of light in the space.

3 pts



4 p15



Interior view of the dance studio looking toward the southeast.



South to north section through the dance studio and theatre.

3 pts 3. **Sketch** a section through one of your proposed skylights to demonstrate its effectiveness as a daylighting fixture. **Annotate** the drawing to explain its features.

1 pt 4. **Explain** two ways that you could adequately analyze your proposed solution.