

Arch 464  
ECS  
Spring 2018

Name \_\_\_\_\_

Quiz #4

# "Sound Dancing"

Read and look at everything before you write!



Illustrations and text from *Architect* April 16, 2018 and Archimania.

For this problem you are acoustically curious. Your mission is to discover acoustic features that pose problems and ones that solve problems in the new home of Ballet Memphis.



# Ballet Memphis

## Archimania

Ballet Memphis had outgrown its current space and wished to move to a thriving performance arts district in the heart of the city with a one-of-a-kind facility. The Company strives to perform an inclusive message about culture and arts and to uplift the community through transparency, connectivity, and education.

The company's new home opens up to the community with large windows and public courtyards between the studios. The two-story building houses practice space for Ballet Memphis' professional company and classrooms for youth and community dance instruction. The building is intended to engage the public in dance, movement, wellness, self-discovery, and connection.

The exterior form, composed of layers of glass, perforated copper, and volumes of contrasting metal emulates a music box. Gauzy screens and deep insets of the building mask and reveal the activity of dancers within. Warm and neutral materials and cool colors are also used to frame and display movement.

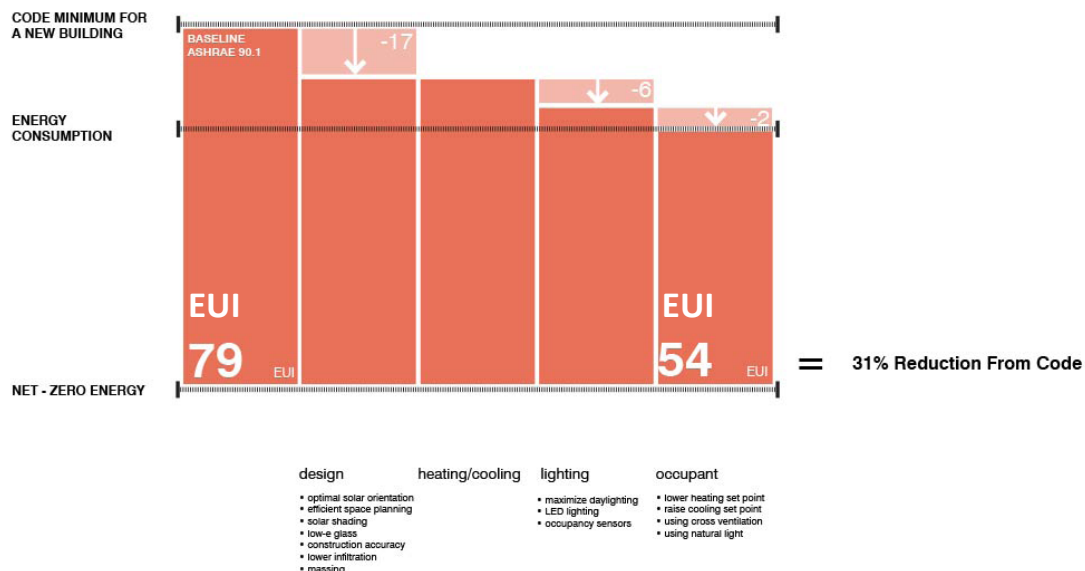
The perforated copper screen mimics the existing historic street edge – enhancing the urban experience within an entertainment district undergoing a renaissance – while complying with current city codes and setbacks. The building's façade offers opportunities for the community to engage with the Ballet, via exterior courtyards and a café. A costume shop exists at the easternmost end of the project, featuring a display window that doubles as a mini-performance venue.

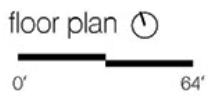
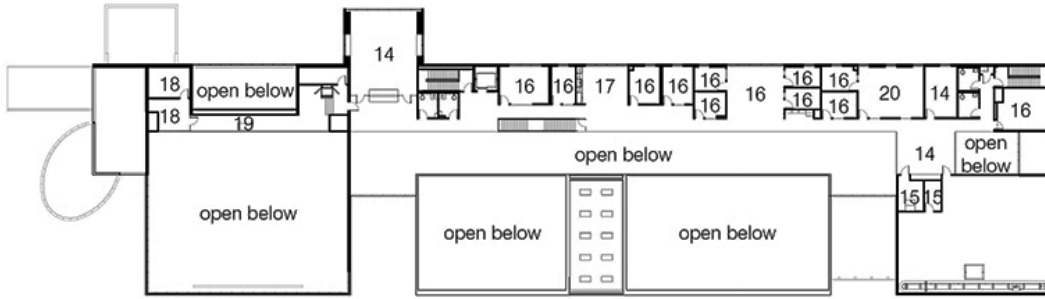
Dance and architecture share a focus on movement, space, and time. Celebrating these disciplines, through this civic project, enhances the growing entertainment district and residential neighborhoods in the area.

For full info see <<http://www.archimania.com/projects/cultural/ballet-memphis/#.WtfdEi7wZpg>>.

—Archimania

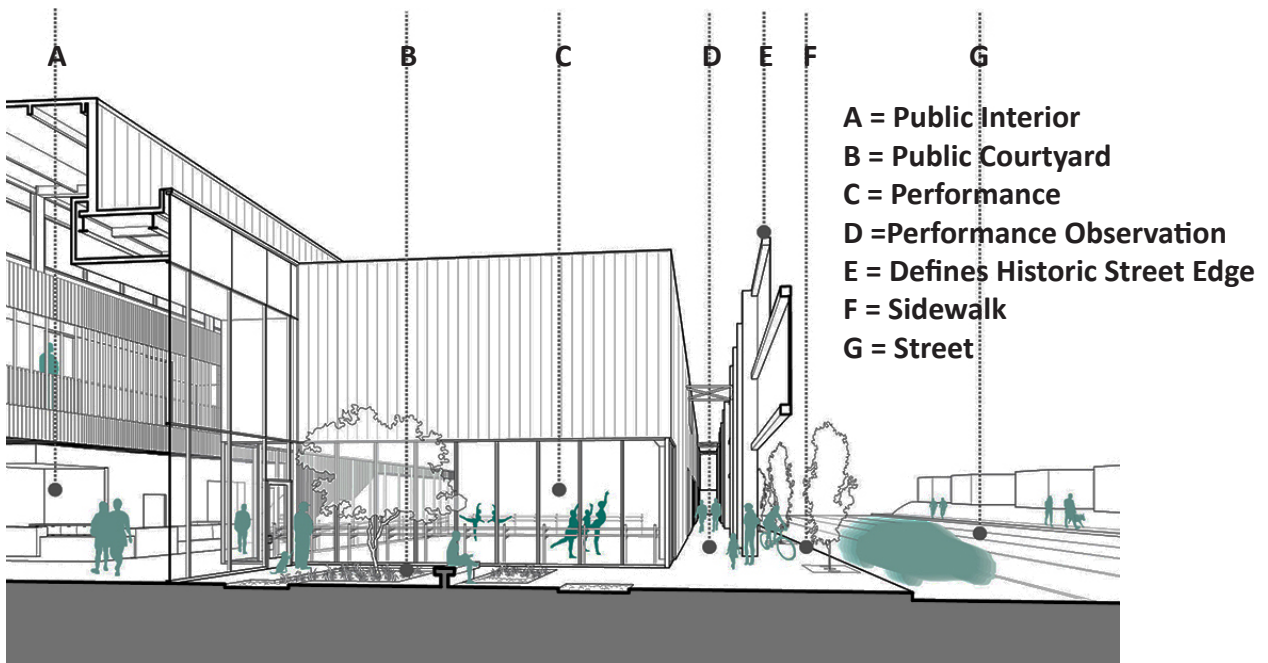
## Energy Performance Measures





**Legend**

1 entry	8 reception	15 storage
2 urban plaza	9 costume shop	16 office
3 courtyard	10 costume display	17 break room
4 cafe	11 loading dock	18 control room
5 flying hall	12 dressing room	19 balcony
6 soaring hall	13 lounge	20 production
7 studio	14 conference	



## Analysis

1a. The largest dance studio (7A in the plan) has bleachers for viewing performances. What is the acoustic goal for the dance performance studio pictured below?

4 points

**Acoustic Goal:** \_\_\_\_\_

1b. Give thorough acoustical explanations for how the glass walls, resiliant floor, and exposed ceiling enhance or detract from the acoustic quality of the space.



*Large dance studio viewed from the balcony above the bleachers. Music is provided by ceiling-mounted speakers.*

## 1 Walls

## 2 Floor

## 3 Ceiling

2. The Ballet Memphis Café (4 in the plan) shown below may be acoustically quirky. Discuss three acoustic features that may or may not contribute to the quirkiness.

3 points



1

2

3

**Advice**

3 points  
4. The Ballet Memphis is planning on holding summer outdoor tuba solos (by the director's son) prior to dance performances in the small entry courtyard (below, B in the section perspective, 3 in the plan). Give three sound (pun!) pieces of advice and/or warnings for outdoor tuba performance in this space.

**1****2****3**