

Walter Nichols
Hawthorn Building
Altoona, PA



Music Room

Design Concept

The purpose of this space is to act as both a classroom as well as a place to practice music and singing. The music room has 2 ceilings in it. The first is a 10' high ceiling the is suspended over the front part of the classroom, while the second ceiling is 15' high and covers the entire ceiling. The walls in this space are white with brown acoustical panels from my breadth study (more on this topic later). The 10' ceiling is white acoustical pyramids (more on this topic later as well), while the 15' ceiling is painted black and hidden behind mechanical equipment. The rear walls also have large windows that allow a decent amount of daylight into the space.

My main design concept for this space was to light the space in a way that wasn't standard of other spaces. Since this room is for more artistic uses, I wanted to use more artistic fixtures in it. Since the 10' ceiling is already divided into 2'x2' grids via acoustical ceiling pyramids, I decided to use a 2'x2' recessed indirect system. Most of the classroom activities take place over the 10' ceiling, so this system should provide decent light over the space while looking different that standard 2'x2' parabolics. Along the outside edge of the classroom, I decided to use a suspended 5-bowl cloud pendant to add a nice artistic touch, as well as provide the lighting for the outer edges. The rear of the room also has a 5-bowl cloud pendant suspended above it, as well as the windows in the rear providing a lot of daylight into the space.

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Picture of the Cloud Pendant

Design Criteria

System Control and Flexibility

The lighting system won't need to be on all the time because of the large windows in the rear, as well as the rear of the classroom not always being in use. Because of this, I chose to switch the pendants and 2'x2' recessed indirect fixtures separately so the pendants can be turned off when they aren't needed.

Appearance of Space

Generally speaking, people involved in the arts, music, and theater (students and teachers alike) major tend to have a finer appreciation for artistic and aesthetic things. Because of this, I feel that the appearance of this room is very important. I think this room should be lit in a way that isn't standard. The suspended pendants are a nice approach to this. Also, the 2'x2' recessed indirect fixtures provide light in a common way, but with an uncommon look. The daylight also gives this room a nice, welcoming feel to it.

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Surface Characteristics

The walls of this space are covered in acoustical panels that are painted brown. Because these walls are somewhat far away from the front middle section of the classroom where most of the teaching is done, they don't play a large role in making sure enough light gets onto the music stand workplane.

Accent Issues

All of the walls in this space have acoustical panels on them, so there is little need for accent lighting the walls. In the front of the room however, there is a staffed (musical lines) blackboard. The front row of 2'x2' recessed indirect fixtures are close enough to the front blackboard, that they act as a wallwash on the board, as well as provide light onto the workplane for the students.

IES Criteria:

Horizontal:

Note taking: 30 FC

General Art Room Requirements: 30 FC

Reading 10 pt. Font: 50 FC

Vertical:

Reading off of a blackboard: 50 FC

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Power Allowances from ASHREA 90.1:

1.4-1.6 w/ft²

Table 9-B – Common Space Types for Space-by-Space Method

| <i>Space Type</i> | <i>W/ft² Range</i> | <i>Space Type</i> | <i>W/ft² Range</i> |
|-----------------------------------|-------------------------------|------------------------|-------------------------------|
| Office, enclosed | 1.5 | Dining area | 1.0 to 2.2 |
| Office, open | 1.3 | Foot preparation | 2.2 |
| Conference, meeting, multipurpose | 1.5 | Restrooms | 1.0 |
| Classroom, lecture , training | 1.4 to 1.6 | Corridor, transition | 0.5 to 1.6 |
| Audience, seating area | 0.5 to 3.2 | Stairs, active | 0.9 |
| Lobby | 0.8 to 1.8 | Storage, active | 1.1 to 2.9 |
| Atrium, first three floors | 1.3 | Storage, inactive | 0.3 to 1.4 |
| Atrium, each additional floor | 0.2 | Electrical, mechanical | 1.3 |
| Lounge, recreation | 1.4 | | |

Fixture Schedule (see appendices for cut sheets and light loss factors):

| Type | Description | Lamps | Voltage | Wattage | Ballast | Quantity |
|-------------|-------------------------|------------------------|----------------|----------------|----------------|-----------------|
| B1 | 2'x2' recessed indirect | (2) 21w T5 | 277 | 48 | Electric | 16 |
| B2 | Cloud Pendant | (5) 60w Halogen Quartz | 120 | 300 | NA | 3 |

Calculations:

16 2x2 fixtures * 48 watts/fixture = 768 watts @ 277v

3 pendant fixtures * 300 watts/fixture = 900 watts @120v

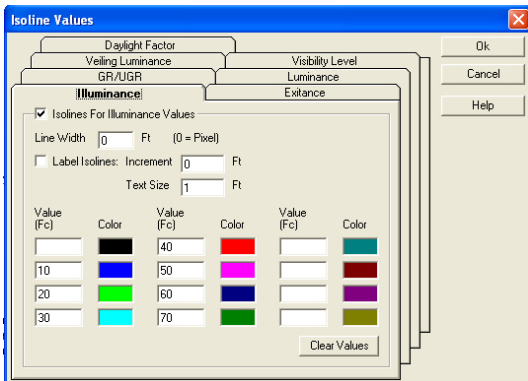
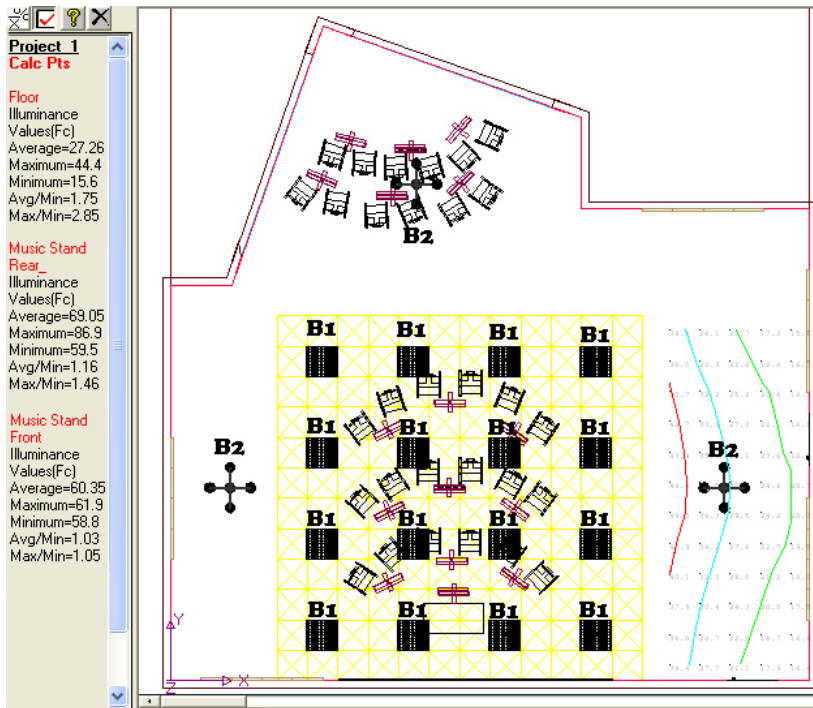
Power density = 1686 watts / 2250 ft² = 0.75 watts/ft²

Therefore, power density is ok.

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Lighting Plan



Note: Both A1 and A2 go to Panel HV2
3 of B1 go to emergency Panel NEH

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Renderings



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Conclusion

The music room provides a lighting solution that supplies enough light into the space while having a certain esthetic appeal to the space. The main source of light for the space is the 2'x2' recessed indirect fixtures, but the pendants provided the needed light to the floor around the perimeter, as well as the sidewalls.