

Walter Nichols
Hawthorn Building
Altoona, PA



Main Corridor

Design Concept

The purpose of this space is to act as a major circulation point in the building. The space has white walls and ceilings, and an intricate tile pattern on the floor. My main design concept was to try and create a cove lighting feel to the space, without changing the architecture of the space. I did this by using a wall mounted 95% uplight fixture at 7.5 feet. Since the space is a major circulation space, I felt that facial recognition was important. The “cove” would help bring the light up onto people’s faces, but wouldn’t be harsh because the light is mostly uplight. By lighting the walls and the ceiling, it would give the space a wider and larger feel than what it really is as well. To make sure enough light reached the ground in the middle of the corridor, I also used small 4” downlights to provide the extra needed light on the floor. The same size downlights were also used above the doorways in the corridor to make the entrances to the rooms easier to see.

Design Criteria

System Control and Flexibility

The lighting system will need to be on all the time when the building is active at full output because there is very little daylight entering this space. Because of this, I chose to run the lighting system off of standard, non-dimming electrical ballasts with switching at both ends of the corridor.

Walter Nichols
Hawthorn Building
Altoona, PA



Appearance of Space

The appearance of this space is important because it is the first and last thing you see when you enter and leave the space. This is where you get your first impression of the building, almost like a lobby area. This should draw people into the building from the outside, as well as make them feel comfortable when they get inside.

Surface Characteristics

The corridor has standard, white walls on both sides, and the doors are made of a lighter colored wood. The main architectural feature to this space is the intricate floor-tiling pattern. This pattern stands out and is highlighted by the downlights that run through the middle of the space.

Atmosphere

As stated before, this space is primarily for circulation, so the atmosphere is fairly fast paced and smooth.

IES Criteria:

Horizontal:

Simple visual tasks (walking): 10 FC

Vertical:

Simple Orientation: 5 FC

Because of the fast paced environment, the need for facial rendering, and the need to act as a main entering point, I wanted to get levels higher than the recommended by IES.

Walter Nichols
Hawthorn Building
Altoona, PA



Power Allowances from ASHREA 90.1:

0.5-1.6 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
A1	Downlight	(1) 18w CFT	277	20	Electric	18
A2	Wall mounted fixture	(1) 28w T5	277	33	Electric	27

Calculations:

27 wallmount fixtures * 33 watts/fixture = 891 watts @ 277v

18 downlight fixtures * 20 watts/fixture = 360 watts @ 277v

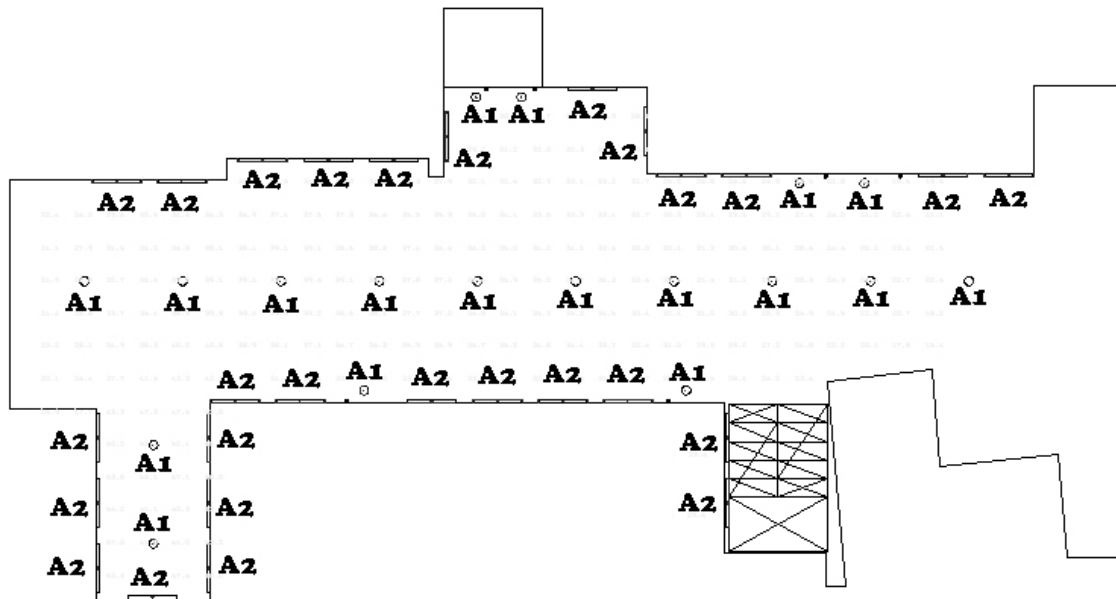
Power density = 2050 watts / 1400 ft² = 1.46 watts/ft²

Therefore, power density is ok.

Walter Nichols
Hawthorn Building
Altoona, PA

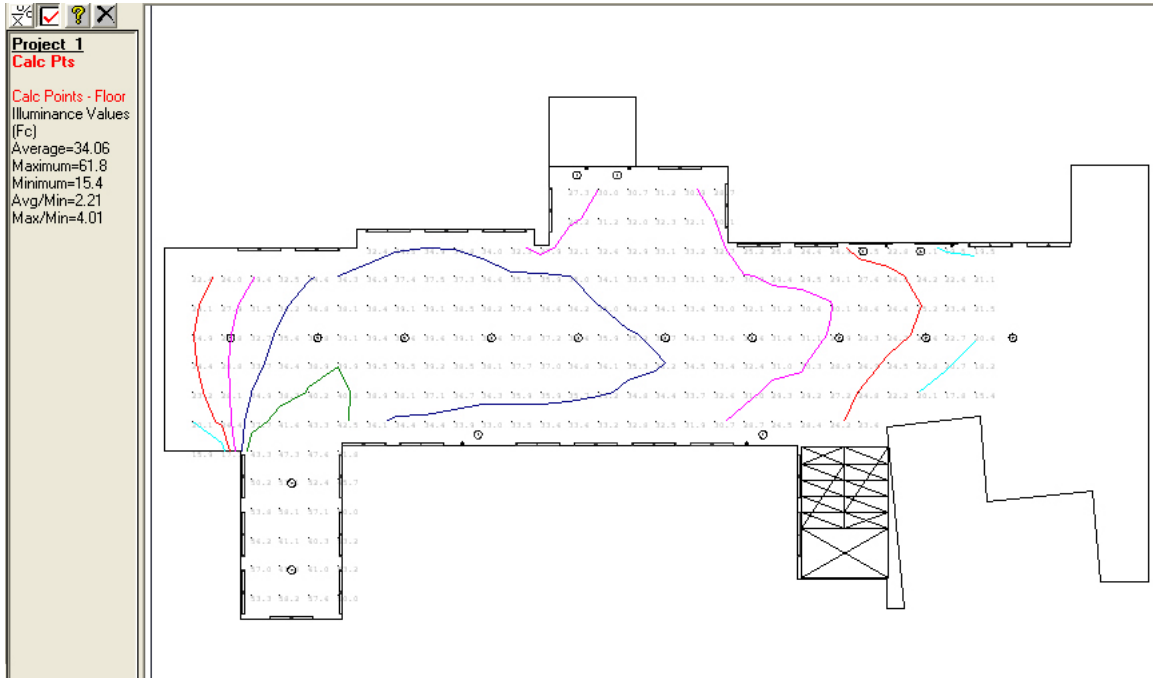


Lighting Plan



Note: Both A1 and A2 go to Panel HV1
10 of A1 go to emergency Panel NEH

Walter Nichols Hawthorn Building Altoona, PA



Isoline Values

Daylight Factor
Veiling Luminance
GR/UGR
Illuminance
Visibility Level
Luminance
Exitance

Isolines For Illuminance Values

Line Width Ft (0 = Pixel)

Label Isolines: Increment Ft
Text Size Ft

Value (Fc)	Color	Value (Fc)	Color	Value (Fc)	Color
5	Black	25	Red		Teal
10	Blue	30	Magenta		Brown
15	Green	35	Dark Blue		Purple
20	Cyan	40	Dark Green		Olive

Clear Values

Ok
Cancel
Help

Walter Nichols
Hawthorn Building
Altoona, PA



Conclusion

The main corridor provides a lighting solution that provides more than enough light into the space, but also does it in a way the compliments the functions of the space. The main source of light for the space is the wall mounted fixtures, but the downlights help to add the extra punch needed to get more light onto the floor, as well as makes the tile pattern on the floor stand out more than the wall mounted fixtures would do alone.