Hall Corporate Headquarters Virginia Beach, Virginia Final Project Booklet Thesis 2004



Lobby

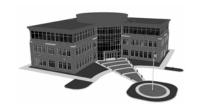
The lobby is located on the first floor through the main entrance to the Hall Corporate Headquarters. This space is a two story open lobby that has a 2 car show room space. Lighting the cars and the room itself will require a unique lighting scheme. The Space is $1620 \, \text{sq.}$ ft. and has a ceiling height of 22 feet. The hallways surrounding will also be used in the lighting redesign resulting in a total of $2695 \, \text{sq.}$ ft for the lighting redesign. The lobby is open to the second floor with a balcony on the second floor looking over the main entrance and show room. There is a curved stairwell going up to the second floor starting from the left side of the room if you are facing the building. The space is the welcoming area to the building and should give an uplifting feeling to the clients and employees that enter the building. Light levels of around 30 Fc overall in the space with special lighting on the cars will create a nice welcoming to the building. The materials in the space are the same as the board room and training room except the main floor of the lobby will marble with two colors making up the pattern. The colors of the marble are beige ref = $0.45 \, \text{and}$ black ref = $0.40 \, \text{with}$ the following reflectance's





The design criteria for this space involved the following:

- Lighting Design Criteria
 - Appearance
 - Welcoming space to the building, lighting should set a standard for the rest of the building
 - Points of interest
 - Reception desk located to the rear of the lobby should be lit to attract attention of visitors and clients
 - Cars located in lobby will be lit brightly to show off their paint well
 - Car lighting
 - Light directly on side of cars to emphasize cars curved body
 - Horizontal illuminance
 - 20 Fc for lobby area
 - 10 Fc in hallways
 - 30+ Fc for reception area



The lighting concept for the space involved the following:

■ Downlights

Compact fluorescent lamps located in hallways

■ Recessed parabolic troffer

Used to produce light on the work plane on the second floor

■ Pendants with direct and indirect light component

- Provide light on worktables and ceiling for good uniform distribution of light throughout space
- Indirect light is good for facial rendering

■ Channel light

- Used to light the body of the cars
- Paint will appear flawless and not hot spots will occur due to the linear lamp.

Fixture and lamps



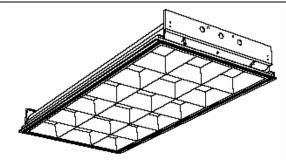
Arcos perf II Pendant

Manufacturer: Litecontrol

Catalog # P – SI - 5900

Dimensions: 2 - 3/8" x 9 - 9/16" x 96"

2 – F54T5 lamps



Recessed Parabolic troffer

Manufacturer: Lithonia

Catalog # 2PM3MN 2' x 4' paramax

Dimensions: 2' x 4'x 3" deep

3 – F32T8 Lamps



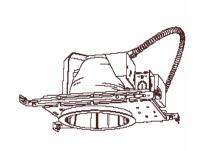
Channel light

Manufacturer: Columbia lighting

Catalog # CH-4-1-32-EB8

Dimensions: 3-3/16" x 3-7/16" x 4'

1-F32T8 lamp



LF6 Downlight

Manufacturer: Litecontrol

Catalog # LF6

Dimensions 6" Diameter

6" x 9-7/8"

1- CFTRT32W Lamp

Note: All interior lamps will have a CCT of 3500 K and a consistent CRI of greater then 80 for uniform color rendering throughout the building.

Ballasts

The power density allowed in a conference room space by ASHREA 90.1 is 1.8 W/Sq.Ft. The power density calculated with the redesigned lighting system is only 1.01 W/Sq.Ft which is well under the allowed amount. This will create a lower usage of power to light the space thus reducing the electric bill.

Label	Description	Ballast	Input Watts	# Used	Watts
G	Linear Pendant	ICN-2S54-90C@277	117	17	1989.0
Н	Channel Light	VEZ-132-SC	35	8	280.0
С	Downlight	VEZ-IT42-M2-BS	38	22	836.0
Е	2x4 recessed	VEL-2P32-SC	58	2	116
		VEL-1P32-SC	32	1	32
			Total Watts	=	3253.0
Area Sq. Ft. = 2695			Power Density	=	1.21 w/Sq.Ft.

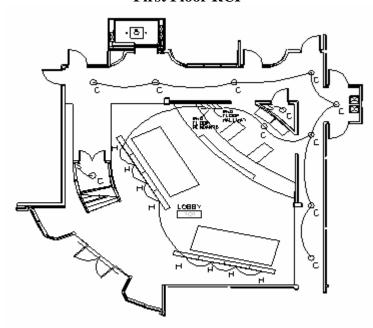
The power density allowed in a lobby space by ASHREA 90.1 is 1.8 W/Sq.Ft. The power density calculated with the redesigned lighting system is 1.21 W/Sq.Ft which is well under the allowed amount.



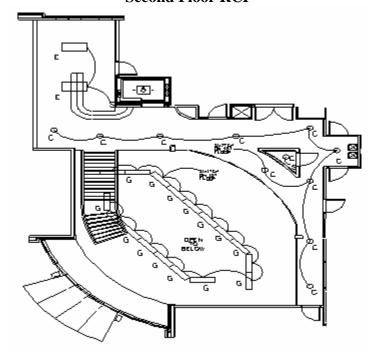
Lighting Layout, Circuiting and Switching

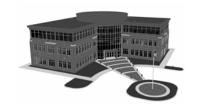
The lighting layouts below show the First and second floor

First Floor RCP

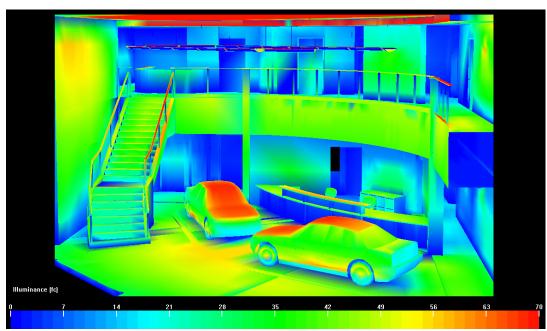


Second Floor RCP

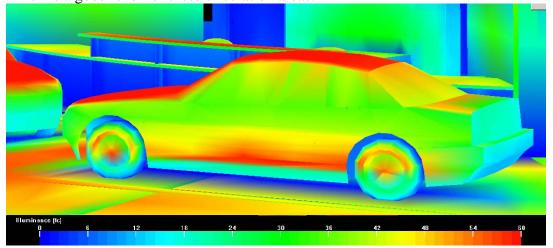




Light Analysis



The lobby has an even distribution throughout the space. The work plane of the reception desk has an average light level of over 40 Fc. The hallways have about 15 Fc which is a good level for these circulation areas.



The car lighting as shown is giving a good gradient of light on the body of the car. This gradient will emphasize the curves of the car and show the paint as very shinny and flawless. The footcandle level isn't as important as the overall uniform level of light of the car. Uniform light will show the paint best any hot spots or areas where the light isn't uniform will create a bad representation of the paint. This doesn't occur in this lighting system.



Renderings





The renderings above show how the lobby will appear under the new lighting system.