

Schematic Design Proposal

The Hall Corporate Headquarters

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Lighting/Electrical option
Thesis project

The Hall Corporate Headquarters

- **Location:** Virginia Beach, Virginia
- **Occupant:** Hall Automotive Car Dealership
- **Architects & Engineers:** Clark Nexsen
- **Contractor:** Commonwealth Construction
- **Building size:** 30,000 Sq. Ft. , 3 stories
- **Construction cost:** 2.5 million dollars

Introduction the Spaces

■ Training Room

- Large workspace located on the first floor
- Employee training and meeting area
- 34 desk work stations
- Speaker area located in front of room
- White board in front of room

■ Conference Room

- Group conference/meeting area located on the third floor
- Triangle shape space with curved glass exterior wall
- Glass walls separate room from open office space
- Oval shaped table in center of room with 8 chairs around it

Introduction to the Spaces

■ Lobby

- Open space as you enter building
- Reception desk located directly to back of lobby
- 2 car show room located in the lobby
- Open to second floor with 23' ceiling
- Large curved stair well

■ Exterior Façade

- Front façade of building and walkway to main entrance
- Canopy will be the main focus of the lighting redesign
- Walkway to entrance has no light on it in existing system
- Curved glass wall extending from second to third floor
- Circular architectural feature atop building to hide mech. Equip.

The Training Room

■ Design Criteria

- Direct glare from fixtures
 - Keep in compliance with luminance ratios
- Integration of day light
 - Large windows located on west and south walls
 - Use of electronic shading to control amount of light entering space
- Facial rendering
 - Meeting place for employees
- Luminance ratios
 - 3:1 between task and adjacent dark surroundings
 - 10:1 between task and nonadjacent dark surroundings
- Light distribution
 - Uniform distribution on work plane
- Horizontal illuminance
 - 30 Fc on work plane

Lighting Concept

- Light ceiling to open up space more
- Lighting system that will integrate well with natural light
- Create Uniform distribution of light
- Provide proper light levels on work plane

Possible Concept Solutions

■ Recessed system

- Create layout with coverage for entire space where work stations will be located

■ Indirect system

- Provide a uniform level of light on work space by use of pendant fixtures
- Ceiling height in space may need to be raised for this system to work

■ Additional light

- Front of room will have a white board and speaker area
- Downlights to be used to add appropriate light needed in this area

Possible Fixtures

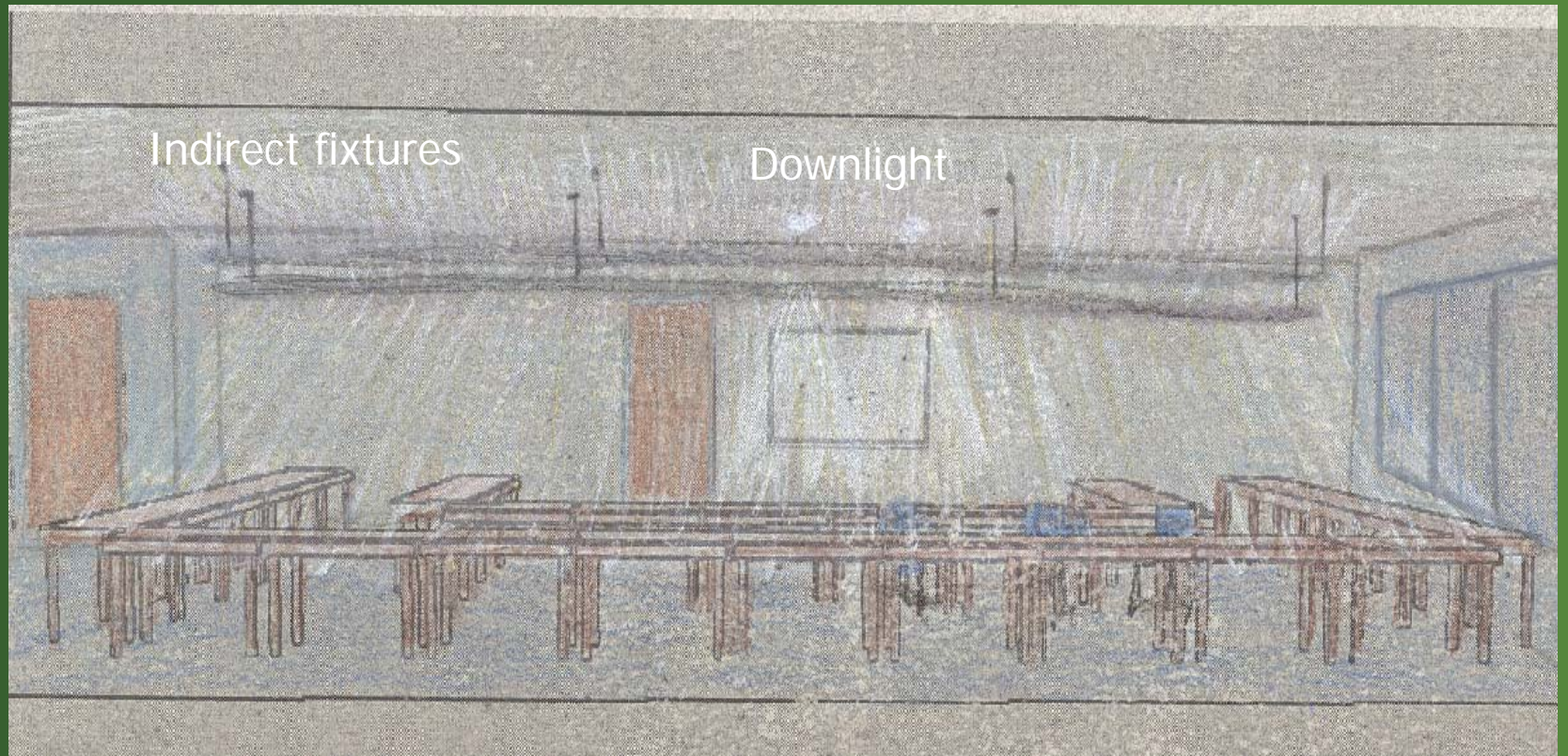


Indirect fixture



Downlight

Visualization of concept



Indirect fixtures

Downlight

Eastward view into training room

Visualization of concept



Northward view into training room

The Conference room

■ Design Criteria

- Direct glare from fixtures
 - Keep in compliance with luminance ratios
- Integration of day light
 - Large windows located on southwest wall
 - Use of electronic shading to control amount of light entering space
- Facial Rendering
 - Close interaction between occupants, facial rendering of high importance
- Luminance ratios
 - Luminances within immediate view should not exceed 3:1 from persons face to the background
 - Ratio is very important because of the facial rendering of the occupants
- Ceiling uniformity
 - Ratio of 8:1 for uniformity of light on ceiling not
 - Not to exceed 825 Cd/m² if less than 425 Cd/m² the uniformity is such a issue
- Horizontal illuminance
 - 40-50 Fc on the conference table

Lighting Concept

- Add cove to ceiling with cove lights to make space more unique
- Emphasize curve shape of room with round light fixtures
- Provide proper light level on table and peoples faces

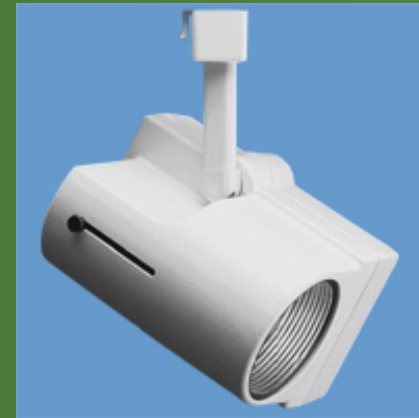
Possible Concept Solutions

- Track fixtures
 - Directed towards individual seats around table
- Downlights
 - Located around room to give ambient light to space
- Possible cove added to ceiling
 - Use of pendant fixture with direct and indirect component to light cove and table
- Pendant with direct and indirect light component
 - Provide light on table and ceiling for good uniform distribution

Possible Fixtures



Indirect / Direct Pendant



Track light

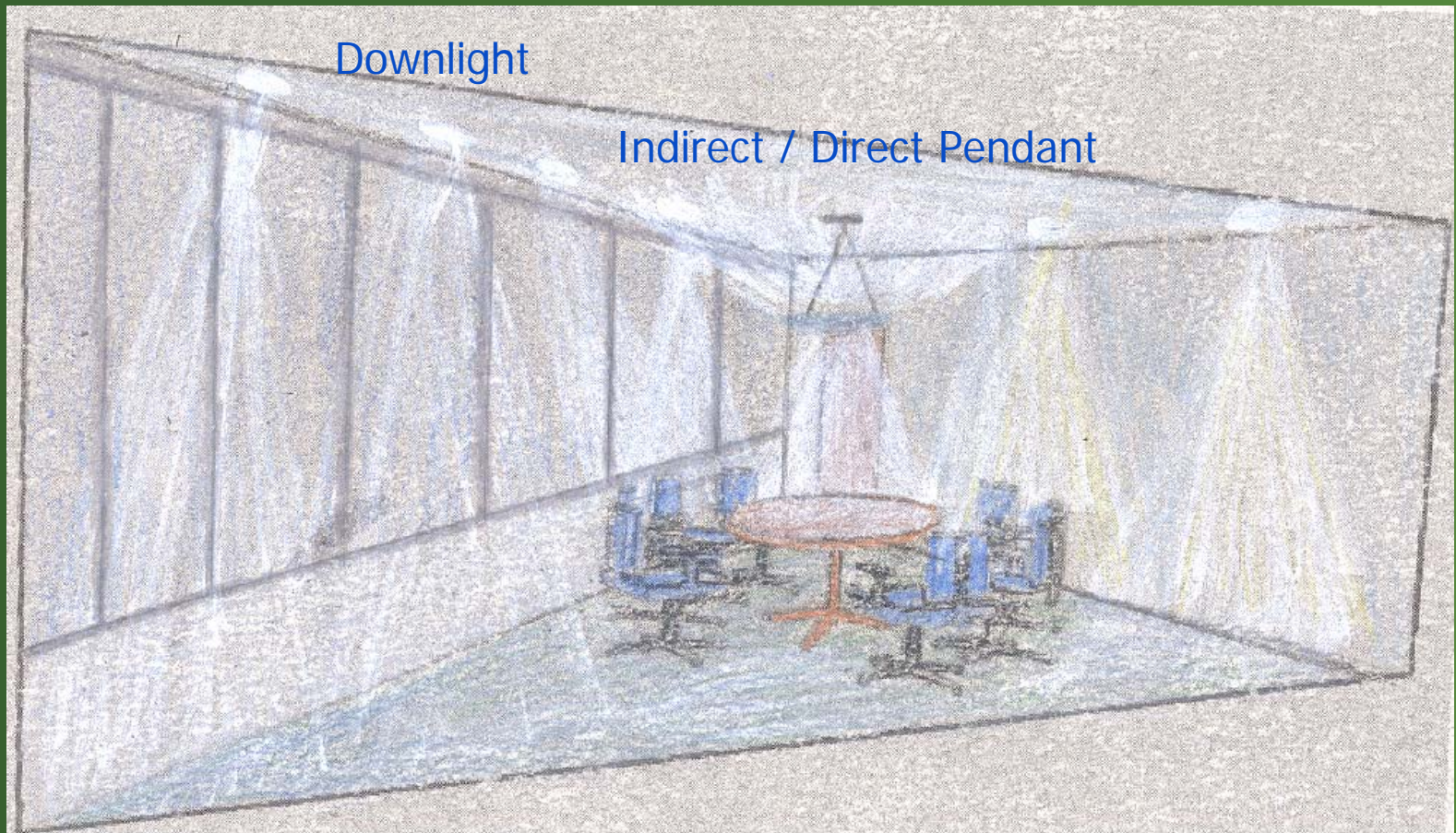


Downlight



Cove light

Visualization of concept

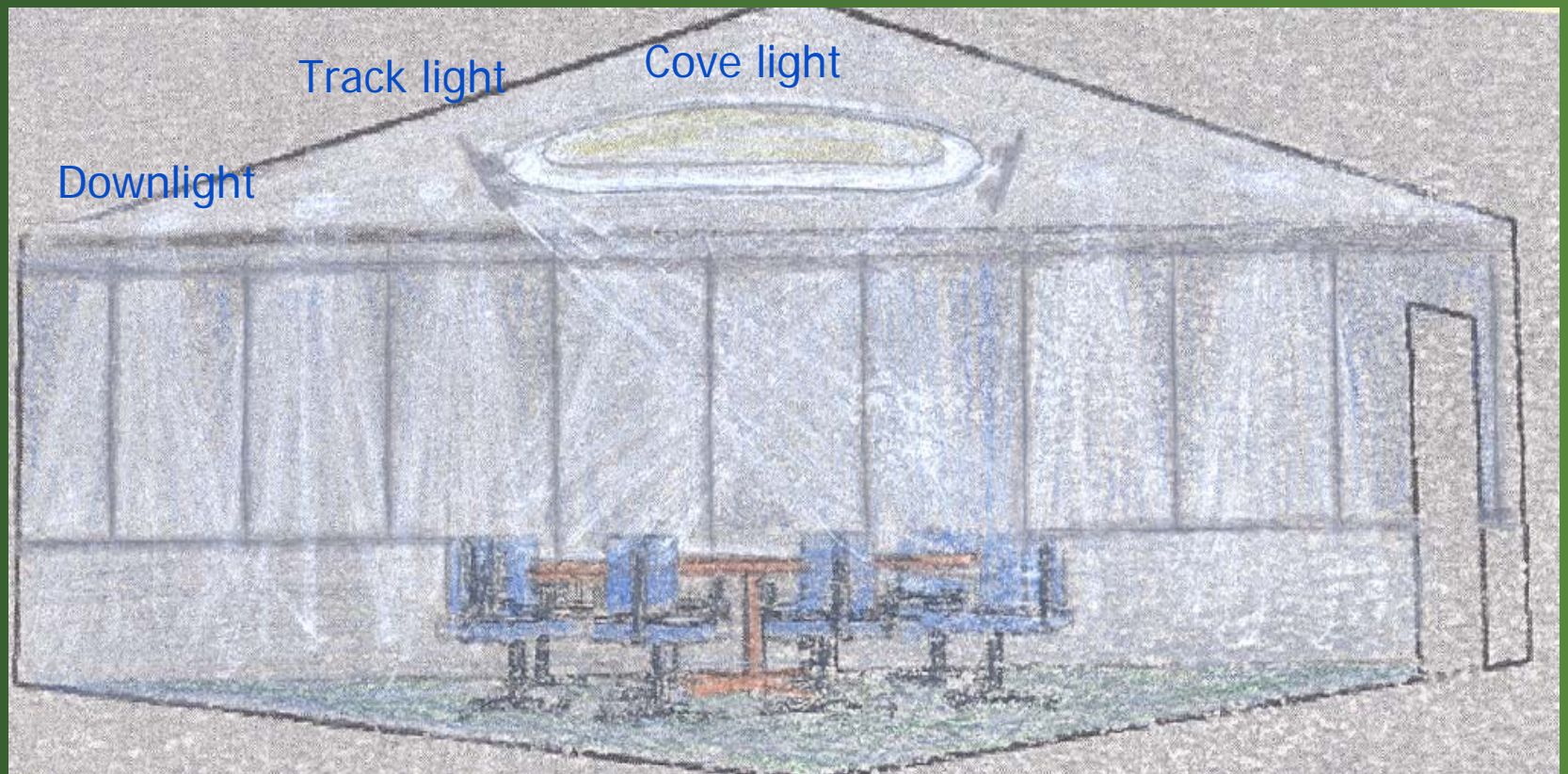


Downlight

Indirect / Direct Pendant

Conference room looking west

Visualization of concept



Conference room looking southwest

The Lobby

■ Design Criteria

- Direct glare from fixture
 - Keep in compliance with luminance ratios
- Integration of day light
 - Large windows located on southwest wall
 - Use of electronic shading to control amount of light entering space
- 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 there paint well
- Horizontal illuminance
 - 10 Fc for lobby area
 - 30 Fc for reception

Lighting Concept

- Draw attention to the reception area in rear of lobby
- Light cars with uniform light so paint looks flawless
- Draw attention to second floor and high ceiling emphasize large open space
- Light stair case create movement to second floor
- Choose fixtures that resemble car like shape ex. Round headlights
- Create bright welcoming feel to the space

Possible Concept Solutions

- General downlights through out space
- Reflected light onto car as to light entire car uniformly
- Cold cathode lamp running along stair case
- Wall sconces for decorative ambient light

Possible Fixtures



Mirror reflected light fixture



Cold cathode

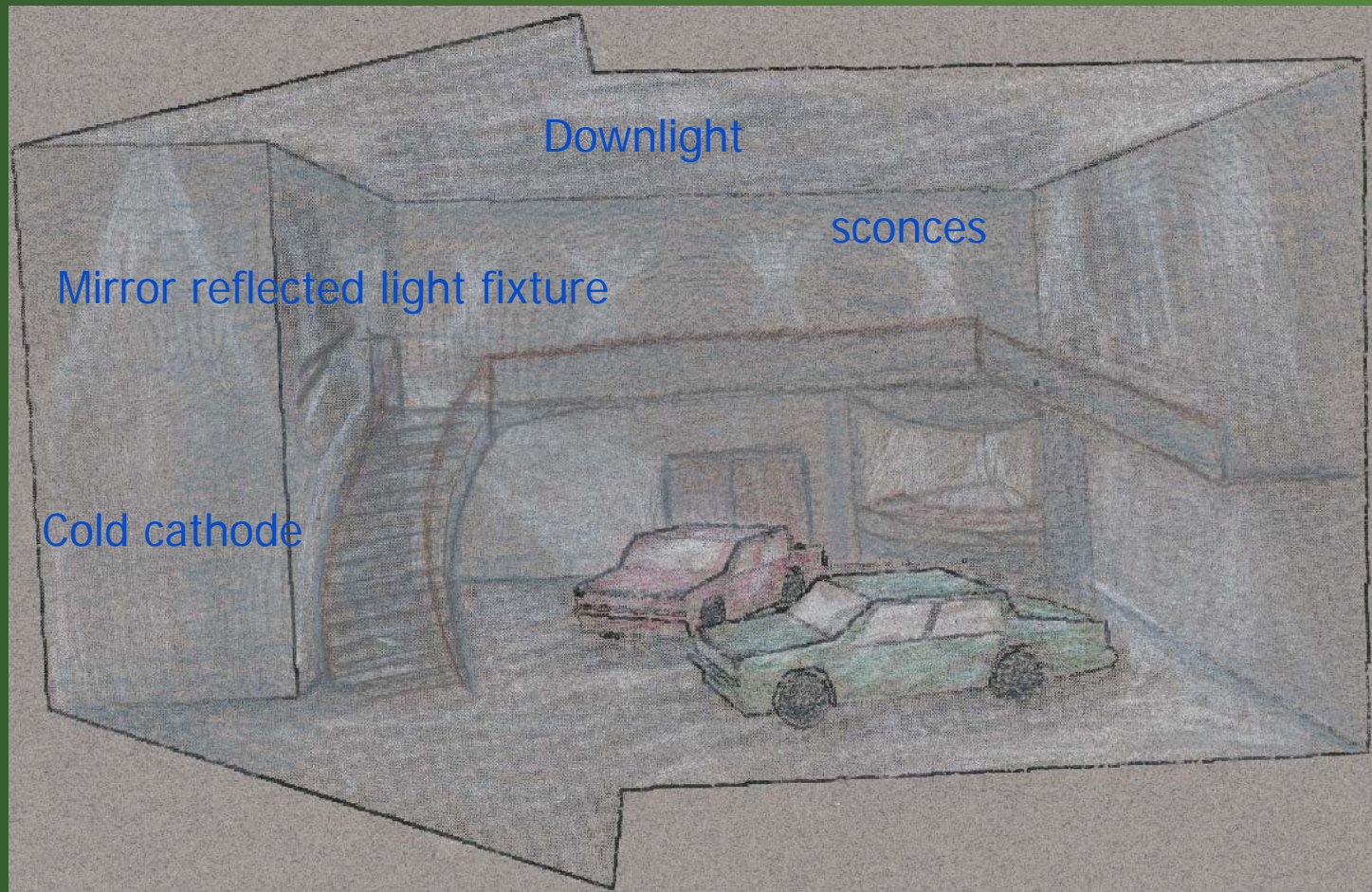


Downlight



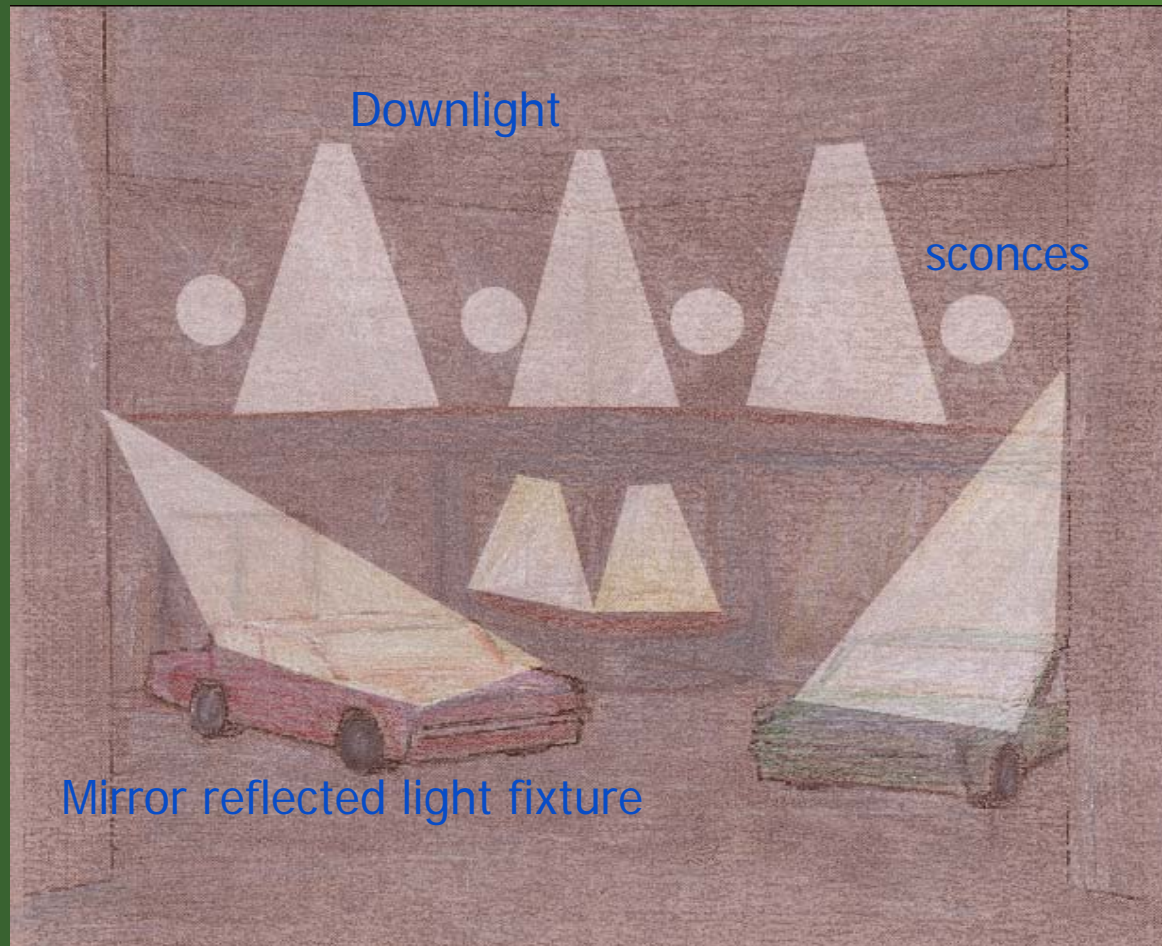
sconces

Visualization of concept



Lobby area looking north

Visualization of concept



Lobby as you enter the main doors of building

The Exterior Facade

■ Design Criteria

- Appearance
 - Accent architectural features, building should look prominent compared to dark background
- Luminance ratio
 - Ratio of 20:1 between building and surrounding or neighboring sites
- Points of interest
 - The main entrance door and canopy of the door
 - Circular architectural feature atop of roof
 - Walkway leading to building
- Light pollution
 - Stay in accordance with local and state laws about light pollution onto adjacent properties
- Vertical illuminance
 - 50 – 75 Fc average on façade

Lighting Concept

- Wallwash façade make building glow
- Wash glass wall above canopy
- Light walkway leading to entrance create a direction for motion
- Emphasize circular roof top architectural feature

Possible Concept Solutions

- Wallwash of front façade
- Downlights above entrance canopy
- Uplight on curved glass wall from above canopy
- Bollards leading down walkway
- Wallwash of circular roof top structure

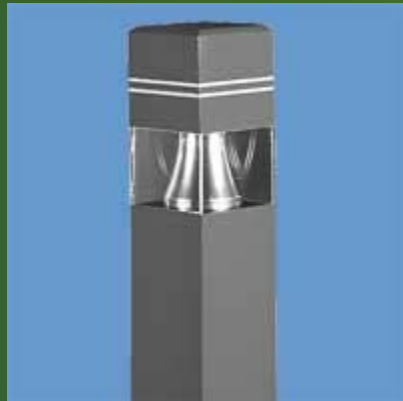
Possible Fixtures



Flood lamp for wallwash



Flood lamp for roof top structure

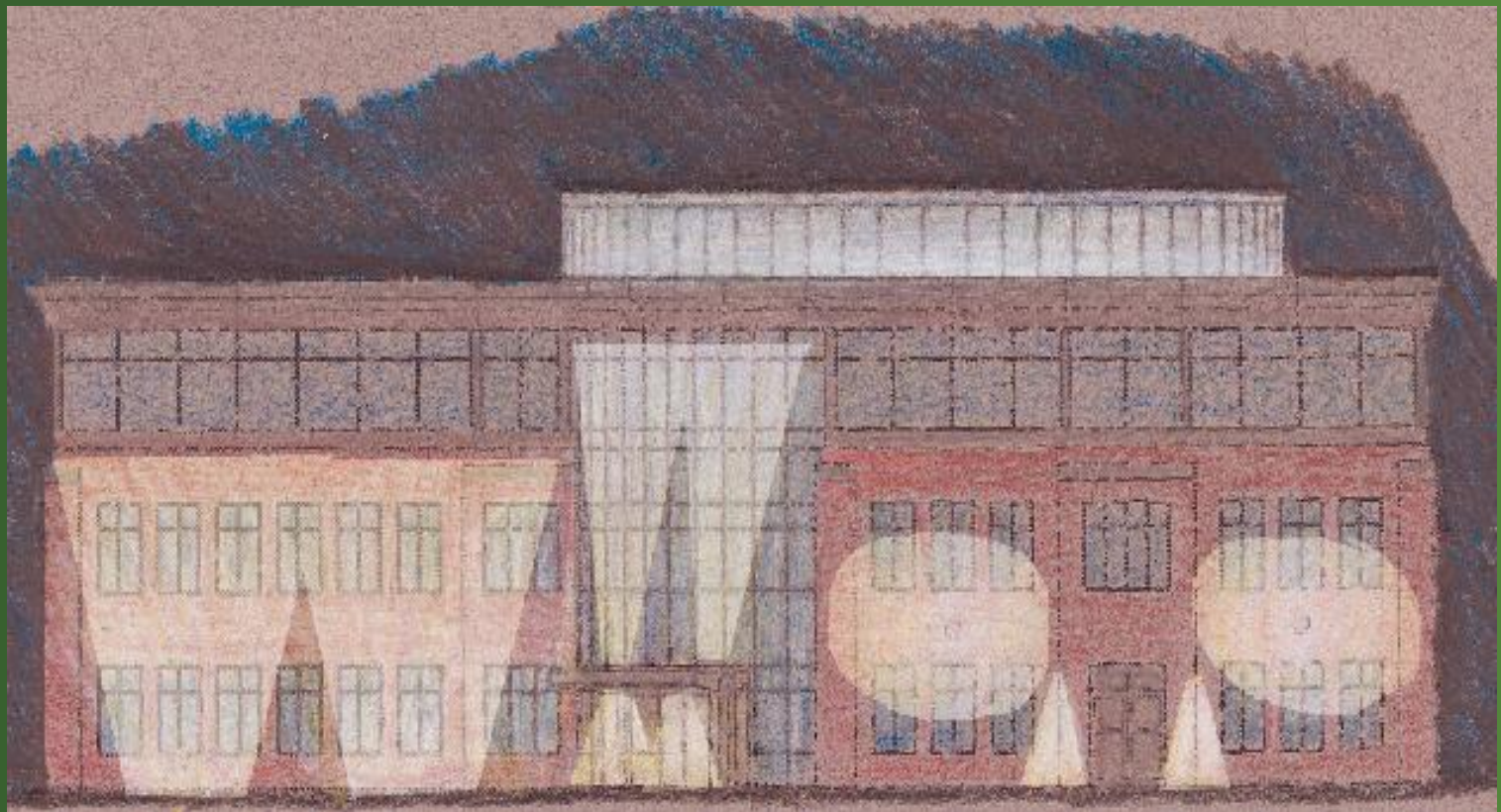


Bollard for walkway



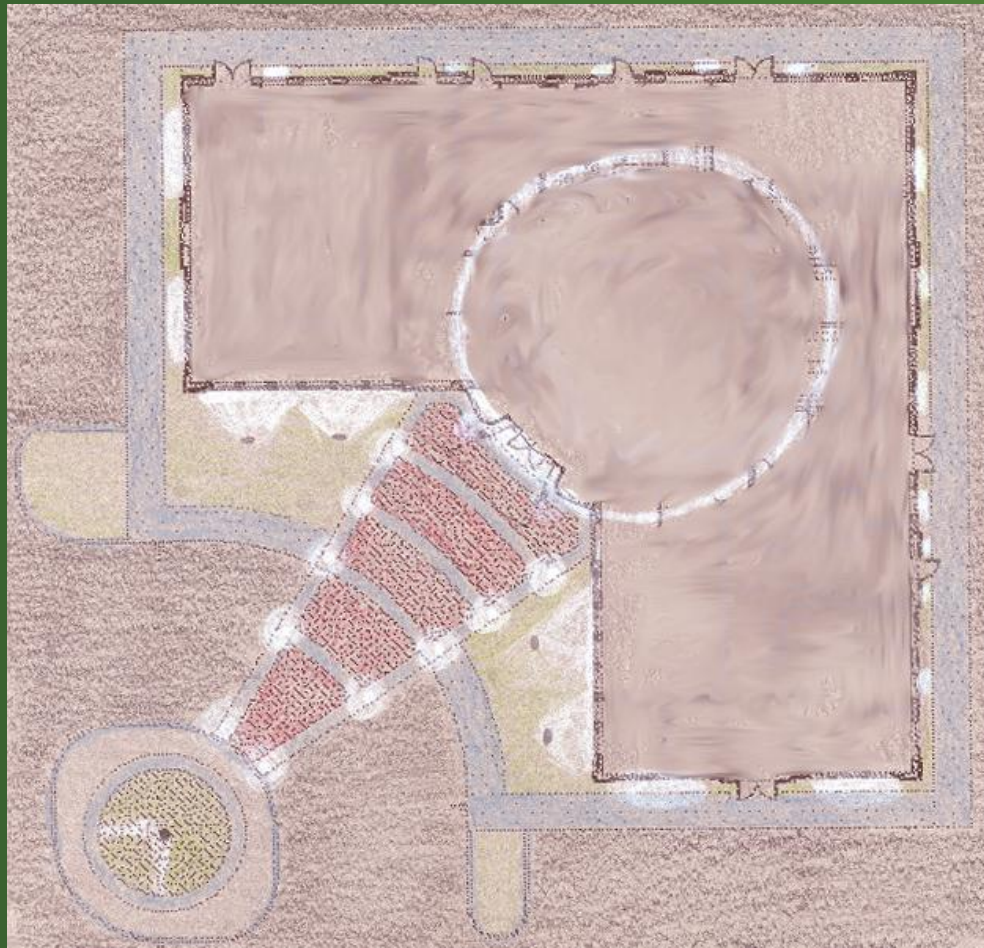
Downlight

Visualization of concept



Exterior façade

Visualization of concept



Building Footprint