

*The National Research and Training
Institute For the Blind
1800 Johnson St., Baltimore MD.*

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Lighting/Electrical*

*Richard Mistrick
9/30/02*



Lighting Existing Conditions and Design Criteria Report

Executive Summary:

I considered various issues when choosing my spaces to evaluate including occupant coordination, building integration, and architectural aesthetics.

I decided to focus my efforts on the fourth floor of the building which I believe will be the most challenging when considering disability discrepancies. The visually impaired may require many different levels of light. For example an elderly person losing vision needs a large amount of illuminance and may be more sensitive to brightness where as another person of a differing sight disability may be extremely sensitive to light and require complete darkness in order to be comfortable. The owner also specified very glossy surfaces throughout the building which may create glare problems for visitors to the building who are not visually impaired.

Another aspect affecting my choices is building systems integration. I would like to concentrate my efforts in evaluating the mechanical and acoustical systems throughout my redesign. The four story glass atrium, "skylight" gallery, and multi-purpose room should accommodate my ambitions.

Finally, I wanted to choose spaces that were interesting architecturally. For the visitors to the facility who are not blind, I would like to create an image for the building by accentuating building materials to emphasize the human sense of touch.

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Computer Classroom

Room Characteristics:

Dimensions: 45' x 54' x 14' with a 2' bulkhead outlining room.

Wall materials: The walls are typically lined with sheets of 4' x 10' acoustical panels. The perimeter is lined with a 4' high decorative wood panel topped with a 1" x 6" wood railing. At the base of the wall is a 1" x 8" wooden baseboard (stained). Outlining the door frames is a wood veneer panel (8' x 10').

Decorative wood panel (Georgia Pacific American oak beaded)



Acoustical fabric (Guilford of Main Lucida 3553 Color 012)



Baseboard (Gossen Corp "deep dimension 943 pine)



Windows: The western wall contains four windows all two layers 1/4" tempered plate clear glass.

Doors: All doors are stained to match the texas birch (WP-1)

Samples

The with glass windows and retractable projection screen on the western wall. Most walls in the space are lined with acoustical fabric with sections of dark specular wood paneling. The floor is covered with bronze carpet.

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Existing lighting systems is as follows:

- *Ambient: 2'x4' lensed 3 lamp F32T8 fixtures on 277 volts. A second lighting system includes 6" 2 lamp F26DBX 4 pin 4100 k on 277 Volts.*
- *Decorative: A direct/indirect 4' wall bracket fluorescent fixture exists above the doorways. A decorative wall sconce (1 lamp F39Bx @ 120 V) accentuates the perimeter of the classroom.*
- *Audiovisual: Three 6" dimmable downlights serve for the audiovisual screen in the front of the classroom. Lutron dimming ballasts are specified.*

The occupancy and function of this room is very diverse. I am still in the process of learning exactly what type of design criteria is required when considering VDT glare issues, daylight integration, and audiovisual requirements based on requirements of blind vs. sighted occupants.

Special Purpose Space:

For my special purpose space, I have chosen to evaluate the multi-purpose room also located on the fourth floor. This room is very unique and will be interesting to evaluate: The large room is divided into two sections by a folding partition. I will probably concentrate on Multi-Purpose Hall 1. This space is approximately 95' x 60' x 20'. The western wall is lined with floor to ceiling windows overlooking a small balcony. The remaining walls are lined with acoustical fabric and wood paneling and painted gypsum wall board.

Existing lighting system is as follows:

- *Ambient: 2'x4' lensed 3 lamp F32T8 fixtures on 277 volts. A second lighting system includes 6" 2 lamp F26DBX 4 pin 4100 k on 277 Volts.*
- *Decorative: A direct/indirect 4' wall bracket fluorescent fixture exists above the doorways. Decorative wall sconces (1 lamp F39Bx @ 120 V) accentuate the perimeter of the room. Four dimmable 48" pendant fixtures (acrylic diffuser, 3 lamp 60 W incandescent, 277 V) diversify the space and are perhaps utilized when a lower light level is required.*
- *Audiovisual: Five dimmable 6", 2 lamp, F26Bx downlights are above the presentation screen.*

In this space, many presentations and lectures will be given. I am again in the process of investigating its exact function and how it will affect my evaluation of the existing lighting system. Daylight integration will be a large issue both from both a lighting and mechanical standpoint.

Circulation Space

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For my circulation space, I have chosen to select the fourth floor elevator lobby/gallery. The space will definitely present challenges with system integration. Above the circulation desk exists two pyramid skylights which essentially acts as one with a column through the center. The well is lined with painted gypsum wall board. The walls are stained dark wood.

Existing lighting system is as follows:

- Ambient: 6" 2 lamp F26DBX 4 pin 4100 k on 277 Volts.*
- Decorative: Decorative wall sconces (1 lamp F39BX @ 120 V) accentuate the perimeter of the room. Three fixtures are centered above the elevators.*
- Skylights: Eight wall mounted up-lights illuminate the 12' wells. I am still acquiring information about these fixtures.*

This is one of the spaces which was aesthetically designed to be attractive to visitors and is probably considered one of the "image-makers" of the building I need to perform more investigating on the location of furniture and art-work for future design ideas. I plan to do a detailed analysis on the skylight system and how it affects the mechanical systems.

Outdoor Space

For my outdoor space, I have chosen to evaluate the plaza in front of the main entrance to the building along East Wells Street. The space is layout symmetrically around the from sliding door entrance with two semi-circular handicapped ramps on either side. An exposed aggregate finish concrete sidewalk leads up to the building on both sides of the main entrance. The plaza contains five landscaped areas around the sidewalks and ramps.

Existing lighting system is as follows:

- Bollard lights line the ramps and sidewalks leading up to the building. I am still acquiring information about these fixtures.*

I have chosen this space to focus on making an architectural statement to those visiting the building and to also evaluate the requirements of the blind (Braille signage, etc.) for ease of entry.

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This space will essentially be the threshold to the facility and I would like to accentuate the architecture with lighting perhaps by focusing on building textures along with accommodating the visual needs of the blind.
