

Center for Health Research
and Rural Advocacy

Angela Nudy
Lighting/Electrical

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Geisinger Health System

Danville, Pa

Lighting Proposal Memo

Lighting Proposal

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Executive Summary

I have chosen to redesign the lighting for four interior spaces and one exterior space in the Center for Health Research and Rural Advocacy (CHRRA). The first space is the first floor open office. The space consists of cubicles and filing storage and is enclosed by an insulated glass curtain wall on the southwest façade. Reading, writing, filing and circulation will take place in this area of the building. There is a great opportunity in the open office for daylight harvesting and photosensor dimming.

The second proposed redesign area is the 300 seat ellipsoidal auditorium. The auditorium is on the ground floor of CHRRA and is one of the main spaces for visitors to enter when coming to the building. Its main uses are: lectures, presentations, and group discussions. Having a flexible system implemented in this area is critical to its multiple functions.

The third interior space is the double height main entrance lobby. This is the first area that a patron entering the building will see. The north facing façade is a curved glass curtain wall, which lets a great deal of natural light enter the space. The main lobby does not have any tables or chairs; therefore, it is used as mainly a circulation, meeting area. Facial modeling is important in this space.

The final interior space is the multipurpose room. The space is located on the ground floor and is intended to be used as both a presentation space and also a banquet space. The room has two moveable partitions that can create three smaller multipurpose rooms. The room will be used for presentations, group discussions, lectures, and dining.

For the exterior redesign, I have decided to focus on the entrance to the building, the pedestrian pathway to the main entrance, and the terrace on the south side of the building. The exterior of CHRRA is mainly glass so it is difficult to light the façade of the building from the exterior without creating glare. Therefore lighting the façade will come from within.



1. First Floor Open Office Work Space

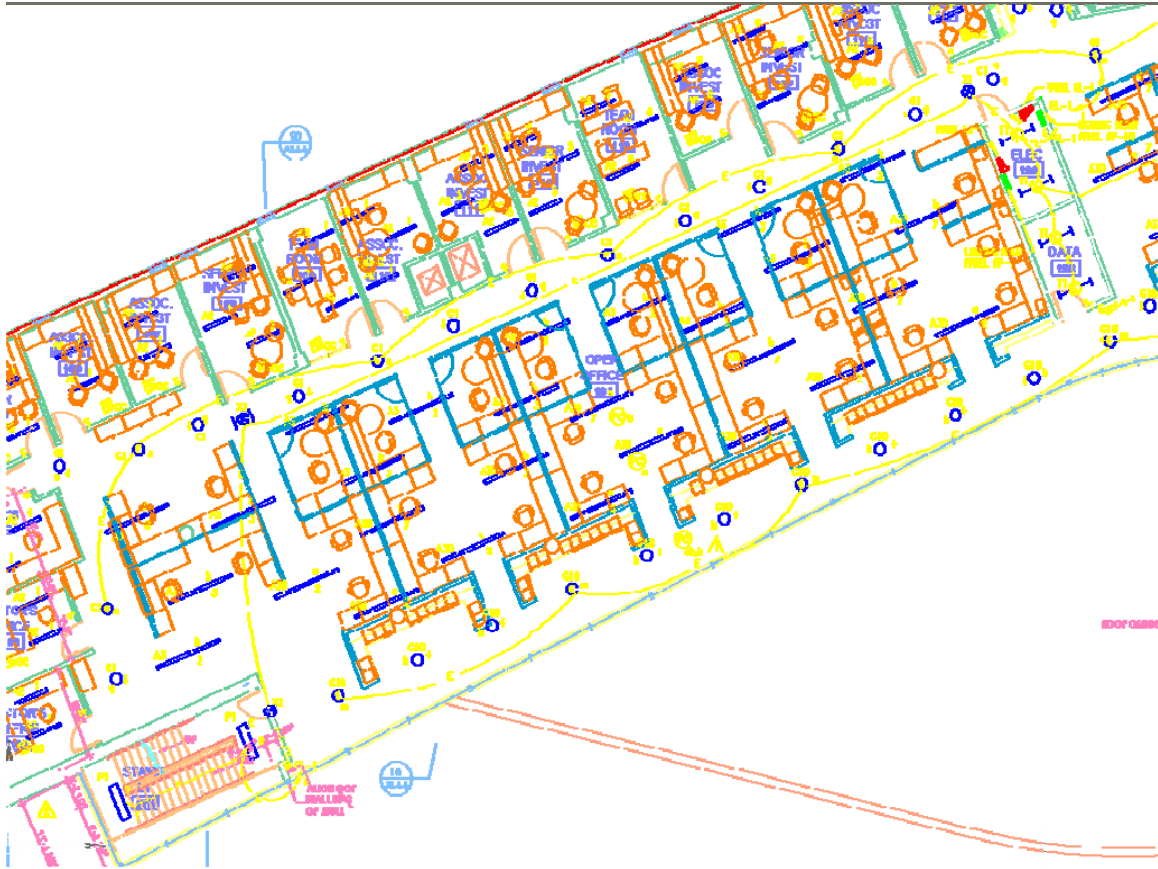
The first floor open office is located on the west side of the building along the south facing glass curtain wall. The remainder of the open area is surrounded by private offices and conference rooms. The office consists of partial height cubicle workstations with PC's for each employee. There is also an area of circulation space directly adjacent to the glass curtain wall that is separated from the workstations by partitions and filing cabinets. This circulation area acts as a buffer for direct sunlight entering the space in order to help minimize the impact the direct sunlight has on the workstations. The space is constructed of dark carpeting, off white paint, and some fabric accent wall-coverings. The current lighting system is an array of recessed linear fluorescent fixtures that are 4" wide by 8' long. Each 4' section of the luminaire houses one T8 32W fluorescent lamp. Over the circulation area are compact fluorescent downlights. The lighting system is controlled by three photocells which are placed at different step backs from the curtain wall. There was also a proposal for automated shades to be installed along the south facing wall in order to maximize energy efficiency and minimize the heat and direct sun effects.

Tasks performed in the space:

- Extensive VDT use
- Reading
- Writing
- Filing
- Circulation
- Conversation with other employees
- Impromptu meetings



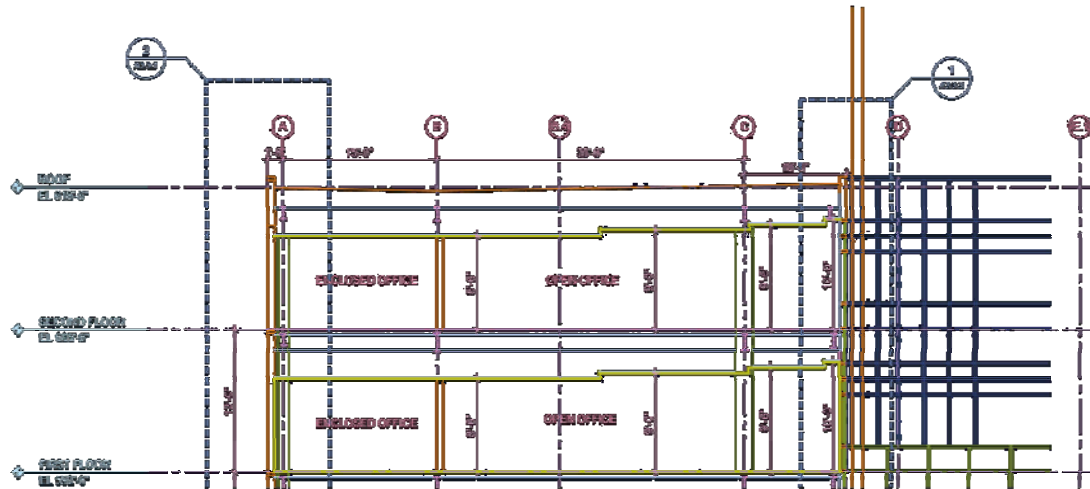
Lighting Proposal Memo



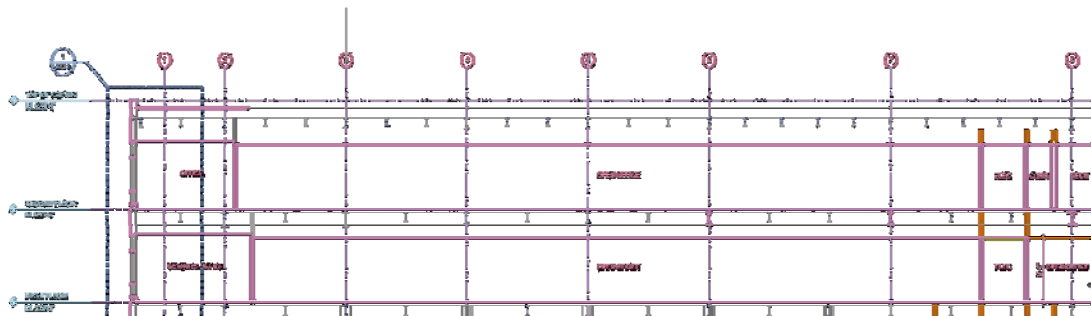
First Floor Open Office Lighting Plan



Lighting Proposal Memo



First Floor Open Office Section- North/South



First Floor Open Office Section- East/West



2. Auditorium

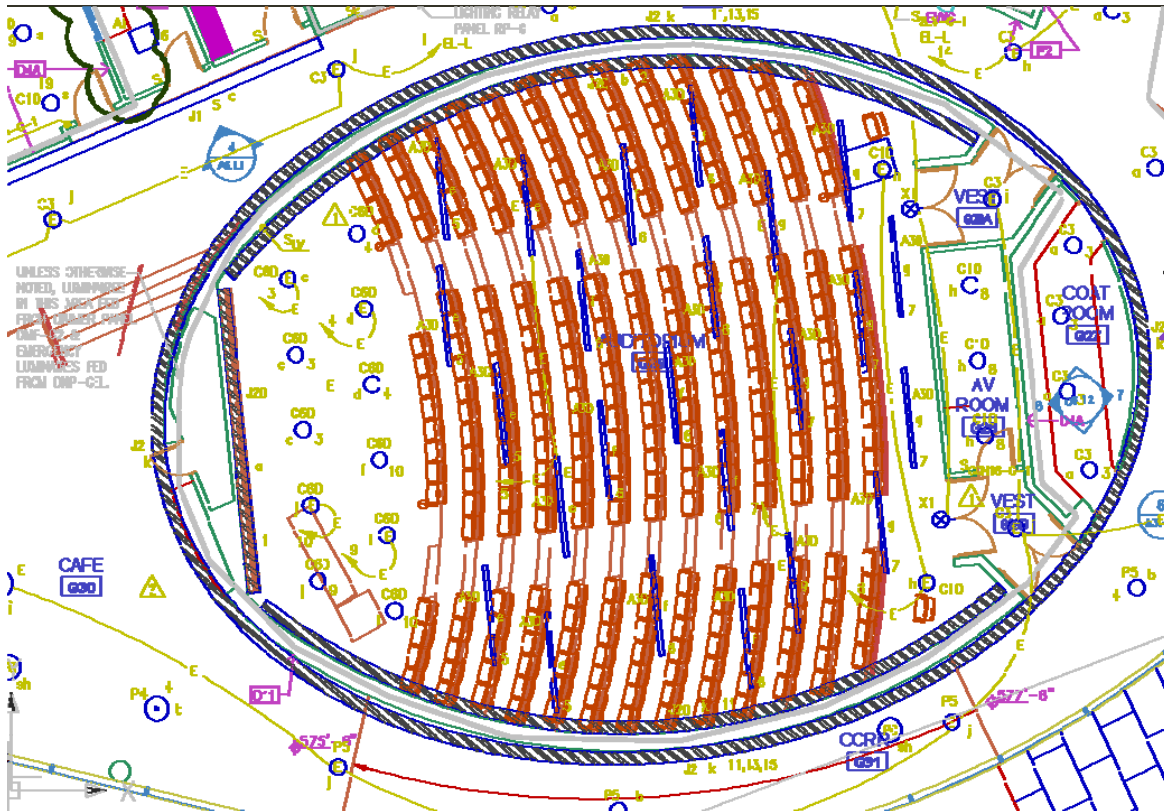
The entrance to the auditorium is located on the ground floor of the Center for Health Research and Rural Advocacy (CHRRA); occupants enter at the top of the space and then walk down the stadium seating to the projector screen and speaker area. The space spans vertically between the lower level and the ground floor. The auditorium is ellipsoidal in plan view with an architectural cove built around the entire perimeter of the space. The space is equipped with over 400 auditorium seats with pull up desks, a front projection system, and a stage area for speakers to stand. There is a control room in the back of the auditorium where the projector hardware is located. The space is constructed of acoustic ceiling tile, dark carpeting with rubber treads for the stairs, off white wall paint with acoustical fabric wall coverings. The current lighting system consists of different zones of light. Over the audience seating, there is an array of recessed linear fluorescent 4" wide by 8' long luminaires which are dimmable and on one control leg. Over the speaker area, there are two rows of compact fluorescent downlights where are also dimmable and on their own control leg. Lastly, there is the accent cove lighting made up of biax lamps which are slightly elevated in order to create a curved cove luminaire. These fixtures are also dimmable and controlled separately from the rest of the space.

Tasks performed in the space:

- Presentations
- Reading/Writing in the audience seating
- Reading from the speaker podium
- Reading off the projector screen
- Facial Identification
- Group Discussions
- Visual Demonstrations
- VDT usage



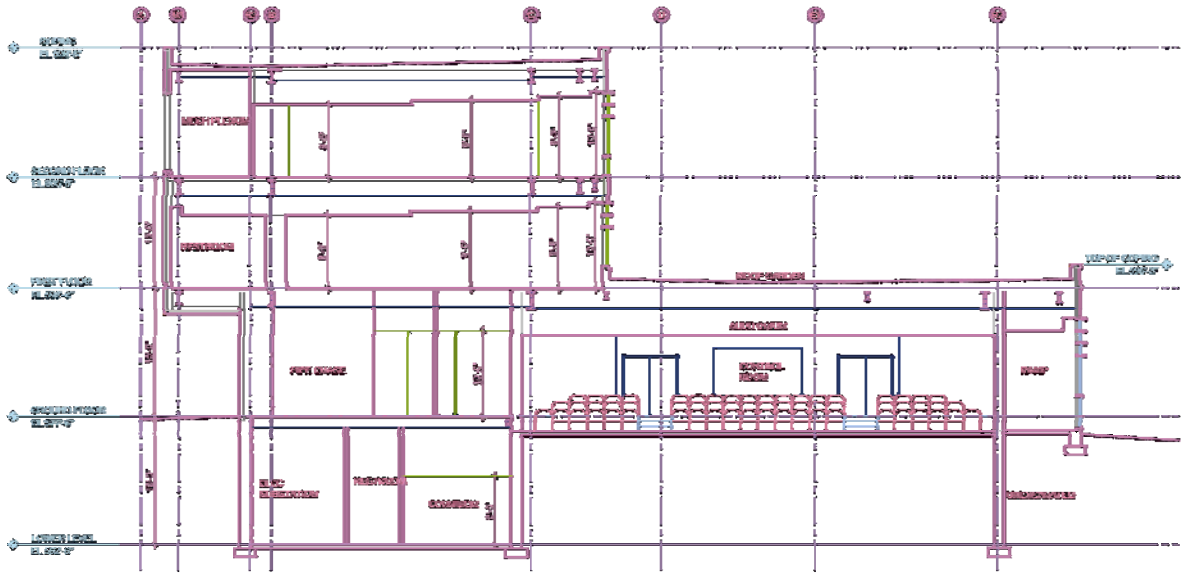
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Auditorium Lighting Plan

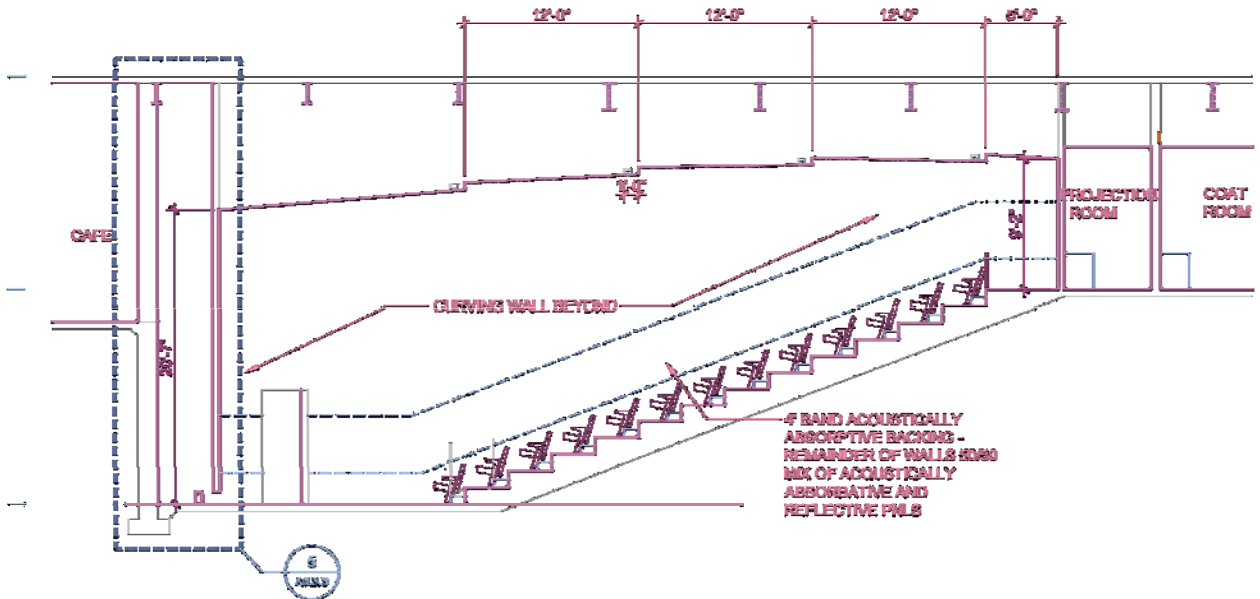


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3 SECTION THROUGH AUDITORIUM
1/8" = 1'-0"

Auditorium Section- North/South



3 SECTION THROUGH AUDITORIUM
1/8" = 1'-0"

Auditorium Section- East/West



3. Main Entrance Lobby

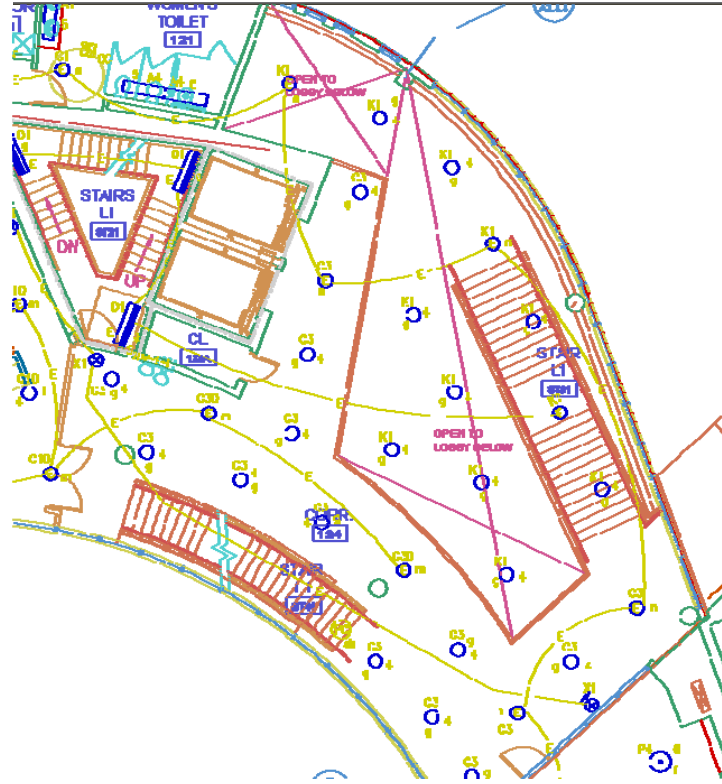
The double height lobby is located on the North side of the building where the glass façade begins to curve and the ceiling height begins to slope downward. On both the North and South sides, the lobby is surrounded by curved glass curtain wall. The double height portion of the lobby is surrounded by break out space on the ground level and first floor. This area includes tables and chairs for casual reading, writing, eating, or personal breaks. The lobby includes an open staircase from the ground level to the first floor. The lobby is constructed of different colors of ceramic tiling, and wood accent wall coverings along with off white wall paint. The existing lighting system is made up of a combination of lamp sources. In the double height space, there are recessed induction downlights. In the break out areas, compact fluorescent semi recessed downlights with a frosted glass cone were used. Neither system of lighting is dimmable.

Tasks performed in the space:

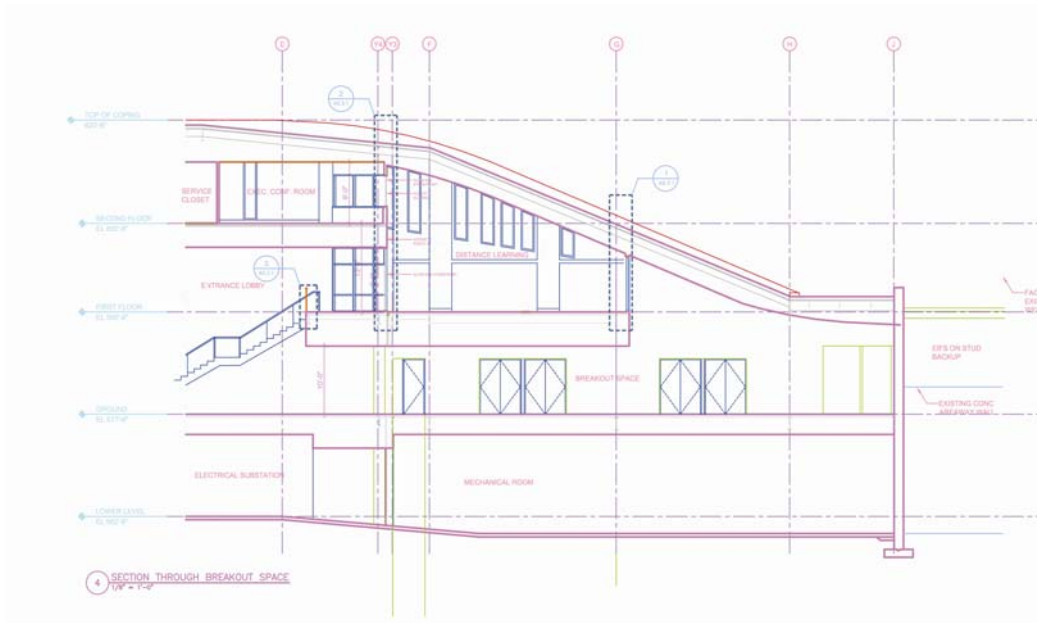
- Reading
- Writing
- Eating
- Conversations
- Circulation
- Facial Recognition



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Main Entrance Lobby Lighting Plan



Main Entrance Lobby Section- East/West

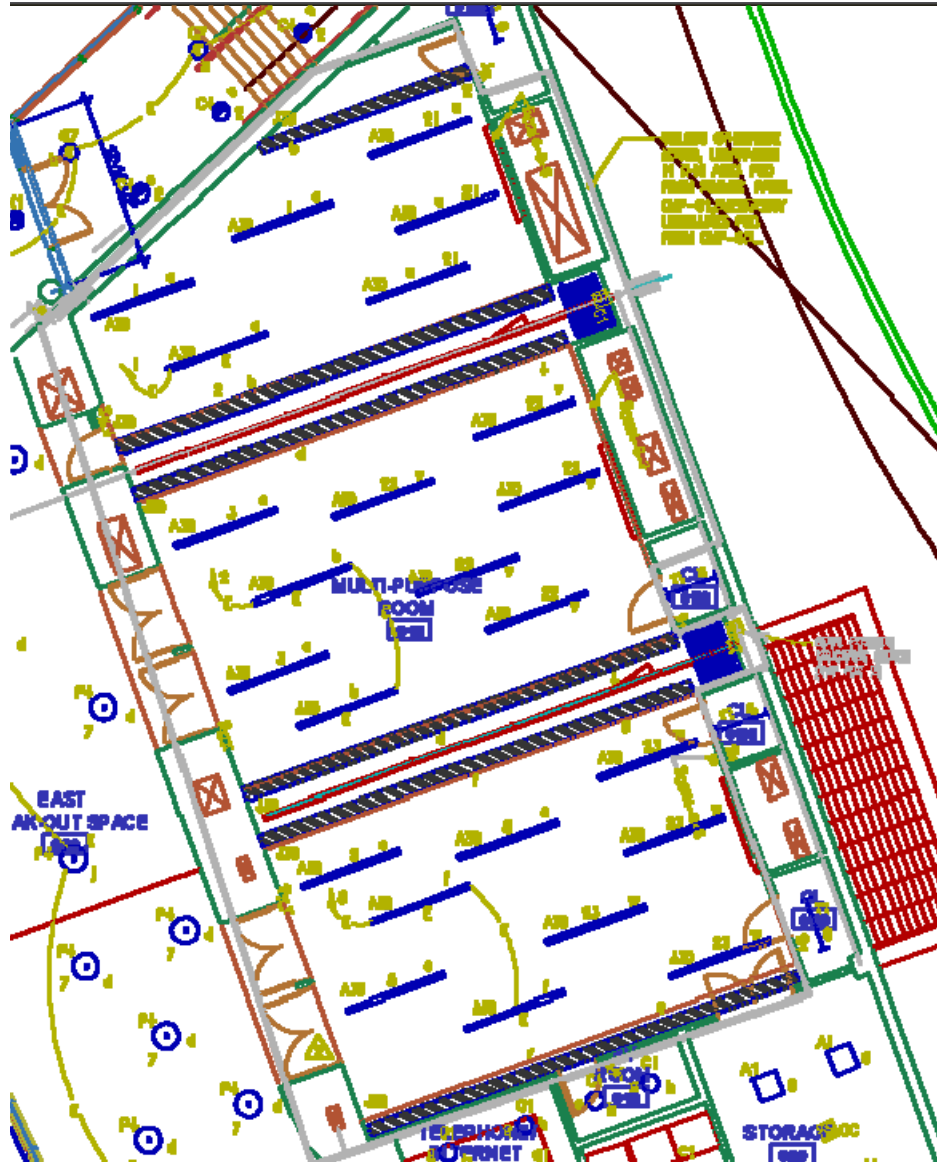


4. Multipurpose Room

The multipurpose room is located in the interior of the east side of the building on the first floor. The space is completely enclosed without any daylight component. The multipurpose room is one large area with two moveable partitions giving it the versatility to be broken up in to three smaller spaces. There are architectural coves built into the walls of the three small spaces on the northwest and southeast walls. The perpendicular walls do not have cove lighting. The space has a variety of furniture set ups including banquet tables and chairs, and long desk worktables with conference room chairs. The area is constructed of brown carpeting, off white walls, and acoustical ceiling tile. The existing lighting system is made up of the same linear fluorescent recessed luminaires used in the open office and auditorium. These fixtures are all dimmable and can be controlled as one large zone or as three separate zones depending on the moveable partitions. The accent wall lighting is linear fluorescent wall washer cove luminaires. These are also dimmable and controlled separately from the task lighting system.

Tasks performed in the space:

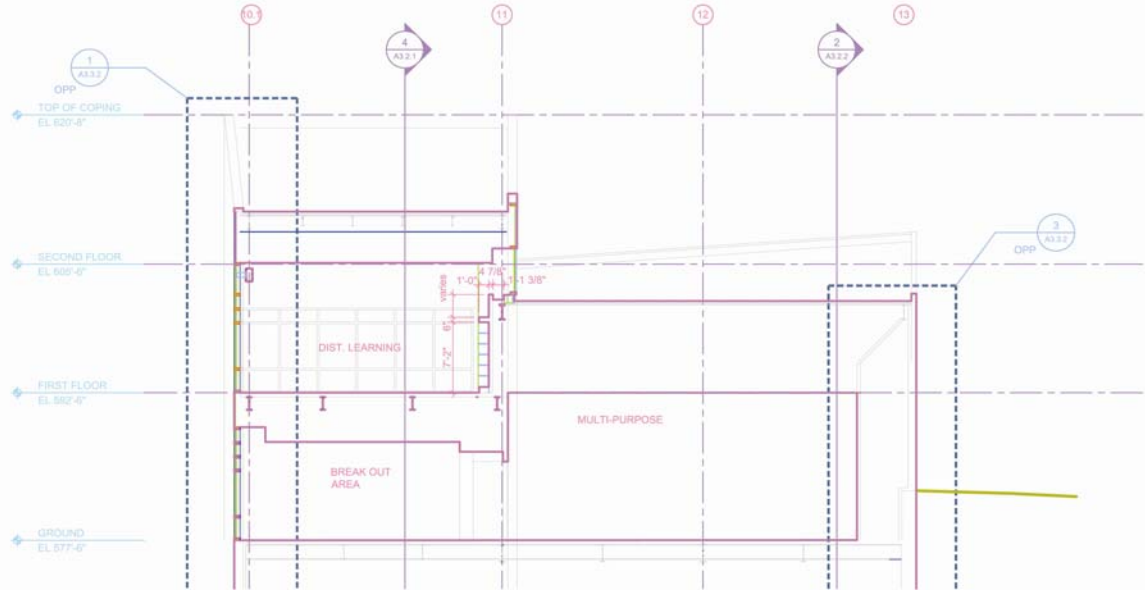
- Reading
- Writing
- Facial Recognition
- VDT use
- Dining
- Receptions
- Conferences
- Tutorials
- Meetings



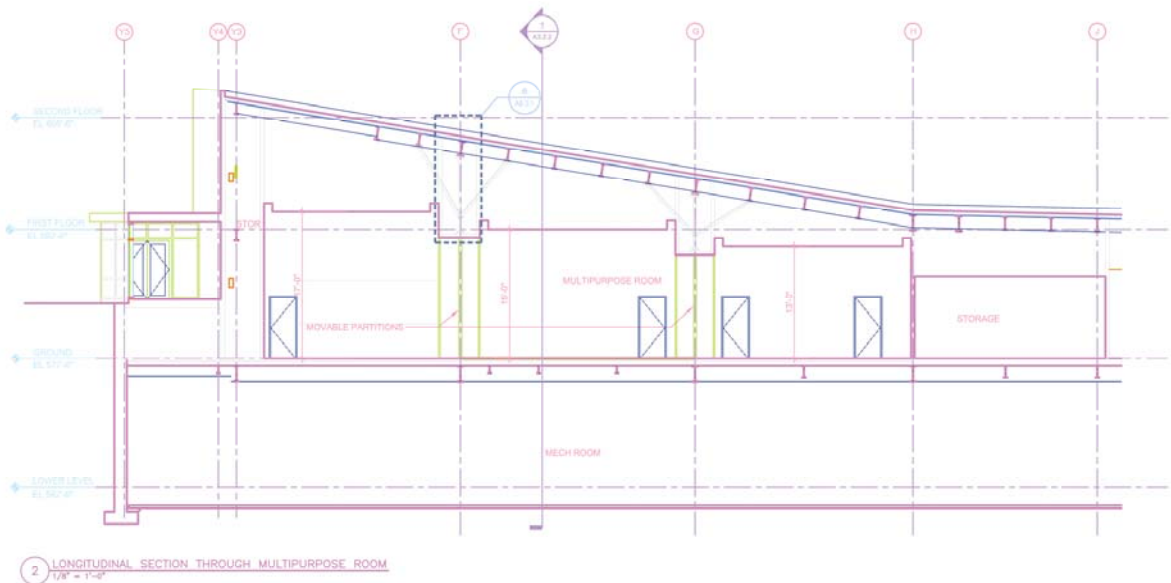
Multipurpose Room Lighting Plan



Lighting Proposal Memo



Multipurpose Room Section- East/West



Multipurpose Room Section- North/South

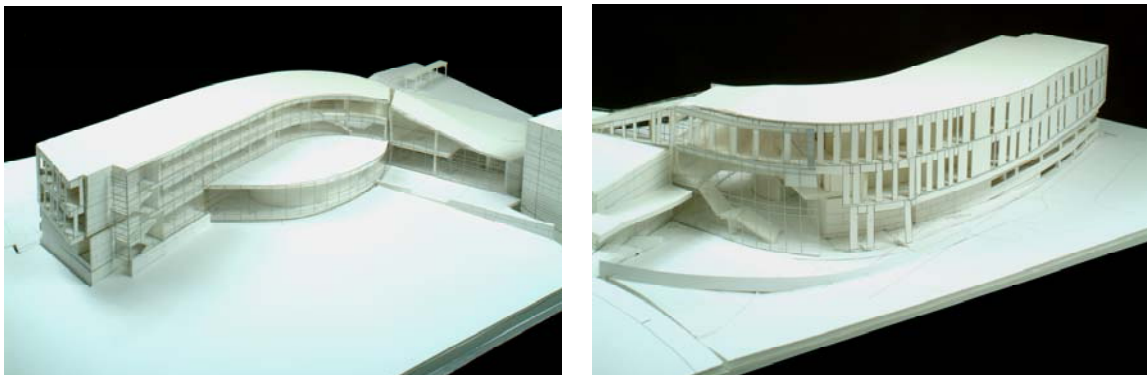


5. Exterior Façade and Site Lighting

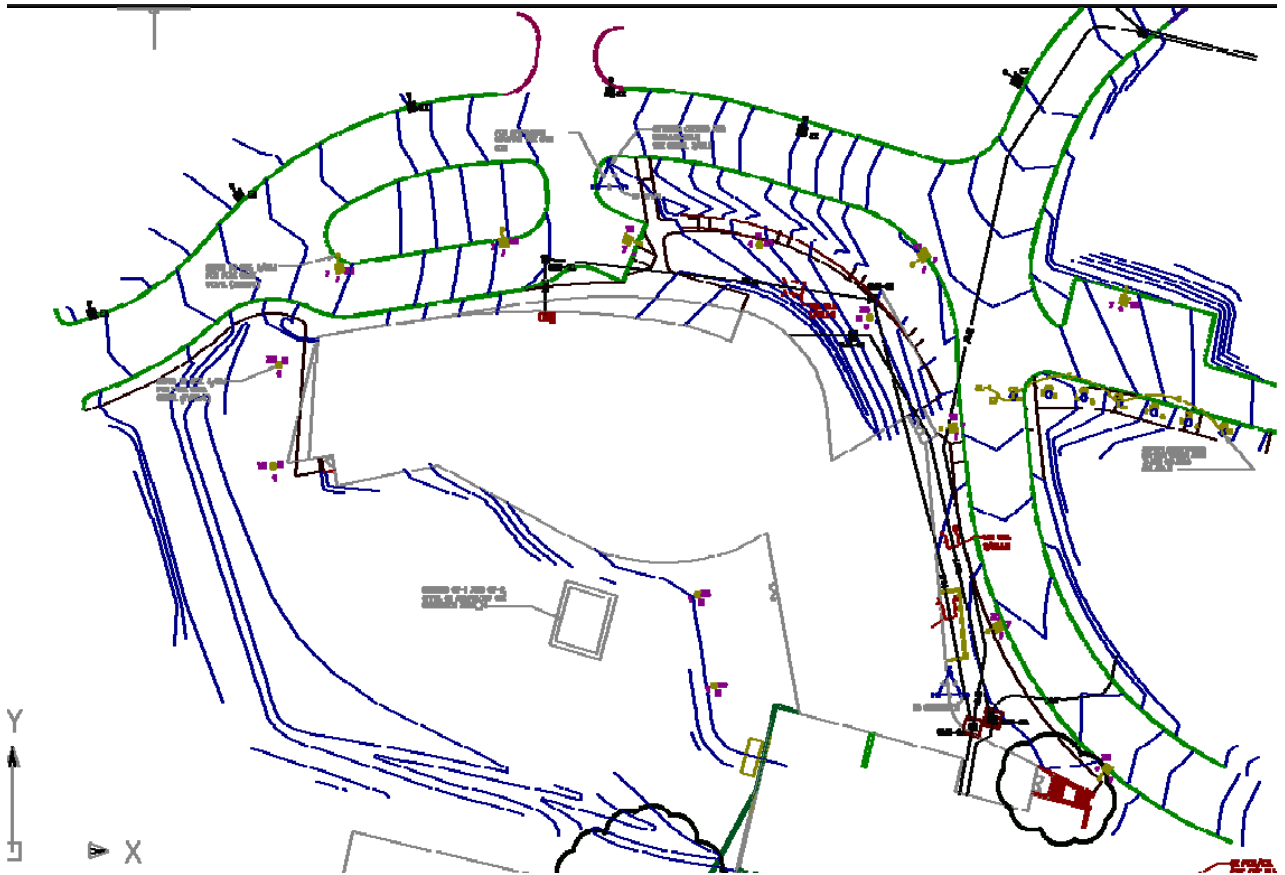
The exterior façade of CHRRA is primarily a curved glass curtain wall including the use of both spandrel and tempered insulated glazing. Around the entrance to the lobby and the lower level of the building is CMU block. Aluminum metal paneling is incorporated into the glass curtain wall façade design. Because of the large amount of glass, the façade is not lit from the exterior but at the entrances to the building. Around the site, there are pole mounted fixtures varying in height from 10' to 18' which are all dark sky compliant. The fixtures on the site are metal halide while the roadway lighting is high pressure sodium to match the existing fixtures used on the campus. Efforts were made to use minimal light only where necessary in order to minimize spill light on the site for the dark sky LEED credit. There is also an extensive roof top garden outside of the first floor open office. There is no lighting in this area. I have decided to focus my redesign on the pedestrian pathway to the main entrance, the canopy over the main entrance, and the terrace on the south side of the building.

Tasks performed in the space:

- Facial Recognition
- Car Recognition
- Circulation
- Reading
- Pedestrian/Automobile interaction
- Driving
- Important to incorporate safety from lighting in this area.



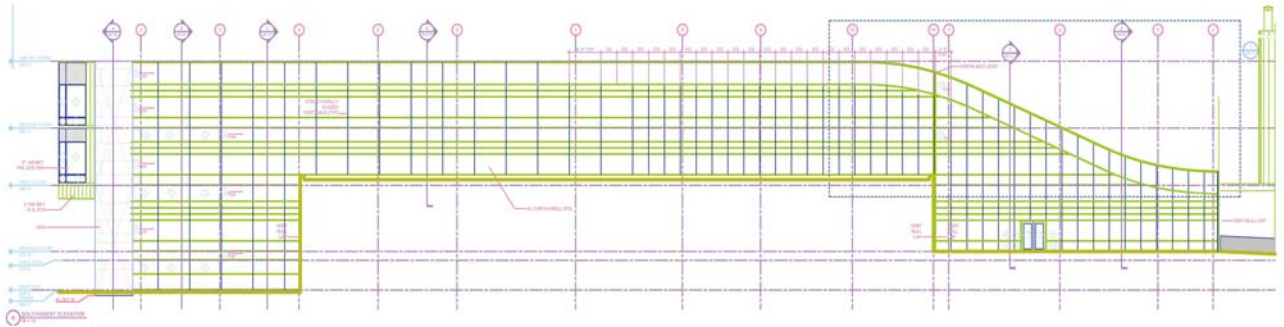
Photographs of the CHRRA Model Exterior



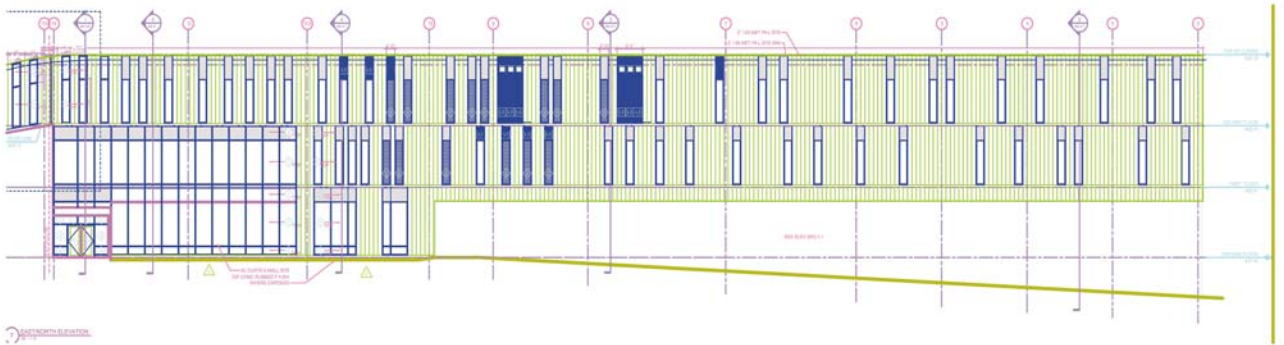
CHHRA Site Lighting Plan



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CHRRR Exterior Elevation- South/West



CHRRR Exterior Elevation- East/North