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LIGHTING + ELECTRICAL

SUNY CORTLAND  
STUDENT LIFE CENTER  
Cortland, NY

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# Tech Report 1



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# Introduction

## Overview

The Lighting Design Portion of this thesis proposal will include the redesign of four spaces in the SUNY Cortland Student Life Center. The four spaces include:

- Weight lifting and cardio area
- Entrance Lobby
- Exterior of Northeast Entrance/Façade
- Large Indoor Running Track

The exterior northeast entrance, entrance lobby, weight lifting and cardio area, and running track create a series of connected spaces, which will allow a fluid lighting design concept to be carried throughout the spaces without being as extensively interrupted by existing conditions.

## Three Schematic Designs

During the schematic design phase, the entrance lobby will be designed three different ways to fulfill the three schematic designs requirement. These three designs will be communicated with strong visual representations to clearly define how and why each was developed. Upon developing these designs, priorities, strengths, and weaknesses will be identified to show the preferred option.

## Psychological Impression

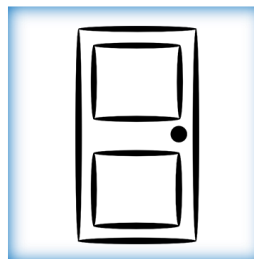
Using the Flynn modes of psychological impression, the weight lifting and cardio space will be identified as a public space. The space will be used by a wide variety of occupants and should reflect this through lighting. This space should feel public without the occupants necessarily making that conscious connection.

## Representation

The following four images will be used throughout the entirety of the thesis process to signify which spaces are being referenced. This will allow the viewer/reader to identify the space at a glance.



Weight lifting &  
Cardio Area



Entrance Lobby



Exterior/Façade



Running Track

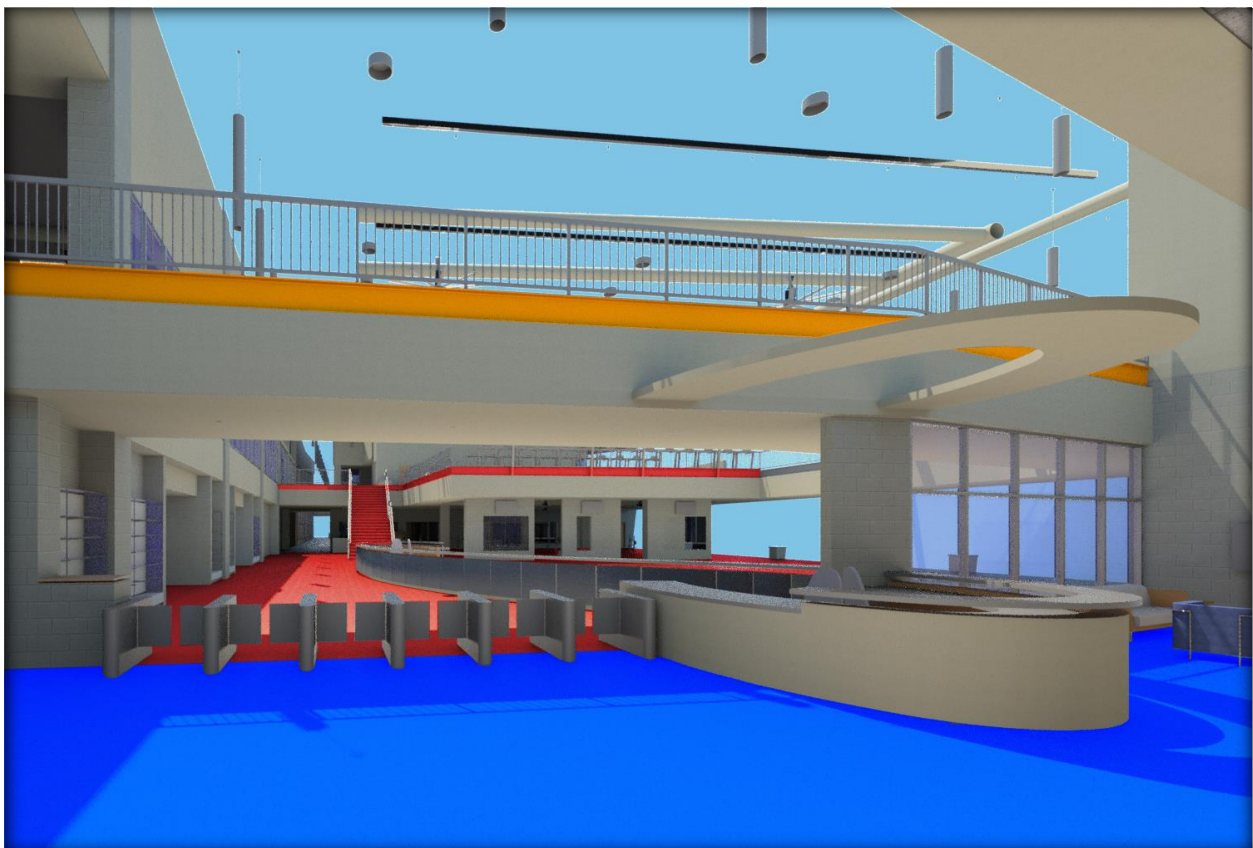
## Orientation and Reference Images

Figure 1.0 through 1.2 below should be referenced in accordance with descriptions given in the individualized sections to follow. These images are to help orient you to the spaces, get an idea of scale, and identify each space's relation to the others. Colors represent the individual design spaces, as noted above. It is clear by the close proximity of the spaces to one another that this lighting design must be approached as one challenge with four subsets, rather than four totally separate conditions.

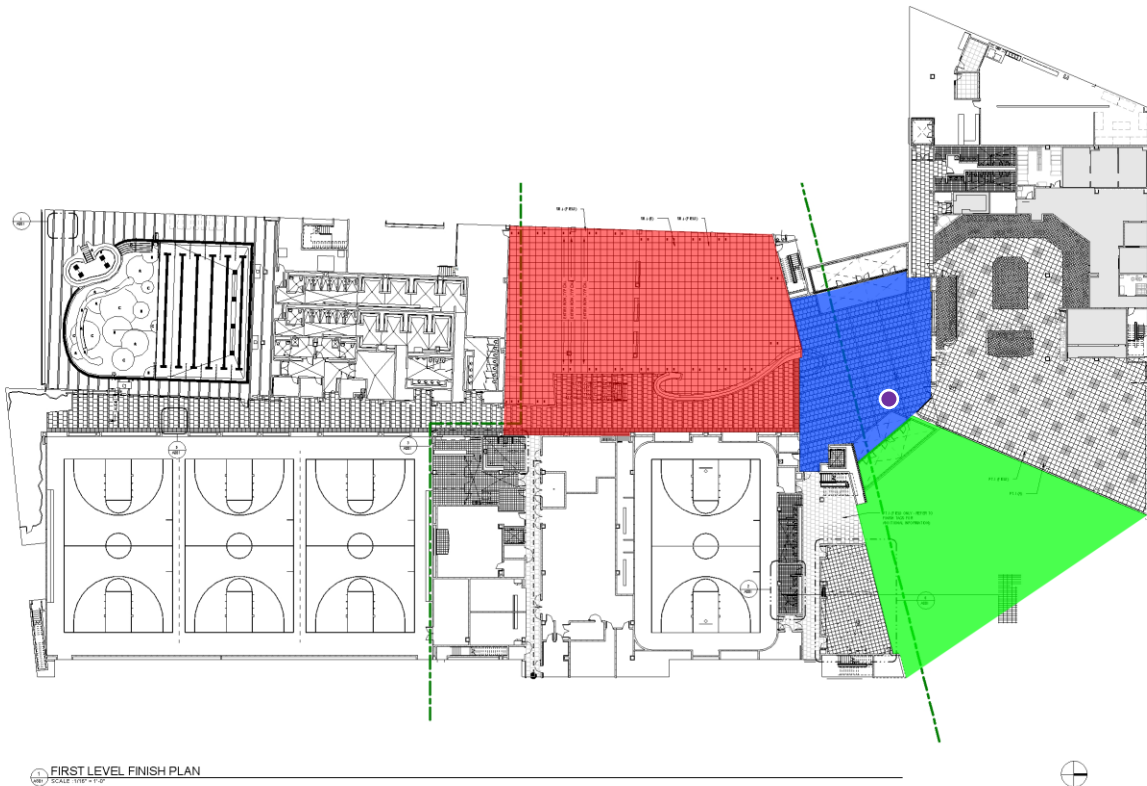
Figure 1.0: Perspective draft render looking from lobby to gym area. Running track is seen above, protected by handrails. Both levels of the weight lifting and cardio space can be seen in this image. The exterior façade/Northeast entrance is to the left of this render.

Figure 1.1: Level 1 Finish Plan; purple dot represents camera position of Figure 1.0.

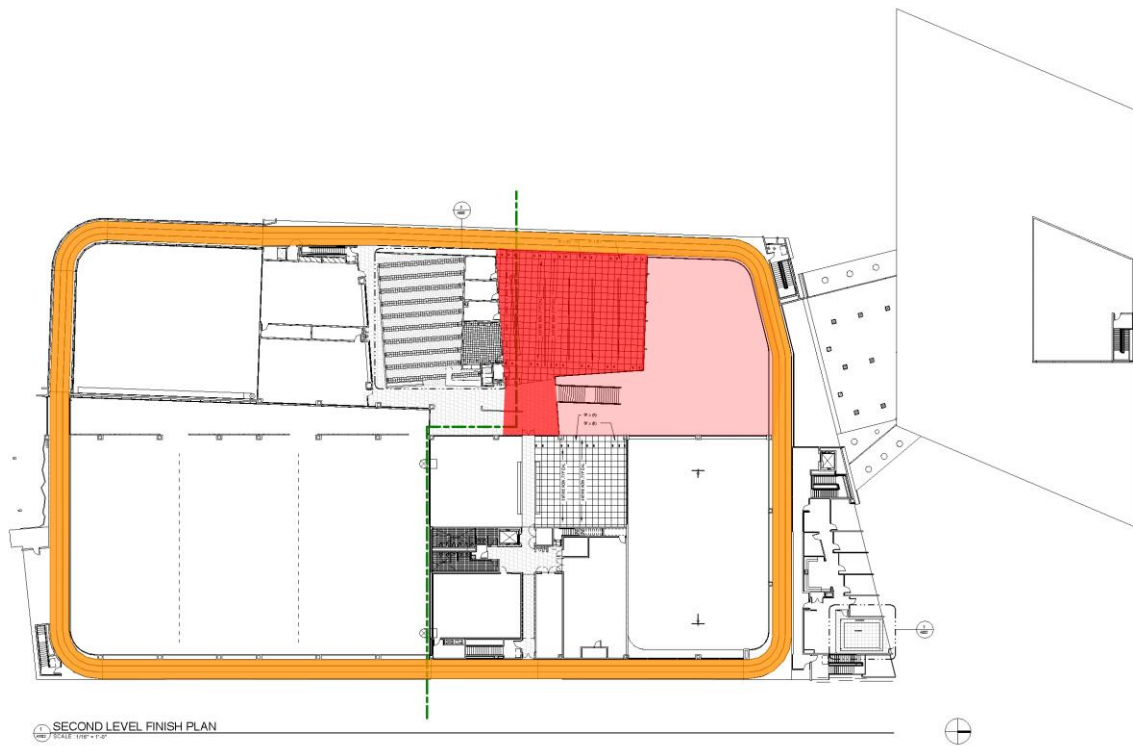
Figure 1.2: Level 2 Finish Plan; faded red represents "open to below" area.



**Figure 1.0**



**Figure 1.1**



**Figure 1.2**

# Large Work Space



## WEIGHTING LIFTING/CARDIO AREA

Space dimensions: 97' x 126'

Specific Dimensions located on drawings in Appendix A.

Area: 12,200 SF

### Description & Materials

The weight-lifting and cardio area is a public space for students geared towards allowing maximum daylight and energy to enter its volume. It is a two story space - as a loft, the second story houses treadmills, ellipticals, rowing machines, and bikes, totaling between 50 and 70 pieces of equipment in a rough area of 4,650 square feet; while the lower level contains various free weight elements in addition to a multitude of resistance training machines spread throughout the floor. The Northern end of the space is only separated from the lobby by a control desk and turn style entry as seen in Figure 1.0. The Southern end on both levels continues on the Eastern side via corridors. The running track on the second level defines the border of this space on its Northern and Western sides.

The floor throughout the entire space will take specially poured sports flooring with the exception of what is to be considered the corridor. When viewing Figure 1.1, the Eastern most area with a different finish is the corridor; this finish is porcelain tile. All desk-like structures and half walls consist of Maplewood millwork. Walls are mostly mirrors and gypsum wall board. Ceilings are a combination of gypsum wall board and 2x2 acoustical ceiling tiles.

### Design Considerations

#### Visual Tasks

- |                         |                      |
|-------------------------|----------------------|
| 1. Weight Training Area | General Lighting     |
| 2. Cardio Loft          | General Lighting     |
| 3. Information Desk     | Reading/Writing      |
| 4. Walkway              | Circulation Lighting |
| 5. Storage Cubbies      | Task Lighting        |

#### Other considerations

1. The West façade defines the Western border of the space. This area of the façade has a considerable amount of glass.
2. There are four extremely large skylights to bring maximum daylight to the space. Proper controls should be addressed to take advantage of this harvesting opportunity.



3. Multiple LCD TVs are positioned throughout the space, so limiting both glare and obtrusive light levels in close proximity to these screens would be preferred.
4. The reflected ceiling plan is nothing standard. There are multiple drop ceilings which are pre-cluttered with ceiling fans, so the lighting will have to completely work around these items.
5. The barn door entry points will have to be considered in this space as well as the lobby space.

## Special Purpose Space



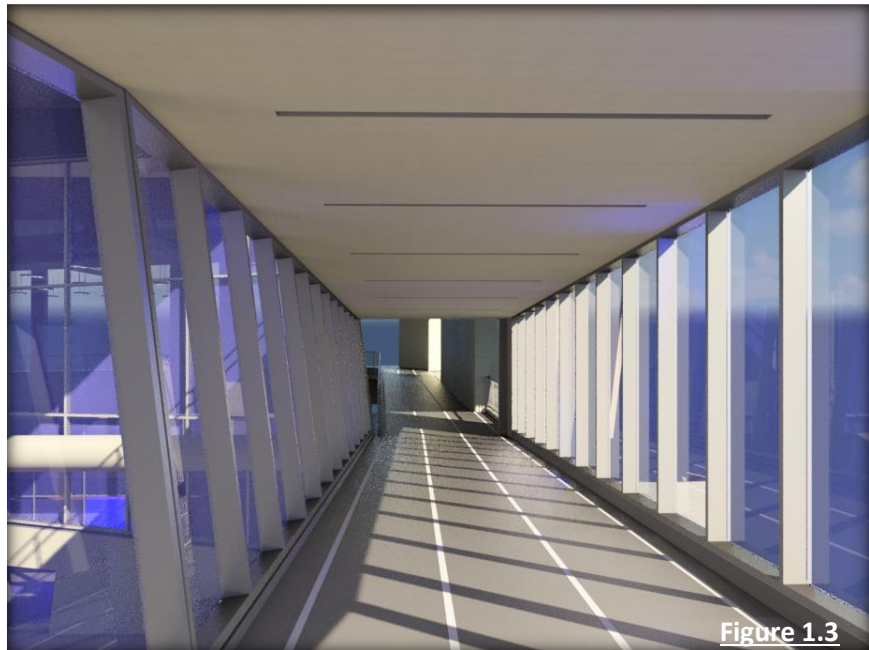
### INDOOR RUNNING TRACK

#### Space dimensions

Perimeter: 215' x 350'  
Track Details: 10' wide x 7.5' high; 1/5 mile per lap

#### Description and Materials

One of the Student Life Center's main features is the second level indoor running track. This track was designed to create an experience for the runner which battles the typical experience of an indoor track; the short monotonous run surrounded by block wall and minimal views. The athlete utilizing this track will get views of all four main gymnasiums, the game room, cardio loft, weight training floor, lobby space (as seen in Figure 1.0), and even the natatorium. During its turn in the Southwest corner, the track is suspended above the natatorium and enclosed on all sides to protect it from the negative effects of the pool air. The walls on both sides are comprised of glass, giving the impression that the track is floating (see Figure 1.3). A large majority of the track is bound by glass on its exterior walls conducting the feeling of freedom for the athlete. Over the course of a single lap, the track also varies slope to enhance the running experience and diminish the feeling of running on a public indoor track.



## Design Considerations

### Visual Tasks

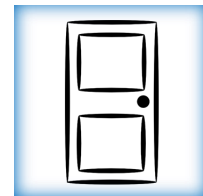
1. Track
2. Vertical walls

General Lighting  
Accent Light

### Other considerations

1. Limiting glare, and light spill in some cases, to the natatorium, gymnasiums, and other spaces adjacent and below the track.
2. Avoiding the strobe effect is important. This will mainly be done by limiting glare experienced by the runners on the track.
3. End walls and some specific vertical surfaces should be lit to add quality to the experience; relying only on track lighting can make it difficult to perceive depth, scale, and distance. Also, simply for comfort, vertical surfaces should not be ignored.

## Circulation Space



### THE ENTRANCE LOBBY

#### Space dimensions

Perimeter: 67' x 70'

Area: 4,440 SF

#### Description and Materials

Creating a transition space between the exterior and the two main wings of the Student Life Center is the lobby. This single story structure serves as the main entrance from the Southeast and the Northwest directions. Upon entering the space, the occupant has multiple options: enter the gym wing after checking in at the control desk, take the small hallway towards a classroom and restrooms, enter the small retail area for snacks and drinks, or enter the dining space after paying at the cashier. Vestibules at both entrances provide energy savings and a barrier for the occupants already sitting at the scattered tables located in the lobby space.

The floor of this space entails porcelain tile and concrete which is to receive special coating and/or penetrating sealer. Walls are painted with low luster latex eggshell paint, and the ceiling is a combination of 2x8 metal acoustical tile and light gray painted gypsum wall board (Color: Ice cube - 6252).



## Design Considerations

### Visual Tasks

- |                        |                          |
|------------------------|--------------------------|
| 1. Lobby Floor         | General Lighting         |
| 2. Control Desk        | Reading/Writing          |
| 3. LEED Plaque         | Accent Lighting          |
| 4. Scattered Tabletops | Reading/Writing          |
| 5. Cashier Check-in    | LCD Screen               |
| 6. Casual seating area | General/ Accent Lighting |

### Other considerations

1. Aesthetic appeal is extraordinarily important in this space since it will be seen by all occupants of the building - this is the structure's "first impression" on its users.
2. There will be an LCD screen above the casual seating area; avoid glare and over-lighting the area surrounding the screen's mounting location.

## Building Façade



### THE NORTHEAST ENTRANCE

#### Space dimensions

Due to a trapezoidal shape, refer to Appendix A for all dimensions.

#### Description and Materials



The Northeast Entrance sits back into surrounding facades created by the two separate wings of the Student Life Center. This entry point is one of two main access points to the building. Its enclosure, also known as the lobby, acts as a connection building between the two wings; and clearly identifies the two wings as separate entities. Although the small entry façade could be lit on its own, I believe it would be much more effective to take into consideration all three faces of this quasi courtyard at once. Since these three faces create an actual exterior environment, lighting the entry façade alone would be rather ineffective in an attempt to create an exceptional experience for the occupant. As the space takes on its own lighting characteristics, it should not neglect its function as an entry, as well as its flow with the succeeding space: the lobby, which is to be lit as the circulation space for this proposal. The three faces of this façade are comprised completely of glass, metal composite wall panels, and aluminum frames.

## Design Considerations

### Visual Tasks

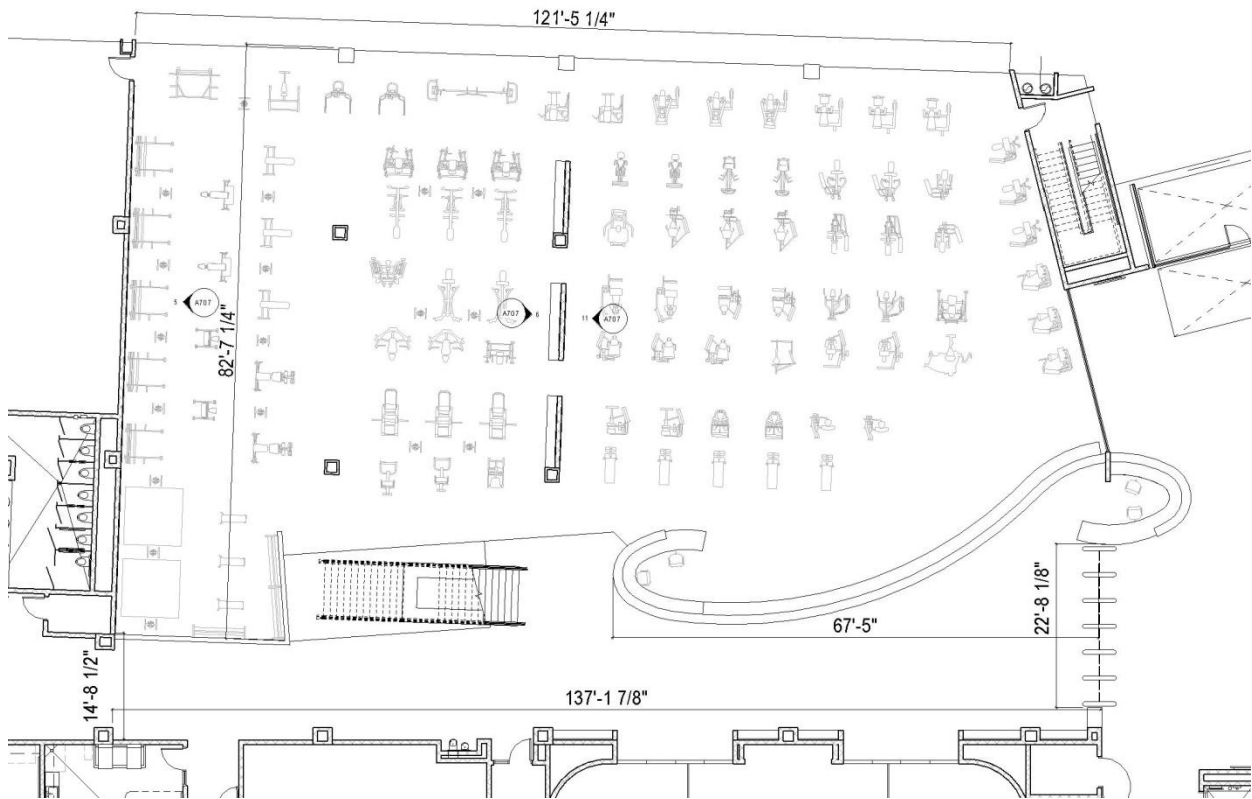
- |                    |                      |
|--------------------|----------------------|
| 1. Sidewalk        | Circulation Lighting |
| 2. Façade surfaces | Accent Lighting      |

### Other considerations

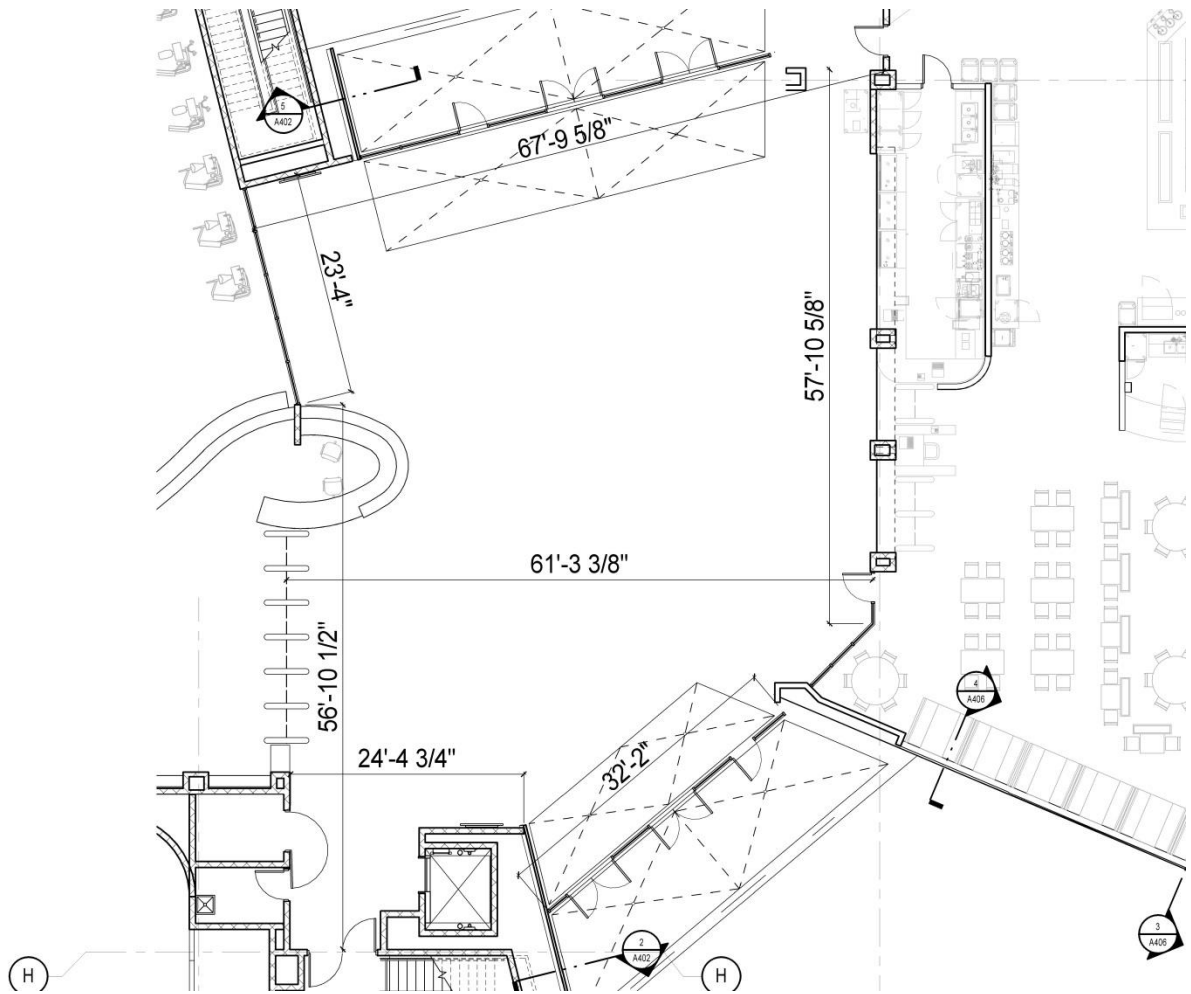
1. Due to the large amounts of glass, the effect known as the lantern effect will be kept in mind when developing concepts for this profound entrance.
2. The entry point should be recognized as such from a great distance away. The entry is a clear focal point for the Northeast view, but at the same time, the architecture is also very unique. Since there are two focuses here – the architecture and the entry point itself – the lighting design should complement both.

# Appendix 1

## Large Workspace Dimensions



Circulation Space Dimensions



# Exterior Space dimensions

