URBN Center & URBN Center Annex

Philadelphia, PA

Technical Report 1: Existing Conditions and Design Criteria

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Option: Lighting/Electrical

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Executive Summary

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LARGE WORK SPACE | FASHION DESIGN STUDIO

The flexibility of the fashion Design Studio, through the use of operable walls, allows for this space to accommodate small fashion shows, xxx, and class lectures.

EXISTING CONDITIONS

Description

Area (ft2)	Length (ft)	Width (ft)	Ceiling Height (ft)
8,928	135	Varies (see Fig.2)	13.5

Table 1.1 | Dimensions

The Fashion Design Studio dominates the West side of the third floor of the URBN Center. The studio will primarily be utilized as a large working design studio for students and for class lectures. Fashion shows will also accommodate this space as well. The layout of this space can vary from an open plan to an organized and divided arrangement of spaces. This flexibility is made possible with 'operable' walls. These panels double as art showcases and wall partitions (see Fig.3). Large windows located on the North Façade of the studio bring in natural light providing the opportunity for daylight harvesting, while excluding direct sunlight. Glazing continues to wrap around the entire studio offering exterior views to the students regardless of their location within the space. Like most floors throughout the URBN Center, existing polished concrete describes the surface of the floor. The ceiling is left bare exposing all of the pluming, air ducts, etc. This type of ceiling demands that these systems be laid out in an organized and appealing manner. The partitions are all finished with gypsum wall board (GWB) and painted white.

Figure 1.1 | 3rd Floor - Fashion Design Studio

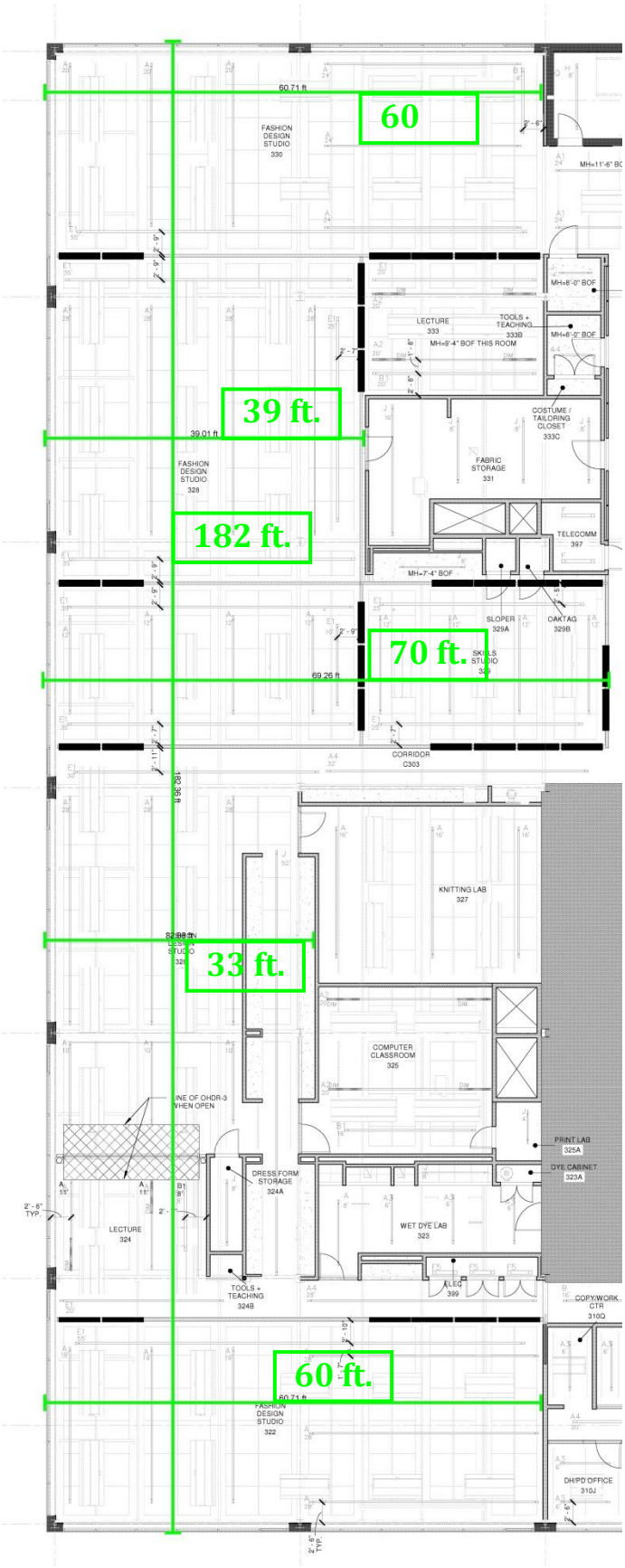


Figure 1.2 | Fashion Studio Dimensions

Materials/Finishes

Acoustic ceiling panels line the bottom of the exposed deck providing some acoustical buffering within the large space. The Tackable cork also provides some acoustical cushioning. The acoustical panels run along with the steel framing of the Fashion Studio. The operable walls double as a visual display surface running primarily East-West. Additionally the Lecture Room and Skills Studio are outlined with these operable walls. Partitions are primarily made up of Gypsum Wall Board (GWB). Storefront partitions exist throughout the space as well (see Fig. 2). A whiteboard can be found in the Lecture hall. In the corridor student lockers house their belongings. The lockers are going to be constructed by an independent contractor so their finish details are unknown at this point in time, but the cabinets above will make use of resin panel finish.

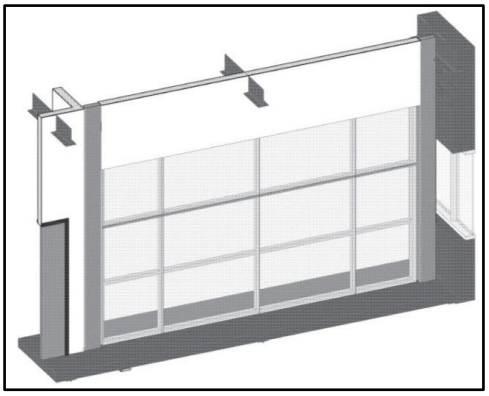


Figure 1.3 | Storefront Partition

Materials/Finishes					
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Reflectance**
Gypsum Wall Board	Partitions	Main paint finish | Eggshell/Satin Latex Paint	Benjamin Moore	Decorators White	0.58
	Accent Paint	Accent paint finish | Eggshell/Satin Latex Paint	Benjamin Moore	Fashion Rose	--
Existing Concrete	Floor	Burnished treated | Level 2 polished concrete - 800 Sheen	--	--	0.47
Visual Display Surface	Partitions / Operable Walls	Tackable cork	Forbo	--	0.59
Metal Wall Panels	North Egress Stairs	Factory formed, single skin, face-fastened metal wall, liner, and soffit panels | Thickness: 0.8 mm	Rheinzink	Blue-Bray	--
Acoustical Ceiling Tile	Ceiling	Thickness: 7/8"| Size: 4' X 4' | NRC: 0.9 | Capz Color: Silver Smooth	Existing Fiberglass Tiles	White	--
Acoustical Ceiling Tile	Ceiling	Thickness: 1-1/2"| Size: 5' X 5' | NRC: 0.9 | Capz Color: Silver Smooth	Existing Fiberglass Tiles	White	--
Structural Steel Framing	Ceiling	Existing interior structural steel framing | Cleaned as required | Existing primer to remain	--	--	--
Cabinets - Upper Sliding Panels	Corridor	Resin Panel | Cabinets - Upper sliding panels	3Form Varia, Color Weave	--	--
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Transmittance**
Interior glazing	Above partitions and operable walls | Storefront	1/4" Clear float glass | Glass access panels	Viracon	Clear	0.91

Table 1.2 | Materials/Finishes

Lighting Conditions

Figure 1.4 | Fashion Design Studio Luminaire Layout

Lighting Equipment					
Designator	**Type**	**Description**	**Mounting**	**Lamp**	**Manufacturer**
	A	Linear direct\indirect extruded aluminum luminaire. Nominal 2" X 4" cross section. Open up with wide light distribution reflector. Diffuse acrylic lens down. Tandem wire using two lamp ballast. Provide two circuits for independent control of indirect and direct light. Matte white housing finish. Requires additional circuit for emergency power.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(2) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 15.75 W/ln ft	Focal Point
	A2	Linear direct\indirect extruded aluminum luminaire. Nominal 2" X 4" cross section. Open up with wide light distribution reflector. Diffuse acrylic lens down. Tandem wire using two lamp ballast. Provide three circuits for independent control of indirect and direct light, and dimming. Matte white housing finish.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(2) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 1 Lamp Ecosystem H 1% Dimming Ballast 15.75 W/ln ft	Focal Point
	A4	Linear direct\indirect extruded aluminum luminaire. Nominal 3" X 5" cross section. Open up with wide light distribution reflector. Diffuse acrylic lens down. Tandem wire using two lamp ballast. Provide two circuits for independent control of indirect and direct light. Matte white housing finish. Requires additional circuit for emergency power.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(2) 28W FP28T5 4100K 80 CRI Indirect 1.00 BF PS Ballast Direct 0.49 BF PS Ballast 12.38 W/ln ft	Focal Point
	B1	Linear extruded aluminum luminaire. Asymmetric wall wash light distribution. Nominal 3" X 3" cross section. Clear Alzak reflector Provide continuous lengths shown. Tandem wire using two lamp ballasts. Matte white housing finish. Requires additional circuit for emergency power.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(1) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 7.88 W/ln ft	Focal Point

Table 1.3A | Lighting Equipment

	E1	Linear direct/indirect extruded aluminum luminaire. Asymmetric light distribution down utilizing manufacturers specular wall wash optic. Wide symmetric light distribution up. Nominal 3" X 5" cross section. Matte white housing finish. Tandem wire using two lamp ballast. Provide circuits as required for independent control of indirect and direct lamps.	Air Craft Cable Suspension 7'-4" AFF to top of light fixture	Downlight (1) 35W FP35T5 4100k 80 CRI 1 Lamp PS Ballast 2 Lamp PS Ballast Uplight (1) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 17.88W/ln ft	Focal Point
	J	Linear direct extruded aluminum luminaire. Nominal 2" X 2" cross section. Diffuse acrylic lens. Tandem wire using two lamp ballast. Matte white housing finish.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(1) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 7.88 W/ln ft	Focal Point

Table 1.3B | Lighting Equipment

Light Loss Factors

The followings light loss factors were considered, while analyzing the existing lighting conditions in the Fashion Design Studio:

- Lamp Lumen Depreciation
- Lamp Dirt Depreciation
- Ballast Factor

Table 1.3 outlines the calculated values for all of the Luminaires in the studio. Because of the extreme similarity in fixture type and cleanliness in the room the table has been reduced to one row of eligible data.

Light Loss Factors						
Type	Lamp Lumens		LLD	LDD	BF	Total
	Initial	Mean				
All	2600	2418	0.93	0.95	1	0.88

Table 1.4 | Light Loss Factors

Power Density

The power density was calculated given the watts per linear feet statistic for each luminaire and then multiplying that by the total linear feet each fixture, of which took ballast input watts into consideration. The total watts per square foot below in Table 1.4 describe the system with all of the lighting equipment on. In fact there are different scenes where the actual power density will be less.

Power Density			
Luminaire	Linear Feet	Watts/ln ft	Total Watts/Luminaire
A	622	15.75	9796.5
A2	40	15.75	630
A4	60	12.38	742.8
B1	40	7.88	315.2
E1	385	17.88	6883.8
J	68	7.88	535.84
		Total Watts	18904.14
		Area (ft2)	8928.00
		LPD	2.12

Table 1.5 | Power Density

Controls

The electrical lighting system's main brain belongs to a Lutron Quantum light management hub containing eight ecosystem loops and two quantum processors with three configurable links. There are four lighting scenes that can be achieved in the studio. Ecosystem switches are located throughout the space and occupancy sensors are utilized as well in the studio.

Computer Aided Lighting Analysis

A model was created using the construction documents and specifications. The model took into account the different reflectances of the following materials:

AGI32* Material Properties			
Surface	**Material**	**Color (Hue | Sat | Lum)**	**Reflectance**
Flooring	Existing Concrete	0 | 0 | 112	0.47
Walls	Gypsum Wall Board	40 | 17 | 198	0.58
Operable Walls	Visual Display Surface	25| 35 | 136	0.59
Ceiling	Assumed Avg.	0 | 0 | 192	0.80
Millwork	Assumed Avg.	24 | 33 | 223	0.93
Steel Faceplate (wire raceway)	Steel	0| 0 | 120	0.50
Interior Glazing	Clear Float Glass	Glass	0.91
Exterior Glazing	1" Insulated Float Glass	Daylight Transition Glass	0.65

Table 1.6 | Material Properties

It was assumed that the personal lockers below the cabinets with sliding doors were made of the same material as the cabinets and had similar reflectance properties.

AGI32 Renderings

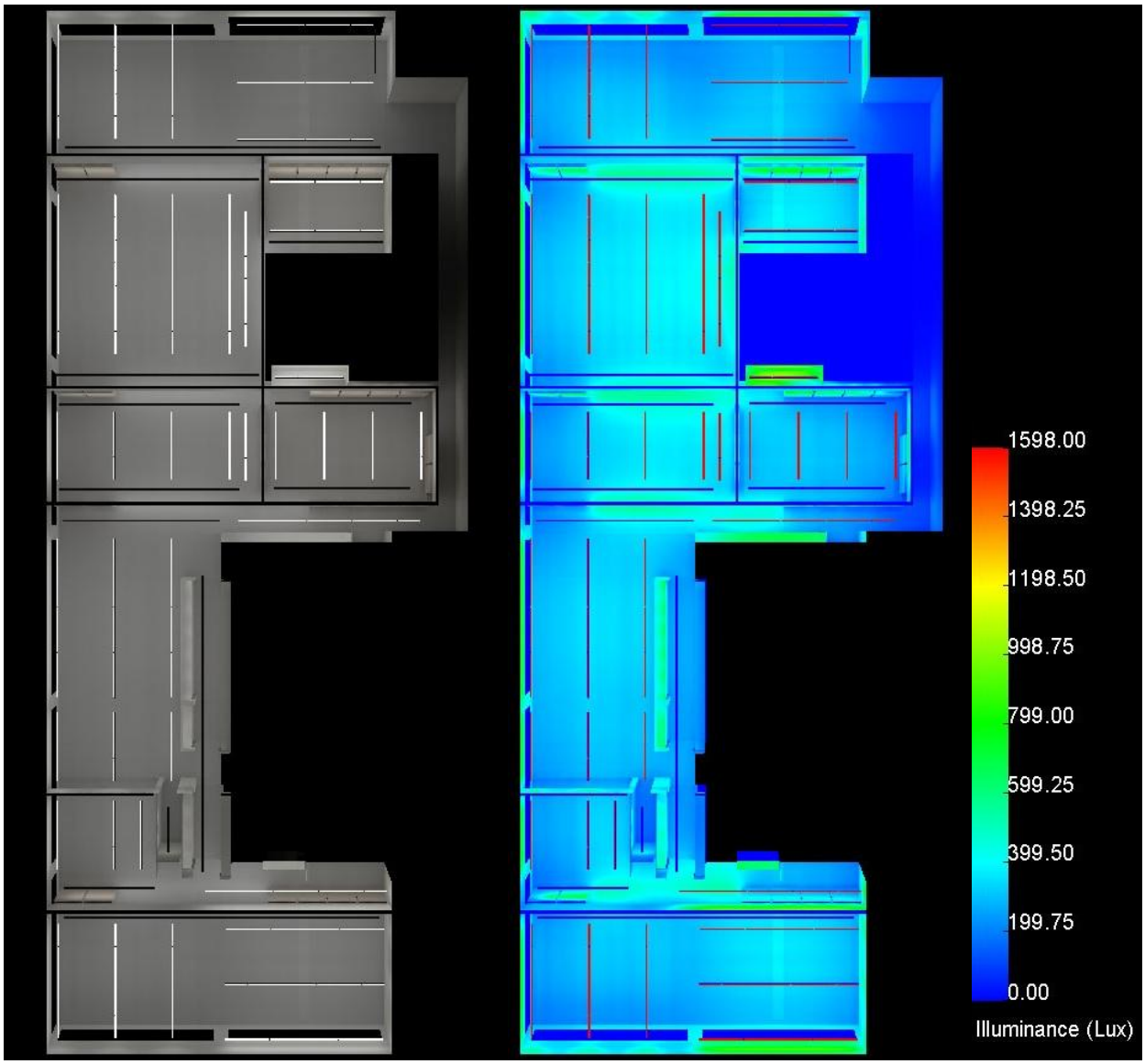


Figure 1.5 | AGI Plan Renderings (Pseudo color right)

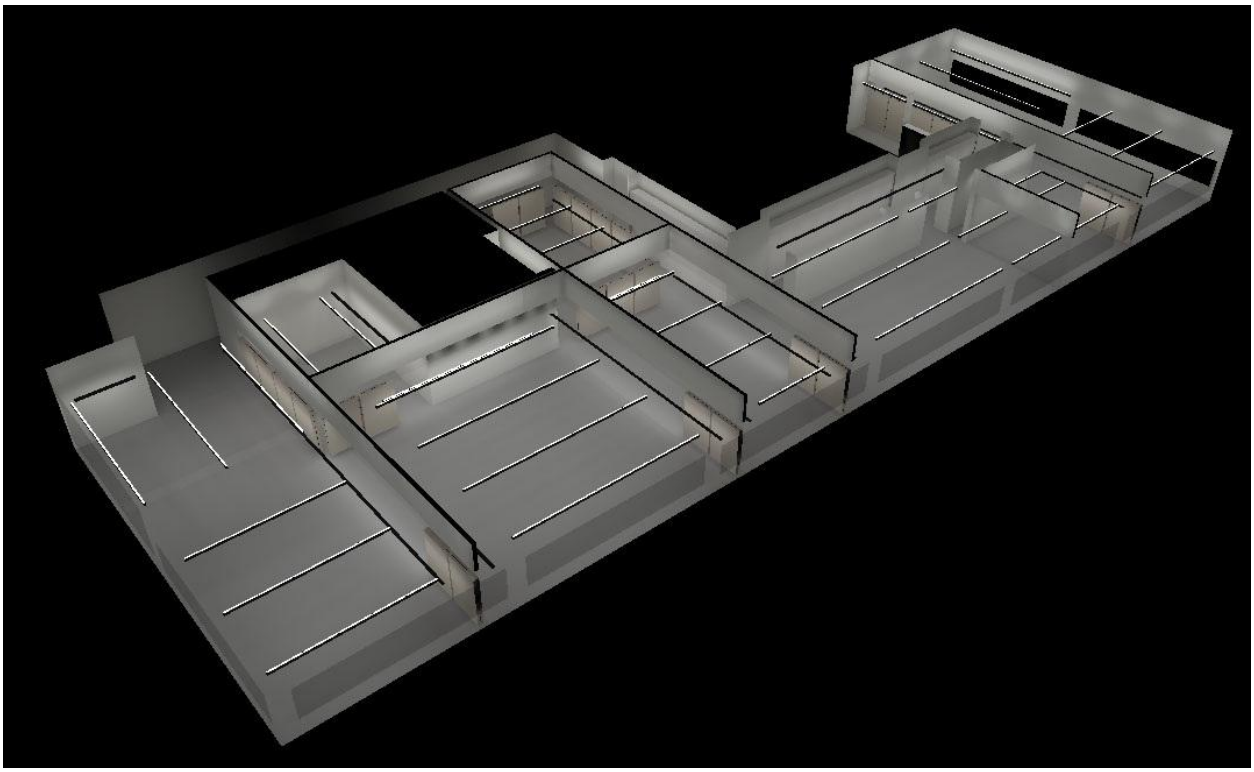


Figure 1.6 | AGI Rendering

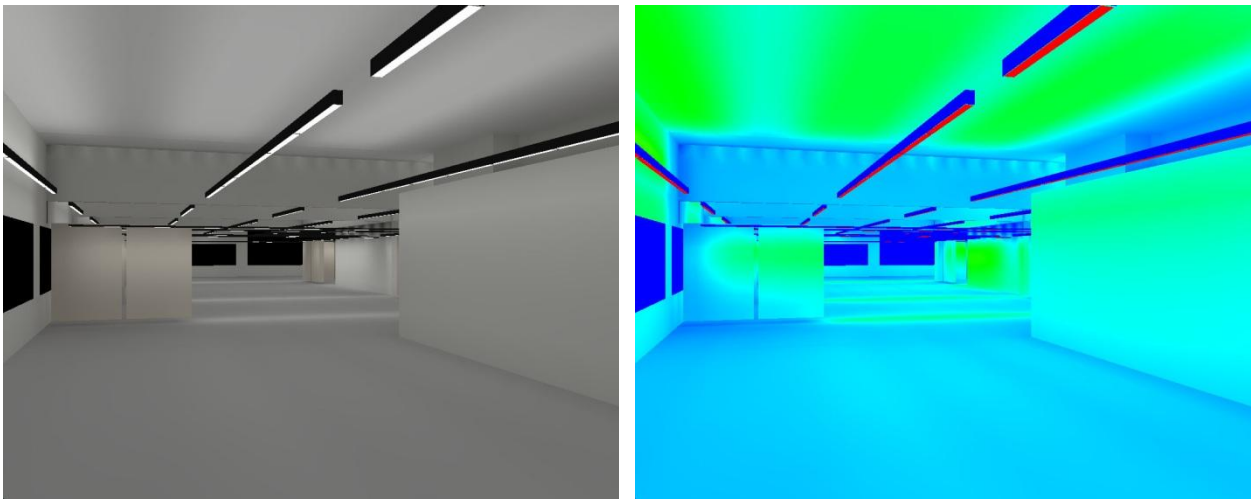


Figure1.7 | AGI Renderings (Pseudo color right)

DESIGN CRITERIA AND CONSIDERATIONS

- IESNA Lighting Design Criteria | Lighting For Education
  - Classrooms – Art Studios

Recommended Maintained Illuminance Targets (lux)

Most of the occupants that will be in the space are in college and therefore between the ages of 25 and 65 so these specific target illuminances are shown below.

Recommended Maintained Illuminance Targets		
Horizontal (lux)	**Vertical (lux)**	**Uniformity Ratio (Hor.)**
500	300	3:1

Table 1.7 | Illuminance Targets

LIGHTING EVALUATION AND CRITIQUE

"Linear," is the perfect word to describe the lighting in the Fashion design studio. With a consistent Correlated Color Temperature (CCT) of 4100K and a relatively high Color Rendering Index (CRI) of 80, it can be said that this space allows the daylight to have a smooth transition into the space. Linear direct/indirect extruded aluminum fixtures deliver a cool ambient light luminosity throughout the space. The operable walls are accented with linear extruded aluminum fixtures. These specific fixtures have an asymmetric direct distribution and a symmetric indirect distribution segment allowing the fixture to accent/wash the operable walls with light, while at the same time making a meaningful contribution to the ambient light within the studio. Again, windows frame the perimeter of the Fashion Studio excluding the East, which permits a view to the exterior virtually form any point within the studio.

SPECIAL PURPOSE SPACE | PEARLSTEIN GALLERY

EXISTING CONDITIONS

Description

Area (ft2)	Length (ft)	Width (ft)	Ceiling Height (ft)
4,302	69	88	16.5

The Pearlstein Gallery is located on the East side of the URBN Center Annex's ground floor. The space exhibits maneuvering architectural features that help keep the art gallery exciting and captivating. Exposed steel framing predominately makes it mark in the art gallery. Large bracing members allow for a floor to ceiling height of 16.5 and in the Far East section of the gallery the roof reaches up to 20 feeet. The exposed ceiling and steel framing gives a tectonic and modern feel to the architecture. The front façade incorporates four pivoting walls, which open the space up to the public providing a new level of connection between the community and the students.

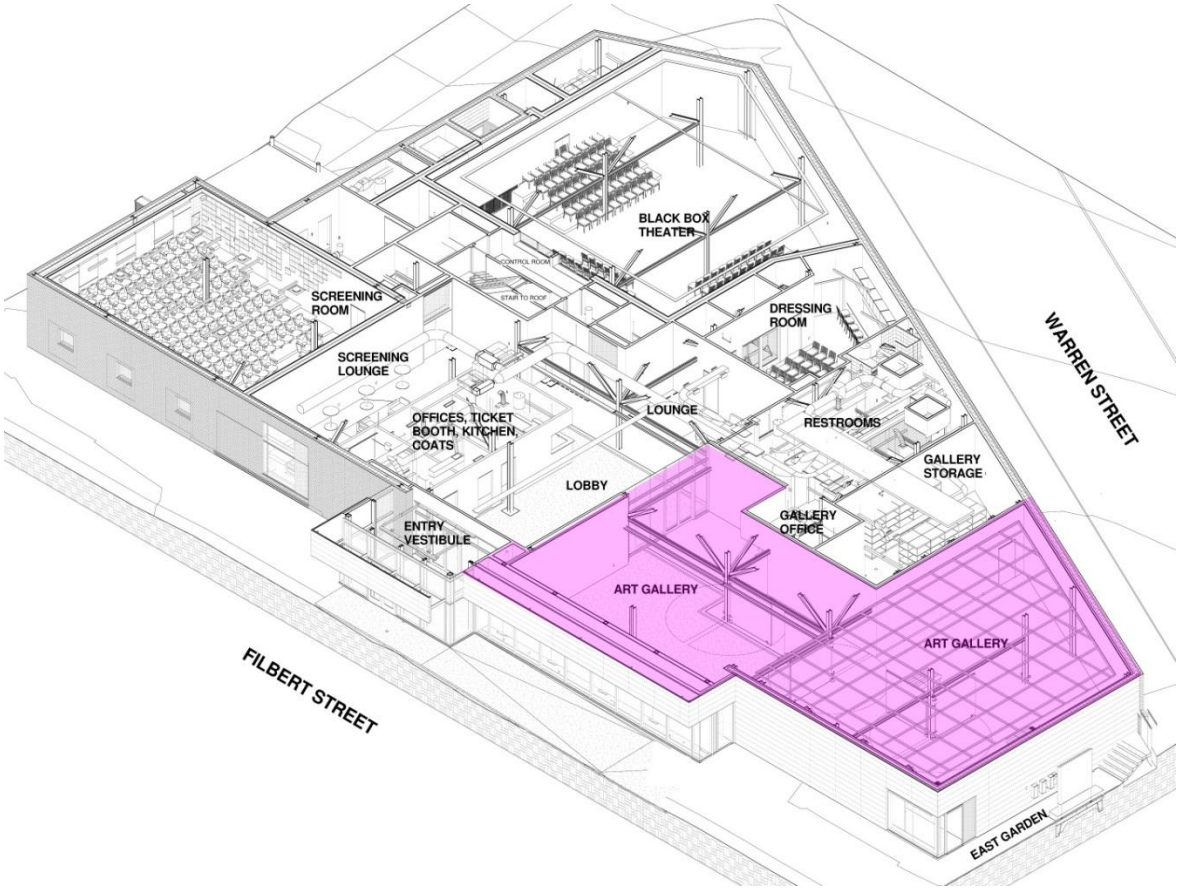


Figure 2.1 | 3D View of Annex

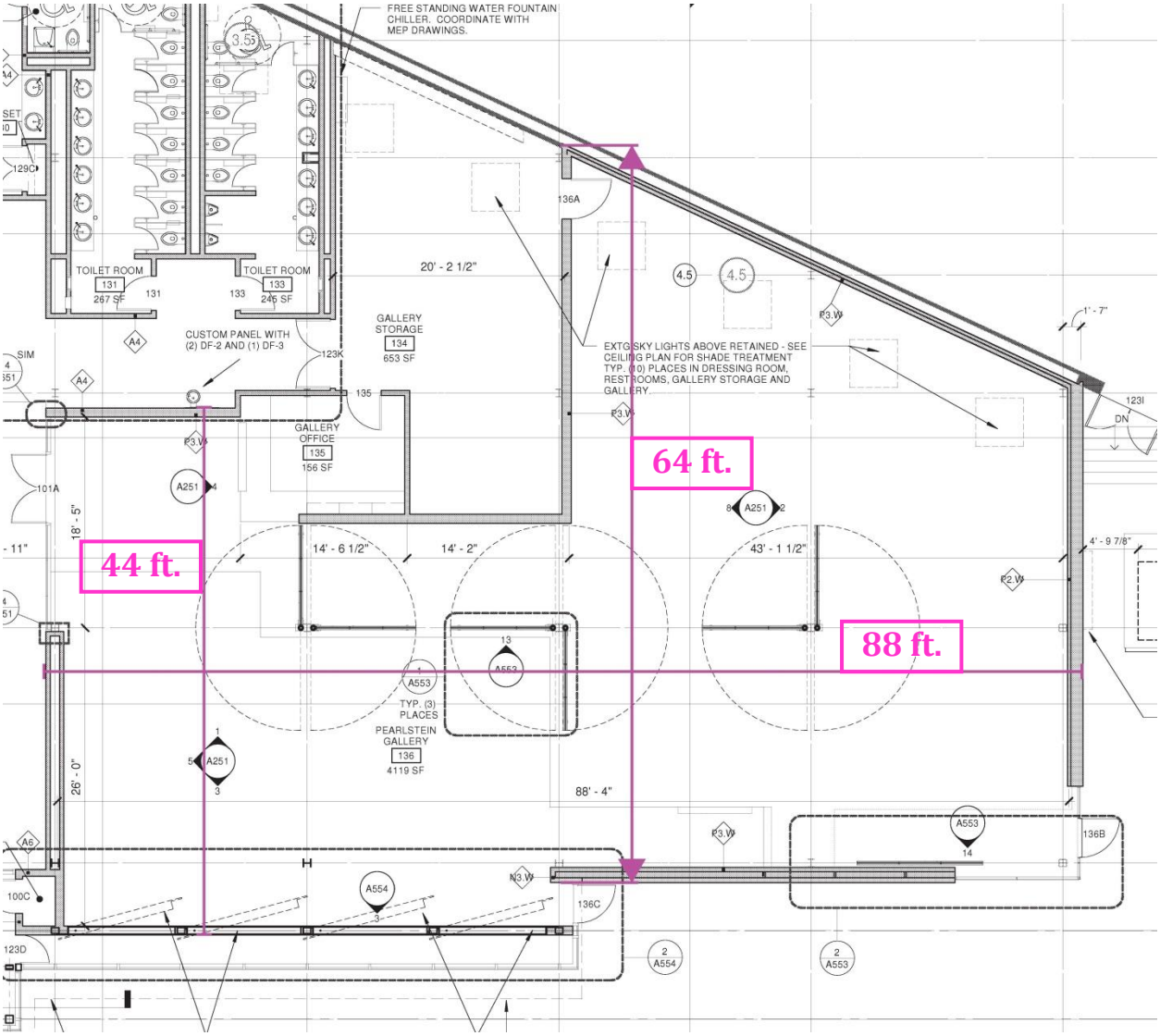


Figure 2.2 | Dimension

Materials/Finishes

Similar to most of the architecture in the URBN Center and URBN Center Annex, the finishes throughout the Pearlstein Gallery are fairly neutral and consist of grey tones. Due to demolition along the South façade of the building, the concrete floor through half of the space has been modified. The new concrete flooring will be similar to the old finish however. Gypsum wall board outlines the gallery and has been painted 'Decorators White'. The entrance of the gallery has been accented with a store front and back lit 'light boxes' to further pronounce the entrance. For full list of materials and finishes see Table 2.3.

Materials/Finishes					
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Reflectance**
Gypsum Wall Board	Partitions	Main paint finish | Eggshell/Satin Latex Paint	Benjamin Moore	Decorators White	0.58
	Accent Paint	Accent paint finish | Eggshell/Satin Latex Paint	Benjamin Moore	Fashion Rose	--
Existing Concrete	Floor	Burnished treated | Level 2 polished concrete - 800 Sheen	--	--	0.47
Visual Display Surface	Partitions / Operable Walls	Tackable cork	Forbo	--	0.59
Metal Wall Panels	North Egress Stairs	Factory formed, single skin, face-fastened metal wall, liner, and soffit panels | Thickness: 0.8 mm	Rheinzink	Blue-Bray	--
Acoustical Ceiling Tile	Ceiling	Thickness: 7/8"| Size: 4' X 4' | NRC: 0.9 | Capz Color: Silver Smooth	Existing Fiberglass Tiles	White	--
Acoustical Ceiling Tile	Ceiling	Thickness: 1-1/2"| Size: 5' X 5' | NRC: 0.9 | Capz Color: Silver Smooth	Existing Fiberglass Tiles	White	--
Structural Steel Framing	Ceiling	Existing interior structural steel framing | Cleaned as required | Existing primer to remain	--	--	--
Cabinets - Upper Sliding Panels	Corridor	Resin Panel | Cabinets - Upper sliding panels	3Form Varia, Color Weave	--	--
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Transmittance**
Interior glazing	Above partitions and operable walls | Storefront	1/4" Clear float glass | Glass access panels	Viracon	Clear	0.91
Exterior glazing	Exterior curtain walls	1" Insulated float glass | Tempered Glass	Viracon	Clear	0.65

Table 2.2 | Materials/Finishes

Lighting Conditions

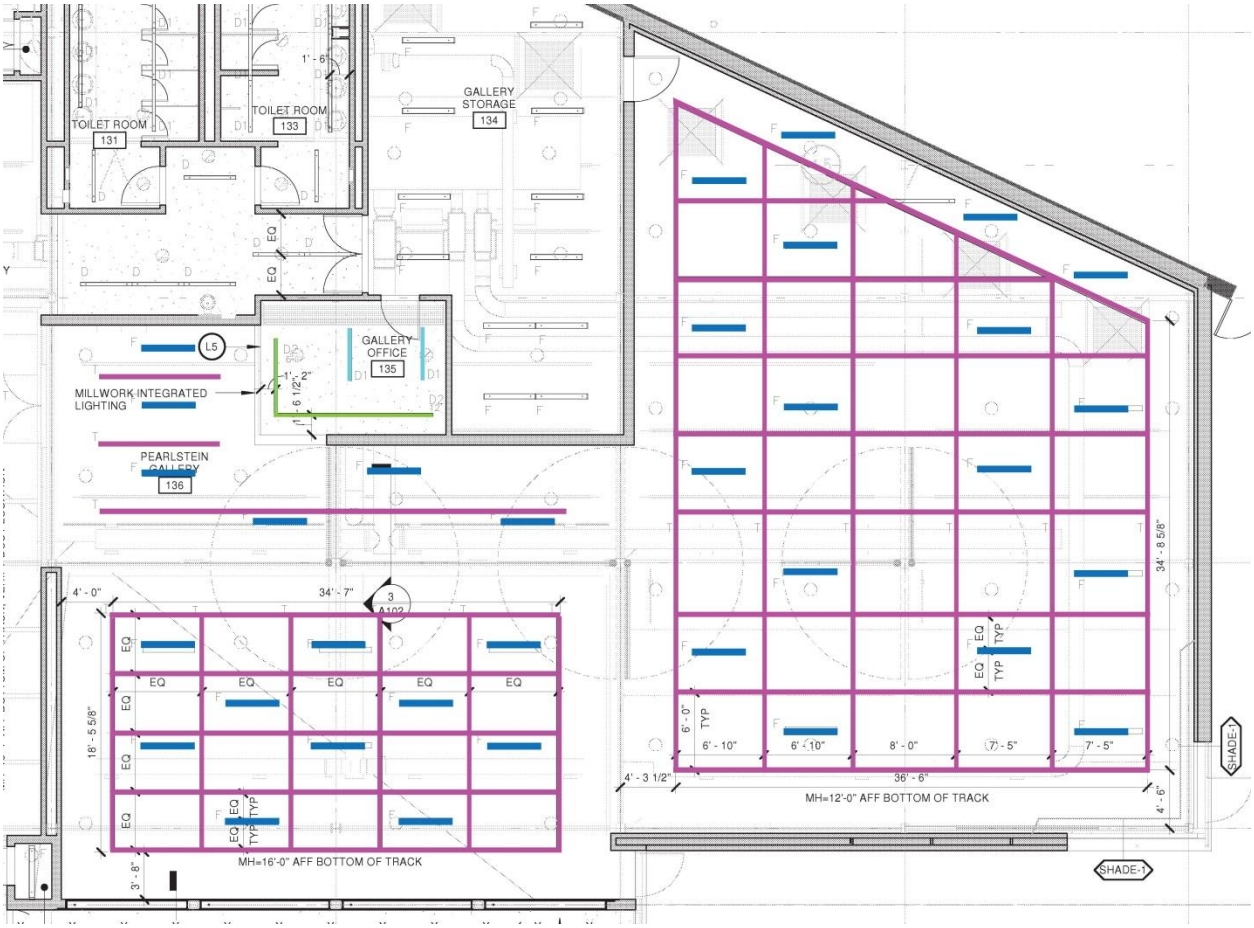


Figure 2.3 | Lighting Fixture Layout

Lighting Equipment					
Designator	**Type**	**Description**	**Mounting**	**Lamp**	**Manufacturer**
	D1	Recessed linear downlight. Nominal 3 in wide by 4 ft long. Regressed diffuse acrylic lens. White painted finish with smooth regress aperture. Tandem wire using two lamp ballast in continuous rows as shown. Provide an additional circuit for emergency power where shown on electrical lighting plans.	Regressed Flange Gypsum Board	(1) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 32W/4 ft	Gammalux
	D2	Linear semi-recessed luminaire. Continuous row lighting system. Nominal 3" X 3" cross section. Diffuse acrylic lens with 2" drop below the ceiling. Standard semi-gloss white painted finish. Use nominal 48" and 36" staggered lamps as required for length shown. tandem wire using 2 lamp ballast. Provide with corner connector.	Semi-Recessed Gypsum Board	(1) 21W FP21T5 (1) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 7.88 w/ln ft	Gammalux
	F	4 ft fluorescent lamp strip. Two lamp section. Provide with wire guard. Provide suspended Unistrut or B-Line structural support channel and all hardware as required for a complete installation. Fixture housing to be Painted After Fabrication.	Chain Hang or surface mount 10'-0" AFF to bottom of light fixture	(2) 32W F032T8 3100 LM 4100K 80 CRI 2 Lamp 0.88 BF PS Ballast 59W/4 ft	Lithonia
	T	Two circuit lighting track with two neutral conductors. Provide suspended Unistrut or B-Line structural channel for mounting track in configurations shown. Track, lamp holders and structural channel to have white finish. Lamp holder to have internal lens retention ring and locking hardware. Provide one UV lens + one heat reduction lens for each lamp holder. Provide one lamp holder for every 4 ln ft of track.	Suspended Structural Channel	(1) 100W PAR38 FLOOD (1) 75W PAR30 SPOT	Lightolier

Table 2.3 | Lighting Equipment

Power Density

The power density was calculated given the watts per linear feet statistic for each luminaire and then multiplying that by the total linear feet each fixture, of which took ballast input watts into consideration. The power density calculated does not take into account the track lighting. The track lighting will be different during different gallery exhibits. Therefore the power density of the Gallery would be far greater than the one described below. Further analysis to come.

Power Density			
Luminaire	**Linear Feet**	**Watts/ln ft**	**Total Watts/Luminaire**
D1	8	8	64.00
D2	18	7.88	141.84
F	132	14.75	742.80
T	887 (Track)	--	--
		Total Watts	1090.84
		Area (ft^2)	4302.00
		LPD	**0.50**

Table 2.4 | Power Density

Controls

All of the lighting controls for the Pearlstein Gallery are also controlled by the Lutron Quantum light management hub located in the URBN Center. All of the track lighting throughout the space can be dimmed. The dimming system is a Lutron Ecosystem. A time clock controls all of the lighting due to the nature of the space. The time clock switch is located behind the gallery's office. In the office there is a 2-pole vacancy sensor switch with manual on/off override capabilities controlling the two different loads.

DESIGN CRITERIA AND CONSIDERATIONS

- IESNA Lighting Design Criteria | Recommended Maintained Illuminance Targets (lux)
  - Circulation/General (Transition Spaces – Circulation Corridors)

The average horizontal and vertical should maintain an illuminance greater than or equal to 0.3 times the task illuminance. A minimum of 10 lux should be maintained for the horizontal illuminance.

The Pearlstein Art Gallery is subject to change through the course of the year and therefore will require different lighting criteria as the exhibits change. Specifics on target illuminances for art work to come.

LIGHTING EVALUATION AND CRITIQUE

The Pearlstein Gallery makes use of track lighting grids that hover over the main exhibits areas. The West exhibit are track lighting grid is set up 16 feet above the finished floor while the track lighting grid located on the East side of the building is raised 12 feet above the finished floor. A 4 foot fluorescent strip light provides general ambient and emergency lighting to the space. These fixtures are chain hung carrying on the industrial look of the exposed ceiling and polished concrete floor. The gallery does introduce a new warmer color temperature with its track lighting. The track lighting will be comprised of 100 watt parabolic flood and 75 watt parabolic spot lights. These fixtures are used to accent and draw attention specific are pieces. The configuration of the exhibit will determine the layout of the halogen fixtures. The layout should induce a psychological impression on the occupants and draw them through the space.

TRANSITION SPACE | LOBBY/LOUNGE

EXISTING CONDITIONS

Description

Area (ft²)	Length (ft)	Width (ft)	Ceiling Height (ft)
3,483	69	88	16.5

Table 3.1 | Dimensions

The lobby of the URBN Center is one of the main attractions the URBN Center has to offer. This space will experience the most traffic compared to the rest of this building. The lobby feature a café with its own designated seat are, a lounge/seating area and a student art gallery. The student art gallery in the URBN Center withholds operable pivot walls, which will showcase student work. This space leads to the atrium, which extends to height of the building allowing natural daylight to spill into the lounge, which will draw the students into the 'lungs' of the building.

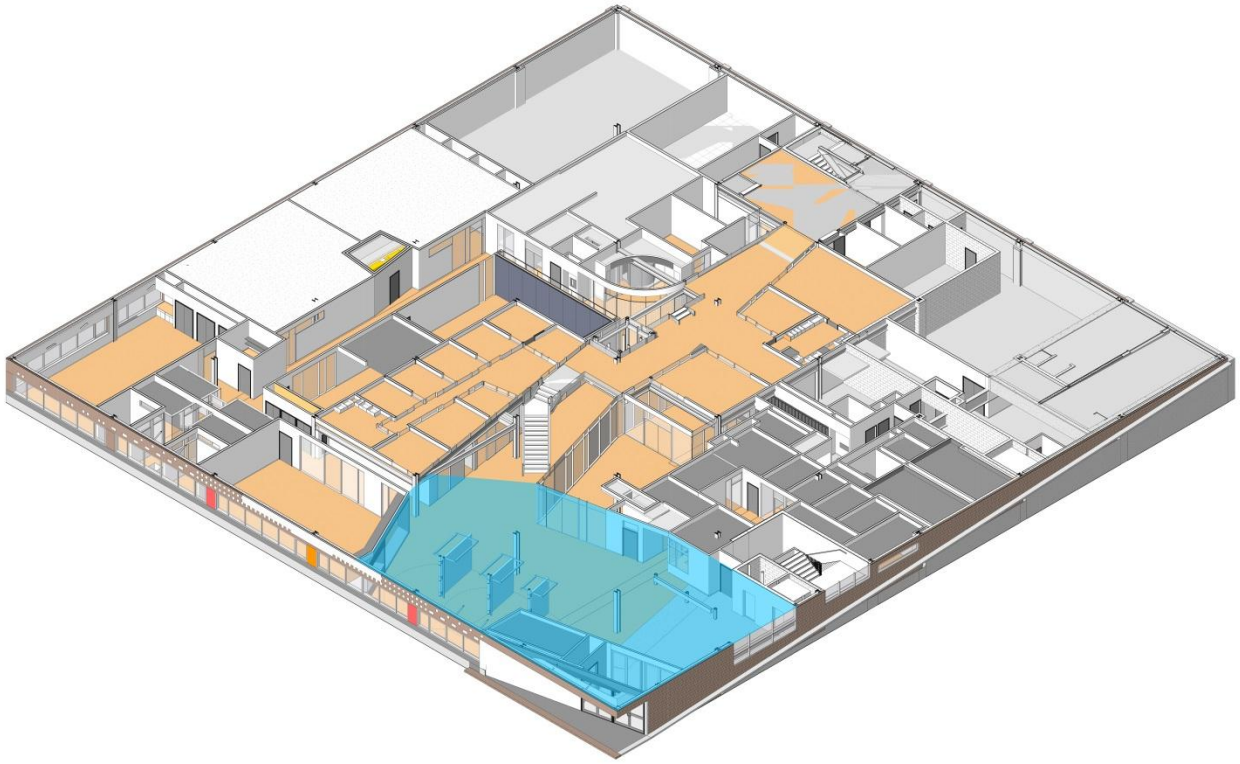


Figure 3.1 | 1st Floor - Lobby

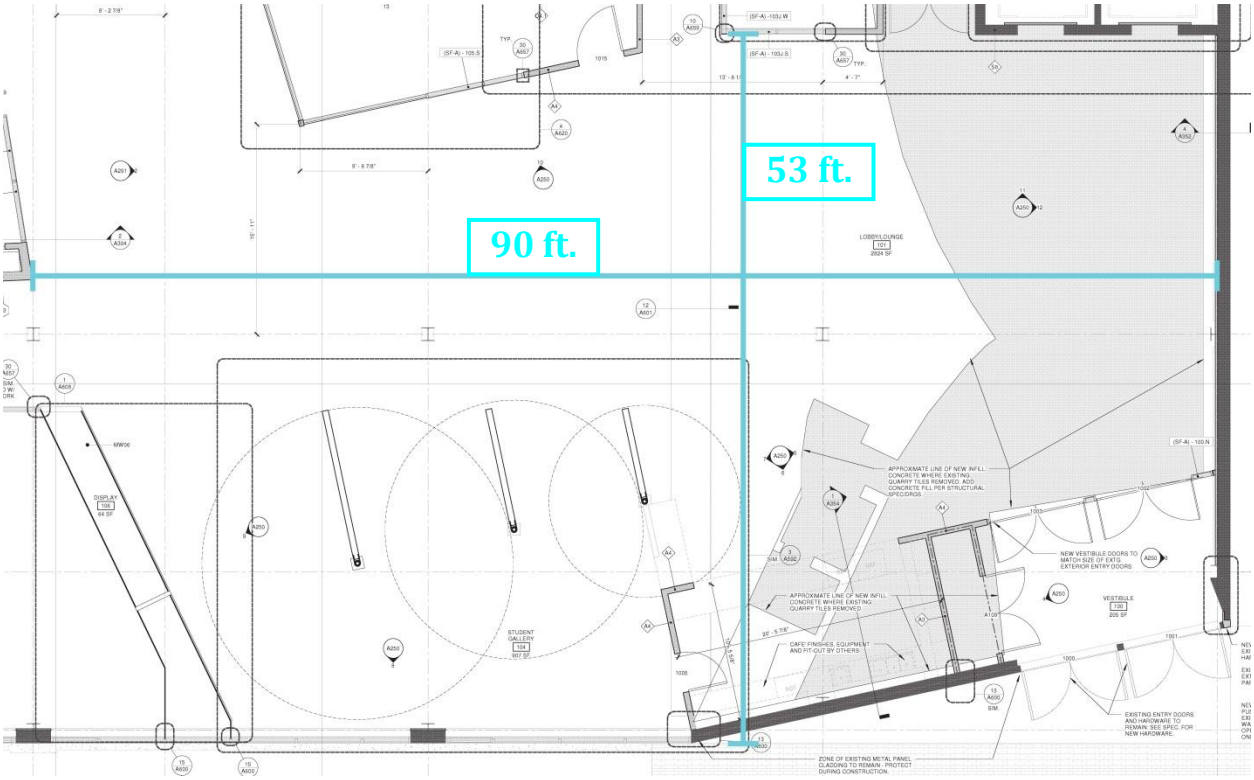


Figure 3.2 | Dimensions

Materials/Finishes

Similar to most of the architecture in the URBN Center and URBN Center Annex, the finishes throughout the Lobby have attained the 'shades of grey" theme. As seen in the dimension drawing above there are two different types of concrete finishes dividing the space into two areas. Gypsum wall board and storefront glass wall partitions outline the lounge. The ceiling has been left unfinished exposing the structural steel beams. A section of the ceiling has been left open to the above and is accented with a projection screen (see Fig 3.4). Acoustical panels run along with the steel framing of the lobby. The operable walls have standard size panel grid layouts allowing for interchangeable future design concepts (see Fig. 3.3).

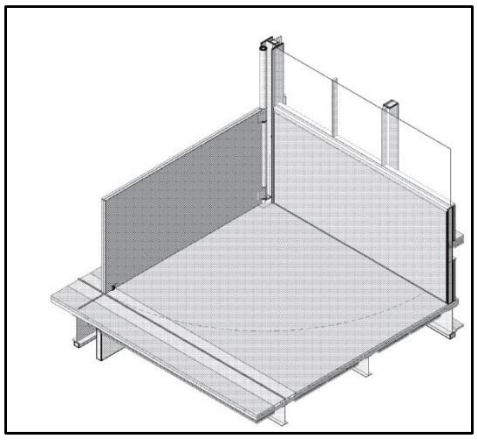


Figure 3.3 | Operable Wall

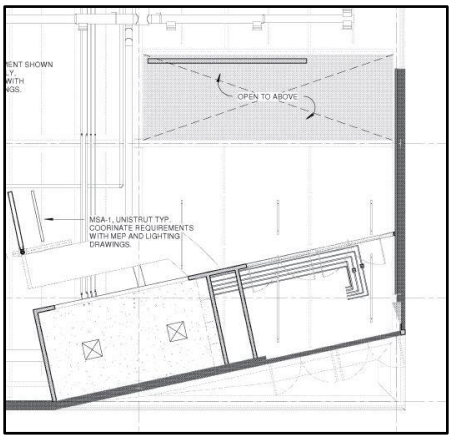


Figure 3.4 | 'Open to above' detail

Materials/Finishes					
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Reflectance**
Gypsum Wall Board	Partitions	Main paint finish | Eggshell/Satin Latex Paint	Benjamin Moore	Decorators White	0.58
Gypsum Wall Board	Partitions	Eggshell/Satin Latex Paint	Benjamin Moore, Affinity Colors	Gray Owl	0.60
Cast-in-Place Concrete	Floor	Exposed concret | Floor seal SL-1			
Existing Concrete	Floor	Burnished treated | Level 2 polished concrete - 800 Sheen	--	--	0.47
Acoustical Ceiling Tile	Ceiling	Thickness: 1-1/2"| Size: 5' X 5' | NRC: 0.9 | Capz Color: Silver Smooth	Existing Fiberglass Tiles	White	--
Concrete Masonary Units	South Curtain Wall	Concrete Masonary Units | Hollow	Existing	White	--
Metal Wall Panels	North Egress Stairs	Factory formed, single skin, face-fastened metal wall, liner, and soffit panels | Thickness: 0.8 mm	Rheinzink	Blue-Bray	--
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Transmittance**
Interior glazing	Above partitions and operable walls | Storefront	1/4" Clear float glass | Glass access panels	Viracon	Clear	0.91
Interior glazing	Interior storefronts	3/8" Clear float glass | Tempered glass	Viracon	Clear	--
Exterior glazing	Exterior curtain walls	1" Insulated float glass | Tempered Glass	Viracon	Clear	0.65

Table 3.2 | Materials/Finishes

Lighting Conditions

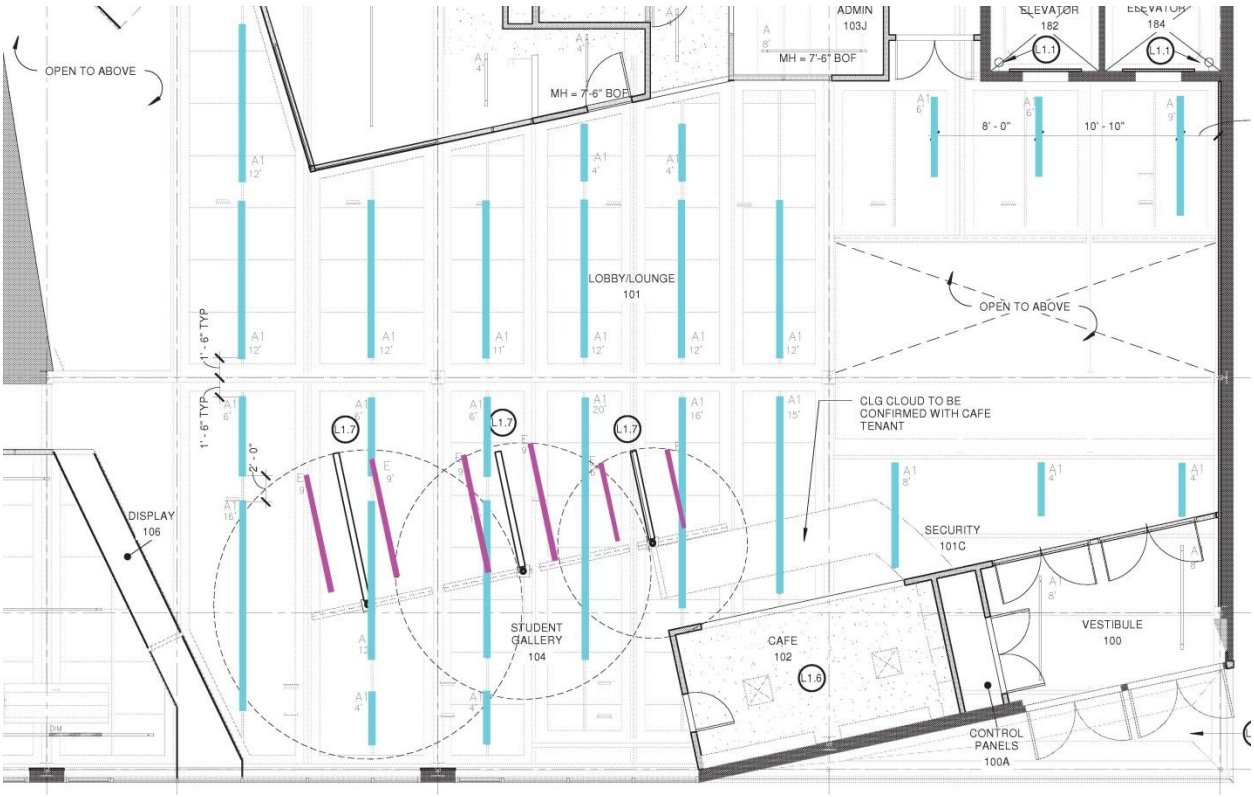


Figure 3.5 | Lighting Equipment Layout

Lighting Equipment					
Designator	**Type**	**Description**	**Mounting**	**Lamp**	**Manufacturer**
	A1	Linear direct\inderect extruded aluminum luminaire. Nominal 2" X 4" cross section. Open up with wide light distribution reflector. Diffuse acrylic lens down. Tandem wire using two lamp ballast. Provide two circuits for independent control of indirect and direct light. Matte white housing finish.	Air Craft Cable Suspension 9'-4" AFF to bottom of light fixture	(2) 28W FP28T5 4100K 80 CRI 2 Lamp PS Ballast 2 Lamp Ecosystem H 1% Dimming Ballast 15.75 W/ln ft	Focal Point
	E	Linear extruded aluminum luminaire. Asymetric light distribution. Nominal 3" X 3" cross section. Clear Alzak reflector. Tandem wire using two lamp ballast. 24" mounting bracket. Matte white housing finish.	Cantilever Wall Mount	(1) 21W FP21T5 4100K 80 CRI Cross section 2 Lamp PS Ballast 7.83 W/ln ft	Focal Point

Table 3.3 | Lighting Equipment

Power Density

The power density was calculated given the watts per linear feet statistic for each luminaire and then multiplying that by the total linear feet each fixture, of which took ballast input watts into consideration. The power density calculated does not take into account the Café or Vestibule lighting.

Power Density			
Luminaire	**Linear Feet**	**Watts/ln ft**	**Total Watts/Luminaire**
A1	245	15.75	3858.75
E	48	7.83	375.84
		Total Watts	4234.59
		Area (ft2)	3482.00
		LPD	**1.22**

Table 3.4 | Power Density

Controls

All of the lighting controls for the Lobby are controlled by the Lutron Quantum light management hub located in the URBN Center. The lobby features no dimming elements. Due to the nature of the lobby are the lights are to be left on at all times.

DESIGN CRITERIA AND CONSIDERATIONS

- IESNA Lighting Design Criteria | Lighting For Common Applications
  - Lobbies

Recommended Maintained Illuminance Targets (lux)

Recommended Maintained Illuminance Targets		
Horizontal (lux)	**Vertical (lux)**	**Uniformity Ratio (Hor.)**
100 (Day)	30 (Day)	4:1
50 (Night)	20 (Night)	4:1

Table 3.5 | Target Illuminances

Most of the occupants that will be in the space are in college and therefore between the ages of 25 and 65 so these specific target illuminances are shown below.

LIGHTING EVALUATION AND CRITIQUE

Linearity seems to be the dominant role throughout the entire building and it again is featured in the Lobby. Extruded aluminum linear fluorescent fixtures stripe the ceiling and deliver indirect and direct lighting. An interesting design aspect is introduced in the student gallery. The fixtures here have been custom fit to the operable walls which can be rotated. This unique mounting ensures an even and uninterrupted light distribution over the wall's panels.

Outdoor Space | Annex Façade and Patio

EXISTING CONDITIONS

Description

Area (ft2)	Length (ft)	Width (ft)	Facade Height (ft)
5,104	20	207	20

Table 4.1 | Dimension

The Exterior façade of the

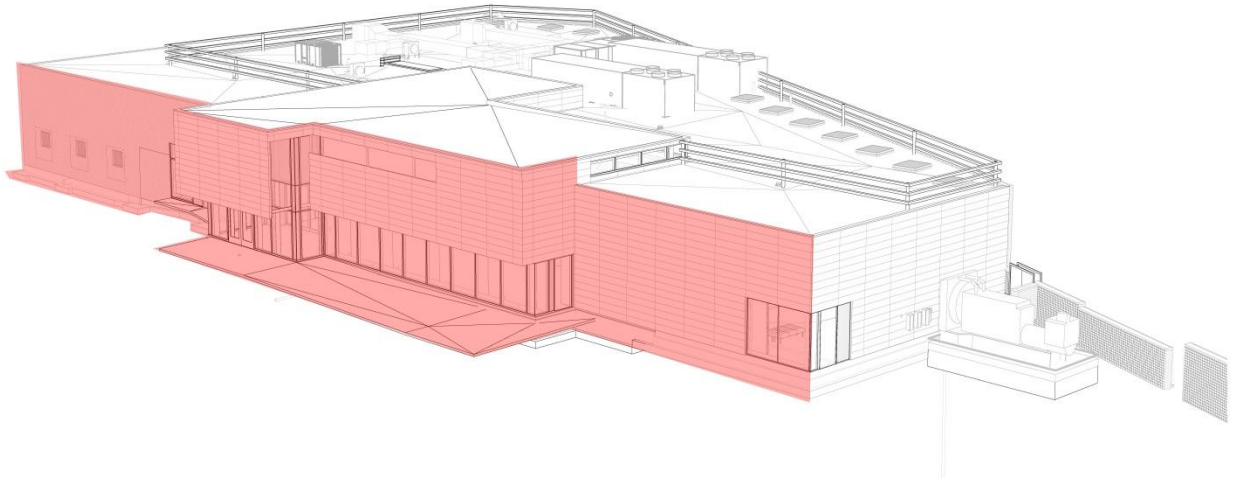


Figure 4.1 | Annex Facade

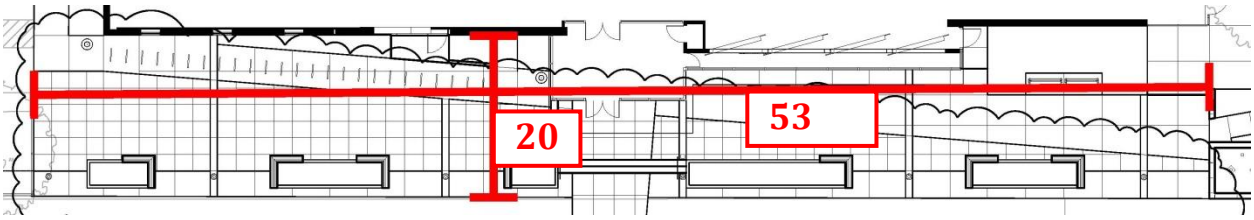


Figure 4.2 | Dimensions

Materials/Finishes

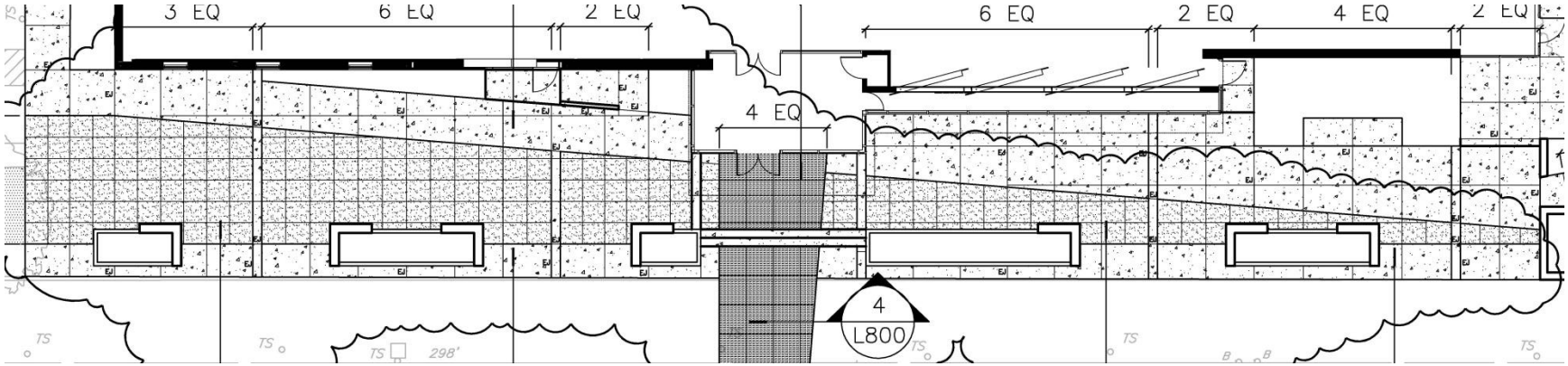
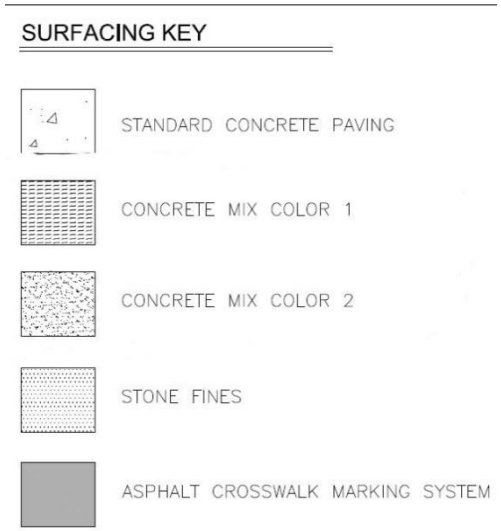


Figure 4.3 | Concrete Surface - Plan view



Materials/Finishes					
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Reflectance**
Glazed Aluminum Curtain Wall	Annex South Façade	Conventioanally glazed aluminum curtain walls | 2.5' X 2.25' Frame size | Insulated glazing	EFCO	--	--
Exterior Metal Wall Panels	Annex South Façade	Metal composite wall systems | Thickness: 4mm	Centria Architectural Systems	Chromium Gray	--
Aluminum-Framed Entrances and Storefronts	Entrance Door	Storefront framing			
Type	**Location**	**Description**	**Manufacturer**	**Color**	**Transmittance**
Exterior glazing	Exterior curtain walls and doors	1" Insulated float glass | Tempered Glass	Viracon	Clear	0.65

Table 4.2 | Materials/Finishes

Lighting Conditions

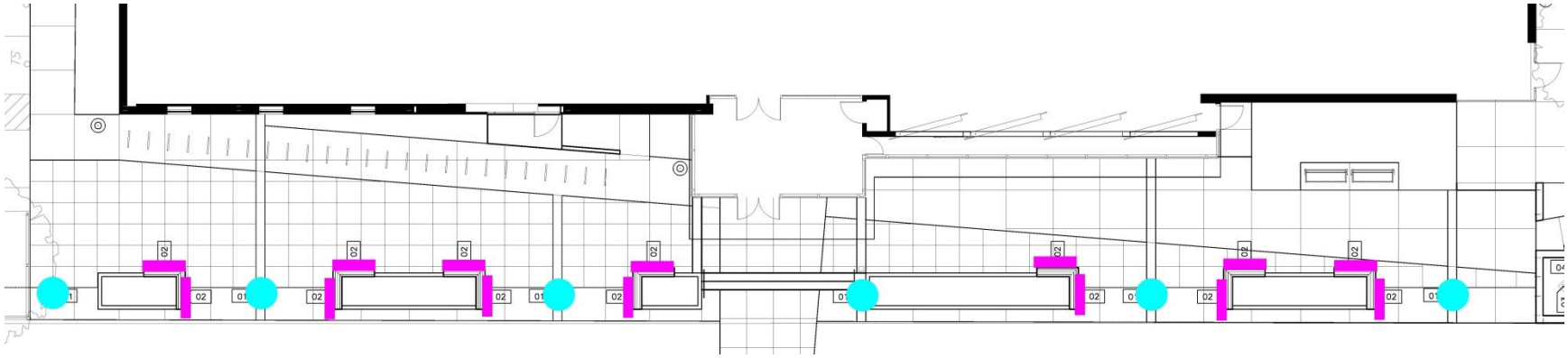


Figure 4.4 | Lighting Equipment Layout

Lighting Equipment					
Designator	**Type**	**Description**	**Mounting**	**Lamp**	**Manufacturer**
	A	Louis Poulsen "KIPP" post light. Die-cast aluminum frame. Black paint finish. QL induction optic system. Cutoff distribution.	Post top mount on cylindrical pole	85W LED	Louis Poulsen
	B	Recessed wall - Linear diffused LED. Stainless steel chasse with aluminum end cap. Tempered flush glass with internal translucent white ceramic coating.	Recessed wall	9.5 W LED (24 V DC)	Bega

Table 4.3 | Lighting Equipment

Power Density

The power density was calculated given the watts per fixture and then multiplying that by the total amount of fixtures.

Power Density			
Luminaire	**Amount**	**Watts/Luminaire**	**Total Watts/Luminaire**
A	6	85	510.00
B	14	9.5	133.00
		Total Watts	643.00
		Area (ft2)	5103.00
		LPD	**0.13**

Table 4.4 | Power Density

DESIGN CRITERIA AND CONSIDERATIONS

- IESNA Lighting Design Criteria | Lighting For Exteriors
  - Facades – medium Activity (Reflectance ≥ 0.5)

Recommended Maintained Illuminance Targets (lux)

Most of the occupants that travel through this space are in college and therefore between the ages of 25 and 65 so these specific target illuminances are shown below.

Recommended Maintained Illuminance Targets		
Horizontal (lux)	**Vertical (lux)**	**Uniformity Ratio (Hor.)**
--	200	--

Table 4.5 | Illuminance Targets

LIGHTING EVALUATION AND CRITIQUE

Top-post mounted Louis Poulsen lighting provide the adequate lighting to the exterior patio of the URBN Center Annex, while slender wall recessed LED's are used to delineate the edges of the benches. The building façade is left untouched, beside the spill light acquired from the adjacent street lighting and patio lighting.