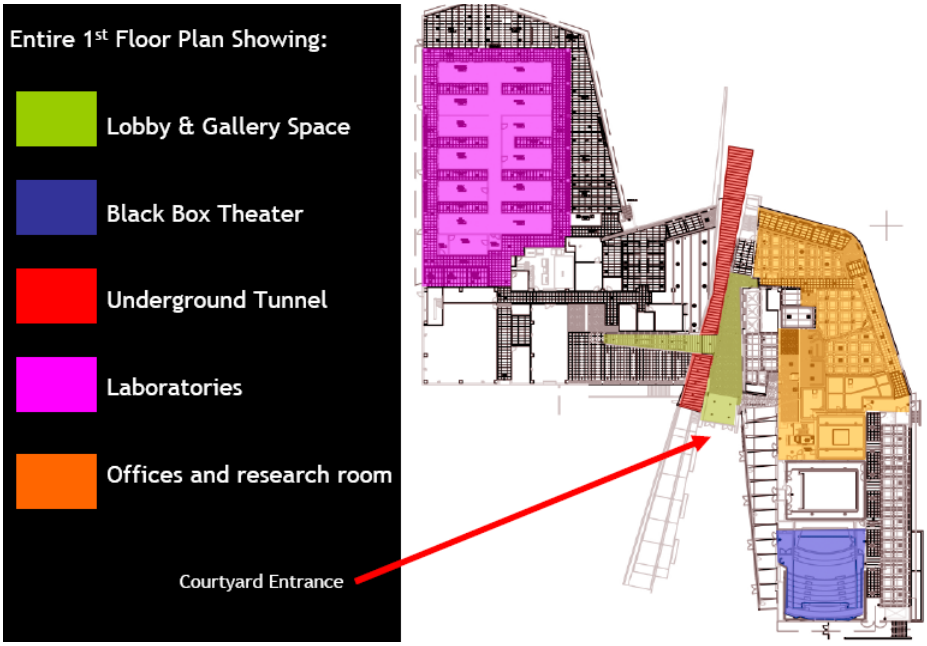
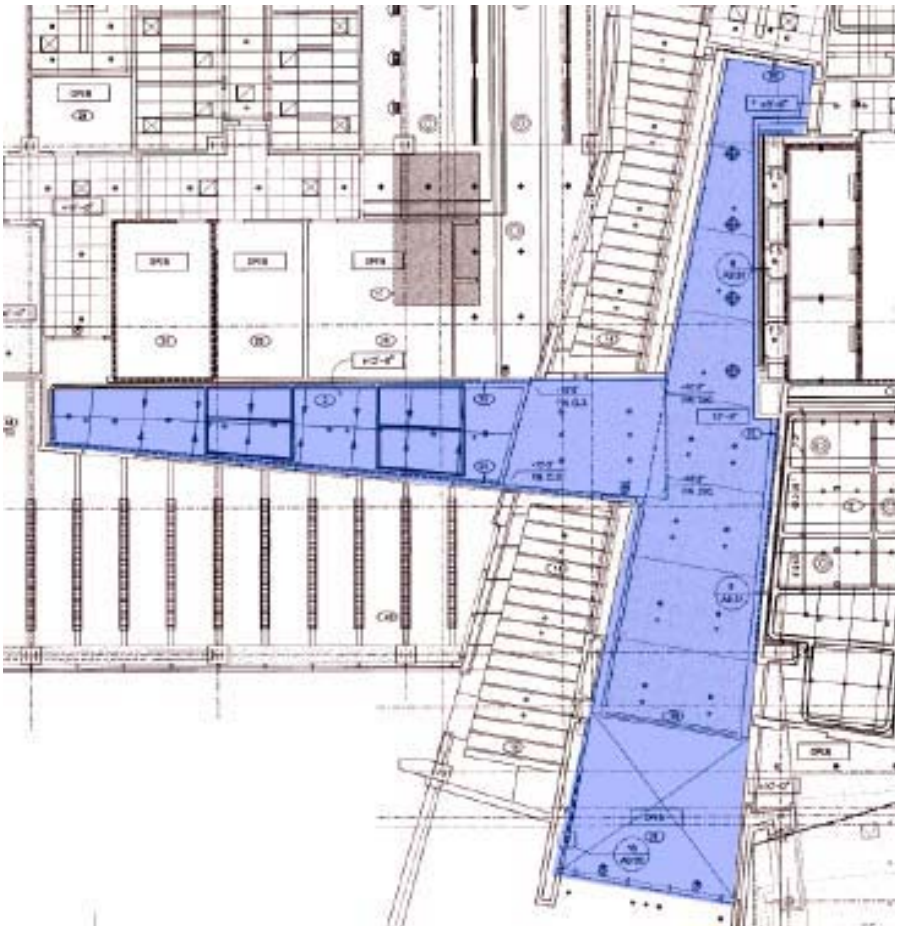
Main Entrance Lobby

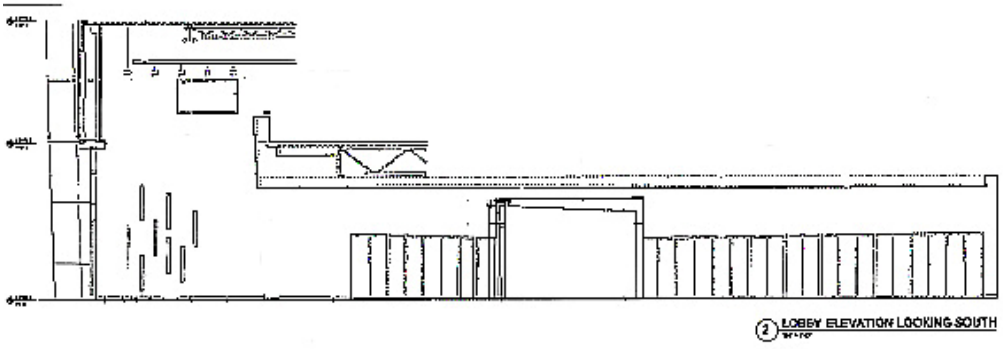
The main entrance lobby of Cal IT^2 is located on the first floor of building section B looking into the academic courtyard. The dark glassed façade leads into this space with a technological feel to it. The lobby is constructed with three different ceiling heights (entrance at 32 ft, main area at 12.75 ft, and the gallery at 10 ft). These ceiling heights defined spaces into little areas by which I designed the lighting atmospheres. This lobby however, is a very odd shape. The main entrance leads down a long converging hallway to the elevators and another hallway. Jutting out to the side is the gallery space which looks into the server room (the hub of the building) and also leads down a narrow converging space to yet another hallway. Another main feature of this space is the ¾ height windows that look into the underground tunnel going through the building. As talked about later, a lighting display will be seen from the tunnel into the space. The main function of this space is to guide people through to their destination. It gives an initial feel for the building and showcases the technological advancement of projects and experiments through art and equipment. My purpose for this space is to provide an impression of what Cal IT^2 is about as the people walk through.



Lobby and Gallery Layout



Lobby Section



Design Criteria

Reflectances and Materials

Walls: 50% (White and Light green paint from Sherwin Williams)
Ceiling: 80% (White coved ceiling)
Floor: 30% (Terrazzo glass and stone pour in place flooring)
Glass: 80% transmittance clear glazing
Façade glass: 14% transmittance tinted glazing
Black leather furniture chairs: 30-40% reflectance
Small tables: 42% reflectance

Ceiling Characteristics

The ceiling in the lobby is multistoried. When first entering, the ceiling expands up to the exposed truss system 32 ft high. As you continue on, the second floor creates a cove ceiling the rest of the way at 12'-9" high. The bridge over the tunnel has another ceiling that is sloped at only 10 ft high. Because of the differing ceilings, many different lights can be used to emphasize the size of the space, the length of the space and the jagged edges that all the ceilings create when put together. These ceilings also define the three different areas by which the lobby is defined: entrance area, guiding area, and the gallery.

Theme

As you enter the space, the lobby is meant to invite you into the building and give a sense of what it is hiding inside. In Cal $(IT)^2$, the blue cove lights, modern hanging custom pendants, and misshaped ceilings give a sense of modern improvement and the advancement of building technology. This is the sense that I am going to highlight in my redesign. Clean lines should be able to guide people through this space. I want to avoid anything blocking a clean line to the destination. All fixtures should appear hidden and recessed.

Horizontal Illuminance

In the lobby, a horizontal illuminance of 5-10 fc is sufficient for circulation and entering according to the IES standards. It is a simple orientation to the building with only a short visit.

Vertical Illuminance

In the lobby, a vertical illuminance of 3 fc is needed.

Daylight Integration

This space has large tinted glazing windows when you first enter the space from the courtyard in the East. Daylight can help generate much of the light needed during the

daytime hours to illuminate the immediate two story space upon entering; however, since the windows are tinted, the pendants will need to be used during the early dusk hours to generate enough light on the floor. A daylight photosensor will be used to turn these fixtures on and off. More on the controls can be found in my electrical depth section.

Color and Texture

For this technological building, all of the walls are painted grey, white and a lightened green. The choice of these colors really emphasizes its use as an educational facility while also showing a form of design. Accenting these colors well can create an atmosphere pleasant and suitable for the growing technology that is being designed within its walls. All textures are very clean and smooth. The chairs in the lobby are designed with black smooth leather, the window mullions with smooth extruded aluminum.

Glare Consideration

Glare should be considered in this space because of the specular surface floor. Since all the fixtures in the lobby are recessed or hidden in coves, they do not cause a problem with this. Another concern was the lighting display in the tunnel shining into the lobby space. This proved to be advantageous since it also provided some light onto the floor as well as give a showpiece to peer at.

Lamping Criteria

A uniform CCT of 4100K will be used in these areas with a CRI of about 82. This keeps in tune with the technological feel of the space as well as renders the works of art on the walls in the gallery well. A color rendering index of 82 is going to be uniform throughout the whole building.

Power Density

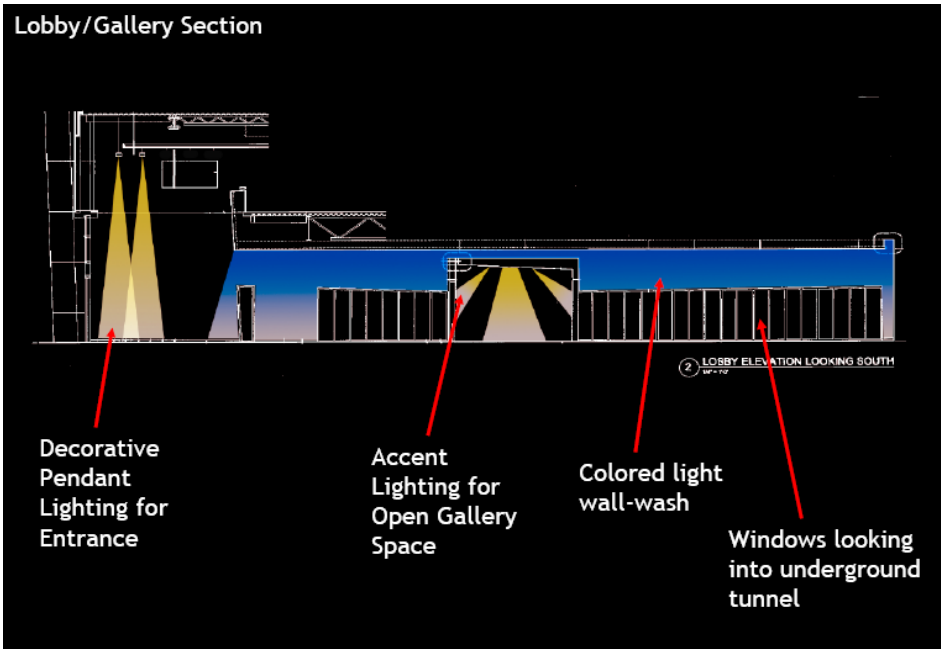
According to California Title 24 Energy Standards, a lobby's power density should be < 1.5 W/SF.

Schematic Design

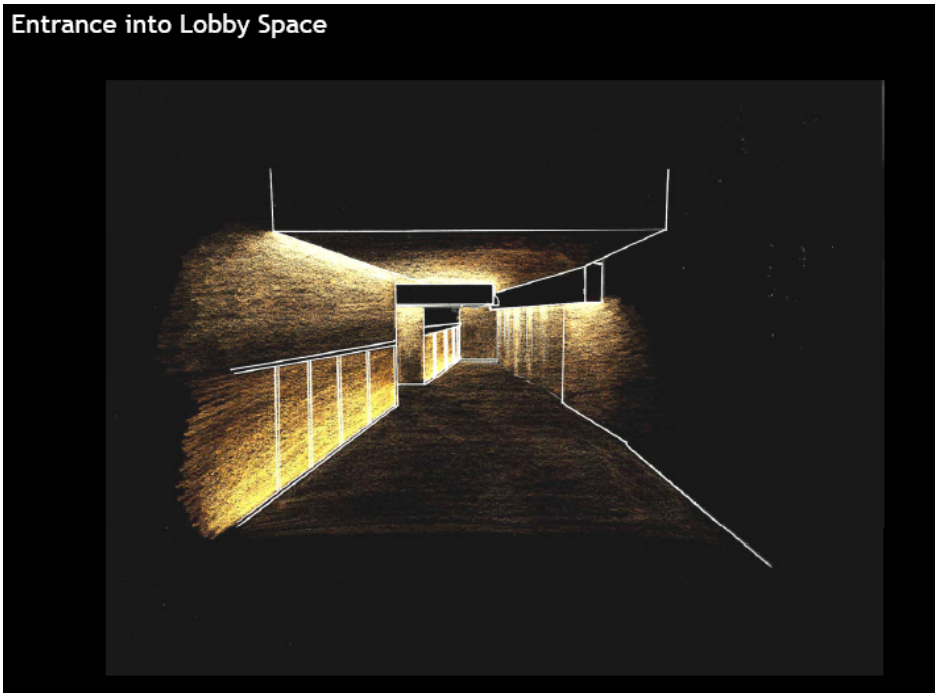
In my redesign, I intend to use light as the guiding tool for people to follow. Upon first entering the large open area of the entrance, one will be able to gaze up at the large clean lined custom fixtures hanging in various lengths from the 32 ft ceiling. As you continue through the space, coves of colored and white light lead your way to the elevators and hallway at the end of the converging lobby. Using lines of guiding light in the ceiling and walls, I hope to achieve a directional space that shows the creativity and technological advancement of the building and its occupants. Using the same concept, I

will be using long converging lines of light to lead people into the gallery area and building section A. With the sleek, clean design, I hope to achieve a statement of triumph for the telecommunications institute this building encompasses. The following diagram shows a section of the lobby space with these concepts in place.

Section of Lobby Showing Schematic Design



Schematic Design Sketch Showing Entrance View



Lighting Fixture Schedule
University of California, San Diego Cal IT2

Type		Mfr/Catalog #	Lamping	Notes
B14		**Cooper Ltg - Corelite CI-SN-1T8-1-C-277-08** Description: Fluorescent cove light with 1-F32T8 (48in) lamp (in cross-section).	1-F32T8 (48in) lamp (in cross-section)	Location: Lobby
B15		**Cooper Ltg - Corelite CI-SN-1T8-1-C-277-08** Description: Fluorescent cove light with blue gelled 1-F32T8 (48in) lamp (in cross-section).	1-F32T8 (48in) lamp (in cross-section)	Location: Lobby
B16		**Edison Price TPX 132/6** Description: 6" recessed compact fluorescent downlight with 1-CFTR32W lamp. Optics: anodized aluminum parabolic reflector.	1-CFTR32W lamp	Location: Lobby
B17		**Erco 88120.023** Description: 6" recessed halogen accent light with 1-MR16 50W max lamp.	1-MR16 50W max lamp	Location: Lobby
B18		**Zumtobel Staff SLR2-*-1285-*** Description: Recessed fluorescent downlight with (1) 28W T5 lamp in cross section.	(1) 28W T5	Location: Lobby
B19		**D'AC Custom Design** Description: A 4' pendant with extruded aluminum body and blue opal glass inserts. Hung by aircraft cable with separated housings.	(2) 32W CFTR lamps	Location: Lobby Entrance

All fixture cut-sheets can be found in the appendix.

Fixture Relevant Schedules

Ballast Schedule

Ballast	Voltage	Lamp	Input Wattage	Input Current	Fixtures	Dimming	Elec/Mag	Manufacturer
BAL1	277V	(2) 32W T8	68	0.25	B1, B2, B13	Yes	E	Advance
BAL2	277V	(1) 32W CFTR	36	0.13	B3, B5, B6, B16	No	E	Universal
BAL3	277V	(1) 13W CFT	20	0.26	B7	No	M	Advance
BAL4	277V	(1) 17W U T8	17	0.08	B8	Yes	E	Lutron
BAL5	277V	(2) 42W CFTR	80	0.36	B9	Yes	E	Advance
BAL6	277V	(1) 32W T8	35	0.13	B10	Yes	E	Advance
BAL7	277V	(1) 13W CFQ	18	0.07	B11	Yes	E	Advance
BAL8	277V	(2) 32W U T8	65	0.25	B12	Yes	E	Lutron
BAL9	277V	(2) 32W T8	59	0.21	B14, B15, E7, E11, E12	No	E	Advance
BAL10	277V	(1) 28W T5	30	0.11	B18	No	E	Advance
BAL11	277V	(1) 135W LPS	135	0.2	E1	No	M	Advance
BAL12	277V	(1) 39W T6 MH	44	0.16	E2, E9	No	E	Advance
BAL13	277V	(1) 9W CFT	14	0.17	E3	No	M	Advance
BAL14	277V	(1) 13W CFQ	24	0.24	E4	No	M	Advance
BAL15	277V	(2) 28W T5	60	0.22	E6	No	E	Advance
BAL16	277V	(1) 70W T6 MH	79	0.29	E10	No	E	Advance
BAL17	277V	(1) 32W CFTR	32	0.28	B19	Yes	E	Advance

All ballast cut-sheets can be found in the appendix.

Lamp Information

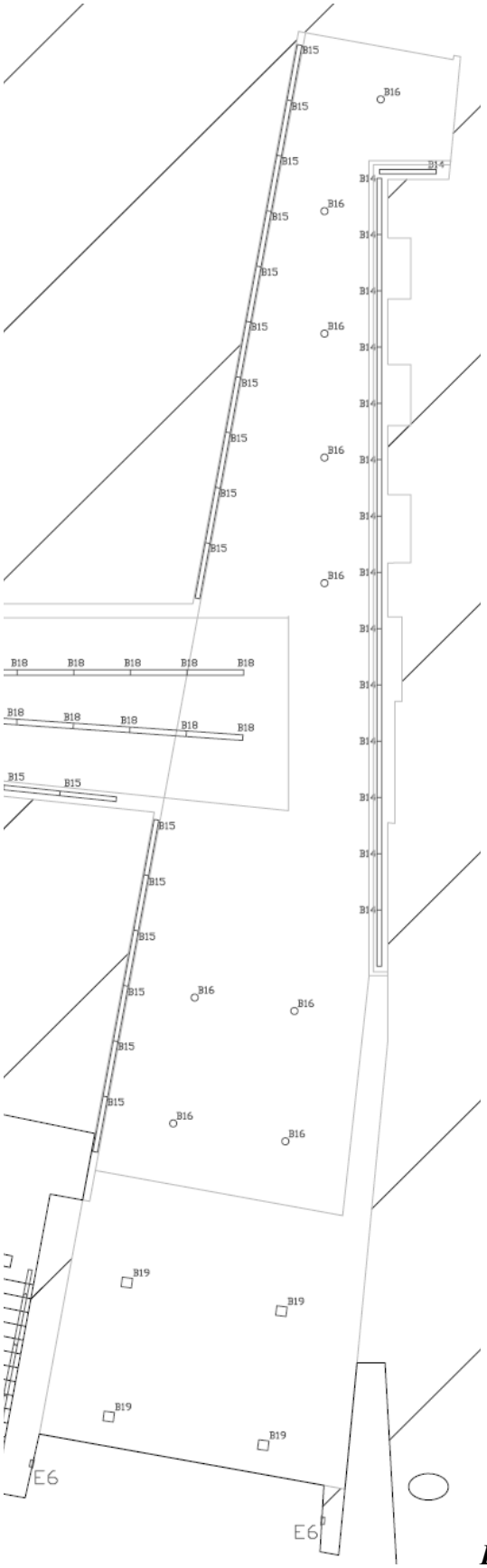
Designation	Manufacturer	Type	Bulb	Wattage	CCT	CRI	Relevant Fixtures
A	Philips	Fluorescent	T8 FL	32W	4100K	86	B1,B2,B10,B13,B14,B15,E7,E11,E12
B	Philips	Compact FL	CFTR	32W	4100K	82	B3,B5,B6,B16
C	Philips	Compact FL	CFT	13W	3500K	82	B7
D	Sylvania	Fluorescent	FBT8 FL	17W	3500K	82	B8
E	Philips	Compact FL	CFTR	42W	3500K	82	B9
F	Philips	Compact FL	CFQ	13W	3500K	82	B11
G	Philips	Compact FL	CFQ	13W	3000K	82	E4
H	Philips	Fluorescent	FBT8 FL	32W	3500K	85	B12
I	Philips	Fluorescent	T5 FL	28W	4100K	85	B18,E6
J	Philips	Halogen	MR16	50W	3050K	100	B17
K	Philips	Low Pressure Sodium	SOX	135W	1700K	NA	E1
L	Philips	Metal Halide	T6	39W	3000K	81	E2,E9
M	Philips	Compact FL	CFT	9W	3000K	82	E3
N	Philips	Incandescent	PAR20	50W	NA	100	E5
O	Sylvania	LED	LED	1W	NA	NA	E8
P	Philips	Metal Halide	T6	70W	3000K	82	E10

Light Loss Factors								
Type	Cleaning Interval	Category	BF	LLD	LDD	RSDD	LLF	Location
B14	12 Months (Clean)	IV	0.88	0.95	0.88	0.95	0.70	Lobby
B15	12 Months (Clean)	IV	0.88	0.95	0.86	0.95	0.68	Lobby
B16	12 Months (Clean)	IV	1.00	0.85	0.88	0.96	0.72	Lobby
B17	12 Months (Clean)	IV	1.00	0.95	0.88	0.96	0.80	Lobby
B18	12 Months (Clean)	V	0.98	0.95	0.88	0.96	0.79	Lobby
B19	12 Months (Clean)	IV	1.00	0.85	0.88	0.96	0.72	Lobby

I assumed a 12 month cleaning interval for all fixtures since the building is located on the University campus. I also assumed a clean environment in the theater since the room will be used intermittently and cleaned after every performance by janitorial staff.

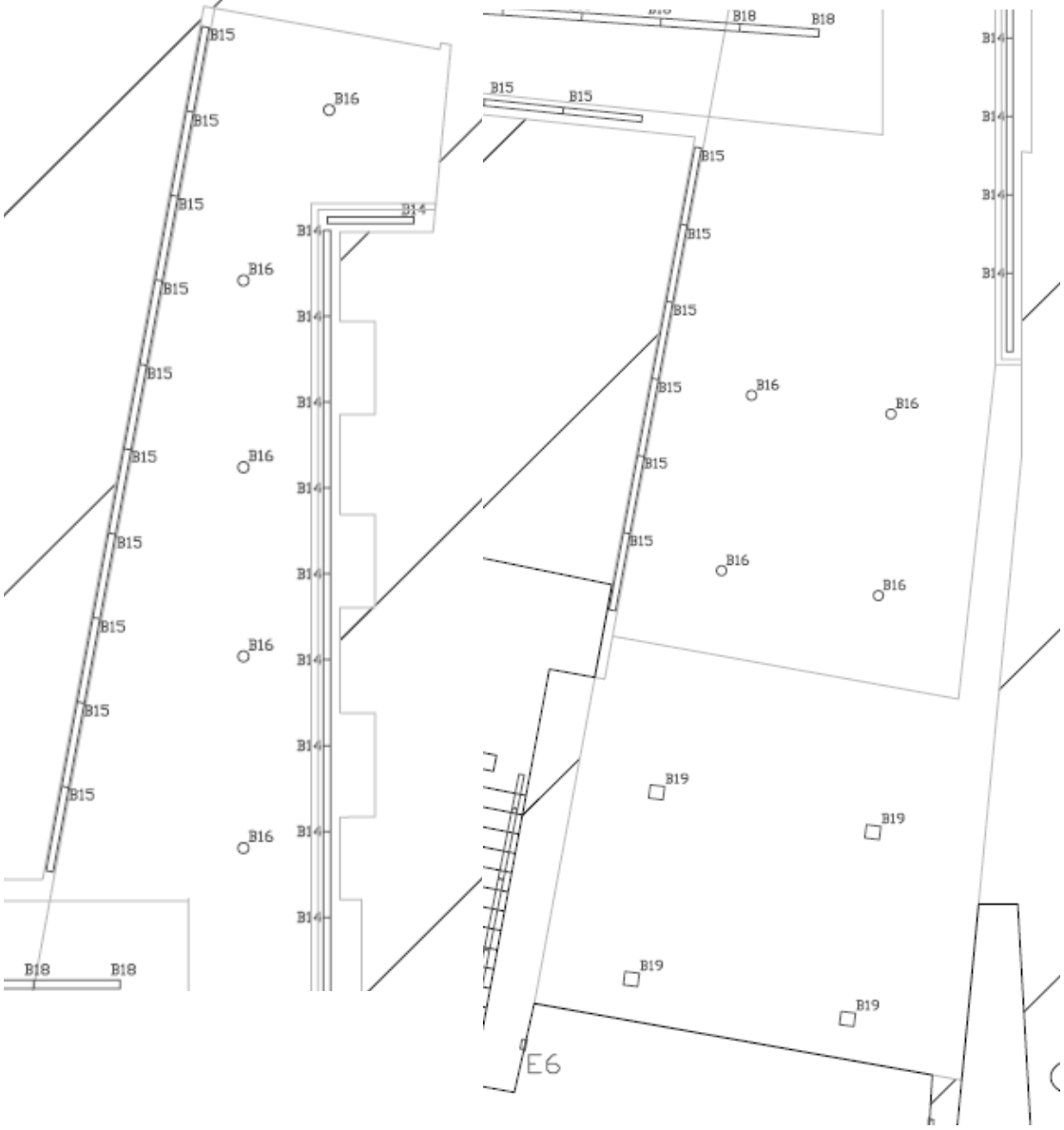
Power Density					
Fixtures	Fixture Count	Watts	Total watts	SF	W/SF
B14	16	29.5	472		
B15	36	29.5	1062		
B16	9	36	324		
B17	7	50	350		
B18	26	30	780		
B19	4	72	288		
			3276	2410	1.36

Using the input wattage from the specified ballasts and lamps, the power density came in under the maximum allowed of 1.5 W/SF which meets California Title 24 standards. An added 1.0 W/sf can also be added for the four decorative fixtures, but is unnecessary because of the already fitting power density.

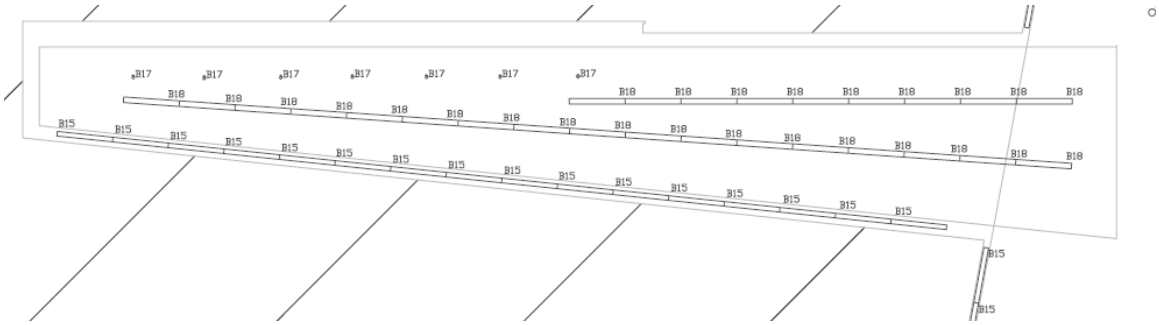


Entire Lobby Section Lighting Plan

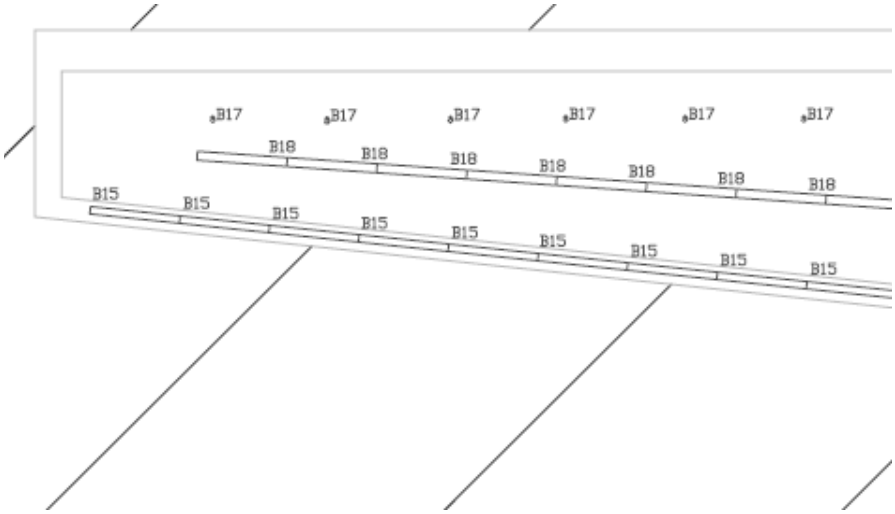
Lobby Close-up Lighting Plan of West and East End



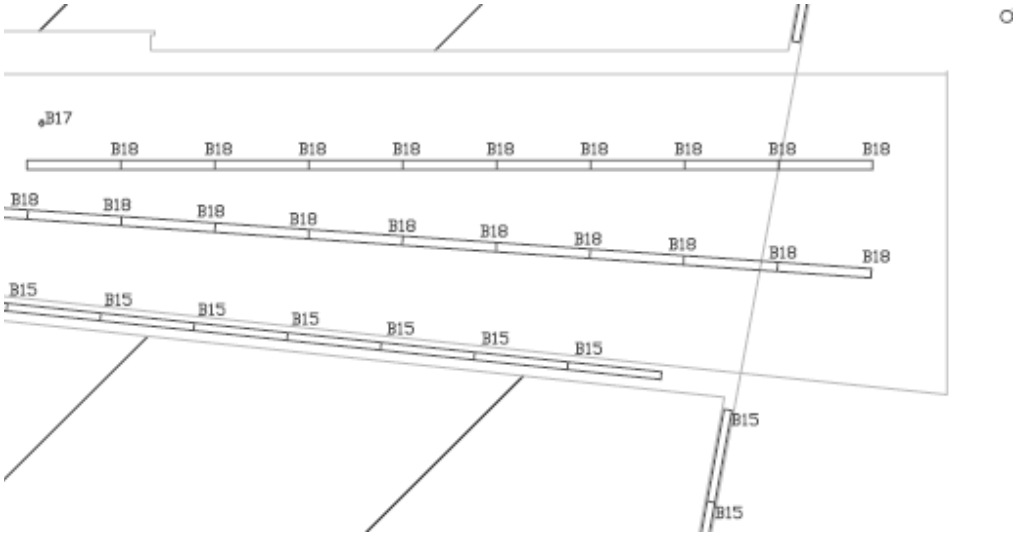
Entire Gallery Lighting Plan



Far South End of Gallery

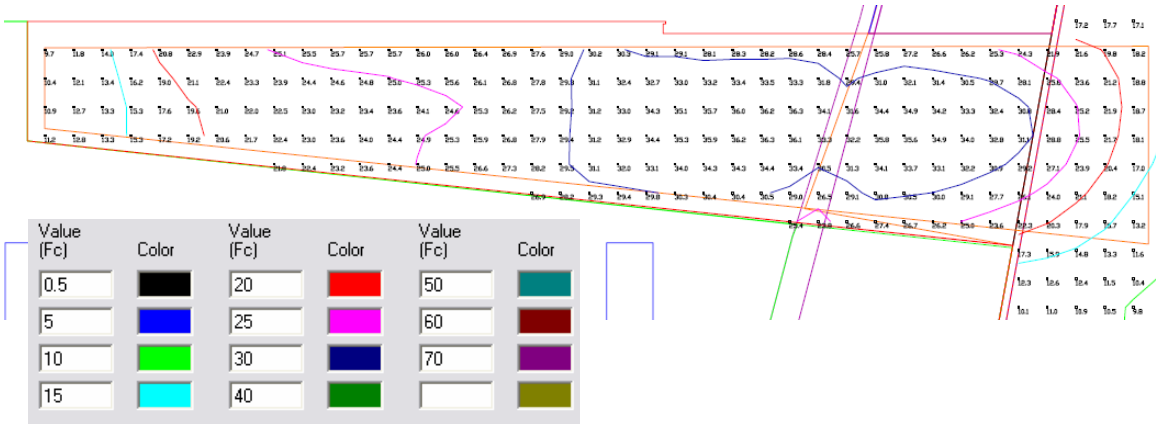


Gallery Continued

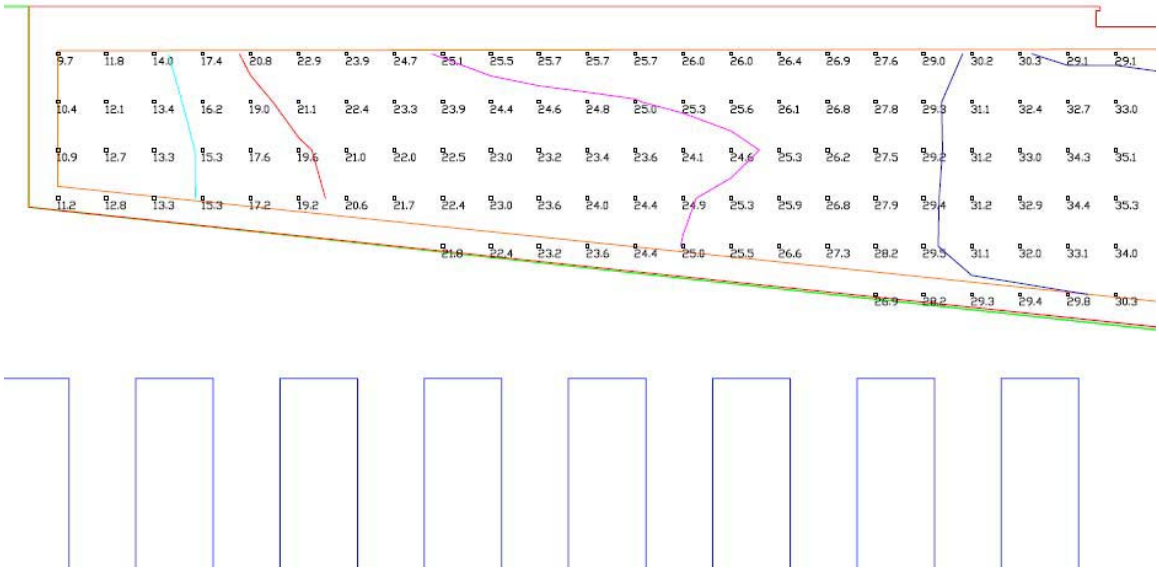


Calculation Grid – Lobby

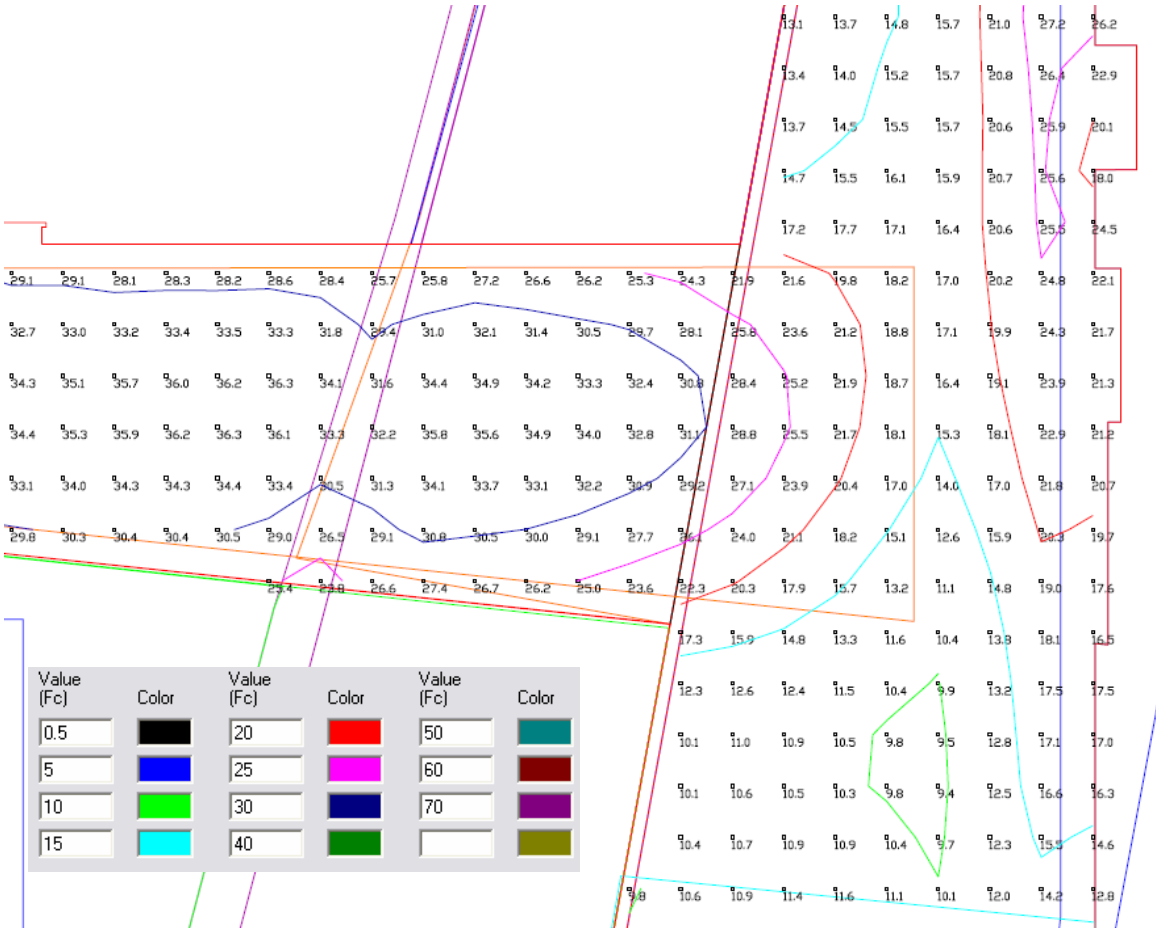
Calculation Grid – Gallery



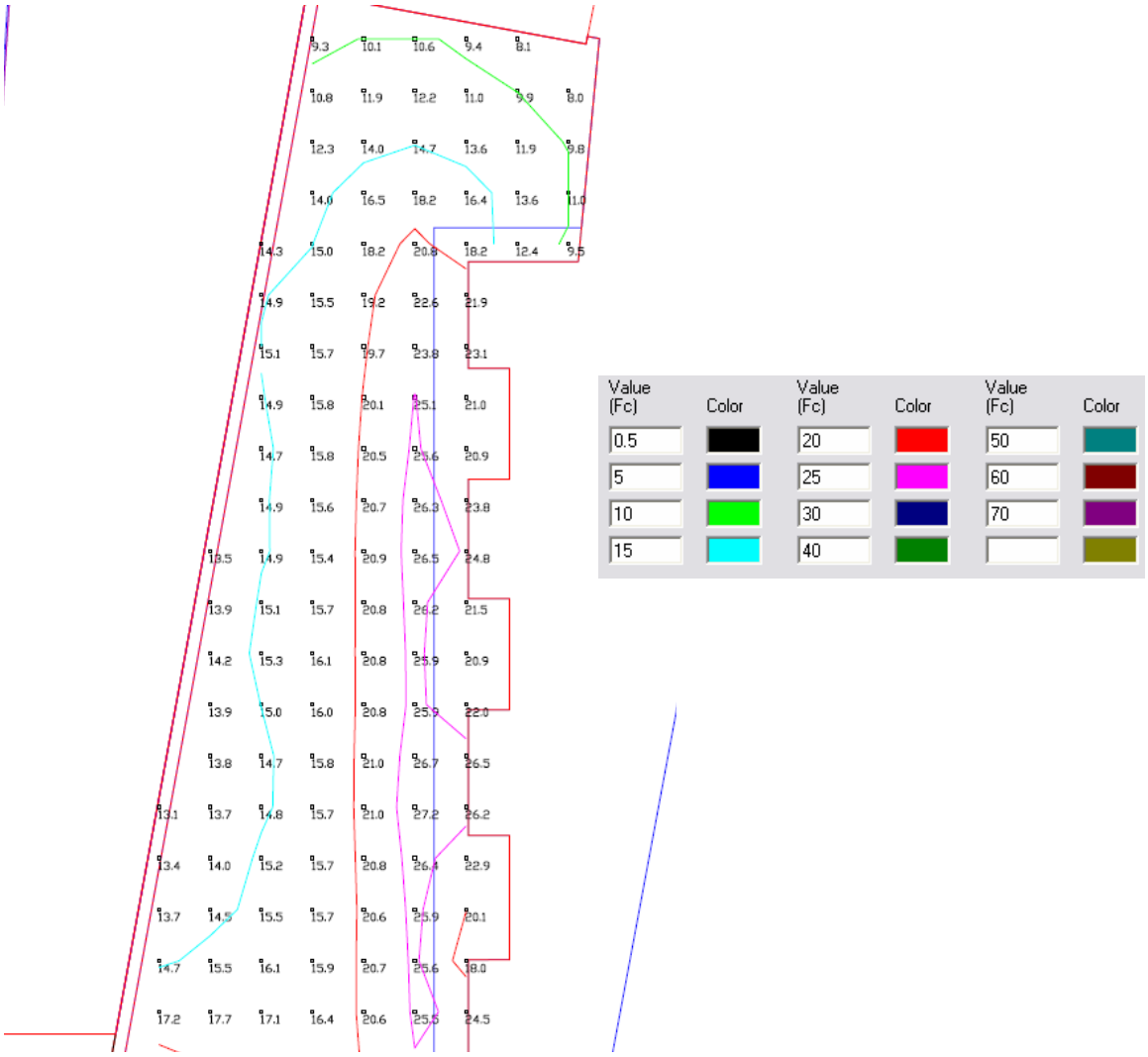
End of Gallery Hallway



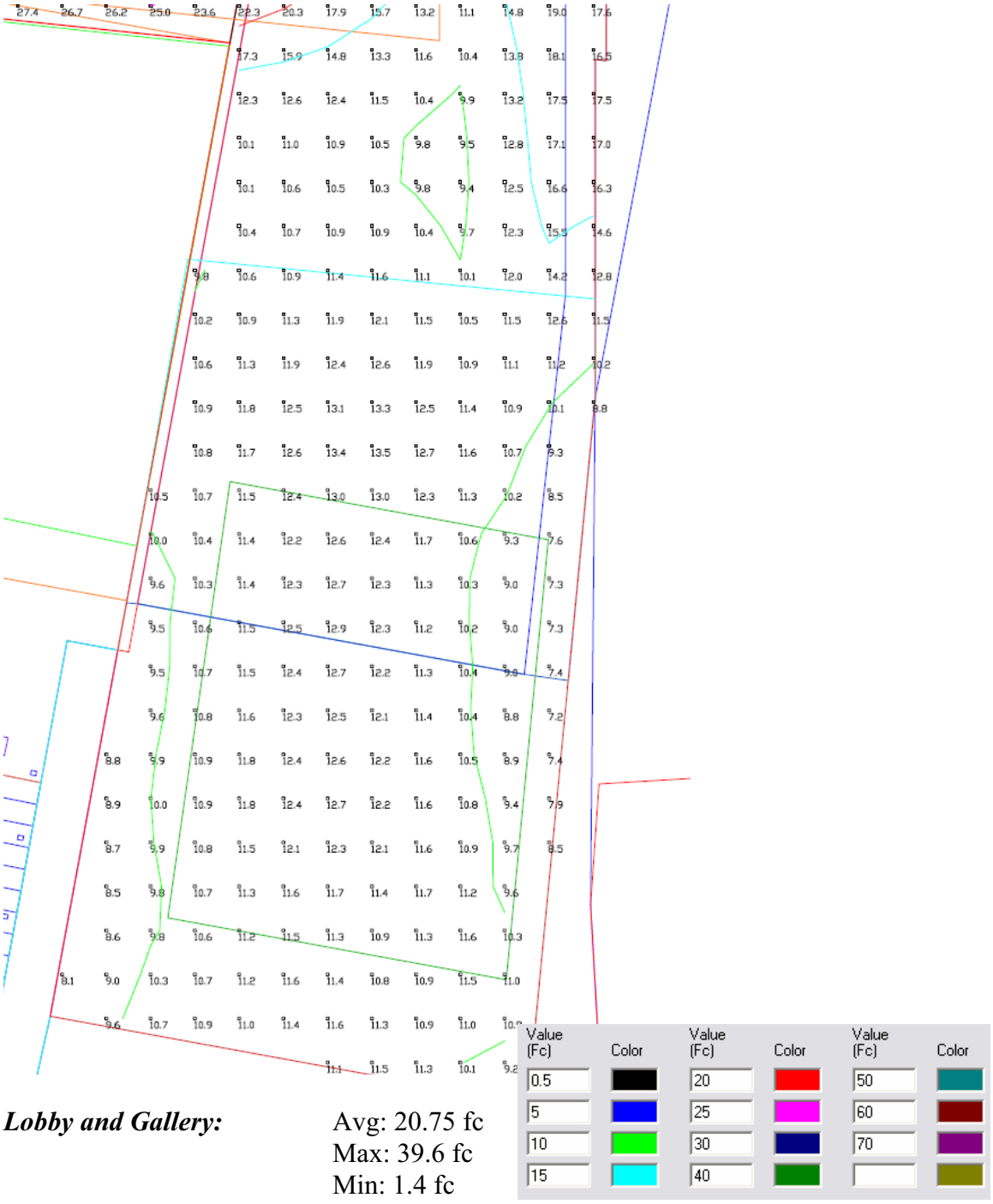
Intersection of Gallery and Lobby



End of Lobby Hallway



Lobby Entrance Space

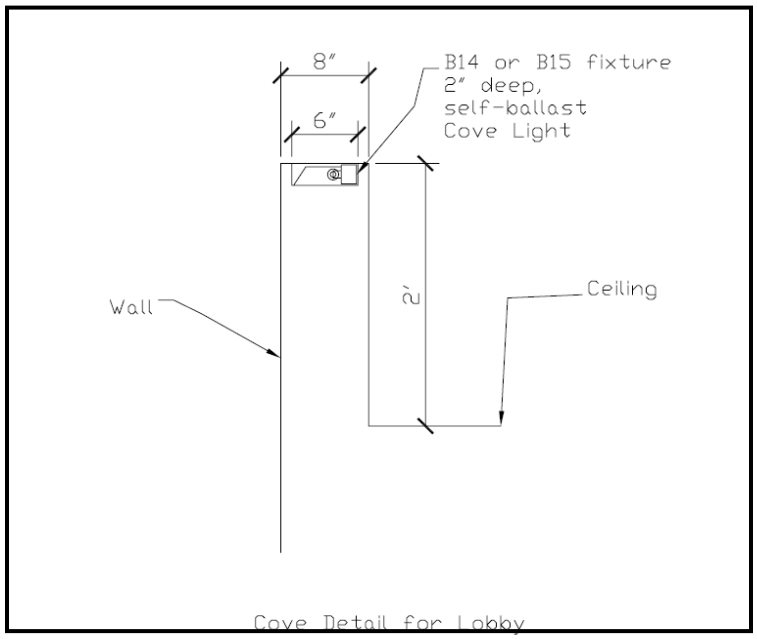


Lobby and Gallery:

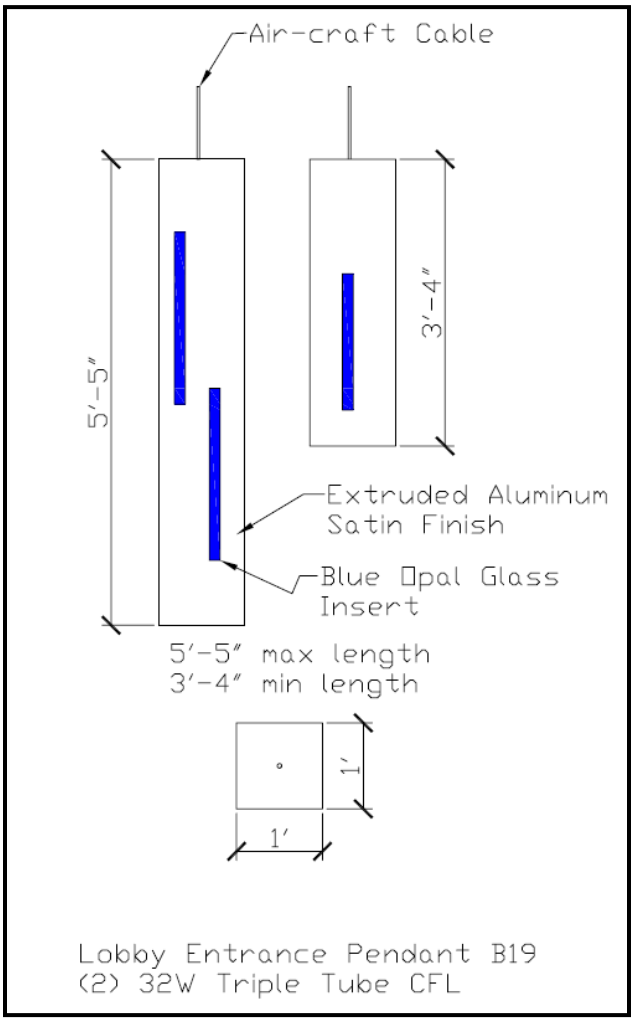
Avg: 20.75 fc
Max: 39.6 fc
Min: 1.4 fc

The lighting calculation results proved to be higher than expected. My goal was to have around 10-15 fc on the ground for general circulation purposes, but the end result provides good levels to buffer from the sunny atmosphere outside to the indoors. This meets the IES criteria I had mentioned.

Fixture Details



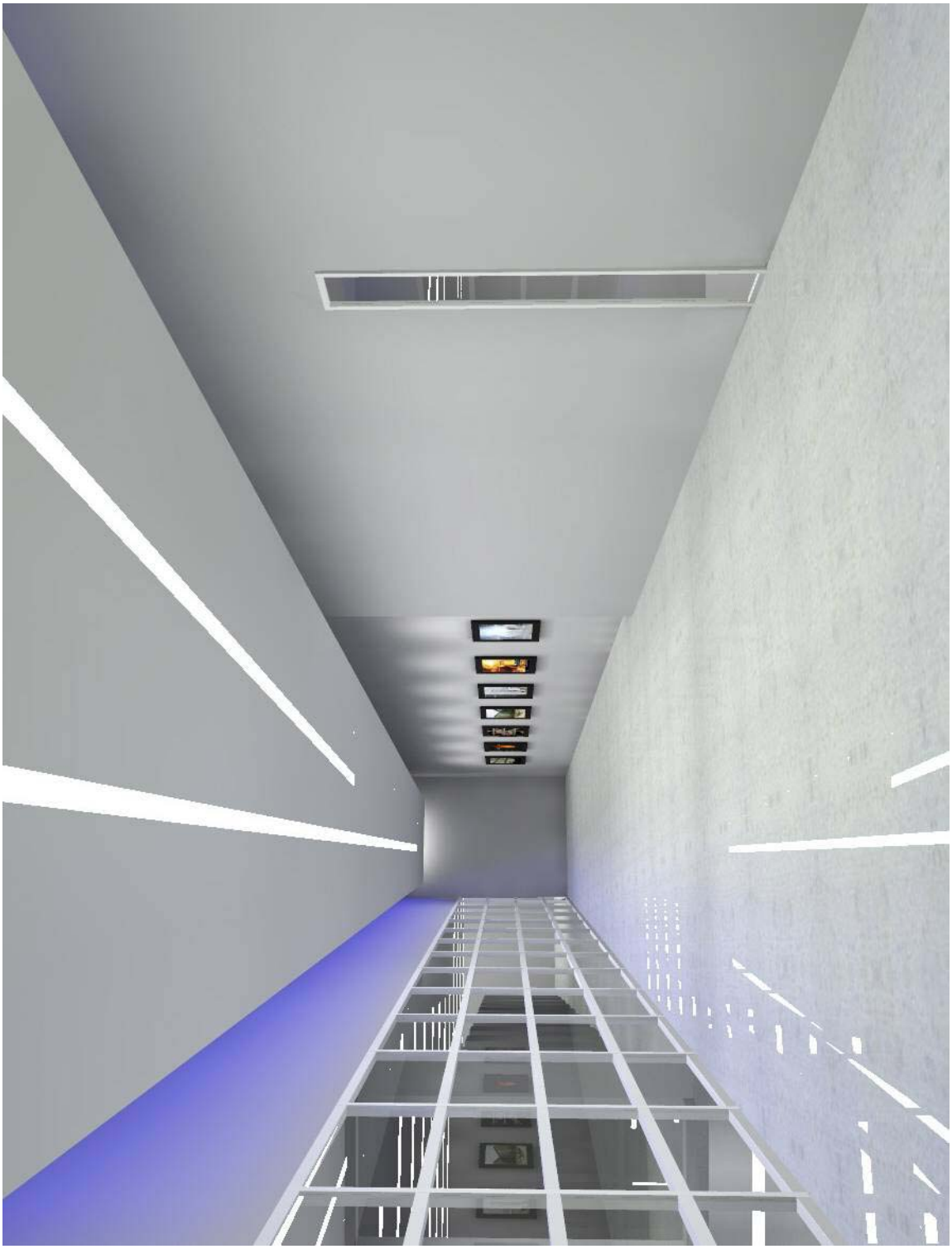
Cove Detail for Lobby



Lobby Entrance Pendant B19
(2) 32W Triple Tube CFL

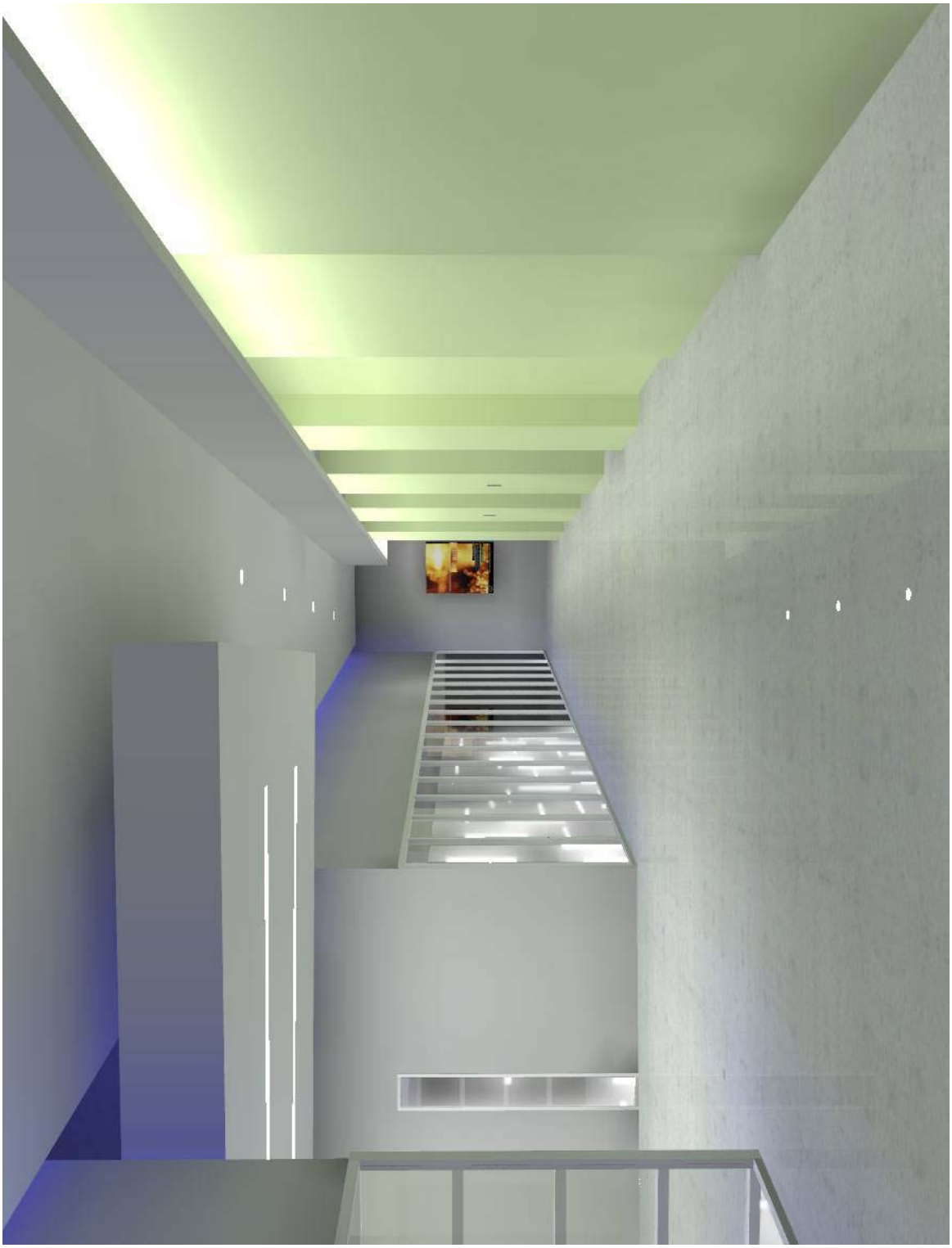
Renderings for the Main Lobby/Gallery

Gallery Corridor – Everything On



Gallery Corridor – Only Accent and Cove On

Lobby Corridor



Lobby Corridor

Lobby Exterior View

Conclusions

The lobby and gallery spaces are a very important aspect of the building. The main lobby gives a first impression of the Cal IT^2 as to what is happening inside as well as the theme for the rest of the building. In my design, my intention was to provide guiding lights using minimal appearance of fixtures and obstructions. The blue cove lights showcase advancement in movement with the minimal downlights providing ambient lighting for the area. The recessed linear fluorescents in the gallery appear to converge to really emphasize the elongated gallery and lead to the other sections of the building. With this sleek design, I have provided a technological feeling encompassed in a new modern building for telecommunication research.