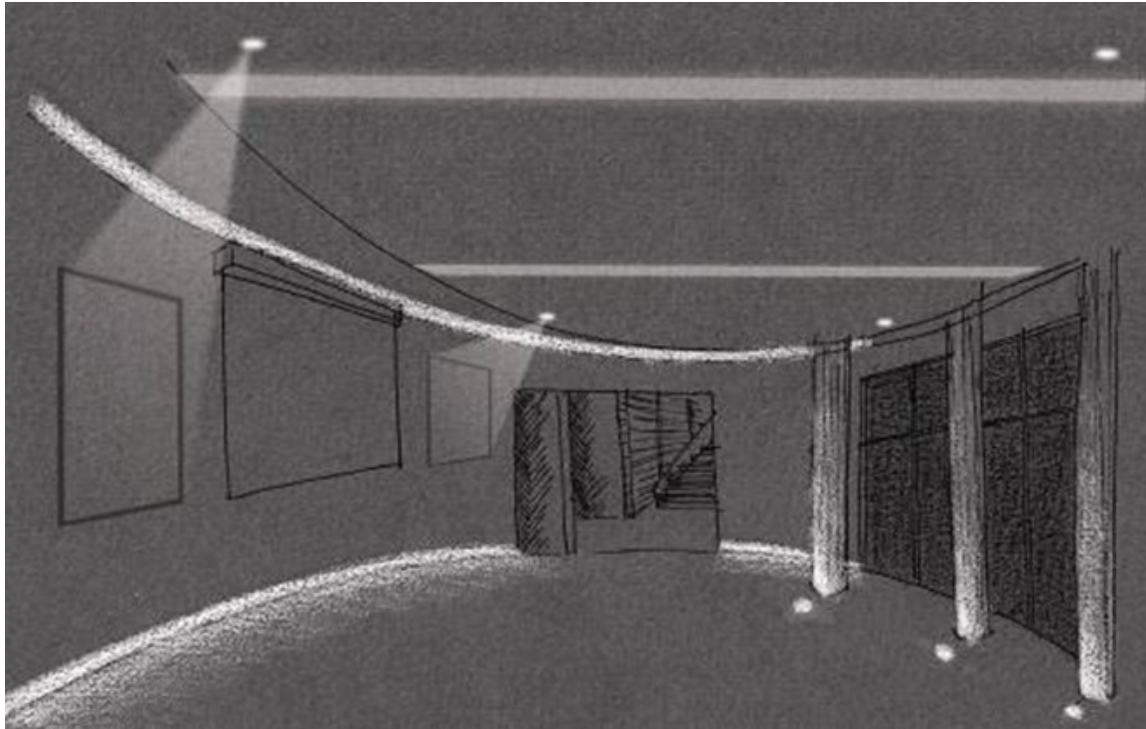


Multipurpose Room



(Original schematic)

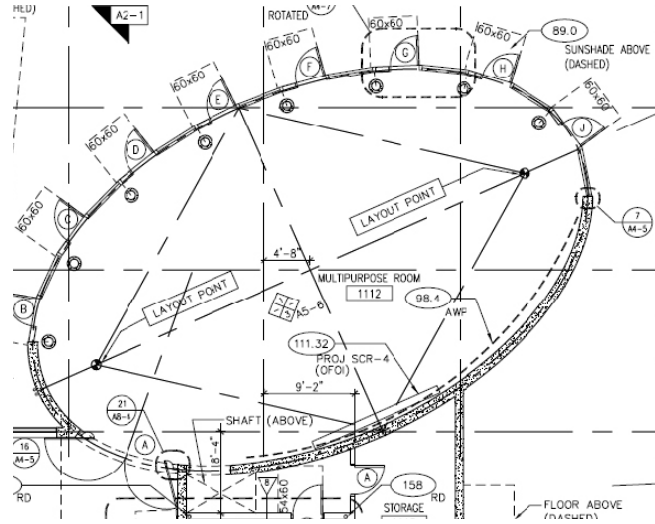
Design Synopsis

The 1590 sf Multipurpose room will be a place that will cater to many different functions. The space's elliptical form gently protrudes into the adjacent North East Plaza. On the interior south façade, acoustical wall panels have been put in place as a decorative element in addition to a tackable display rail, allowing vertical wall space for potential displays.

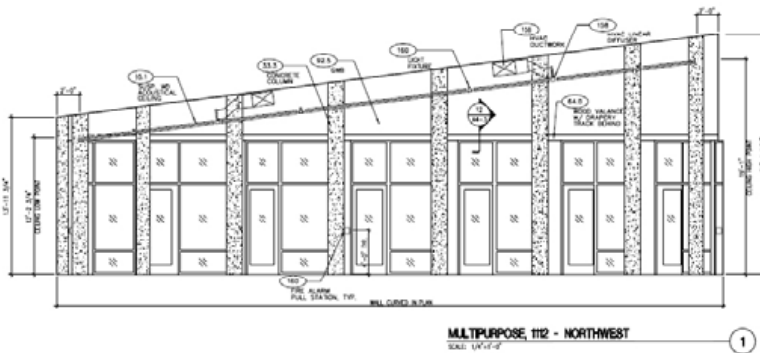
Since the schematic design presentation, some adjustments to the original concept have been made. For instance, the vertical recessed LED cove that wraps around the North Façade has been replaced by a very thin profile surface-mounted LED panel. In addition, the proposed ingrade uplights to highlight the columns along the north façade have now been removed due to lighting power density constraints as required by California's Title 24 (2005).

Adjustable accents shall still be used to provide sufficient illumination levels for vertical displays or exhibition pieces in addition to general overhead linear lighting to provide for necessary ambience.

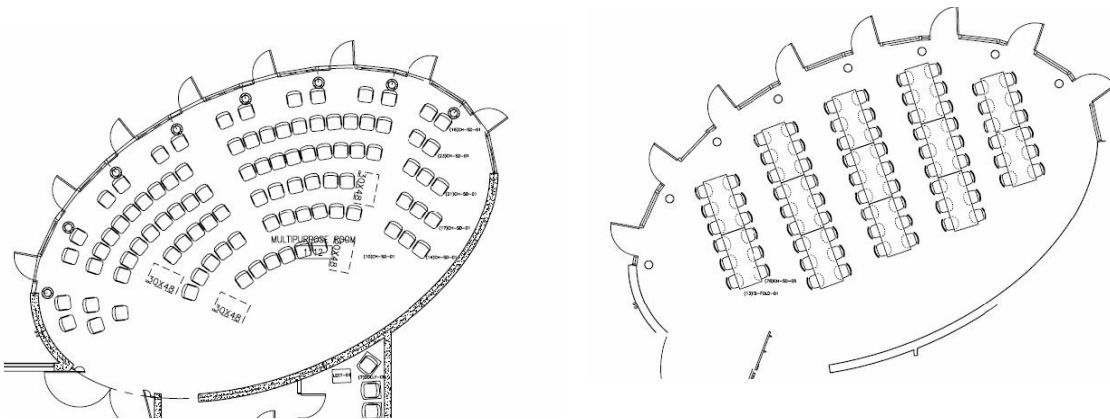
Existing Layout



Enlarged Floor Plan



Interior-North West Elevation



Proposed Furniture Configurations

Design Criteria

Space and Luminaire Appearance

The multipurpose room will serve many different social functions. Therefore, the space should be visually appealing to create a pleasant and comfortable environment that encourages social interaction. The room's unique elliptical form is also an architectural feature that should also be considered.

Special attention should be paid to the fact that the space is visible from the exterior by people who are in the adjacent North-East plaza. Design considerations of these two adjacent spaces should be considered collectively to enhance the overall visual appearance of this area of the SRB. That being said, the appearance of the luminaire should conform to the overall design of the two spaces to provide a "luminous connection" between them, whereby the two separate spaces will visually appear as one under the influence of the implemented lighting design.

Color Appearance and Color Contrast

Proper color rendition is crucial in this space, especially in terms of facial rendering since this room will cater to many social events. Color contrast and variation may be desired to increase visual interest in this space.

Controls

As the space will be infrequently used, an occupancy sensor shall be put in place to reduce the amount of waste light in order to conserve energy. The user shall also have the ability to control the ambient light level as needed to cater for the different visual tasks that may occur in this space during different types of events.

Glare Considerations

Special care must be taken to avoid direct and reflected glare from the sun. Sufficient shading devices must be installed to avoid this. Luminaires should also be placed as to avoid discomfort glare on the space occupants. Glare should also be avoided on vertical surfaces such as artwork that may be hung in the space.

Light Distribution and Uniformity

Although not required at all times, sufficient uniformity should be provided during situations when important visual tasks are performed within the space (i.e. VDT presentations and lectures). On other occasions, variation can add to the visual appeal of this room.

Surface Luminances

For task-related functions such as the performance of visual tasks, the IESNA Lighting Handbook recommends the following luminance ratios:

3:1 Task and Adjacent Surround

10:1 Task and Non-Adjacent Surfaces

For other events, this is of lesser importance but should be addressed for safety reasons.

Facial/ Object Modeling

To accommodate for the high level of social interaction that will occur in this room, good facial rendition is very important. Other distinct architectural features or objects that will be placed in this room also warrant design attention (i.e. during exhibitions). Installed lighting should also be able to provide high quality illumination of objects that may be exhibited in this space.

Points of Interest

This is desired to create a more visually appealing room. Luminance ratios should suggest to people using this room that there are areas of varying importance.

Shadows

Illumination provided should avoid shadow shadows on the task-plane when the space is configured for such purposes. For social gatherings, eye-socket shadows should be avoided as well.

Source/ Task/ Eye Geometry

This is very important as the room will be used to cater for events where tasks requiring a relatively high degree of visual acuity are required. Sources should be positioned accordingly to optimize source/task/eye geometry for such scenarios to avoid reflected glare on the task plane.

IESNA Illuminance Recommendations

Horizontal

Cat. C: Working spaces where simple visual tasks are performed 100 lx (10 fc)

Cat. D: Performance of visual tasks of high contrast and large size 300 lx (30 fc)

Vertical


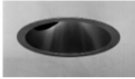

Cat. C: Working spaces where simple visual tasks are performed 100 lx (10 fc)

Cat. D: Performance of visual tasks of high contrast and large size 300 lx (30 fc)

Schedules and Lighting Layouts

Luminaire Schedule

Location: Multipurpose Room

Type	Quantity	Catalog No.	Lamping / Ballast	Watts/ Fixture	Ballast/ fixture	Total Watts	Voltage
F1 	133	Ambisol UK, SlabLight™ (0.5 x 1 FT) Surface-mounted LED panel w/ non transparent fascia	(L1) White Phillips LumiLeds	1	-	133	277 V
F3A 	10	Zumtobel, "Spec-3": S3D4360-S2-4660TC Recessed Adjustable Low Voltage Halogen Downlight	1 - (L3) GE Lighting 20843 Q50MR16/C/NFL25	71	-	710	12 V
F4 	16	Zumtobel, "Synto T5": SY5U-14-2285-W-DE277 (1 x 4 FT) Recessed Fixture	2 - (L5) GE Lighting 39982 F28W/T5/B30	66	1 - (B2) Lutron Eco-10: ECO-T528-277-2	1056	277V
Total Watts:						1899	W
Space Area:						1590	SF
Achieved Power Density:						1.19	W/SF
Allowed Power Density:						1.40	W/SF
Status:						Ok	

Based on calculations, the implemented design falls under the 1.40 W/sf allowed for this type of space as specified by California's Title 24 (2006).

Lamp Types Schedule

Location: Multipurpose Room

Type	Manuf.	Designation	Rated Wattage	Base	CRI / CCT	Rated Life (hrs)	Initial Lumens	Assoc. Fixture	Assoc. Ballast
L1	Philips Lighting	LumiLEDS	(see F1)	n/a	70 / 4500K	50000	120	F1	-
L3	General Electric	20835 Q50MR16/C/NFL25	50	Gx5.3	100 / 3050K	6000	720	F3A	-
L5	General Electric	46704 F28W/T5/B30/ECO	28	G5	85 / 3000K	30000	2900	F4	B2

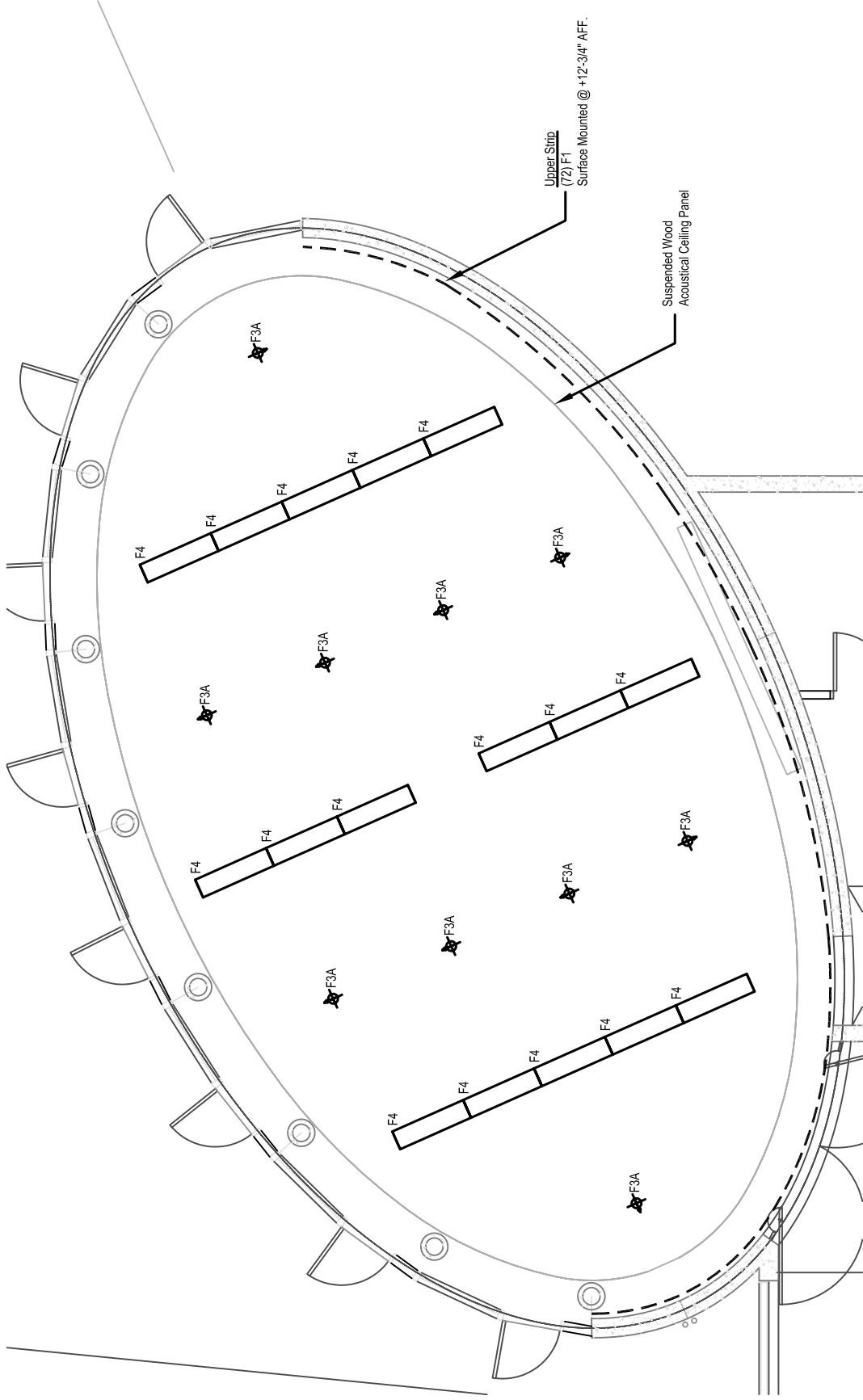
Ballasts Schedule

Location: Multipurpose Room

Type	Manuf.	Catalog Name	# Lamps	Ballast Type	Start Method	Input Watts	Ballast Factor	Power Factor	THD (%)	Assoc. Fixture
B2	Lutron	Lutron Eco-10: ECO-T528-277-2	2 - (L5)	Electronic Dimming (10%)	Programmed Rapid Start	66	1.00	>0.95	<10%	F4

Notes: Please see Appendix A for all product cutsheets and complete schedules.

Lighting control intent is located in the electrical depth.

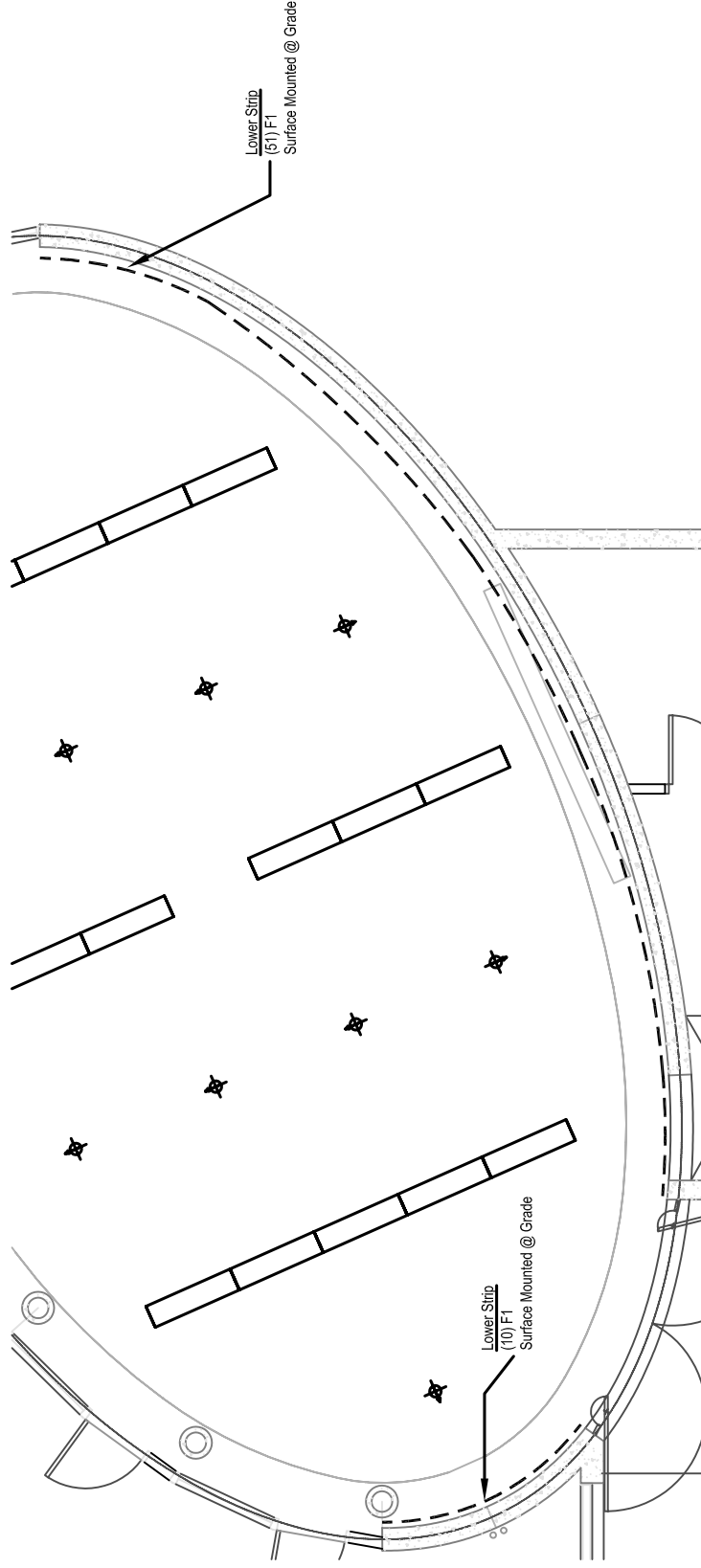


UCSB Student Resource Building

Multipurpose Room - Lighting Plan

Scale: 3/8" = 1'-0"





UCSB Student Resource Building

Multipurpose Room - Lower Strip Mounting Detail

Scale: $\frac{1}{8}$ " = 1'-0"

Assumptions

Surface Reflectances

Material	Location	Reflectance (%)
Architectural Concrete	Walls and Ceiling	20
Wood Plank	Floor	8
Projection Screen	-	50
Gypsum Wall Board	Walls	75
Suspended Wood Acoustical Ceiling Panel	Suspended Ceiling	44
Vermillion Drapery	North Façade	36

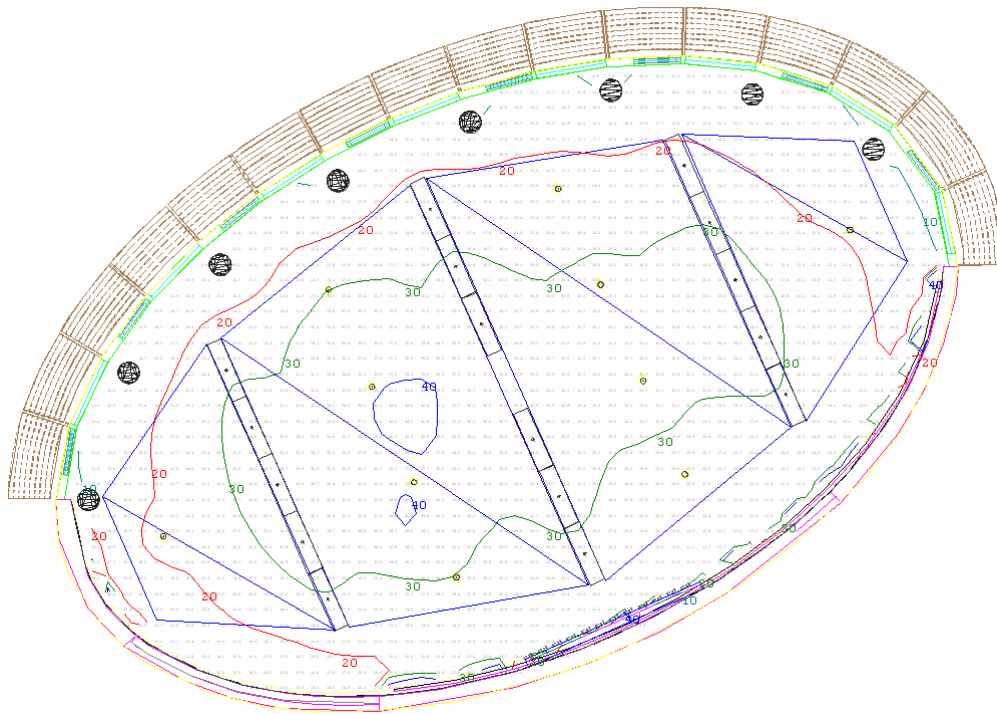
Note: Refer to Section 1b. for glazing information

Light Loss Factors

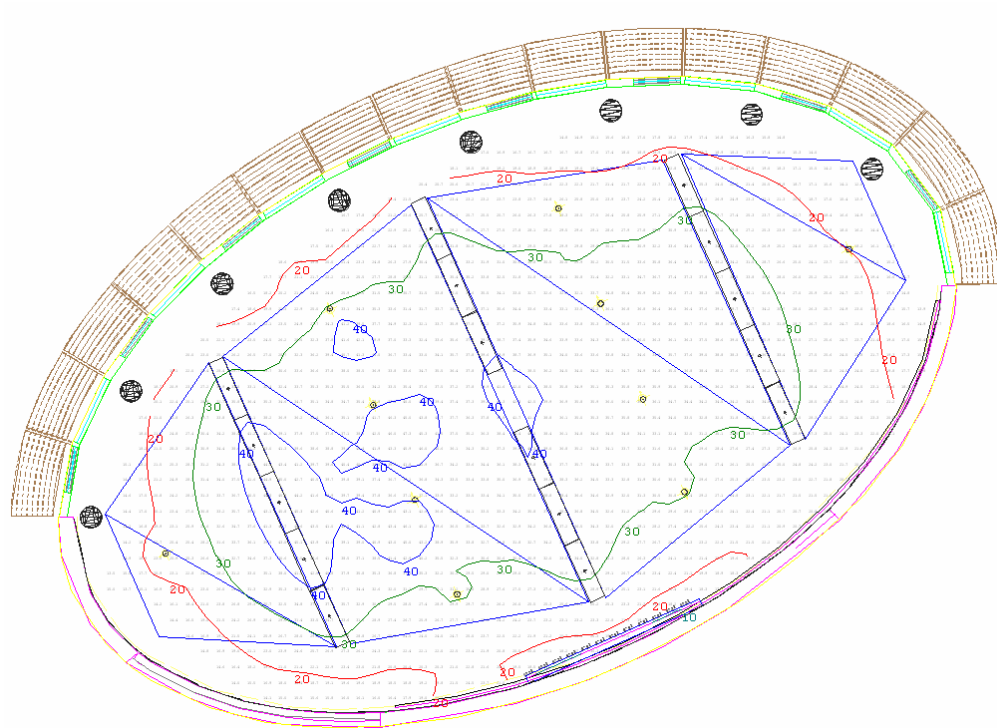
Label	IESNA Maintenance Category	Distribution Type	Environment Cleanliness	Cleaning Cycle	LLF				TOTAL
					LLD	LDD	RSDD	BF	
F1	VI	Direct	Clean	12mo	0.98	0.86	0.95	1.00	0.80
F3A	IV	Direct	Clean	12mo	0.85	0.88	0.97	1.00	0.73
F4	IV	Direct	Clean	12mo	0.94	0.88	0.97	1.00	0.80

Illuminance Data

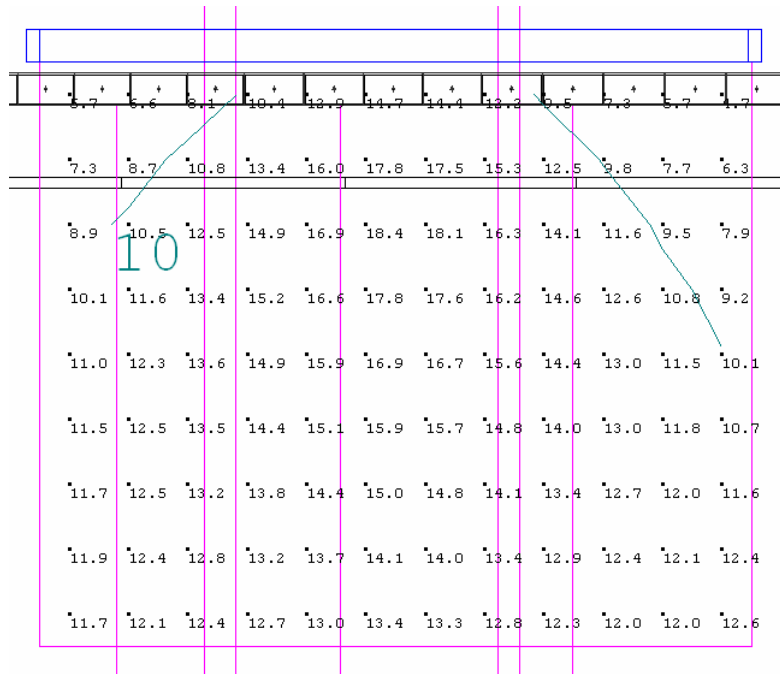
(Software used: AGI32 – v1.92)



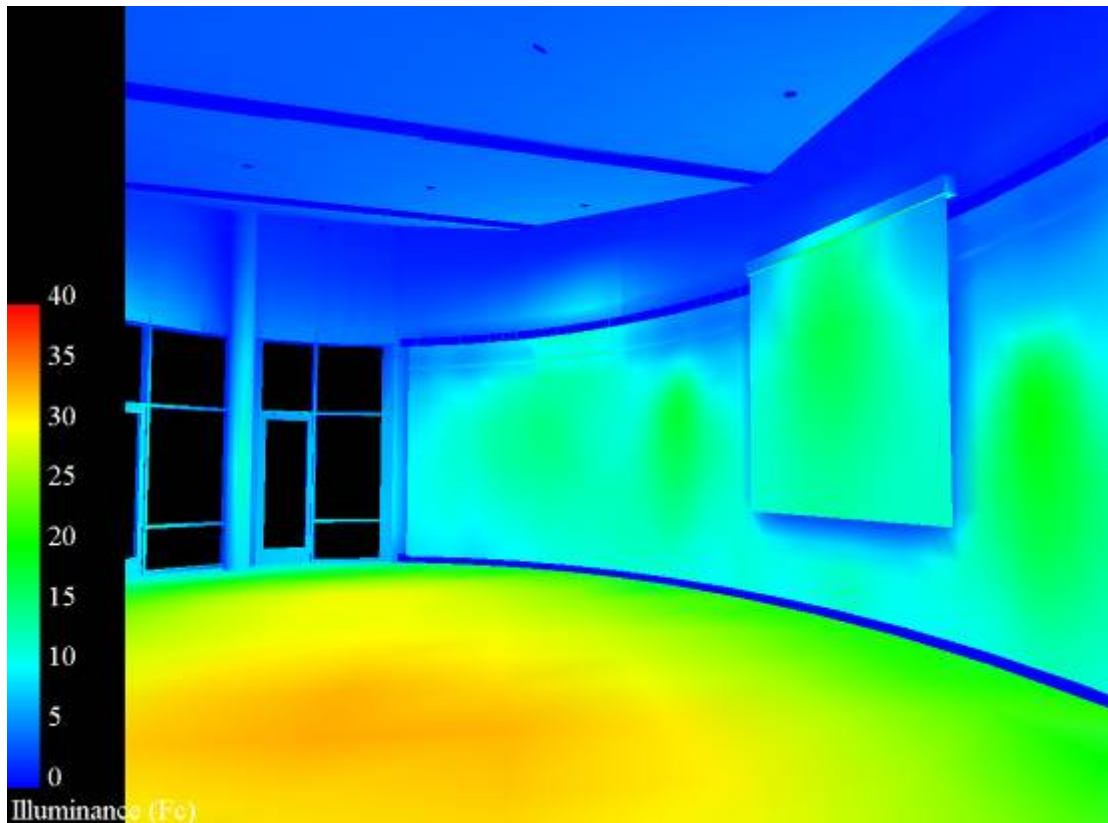
Floor Plane: Illuminance Contours



Work Plane: Illuminance Contours



Vertical Projection Screen: Illuminance Data



Overall Room: Pseudo Rendering

AGI32-v1.92 Statistical Summary

Calculation Area	Average Illuminance (fc)	Max. (fc)	Min. (fc)	Avg/min	Max/min
Floor Plane	25.9	98.2	3.3	2.3	3.7
Projection Screen* (see note)	12.7	18.4	4.7	2.7	3.9
Work Plane**	29.0	47.4	12.8	2.3	3.7

(*) Vertical Illuminance Data

(**) Assumed to be 2.5 ft AFF

Note: Average illuminance data calculated when the entire lighting system is on. In the event that the projector screen is required, it is assumed that the system will be off.

Radiosity Renderings

Full System On



Interior View



Exterior View

Exhibition Mode

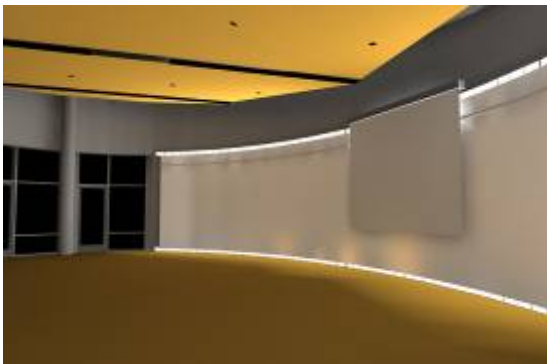


Interior View



Exterior View

Night-Time



Interior View



Exterior View

Artificial Light Control

Though the glass façade faces North, analysis shows that there is a lot of daylight entering this space throughout the year. However, because this room will only be used during special events, an occupancy sensor has been installed in lieu of a photosensor along with a manual override provided for by the Graphik Eye control unit located by the main entrance.

Note: Please consult Appendix C for this space's existing daylight conditions.

Evaluation

Based on lighting simulations, the proposed system described above satisfies both IESNA light level recommendations as well as California Title 24 requirements. The flexibility of the system is now aligned with the diverse nature of this space through the utilization of multiple levels of control.

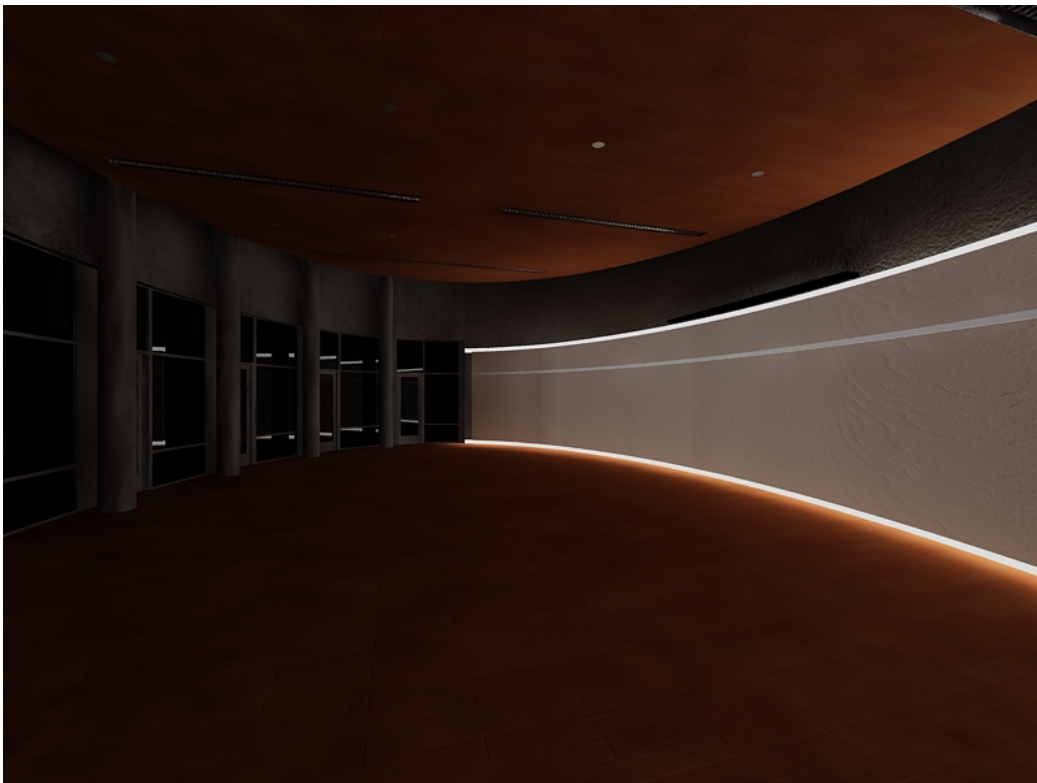
From an aesthetics standpoint, additional visual interest is added to the space through the utilization of the curved LED panel system that highlights the elliptical form of the room. This provides a better visual connection between this space and the adjacent North East Plaza.



All On



LED and Adjustable Downlights



LED Only