

APPENDIX C

Existing Conditions Daylight Studies

UC Santa Barbara Student Resource Building Existing Conditions Daylight Studies



Executive Summary

The following report will discuss how daylight currently affects interior light levels of the three interior spaces of the University of California Santa Barbara Student Resource Building (SRB). They will be presented in this order:

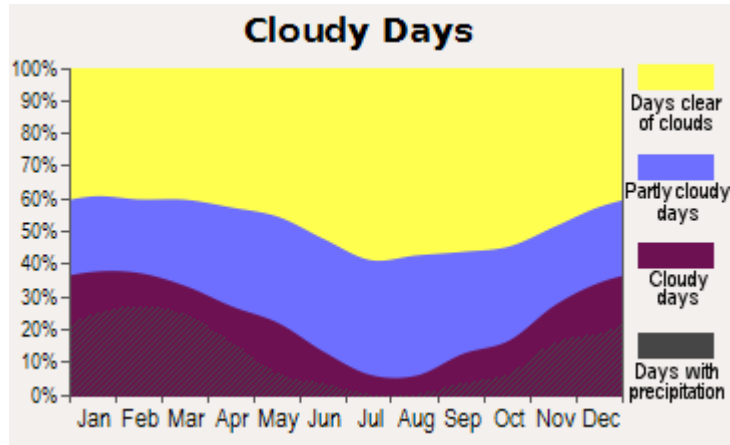
- Section 1 Daylight Elements and Study Parameters
- Section 2 Forum
- Section 3 Multi Purpose Room
- Section 4 Student Resource Center

An analysis of each space will consist of following:

- a. Overview
- b. Daylight Renderings
- c. Numerical Summary
- d. Conclusion

All data was generated using AGI32 v1.92.

Here is the percentage breakdown of the different sky conditions in Santa Barbara, CA over a year:



(Source: City-Data.com)

Section 1: Daylight Elements and Study Parameters

Window Data

Window Type	Properties
Operable Windows	“Wausau’s 2250, 3250 and 3250H Series” 5” thick U Factor: 0.43-0.62 Solar Transmittance Coefficient: 32-45
Sliding Windows	“Wausau’s 4100HS” 4-1/2” thick U Factor: 0.49-0.57 Solar Transmittance Coefficient: 32-35

Location Data

Location	Santa Barbara
Coordinates	Longitude: 34.26 Degrees (North) Latitude: 119.5 Degrees (West)

Glazing Data

Glass Type

GL1:

"PPG Solarban 60 System"

Inner Light: 1/4" thick

Air Space: 1/2" thick

Outer Light: 1/4" thick

Insulating Vision Glass w/ low E
(General application on South and West
Façade)

Pertinent Locations:

Forum, Student Resource Center

GL2:

"PPG Solarban 60 System"

Insulating Vision Glass w/o low E
(Throughout)

Pertinent Locations:

Forum, Student Resource Center,
Multipurpose Rm

GL3:

"PPG Uncoated Clear Glass"
Min. 1/4" Clear Monolithic Glass

Locations:

(Throughout)

Properties

Transmittance:

UV: 4%

Visible Light: 52%

Total Solar Energy: 20%

Reflectance:

Visible Light: 10%

Total Solar Energy: 8%

U-Values:

Winter Night-time: 0.29

Summer Day-time: 0.28

Shading Coefficient (SC): 0.35

Solar Heat Gain Coefficient (SHGC): 0.31

Light to Solar Gain: 1.68

(see GL1)

Transmittance:

UV: 50%

Visible Light: 79%

Total Solar Energy: 61%

Reflectance:

Visible Light: 15%

Total Solar Energy: 12%

U-Values:

Winter Night-time: 0.47

Summer Day-time: 0.50

Shading Coefficient (SC): 0.81

Solar Heat Gain Coefficient (SHGC): 0.70

Light to Solar Gain: 1.13

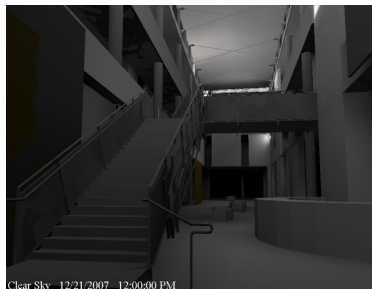
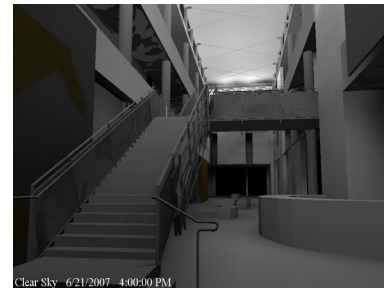
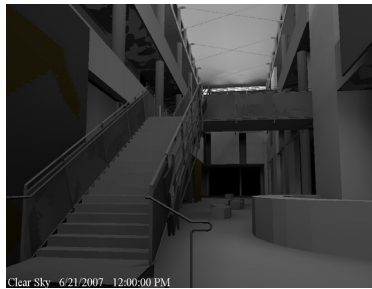
Section 2: Forum

Overview

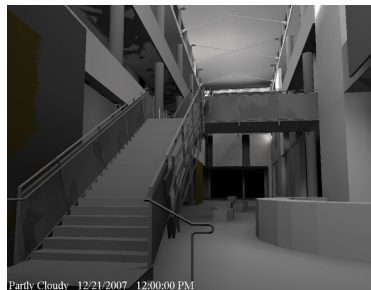
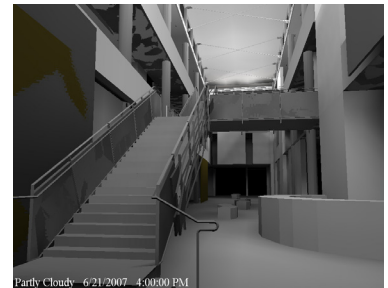
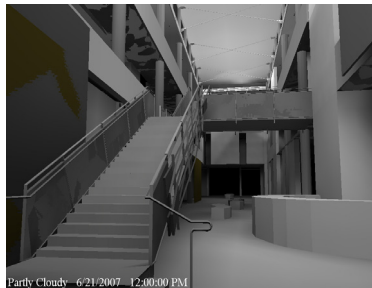
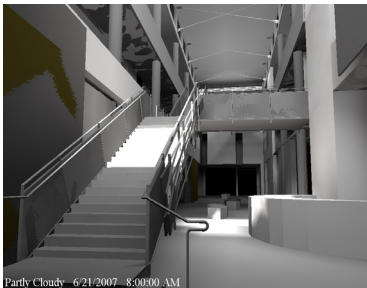
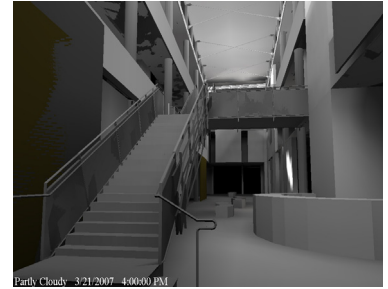
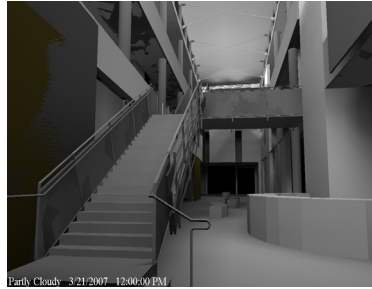
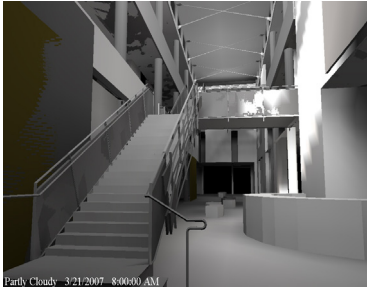
Daylight data was collected between 8am to 6pm on March 21st, June 21st and December 21st under the three standard IES sky conditions in Santa Barbara, CA.

Daylight Study Results

Clear Sky Renderings (8 am, 12 pm and 4 pm)



Partly Cloudy Renderings (8 am, 12 pm and 4 pm)



Overcast Rendering (Typical)



Numeric Summary

- Notes:
1. All values in fc
 2. Workplane @ 2'-6" AFF
 3. Overcast values typical for that month
 4. Sun below horizon at 6pm on 12/21.

Analysis Area:		<u>1st Floor</u>								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	34.8	2746.4	3.2	18.4	612.5	2.2			
	10:00 AM	21.7	4321.8	2.8	22.7	1914.6	3.0			
	12:00 PM	9.8	27.0	1.9	16.2	62.7	3.5	6.7	32.0	1.1
	2:00 PM	8.1	18.3	1.9	12.0	38.6	3.1			
	4:00 PM	9.6	37.1	2.0	7.7	19.8	1.8			
	6:00 PM	1.4	4.1	0.8	0.4	1.2	0.5			
6.21	8:00 AM	243.5	4937.8	3.6	106.7	1908.5	3.5			
	10:00 AM	69.1	5381.2	3.2	51.8	2809.7	4.0			
	12:00 PM	11.0	31.3	2.0	19.1	75.3	4.2	8.0	38.1	1.3
	2:00 PM	22.5	7985.4	2.0	21.3	4092.1	3.9			
	4:00 PM	80.5	4914.5	2.1	37.2	1862.8	2.5			
	6:00 PM	6.9	720.9	1.4	3.8	54.1	0.9			
12.21	8:00 AM	10.3	20.9	1.6	5.0	18.3	0.7			
	10:00 AM	13.6	28.9	2.4	11.9	42.2	1.9			
	12:00 PM	19.2	4415.4	2.7	14.2	1461.2	2.4	4.4	20.9	0.7
	2:00 PM	9.7	20.1	2.3	8.1	24.2	1.9			
	4:00 PM	5.5	11.1	1.3	2.4	7.2	0.6			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area:		<u>1st Floor Counter</u>								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	117.6	157.1	35.0	74.4	82.8	41.4			
	10:00 AM	110.1	4285.7	33.3	109.2	1898.0	60.0			
	12:00 PM	26.1	31.8	19.4	57.9	73.4	42.0	27.4	35.5	18.3
	2:00 PM	18.6	21.1	13.8	36.8	44.6	28.0			
	4:00 PM	14.2	15.3	9.1	19.4	22.3	14.8			
	6:00 PM	4.2	4.5	2.7	1.2	1.3	0.9			
6.21	8:00 AM	1890.8	3509.8	41.2	776.8	1395.5	57.1			
	10:00 AM	53.7	74.3	32.7	99.0	129.9	65.5			
	12:00 PM	28.5	35.0	20.5	66.4	84.6	46.4	32.7	42.3	21.8
	2:00 PM	20.6	23.7	14.7	44.0	53.6	32.7			
	4:00 PM	16.1	17.7	10.6	26.5	31.0	19.7			
	6:00 PM	11.6	12.6	7.6	10.3	11.9	7.4			
12.21	8:00 AM	22.9	25.8	15.4	20.4	23.0	15.8			
	10:00 AM	31.3	35.0	23.5	43.7	52.3	33.7			
	12:00 PM	26.3	30.0	18.7	38.5	45.9	28.6	17.9	23.2	11.9
	2:00 PM	20.2	23.5	12.8	24.0	27.9	18.4			
	4:00 PM	10.9	12.3	6.6	7.2	8.3	5.6			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area:		<u>2F Pedestrian Bridge</u>								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	31.9	50.6	13.5	22.1	45.3	7.0			
	10:00 AM	17.5	29.3	7.2	24.1	47.8	7.6			
	12:00 PM	16.7	24.7	7.9	22.8	40.0	8.5	7.8	16.2	2.5
	2:00 PM	14.7	21.6	7.0	18.0	29.8	7.1			

	4:00 PM	10.5	16.8	4.6	10.0	16.8	3.9			
	6:00 PM	2.3	4.4	1.5	0.5	0.8	0.3			
6.21	8:00 AM	28.9	58.5	8.5	31.3	71.0	7.8			
	10:00 AM	20.5	34.7	8.8	30.0	60.1	9.8			
	12:00 PM	18.2	27.3	8.8	26.4	47.1	10.1	9.3	19.3	2.9
	2:00 PM	16.2	23.7	8.0	21.6	36.2	8.8			
	4:00 PM	12.4	19.1	5.8	14.2	24.0	5.8			
	6:00 PM	7.9	13.3	3.4	5.6	9.7	2.2			
12.21	8:00 AM	14.6	25.4	4.3	7.2	15.0	1.9			
	10:00 AM	22.0	32.1	7.2	17.2	30.9	5.1	5.1	10.6	1.6
	12:00 PM	23.2	32.1	7.8	18.8	30.0	6.1			
	2:00 PM	20.1	28.0	6.6	13.4	21.3	4.5			
	4:00 PM	10.8	17.5	3.2	3.7	6.4	1.3			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area: 3F Pedestrian Bridge

Date	Time	Clear Sky			Partly Cloudy			Avg	Overcast Max	Min
		Avg	Max	Min	Avg	Max	Min			
3.21	8:00 AM	13.9	22.6	8.4	15.4	27.0	7.9			
	10:00 AM	18.7	24.4	13.1	25.8	38.6	14.7			
	12:00 PM	21.1	26.8	15.2	29.7	42.2	17.4	11.8	21.9	4.4
	2:00 PM	18.9	24.1	13.5	25.4	37.0	14.7			
	4:00 PM	13.9	19.9	9.7	15.0	24.5	8.1			
	6:00 PM	2.6	4.9	1.4	0.5	1.3	0.1			
6.21	8:00 AM	17.1	29.1	10.2	24.2	46.0	11.4			
	10:00 AM	21.4	29.8	14.6	32.6	54.2	17.0			
	12:00 PM	22.7	30.0	16.1	34.7	55.0	18.9	14.1	26.2	5.3
	2:00 PM	20.9	28.7	14.6	31.1	51.3	16.6			
	4:00 PM	16.2	25.3	10.7	21.8	40.3	10.8			
	6:00 PM	15.6	37.3	9.5	9.2	20.1	4.2			
12.21	8:00 AM	29.4	54.8	14.8	7.4	11.1	4.1			
	10:00 AM	21.7	40.4	14.4	19.1	33.7	11.0			
	12:00 PM	280.6	3117.1	17.1	107.7	1055.4	13.7	7.7	14.4	2.9
	2:00 PM	20.8	46.4	14.1	17.5	32.3	10.1			
	4:00 PM	17.4	22.6	12.0	5.5	8.1	3.0			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area: 2F Corridor

Date	Time	Clear Sky			Partly Cloudy			Avg	Overcast Max	Min
		Avg	Max	Min	Avg	Max	Min			
3.21	8:00 AM	32.7	1253.1	1.1	13.0	294.8	1.0			
	10:00 AM	5.6	16.0	1.2	9.2	29.1	1.1			
	12:00 PM	5.2	12.5	1.3	8.8	25.4	1.3	4.3	15.6	0.5
	2:00 PM	4.7	11.1	1.3	7.2	19.7	1.2			
	4:00 PM	24.9	651.3	1.1	9.8	173.6	1.1			
	6:00 PM	1.0	2.6	0.8	11.1	162.0	0.8			
6.21	8:00 AM	9.0	29.8	1.2	12.2	41.8	1.1			
	10:00 AM	6.8	19.7	1.2	12.5	41.6	1.2			
	12:00 PM	6.0	14.9	1.4	11.1	34.1	1.3	5.2	18.6	0.8
	2:00 PM	5.4	13.0	1.4	9.4	26.9	1.3			
	4:00 PM	4.7	11.0	1.1	6.8	18.9	1.1			
	6:00 PM	7.5	518.5	1.0	3.2	43.1	0.9			

12.21	8:00 AM	4.3	12.7	1.2	2.7	8.7	1.1	2.8	10.2	0.3
	10:00 AM	5.5	14.5	1.3	5.8	16.9	1.2			
	12:00 PM	5.4	14.6	1.3	6.1	16.5	1.3			
	2:00 PM	4.7	12.5	1.1	4.6	12.0	1.0			
	4:00 PM	3.1	7.8	1.0	1.5	4.2	1.0			
	6:00 PM	-	-	-	-	-	-			

Analysis Area: 3F Corridor

Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	10.6	24.9	0.8	9.6	24.4	1.5	5.3	15.5	0.8
	10:00 AM	9.7	22.6	0.9	14.1	37.4	1.9			
	12:00 PM	10.3	23.1	1.0	15.5	40.5	1.9			
	2:00 PM	9.5	21.0	1.0	13.6	35.1	1.6			
	4:00 PM	16.4	1108.7	0.8	10.7	289.6	1.0			
	6:00 PM	1.8	3.9	0.3	1.1	1.3	0.8			
6.21	8:00 AM	11.1	26.9	1.0	13.9	37.7	2.1	6.3	18.5	1.0
	10:00 AM	10.5	23.5	1.0	16.6	42.5	2.5			
	12:00 PM	10.5	21.7	1.1	16.9	42.2	2.3			
	2:00 PM	9.9	20.3	1.0	15.4	38.5	1.9			
	4:00 PM	27.1	2464.1	0.9	15.4	38.5	1.9			
	6:00 PM	9.3	368.9	0.5	5.3	33.1	0.9			
12.21	8:00 AM	19.7	40.2	4.3	4.6	11.1	1.0	3.4	10.2	0.5
	10:00 AM	67.1	1192.5	2.9	10.3	35.8	1.4			
	12:00 PM	12.1	31.3	0.9	12.7	35.3	1.4			
	2:00 PM	36.9	1144.2	0.8	16.4	302.6	0.9			
	4:00 PM	12.8	31.1	0.5	3.3	8.3	0.5			
	6:00 PM	-	-	-	-	-	-			

Conclusion

As expected, the greatest amount of light reaches the ground floor during the summer months. The same can be said for the corridors and pedestrian bridges on the upper levels. The data also suggest that there is sufficient daylight reaching the counter on the ground floor for most days in the year.

The studies assume that the operable clerestory windows are closed. This may not be the case, as most of the building was designed to make use of natural ventilation by keeping those open for most of the year. Therefore, we can expect a slightly higher level of daylight penetration in this space if the windows were open.

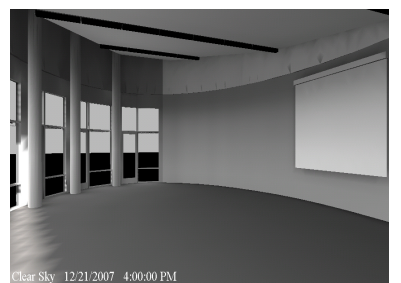
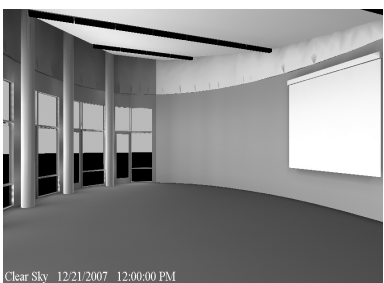
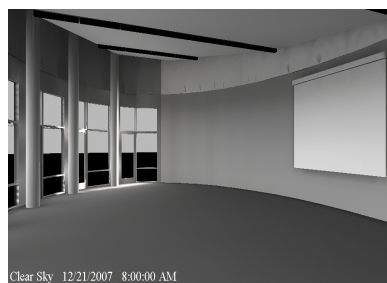
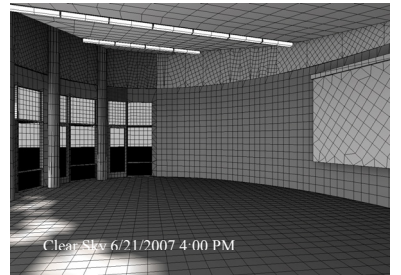
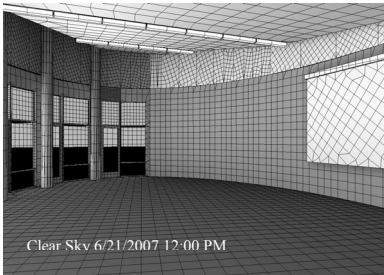
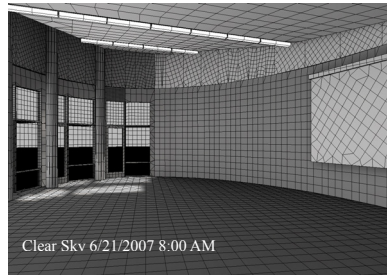
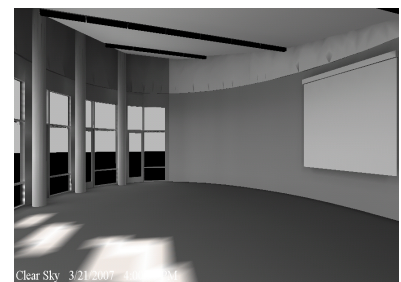
Section 3: Multipurpose Room

Overview

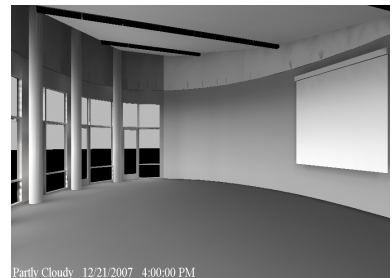
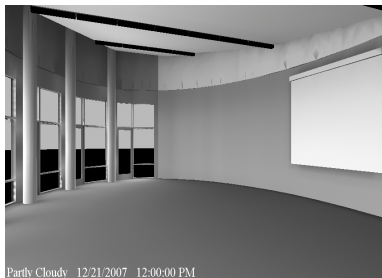
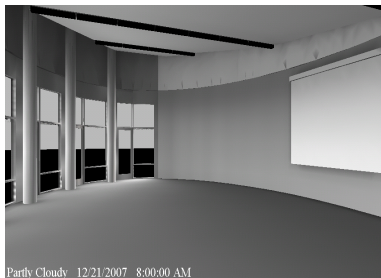
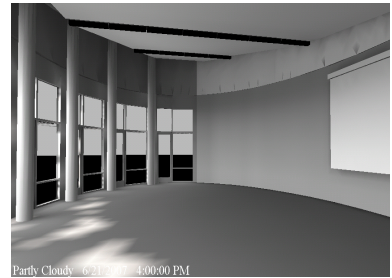
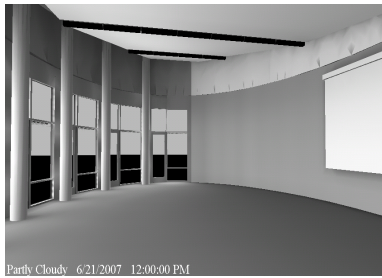
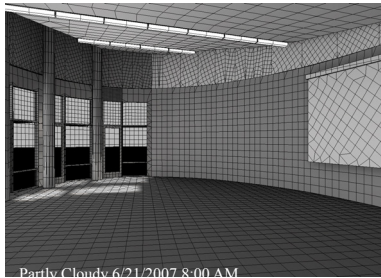
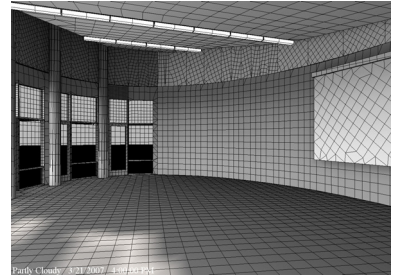
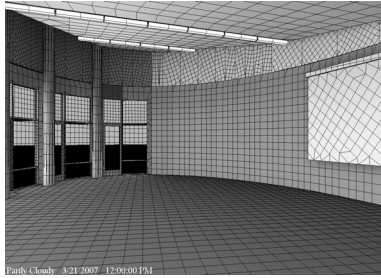
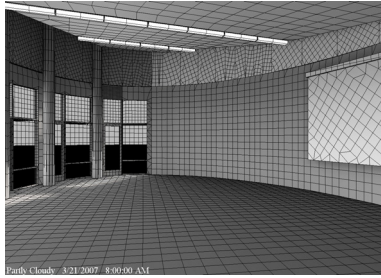
Daylight data was collected between 8am to 6pm on March 21st, June 21st and December 21st under the three standard IES sky conditions in Santa Barbara, CA.

Daylight Study Results

Clear Sky Renderings (8 am, 12 pm and 4 pm)



Partly Cloudy Renderings (8 am, 12 pm and 4 pm)



Overcast Rendering (Typical)



Numeric Summary

- Notes:
1. All values in fc
 2. Workplane @ 2'-6" AFF
 3. Overcast values typical for that month
 4. Sun below horizon at 6pm on 12/21.

Analysis Area:		Floor Plane								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	128.9	2822.9	7.4	77.3	692.3	8.1			
	10:00 AM	80.7	3039.0	9.7	98.7	1666.1	11.6			
	12:00 PM	67.3	7695.3	10.6	106.2	3825.4	12.2	2.1	7.5	1.6
	2:00 PM	71.9	3101.1	10.6	112.1	2903.0	10.4			
	4:00 PM	154.9	3195.8	8.6	105.7	890.7	6.1			
	6:00 PM	17.1	52.9	1.4	5.3	19.3	0.3			
6.21	8:00 AM	189.1	4938.9	9.0	157.2	1890.3	14.2			
	10:00 AM	118.8	8107.3	10.5	159.6	4361.8	16.1			
	12:00 PM	66.3	162.7	11.4	143.5	456.1	15.8	2.5	8.9	1.2
	2:00 PM	123.5	8122.6	11.9	175.3	4452.4	14.0			
	4:00 PM	310.0	4978.2	10.4	213.7	2004.4	10.3			
	6:00 PM	258.4	1068.8	7.1	76.5	245.0	3.8			
12.21	8:00 AM	35.9	430.9	3.9	25.2	135.0	3.0			
	10:00 AM	43.9	1400.5	6.5	55.0	471.9	6.4			
	12:00 PM	47.3	4463.1	7.5	65.1	1504.8	7.2	1.4	4.9	1.1
	2:00 PM	51.5	3260.6	7.4	59.6	919.9	5.4			
	4:00 PM	41.0	450.5	3.9	24.9	114.9	1.8			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area:		Work Plane								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	117.0	2845.8	9.8	66.9	730.0	10.7			
	10:00 AM	75.8	6265.1	12.7	86.4	2724.9	15.3			
	12:00 PM	59.4	202.8	13.9	90.4	447.1	16.2	1.8	8.6	1.3
	2:00 PM	70.1	6497.9	14.0	95.9	2892.7	13.7			
	4:00 PM	132.6	1946.0	11.3	91.2	875.7	8.1			
	6:00 PM	15.2	62.6	1.9	4.6	21.8	0.4			
6.21	8:00 AM	160.6	2707.1	11.9	133.3	1505.9	18.7			
	10:00 AM	87.6	3921.3	13.9	130.2	2560.9	21.2			
	12:00 PM	66.8	9157.8	12.9	123.7	552.3	20.9	2.1	10.2	1.6
	2:00 PM	106.6	3835.3	15.7	149.1	2450.6	18.5			
	4:00 PM	256.1	4963.5	13.9	179.3	1482.6	13.5			
	6:00 PM	259.2	1058.2	9.4	68.7	277.0	5.0			
12.21	8:00 AM	33.5	601.2	5.1	21.8	166.1	3.9			
	10:00 AM	41.6	3405.8	8.6	48.1	937.0	8.5			
	12:00 PM	41.1	140.7	9.9	55.8	276.9	9.5	1.2	5.6	0.9
	2:00 PM	50.1	3235.2	9.8	52.5	878.0	7.2			
	4:00 PM	38.6	420.8	5.2	21.6	128.2	2.4			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area:		Projector Screen (vertical illuminance data)								
Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	53.0	62.2	40.5	39.7	52.7	24.3			
	10:00 AM	80.7	82.5	76.8	72.3	83.2	57.1			
	12:00 PM	90.5	92.9	84.6	87.3	97.7	71.8	1.0	1.3	0.6
	2:00 PM	80.2	82.7	75.7	81.2	97.6	59.6			

	4:00 PM	58.5	68.9	42.8	54.5	77.0	27.9			
	6:00 PM	85.6	87.7	80.7	3.8	6.1	1.1			
6.21	8:00 AM	71.3	75.2	62.6	70.9	91.2	46.6			
	10:00 AM	92.1	95.1	84.9	100.6	116.6	78.8			
	12:00 PM	100.0	104.5	89.3	113.7	129.6	91.4	1.1	1.5	0.7
	2:00 PM	94.7	97.6	89.9	110.6	135.7	79.0			
	4:00 PM	82.9	95.7	63.4	85.7	103.9	62.7			
	6:00 PM	127.1	1608.2	27.3	107.1	123.1	85.1			
12.21	8:00 AM	29.6	42.4	14.1	15.4	21.8	8.1			
	10:00 AM	56.6	65.1	43.7	40.3	49.9	28.2			
	12:00 PM	64.5	69.9	54.4	51.1	61.3	37.7	0.6	0.8	0.4
	2:00 PM	53.6	61.3	41.5	15.4	21.8	8.1			
	4:00 PM	26.1	38.2	11.3	16.4	24.5	6.9			
	6:00 PM	-	-	-	-	-	-	-	-	-

Conclusion

Data collected suggest that there is an ample amount of daylight in this space. As the glazing is facing north, daylight levels significantly drop during an overcast sky condition. Although daylight levels seem to be high on the workplane and on the projector screen's surface, it can be assumed that the curtains in the room will be drawn when the needs of the space demand that both surfaces need to be used.

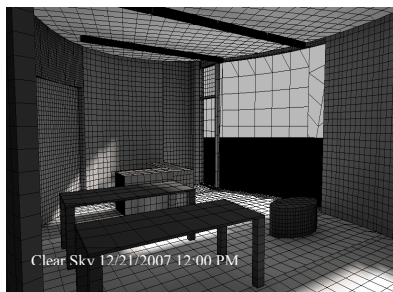
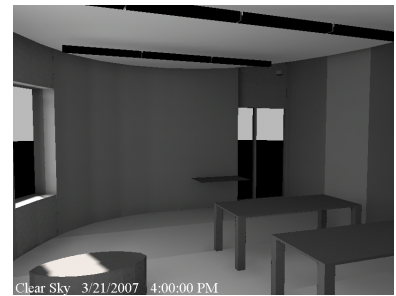
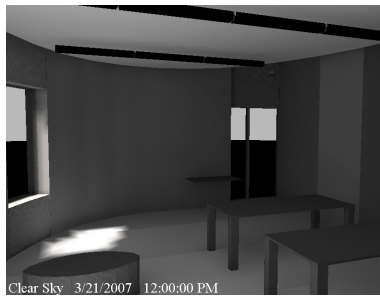
Section 4: Student Resource Center

Overview

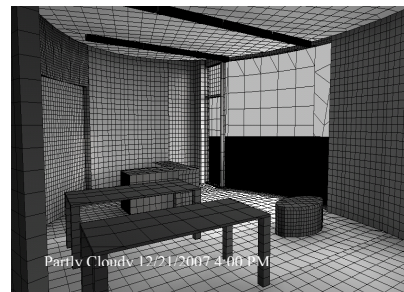
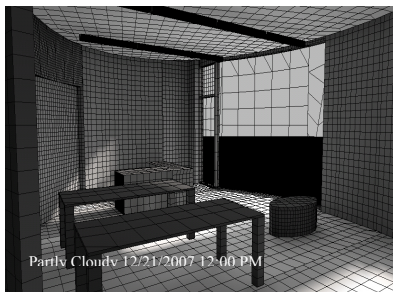
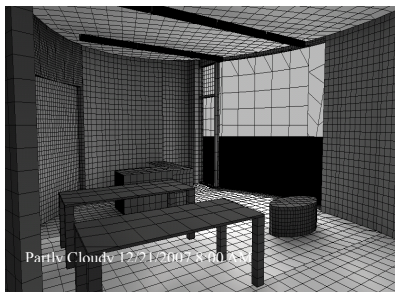
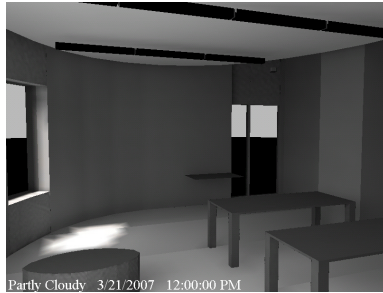
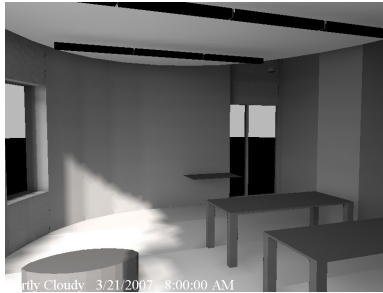
Daylight data was collected between 8am to 6pm on March 21st, June 21st and December 21st under the three standard IES sky conditions in Santa Barbara, CA.

Daylight Study Results

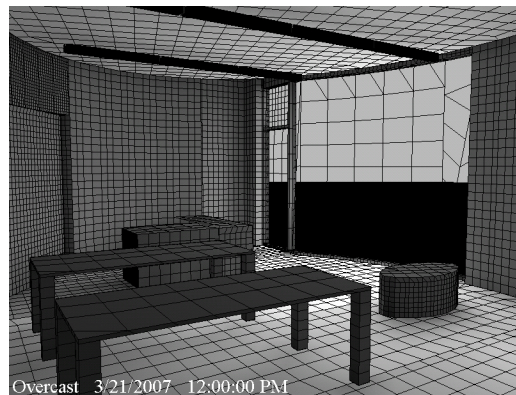
Clear Sky Renderings (8 am, 12 pm and 4 pm)



Partly Cloudy Renderings (8 am, 12 pm and 4 pm)



Overcast Rendering (Typical)



Numeric Summary

- Notes:
1. All values in fc
 2. Workplane @ 2'-6" AFF
 3. Overcast values typical for that month
 4. Sun below horizon at 6pm on 12/21.

Analysis Area: Floor Plane

Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	381.8	2834.9	6.4	166.3	723.9	4.7			
	10:00 AM	746.2	6475.0	15.1	462.8	2999.9	12.4			
	12:00 PM	829.5	7900.0	17.9	561.8	4124.9	16.4	64.4	349.3	2.8
	2:00 PM	498.2	3345.3	12.2	344.8	1975.1	12.6			
	4:00 PM	200.4	3171.9	5.7	120.1	838.9	6.0			
	6:00 PM	11.7	63.8	0.8	3.9	23.5	0.3			
6.21	8:00 AM	137.6	4933.3	5.5	141.5	1883.8	5.7			
	10:00 AM	262.2	8211.9	8.8	266.1	4576.4	10.1			
	12:00 PM	191.2	3142.8	8.9	244.3	2392.3	11.5	76.7	416.1	3.3
	2:00 PM	215.0	3955.5	7.0	227.4	2626.3	9.9			
	4:00 PM	280.8	5048.5	5.0	181.6	2199.6	6.3			
	6:00 PM	105.2	562.0	2.3	39.3	285.3	2.1			
12.21	8:00 AM	175.4	497.5	3.6	54.7	211.6	2.2			
	10:00 AM	785.0	2012.6	15.6	319.7	986.1	9.4			
	12:00 PM	884.5	2570.8	30.5	421.8	1381.0	17.8	42.2	229.0	1.8
	2:00 PM	445.5	3284.1	19.0	205.5	883.6	15.0			
	4:00 PM	60.1	333.5	6.9	33.8	140.4	2.8			
	6:00 PM	-	-	-	-	-	-	-	-	-

Analysis Area: Work Plane

Date	Time	Clear Sky			Partly Cloudy			Overcast		
		Avg	Max	Min	Avg	Max	Min	Avg	Max	Min
3.21	8:00 AM	76.2	104.1	55.1	70.1	100.1	48.2			
	10:00 AM	181.9	2452.2	98.5	170.3	1173.9	102.6			
	12:00 PM	219.5	2080.9	95.4	210.4	1153.0	112.9	36.9	57.1	22.4
	2:00 PM	76.2	104.1	55.1	123.8	174.7	81.9			
	4:00 PM	46.9	63.8	34.2	59.5	86.5	40.0			
	6:00 PM	9.2	12.7	6.9	2.8	4.2	2.0			
6.21	8:00 AM	51.2	69.9	37.1	74.2	107.6	50.3			
	10:00 AM	75.1	102.8	53.5	118.3	171.7	79.1			
	12:00 PM	44.1	60.2	32.1	125.2	180.6	82.8	43.9	68.0	26.7
	2:00 PM	57.8	79.2	41.3	103.1	151.5	68.4			
	4:00 PM	44.5	64.0	32.2	65.1	94.5	43.8			
	6:00 PM	186.0	642.0	19.6	35.7	74.1	16.1			
12.21	8:00 AM	212.4	325.6	128.9	43.7	62.2	30.4			
	10:00 AM	925.6	1418.0	114.6	328.6	494.0	89.7			
	12:00 PM	787.8	1278.4	657.5	357.8	558.2	282.8	24.2	37.5	14.7
	2:00 PM	471.1	323.7	28.9	182.4	322.8	64.2			
	4:00 PM	45.0	182.2	25.9	25.6	36.8	17.8			
	6:00 PM	-	-	-	-	-	-	-	-	-

Conclusion

Collected data shows that there are ample levels of daylight penetrating this space throughout the year due to the floor to ceiling glazing on the south façade. As such, in collaboration with the study done in Appendix D, it is shown that for the majority of the time that this space is in operation throughout the year, artificial lighting is not required.