



تمرین میانترم
استاد: دکتر تحصیلدوست
دستیار استاد: مهندس شاهرودی

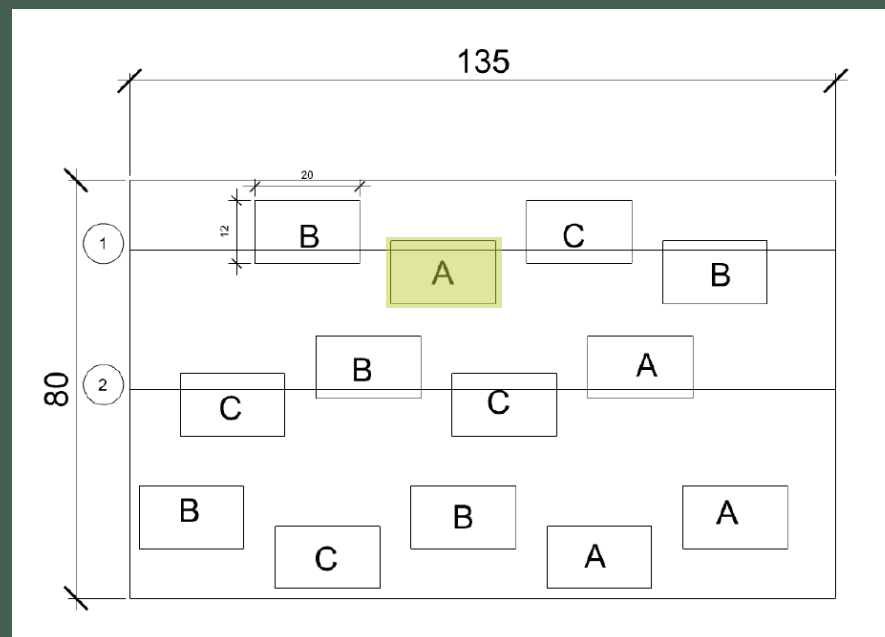
دانشجو:
امیرحسین بهرامی

امیرحسین بهرامی

اعداد انتخابی: ۳-۶-۹

۳ رقم آخر شناسنامه: ۸۹۹ = ۱۷۹ درجه

پس از جایگذاری ساختمان ها و مشخص شدن جهت شمال با توجه به کشیدگی شرقی-غربی بنا ها ساختمان زیر انتخاب گردید.
چراکه نور جنوب را به خوبی دریافت میکند و نسبت به خیرگی نور شرقی و غربی مصون است.



سپس سه سناریو زیر را برای اندازه پنجره در جبهه جنوبی امتحان شد. و سناریو سوم با پیش بینی اثر سایه بان انتخاب شد.

SENARIO 1 (WWR:33%)

June				December				sDA:	65.5
15		12		15		12		ASE:	15.3
Mean:	857	Mean:	849	Mean:	3019	Mean:	4206	UDI:	50
0Media	304	Median	296	Median	541	Median	704	SDG:	26

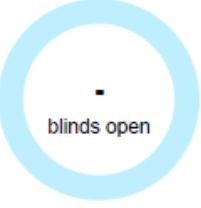
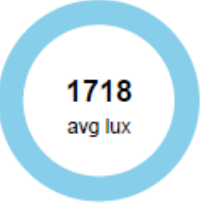
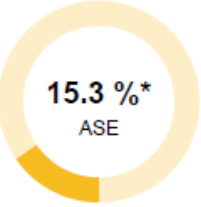
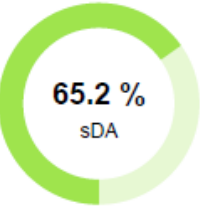
SENARIO 2 (WWR:75%)

June				December				sDA:	91
15		12		15		12		ASE:	27
Mean:	1369	Mean:	1376	Mean:	4936	Mean:	666	UDI:	66
Median	615	Median	606	Median	1033	Median	1439	SDG:	41.3

SENARIO 3 (WWR:50%)

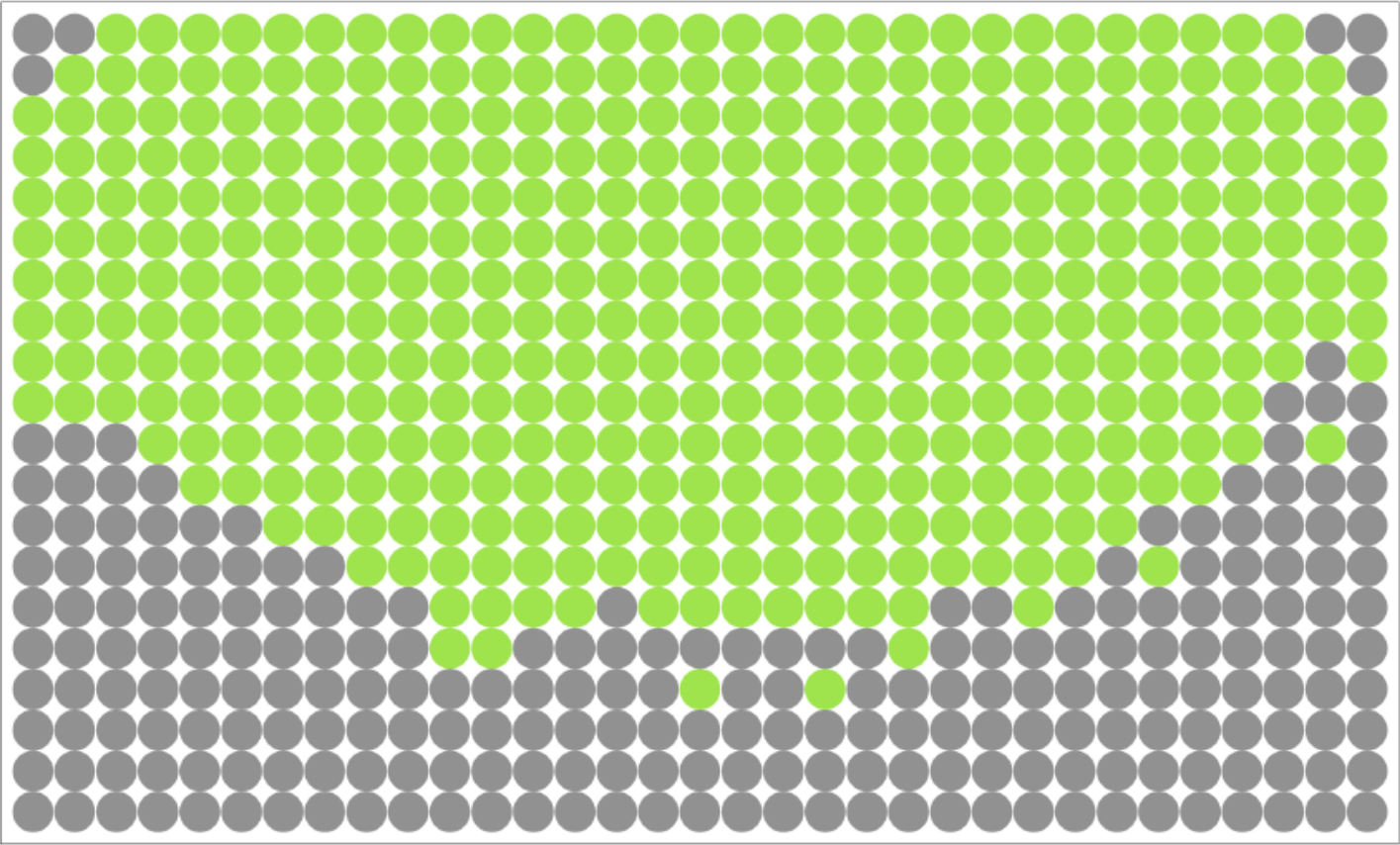
June				December				sDA:	92
15		12		15		12		ASE:	20.2
Mean:	1148	Mean:	1149	Mean:	4273	Mean:	418	UDI:	66.5
Median	482	Median	462	Median	805	Median	178	SDG:	35.1

SENARIO 1

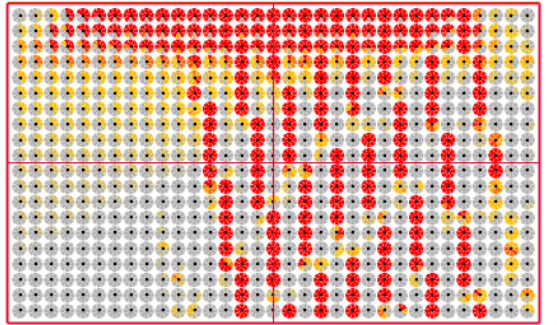


Space ID & Description	Area	Spacing	Shading	050%	sDA	0250 hrs	ASE
	2589 ft²	2.0 ft	N		65.15 %		15.30 %

Totals 2589 ft² 65.15 % 15.30 %

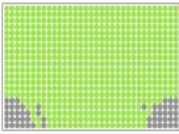
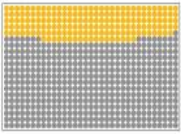


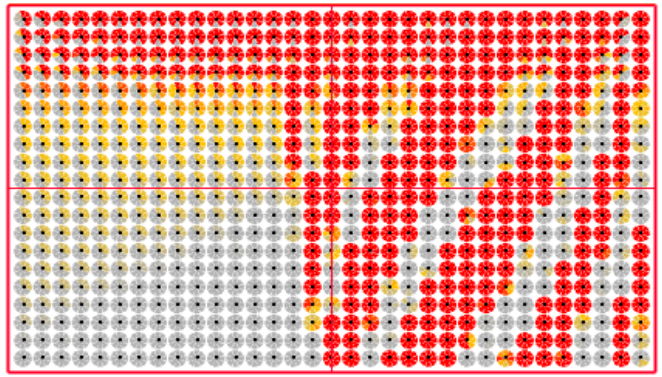
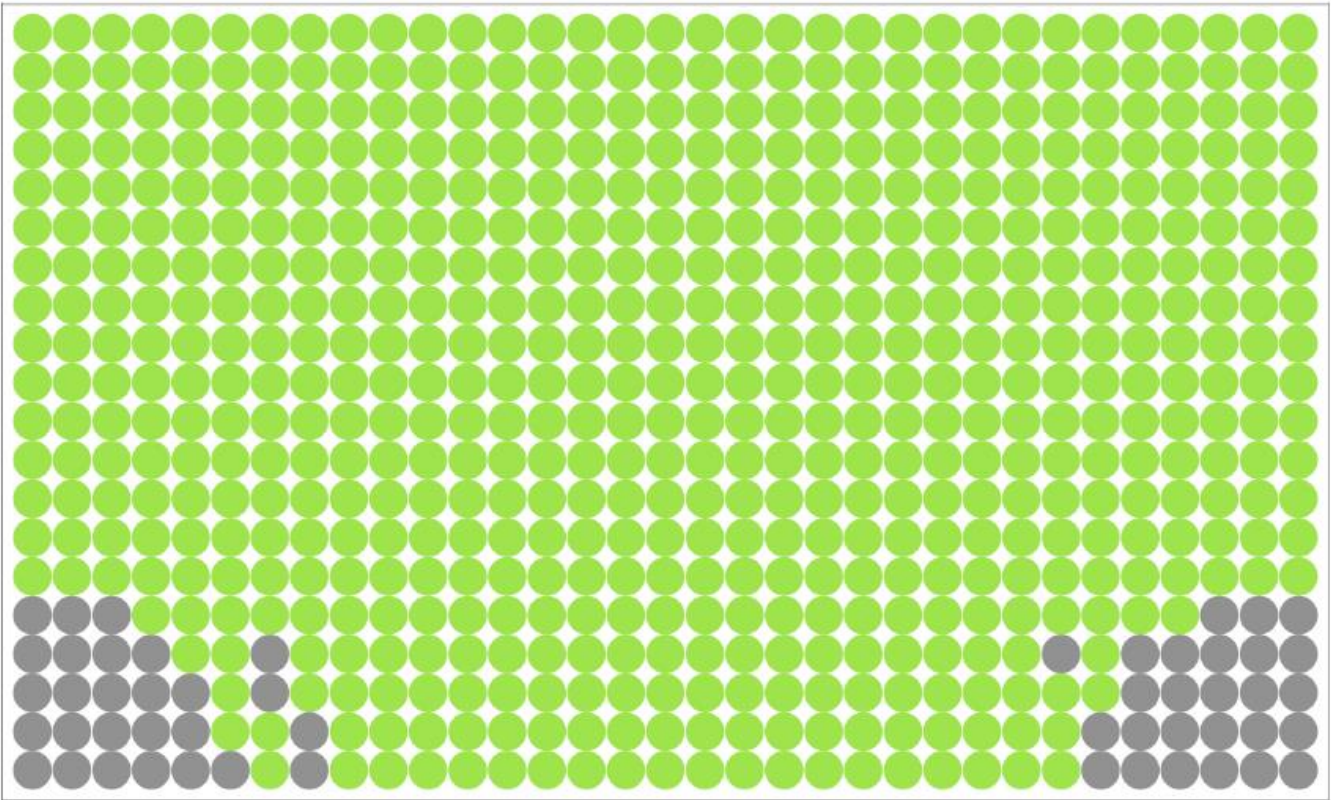
Daylight Autonomy (300 lux) 0 50%



SDG: 26 %

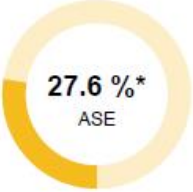
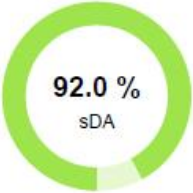
SENARIO 2

Space ID & Description	Area	Spacing	Shading	050% sDA	0250 hrs ASE
1	2589 ft²	2.0 ft	N	 91.97 %	 27.58 %
Totals	2589 ft²			91.97 %	27.58 %



SDG:

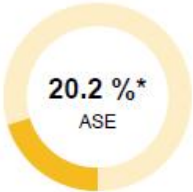
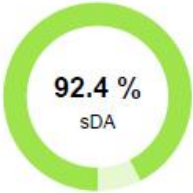
41.3



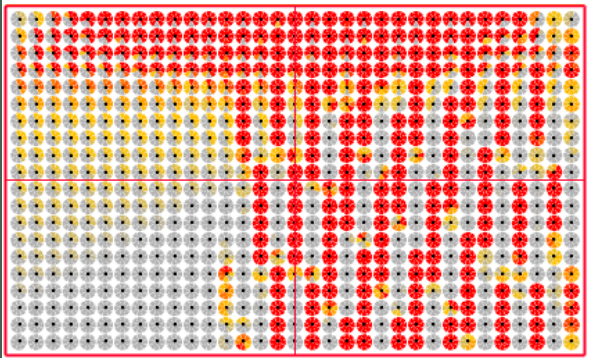
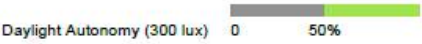
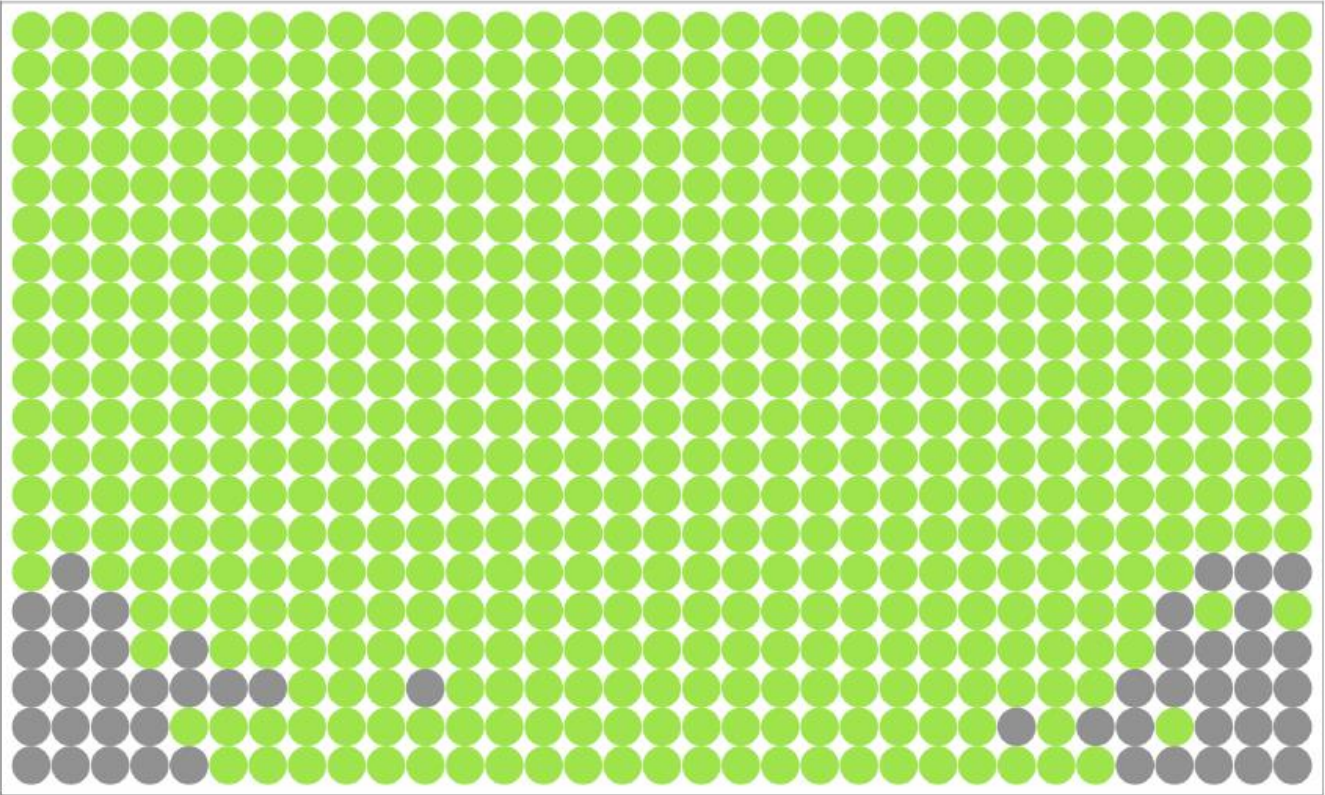
Daylight Autonomy (300 lux) 050%



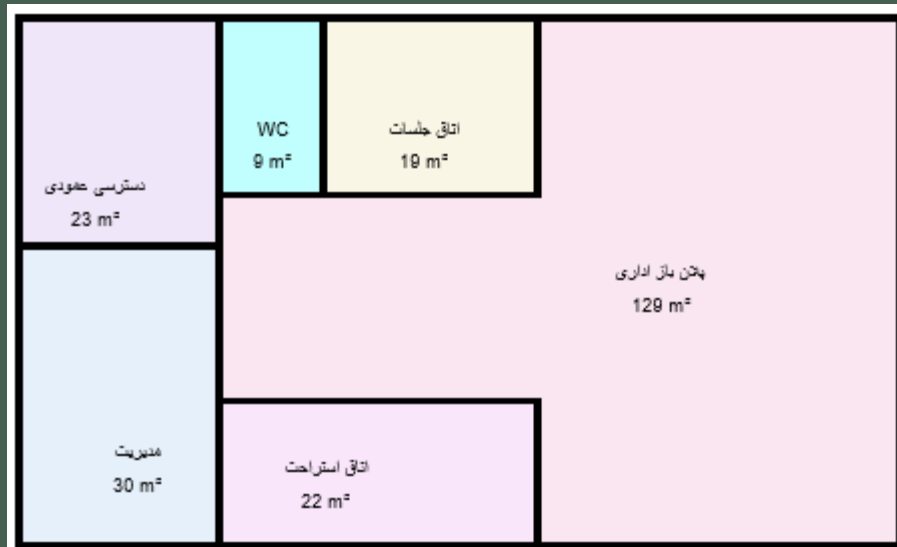
SENARIO 3



Space ID & Description	Area	Spacing	Shading	050% sDA	0250 hrs ASE
1	2589 ft²	2.0 ft	N	92.42 %	20.15 %
Totals	2589 ft²			92.42 %	20.15 %



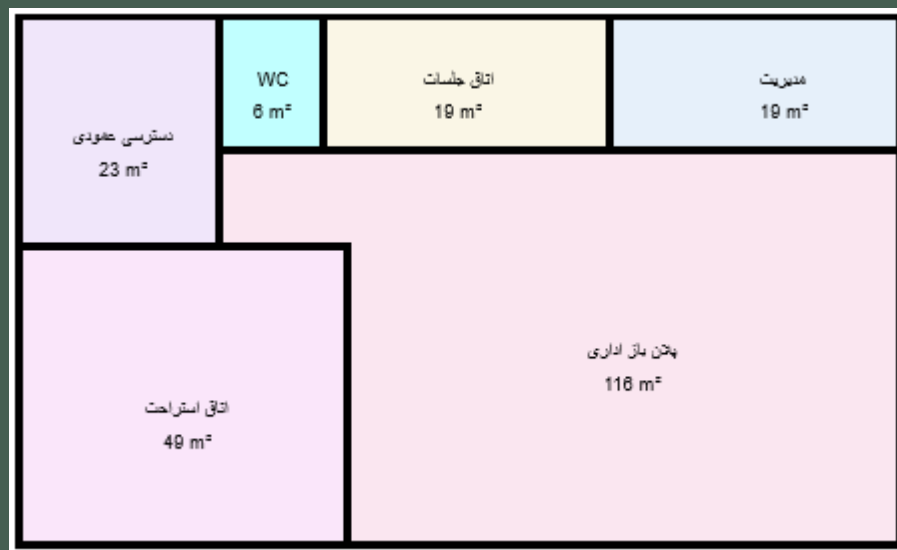
SDG:	35.1
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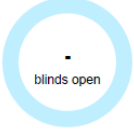
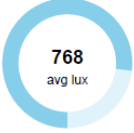
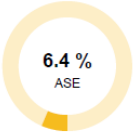
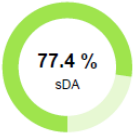
PLAN A

با توجه به وضعیت روشنایی و نیاز هر فضا ۲ پلان به شکل های بالا ترسیم شد.

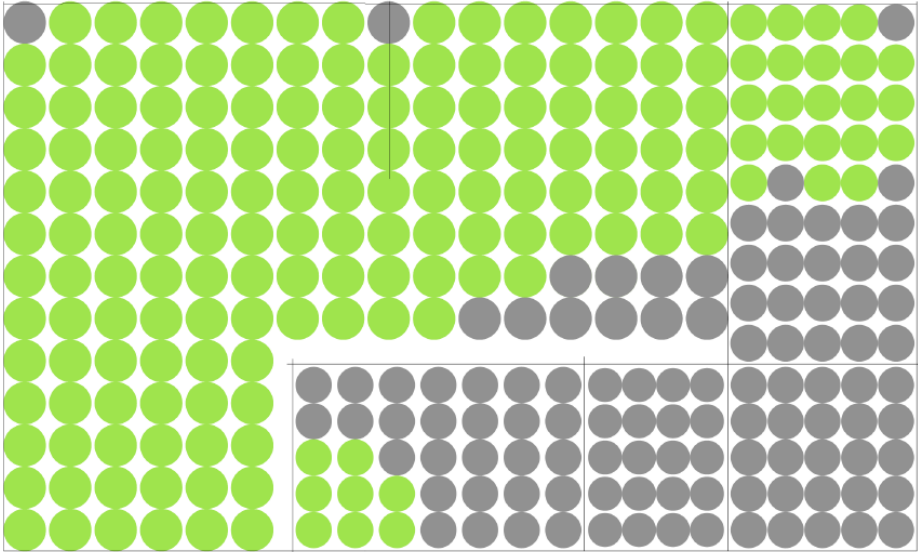
پلان باز ادارى، اتاق استراحت و مدیریت به ترتیب الویت نیاز روشنایی بود سپس اتاق جلسات که بیشتر مسئله ارائه در آن مطرح هست و نیاز به نور کمتری دارد قرار گرفت و در نهایت راه پله و دستشویی در پایین ترین الویت ها قرار گرفتند. در جبه جنوبی پنجره ها به سایه بان افقى مجهز شدند.



PLAN B



No dynamic shading has been modeled because: **PLAN A**



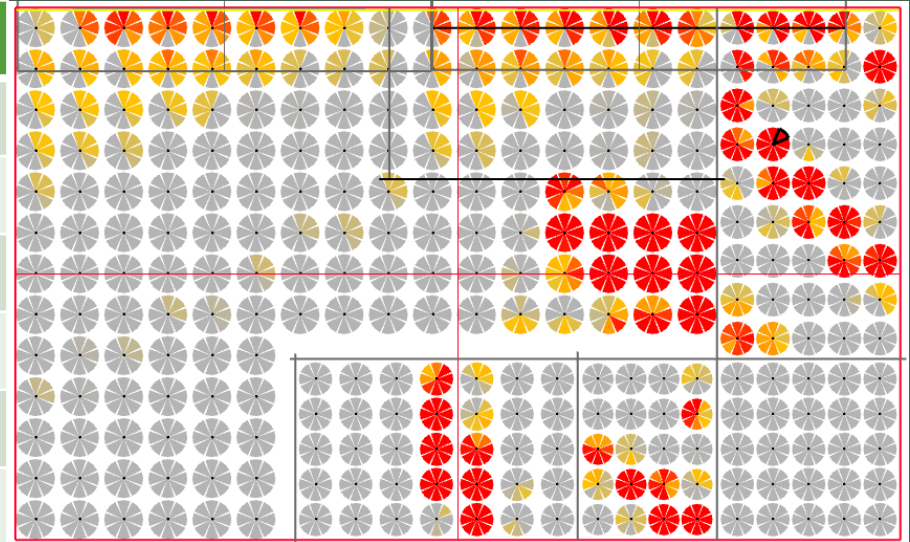
Software: ClimateStudio v1.9.8389.21977
Engine: Radiance 5.3
Weather: IRN_TE_Tehran-Mehrabad.Intl.AP.407540_TMYx.2004-2018.epw
North Offset: 179°
Ambient Bounces: 6
Passes Completed: 100
Primary Ambient Samples: 6400

Layer	Objects	Material	Rvis	Tvis
floor	7	Parquet floor	15.4 %	0.0 %
ceiling	1	Ceiling E14 528	87.3 %	0.0 %
walls	4	Violet Painted Walls	43.5 %	0.0 %
window	3	Optigray	6.2 %	62.8 %
shading	7	Plastic Chair Arm	5.2 %	0.0 %
neighbour	72	Thin Film PV on White Exterior Louver	5.6 %	0.0 %

Space ID & Description	Area	Spacing	Shading	050%	sDA	0250 hrs	ASE
1دسترسی عمودی	182 ft²	3.3 ft	N		0.00 %		0.00 %
2استراحت	1633 ft²	3.3 ft	N		93.04 %		7.59 %
3جلسات	281 ft²	3.3 ft	N		22.86 %		0.00 %
4ریاست	354 ft²	3.3 ft	N		48.89 %		6.67 %
5WC	139 ft²	3.3 ft	N		0.00 %		0.00 %
6فضای کار	1633 ft²	3.3 ft	N		92.41 %		7.59 %
Totals	4222 ft²				77.35 %		6.43 %

PLAN B

		UDI	ASE	SDA	SDG
1	دسترسی عمودی	0	0	0	0
2	پلان باز کار	77	7.5	91	15
3	جلسات	20	0	22	16
4	ریاست	42	6.6	51	19
5	WC	0	0	0	19
6	استراحت	76	7.5	90	6



PLAN A

June

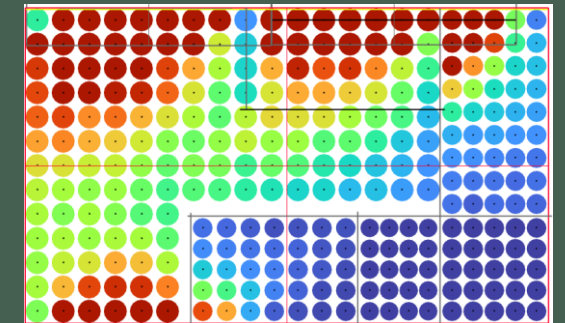
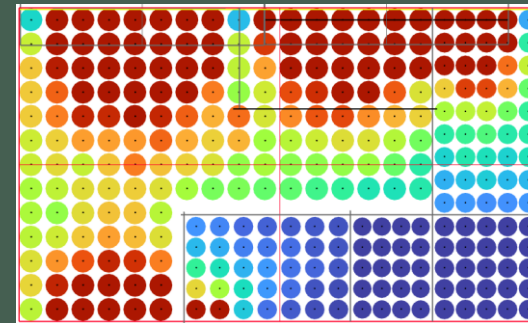
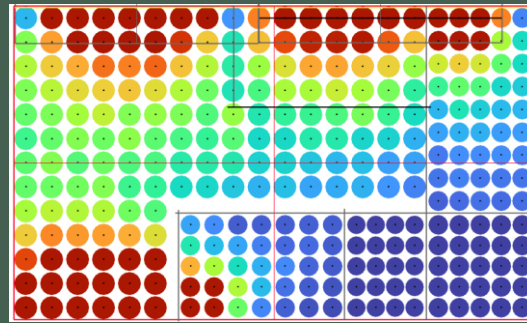
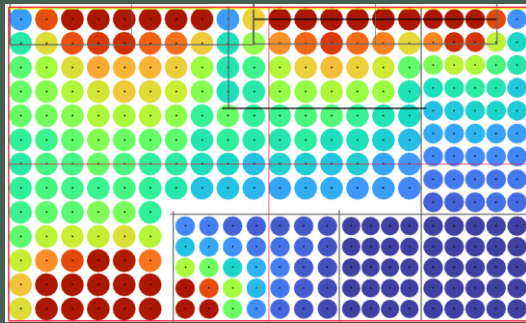
December

12

15

12

15



SENARIO 3 (WWR:50%)

كل

June

December

15

12

15

12

sDA:

77

Mean:

700

Mean:

571

Mean:

2312

Mean:

2384

ASE:

6.4

Median

423

Median

387

Median

484

Median

640

Av LUX:

768

PLAN A

September

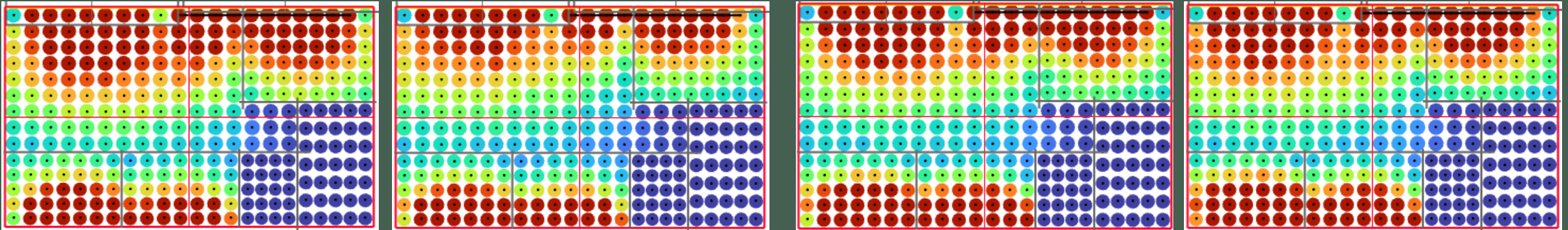
March

12

15

12

15



SENARIO 3 (WWR:50%)

كل

September

March

12

15

12

15

sDA:

77

Mean:

798

Mean:

565

Mean:

757

Mean:

713

ASE:

6.4

Median

552

Median

429

Median

470

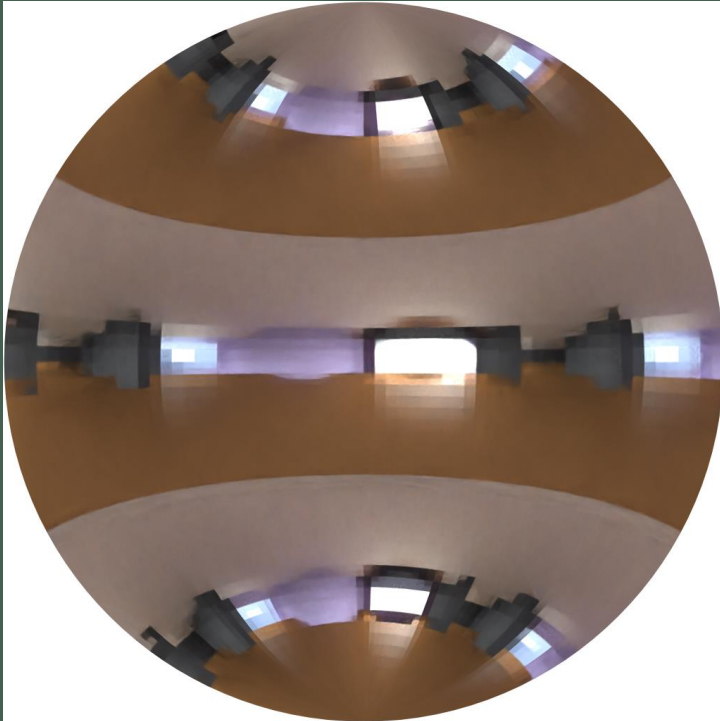
Median

493

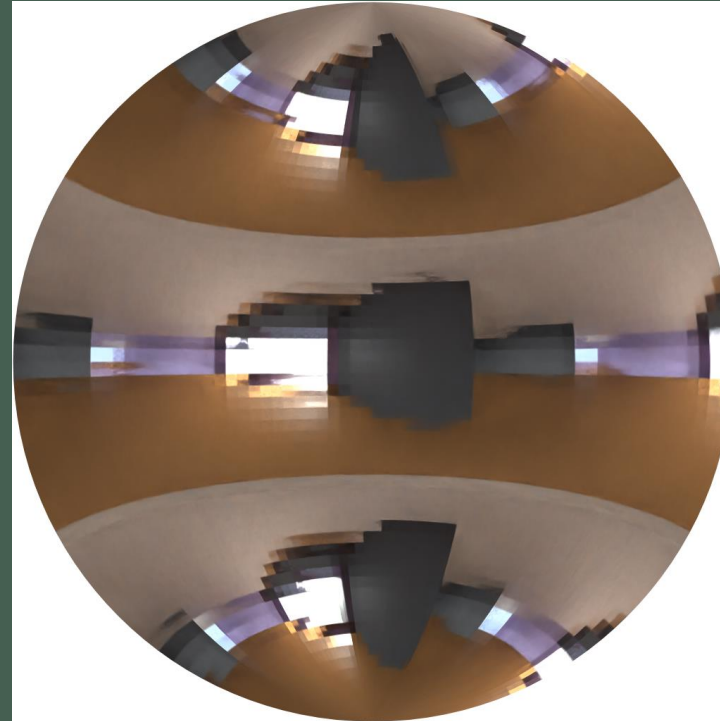
Av LUX:

768

June

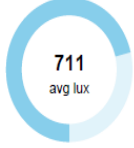
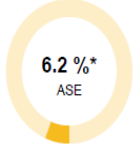
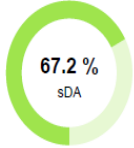


12

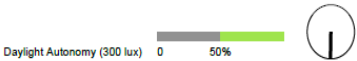
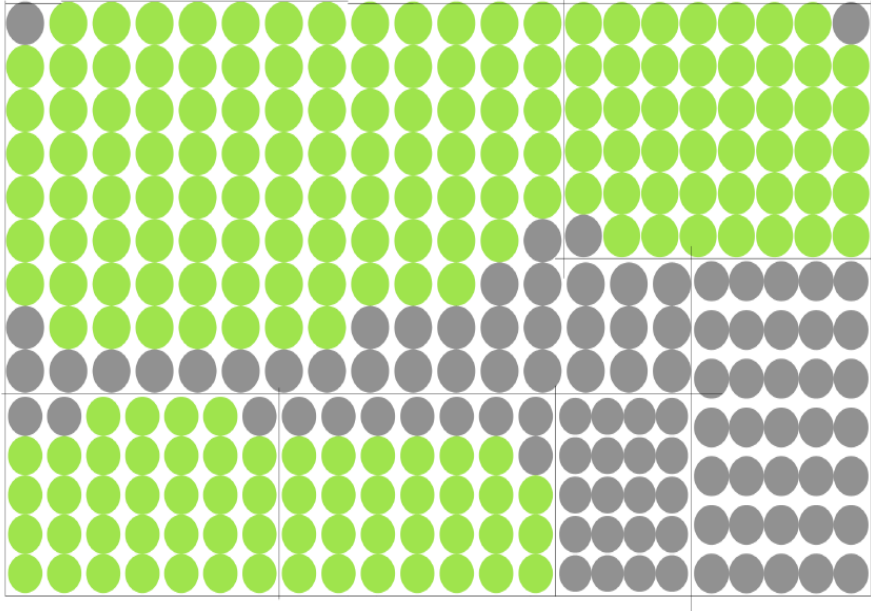


15

PLAN B



* No dynamic shading has been modeled, and ASE > 10% in one or more spaces. The design addresses glare as follows:
75



Software: ClimateStudio v1.9.8389.21977
Engine: Radiance 5.3
Weather: IRN_TE_Tehran-Mehrabad.Intl.AP.407540_TMYx.2004-2018.epw
North Offset: 179°
Ambient Bounces: 6
Passes Completed: 100
Primary Ambient Samples: 6400

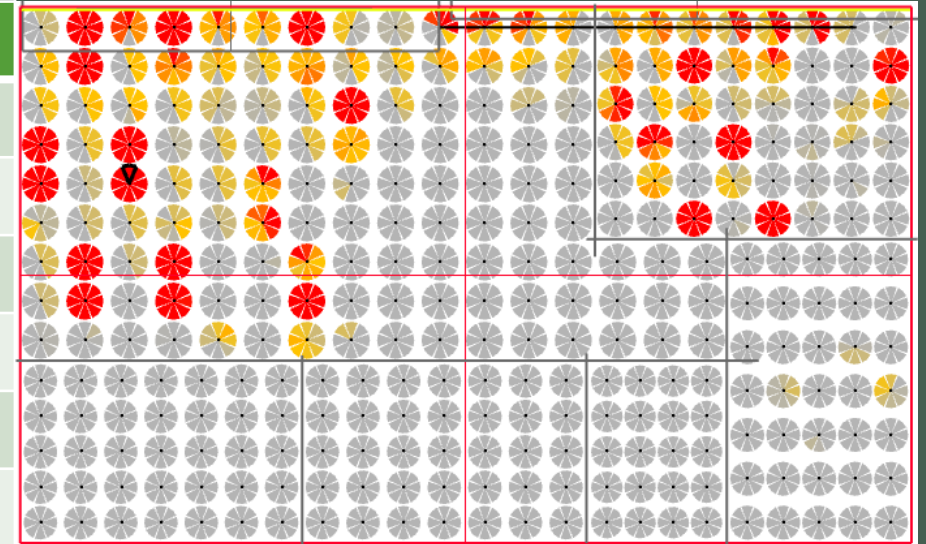
Layer Materials				
Layer	Objects	Material	Rvis	Tvis
floor	7	Parquet floor	15.4 %	0.0 %
ceiling	1	Ceiling E14 528	87.3 %	0.0 %
walls	5	Violet Painted Walls	43.5 %	0.0 %
window	4	Optigray	8.2 %	82.9 %
shading	9	Plastic Chair Arm	5.2 %	0.0 %
neighbour	72	Thin Film PV on White Exterior Louver	5.6 %	0.0 %

Space ID & Description		Area	Spacing	Shading	050%	sDA	0250 hrs	ASE
3	WC	139 ft²	3.3 ft	N		0.00 %		0.00 %
3	جلسات	279 ft²	3.3 ft	N		91.43 %		0.00 %
3	ریاست	281 ft²	3.3 ft	N		77.14 %		0.00 %
3	استراحت	398 ft²	3.3 ft	N		95.83 %		18.75 %
3	فضای کار	1189 ft²	3.3 ft	N		74.60 %		7.14 %
3	دسترسی عمودی	304 ft²	3.3 ft	N		0.00 %		0.00 %

Totals 2589 ft² 67.20 % 6.16 %

PLAN B

		UDI	ASE	SDA	SDG
1	دسترسی عمودی	0	0	0	0
2	پلان باز کار	65.88	7.14	74.60	11
3	جلسات	76.14	0	91.43	0
4	ریاست	67.78	0	77.14	0
5	WC	0	0	0	0
6	استراحت	78.87	18.75	95.83	16



PLAN B

June

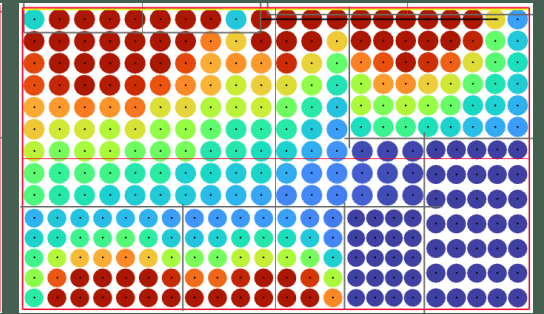
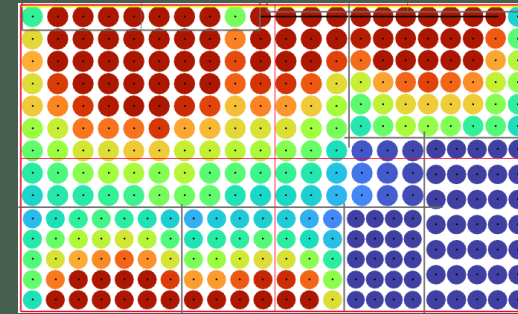
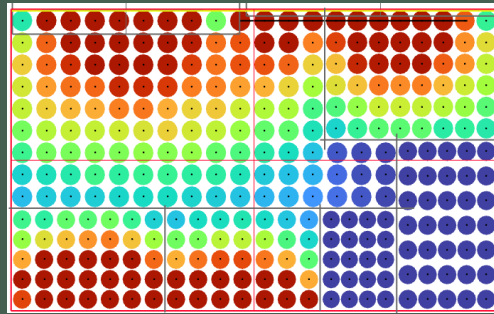
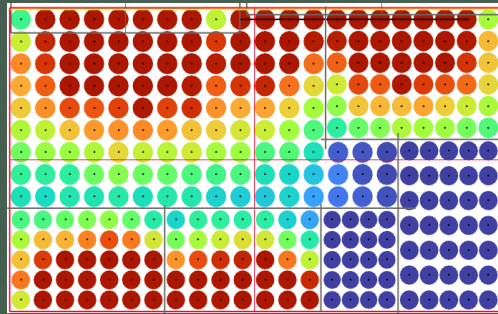
December

12

15

12

15



SENARIO 3 (WWR:50%)

كل

June

December

15

12

15

12

sDA:

67.2 %

Mean:

674

Mean:

775

Mean:

1063

Mean:

947

ASE:

6.2 %

Median

521

Median

607

Median

389

Median

534

Av LUX:

711

PLAN B

September

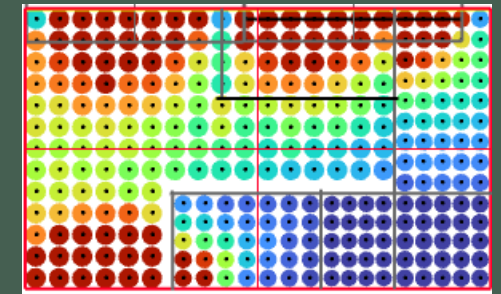
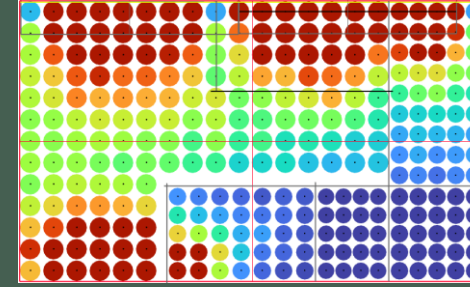
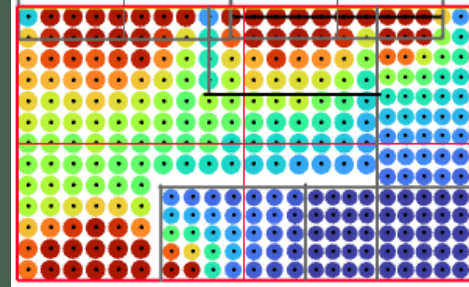
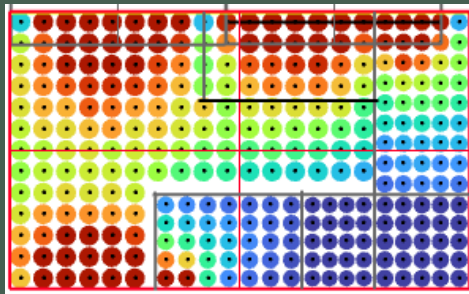
March

12

15

12

15



SENARIO 3 (WWR:50%)

كل

September

March

15

12

15

12

sDA:

67.2 %

Mean:

710

Mean:

772

Mean:

874

Mean:

852

ASE:

6.2 %

Median

482

Median

590

Median

548

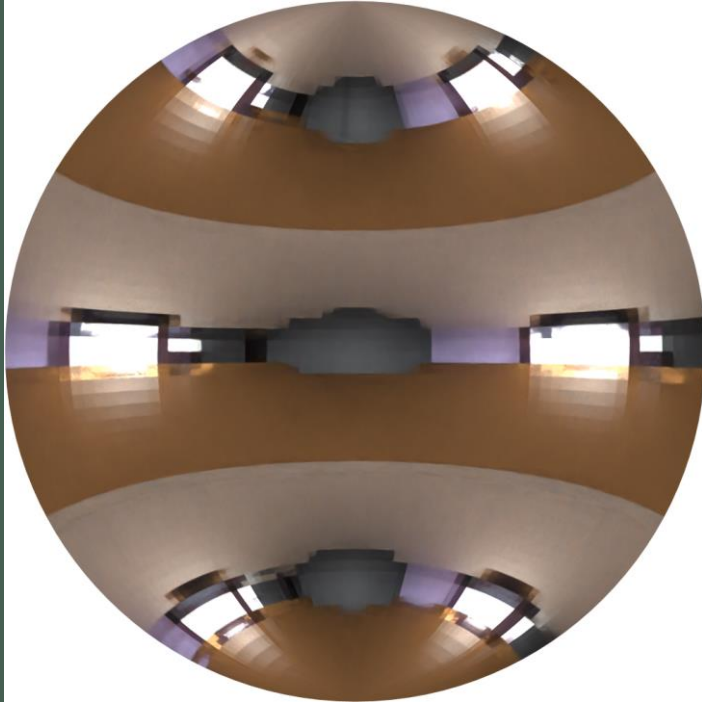
Median

527

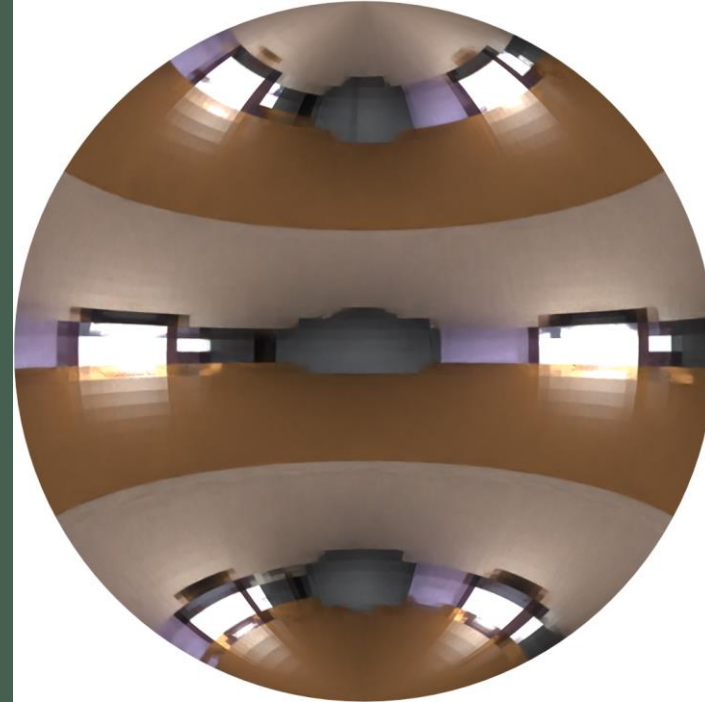
Av LUX:

711

June



12



15

در نهایت ارزیابی هر دو پلان و اندازه گیری شاخص های روشنایی نتیجه مطلوبی به همراه داشت. که پلان اول credit 3 و پلان دوم credit 2 گواهینامه Leed را بدست می آورد.