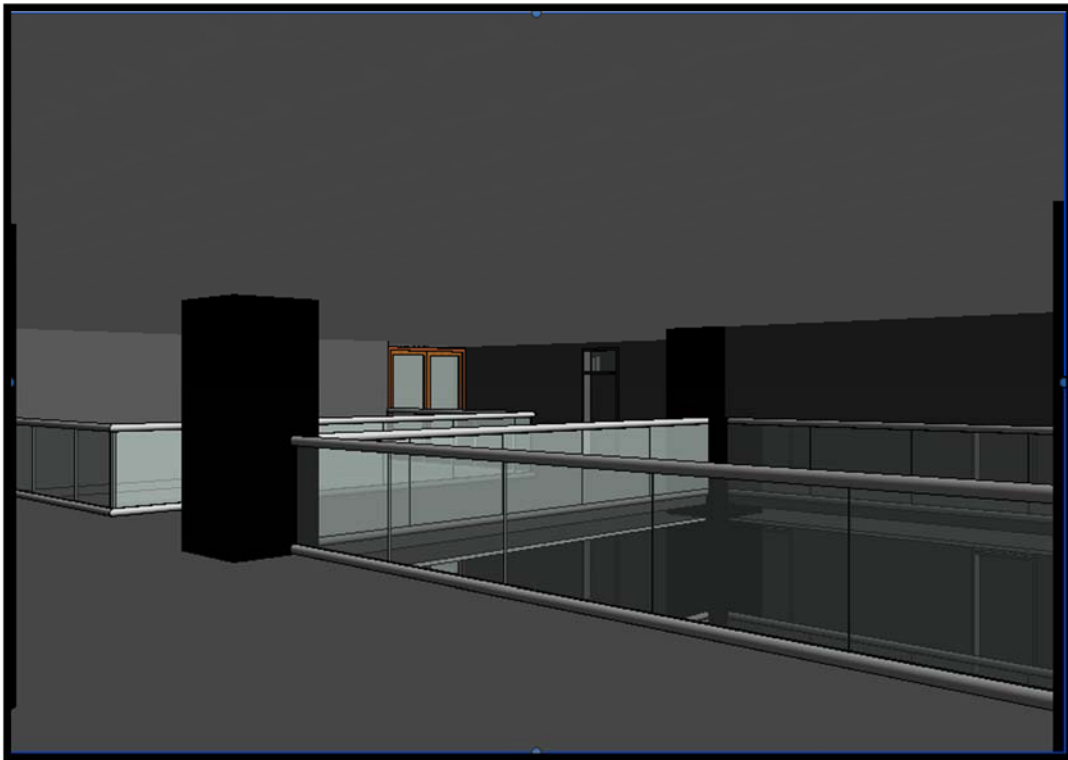


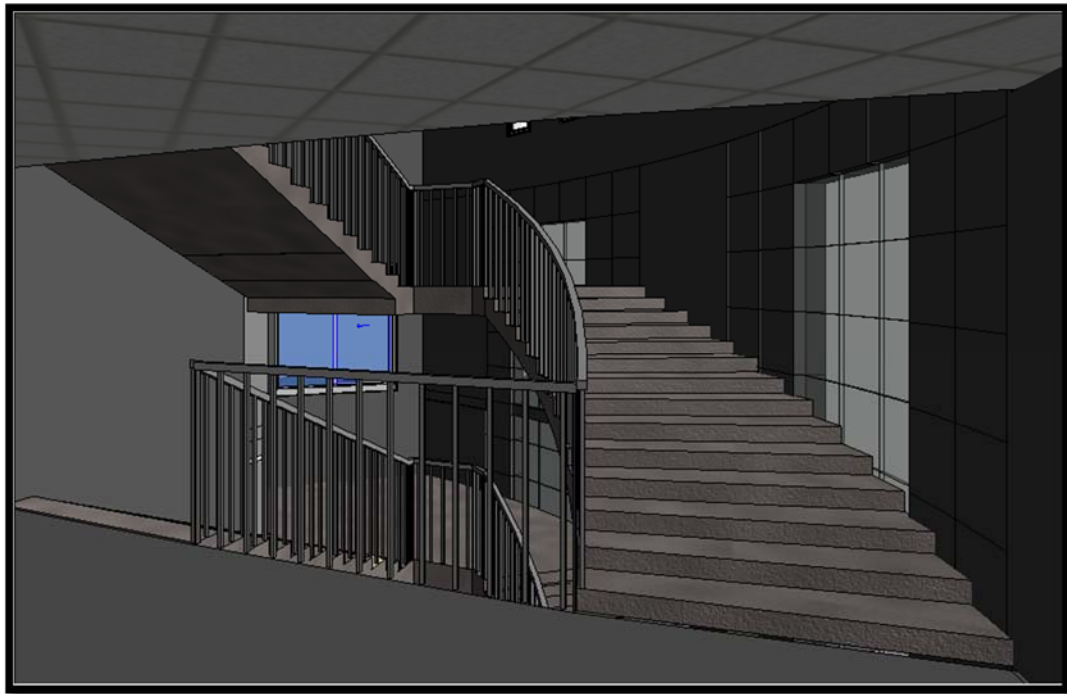
**Photo 4:** building (A) Internal shot (reception)



**Photo 5:** building (A) Internal shot (2<sup>nd</sup> floor)



**Photo 6:** building (A) Internal shot(labs in 2<sup>nd</sup> floor)



**Photo 7:** building (A) Internal shot (stairs)



**Photo 8:** building (A) exterior shot

**APPENDIX –B**  
**(Building B)**

## Field Survey Data

**Table 1 (Building B Basement)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent lamp 100cm	6	23	18	20	18	0.414	12.4	74.52
fluorescent bulb	123	26	6	14	10	0.26	7.8	959.4
fluorescent bulb	12	15	6	14	10	0.15	4.5	54
spotlight	113	40	6	10	7	0.28	8.4	949.2
fluorescent lamp 60cm	270	15	6	10	8	0.12	3.6	972
fluorescent lamp 120cm	4	36	8	12	10	0.36	10.8	43.2
computer	3	500	6	12	8	4	80	240
air condition 4hp	5	2944	4	10	6	17.664	530	2649.6
air condition 2hp	4	1472	4	10	6	8.832	265	1059.84
central A.C 25hp	1	18400	6	12	8	147.2	4416	4416
elevator	2	19600	3	12	6	117.6	3528	7056
copy machine	3	940	1	5	3	2.82	84.6	253.8
fan	5	75	2	8	5	0.375	11.3	56.25
water boiler	3	2500	0.5	2	1	2.5	50	150
speaker	6	75	0	4	3	0.225	6.75	40.5
projector	2	313	2	6	4	1.252	37.6	75.12
microphone	3	75	0	5	2	0.15	4.5	13.5
Electricity socket	164					0	0	0
water pump 5hp	2	3560	0	4	2	7.12	142	284.8
laptop	5	100	4	12	6	0.6	12	60
								<b>19407.73</b>

**Table 2 (Building B Ground floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	46	26	10	16	12	0.312	9.36	430.56
spotlight	39	40	10	16	12	0.48	14.4	561.6
fluorescent lamp 60cm	420	15	6	10	8	0.12	2.4	1008
plasma TV 32"	2	130	6	14	12	1.56	31.2	62.4
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
computer	47	500	6	12	8	4	80	3760
air condition 4hp	4	2944	4	10	6	17.664	353.28	1413.12
air condition 2hp	10	1472	4	10	6	8.832	176.64	1766.4
electronic gate	1	70	6	12	10	0.7	14	14
copy machine	2	940	1	5	3	2.82	56.4	112.8
printer	2	450	1	3	2	0.9	18	36
scanner	1	450	0	2	1	0.45	9	9
fan	3	75	8	12	10	0.75	15	45
fan	4	150	8	12	10	1.5	30	120
water boiler	4	2500	2	4	3	7.5	150	600
water cooler	1	485	12	12	12	5.82	174.6	174.6
fingerprint reader	1	10	24	24	24	0.24	4.8	4.8
hand dryer	2	2300	1	3	2	4.6	92	184
projector	5	313	4	8	6	1.878	37.56	187.8
central telephone network	1	500	24	24	24	12	360	360
cashier machine	2	250	8	12	10	2.5	50	100
kitchen vent fan	1	300	8	12	10	3	60	60
small vent fan	2	40	24	24	24	0.96	19.2	38.4
microwave oven	2	700	0	3	2	1.4	28	56
soft drink machine	1	1275	4	8	6	7.65	153	153
refrigerator	10	1500	8	8	8	12	360	3600
refrigerator	1	2800	8	8	8	22.4	672	672
boiler	1	1800	8	14	12	21.6	648	648
electric oven	2	4000	2	8	4	16	320	640
electric fryer	3	3000	4	10	6	18	360	1080

**Table 2 Building B Ground floor continue:**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
Electric Crepe machine	1	3000	2	6	4	12	240	240
mixer	3	2500	0	3	2	5	100	300
grill	2	4400	3	6	4	5	100	200
outdoor light	4	500	6	10	8	17.6	352	1408
laptop	5	100	4	12	6	0.6	12	60
stereo	1	2500	8	14	12	30	600	600
receiver	2	20	8	14	12	0.24	4.8	9.6
electricity socket	30	0						
								<b>20755.88</b>

**Table 3 (Building B 1<sup>st</sup> floor)**

Type	Quantity	Power (watt)	min usage (hr)	max usage(hr)	actual usage(hr)	usage (kw/d)	usage (kw/month)	total usage (kw/month)
fluorescent lamp 60cm	428	15	8	12	10	0.15	3	1284
air conditioner 4hp	9	2944	4	10	6	17.664	353	3179.52
air conditioner 2hp	6	1472	4	10	6	8.832	177	1059.84
computer	28	500	4	10	6	3	60	1680
printer	9	450	4	10	6	2.7	54	486
copy machine	2	940	1	5	3	2.82	56.4	112.8
projector	9	313	4	10	8	2.504	50.1	450.72
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
laptop	5	100	4	12	6	0.6	18	90
spotlight	61	40	8	16	12	0.48	9.6	585.6
refrigerator	1	1500	24	24	24	36	1080	1080
fluorescent bulb	9	26	8	16	12	0.312	6.24	56.16
vent fan	2	40	24	24	24	0.96	19.2	38.4
hand dryer	2	2300	1	3	2	4.6	92	184
water boiler	5	2500	0.5	2	1	2.5	50	250
Electricity socket	30					0	0	0
								<b>10577.84</b>

**Table 4 (Building B 2<sup>nd</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Uasge (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent lamp 60cm	428	15	8	12	10	0.15	3	1284
air conditioner 4hp	9	2944	4	10	6	17.664	353	3179.52
air conditioner 2hp	6	1472	4	10	6	8.832	177	1059.84
computer	48	500	4	10	6	3	60	2880
printer	15	450	4	10	6	2.7	54	810
copy machine	3	940	1	5	3	2.82	56.4	169.2
projector	9	313	4	10	8	2.504	50.1	450.72
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
laptop	5	100	4	12	6	0.6	18	90
scanner	2	450	4	10	6	2.7	81	162
spotlight	61	40	8	16	12	0.48	9.6	585.6
refrigerator	2	1500	24	24	24	36	1080	2160
fluorescent bulb	9	26	8	16	12	0.312	6.24	56.16
vent fan	2	40	24	24	24	0.96	19.2	38.4
hand dryer	2	2300	1	3	2	4.6	92	184
water boiler	5	2500	0.5	2	1	2.5	50	250
Electricity socket	30					0	0	0
								13400.24

**Table 5 (Building B 3<sup>rd</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Uasge (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent lamp 60cm	428	15	8	12	10	0.15	3	1284
air conditioner 4hp	9	2944	4	10	6	17.664	353	3179.52
air conditioner 2hp	6	1472	4	10	6	8.832	177	1059.84
computer	49	500	4	10	6	3	60	2940
printer	15	450	4	10	6	2.7	54	810
copy machine	4	940	1	5	3	2.82	56.4	225.6
projector	9	313	4	10	8	2.504	50.1	450.72
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
laptop	5	100	4	12	6	0.6	18	90



**Table 5 Building B 3<sup>rd</sup> floor continue:**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
scanner	3	450	4	10	6	2.7	81	243
spotlight	61	40	8	16	12	0.48	9.6	585.6
refrigerator	3	1500	24	24	24	36	1080	3240
fluorescent bulb	9	26	8	16	12	0.312	6.24	56.16
vent fan	2	40	24	24	24	0.96	19.2	38.4
hand dryer	2	2300	1	3	2	4.6	92	184
water boiler	5	2500	0.5	2	1	2.5	50	250
Electricity socket	30					0	0	0
								14677.64

**Table 6 (Building B 4<sup>th</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent lamp 60cm	428	15	8	12	10	0.15	3	1284
air conditioner 4hp	9	2944	4	10	6	17.664	353	3179.52
air conditioner 2hp	6	1472	4	10	6	8.832	177	1059.84
computer	49	500	4	10	6	3	60	2940
printer	15	450	4	10	6	2.7	54	810
copy machine	4	940	1	5	3	2.82	56.4	225.6
projector	9	313	4	10	8	2.504	50.1	450.72
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
laptop	5	100	4	12	6	0.6	18	90
scanner	3	450	4	10	6	2.7	81	243
spotlight	61	40	8	16	12	0.48	9.6	585.6
refrigerator	3	1500	24	24	24	36	1080	3240
fluorescent bulb	9	26	8	16	12	0.312	6.24	56.16
vent fan	2	40	24	24	24	0.96	19.2	38.4
hand dryer	2	2300	1	3	2	4.6	92	184
water boiler	5	2500	0.5	2	1	2.5	50	250
outdoor light	7	450	8	12	10	4.5	90	630
Electricity socket	30					0	0	0
								15307.64

**Table 7 (Building B stairs)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent lamp 120cm	6	36	8	16	12	0.432	360	2160
fluorescent bulb	48	26	8	16	12	0.312	9.36	449.28
								2609.28

**Table 8 (Building B basement)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 100cm	23	74.52	37.26
fluorescent bulb	26	959.4	479.7
fluorescent bulb	15	54	27
spotlight	40	949.2	474.6
fluorescent lamp 60cm	15	972	486
fluorescent lamp 120cm	36	43.2	21.6
computer	500	240	240
air condition 4hp	2944	2649.6	1324.8
air condition 2hp	1472	1059.84	529.92
central A.C 25hp	18400	4416	2208
elevator	19600	7056	7056
copy machine	940	253.8	253.8
fan	75	56.25	56.25
water boiler	2500	150	150
speaker	75	40.5	40.5
projector	313	75.12	75.12
microphone	75	13.5	13.5
Electricity socket		0	0
water pump 5hp	3560	284.8	284.8
laptop	100	60	60
		<b>19407.73</b>	<b>13818.85</b>

**Table 9 (Building B ground floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	430.56	129.168
spotlight	40	561.6	168.48
fluorescent lamp 60cm	15	1008	302.4
plasma TV 32"	130	62.4	62.4
plasma TV 42"	170	40.8	40.8
computer	500	3760	3760
air condition 4hp	2944	1413.12	706.56
air condition 2hp	1472	1766.4	883.2
electronic gate	70	14	14
copy machine	940	112.8	112.8
printer	450	36	36
scanner	450	9	9
fan	75	45	45
fan	150	120	120
water boiler	2500	600	600
water cooler	485	174.6	174.6
fingerprint reader	10	4.8	4.8
hand dryer	2300	184	184
projector	313	187.8	187.8
central telephone network	500	360	360
cashier machine	250	100	100
kitchen vent fan	300	60	60
small vent fan	40	38.4	38.4
microwave oven	700	56	56
soft drink machine	1275	153	153
refrigerator	1500	3600	3600
refrigerator	2800	672	672
boiler	1800	648	648
electric oven	4000	640	640
electric fryer	3000	1080	1080
Electric Crepe machine	3000	240	240
mixer	2500	300	300
grill	4400	200	200
outdoor light	500	1408	1408

**Table 9 Building B ground floor continue:**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
laptop	100	60	60
stereo	2500	600	600
receiver	20	9.6	9.6
electricity socket	0		
		<b>20755.88</b>	<b>17766.008</b>

**Table 10 (1<sup>st</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 60cm	15	1284	513.6
air conditioner 4hp	2944	3179.52	1589.76
air conditioner 2hp	1472	1059.84	529.92
computer	500	1680	1680
printer	450	486	486
copy machine	940	112.8	112.8
projector	313	450.72	450.72
plasma TV 42"	170	40.8	40.8
laptop	100	90	90
spotlight	40	585.6	292.8
refrigerator	1500	1080	1080
fluorescent bulb	26	56.16	28.08
vent fan	40	38.4	38.4
hand dryer	2300	184	184
water boiler	2500	250	250
Electricity socket		0	0
		10577.84	7366.88

**Table 11 (Building B 2<sup>nd</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 60cm	15	1284	513.6
air conditioner 4hp	2944	3179.52	1589.76
air conditioner 2hp	1472	1059.84	529.92
computer	500	2880	2880
printer	450	810	810
copy machine	940	169.2	169.2
projector	313	450.72	450.72

**Table 11 Building B 2<sup>nd</sup> floor continue:**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
plasma TV 42"	170	40.8	40.8
laptop	100	90	90
scanner	450	162	162
spotlight	40	585.6	292.8
refrigerator	1500	2160	2160
fluorescent bulb	26	56.16	56.16
vent fan	40	38.4	38.4
hand dryer	2300	184	184
water boiler	2500	250	250
Electricity socket			
		13400.24	10217.36

**Table 12 (Building B 3<sup>rd</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 60cm	15	1284	513.6
air conditioner 4hp	2944	3179.52	1589.76
air conditioner 2hp	1472	1059.84	529.92
computer	500	2940	2940
printer	450	810	810
copy machine	940	225.6	225.6
projector	313	450.72	450.72
plasma TV 42"	170	40.8	40.8
laptop	100	90	90
scanner	450	243	243
spotlight	40	585.6	292.8
refrigerator	1500	3240	3240
fluorescent bulb	26	56.16	56.16
vent fan	40	38.4	38.4
hand dryer	2300	184	184
water boiler	2500	250	250
Electricity socket		0	0
		14677.64	11494.76

**Table 13 (Building B 4<sup>th</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 60cm	15	1284	513.6
air conditioner 4hp	2944	3179.52	1589.76
air conditioner 2hp	1472	1059.84	529.92
computer	500	2940	2940
printer	450	810	810
copy machine	940	225.6	225.6
projector	313	450.72	450.72
plasma TV 42"	170	40.8	40.8
laptop	100	90	90
scanner	450	243	243
spotlight	40	585.6	292.8
refrigerator	1500	3240	3240
fluorescent bulb	26	56.16	56.16
vent fan	40	38.4	38.4
hand dryer	2300	184	184
water boiler	2500	250	250
outdoor light	450	630	630
Electricity socket		0	0
		15307.64	12124.76

**Table 14 (Building B stairs)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent lamp 120cm	36	2160	1512
fluorescent bulb	26	449.28	314.496
		2609.28	1826.496

**Table 15 (Building B total)**

floor	Before applying G.B. technologies		After applying G.B. technologies		Reduction (%)
	usage (kw/month)	usage (kw/year)	usage (kw/month)	usage (kw/year)	
basement	19407.73	232892.76	13818.85	165826.2	28.79%
ground floor	20755.88	249070.56	17766.008	213192.096	14.40%
1st floor	10577.84	126934.08	7366.88	88402.56	30.35%
2nd floor	13400.24	160802.88	10217.36	122608.32	23.75%
3rd floor	14677.64	176131.68	11494.76	137937.12	21.68%
4th floor	15307.64	183691.68	12124.76	145497.12	20.79%
stairs	2609.28	31311.36	1826.496	21917.952	30%
total	96736.25	1160835	74615.114	895381.368	22.86%

## Natural lighting analyses results

**Table (16): Lighting Analyses Room Schedule, Building B, Whole Building Results – 9am.**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Basement	Basement	1	29 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	29 m <sup>2</sup>
Basement	Basement	2	8 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	8 m <sup>2</sup>
Basement	Basement	3	8 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	8 m <sup>2</sup>
Basement	Basement	4	22 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	22 m <sup>2</sup>
Basement	Basement	5	19 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	19 m <sup>2</sup>
Basement	Basement	6	20 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	20 m <sup>2</sup>
Basement	Basement	7	6 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	6 m <sup>2</sup>
Basement	Basement	8	171 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	171 m <sup>2</sup>
Basement	Basement	9	178 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	178 m <sup>2</sup>
Basement	Basement	10	146 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	146 m <sup>2</sup>
Basement	Basement	11	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	12	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	13	16 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	16 m <sup>2</sup>
Basement	Basement	14	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	15	6 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	6 m <sup>2</sup>
Basement	Basement	16	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Basement	Basement	17	14 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	14 m <sup>2</sup>
Basement	Basement	18	15 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	15 m <sup>2</sup>
Basement	Basement	19	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Basement	Basement	20	15 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	15 m <sup>2</sup>
Basement	Elevator	96	5 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	5 m <sup>2</sup>
Ground Floor	Ground	21	38 m <sup>2</sup>	Yes	No	5	2 m <sup>2</sup>	0	0 m <sup>2</sup>	95	36 m <sup>2</sup>

**Table (16): Lighting Analyses Room Schedule, Building B, Whole Building Results – 9am continue:**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Ground Floor	Ground	22	78 m <sup>2</sup>	Yes	No	27	21 m <sup>2</sup>	0	0 m <sup>2</sup>	73	57 m <sup>2</sup>
Ground Floor	Ground	24	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Ground Floor	Ground	25	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Ground Floor	Ground	26	12 m <sup>2</sup>	Yes	No	15	2 m <sup>2</sup>	0	0 m <sup>2</sup>	85	10 m <sup>2</sup>
Ground Floor	Ground	27	18 m <sup>2</sup>	Yes	No	50	9 m <sup>2</sup>	0	0 m <sup>2</sup>	50	9 m <sup>2</sup>
Ground Floor	Ground	28	18 m <sup>2</sup>	Yes	No	53	10 m <sup>2</sup>	0	0 m <sup>2</sup>	47	9 m <sup>2</sup>
Ground Floor	Ground	29	18 m <sup>2</sup>	Yes	No	56	10 m <sup>2</sup>	0	0 m <sup>2</sup>	44	8 m <sup>2</sup>
Ground Floor	Ground	30	18 m <sup>2</sup>	Yes	No	54	10 m <sup>2</sup>	0	0 m <sup>2</sup>	46	8 m <sup>2</sup>
Ground Floor	Stairs	31	34 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	34 m <sup>2</sup>
Ground Floor	Ground	32	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Ground Floor	Ground	33	40 m <sup>2</sup>	Yes	No	89	35 m <sup>2</sup>	6	3 m <sup>2</sup>	4	2 m <sup>2</sup>
Ground Floor	Ground	34	18 m <sup>2</sup>	Yes	No	77	14 m <sup>2</sup>	7	1 m <sup>2</sup>	16	3 m <sup>2</sup>
Ground Floor	Ground	35	40 m <sup>2</sup>	Yes	No	4	2 m <sup>2</sup>	0	0 m <sup>2</sup>	96	38 m <sup>2</sup>
Ground Floor	Ground	36	38 m <sup>2</sup>	Yes	No	3	1 m <sup>2</sup>	0	0 m <sup>2</sup>	97	36 m <sup>2</sup>
Ground Floor	Ground	37	20 m <sup>2</sup>	Yes	No	1	0 m <sup>2</sup>	0	0 m <sup>2</sup>	99	19 m <sup>2</sup>
Ground Floor	Ground	38	12 m <sup>2</sup>	Yes	No	2	0 m <sup>2</sup>	0	0 m <sup>2</sup>	98	11 m <sup>2</sup>
Ground Floor	Ground	39	135 m <sup>2</sup>	Yes	No	51	69 m <sup>2</sup>	1	2 m <sup>2</sup>	47	64 m <sup>2</sup>
Ground Floor	Ground	40	44 m <sup>2</sup>	Yes	No	23	10 m <sup>2</sup>	9	4 m <sup>2</sup>	68	30 m <sup>2</sup>
First Floor	First	41	39 m <sup>2</sup>	Yes	No	18	7 m <sup>2</sup>	0	0 m <sup>2</sup>	82	33 m <sup>2</sup>
First Floor	First	42	37 m <sup>2</sup>	Yes	No	20	7 m <sup>2</sup>	0	0 m <sup>2</sup>	80	30 m <sup>2</sup>
First Floor	First	43	39 m <sup>2</sup>	Yes	No	9	3 m <sup>2</sup>	0	0 m <sup>2</sup>	91	36 m <sup>2</sup>
First Floor	First	44	37 m <sup>2</sup>	Yes	No	47	18 m <sup>2</sup>	0	0 m <sup>2</sup>	53	20 m <sup>2</sup>
First Floor	First	45	171 m <sup>2</sup>	Yes	No	21	36 m <sup>2</sup>	5	8 m <sup>2</sup>	75	127 m <sup>2</sup>



**Table (16): Lighting Analyses Room Schedule, Building B, Whole Building Results – 9am continue:**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
First Floor	First	46	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
First Floor	First	47	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
First Floor	First	48	12 m <sup>2</sup>	Yes	No	16	2 m <sup>2</sup>	0	0 m <sup>2</sup>	84	10 m <sup>2</sup>
First Floor	First	49	36 m <sup>2</sup>	Yes	No	57	21 m <sup>2</sup>	0	0 m <sup>2</sup>	43	16 m <sup>2</sup>
First Floor	First	50	18 m <sup>2</sup>	Yes	No	49	9 m <sup>2</sup>	0	0 m <sup>2</sup>	51	9 m <sup>2</sup>
First Floor	First	51	18 m <sup>2</sup>	Yes	No	45	8 m <sup>2</sup>	0	0 m <sup>2</sup>	55	10 m <sup>2</sup>
First Floor	First	52	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
First Floor	First	53	37 m <sup>2</sup>	Yes	No	8	3 m <sup>2</sup>	0	0 m <sup>2</sup>	92	34 m <sup>2</sup>
First Floor	First	54	37 m <sup>2</sup>	Yes	No	6	2 m <sup>2</sup>	0	0 m <sup>2</sup>	94	35 m <sup>2</sup>
First Floor	First	55	18 m <sup>2</sup>	Yes	No	78	14 m <sup>2</sup>	5	1 m <sup>2</sup>	17	3 m <sup>2</sup>
First Floor	First	56	39 m <sup>2</sup>	Yes	No	90	35 m <sup>2</sup>	5	2 m <sup>2</sup>	6	2 m <sup>2</sup>
First Floor	First	57	39 m <sup>2</sup>	Yes	No	10	4 m <sup>2</sup>	0	0 m <sup>2</sup>	90	36 m <sup>2</sup>
First Floor	First	58	44 m <sup>2</sup>	Yes	No	21	9 m <sup>2</sup>	8	3 m <sup>2</sup>	72	31 m <sup>2</sup>
Second Floor	Second	59	38 m <sup>2</sup>	Yes	No	50	19 m <sup>2</sup>	0	0 m <sup>2</sup>	50	19 m <sup>2</sup>
Second Floor	Second	60	39 m <sup>2</sup>	Yes	No	18	7 m <sup>2</sup>	0	0 m <sup>2</sup>	82	33 m <sup>2</sup>
Second Floor	Second	61	37 m <sup>2</sup>	Yes	No	29	11 m <sup>2</sup>	0	0 m <sup>2</sup>	71	27 m <sup>2</sup>
Second Floor	Second	62	39 m <sup>2</sup>	Yes	No	23	9 m <sup>2</sup>	0	0 m <sup>2</sup>	77	30 m <sup>2</sup>
Second Floor	Second	63	170 m <sup>2</sup>	Yes	No	33	56 m <sup>2</sup>	4	7 m <sup>2</sup>	63	108 m <sup>2</sup>
Second Floor	Second	64	37 m <sup>2</sup>	Yes	No	10	4 m <sup>2</sup>	0	0 m <sup>2</sup>	90	33 m <sup>2</sup>
Second Floor	Second	65	37 m <sup>2</sup>	Yes	No	12	4 m <sup>2</sup>	0	0 m <sup>2</sup>	88	33 m <sup>2</sup>
Second Floor	Second	66	39 m <sup>2</sup>	Yes	No	7	3 m <sup>2</sup>	0	0 m <sup>2</sup>	93	37 m <sup>2</sup>
Second Floor	Second	67	44 m <sup>2</sup>	Yes	No	21	9 m <sup>2</sup>	8	4 m <sup>2</sup>	71	31 m <sup>2</sup>
Second Floor	Second	68	18 m <sup>2</sup>	Yes	No	76	13 m <sup>2</sup>	5	1 m <sup>2</sup>	19	3 m <sup>2</sup>

**Table (16): Lighting Analyses Room Schedule, Building B, Whole Building Results – 9am continue:**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Second Floor	Second	69	39 m <sup>2</sup>	Yes	No	87	34 m <sup>2</sup>	5	2 m <sup>2</sup>	9	3 m <sup>2</sup>
Second Floor	Second	70	18 m <sup>2</sup>	Yes	No	43	8 m <sup>2</sup>	0	0 m <sup>2</sup>	57	10 m <sup>2</sup>
Second Floor	Second	71	18 m <sup>2</sup>	Yes	No	43	8 m <sup>2</sup>	0	0 m <sup>2</sup>	57	10 m <sup>2</sup>
Second Floor	Second	72	18 m <sup>2</sup>	Yes	No	46	8 m <sup>2</sup>	0	0 m <sup>2</sup>	54	10 m <sup>2</sup>
Second Floor	Second	73	18 m <sup>2</sup>	Yes	No	39	7 m <sup>2</sup>	0	0 m <sup>2</sup>	61	11 m <sup>2</sup>
Second Floor	Second	74	12 m <sup>2</sup>	Yes	No	14	2 m <sup>2</sup>	0	0 m <sup>2</sup>	86	10 m <sup>2</sup>
Second Floor	Second	75	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Second Floor	Second	76	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	77	38 m <sup>2</sup>	Yes	No	51	19 m <sup>2</sup>	0	0 m <sup>2</sup>	49	18 m <sup>2</sup>
Third Floor	Third	78	37 m <sup>2</sup>	Yes	No	50	19 m <sup>2</sup>	0	0 m <sup>2</sup>	50	19 m <sup>2</sup>
Third Floor	Third	79	37 m <sup>2</sup>	Yes	No	49	18 m <sup>2</sup>	0	0 m <sup>2</sup>	51	19 m <sup>2</sup>
Third Floor	Third	80	39 m <sup>2</sup>	Yes	No	42	17 m <sup>2</sup>	0	0 m <sup>2</sup>	58	23 m <sup>2</sup>
Third Floor	Third	81	44 m <sup>2</sup>	Yes	No	22	9 m <sup>2</sup>	8	3 m <sup>2</sup>	70	31 m <sup>2</sup>
Third Floor	Third	82	39 m <sup>2</sup>	Yes	No	79	31 m <sup>2</sup>	14	5 m <sup>2</sup>	8	3 m <sup>2</sup>
Third Floor	Third	83	18 m <sup>2</sup>	Yes	No	85	15 m <sup>2</sup>	10	2 m <sup>2</sup>	5	1 m <sup>2</sup>
Third Floor	Third	84	170 m <sup>2</sup>	Yes	No	32	54 m <sup>2</sup>	4	7 m <sup>2</sup>	64	110 m <sup>2</sup>
Third Floor	Third	85	39 m <sup>2</sup>	Yes	No	44	17 m <sup>2</sup>	0	0 m <sup>2</sup>	56	22 m <sup>2</sup>
Third Floor	Third	86	37 m <sup>2</sup>	Yes	No	50	19 m <sup>2</sup>	0	0 m <sup>2</sup>	50	19 m <sup>2</sup>
Third Floor	Third	87	39 m <sup>2</sup>	Yes	No	45	18 m <sup>2</sup>	0	0 m <sup>2</sup>	55	22 m <sup>2</sup>
Third Floor	Third	88	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	89	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	90	12 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	87	10 m <sup>2</sup>
Third Floor	Third	91	18 m <sup>2</sup>	Yes	No	52	9 m <sup>2</sup>	3	1 m <sup>2</sup>	44	8 m <sup>2</sup>

**Table (16): Lighting Analyses Room Schedule, Building B, Whole Building Results – 9am continue:**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Third Floor	Third	92	18 m <sup>2</sup>	Yes	No	53	10 m <sup>2</sup>	5	1 m <sup>2</sup>	42	8 m <sup>2</sup>
Third Floor	Third	93	18 m <sup>2</sup>	Yes	No	50	9 m <sup>2</sup>	5	1 m <sup>2</sup>	45	8 m <sup>2</sup>
Third Floor	Third	94	18 m <sup>2</sup>	Yes	No	49	9 m <sup>2</sup>	7	1 m <sup>2</sup>	44	8 m <sup>2</sup>
Fourth Floor	Fourth	99	39 m <sup>2</sup>	Yes	No	49	19 m <sup>2</sup>	0	0 m <sup>2</sup>	51	20 m <sup>2</sup>
Fourth Floor	Fourth	100	170 m <sup>2</sup>	Yes	No	32	54 m <sup>2</sup>	5	9 m <sup>2</sup>	63	107 m <sup>2</sup>
Fourth Floor	Fourth	101	18 m <sup>2</sup>	Yes	No	55	10 m <sup>2</sup>	5	1 m <sup>2</sup>	40	7 m <sup>2</sup>
Fourth Floor	Fourth	102	18 m <sup>2</sup>	Yes	No	55	10 m <sup>2</sup>	5	1 m <sup>2</sup>	40	7 m <sup>2</sup>
Fourth Floor	Fourth	103	18 m <sup>2</sup>	Yes	No	57	10 m <sup>2</sup>	6	1 m <sup>2</sup>	37	7 m <sup>2</sup>
Fourth Floor	Fourth	104	18 m <sup>2</sup>	Yes	No	52	9 m <sup>2</sup>	3	0 m <sup>2</sup>	45	8 m <sup>2</sup>
Fourth Floor	Fourth	105	12 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	87	10 m <sup>2</sup>
Fourth Floor	Fourth	106	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Fourth Floor	Fourth	107	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Fourth Floor	Fourth	108	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Fourth Floor	Fourth	109	23 m <sup>2</sup>	Yes	No	99	22 m <sup>2</sup>	0	0 m <sup>2</sup>	1	0 m <sup>2</sup>
Fourth Floor	Fourth	110	37 m <sup>2</sup>	Yes	No	49	18 m <sup>2</sup>	0	0 m <sup>2</sup>	51	19 m <sup>2</sup>
Fourth Floor	Fourth	111	37 m <sup>2</sup>	Yes	No	49	18 m <sup>2</sup>	0	0 m <sup>2</sup>	51	19 m <sup>2</sup>
Fourth Floor	Fourth	112	18 m <sup>2</sup>	Yes	No	82	14 m <sup>2</sup>	12	2 m <sup>2</sup>	6	1 m <sup>2</sup>
Fourth Floor	Fourth	113	39 m <sup>2</sup>	Yes	No	84	33 m <sup>2</sup>	13	5 m <sup>2</sup>	3	1 m <sup>2</sup>
Fourth Floor	Fourth	114	39 m <sup>2</sup>	Yes	No	46	18 m <sup>2</sup>	0	0 m <sup>2</sup>	54	21 m <sup>2</sup>
Fourth Floor	Fourth	115	44 m <sup>2</sup>	Yes	No	23	10 m <sup>2</sup>	8	4 m <sup>2</sup>	69	30 m <sup>2</sup>
Roof Floor	Roof	116	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Roof Floor	Roof	117	39 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	39 m <sup>2</sup>

**Table (17): Lighting Analyses Room Schedule, Building B, Whole Building Results - 3pm.**

Level	Name	Number	Area	Include In Daylighting	Automate d Shades	3pm threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Basement	Basement	1	29 m <sup>2</sup>	Yes	No	1	0 m <sup>2</sup>	0	0 m <sup>2</sup>	99	29 m <sup>2</sup>
Basement	Basement	2	8 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	8 m <sup>2</sup>
Basement	Basement	3	8 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	8 m <sup>2</sup>
Basement	Basement	4	22 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	22 m <sup>2</sup>
Basement	Basement	5	19 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	19 m <sup>2</sup>
Basement	Basement	6	20 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	20 m <sup>2</sup>
Basement	Basement	7	6 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	6 m <sup>2</sup>
Basement	Basement	8	171 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	171 m <sup>2</sup>
Basement	Basement	9	178 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	178 m <sup>2</sup>
Basement	Basement	10	146 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	146 m <sup>2</sup>
Basement	Basement	11	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	12	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	13	16 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	16 m <sup>2</sup>
Basement	Basement	14	3 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	3 m <sup>2</sup>
Basement	Basement	15	6 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	6 m <sup>2</sup>
Basement	Basement	16	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Basement	Basement	17	14 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	14 m <sup>2</sup>
Basement	Basement	18	15 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	15 m <sup>2</sup>
Basement	Basement	19	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Basement	Basement	20	15 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	15 m <sup>2</sup>
Basement	Elevator	96	5 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	5 m <sup>2</sup>
Ground Floor	Ground	21	38 m <sup>2</sup>	Yes	No	11	4 m <sup>2</sup>	0	0 m <sup>2</sup>	89	34 m <sup>2</sup>
Ground Floor	Ground	22	78 m <sup>2</sup>	Yes	No	20	16 m <sup>2</sup>	0	0 m <sup>2</sup>	80	62 m <sup>2</sup>

**Table (17): Lighting Analyses Room Schedule, Building B, Whole Building Results - 3pm continue:**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	3pm threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Ground Floor	Ground	23	65 m <sup>2</sup>	Yes	No	22	14 m <sup>2</sup>	0	0 m <sup>2</sup>	78	51 m <sup>2</sup>
Ground Floor	Ground	24	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Ground Floor	Ground	25	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Ground Floor	Ground	26	12 m <sup>2</sup>	Yes	No	14	2 m <sup>2</sup>	0	0 m <sup>2</sup>	86	10 m <sup>2</sup>
Ground Floor	Ground	27	18 m <sup>2</sup>	Yes	No	34	6 m <sup>2</sup>	0	0 m <sup>2</sup>	66	12 m <sup>2</sup>
Ground Floor	Ground	28	18 m <sup>2</sup>	Yes	No	33	6 m <sup>2</sup>	0	0 m <sup>2</sup>	67	12 m <sup>2</sup>
Ground Floor	Ground	29	18 m <sup>2</sup>	Yes	No	22	4 m <sup>2</sup>	0	0 m <sup>2</sup>	78	14 m <sup>2</sup>
Ground Floor	Ground	30	18 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	87	16 m <sup>2</sup>
Ground Floor	Stairs	31	34 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	34 m <sup>2</sup>
Ground Floor	Ground	32	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Ground Floor	Ground	33	40 m <sup>2</sup>	Yes	No	14	6 m <sup>2</sup>	0	0 m <sup>2</sup>	86	34 m <sup>2</sup>
Ground Floor	Ground	34	18 m <sup>2</sup>	Yes	No	9	2 m <sup>2</sup>	0	0 m <sup>2</sup>	91	16 m <sup>2</sup>
Ground Floor	Ground	35	40 m <sup>2</sup>	Yes	No	74	30 m <sup>2</sup>	9	4 m <sup>2</sup>	16	7 m <sup>2</sup>
Ground Floor	Ground	36	38 m <sup>2</sup>	Yes	No	78	29 m <sup>2</sup>	10	4 m <sup>2</sup>	12	4 m <sup>2</sup>
Ground Floor	Ground	37	20 m <sup>2</sup>	Yes	No	70	14 m <sup>2</sup>	10	2 m <sup>2</sup>	20	4 m <sup>2</sup>
Ground Floor	Ground	38	12 m <sup>2</sup>	Yes	No	72	8 m <sup>2</sup>	17	2 m <sup>2</sup>	11	1 m <sup>2</sup>
Ground Floor	Ground	39	135 m <sup>2</sup>	Yes	No	50	67 m <sup>2</sup>	3	3 m <sup>2</sup>	47	64 m <sup>2</sup>
Ground Floor	Ground	40	44 m <sup>2</sup>	Yes	No	22	10 m <sup>2</sup>	9	4 m <sup>2</sup>	69	30 m <sup>2</sup>
First Floor	First	41	39 m <sup>2</sup>	Yes	No	19	8 m <sup>2</sup>	0	0 m <sup>2</sup>	81	32 m <sup>2</sup>
First Floor	First	42	37 m <sup>2</sup>	Yes	No	23	8 m <sup>2</sup>	0	0 m <sup>2</sup>	77	29 m <sup>2</sup>
First Floor	First	43	39 m <sup>2</sup>	Yes	No	15	6 m <sup>2</sup>	0	0 m <sup>2</sup>	85	34 m <sup>2</sup>
First Floor	First	44	37 m <sup>2</sup>	Yes	No	79	30 m <sup>2</sup>	20	8 m <sup>2</sup>	0	0 m <sup>2</sup>
First Floor	First	45	171 m <sup>2</sup>	Yes	No	19	33 m <sup>2</sup>	0	0 m <sup>2</sup>	81	138 m <sup>2</sup>

**Table (17): Lighting Analyses Room Schedule, Building B, Whole Building Results - 3pm continue:**

Level	Name	Number	Area	Include In Daylighting	Automate d Shades	3pm threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
First Floor	First	46	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
First Floor	First	47	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
First Floor	First	48	12 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	88	11 m <sup>2</sup>
First Floor	First	49	36 m <sup>2</sup>	Yes	No	41	15 m <sup>2</sup>	0	0 m <sup>2</sup>	59	22 m <sup>2</sup>
First Floor	First	50	18 m <sup>2</sup>	Yes	No	22	4 m <sup>2</sup>	0	0 m <sup>2</sup>	78	14 m <sup>2</sup>
First Floor	First	51	18 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	87	16 m <sup>2</sup>
First Floor	First	52	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
First Floor	First	53	37 m <sup>2</sup>	Yes	No	86	32 m <sup>2</sup>	7	3 m <sup>2</sup>	7	3 m <sup>2</sup>
First Floor	First	54	37 m <sup>2</sup>	Yes	No	83	31 m <sup>2</sup>	7	3 m <sup>2</sup>	10	4 m <sup>2</sup>
First Floor	First	55	18 m <sup>2</sup>	Yes	No	7	1 m <sup>2</sup>	0	0 m <sup>2</sup>	93	16 m <sup>2</sup>
First Floor	First	56	39 m <sup>2</sup>	Yes	No	16	6 m <sup>2</sup>	0	0 m <sup>2</sup>	84	33 m <sup>2</sup>
First Floor	First	57	39 m <sup>2</sup>	Yes	No	78	31 m <sup>2</sup>	7	3 m <sup>2</sup>	15	6 m <sup>2</sup>
First Floor	First	58	44 m <sup>2</sup>	Yes	No	23	10 m <sup>2</sup>	8	3 m <sup>2</sup>	69	30 m <sup>2</sup>
Second Floor	Second	59	38 m <sup>2</sup>	Yes	No	79	30 m <sup>2</sup>	20	8 m <sup>2</sup>	1	0 m <sup>2</sup>
Second Floor	Second	60	39 m <sup>2</sup>	Yes	No	24	10 m <sup>2</sup>	0	0 m <sup>2</sup>	76	30 m <sup>2</sup>
Second Floor	Second	61	37 m <sup>2</sup>	Yes	No	30	11 m <sup>2</sup>	0	0 m <sup>2</sup>	70	26 m <sup>2</sup>
Second Floor	Second	62	39 m <sup>2</sup>	Yes	No	27	11 m <sup>2</sup>	0	0 m <sup>2</sup>	73	29 m <sup>2</sup>
Second Floor	Second	63	170 m <sup>2</sup>	Yes	No	31	53 m <sup>2</sup>	0	0 m <sup>2</sup>	69	117 m <sup>2</sup>
Second Floor	Second	64	37 m <sup>2</sup>	Yes	No	88	33 m <sup>2</sup>	7	3 m <sup>2</sup>	5	2 m <sup>2</sup>
Second Floor	Second	65	37 m <sup>2</sup>	Yes	No	88	33 m <sup>2</sup>	7	3 m <sup>2</sup>	5	2 m <sup>2</sup>
Second Floor	Second	66	39 m <sup>2</sup>	Yes	No	80	31 m <sup>2</sup>	7	3 m <sup>2</sup>	14	5 m <sup>2</sup>
Second Floor	Second	67	44 m <sup>2</sup>	Yes	No	22	10 m <sup>2</sup>	8	3 m <sup>2</sup>	70	30 m <sup>2</sup>
Second Floor	Second	68	18 m <sup>2</sup>	Yes	No	9	2 m <sup>2</sup>	0	0 m <sup>2</sup>	91	16 m <sup>2</sup>

**Table (17): Lighting Analyses Room Schedule, Building B, Whole Building Results - 3pm continue:**

Level	Name	Number	Area	Include In Daylighting	Automate d Shades	3pm threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Second Floor	Second	69	39 m <sup>2</sup>	Yes	No	15	6 m <sup>2</sup>	0	0 m <sup>2</sup>	85	34 m <sup>2</sup>
Second Floor	Second	70	18 m <sup>2</sup>	Yes	No	14	3 m <sup>2</sup>	0	0 m <sup>2</sup>	86	15 m <sup>2</sup>
Second Floor	Second	71	18 m <sup>2</sup>	Yes	No	27	5 m <sup>2</sup>	0	0 m <sup>2</sup>	73	13 m <sup>2</sup>
Second Floor	Second	72	18 m <sup>2</sup>	Yes	No	33	6 m <sup>2</sup>	0	0 m <sup>2</sup>	67	12 m <sup>2</sup>
Second Floor	Second	73	18 m <sup>2</sup>	Yes	No	37	7 m <sup>2</sup>	0	0 m <sup>2</sup>	63	11 m <sup>2</sup>
Second Floor	Second	74	12 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	88	11 m <sup>2</sup>
Second Floor	Second	75	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Second Floor	Second	76	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	77	38 m <sup>2</sup>	Yes	No	79	30 m <sup>2</sup>	21	8 m <sup>2</sup>	0	0 m <sup>2</sup>
Third Floor	Third	78	37 m <sup>2</sup>	Yes	No	80	30 m <sup>2</sup>	19	7 m <sup>2</sup>	0	0 m <sup>2</sup>
Third Floor	Third	79	37 m <sup>2</sup>	Yes	No	80	30 m <sup>2</sup>	19	7 m <sup>2</sup>	1	0 m <sup>2</sup>
Third Floor	Third	80	39 m <sup>2</sup>	Yes	No	74	29 m <sup>2</sup>	18	7 m <sup>2</sup>	8	3 m <sup>2</sup>
Third Floor	Third	81	44 m <sup>2</sup>	Yes	No	22	10 m <sup>2</sup>	8	4 m <sup>2</sup>	70	30 m <sup>2</sup>
Third Floor	Third	82	39 m <sup>2</sup>	Yes	No	47	18 m <sup>2</sup>	0	0 m <sup>2</sup>	53	21 m <sup>2</sup>
Third Floor	Third	83	18 m <sup>2</sup>	Yes	No	24	4 m <sup>2</sup>	0	0 m <sup>2</sup>	76	13 m <sup>2</sup>
Third Floor	Third	84	170 m <sup>2</sup>	Yes	No	30	51 m <sup>2</sup>	0	0 m <sup>2</sup>	70	119 m <sup>2</sup>
Third Floor	Third	85	39 m <sup>2</sup>	Yes	No	45	18 m <sup>2</sup>	0	0 m <sup>2</sup>	55	22 m <sup>2</sup>
Third Floor	Third	86	37 m <sup>2</sup>	Yes	No	50	19 m <sup>2</sup>	0	0 m <sup>2</sup>	50	19 m <sup>2</sup>
Third Floor	Third	87	39 m <sup>2</sup>	Yes	No	47	19 m <sup>2</sup>	0	0 m <sup>2</sup>	53	21 m <sup>2</sup>
Third Floor	Third	88	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	89	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Third Floor	Third	90	12 m <sup>2</sup>	Yes	No	15	2 m <sup>2</sup>	0	0 m <sup>2</sup>	85	10 m <sup>2</sup>
Third Floor	Third	91	18 m <sup>2</sup>	Yes	No	57	10 m <sup>2</sup>	7	1 m <sup>2</sup>	36	7 m <sup>2</sup>

**Table (17): Lighting Analyses Room Schedule, Building B, Whole Building Results - 3pm continue:**

Level	Name	Number	Area	Include In Daylighting	Automate d Shades	3pm threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Third Floor	Third	92	18 m <sup>2</sup>	Yes	No	52	9 m <sup>2</sup>	2	0 m <sup>2</sup>	47	8 m <sup>2</sup>
Third Floor	Third	93	18 m <sup>2</sup>	Yes	No	49	9 m <sup>2</sup>	1	0 m <sup>2</sup>	50	9 m <sup>2</sup>
Third Floor	Third	94	18 m <sup>2</sup>	Yes	No	41	7 m <sup>2</sup>	0	0 m <sup>2</sup>	59	11 m <sup>2</sup>
Fourth Floor	Fourth	99	39 m <sup>2</sup>	Yes	No	50	20 m <sup>2</sup>	0	0 m <sup>2</sup>	50	20 m <sup>2</sup>
Fourth Floor	Fourth	100	170 m <sup>2</sup>	Yes	No	33	56 m <sup>2</sup>	0	0 m <sup>2</sup>	67	114 m <sup>2</sup>
Fourth Floor	Fourth	101	18 m <sup>2</sup>	Yes	No	45	8 m <sup>2</sup>	0	0 m <sup>2</sup>	55	10 m <sup>2</sup>
Fourth Floor	Fourth	102	18 m <sup>2</sup>	Yes	No	54	10 m <sup>2</sup>	4	1 m <sup>2</sup>	42	8 m <sup>2</sup>
Fourth Floor	Fourth	103	18 m <sup>2</sup>	Yes	No	53	10 m <sup>2</sup>	3	0 m <sup>2</sup>	44	8 m <sup>2</sup>
Fourth Floor	Fourth	104	18 m <sup>2</sup>	Yes	No	58	10 m <sup>2</sup>	5	1 m <sup>2</sup>	37	7 m <sup>2</sup>
Fourth Floor	Fourth	105	12 m <sup>2</sup>	Yes	No	13	2 m <sup>2</sup>	0	0 m <sup>2</sup>	88	11 m <sup>2</sup>
Fourth Floor	Fourth	106	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Fourth Floor	Fourth	107	2 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	2 m <sup>2</sup>
Fourth Floor	Fourth	108	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Fourth Floor	Fourth	109	23 m <sup>2</sup>	Yes	No	31	7 m <sup>2</sup>	69	16 m <sup>2</sup>	0	0 m <sup>2</sup>
Fourth Floor	Fourth	110	37 m <sup>2</sup>	Yes	No	82	31 m <sup>2</sup>	16	6 m <sup>2</sup>	1	1 m <sup>2</sup>
Fourth Floor	Fourth	111	37 m <sup>2</sup>	Yes	No	81	30 m <sup>2</sup>	17	6 m <sup>2</sup>	2	1 m <sup>2</sup>
Fourth Floor	Fourth	112	18 m <sup>2</sup>	Yes	No	25	4 m <sup>2</sup>	0	0 m <sup>2</sup>	75	13 m <sup>2</sup>
Fourth Floor	Fourth	113	39 m <sup>2</sup>	Yes	No	49	19 m <sup>2</sup>	0	0 m <sup>2</sup>	51	20 m <sup>2</sup>
Fourth Floor	Fourth	114	39 m <sup>2</sup>	Yes	No	82	32 m <sup>2</sup>	16	6 m <sup>2</sup>	2	1 m <sup>2</sup>
Fourth Floor	Fourth	115	44 m <sup>2</sup>	Yes	No	21	9 m <sup>2</sup>	8	3 m <sup>2</sup>	71	31 m <sup>2</sup>
Roof Floor	Roof	116	4 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	4 m <sup>2</sup>
Roof Floor	Roof	117	39 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	39 m <sup>2</sup>



## Revit Photos



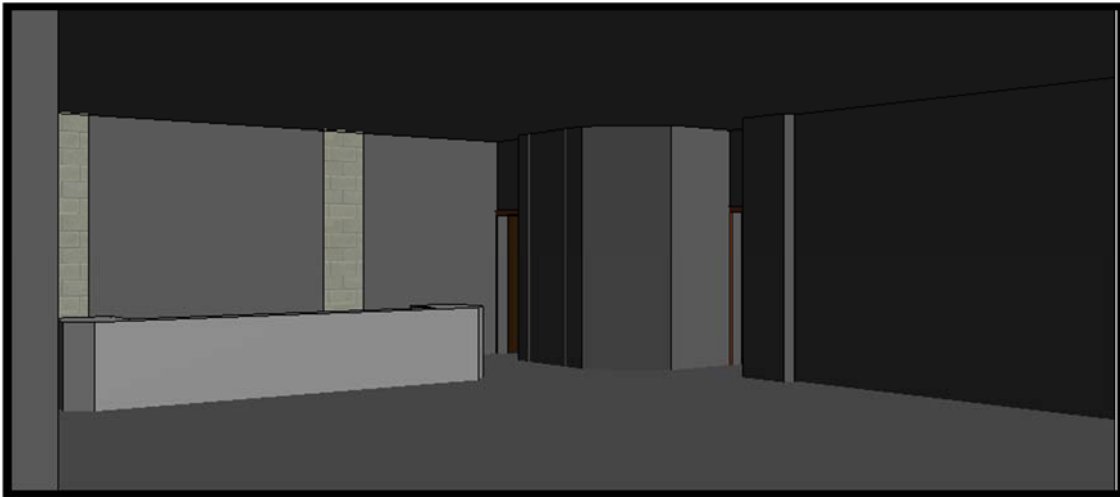
**Photo 1:** building (B) Front side



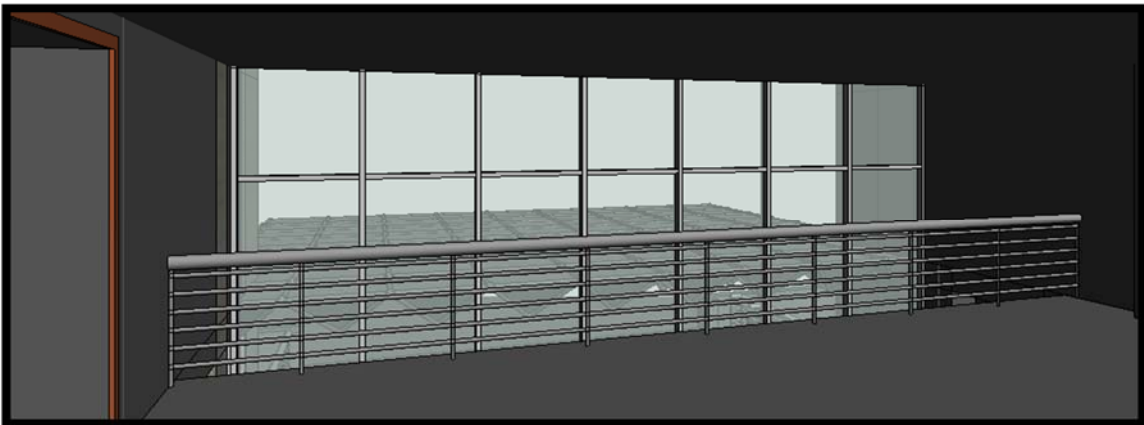
**Photo 2:** building (B) north side view



**Photo 3:** building (B) back side



**Photo 4:** building (B) internal shot (reception)



**Photo 5:** building (B) internal shot ( reception 2<sup>nd</sup> floor)



**Photo 6:** building (B) internal shot (2<sup>nd</sup> floor lecture room)



**Photo 7:** building (B) exterior shot

**APPENDIX –GS**  
**(Building GS)**

## Field Survey Data

**Table 1 (Building GS basement)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	120	26	8	12	10	0.26	7.8	936
fluorescent lamp 60cm	364	15	8	12	10	0.15	4.5	1638
fluorescent lamp 120cm	20	36	8	12	10	0.36	10.8	216
computer	6	500	6	12	8	4	120	720
air condition 4hp	3	2944	4	10	6	17.664	529.92	1589.76
air condition 3hp	1	2000	4	10	6	12	360	360
air condition 2hp	8	1742	4	10	6	10.452	313.56	2508.48
elevator	2	19600	3	6	4	78.4	2352	4704
router	1	7.65	24	24	24	0.1836	5.508	5.508
water pump 5hp	2	3560	0	4	2	7.12	213.6	427.2
copy machine	2	940	1	5	3	2.82	84.6	169.2
printer	2	450	1	3	2	0.9	27	54
fan	3	75	2	8	5	0.375	11.25	33.75
water boiler	3	2500	0.5	2	1	2.5	75	225
hand dryer	2	2300	1	3	2	4.6	138	276
projector	7	313	0	3	1	0.313	9.39	65.73
Insects trap	6	30	24	24	24	0.72	21.6	129.6
air curtain	2	1500	2	6	5	7.5	225	450
air condition	2	1750	6	10	8	14	420	840
kitchen vent fan	1	300	8	12	10	3	90	90
large vent fan	4	1100	4	10	6	6.6	198	792
small vent fan	2	40	24	24	24	0.96	28.8	57.6
microwave oven	1	700	0	3	2	1.4	42	42
hot drink machine	3	1275	4	8	6	7.65	229.5	688.5
refrigerator	8	2800	8	8	8	22.4	672	5376
freezer	1	1050	8	8	8	8.4	252	252
boiler	1	2800	8	14	12	33.6	1008	1008
electric fryer	1	3000	4	10	6	18	540	540
grill	1	4400	3	6	4	17.6	528	528
electricity socket	30	0						
								24722.3

**Table 2 (Building GS ground floor)**

Type	Quantity	Power (watt)	min usage (hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	145	26	8	12	10	0.26	7.8	1131
spotlight	85	40	8	12	10	0.4	12	1020
fluorescent lamp60cm	396	15	8	12	10	0.15	4.5	1782
fluorescent lamp 120cm	10	36	8	12	10	0.36	10.8	108
plasma TV 42"	1	170	6	14	12	2.04	61.2	61.2
computer	46	500	6	12	8	4	120	5520
air condition 4hp	3	2944	4	10	6	17.664	530	1589.76
air condition 2hp	14	1742	6	10	8	13.936	418	5853.12
router	2	7.65	24	24	24	0.1836	5.51	11.016
printer	15	450	1	3	2	0.9	27	405
fan	2	75	2	8	5	0.375	11.3	22.5
water boiler	4	2500	0.5	2	1	2.5	75	300
security gate	1	20	6	10	8	0.16	4.8	4.8
fingerprint reader	2	10	1	2	1.5	0.015	0.45	0.9
hand dryer	4	2300	1	3	2	4.6	138	552
fax	2	150	24	24	24	3.6	108	216
projector	7	313	0	3	1	0.313	9.39	65.73
receipt Printer	2	48	6	10	8	0.384	11.5	23.04
paper shredder	1	1500	0	2	1	1.5	45	45
camera	2	1	24	24	24	0.024	0.72	1.44
counting machine	4	60	3	12	6	0.36	10.8	43.2
small vent fan	4	40	24	24	24	0.96	28.8	115.2
laptop	5	100	4	12	6	0.6	18	90
electricity socket	20							
								18960.91

**Table 3 (Building GS 1<sup>st</sup> floor)**

Type	Quantity	Power (watt)	min usage (hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	70	26	8	12	10	0.26	7.8	546
spotlight	81	40	8	12	10	0.4	12	972
fluorescent lamp60cm	520	15	8	12	10	0.15	4.5	2340
plasma TV 42"	1	170	6	14	12	2.04	61.2	61.2
computer	37	500	6	12	8	4	120	4440

**Table 3 Building GS 1<sup>st</sup> floor continue:**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
air condition 2hp	13	1742	6	10	8	13.936	418	5435.04
router	4	7.65	24	24	24	0.1836	5.51	22.032
printer	5	450	1	3	2	0.9	27	135
fax	1	150	24	24	24	3.6	108	108
projector	7	313	0	3	1	0.313	9.39	65.73
scanner	3	450	4	10	6	2.7	81	243
water cooler	1	485	12	12	12	5.82	175	174.6
hand dryer	4	2300	1	3	2	4.6	138	552
small vent fan	4	40	24	24	24	0.96	28.8	115.2
laptop	5	100	4	12	6	0.6	18	90
electricity socket	20							
								15299.8

**Table 4 (Building GS 2<sup>nd</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	70	26	8	12	10	0.26	7.8	546
spotlight	81	40	8	12	10	0.4	12	972
fluorescent lamp60cm	504	15	8	12	10	0.15	4.5	2268
plasma TV 42"	1	170	6	14	12	2.04	61.2	61.2
computer	28	500	6	12	8	4	120	3360
air condition 2hp	13	1742	6	10	8	13.936	418	5435.04
router	4	7.65	24	24	24	0.1836	5.51	22.032
printer	12	450	1	3	2	0.9	27	324
projector	7	313	0	3	1	0.313	9.39	65.73
scanner	2	450	4	10	6	2.7	81	162
hand dryer	4	2300	1	3	2	4.6	138	552
small vent fan	4	40	24	24	24	0.96	28.8	115.2
laptop	5	100	4	12	6	0.6	18	90
electricity socket	20							
								13973.2

**Table 5 (Building GS 3<sup>rd</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	68	26	8	12	10	0.26	7.8	530.4
spotlight	81	40	8	12	10	0.4	12	972
fluorescent lamp60cm	532	15	8	12	10	0.15	4.5	2394
plasma TV 42"	1	170	6	14	12	2.04	61.2	61.2
computer	38	500	6	12	8	4	120	4560
air condition 2hp	16	1742	6	10	8	13.936	418	6689.28
router	5	7.65	24	24	24	0.1836	5.51	27.54
printer	17	450	1	3	2	0.9	27	459
projector	2	313	0	3	1	0.313	9.39	18.78
scanner	1	450	4	10	6	2.7	81	81
hand dryer	4	2300	1	3	2	4.6	138	552
small vent fan	4	40	24	24	24	0.96	28.8	115.2
laptop	5	100	4	12	6	0.6	18	90
paper shredder	1	1500	0	2	1	1.5	45	45
receipt Printer	3	48	6	10	8	0.384	11.5	34.56
copy machine	4	940	1	5	3	2.82	84.6	338.4
plastic id card printer	1	396	0	4	2	0.792	23.8	23.76
network switch	1	7.65	24	24	24	0.1836	5.51	5.508
electricity socket	20							
								16997.63

**Table 6 (Building GS 4<sup>th</sup> floor)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	90	26	8	12	10	0.26	5.2	468
spotlight	81	40	8	12	10	0.4	8	648
fluorescent lamp60cm	556	15	8	12	10	0.15	3	1668
plasma TV 42"	1	170	6	14	12	2.04	40.8	40.8
computer	25	500	6	12	8	4	80	2000
air condition 2hp	20	1742	6	10	8	13.936	279	5574.4
router	5	7.65	24	24	24	0.1836	3.67	18.36
printer	10	450	1	3	2	0.9	18	180
projector	5	313	0	3	1	0.313	6.26	31.3



**Table 6 Building GS 4<sup>th</sup> floor continue:**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
scanner	1	450	4	10	6	2.7	54	54
hand dryer	4	2300	1	3	2	4.6	92	368
small vent fan	4	40	24	24	24	0.96	19.2	76.8
laptop	10	100	4	12	6	0.6	12	120
copy machine	2	940	1	5	3	2.82	56.4	112.8
electricity socket	20							
								11360.46

**Table 7 (Building GS stairs)**

Type	Quantity	Power (watt)	min usage(hr)	max usage(hr)	actual usage(hr)	Usage (kw/d)	Usage (kw/month)	total usage (kw/month)
fluorescent bulb	78	26	8	12	10	0.26	7.8	608.4
outdoor light	10	450	10	14	12	5.4	162	1620
light bulb	42	100	10	14	12	1.2	36	1512
								3740.4

**Table 8 (Building GS basement)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	936	468
fluorescent lamp 60cm	15	1638	819
fluorescent lamp 120cm	36	216	108
computer	500	720	720
air condition 4hp	2944	1589.76	794.88
air condition 3hp	2000	360	180
air condition 2hp	1742	2508.48	1254.24
elevator	19600	4704	4704
router	7.65	5.508	5.508
water pump 5hp	3560	427.2	427.2
copy machine	940	169.2	169.2
printer	450	54	54
fan	75	33.75	33.75
water boiler	2500	225	225
hand dryer	2300	276	276
projector	313	65.73	65.73
Insects trap	30	129.6	129.6

**Table 8 Building GS basement continue:**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
air curtain	9100	450	450
air condition	1750	840	840
kitchen vent fan	300	90	90
large vent fan	1100	792	792
small vent fan	40	57.6	57.6
microwave oven	700	42	42
hot drink machine	1275	688.5	688.5
refrigerator	2800	5376	5376
freezer	1050	252	252
boiler	2800	1008	1008
electric fryer	3000	540	540
grill	4400	528	528
electricity socket	0	0	0
		24722.328	21098.208

**Table 9 (Building GS ground floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	1131	339.3
spotlight	40	1020	306
fluorescent lamp60cm	15	1782	534.6
fluorescent lamp 120cm	36	108	32.4
plasma TV 42"	170	61.2	61.2
computer	500	5520	5520
air condition 4hp	2944	1589.76	794.88
air condition 2hp	1742	5853.12	2926.56
router	7.65	11.016	11.016
printer	450	405	405
fan	75	22.5	22.5
water boiler	2500	300	300
security gate	20	4.8	4.8
fingerprint reader	10	0.9	0.9
hand dryer	2300	552	552
fax	150	216	216
projector	313	65.73	65.73

**Table 9 Building GS ground floor continue:**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
receipt Printer	48	23.04	23.04
paper shredder	1500	45	45
camera	1	1.44	1.44
counting machine	60	43.2	43.2
small vent fan	40	115.2	115.2
laptop	100	90	90
electricity socket		0	0
		18960.906	12410.766

**Table 10 (Building GS 1<sup>st</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	546	218.4
spotlight	40	972	388.8
fluorescent lamp60cm	15	2340	936
plasma TV 42"	170	61.2	61.2
computer	500	4440	4440
air condition 2hp	1742	5435.04	2717.52
router	7.65	22.032	22.032
printer	450	135	135
fax	150	108	108
projector	313	65.73	65.73
scanner	450	243	243
water cooler	485	174.6	174.6
hand dryer	2300	552	552
small vent fan	40	115.2	115.2
laptop	100	90	90
electricity socket		0	0
		15299.802	10267.482

**Table 11 (Building GS 2<sup>nd</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	546	218.4
spotlight	40	972	388.8
fluorescent lamp60cm	15	2268	907.2
plasma TV 42"	170	61.2	61.2
computer	500	3360	3360
air condition 2hp	1742	5435.04	2717.52
router	7.65	22.032	22.032
printer	450	324	324
projector	313	65.73	65.73
scanner	450	162	162
hand dryer	2300	552	552
small vent fan	40	115.2	115.2
laptop	100	90	90
electricity socket		0	0
		13973.202	8984.082

**Table 12 (Building GS 3<sup>rd</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	530.4	212.16
spotlight	40	972	388.8
fluorescent lamp60cm	15	2394	957.6
plasma TV 42"	170	61.2	61.2
computer	500	4560	4560
air condition 2hp	1742	6689.28	3344.64
router	7.65	27.54	27.54
printer	450	459	459
projector	313	18.78	18.78
scanner	450	81	81
hand dryer	2300	552	552
small vent fan	40	115.2	115.2
laptop	100	90	90
paper shredder	1500	45	45

**Table 12 Building GS 3<sup>rd</sup> floor continue:**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
receipt Printer	48	34.56	34.56
copy machine	940	338.4	338.4
plastic id card printer	396	23.76	23.76
network switch	7.65	5.508	5.508
electricity socket		0	0
		16997.628	11315.148

**Table 13 (Building GS 4<sup>th</sup> floor)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	468	187.2
spotlight	40	648	259.2
fluorescent lamp60cm	15	1668	667.2
plasma TV 42"	170	40.8	40.8
computer	500	2000	2000
air condition 2hp	1742	5574.4	2787.2
router	7.65	18.36	18.36
printer	450	180	180
projector	313	31.3	31.3
scanner	450	54	54
hand dryer	2300	368	368
small vent fan	40	76.8	76.8
laptop	100	120	120
copy machine	940	112.8	112.8
electricity socket		0	0
		11360.46	6902.86

**Table 14 (Building GS stairs)**

Type	Power (watt)	high usage (kw/month)	low usage (kw/month)
fluorescent bulb	26	608.4	425.88
outdoor light	450	1620	1134
light bulb	100	1512	1058.4
		3740.4	2618.28

**Table 15 (Building GS total)**

floor	Before applying G.B. technologies		After applying G.B. technologies		Reduction (%)
	usage (kw/month)	usage (kw/year)	usage (kw/month)	usage (kw/year)	
basement	24722.33	296667.96	21098.208	253178.496	14.65%
ground floor	18960.91	227530.92	12410.766	148929.192	34.54%
1st floor	15299.8	183597.6	10267.482	123209.784	32.89%
2nd floor	13973.2	167678.4	8984.082	107808.984	35.70%
3rd floor	16997.63	203971.56	11315.148	135781.776	33.43%
4th floor	11360.46	136325.52	6902.86	82834.32	39.23%
stairs	3740.4	44884.8	2618.28	31419.36	30%
total	105054.7	1260656.4	73596.826	883161.912	29.94%

### Natural lighting analyses results

**Table (16): Lighting Analyses Room Schedule, Building GS, Whole Building Results – 9am.**

Level	Name	Number	Area	Include In Daylighting	Automated Shades	9am threshold results					
						within threshold		above threshold		below threshold	
						%	Area	%	Area	%	Area
Basement	Basements	1	66 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	66 m <sup>2</sup>
Basement	Basements	2	66 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	66 m <sup>2</sup>
Basement	Basements	3	67 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	67 m <sup>2</sup>
Basement	Basements	4	31 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	31 m <sup>2</sup>
Basement	Basements	5	1206 m <sup>2</sup>	Yes	No	12	149 m <sup>2</sup>	5	59 m <sup>2</sup>	83	998 m <sup>2</sup>
Basement	Basements	6	57 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	57 m <sup>2</sup>
Basement	Basements	7	31 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	31 m <sup>2</sup>
Basement	Basements	8	38 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	38 m <sup>2</sup>
Basement	Basements	9	33 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	33 m <sup>2</sup>
Basement	Basements	10	9 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	9 m <sup>2</sup>
Basement	Basements	11	25 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	25 m <sup>2</sup>
Basement	Basements	12	41 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	100	41 m <sup>2</sup>
Ground Floor	Ground Floor	13	47 m <sup>2</sup>	Yes	No	79	37 m <sup>2</sup>	0	0 m <sup>2</sup>	21	10 m <sup>2</sup>
Ground Floor	Ground Floor	14	343 m <sup>2</sup>	Yes	No	19	66 m <sup>2</sup>	0	0 m <sup>2</sup>	81	277 m <sup>2</sup>
Ground Floor	Ground Floor	15	11 m <sup>2</sup>	Yes	No	100	11 m <sup>2</sup>	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>
Ground Floor	Ground Floor	16	15 m <sup>2</sup>	Yes	No	80	12 m <sup>2</sup>	0	0 m <sup>2</sup>	20	3 m <sup>2</sup>
Ground Floor	Ground Floor	17	15 m <sup>2</sup>	Yes	No	80	12 m <sup>2</sup>	0	0 m <sup>2</sup>	20	3 m <sup>2</sup>
Ground Floor	Ground Floor	18	11 m <sup>2</sup>	Yes	No	100	11 m <sup>2</sup>	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>
Ground Floor	Ground Floor	19	46 m <sup>2</sup>	Yes	No	100	46 m <sup>2</sup>	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>
Ground Floor	Ground Floor	20	9 m <sup>2</sup>	Yes	No	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>	0	0 m <sup>2</sup>
Ground Floor	Ground Floor	21	48 m <sup>2</sup>	Yes	No	77	37 m <sup>2</sup>	0	0 m <sup>2</sup>	23	11 m <sup>2</sup>