

“Administrative Block – Mini Secretariat” Building at Charkhi Dadri



ECBC Compliance Report

Submitted By:

**ECBC Cell, Haryana New and Renewable Energy
Development Agency (HAREDA)**

Haryana State Designated Agency (HSDA)

**Akshay Urja Bhawan, Plot No-1, Sector 17,
Panchkula, Haryana 134109**

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Summary

Whole Building Performance Method has been used to show compliance of project with ECBC.

Input Parameter	Baseline	Proposed	Units
Wall material	As per ECBC	200 mm AAC Block	
Wall U-value	0.0704	0.119	Btu/hrsqt F
Roof material	As per ECBC	11 mm clay tiles + 115 mm RCC + 25 mm XPS +25 mm PUF + 50 mm Wood	
Roof U-value	0.058	0.090	Btu/hrsqt F
Glazing U Value	0.53	0.264	Btu/hrsqt F
SHGC	0.27	0.27	
Window Shading	No	As per Architectural Drawings	
Cooling Sizing Ratio	1.15	1	
Heating Sizing Ratio	1.25	1	
HVAC System	VRF with DOAS sys	VRF with DOAS sys	
HVAC System Efficiency (EER)	3.02	3.5	
Lighting Power Density calculation (As per space function method- ECBC §6.3.2)			
Internal	0.91	0.71	W/ ft ²
External	0.88	0.79	W/ ft ²
Zone Cooling set point	75	75	deg F
Zone Heating set point	70	70	deg F

Project achieves energy saving of 11.3% when compared with ECBC baseline case. Thereby, project is meeting the ECBC compliance by 'Whole Building Performance' approach.

Description	Energy Consumption/ Generation
Proposed case energy consumption (kWh)	1503225
Base case energy consumption (kWh)	1694738
Savings %	11.3%
Base case EPI (kWh/Sq.m./Annum)	85.9
Proposed case EPI (kWh/Sq.m./Annum)	76.2
EPI ratio	0.9

Introduction

Administrative Block – Mini Secretariat” at Charkhi Dadri, with the approved drawing, is office type building which is under composite climate zone.

Building Floor Plan

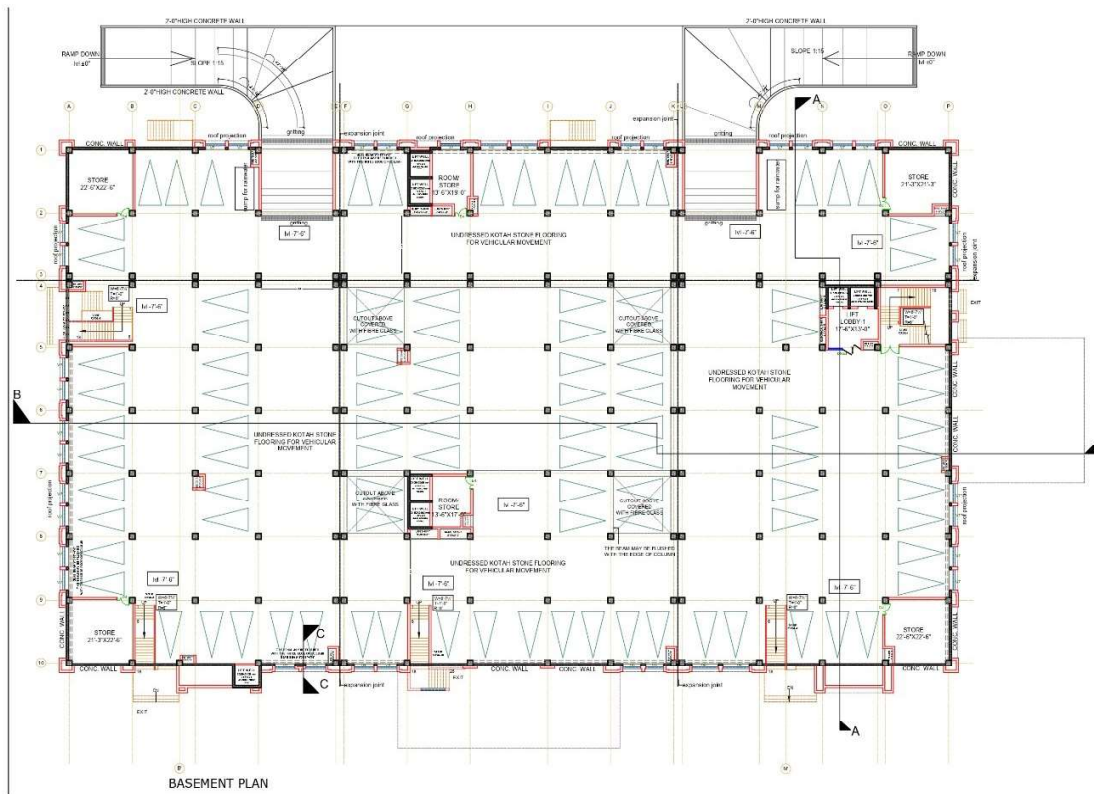


Figure 1: Basement plan

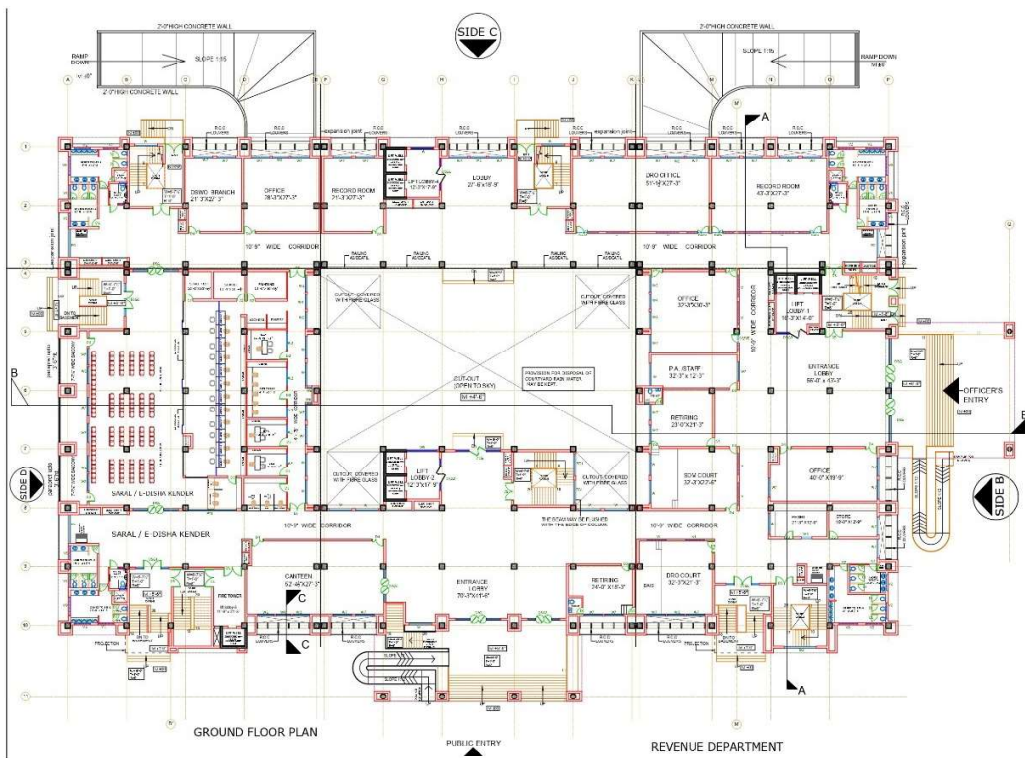


Figure 2: Ground Floor plan

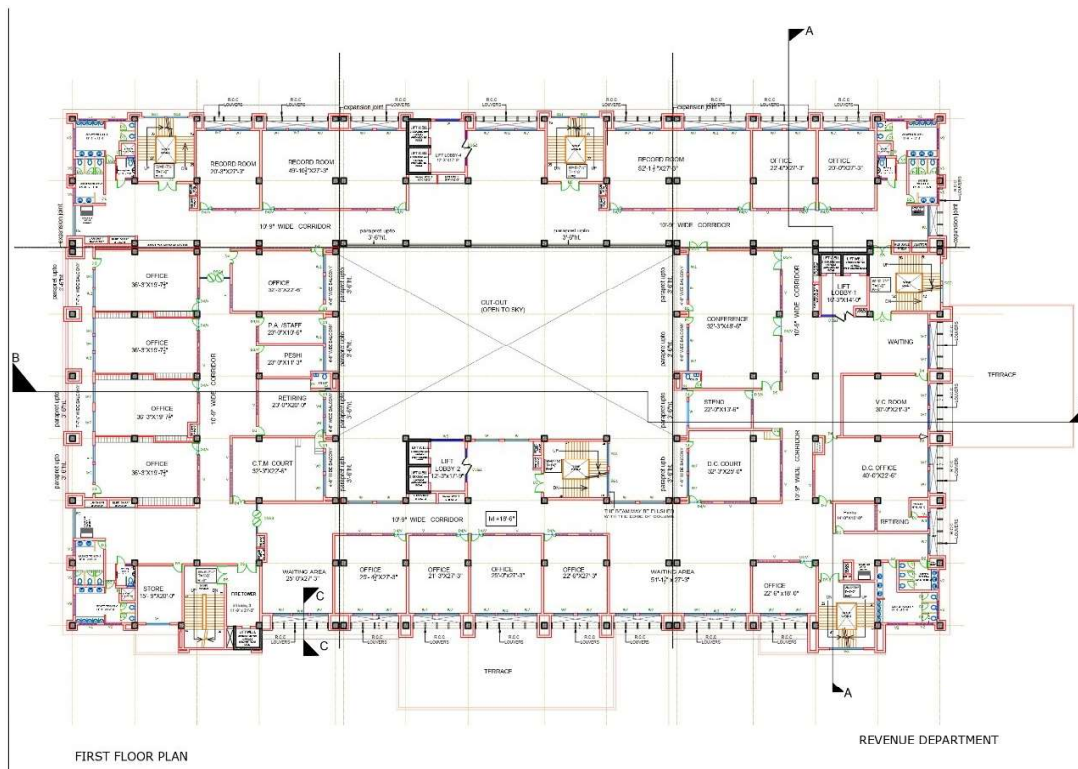


Figure 3: First floor plan

Building Schedules

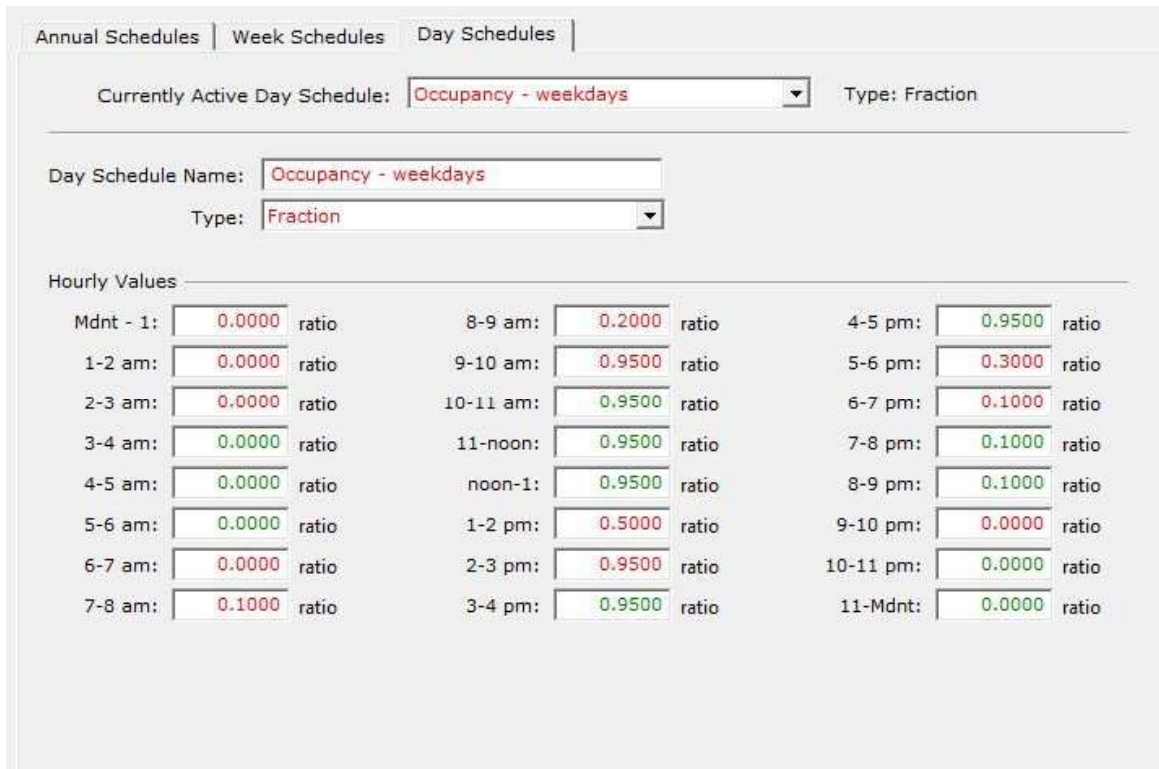


Figure 6: Office occupancy weekdays

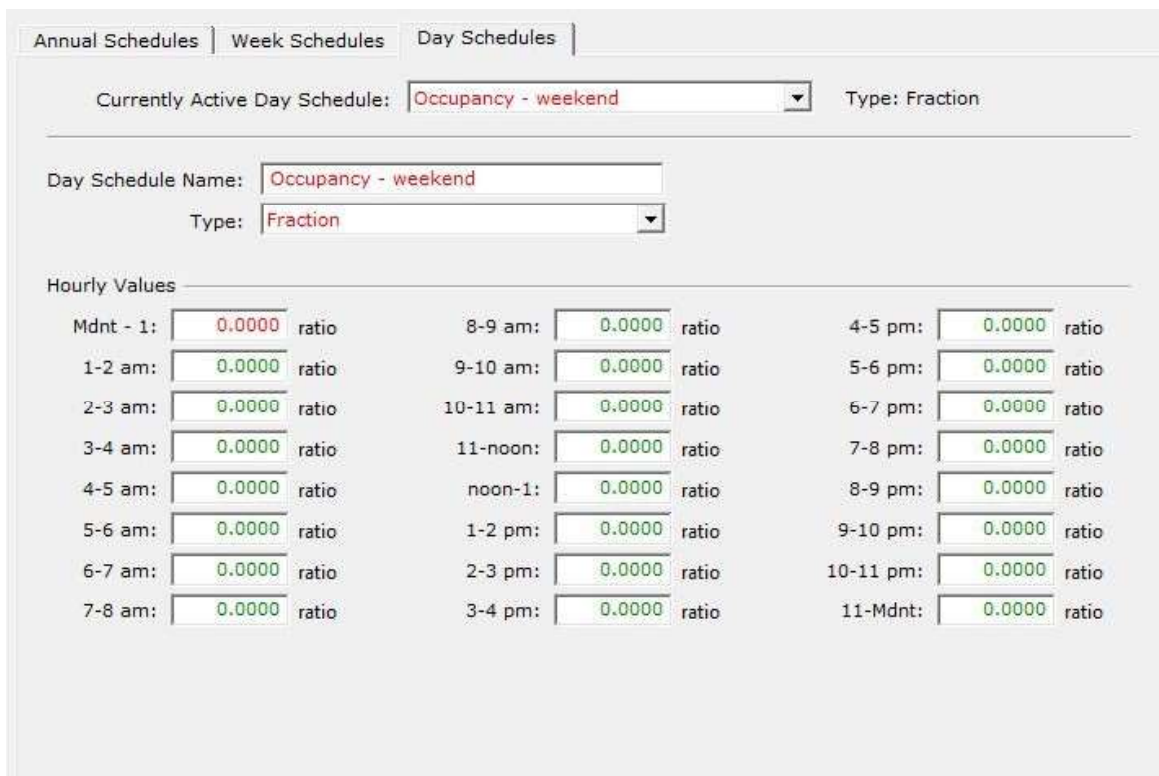


Figure 7: Office occupancy weekend

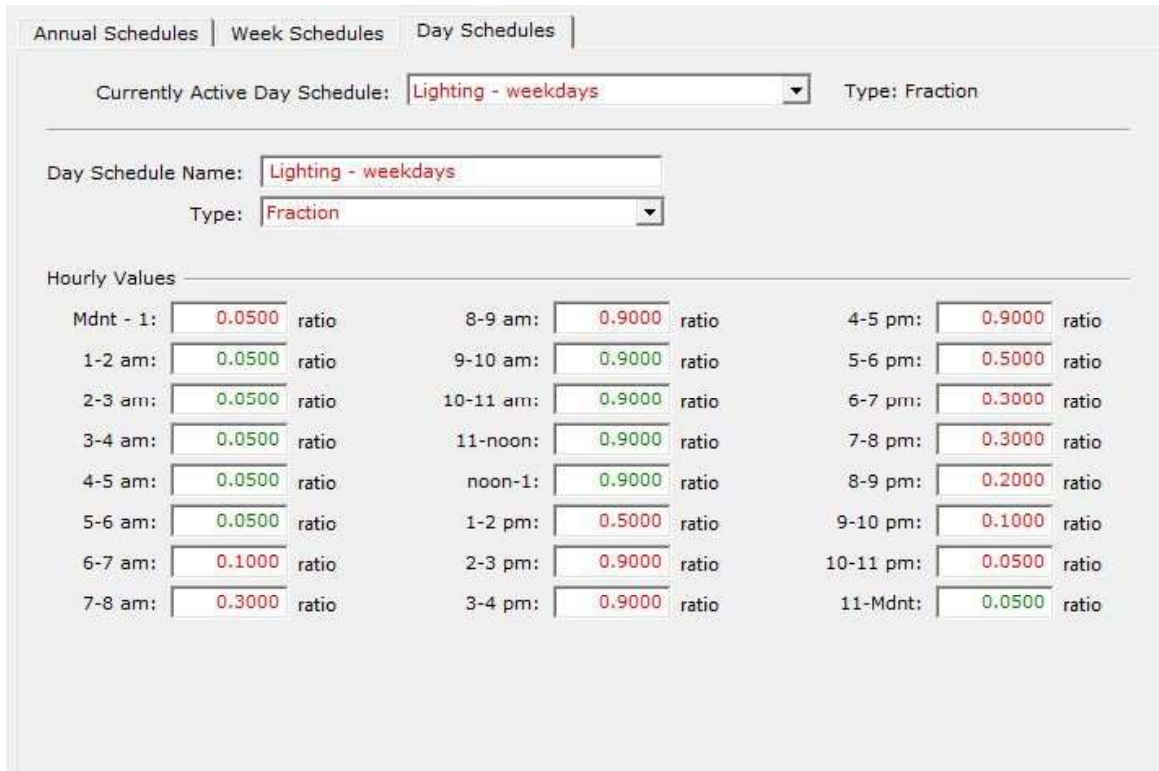


Figure 8: Office lighting weekdays

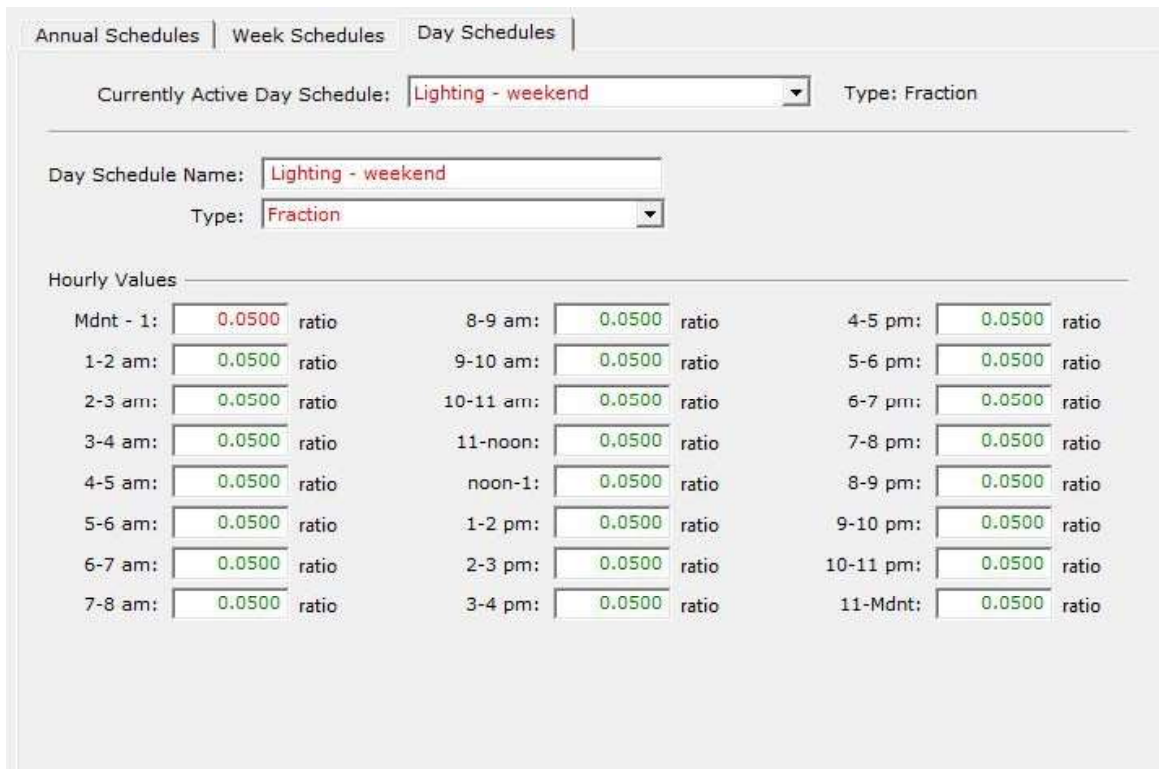


Figure 9: Office lighting weekend

Annual Schedules | Week Schedules | Day Schedules |

Currently Active Day Schedule: Type: Fraction

Day Schedule Name: Type:

Hourly Values

Mdnt - 1:	<input type="text" value="0.0000"/> ratio	8-9 am:	<input type="text" value="0.1000"/> ratio	4-5 pm:	<input type="text" value="0.9000"/> ratio
1-2 am:	<input type="text" value="0.0000"/> ratio	9-10 am:	<input type="text" value="0.9000"/> ratio	5-6 pm:	<input type="text" value="0.5000"/> ratio
2-3 am:	<input type="text" value="0.0000"/> ratio	10-11 am:	<input type="text" value="0.9000"/> ratio	6-7 pm:	<input type="text" value="0.1000"/> ratio
3-4 am:	<input type="text" value="0.0000"/> ratio	11-noon:	<input type="text" value="0.9000"/> ratio	7-8 pm:	<input type="text" value="0.1000"/> ratio
4-5 am:	<input type="text" value="0.0000"/> ratio	noon-1:	<input type="text" value="0.9000"/> ratio	8-9 pm:	<input type="text" value="0.0000"/> ratio
5-6 am:	<input type="text" value="0.0000"/> ratio	1-2 pm:	<input type="text" value="0.8000"/> ratio	9-10 pm:	<input type="text" value="0.0000"/> ratio
6-7 am:	<input type="text" value="0.0000"/> ratio	2-3 pm:	<input type="text" value="0.9000"/> ratio	10-11 pm:	<input type="text" value="0.0000"/> ratio
7-8 am:	<input type="text" value="0.0000"/> ratio	3-4 pm:	<input type="text" value="0.9000"/> ratio	11-Mdnt:	<input type="text" value="0.0000"/> ratio

Figure 10: Office equipment weekdays

Annual Schedules | Week Schedules | Day Schedules |

Currently Active Day Schedule: Type: Fraction

Day Schedule Name: Type:

Hourly Values

Mdnt - 1:	<input type="text" value="0.0000"/> ratio	8-9 am:	<input type="text" value="0.0000"/> ratio	4-5 pm:	<input type="text" value="0.0000"/> ratio
1-2 am:	<input type="text" value="0.0000"/> ratio	9-10 am:	<input type="text" value="0.0000"/> ratio	5-6 pm:	<input type="text" value="0.0000"/> ratio
2-3 am:	<input type="text" value="0.0000"/> ratio	10-11 am:	<input type="text" value="0.0000"/> ratio	6-7 pm:	<input type="text" value="0.0000"/> ratio
3-4 am:	<input type="text" value="0.0000"/> ratio	11-noon:	<input type="text" value="0.0000"/> ratio	7-8 pm:	<input type="text" value="0.0000"/> ratio
4-5 am:	<input type="text" value="0.0000"/> ratio	noon-1:	<input type="text" value="0.0000"/> ratio	8-9 pm:	<input type="text" value="0.0000"/> ratio
5-6 am:	<input type="text" value="0.0000"/> ratio	1-2 pm:	<input type="text" value="0.0000"/> ratio	9-10 pm:	<input type="text" value="0.0000"/> ratio
6-7 am:	<input type="text" value="0.0000"/> ratio	2-3 pm:	<input type="text" value="0.0000"/> ratio	10-11 pm:	<input type="text" value="0.0000"/> ratio
7-8 am:	<input type="text" value="0.0000"/> ratio	3-4 pm:	<input type="text" value="0.0000"/> ratio	11-Mdnt:	<input type="text" value="0.0000"/> ratio

Figure 11: Office equipment weekend

Annual Schedules | Week Schedules | Day Schedules

Currently Active Day Schedule: **Fan - weekdays** Type: On/Off

Day Schedule Name: **Fan - weekdays**
 Type: **On/Off**

Hourly Values

Mdnt - 1:	<input type="text" value="0"/>	8-9 am:	<input type="text" value="1"/>	4-5 pm:	<input type="text" value="1"/>
1-2 am:	<input type="text" value="0"/>	9-10 am:	<input type="text" value="1"/>	5-6 pm:	<input type="text" value="1"/>
2-3 am:	<input type="text" value="0"/>	10-11 am:	<input type="text" value="1"/>	6-7 pm:	<input type="text" value="0"/>
3-4 am:	<input type="text" value="0"/>	11-noon:	<input type="text" value="1"/>	7-8 pm:	<input type="text" value="0"/>
4-5 am:	<input type="text" value="0"/>	noon-1:	<input type="text" value="1"/>	8-9 pm:	<input type="text" value="0"/>
5-6 am:	<input type="text" value="0"/>	1-2 pm:	<input type="text" value="1"/>	9-10 pm:	<input type="text" value="0"/>
6-7 am:	<input type="text" value="0"/>	2-3 pm:	<input type="text" value="1"/>	10-11 pm:	<input type="text" value="0"/>
7-8 am:	<input type="text" value="0"/>	3-4 pm:	<input type="text" value="1"/>	11-Mdnt:	<input type="text" value="0"/>

Figure 12: HVAC Fan weekdays

Annual Schedules | Week Schedules | Day Schedules

Currently Active Day Schedule: **Fan - weekend** Type: On/Off

Day Schedule Name: **Fan - weekend**
 Type: **On/Off**

Hourly Values

Mdnt - 1:	<input type="text" value="0"/>	8-9 am:	<input type="text" value="0"/>	4-5 pm:	<input type="text" value="0"/>
1-2 am:	<input type="text" value="0"/>	9-10 am:	<input type="text" value="0"/>	5-6 pm:	<input type="text" value="0"/>
2-3 am:	<input type="text" value="0"/>	10-11 am:	<input type="text" value="0"/>	6-7 pm:	<input type="text" value="0"/>
3-4 am:	<input type="text" value="0"/>	11-noon:	<input type="text" value="0"/>	7-8 pm:	<input type="text" value="0"/>
4-5 am:	<input type="text" value="0"/>	noon-1:	<input type="text" value="0"/>	8-9 pm:	<input type="text" value="0"/>
5-6 am:	<input type="text" value="0"/>	1-2 pm:	<input type="text" value="0"/>	9-10 pm:	<input type="text" value="0"/>
6-7 am:	<input type="text" value="0"/>	2-3 pm:	<input type="text" value="0"/>	10-11 pm:	<input type="text" value="0"/>
7-8 am:	<input type="text" value="0"/>	3-4 pm:	<input type="text" value="0"/>	11-Mdnt:	<input type="text" value="0"/>

Figure 13: HVAC Fan weekend

Annual Schedules | Week Schedules | Day Schedules |

Currently Active Day Schedule: **Elevator - weekdays** Type: Fraction

Day Schedule Name: **Elevator - weekdays**
 Type: **Fraction**

Hourly Values

Mdnt - 1:	<input type="text" value="0.0500"/> ratio	8-9 am:	<input type="text" value="0.8000"/> ratio	4-5 pm:	<input type="text" value="0.7500"/> ratio
1-2 am:	<input type="text" value="0.0500"/> ratio	9-10 am:	<input type="text" value="0.8000"/> ratio	5-6 pm:	<input type="text" value="0.9500"/> ratio
2-3 am:	<input type="text" value="0.0500"/> ratio	10-11 am:	<input type="text" value="0.5500"/> ratio	6-7 pm:	<input type="text" value="0.5000"/> ratio
3-4 am:	<input type="text" value="0.0500"/> ratio	11-noon:	<input type="text" value="0.3500"/> ratio	7-8 pm:	<input type="text" value="0.3000"/> ratio
4-5 am:	<input type="text" value="0.0500"/> ratio	noon-1:	<input type="text" value="0.2500"/> ratio	8-9 pm:	<input type="text" value="0.2000"/> ratio
5-6 am:	<input type="text" value="0.0500"/> ratio	1-2 pm:	<input type="text" value="0.9500"/> ratio	9-10 pm:	<input type="text" value="0.0500"/> ratio
6-7 am:	<input type="text" value="0.2000"/> ratio	2-3 pm:	<input type="text" value="0.9500"/> ratio	10-11 pm:	<input type="text" value="0.0500"/> ratio
7-8 am:	<input type="text" value="0.4000"/> ratio	3-4 pm:	<input type="text" value="0.3500"/> ratio	11-Mdnt:	<input type="text" value="0.0500"/> ratio

Figure 14: Elevator weekdays

Annual Schedules | Week Schedules | Day Schedules |

Currently Active Day Schedule: **Elevator - weekend** Type: Fraction

Day Schedule Name: **Elevator - weekend**
 Type: **Fraction**

Hourly Values

Mdnt - 1:	<input type="text" value="0.0500"/> ratio	8-9 am:	<input type="text" value="0.0500"/> ratio	4-5 pm:	<input type="text" value="0.0500"/> ratio
1-2 am:	<input type="text" value="0.0500"/> ratio	9-10 am:	<input type="text" value="0.0500"/> ratio	5-6 pm:	<input type="text" value="0.0500"/> ratio
2-3 am:	<input type="text" value="0.0500"/> ratio	10-11 am:	<input type="text" value="0.0500"/> ratio	6-7 pm:	<input type="text" value="0.0500"/> ratio
3-4 am:	<input type="text" value="0.0500"/> ratio	11-noon:	<input type="text" value="0.0500"/> ratio	7-8 pm:	<input type="text" value="0.0500"/> ratio
4-5 am:	<input type="text" value="0.0500"/> ratio	noon-1:	<input type="text" value="0.0500"/> ratio	8-9 pm:	<input type="text" value="0.0500"/> ratio
5-6 am:	<input type="text" value="0.0500"/> ratio	1-2 pm:	<input type="text" value="0.0500"/> ratio	9-10 pm:	<input type="text" value="0.0500"/> ratio
6-7 am:	<input type="text" value="0.0500"/> ratio	2-3 pm:	<input type="text" value="0.0500"/> ratio	10-11 pm:	<input type="text" value="0.0500"/> ratio
7-8 am:	<input type="text" value="0.0500"/> ratio	3-4 pm:	<input type="text" value="0.0500"/> ratio	11-Mdnt:	<input type="text" value="0.0500"/> ratio

Figure 15: Elevator weekend

ENVELOPE DETAILED SPECIFICATION

Table 1: Building envelope properties

Component	Category	Input Parameter	Base case	Proposed
Envelope	Wall	Material	As per ECBC	200 mm AAC Block
		U-value (Btu/hr.sqft.F)	0.0704	0.119
	Roof	Material	As per ECBC	11 mm clay tiles + 115 mm RCC + 25 mm XPS +25 mm PUF + 50 mm Wood
		U-value (Btu/hr.sqft.F)	0.058	0.090
	Glass	U-value (Btu/hr.sqft.F)	0.528	0.264
		SHGC	0.27	0.27
		Shading Coefficient	0.31	0.32
		VLT	-	49%

Table 1 above lists the building envelope properties used for WBP method for Proposed Development

Table 2: U-Value calculation - Building envelope

Wall Construction						
Sr. No	Description	Thickness (m)	K (W/m.K)	R (m ² .K/W)	U (W/m ² .K)	U (Btu/hr-ft ² .F)
1	Inner Air Film			0.12		
2	Internal Plaster	0.015	0.72	0.03		
3	AAC Block	0.23	0.1839	1.25		
4	External Plaster	0.015	0.72	0.03		
5	External Air Film			0.04		
				1.48	0.68	0.119

Roof Construction						
Sr. No	Description	Thickness (m)	K (W/m.K)	R (m ² .K/W)	U (W/m ² .K)	U (Btu/hr-ft ² .F)
1	Inner Air Film			0.12		
2	RCC Slab	0.15	0.357	0.42		
3	PUF	0.05	0.0372	1.34		
4	External Plaster	0.015	0.72	0.02		
5	External Air Film			0.04		
				1.95	0.51	0.090

HVAC (Heating, Ventilation & Air-conditioning)

Ventilation system has been model in accordance with requirement of §5.2.1 of the code. CFM and load calculation has been summary sheet has been attached in Annexure 1.

Table 3: Zone cooling & heating set point

Component	Category	Input Parameter	Base case	Proposed
HVAC	Specification	System	VRF with DOAS sys	VRF with DOAS sys
		Efficiency (EER)	3.02	3.5
	Operation	Schedule	As per ECBC 2017	
	Temperature	Cooling set point (°F)	75	
		Heating set point (°F)	70	

Lighting

Table 4: LPD level as per ECBC

Lighting Power Density calculation (As per space function method- ECBC §6.3.5)			
Space	Baseline case	Propose case	Unit
Internal	0.91	0.71	W/ ft ²
External	0.88	0.79	W/ ft ²

Electrical Power

3.1.10. Transformer

The maximum total losses of the proposed transformer at 100% loading and 50% loading has been determined as per ECBC 2017 Table 7-2. Additional metering class current transformers (CTs) and potential transformers (PTs) shall be provided. Voltage drop for feeders shall not exceed 2% at design load. Voltage drop for branch circuit shall not exceed 3% at design load.

3.1.11. Motors (type, efficiency)

IE-2 High Efficiency Motors has been recommended as per ECBC 2017 Section 7.2.2 and shall be followed.

3.1.12. Diesel generator sets

BEE 3 Star Rated Diesel Generator sets have been recommended as per ECBC 2017 Section 7.2.3 and shall be followed.

3.1.13. Check metering and monitoring

Permanently installed electric meter to record demand (kW), energy (kWh), and total power factor (kVARH) has been recommended as per ECBC 2017 Section 7.2.4 and shall be followed. Additionally, sub-meters for HVAC system, Interior and Exterior Lighting and Plug loads shall also be provided.

3.1.14. Power factor correction

APFC panel shall be installed for Power Factor Correction of 0.97. Dry (MPPH type) automatic power factor improvement capacitor banks, 400/430 Volts shall conform to IS-2834-1964 (Amended to date). All the units shall be connected in parallel for each block by means of solid copper bars.

3.1.15. Power distribution system

Power cabling shall be sized so that the distribution losses do not exceed 3% of the total power usage as recommended in ECBC 2017 Section 7.2.6

3.1.16. Uninterruptable Power Supply (UPS)

Energy Efficient UPS system with minimum efficiency of 93.8% at 100% loading is being installed for Emergency lighting, Fire alarm and security systems.

Energy Performance Analysis

The proposed building is considered as operating throughout the day. Following table indicates the operating hours and diversity factor considered for the building.

Table 5: Operation schedule considered

Component	Category	Input Parameter	Base case	Proposed
Occupancy & Equipment	Equipment	All spaces (W/sqft)	1.0	
	Operation	Equipment Schedule	As per Section 9.6 of ECBC 2017	
		Occupancy Schedule	As per Section 9.6 of ECBC 2017	

Table 6: Summary of Unmet hours

Baseline case	Cool Unmet hour	67
	Heat Unmet hour	57
Proposed case	Cool Unmet hour	10
	Heat Unmet hour	138

Table 7: Summary of total tonnage and Sq. ft. per TR

	Total tonnage	Sq. ft. per TR
Proposed case	384	298
Baseline case	424	270

Summary of Renewable Energy generation of the project:

A dedicated REGZ equivalent to at least 25% of roof area or area required for generation of energy equivalent to 1% of total peak demand or connected load of the building, whichever is less, shall be provided in all buildings.

Total peak demand of the building = 593.35 KW

Therefore, 1% of peak demand = $(593.35 \times 0.01) = 5.9 \text{ kW}$

Therefore, the project has proposed to install **6 kW** PV system = $(6/593.35) \times 100\% = 1.01 \%$ of total peak demand.

Solar PV generation calculation has been attached in Annexure 2.

Building View:

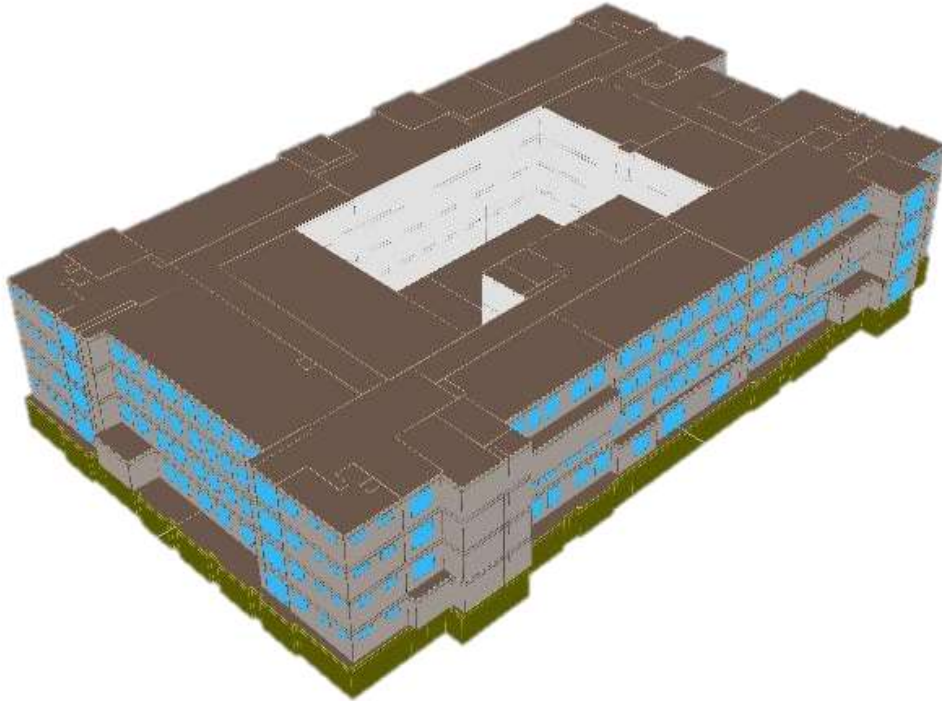


Figure 16: 3D Front View Admin block – Mini Sectt.

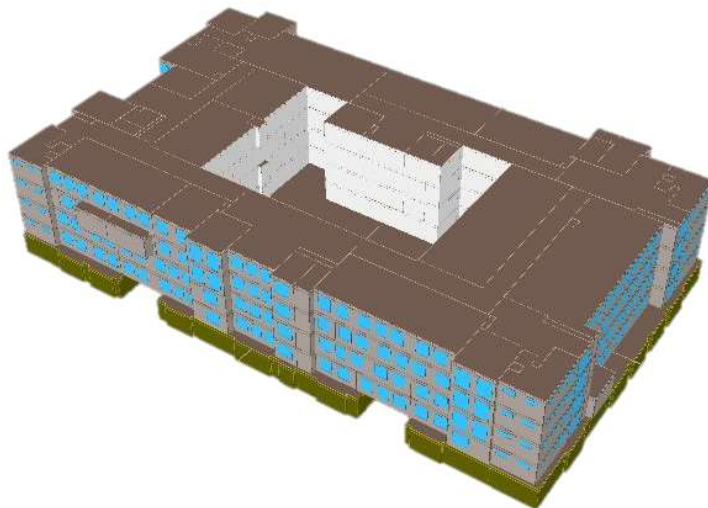


Figure 17: 3D Rear View Admin block – Mini Sectt.

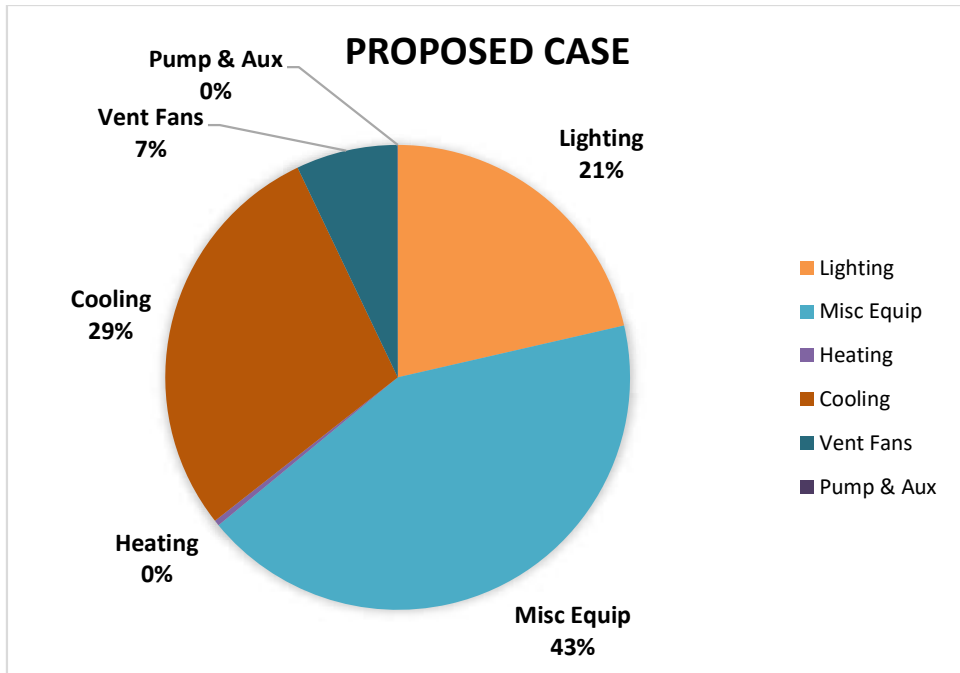


Figure 18: Proposed Energy End Use Characterization

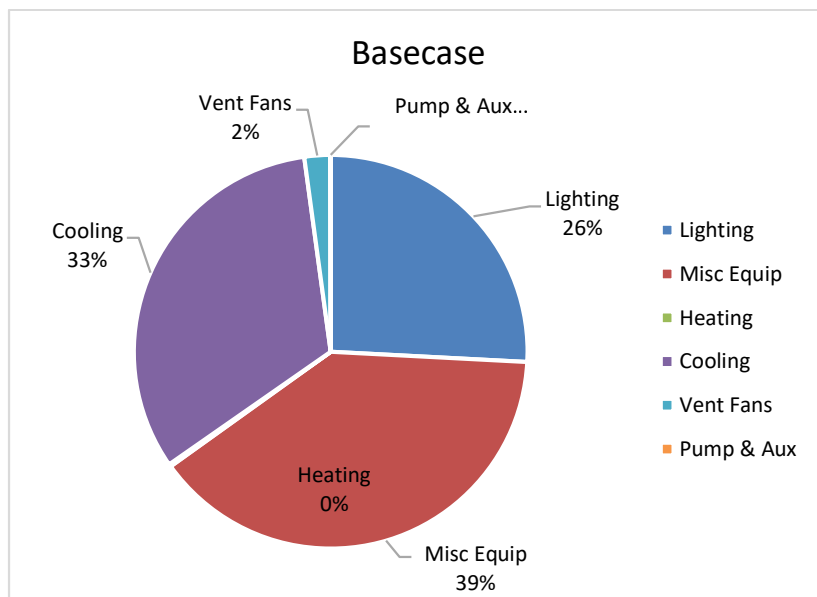


Figure 19: Base case Energy End Use Characterization

Overall Energy Consumption

Table 8: Overall Energy consumption in kWh (without basement and external lighting consumption)

PROJECT SUMMARY

Description	UNITS	LIGHTS	MISC EQUIP	Heating	Cooling	Pump & Aux	VENT FANS	TOTAL
PROPOSED	KWH	334762	665765	6557	457898	149	38094	1503225
BASE - 0 DEG	KWH	437578	665765	4615	541396	149	37613	1687116
BASE - 90 DEG	KWH	437578	665765	2623	572117	149	38825	1717057
BASE - 180 DEG	KWH	437578	665765	2863	553178	149	34537	1694070
BASE - 270 DEG	KWH	437578	665765	4332	539275	149	33610	1680709
BASE - AVG	KWH	437578	665765	3608.3	551491.5	149	36146.25	1694738
ENERGY / COST SAVINGS		23.5	0.0	-81.7	17.0	0.0	-0.5	

From the above table following parameters are analysed, proposed case energy consumption of the project is estimated to be **1503225 kWh**, which is less than the base case energy consumption i.e., **1694738 kWh**.

Therefore, project achieves energy saving of 11.3% when compared with ECBC baseline case. Thereby, project is meeting the ECBC compliance by 'Whole Building Performance' approach.

e-Quest Output Screenshots

Commercial Building

Baseline 0 degree

Charkhi Dadri - AdminBlock DOE-2.2-50a 3/25/2022 23:27:05 BDL RUN 1
 REPORT- BEPU Building Utility Performance WEATHER FILE- EPW Hissar, Haryana, I

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	437578.	0.	665765.	4615.	541396.	0.	149.	37613.	0.	0.	0.	16644.	1703761.
FM1 NATURAL-GAS THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1703761. KWH 7.472 KWH /SQFT-YR GROSS-AREA 7.472 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 4.34
 PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
 HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 67
 HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 57

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Baseline 90 degree

Charkhi Dadri - AdminBlock DOE-2.2-50a 3/29/2022 16:33:46 BDL RUN 1
 REPORT- BEPU Building Utility Performance WEATHER FILE- EPW Hissar, Haryana, I

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	437578.	0.	665765.	2623.	572117.	0.	149.	38825.	0.	0.	0.	16644.	1733701.
FM1 NATURAL-GAS THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1733701. KWH 7.604 KWH /SQFT-YR GROSS-AREA 7.604 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.70
 PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
 HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 6
 HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 14

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Baseline 180 degree

Charkhi Dadri - AdminBlock DOE-2.2-50a 3/30/2022 10:50:32 BDL RUN 1

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW Hissar,Haryana,I

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	437578.	0.	665765.	2863.	553178.	0.	149.	34537.	0.	0.	0.	16644.	1710715.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1710715. KWH 7.503 KWH /SQFT-YR GROSS-AREA 7.503 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.63
 PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
 HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 5
 HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 13

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Baseline 270 degree

Charkhi Dadri - AdminBlock DOE-2.2-50a 3/30/2022 12:05:42 BDL RUN 1

REPORT- BEPU Building Utility Performance WEATHER FILE- EPW Hissar,Haryana,I

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	437578.	0.	665765.	4332.	539275.	0.	149.	33610.	0.	0.	0.	16644.	1697353.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1697353. KWH 7.444 KWH /SQFT-YR GROSS-AREA 7.444 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 0.07
 PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
 HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 0
 HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 2

NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Proposed Case

Charkhi Dadri - AdminBlock

DOE-2.2-50a 3/29/2022 11:31:45 BDL RUN 1

REPORT- BEPU Building Utility Performance

WEATHER FILE- EPW Hissar, Haryana, I

	LIGHTS	TASK LIGHTS	MISC EQUIP	SPACE HEATING	SPACE COOLING	HEAT REJECT	PUMPS & AUX	VENT FANS	REFRIG DISPLAY	HT PUMP SUPPLEM	DOMEST HOT WTR	EXT USAGE	TOTAL
EM1 ELECTRICITY													
KWH	334762.	0.	665765.	6557.	457898.	0.	149.	38094.	0.	0.	0.	14892.	1518119.
FM1 NATURAL-GAS													
THERM	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.	0.

TOTAL ELECTRICITY 1518119. KWH 6.658 KWH /SQFT-YR GROSS-AREA 6.658 KWH /SQFT-YR NET-AREA

PERCENT OF HOURS ANY SYSTEM ZONE OUTSIDE OF THROTTLING RANGE = 5.17
 PERCENT OF HOURS ANY PLANT LOAD NOT SATISFIED = 0.00
 HOURS ANY ZONE ABOVE COOLING THROTTLING RANGE = 10
 HOURS ANY ZONE BELOW HEATING THROTTLING RANGE = 138

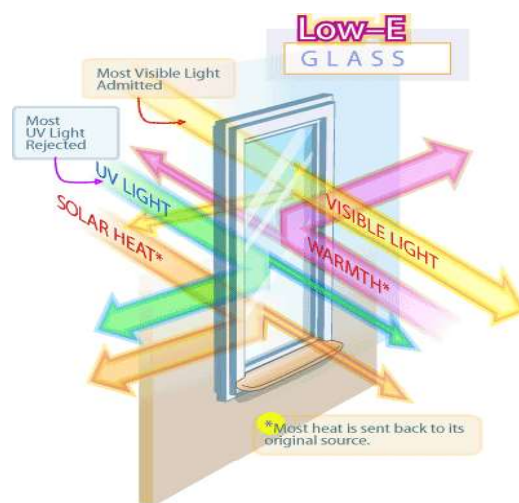
NOTE: ENERGY IS APPORTIONED HOURLY TO ALL END-USE CATEGORIES.

Daylight Analysis

Introduction

The commitment 4.2.3 of ECBC 2017 for ECBC Compliance Building is checked by computer simulation analysis. In the computer analysis method, the daylight analysis is done by creating a model in Design Builder and then simulating it further. A summary of daylight calculations is provided in Table 11. Simulation tool and UDI analysis image of each floor plate is attached below.

Daylight is a natural source of light, which meets all the requirements of good lighting while enhancing user efficiency and productivity. In India, daylight is available in plenty and can be used for satisfactory indoor illumination during the day. Day lighting plays a crucial role in developing comfortable indoor environmental quality. It reduces the need for electric lighting of building interiors, resulting in decreased energy use. Daylight penetration inside the living space depends entirely on the building design, i.e., the orientation, internal space arrangement, distribution of openings, size and shape of the openings, shading design and glazing properties, and so on.



For achieving utmost benefit of day lighting within a living space, the glass should be chosen in such a way that it allows maximum penetration of daylight to provide visual comfort to the inhabitants without producing glare. In addition to that, the glass should also restrict the heat of the sun from entering the space thereby reducing the cooling load of the space.

Objective

The prime intent of the criterion is to ensure connectivity between the interior and the exterior environment, by providing adequate day lighting within the living spaces. The analysis would help in:

- Optimizing the type of glass used
- Assessing the availability of daylight in living areas and finalizing the credit points as per the new buildings criteria.

Methodology-

In the computer analysis method, the daylight analysis is done by creating a model and then performing Analysis in Design Builder software. For day lighting analysis, the following design values have been considered during this process:

1. The model is designed considering that the sky is clear.
2. The day lighting simulation is done on a work plane of 800 mm height from finish floor level.

Executive Summary-

Project Name	Administrative Block – Mini Secretariat
Project Type	Office Building
Location	Charkhi Dadri
Climate Type	Composite
Day lighted Area (%)	44.8 %
Simulation Tool Used	Design Builder

Daylight Analysis

The commitment 4.2.3 of ECBC 2017 for Compliance Building is checked by computer simulation Analysis. In the computer analysis method, the daylight analysis is done by creating a model and then performing Analysis in Design Builder software. A summary of daylight calculations is provided in the Table below. Simulation tool and UDI Analysis image of each floor plate is attached below.

Table 9: Daylight Calculation

Floor Description	UDI
Ground Floor	40.0 %
First Floor	41.8 %
Second Floor	45.1 %
Third Floor	52.4 %
Total UDI of the Project	44.8 %
ECBC recommendation for building category	40 %

Design Builder Daylight Simulation Screenshots

Simulation Assumptions:

Calculation Description

Calculation Options

Simulation type: 1-General

Detail template: 2-Standard

Working plane height (m): 0.8000

Margin (m): 0.000

Ground plane extension (m): 30.0

Override zone occupancy schedule

Outputs and Thresholds

Spatial Daylight Autonomy (sDA)

Override zone illuminance target

sDA lower illuminance threshold (lux): 300

Annual Sunlight Exposure (ASE)

ASE illuminance threshold (lux): 1000

Useful Daylight Illuminance (UDI)

UDI lower illuminance threshold (lux): 100

UDI upper illuminance threshold (lux): 2000

Grid

Min Grid Size (m): 0.3

Max Grid Size (m): 0.3

Advanced Options

Ambient bounces: 3

Ambient accuracy: 0.25

Ambient resolution: 256

Ambient divisions: 512

Number of ambient super-samples: 256

Simulated results:

Untitled, AdminBlock-CharkhiDadri								
		Annual daylighting						
Block	Zone	Floor Area (m2)	sDA Area in Range (m2)	sDA Area in Range (%)	ASE Area in Range (m2)	ASE Area in Range (%)	UDI Area in Range (m2)	UDI Area in Range (%)
Ground floor	Zone 1	3762.682	997.238	26.503	3374.438	89.682	1505.790	40.019
First floor	Zone 1	3762.682	1022.164	27.166	3369.287	89.545	1571.463	41.764
Second floor	Zone 1	3762.682	1079.467	28.689	3345.741	88.919	1638.579	45.143
Third floor	Zone 1	3638.132	1204.410	33.105	3189.832	87.678	1906.493	52.403
Total		14926.178	4303.279	28.830	13279.298	88.966	6682.325	44.769

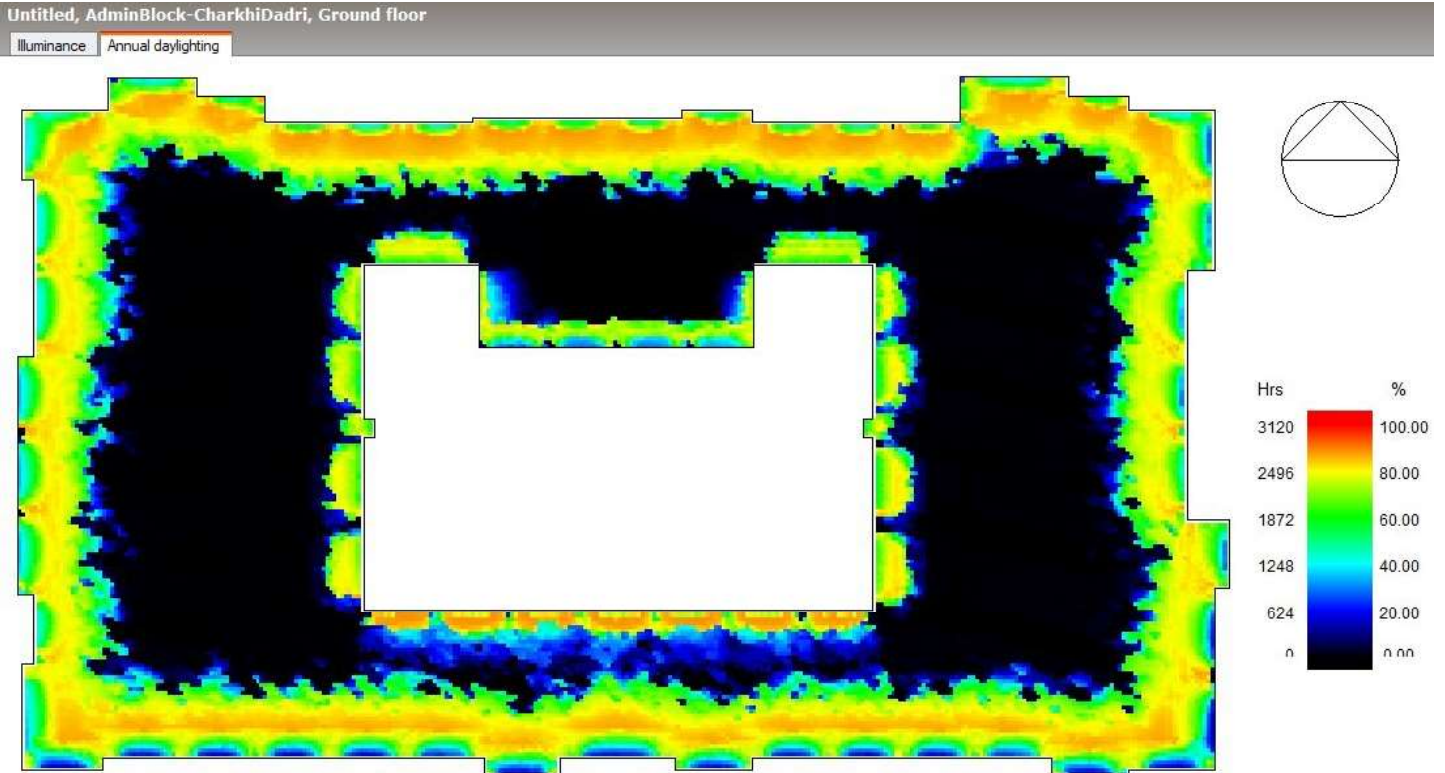


Figure 20: Ground Floor

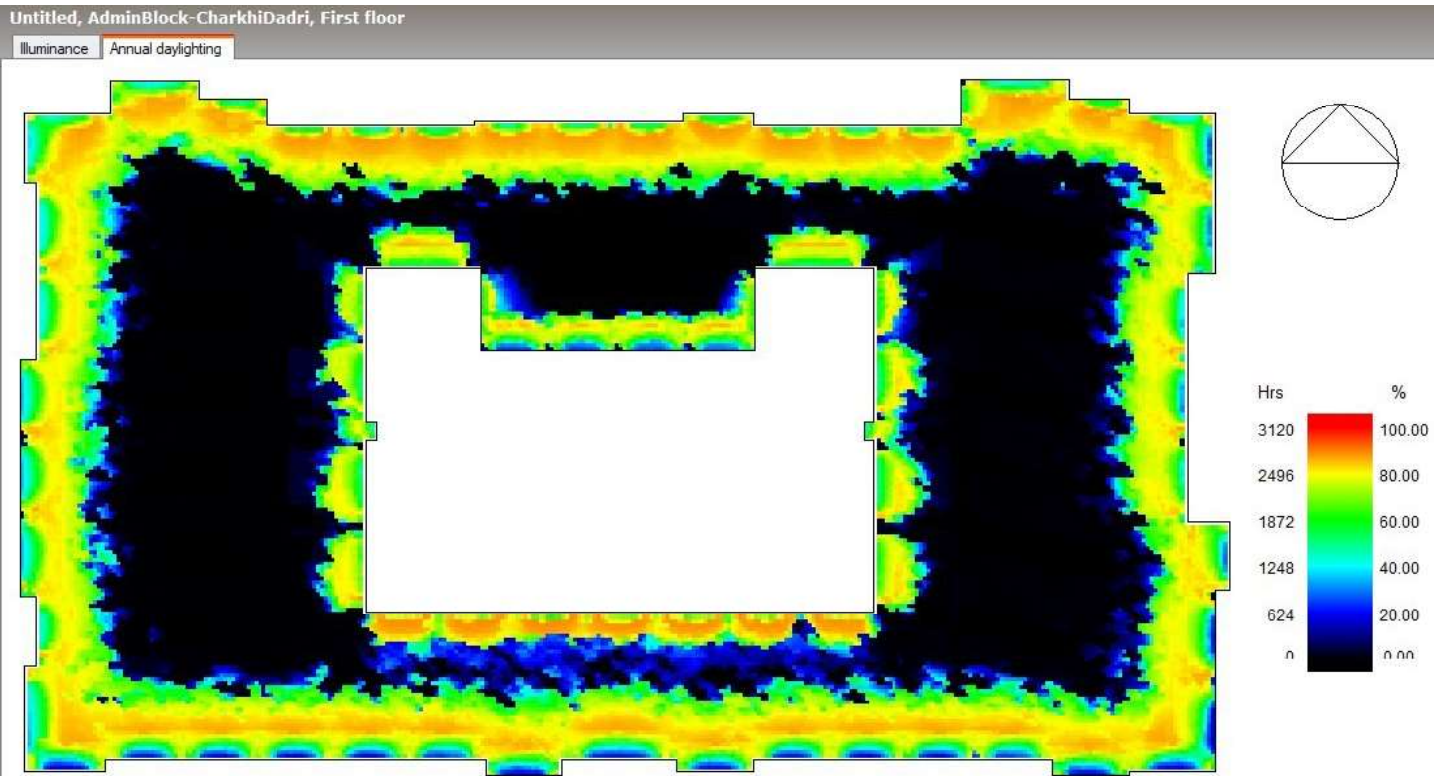


Figure 21: First Floor

Untitled, AdminBlock-CharkhiDadri, Second floor

illuminance Annual daylighting

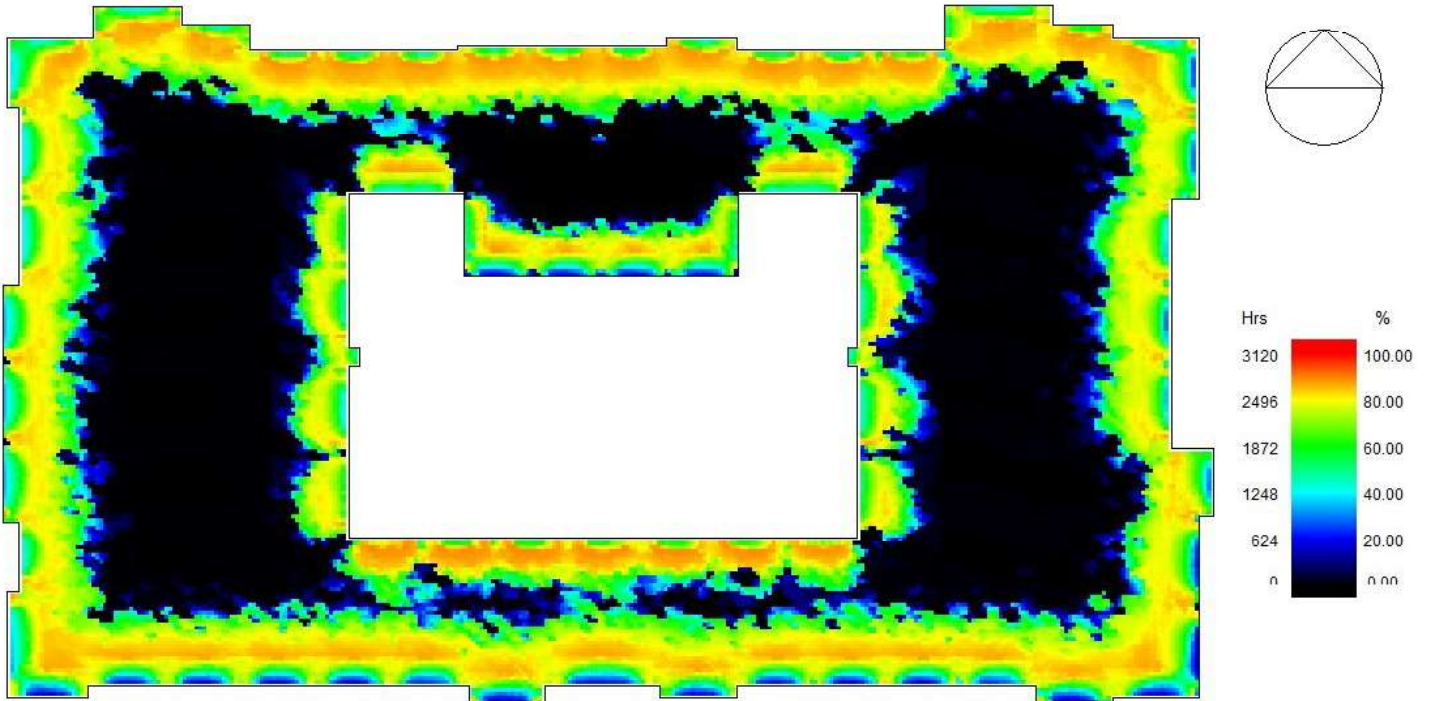


Figure 22: Second Floor

Untitled, AdminBlock-CharkhiDadri, Third floor

illuminance Annual daylighting

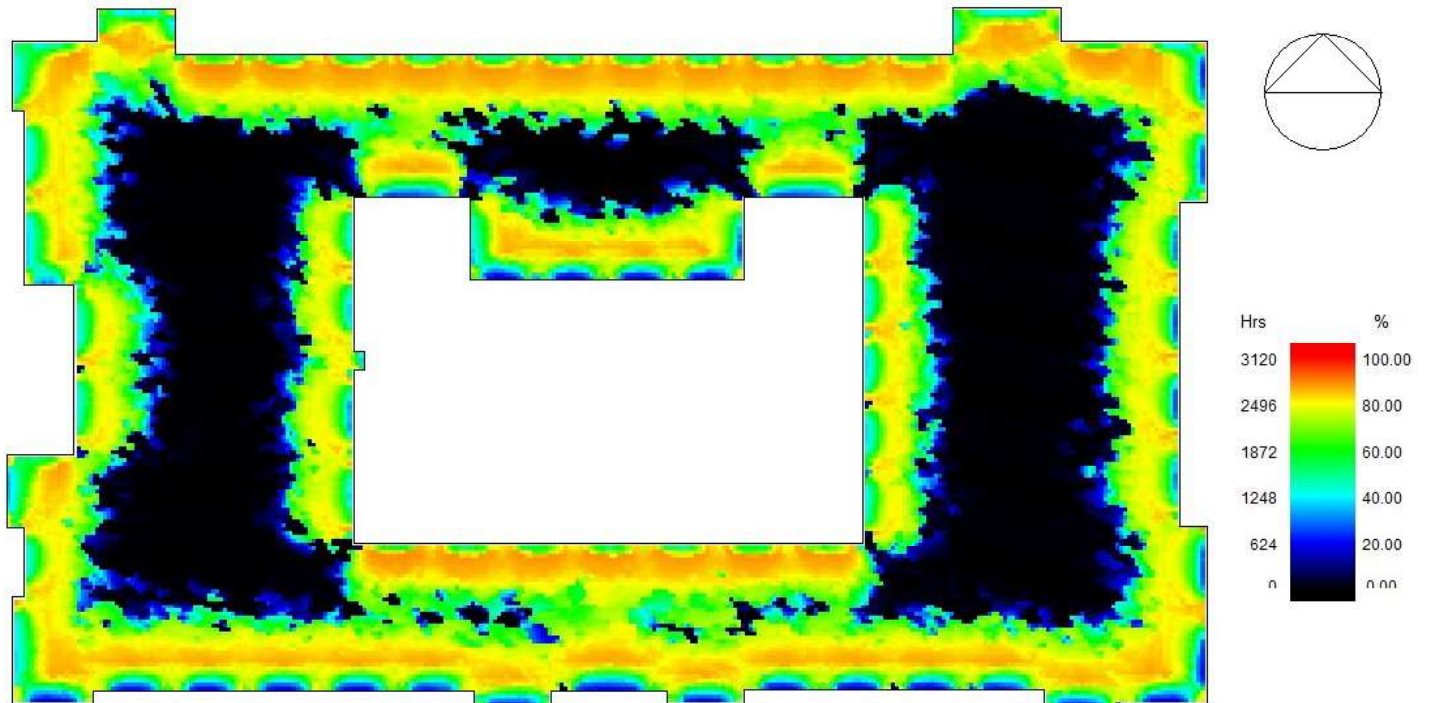


Figure 23: Third Floor

Cost Analysis:

For the increased energy performance of the building, energy efficient materials were used in the building which are not conventionally used. Cost comparison analysis was done for the building systems coming under the scope of ECBC for both the baseline and proposed buildings. The total investment in the conventional building is not available for the building systems coming under the scope of ECBC. As per incremental cost of investment payback period is around 10.9 years.

Table 10: Cost Analysis:

Cost Feasibility Analysis – Administrative Block, Mini Sectt., Charkhi Dadri						
S. No.	Particulars	Quantity	Unit	Rate	Total Amount (Rs)	Difference (lacs)
1	Red Brick wall assembly					
	1. Outside plaster 15 mm	2027.35	Cu.ft			
	2. External Red Brick wall 230 mm	31085.98	Cu.ft			
	3. Inside Cement Plaster 15 mm	2027.35	Cu.ft			
	3. Roof	118215.92	Sq.ft			
	Note: For Both case Red Brick has been taken so no extra cost will be incremented					
	Wall area from Ground to Top Floor					
	Total Wall Area	41206.23	Sq.ft			
	Total Window area	15333.39	Sq.ft			
	Red Brick Wall	879.73	cum	400	3,51,893.29	
	Cost of 230 mm Eco Tric wall	3829.58	sqm	3212.8	1,23,03,659.46	
	Extra cost for wall				1,19,51,766.16	
	No Insulation provided	0	sqm		0.00	
	Total increment cost of Wall Assembly		INR		1,19,51,766.16	1,19,51,766.16
2	RCC Roof Work					
	Note: For Both case RCC slab has been taken so no extra cost will be incremented					
	Basecase: RCC roof Slab 150 mm	10986.61	cum	3950	43397108.18	
	Proposed Case: RCC roof Slab 150 mm	10986.61	cum	3950	4,33,97,108.18	
	Total increment cost of roof Assembly		INR		0.00	0.00
3	Glass Work in windows					
	Note: For Both case Single glazed unit has been taken so no extra cost will be incremented					
	Basecase: Single glazed vision panels in UPVC frame	1425.04	sqm	1004	1430736.39	
	Proposed Case: DGU having 6mm thick solar glass on external side	1425.04	sqm	2237	3187806.08	
	Total increment cost Window Glazing Assembly		INR		1757069.69	1757069.69
4	HVAC					
	Base case- VRF-EER 3.05	424.00	ton	53000.00	22472000.00	
	Propose case- VRF-EER 3.5	384.00	ton	59000.00	22656000.00	
	Cost Saving in HVAC System		INR		184000.00	184000.00
5	Lighting					
	Basecase: Lighting Load	4933	Nos	150	739950	
	Proposedcase: Lighting Load	10338	Nos	150	1550700	
	Cost Saving in Lighting System		INR		810750	810750.00
5	Roof Top Solar PV Panel 25% of roof area or 1% of Peak Demand or Connected Load					
		6	kW	48042	2,88,252.00	2,88,252.00
6	Occupancy control in all toilets and rooms except common areas (Approx) as per drawing	0	Nos.	3090	0.00	0.00
	Total cost		INR			1,49,91,837.85
	Add 10% for miscellaneous items					1499183.79
	Total					16491021.64
	Add GST @ 12%					1978922.60
	Total additional cost for ECBC compliance		INR			18469944.24
S. No.	Case	kWh/Year				
1	Base Case	1694738				
2	Proposed Case	1503225				
3	Renewable Energy Generation Zone	8702				
	Total Annual Energy Savings	200215				
	Total Saving in Cost (INR) @ 8.5	1701828				
	Payback Period (Years)	10.9				

ECBC COMPLIANCE FORMS

ECBC Compliance Forms are placed at Annexure -4.

APPENDIX:

- Annexure 1 : Ventilation CFM and load calculation
- Annexure 2 : Solar PV generation calculation sheet from snapshot.
- Annexure 3 : Cut sheets
- Annexure 4 : Compliance Forms

Abbreviations

AAC	Autoclaved Aerated Concrete	mps	Meters Per Second
ACTI	Cooling Tower Institute	ODP	Ozone Depletion Potential
ANSI	American National Standards Institute	PCC	Pozzolana Cement Concrete
ASHRAE	American Society Of Heating, Refrigerating And Air-Conditioning Engineers	PCM	Phase Change Material
DEVap	Desiccant Enhanced Evaporative Air-Conditioning	PMV	Pulse Modulating Valve
ECBC	Energy Conservation Building Code	PUF	Polyurethane Foam
EEV	Electronic Expansion Valve	RCC	Reinforced Cement Concrete
GPM	Gallons Per Minute	TRIC	Thermally Resistant Insulated Concrete
GWP	Global Warming Potential	TXV	Thermostatic Expansion Valve
HR	Heat Recovery	VAV	Variable Air Volume
HVAC	Heating, Ventilation And Air Conditioning	VRF	Variable Refrigerant Flow
LCCA	Life Cycle Cost Analysis	VRV	Variable Refrigerant Volume
LDAC	Liquid-Desiccant Air Conditioner	wg	Water Gauge

Annexures

Annexure 1 : Ventilation CFM and load calculation

Baseline case

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow			Design Ventilation			Design Capacity				Hrs Outside Thri-Range		Cool Hrs	Heat Hrs
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/psf	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/sf	Heat Btu/sf		
EL1 Sys1 (PMZS) (G)	Pkgd Var Vol Var Temp	d	2,44,17	2,71,04	1.11	94%	26,17	10%	0.107	13.3	94	259	288	46.3	71.0	1	44
... EL1 NE Perim Zn (G.NE1)	Office (Executive/Private) (59%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C2)	Office (Open Plan) (32%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 NNE Perim Zn (G.NNE3)	Office (Executive/Private) (59%)	U	904	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 NW Perim Zn (G.NW4)	Office (Executive/Private) (59%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 North Perim Zn (G.N5)	Office (Executive/Private) (59%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C6)	Office (Open Plan) (32%)	U	275	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C7)	Office (Open Plan) (32%)	U	32	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 North Perim Zn (G.N8)	Office (Executive/Private) (59%)	C	14,80	16,80	1.15	9%	153	9%	0.105	19.1	6	256	294	46.9	71.4	0	2
... EL1 Core Zn (G.C9)	Office (Open Plan) (32%)	U	18,61	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 SSE Perim Zn (G.SSE10)	Office (Executive/Private) (59%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C11)	Office (Open Plan) (32%)	S	20,48	17,91	0.87	100%	233	13%	0.114	39.8	6	337	294	36.7	64.0	0	0
... EL1 Core Zn (G.C12)	Office (Open Plan) (32%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 East Perim Zn (G.E13)	Office (Executive/Private) (59%)	S	28,56	32,99	1.16	100%	300	9%	0.105	19.1	11	255	294	47.1	71.6	0	0
... EL1 Core Zn (G.C14)	Office (Open Plan) (32%)	U	323	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C15)	Office (Open Plan) (32%)	U	337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C16)	Office (Open Plan) (32%)	U	171	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C17)	Office (Open Plan) (32%)	U	83	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C18)	Office (Open Plan) (32%)	U	749	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C19)	Office (Open Plan) (32%)	S	180	278	1.55	100%	20	7%	0.114	39.8	1	190	294	63.2	82.2	0	0
... EL1 Core Zn (G.C20)	Office (Open Plan) (32%)	S	146	199	1.34	100%	17	8%	0.114	39.8	1	219	294	54.8	76.6	0	0
... EL1 Core Zn (G.C21)	Office (Open Plan) (32%)	S	136	238	1.75	100%	16	7%	0.114	39.8	1	188	294	71.2	87.5	0	0
... EL1 ENE Perim Zn (G.ENE22)	Office (Executive/Private) (59%)	U	600	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C23)	Office (Open Plan) (32%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C24)	Office (Open Plan) (32%)	U	16,17	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 South Perim Zn (G.S25)	Office (Executive/Private) (59%)	S	20,32	19,34	0.95	100%	213	11%	0.105	19.1	7	309	294	38.8	66.1	0	0
... EL1 Core Zn (G.C26)	Office (Open Plan) (32%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 SSW Perim Zn (G.SSW27)	Office (Executive/Private) (59%)	S	250	426	1.70	100%	26	6%	0.105	19.1	1	173	294	69.3	86.3	0	0
... EL1 SSE Perim Zn (G.SSE28)	Office (Executive/Private) (59%)	U	184	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 South Perim Zn (G.S29)	Office (Executive/Private) (59%)	U	668	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 South Perim Zn (G.S30)	Office (Executive/Private) (59%)	S	838	11,87	1.42	100%	88	7%	0.105	19.1	4	208	294	57.8	76.6	0	0
... EL1 South Perim Zn (G.S31)	Office (Executive/Private) (59%)	S	633	843	1.33	100%	66	8%	0.105	19.1	3	221	294	54.4	76.4	0	0
... EL1 South Perim Zn (G.S32)	Office (Executive/Private) (59%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C33)	Office (Open Plan) (32%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C34)	Office (Open Plan) (32%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 SE Perim Zn (G.SE35)	Office (Executive/Private) (59%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 South Perim Zn (G.S36)	Office (Executive/Private) (59%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C37)	Office (Open Plan) (32%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 South Perim Zn (G.S38)	Office (Executive/Private) (59%)	S	14,01	20,80	1.30	100%	156	0%	0.105	19.1	7	213	294	56.4	77.7	0	0
... EL1 South Perim Zn (G.S39)	Office (Executive/Private) (59%)	U	12,43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 SW Perim Zn (G.SW40)	Office (Executive/Private) (59%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C41)	Office (Open Plan) (32%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 West Perim Zn (G.W42)	Office (Executive/Private) (59%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C43)	Office (Open Plan) (32%)	U	19,78	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 WSW Perim Zn (G.WSW44)	Office (Executive/Private) (59%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C45)	Office (Open Plan) (32%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C46)	Office (Open Plan) (32%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

... EL1 Core Zn (G.C47)	Office (Open Plan) (32%)	S	233	331	1.42	100%	27	8%	0.114	39.8	1	207	294	58.0	78.8	0	0
... EL1 Core Zn (G.C48)	Office (Open Plan) (32%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C49)	Office (Open Plan) (32%)	S	10,72	937	0.87	100%	122	13%	0.114	39.8	3	336	294	35.7	64.0	0	0
... EL1 Core Zn (G.C50)	Office (Open Plan) (32%)	S	431	377	0.88	100%	49	13%	0.114	39.8	1	336	294	35.7	64.0	0	0
... EL1 Core Zn (G.C51)	Office (Open Plan) (32%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C52)	Office (Open Plan) (32%)	S	511	447	0.87	100%	58	13%	0.114	39.8	2	336	294	35.7	64.0	0	0
... EL1 Core Zn (G.C53)	Office (Open Plan) (32%)	S	759	664	0.87	100%	87	13%	0.114	39.8	2	337	294	35.6	64.0	0	0
... EL1 West Perim Zn (G.W54)	Office (Executive/Private) (59%)	S	881	992	1.15	100%	90	9%	0.105	19.1	3	255	294	47.0	71.5	0	2
... EL1 Core Zn (G.C55)	Office (Open Plan) (32%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 West Perim Zn (G.W56)	Office (Executive/Private) (59%)	S	26,32	35,56	1.35	100%	278	8%	0.105	19.1	12	218	294	55.1	78.9	0	3
... EL1 West Perim Zn (G.W57)	Office (Executive/Private) (59%)	U	253	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C58)	Office (Open Plan) (32%)	S	307	483	1.51	100%	35	8%	0.114	39.8	2	195	294	81.5	81.1	0	0
... EL1 NW Perim Zn (G.NW59)	Office (Executive/Private) (59%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 North Perim Zn (G.N60)	Office (Executive/Private) (59%)	U	935	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C61)	Office (Open Plan) (32%)	U	27	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C62)	Office (Open Plan) (32%)	U	16,52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 North Perim Zn (G.N63)	Office (Executive/Private) (59%)	S	604	583	1.15	100%	60	9%	0.105	19.1	3	255	294	47.1	71.5	0	4
... EL1 North Perim Zn (G.N64)	Office (Executive/Private) (59%)	S	468	585	1.25	100%	49	8%	0.105	19.1	2	235	294	51.0	74.1	1	20
... EL1 NNW Perim Zn (G.NNW65)	Office (Executive/Private) (59%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 North Perim Zn (G.N68)	Office (Executive/Private) (59%)	S	39,87	42,67	1.07	100%	418	10%	0.105	19.1	15	275	294	43.6	69.3	0	4
... EL1 Core Zn (G.C67)	Office (Open Plan) (32%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C68)	Office (Open Plan) (32%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C69)	Office (Open Plan) (32%)	S	250	219	0.87	100%	29	13%	0.114	39.8	1	337	294	35.6	63.9	0	9
... EL1 Core Zn (G.C70)	Office (Open Plan) (32%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL1 Core Zn (G.C71)	Office (Open Plan) (32%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow		Design Ventilation				Design Capacity				Hrs Outside Tri-Range			
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf	Heat Btu/h/sf	Cool Hrs	Heat Hrs
EL2 Sys2 (PMZS) (G)	Pkgd Var Vol Var Temp	d	2,67,63	2,75,22	1.03	99%	29,39	11%	0.110	15.2	98	274	282	43.9	66.6	0	73
... EL2 NE Perim Zn (G.NE1)	Office (Executive/Private) (64%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C2)	Office (Open Plan) (39%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 North Perim Zn (G.N3)	Office (Executive/Private) (64%)	U	355	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 NNE Perim Zn (G.NNE4)	Office (Executive/Private) (64%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 NW Perim Zn (G.NW5)	Office (Executive/Private) (64%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C8)	Office (Open Plan) (39%)	C	275	240	0.87	13%	31	13%	0.113	36.5	1	331	289	36.3	61.6	0	0
... EL2 North Perim Zn (G.N7)	Office (Executive/Private) (64%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 North Perim Zn (G.N8)	Office (Executive/Private) (64%)	U	993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C9)	Office (Open Plan) (39%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 North Perim Zn (G.N10)	Office (Executive/Private) (64%)	S	28,15	32,56	1.16	100%	297	9%	0.105	19.0	11	250	289	48.0	69.3	0	5
... EL2 Core Zn (G.C11)	Office (Open Plan) (39%)	S	16,82	14,71	0.87	100%	189	13%	0.113	36.5	5	331	289	36.3	61.6	0	0
... EL2 Core Zn (G.C12)	Office (Open Plan) (39%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C13)	Office (Open Plan) (39%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C14)	Office (Open Plan) (39%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C15)	Office (Open Plan) (39%)	S	250	278	1.11	100%	28	10%	0.113	36.5	1	280	289	46.1	68.1	0	0
... EL2 Core Zn (G.C16)	Office (Open Plan) (39%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 North Perim Zn (G.N17)	Office (Executive/Private) (64%)	U	24,88	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 North Perim Zn (G.N18)	Office (Executive/Private) (64%)	S	453	582	1.28	100%	48	8%	0.105	19.0	2	225	289	53.3	72.7	0	2
... EL2 North Perim Zn (G.N19)	Office (Executive/Private) (64%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 NW Perim Zn (G.NW20)	Office (Executive/Private) (64%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C21)	Office (Open Plan) (39%)	S	580	596	1.06	100%	63	11%	0.113	36.5	2	272	289	44.1	66.7	0	1

... EL2 Core Zn (G.C22)	Office (Open Plan) (39%)	U	27	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C23)	Office (Open Plan) (39%)	U	167	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 West Perim Zn (G.W24)	Office (Executive/Private) (64%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 West Perim Zn (G.W25)	Office (Executive/Private) (64%)	S	11.16	13.12	1.18	100%	118	9%	0.105	19.0	5	246	289	48.8	69.8	0	7	
... EL2 Core Zn (G.C26)	Office (Open Plan) (39%)	U	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 West Perim Zn (G.W27)	Office (Executive/Private) (64%)	S	693	10.85	1.54	100%	73	7%	0.105	19.0	4	188	289	63.8	79.5	0	36	
... EL2 Core Zn (G.C28)	Office (Open Plan) (39%)	S	20.24	19.93	0.98	100%	228	11%	0.113	36.5	7	294	289	40.9	64.8	0	8	
... EL2 West Perim Zn (G.W29)	Office (Executive/Private) (64%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C30)	Office (Open Plan) (39%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C31)	Office (Open Plan) (39%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C32)	Office (Open Plan) (39%)	S	233	285	1.14	100%	26	10%	0.113	36.5	1	255	289	47.1	68.7	0	13	
... EL2 Core Zn (G.C33)	Office (Open Plan) (39%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C34)	Office (Open Plan) (39%)	S	16.52	14.44	0.87	100%	186	13%	0.113	36.5	5	331	289	36.3	61.6	0	0	
... EL2 Core Zn (G.C35)	Office (Open Plan) (39%)	S	869	780	0.87	100%	98	13%	0.113	36.5	3	331	289	36.3	61.6	0	0	
... EL2 Core Zn (G.C36)	Office (Open Plan) (39%)	S	138	159	1.15	100%	16	10%	0.113	36.5	1	252	289	47.6	69.0	0	1	
... EL2 Core Zn (G.C37)	Office (Open Plan) (39%)	S	317	278	0.88	100%	38	13%	0.113	36.5	1	330	289	38.4	61.7	0	0	
... EL2 Core Zn (G.C38)	Office (Open Plan) (39%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 West Perim Zn (G.W39)	Office (Executive/Private) (64%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 SW Perim Zn (G.SW40)	Office (Executive/Private) (64%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C41)	Office (Open Plan) (39%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 South Perim Zn (G.S42)	Office (Executive/Private) (64%)	S	12.43	15.84	1.27	100%	131	8%	0.105	19.0	5	227	289	52.8	72.4	0	0	
... EL2 South Perim Zn (G.S43)	Office (Executive/Private) (64%)	U	14.91	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C44)	Office (Open Plan) (39%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C45)	Office (Open Plan) (39%)	S	17.34	15.16	0.87	100%	195	13%	0.113	36.5	5	331	289	36.3	61.6	0	0	
... EL2 South Perim Zn (G.S46)	Office (Executive/Private) (64%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 SSW Perim Zn (G.SSW47)	Office (Executive/Private) (64%)	S	250	728	2.91	100%	26	4%	0.105	19.0	3	99	289	120.7	116.6	0	0	
... EL2 SSE Perim Zn (G.SSE48)	Office (Executive/Private) (64%)	U	184	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C49)	Office (Open Plan) (39%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 South Perim Zn (G.S50)	Office (Executive/Private) (64%)	U	20.32	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 South Perim Zn (G.S51)	Office (Executive/Private) (64%)	U	15.07	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 South Perim Zn (G.S52)	Office (Executive/Private) (64%)	U	633	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C53)	Office (Open Plan) (39%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 South Perim Zn (G.S54)	Office (Executive/Private) (64%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 SE Perim Zn (G.SE55)	Office (Executive/Private) (64%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C56)	Office (Open Plan) (39%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C57)	Office (Open Plan) (39%)	U	83	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C58)	Office (Open Plan) (39%)	S	19.18	19.84	1.03	100%	216	11%	0.113	36.5	7	280	289	42.9	66.0	0	0	
... EL2 Core Zn (G.C59)	Office (Open Plan) (39%)	S	788	672	0.87	100%	80	13%	0.113	36.5	2	331	289	36.3	61.6	0	0	
... EL2 Core Zn (G.C60)	Office (Open Plan) (39%)	S	276	240	0.87	100%	31	13%	0.113	36.5	1	332	289	36.2	61.6	0	0	
... EL2 Core Zn (G.C61)	Office (Open Plan) (39%)	S	280	245	0.88	100%	31	13%	0.113	36.5	1	330	289	36.4	61.7	0	0	
... EL2 Core Zn (G.C62)	Office (Open Plan) (39%)	S	489	411	0.88	100%	53	13%	0.113	36.5	1	330	289	36.3	61.7	0	0	
... EL2 Core Zn (G.C63)	Office (Open Plan) (39%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C64)	Office (Open Plan) (39%)	S	12.61	11.03	0.87	100%	142	13%	0.113	36.5	4	331	289	36.3	61.6	0	0	
... EL2 Core Zn (G.C65)	Office (Open Plan) (39%)	S	610	536	0.66	100%	91	17%	0.113	36.5	2	437	289	27.5	55.9	0	0	
... EL2 SSE Perim Zn (G.SSE66)	Office (Executive/Private) (64%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL2 Core Zn (G.C67)	Office (Open Plan) (39%)	S	12.30	11.10	0.90	100%	138	12%	0.113	36.5	4	321	289	37.4	62.4	0	0	
... EL2 East Perim Zn (G.E68)	Office (Executive/Private) (64%)	S	34.47	44.74	1.30	100%	383	8%	0.105	19.0	15	223	289	53.8	73.1	0	0	
... EL2 Core Zn (G.C69)	Office (Open Plan) (39%)	U	14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

System & Zone Name	System Type Principal Zone Activity	Type*	Ret Zn	Design Flow			Design Ventilation			Design Capacity					Hrs Outside Thr-Range		
				Area sqft	Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Heat Btu/hf	Heat Btu/hf	
EL3 Sys2 (PM2.6) (G)	PkgH Var Vol Var Temp	A	3,18,75	3,35,67	1.05	96%	34,78	10%	0.109	18.7	116	274	289	43.8	68.7	81	95
... EL3 NE Perim Zn (G.NE1)	Office (Executive/Private) (52%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C2)	Corridor (43%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 NE Perim Zn (G.NE3)	Office (Executive/Private) (52%)	C	16,00	15,25	0.95	11%	167	11%	0.104	19.2	5	304	290	39.4	63.8	0	1
... EL3 SSE Perim Zn (G.SSE4)	Office (Executive/Private) (52%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 NNE Perim Zn (G.NNE5)	Office (Executive/Private) (52%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 NW Perim Zn (G.NW6)	Office (Executive/Private) (52%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C7)	Corridor (43%)	S	275	331	1.20	100%	33	10%	0.119	55.8	1	241	290	49.8	70.6	0	0
... EL3 North Perim Zn (G.N8)	Office (Executive/Private) (52%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C9)	Corridor (43%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 East Perim Zn (G.E10)	Office (Executive/Private) (52%)	S	34.38	44.67	1.30	100%	359	8%	0.104	19.2	15	223	290	53.8	73.1	0	1
... EL3 Core Zn (G.C11)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C12)	Corridor (43%)	S	11.49	10.05	0.87	100%	136	14%	0.119	55.8	3	332	290	36.2	61.7	0	1
... EL3 Core Zn (G.C13)	Corridor (43%)	S	743	650	0.88	100%	88	14%	0.119	55.8	2	331	290	36.2	61.7	0	0
... EL3 North Perim Zn (G.N14)	Office (Executive/Private) (52%)	U	23.13	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 North Perim Zn (G.N15)	Office (Executive/Private) (52%)	S	20.83	24.33	1.18	100%	215	9%	0.104	19.2	8	246	290	48.8	69.9	3	7
... EL3 North Perim Zn (G.N16)	Office (Executive/Private) (52%)	U	25.85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 North Perim Zn (G.N17)	Office (Executive/Private) (52%)	U	31	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 North Perim Zn (G.N18)	Office (Executive/Private) (52%)	S	559	661	1.18	100%	58	9%	0.104	19.2	2	245	290	48.9	70.0	0	0
... EL3 North Perim Zn (G.N19)	Office (Executive/Private) (52%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 NW Perim Zn (G.NW20)	Office (Executive/Private) (52%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C21)	Corridor (43%)	S	490	496	0.95	100%	58	12%	0.119	55.8	2	305	290	39.3	63.7	0	2

... EL3 Core Zn (G.C22)	Corridor (43%)	U	33	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 WSW Perim Zn (G.WSW23)	Office (Executive/Private) (52%)	S	14,13	16,89	1.20	100%	147	9%	0.104	19.2	6	243	290	49.4	70.3	0	8	
... EL3 Core Zn (G.C24)	Corridor (43%)	U	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 West Perim Zn (G.W25)	Office (Executive/Private) (52%)	S	638	906	1.42	100%	67	7%	0.104	19.2	3	204	290	58.8	76.4	0	7	
... EL3 West Perim Zn (G.W26)	Office (Executive/Private) (52%)	S	17,50	15,31	0.87	100%	182	12%	0.104	19.2	5	332	290	36.2	61.7	0	7	
... EL3 WNW Perim Zn (G.WNW27)	Office (Executive/Private) (52%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C28)	Corridor (43%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C29)	Corridor (43%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C30)	Corridor (43%)	S	233	204	0.87	100%	28	14%	0.119	55.8	1	332	290	36.1	61.7	5	24	
... EL3 Core Zn (G.C31)	Corridor (43%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C32)	Corridor (43%)	S	798	698	0.87	100%	95	14%	0.119	55.8	2	332	290	36.2	61.7	0	1	
... EL3 Core Zn (G.C33)	Corridor (43%)	S	15,27	13,36	0.88	100%	181	14%	0.119	55.8	5	332	290	36.2	61.7	10	0	
... EL3 Core Zn (G.C34)	Corridor (43%)	S	539	470	0.87	100%	64	14%	0.119	55.8	2	332	290	36.1	61.6	32	6	
... EL3 West Perim Zn (G.W35)	Office (Executive/Private) (52%)	S	56	64	1.14	100%	6	9%	0.104	19.2	0	254	290	47.2	68.9	30	9	
... EL3 SW Perim Zn (G.SW36)	Office (Executive/Private) (52%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C37)	Corridor (43%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 South Perim Zn (G.S38)	Office (Executive/Private) (52%)	U	43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 SW Perim Zn (G.SW39)	Office (Executive/Private) (52%)	S	20,31	21,37	1.05	100%	212	10%	0.104	19.2	7	276	290	43.5	68.5	1	7	
... EL3 South Perim Zn (G.S40)	Office (Executive/Private) (52%)	S	589	707	1.20	100%	61	9%	0.104	19.2	2	242	290	49.6	70.5	0	5	
... EL3 SSE Perim Zn (G.SSE41)	Office (Executive/Private) (52%)	S	914	12,10	1.32	100%	95	8%	0.104	19.2	4	219	290	54.8	73.8	0	2	
... EL3 South Perim Zn (G.S42)	Office (Executive/Private) (52%)	S	714	913	1.28	100%	75	8%	0.104	19.2	3	227	290	52.9	72.6	0	0	
... EL3 South Perim Zn (G.S43)	Office (Executive/Private) (52%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C44)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 South Perim Zn (G.S45)	Office (Executive/Private) (52%)	S	29,02	25,38	0.87	100%	303	12%	0.104	19.2	9	332	290	36.2	61.7	0	0	
... EL3 SSW Perim Zn (G.SSW46)	Office (Executive/Private) (52%)	S	250	422	1.69	100%	26	6%	0.104	19.2	1	172	290	69.8	83.6	0	0	
... EL3 Core Zn (G.C47)	Corridor (43%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 SSE Perim Zn (G.SSE48)	Office (Executive/Private) (52%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 South Perim Zn (G.S49)	Office (Executive/Private) (52%)	S	227	361	1.59	100%	24	7%	0.104	19.2	1	182	290	65.8	81.0	0	0	
... EL3 South Perim Zn (G.S50)	Office (Executive/Private) (52%)	S	18,04	25,14	1.39	100%	188	7%	0.104	19.2	9	208	290	57.6	75.7	0	0	
... EL3 South Perim Zn (G.S51)	Office (Executive/Private) (52%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C52)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C53)	Corridor (43%)	U	63	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 SE Perim Zn (G.SE54)	Office (Executive/Private) (52%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C55)	Corridor (43%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C56)	Corridor (43%)	S	14,46	12,64	0.87	100%	172	14%	0.119	55.8	4	332	290	36.2	61.7	0	1	
... EL3 Core Zn (G.C57)	Corridor (43%)	S	15,38	13,46	0.87	100%	183	14%	0.119	59.2	5	332	290	36.2	61.7	0	0	
... EL3 Core Zn (G.C58)	Corridor (43%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C59)	Corridor (43%)	S	506	443	0.87	100%	60	14%	0.119	55.8	2	332	290	36.2	61.7	0	0	
... EL3 Core Zn (G.C60)	Corridor (43%)	S	13,81	12,06	0.87	100%	164	14%	0.119	55.8	4	332	290	36.2	61.7	0	6	
... EL3 Core Zn (G.C61)	Corridor (43%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C62)	Corridor (43%)	S	250	219	0.87	100%	30	14%	0.119	55.8	1	332	290	36.1	61.6	0	0	
... EL3 Core Zn (G.C63)	Corridor (43%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C64)	Corridor (43%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL3 Core Zn (G.C65)	Corridor (43%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

System & Zone Name	System Type Principal Zone Activity Pkgd Var Vol Var Temp	Type*	Ret Zn	Area sqft	Design Flow		Design Ventilation			Design Capacity				Hrs Outside Thr-Range				
					Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/sf	Heat Btu/sf	Cool Hrs	Heat Hrs
EL4 Sys4 (PMZS) (G)				3,07,82	3,29,80	1.07	96%	33,64	10%	0.109	17.6	114	270	290	44.4	67.8	6	7
... EL4 NE Perim Zn (G.NE1)	Office (Executive/Private) (57%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C2)	Corridor (35%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NNE Perim Zn (G.NNE3)	Office (Executive/Private) (57%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NE Perim Zn (G.NE4)	Office (Executive/Private) (57%)	C	16,66	15,71	0.94	11%	174	11%	0.105	19.1	5	309	291	38.8	64.1	6	2	
... EL4 NW Perim Zn (G.NW5)	Office (Executive/Private) (57%)	U	65	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N5)	Office (Executive/Private) (57%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C7)	Corridor (35%)	S	275	331	1.20	100%	32	10%	0.115	43.5	1	242	291	49.6	71.2	0	0	
... EL4 Core Zn (G.C8)	Corridor (35%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N5)	Office (Executive/Private) (57%)	U	14,52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N10)	Office (Executive/Private) (57%)	S	20,27	24,07	1.19	100%	212	9%	0.105	19.1	8	245	291	48.9	70.7	0	1	
... EL4 North Perim Zn (G.N11)	Office (Executive/Private) (57%)	U	35,14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N12)	Office (Executive/Private) (57%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C13)	Corridor (35%)	U	33	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C14)	Corridor (35%)	S	19,77	17,28	0.87	100%	228	13%	0.115	43.5	6	333	291	36.0	62.3	0	1	
... EL4 Core Zn (G.C15)	Corridor (35%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C16)	Corridor (35%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C17)	Corridor (35%)	S	250	278	1.11	100%	29	10%	0.115	43.5	1	282	291	45.8	68.7	0	0	
... EL4 Core Zn (G.C18)	Corridor (35%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C19)	Corridor (35%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NW Perim Zn (G.NW20)	Office (Executive/Private) (57%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C21)	Corridor (35%)	U	159	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

... EL4 West Perim Zn (G.W22)	Office (Executive/Private) (57%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 WSW Perim Zn (G.WSW23)	Office (Executive/Private) (57%)	S	11,24	14,93	1.33	100%	118	8%	0.105	19.1	5	219	291	54.7	74.5	0	1	
... EL4 Core Zn (G.C24)	Corridor (35%)	U	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 West Perim Zn (G.W25)	Office (Executive/Private) (57%)	S	638	906	1.42	100%	67	7%	0.105	19.1	3	205	291	58.5	77.0	0	1	
... EL4 West Perim Zn (G.W28)	Office (Executive/Private) (57%)	S	15,46	14,38	0.93	100%	182	11%	0.105	19.1	5	313	291	38.3	63.8	0	1	
... EL4 WNW Perim Zn (G.WNW27)	Office (Executive/Private) (57%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C28)	Corridor (35%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C29)	Corridor (35%)	S	233	265	1.14	100%	27	10%	0.115	43.5	1	257	291	46.8	69.3	0	0	
... EL4 Core Zn (G.C30)	Corridor (35%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C31)	Corridor (35%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 West Perim Zn (G.W32)	Office (Executive/Private) (57%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C33)	Corridor (35%)	S	13,50	11,61	0.87	100%	156	13%	0.115	43.5	4	333	291	36.0	62.3	0	0	
... EL4 Core Zn (G.C34)	Corridor (35%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C35)	Corridor (35%)	S	16,82	14,72	0.87	100%	194	13%	0.115	43.5	5	333	291	36.0	62.3	0	0	
... EL4 Core Zn (G.C36)	Corridor (35%)	S	17,03	14,89	0.87	100%	196	13%	0.115	43.5	5	333	291	36.0	62.3	0	0	
... EL4 SW Perim Zn (G.SW37)	Office (Executive/Private) (57%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C38)	Corridor (35%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S39)	Office (Executive/Private) (57%)	S	20,20	28,44	1.41	100%	212	7%	0.105	19.1	10	207	291	58.0	78.7	0	0	
... EL4 South Perim Zn (G.S40)	Office (Executive/Private) (57%)	S	714	914	1.28	100%	75	8%	0.105	19.1	3	228	291	52.7	73.2	0	0	
... EL4 South Perim Zn (G.S41)	Office (Executive/Private) (57%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C42)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S43)	Office (Executive/Private) (57%)	S	20,32	18,63	0.92	100%	213	11%	0.105	19.1	6	318	291	37.7	63.4	0	0	
... EL4 SSW Perim Zn (G.SSW44)	Office (Executive/Private) (57%)	S	250	422	1.69	100%	26	6%	0.105	19.1	1	173	291	69.4	84.2	0	0	
... EL4 SSE Perim Zn (G.SSE45)	Office (Executive/Private) (57%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C46)	Corridor (35%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S47)	Office (Executive/Private) (57%)	S	21,39	29,61	1.38	100%	224	8%	0.105	19.1	10	211	291	57.0	76.0	0	0	
... EL4 South Perim Zn (G.S48)	Office (Executive/Private) (57%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C49)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C50)	Corridor (35%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 SE Perim Zn (G.SE51)	Office (Executive/Private) (57%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C52)	Corridor (35%)	S	839	872	1.04	100%	97	11%	0.115	43.5	3	280	291	42.8	66.7	0	0	
... EL4 Core Zn (G.C53)	Corridor (35%)	U	83	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 East Perim Zn (G.E54)	Office (Executive/Private) (57%)	S	33,77	44,33	1.31	100%	354	8%	0.105	19.1	15	222	291	54.1	74.1	0	0	
... EL4 Core Zn (G.C55)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 SSE Perim Zn (G.SSE56)	Office (Executive/Private) (57%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C57)	Corridor (35%)	S	19,27	16,85	0.87	100%	222	13%	0.115	43.5	6	333	291	36.0	62.3	0	0	
... EL4 Core Zn (G.C58)	Corridor (35%)	S	30,12	26,35	0.87	100%	347	13%	0.115	43.5	9	333	291	36.0	62.3	0	0	

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow		Design Ventilation			Design Capacity				Hrs Outside Thri-Range		Cool Hrs	Heat Hrs	
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool BtuH/sf			Heat BtuH/sf
EL5 Sys4 (PMZS) (B)	Pkgd Var Vol Var Temp	d	576	504	0.87	12%	60	12%	0.104	0.7	2	321	281	37.3	55.6	0	0
... EL5 NE Perim Zn (B.NE1)	Office (Open Plan) (40%)	C	576	504	0.87	12%	60	12%	0.104	20.0	2	321	281	37.3	55.6	0	0

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow		Design Ventilation			Design Capacity				Throttling Range		Hrs Outside Thri-Range	
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool BtuH/sf		Heat BtuH/sf
Sum of SYSTEMS	11,43,62	12,17,67	1.08	96%	1,24,57	10%	0.109	14.5	424	270	287	44.5	67.6	4%
Sum of ZONES	12,34,43	1.08	..	..	..	..	..	424	..	..	..	..	..
Sum of Zones / System Total	101%	..	..	..	..	..	..	100%	..	..	..	..	..

Return Types: .. 'P' = Plenum Return .. 'D' = Ducted Return .. 'd' = Direct return .. (Plenum Zones are not shown on this report)
 Zone Types: .. 'C' = Conditioned Zone .. 'U' = Unconditioned Zone .. 'S' = Slave Zone .. (conditioned but no t-stat)

Proposed case

System & Zone Name	System Type Principal Zone Activity	Type*	Design Flow				Design Ventilation				Design Capacity				Hrs Outside Thr-Range			
			Area sqft	Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf	Heat Btu/h/sf	Cool Hrs	Heat Hrs	
EL1 Sys1 (PMZS) (G)	Pkgd Var Vol Var Temp	d	2,44.17	2,72.34	1.12	95%	26.17	10%	0.107	13.3	82	298	332	40.3	63.1	0	40	
... EL1 NE Perim Zn (G.NE1)	Office (Executive/Private) (59%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C2)	Office (Open Plan) (32%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 NNE Perim Zn (G.NNE3)	Office (Executive/Private) (59%)	U	904	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 NW Perim Zn (G.NW4)	Office (Executive/Private) (59%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 North Perim Zn (G.N5)	Office (Executive/Private) (59%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C6)	Office (Open Plan) (32%)	U	275	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C7)	Office (Open Plan) (32%)	U	32	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 North Perim Zn (G.N8)	Office (Executive/Private) (59%)	C	14,80	15,85	1.09	10%	153	10%	0.105	19.1	5	312	339	38.4	61.7	0	2	
... EL1 Core Zn (G.C9)	Office (Open Plan) (32%)	U	18,81	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 SSE Perim Zn (G.SSE10)	Office (Executive/Private) (59%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C11)	Office (Open Plan) (32%)	S	20,48	17,92	0.87	100%	233	13%	0.114	39.8	5	387	339	31.0	56.0	0	0	
... EL1 Core Zn (G.C12)	Office (Open Plan) (32%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 East Perim Zn (G.E13)	Office (Executive/Private) (59%)	S	28,56	33,06	1.16	100%	300	9%	0.105	19.1	10	293	339	41.0	63.6	0	0	
... EL1 Core Zn (G.C14)	Office (Open Plan) (32%)	U	323	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C15)	Office (Open Plan) (32%)	U	337	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C16)	Office (Open Plan) (32%)	U	171	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C17)	Office (Open Plan) (32%)	U	83	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C18)	Office (Open Plan) (32%)	U	749	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C19)	Office (Open Plan) (32%)	S	180	289	1.61	100%	20	7%	0.114	39.8	1	211	339	56.9	75.8	0	0	
... EL1 Core Zn (G.C20)	Office (Open Plan) (32%)	S	148	282	1.77	100%	17	6%	0.114	39.8	1	191	339	62.7	80.2	0	0	
... EL1 Core Zn (G.C21)	Office (Open Plan) (32%)	S	136	252	1.85	100%	16	6%	0.114	39.8	1	183	339	65.4	82.3	0	0	
... EL1 ENE Perim Zn (G.ENE22)	Office (Executive/Private) (59%)	U	600	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C23)	Office (Open Plan) (32%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C24)	Office (Open Plan) (32%)	U	18,17	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 South Perim Zn (G.S25)	Office (Executive/Private) (59%)	S	20,32	19,06	0.94	100%	213	11%	0.105	19.1	6	361	339	33.2	57.7	0	0	
... EL1 Core Zn (G.C26)	Office (Open Plan) (32%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 SSW Perim Zn (G.SSW27)	Office (Executive/Private) (59%)	S	250	438	1.75	100%	26	6%	0.105	19.1	1	194	339	62.0	79.6	0	0	
... EL1 SSE Perim Zn (G.SSE28)	Office (Executive/Private) (59%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 South Perim Zn (G.S29)	Office (Executive/Private) (59%)	U	688	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 South Perim Zn (G.S30)	Office (Executive/Private) (59%)	S	838	12,08	1.44	100%	88	7%	0.105	19.1	4	235	339	51.0	71.3	0	0	
... EL1 South Perim Zn (G.S31)	Office (Executive/Private) (59%)	S	633	980	1.36	100%	66	6%	0.105	19.1	3	249	339	46.2	69.1	0	0	
... EL1 South Perim Zn (G.S32)	Office (Executive/Private) (59%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C33)	Office (Open Plan) (32%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C34)	Office (Open Plan) (32%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 SE Perim Zn (G.SE35)	Office (Executive/Private) (59%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 South Perim Zn (G.S36)	Office (Executive/Private) (59%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C37)	Office (Open Plan) (32%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 South Perim Zn (G.S38)	Office (Executive/Private) (59%)	S	14,91	20,99	1.41	100%	156	7%	0.105	19.1	6	241	339	49.9	70.4	0	0	
... EL1 South Perim Zn (G.S39)	Office (Executive/Private) (59%)	U	12,43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 SW Perim Zn (G.SW40)	Office (Executive/Private) (59%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C41)	Office (Open Plan) (32%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 West Perim Zn (G.W42)	Office (Executive/Private) (59%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C43)	Office (Open Plan) (32%)	U	19,78	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 WSW Perim Zn (G.WSW44)	Office (Executive/Private) (59%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C45)	Office (Open Plan) (32%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C46)	Office (Open Plan) (32%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C47)	Office (Open Plan) (32%)	S	233	309	1.33	100%	27	9%	0.114	39.8	1	255	339	47.0	68.2	0	0	
... EL1 Core Zn (G.C48)	Office (Open Plan) (32%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C49)	Office (Open Plan) (32%)	S	10,72	936	0.87	100%	122	13%	0.114	39.8	3	388	339	30.9	56.0	0	0	
... EL1 Core Zn (G.C50)	Office (Open Plan) (32%)	S	431	377	0.88	100%	49	13%	0.114	39.8	1	387	339	31.0	56.0	0	0	
... EL1 Core Zn (G.C51)	Office (Open Plan) (32%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C52)	Office (Open Plan) (32%)	S	511	447	0.87	100%	58	13%	0.114	39.8	1	387	339	31.0	56.0	0	0	
... EL1 Core Zn (G.C53)	Office (Open Plan) (32%)	S	759	665	0.88	100%	87	13%	0.114	39.8	2	387	339	31.0	56.0	0	0	
... EL1 West Perim Zn (G.W54)	Office (Executive/Private) (59%)	S	861	961	1.12	100%	90	9%	0.105	19.1	3	303	339	39.5	62.5	0	2	
... EL1 Core Zn (G.C55)	Office (Open Plan) (32%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 West Perim Zn (G.W56)	Office (Executive/Private) (59%)	S	26,32	36,39	1.38	100%	276	8%	0.105	19.1	11	245	339	49.0	69.7	0	4	
... EL1 West Perim Zn (G.W57)	Office (Executive/Private) (59%)	U	253	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C58)	Office (Open Plan) (32%)	S	307	336	1.09	100%	35	10%	0.114	39.8	1	310	339	38.7	61.9	0	0	
... EL1 NW Perim Zn (G.NW59)	Office (Executive/Private) (59%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 North Perim Zn (G.N60)	Office (Executive/Private) (59%)	U	935	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C61)	Office (Open Plan) (32%)	U	27	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C62)	Office (Open Plan) (32%)	U	16,52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 North Perim Zn (G.N63)	Office (Executive/Private) (59%)	S	834	913	1.10	100%	88	10%	0.105	19.1	3	309	339	38.8	61.9	0	0	
... EL1 North Perim Zn (G.N64)	Office (Executive/Private) (59%)	S	468	562	1.18	100%	49	9%	0.105	19.1	2	287	339	41.8	64.2	0	6	
... EL1 NNW Perim Zn (G.NNW65)	Office (Executive/Private) (59%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 North Perim Zn (G.N66)	Office (Executive/Private) (59%)	S	36,87	44,57	1.17	100%	418	9%	0.105	19.1	13	303	339	39.9	62.9	0	12	
... EL1 Core Zn (G.C67)	Office (Open Plan) (32%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C68)	Office (Open Plan) (32%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C69)	Office (Open Plan) (32%)	S	250	220	0.88	100%	29	13%	0.114	39.8	1	388	339	31.1	56.1	0	14	
... EL1 Core Zn (G.C70)	Office (Open Plan) (32%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
... EL1 Core Zn (G.C71)	Office (Open Plan) (32%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	

System & Zone Name	System Type Principal Zone Activity Pkqgd Var Vol Var Temp	Ret Zn	Design Flow			Design Ventilation			Design Capacity					Hrs Outside Thrld-Range				
			Area sqft	Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf	Heat Btu/h/sf	Cool Hrs	Heat Hrs	
			2,67.83	2,74.90	1.03	99%	29,39	11%	0.110	15.2	87	306	314	39.2	60.5	1	56	
EL2 NE Perim Zn (G.NE1)	Office (Executive/Private) (64%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C2)	Office (Open Plan) (39%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N3)	Office (Executive/Private) (64%)	U	355	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 NNE Perim Zn (G.NNE4)	Office (Executive/Private) (64%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 NW Perim Zn (G.NW5)	Office (Executive/Private) (64%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C6)	Office (Open Plan) (39%)	C	275	296	1.08	10%	31	10%	0.113	36.5	1	307	332	39.1	60.4	0	2	
EL2 North Perim Zn (G.N7)	Office (Executive/Private) (64%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N8)	Office (Executive/Private) (64%)	U	993	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C9)	Office (Open Plan) (39%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N10)	Office (Executive/Private) (64%)	S	28.15	31.23	1.11	100%	297	9%	0.105	19.0	9	300	332	40.1	61.1	0	2	
EL2 Core Zn (G.C11)	Office (Open Plan) (39%)	S	16.82	14.71	0.87	100%	189	13%	0.113	36.5	4	380	332	31.6	54.8	0	2	
EL2 Core Zn (G.C12)	Office (Open Plan) (39%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C13)	Office (Open Plan) (39%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C14)	Office (Open Plan) (39%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C15)	Office (Open Plan) (39%)	S	250	305	1.22	100%	28	9%	0.113	36.5	1	273	332	44.0	64.0	0	0	
EL2 Core Zn (G.C16)	Office (Open Plan) (39%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N17)	Office (Executive/Private) (64%)	U	24.88	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N18)	Office (Executive/Private) (64%)	S	453	562	1.22	100%	48	9%	0.105	19.0	2	273	332	43.9	64.0	0	2	
EL2 North Perim Zn (G.N19)	Office (Executive/Private) (64%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 North Perim Zn (G.N19)	Office (Executive/Private) (64%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 NW Perim Zn (G.NW20)	Office (Executive/Private) (64%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C21)	Office (Open Plan) (39%)	S	590	622	1.11	100%	83	10%	0.113	36.5	2	299	332	40.1	61.1	0	1	
EL2 Core Zn (G.C22)	Office (Open Plan) (39%)	U	27	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C23)	Office (Open Plan) (39%)	U	167	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 West Perim Zn (G.W24)	Office (Executive/Private) (64%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 West Perim Zn (G.W25)	Office (Executive/Private) (64%)	U	11.16	12.87	1.15	100%	118	9%	0.105	19.0	4	288	332	41.6	62.3	0	5	
EL2 Core Zn (G.C26)	Office (Open Plan) (39%)	S	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 West Perim Zn (G.W27)	Office (Executive/Private) (64%)	S	693	11.14	1.61	100%	73	7%	0.105	19.0	3	207	332	58.0	74.6	0	21	
EL2 Core Zn (G.C28)	Office (Open Plan) (39%)	S	20.24	20.21	1.00	100%	228	11%	0.113	36.5	6	333	332	36.0	58.1	0	12	
EL2 West Perim Zn (G.W29)	Office (Executive/Private) (64%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C30)	Office (Open Plan) (39%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C31)	Office (Open Plan) (39%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C32)	Office (Open Plan) (39%)	S	233	204	0.87	100%	26	13%	0.113	36.5	1	380	332	31.5	54.7	0	7	
EL2 Core Zn (G.C33)	Office (Open Plan) (39%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C34)	Office (Open Plan) (39%)	S	16.52	14.46	0.87	100%	186	13%	0.113	36.5	4	380	332	31.6	54.8	0	0	
EL2 Core Zn (G.C35)	Office (Open Plan) (39%)	S	869	760	0.87	100%	98	13%	0.113	36.5	2	380	332	31.6	54.8	0	0	
EL2 Core Zn (G.C36)	Office (Open Plan) (39%)	S	138	159	1.15	100%	16	10%	0.113	36.5	0	290	332	41.4	62.1	0	2	
EL2 Core Zn (G.C37)	Office (Open Plan) (39%)	S	317	363	1.15	100%	36	10%	0.113	36.5	1	290	332	41.3	62.1	0	0	
EL2 Core Zn (G.C38)	Office (Open Plan) (39%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 West Perim Zn (G.W39)	Office (Executive/Private) (64%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 SW Perim Zn (G.SW40)	Office (Executive/Private) (64%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C41)	Office (Open Plan) (39%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 South Perim Zn (G.S42)	Office (Executive/Private) (64%)	S	12.43	17.86	1.44	100%	131	7%	0.105	19.0	5	231	332	51.8	69.9	1	0	
EL2 South Perim Zn (G.S43)	Office (Executive/Private) (64%)	U	14.91	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C44)	Office (Open Plan) (39%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C45)	Office (Open Plan) (39%)	S	17.34	16.54	0.95	100%	195	12%	0.113	36.5	5	349	332	34.4	56.9	0	0	
EL2 South Perim Zn (G.S46)	Office (Executive/Private) (64%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 SSW Perim Zn (G.SSW47)	Office (Executive/Private) (64%)	S	250	728	2.91	100%	26	4%	0.105	19.0	2	114	332	105.0	109.7	0	0	
EL2 SSE Perim Zn (G.SSE48)	Office (Executive/Private) (64%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C49)	Office (Open Plan) (39%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 South Perim Zn (G.S50)	Office (Executive/Private) (64%)	U	20.32	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 South Perim Zn (G.S51)	Office (Executive/Private) (64%)	U	15.07	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 South Perim Zn (G.S52)	Office (Executive/Private) (64%)	U	633	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C53)	Office (Open Plan) (39%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 South Perim Zn (G.S54)	Office (Executive/Private) (64%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 SE Perim Zn (G.SE55)	Office (Executive/Private) (64%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C56)	Office (Open Plan) (39%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C57)	Office (Open Plan) (39%)	U	63	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C58)	Office (Open Plan) (39%)	S	19.18	19.84	1.03	100%	216	11%	0.113	36.5	6	321	332	37.3	59.1	0	0	
EL2 Core Zn (G.C59)	Office (Open Plan) (39%)	S	768	760	0.99	100%	86	11%	0.113	36.5	2	336	332	35.7	57.9	0	0	
EL2 Core Zn (G.C60)	Office (Open Plan) (39%)	S	276	281	1.02	100%	31	11%	0.113	36.5	1	327	332	36.7	58.6	0	0	
EL2 Core Zn (G.C61)	Office (Open Plan) (39%)	S	280	284	1.02	100%	31	11%	0.113	36.5	1	327	332	36.7	58.6	0	0	
EL2 Core Zn (G.C62)	Office (Open Plan) (39%)	S	469	463	0.99	100%	53	11%	0.113	36.5	1	336	332	35.7	57.8	0	0	
EL2 Core Zn (G.C63)	Office (Open Plan) (39%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C64)	Office (Open Plan) (39%)	S	12.61	11.03	0.87	100%	142	13%	0.113	36.5	3	380	332	31.6	54.8	0	0	
EL2 Core Zn (G.C65)	Office (Open Plan) (39%)	S	810	760	0.94	100%	91	12%	0.113	36.5	2	364	332	33.9	56.5	0	0	
EL2 SSE Perim Zn (G.SSE66)	Office (Executive/Private) (64%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL2 Core Zn (G.C67)	Office (Open Plan) (39%)	S	12.30	10.75	0.87	100%	138	13%	0.113	36.5	3	380	332	31.6	54.7	0	0	
EL2 East Perim Zn (G.E68)	Office (Executive/Private) (64%)	S	34.47	44.71	1.30	100%	363	8%	0.105	19.0	13	256	332	46.8	66.2	0	0	
EL2 Core Zn (G.C69)	Office (Open Plan) (39%)	U	14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

System & Zone Name	System Type Principal Zone Activity	Type*	Design Flow			Design Ventilation			Design Capacity					Hrs Outside Thr-Rng			
			Area sqft	Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btuh/sf	Heat Btuh/sf	Cool Hrs	Heat Hrs
Pkgd Var Vol Var Temp	d		3,18,25	3,38,79	1.08	97%	34,78	10%	0.109	18.2	108	301	318	39.9	81.7	9	211
EL3 Sys3 (PMZS) (G)																	
EL3 NE Perim Zn (G.NE1)	Office (Executive/Private) (52%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C2)	Corridor (43%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 NE Perim Zn (G.NE3)	Office (Executive/Private) (52%)	C	16,00	14,00	0.87	12%	167	12%	0.104	19.2	4	382	334	31.4	55.4	0	2
EL3 SSE Perim Zn (G.SSE4)	Office (Executive/Private) (52%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 NNE Perim Zn (G.NNE5)	Office (Executive/Private) (52%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 NW Perim Zn (G.NW8)	Office (Executive/Private) (52%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C7)	Corridor (43%)	S	275	331	1.20	100%	33	10%	0.119	55.8	1	278	334	43.2	84.3	0	0
EL3 North Perim Zn (G.N8)	Office (Executive/Private) (52%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C9)	Corridor (43%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 East Perim Zn (G.E10)	Office (Executive/Private) (52%)	S	34,38	44,82	1.30	100%	359	8%	0.104	19.2	13	257	334	46.8	88.8	0	1
EL3 Core Zn (G.C11)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C12)	Corridor (43%)	S	11,49	10,05	0.87	100%	138	14%	0.119	55.8	3	382	334	31.4	55.4	0	0
EL3 Core Zn (G.C13)	Corridor (43%)	S	743	697	0.94	100%	88	13%	0.119	55.8	2	366	334	33.7	57.1	0	0
EL3 North Perim Zn (G.N14)	Office (Executive/Private) (52%)	U	23,13	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 North Perim Zn (G.N15)	Office (Executive/Private) (52%)	S	20,83	23,31	1.13	100%	215	9%	0.104	19.2	7	290	334	40.8	82.3	0	3
EL3 North Perim Zn (G.N16)	Office (Executive/Private) (52%)	U	25,85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 North Perim Zn (G.N17)	Office (Executive/Private) (52%)	U	31	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 North Perim Zn (G.N18)	Office (Executive/Private) (52%)	S	559	860	1.54	100%	58	7%	0.104	19.2	3	217	334	55.2	73.3	0	2
EL3 North Perim Zn (G.N19)	Office (Executive/Private) (52%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 NW Perim Zn (G.NW20)	Office (Executive/Private) (52%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C21)	Corridor (43%)	S	490	561	1.15	100%	58	10%	0.119	55.8	2	292	334	41.1	82.7	0	2
EL3 Core Zn (G.C22)	Corridor (43%)	U	33	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 WSW Perim Zn (G.WSW23)	Office (Executive/Private) (52%)	S	14,13	16,72	1.18	100%	147	9%	0.104	19.2	5	283	334	42.5	83.7	0	8
EL3 Core Zn (G.C24)	Corridor (43%)	U	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 West Perim Zn (G.W25)	Office (Executive/Private) (52%)	S	638	883	1.35	100%	87	8%	0.104	19.2	3	247	334	48.5	88.2	0	6
EL3 West Perim Zn (G.W26)	Office (Executive/Private) (52%)	S	17,50	15,31	0.87	100%	182	12%	0.104	19.2	5	382	334	31.4	55.4	0	8
EL3 WNW Perim Zn (G.WNW27)	Office (Executive/Private) (52%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C28)	Corridor (43%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C29)	Corridor (43%)	U	138	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C30)	Corridor (43%)	S	233	204	0.87	100%	28	14%	0.119	55.8	1	382	334	31.4	55.3	0	25
EL3 Core Zn (G.C31)	Corridor (43%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C32)	Corridor (43%)	S	798	698	0.87	100%	95	14%	0.119	55.8	2	382	334	31.4	55.4	5	100
EL3 Core Zn (G.C33)	Corridor (43%)	S	15,27	13,36	0.88	100%	181	14%	0.119	55.8	4	382	334	31.4	55.4	0	0
EL3 Core Zn (G.C34)	Corridor (43%)	S	539	473	0.88	100%	64	14%	0.119	55.8	1	381	334	31.5	55.4	0	7
EL3 West Perim Zn (G.W35)	Office (Executive/Private) (52%)	S	56	88	1.53	100%	6	7%	0.104	19.2	0	219	334	54.9	73.0	4	11
EL3 SW Perim Zn (G.SW36)	Office (Executive/Private) (52%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C37)	Corridor (43%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 South Perim Zn (G.S38)	Office (Executive/Private) (52%)	U	43	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 SW Perim Zn (G.SW39)	Office (Executive/Private) (52%)	S	20,31	21,83	1.07	100%	212	10%	0.104	19.2	7	311	334	38.6	80.8	0	9
EL3 South Perim Zn (G.S40)	Office (Executive/Private) (52%)	S	589	716	1.22	100%	81	9%	0.104	19.2	2	275	334	43.8	84.8	0	5
EL3 SSE Perim Zn (G.SSE41)	Office (Executive/Private) (52%)	S	914	14,38	1.57	100%	95	7%	0.104	19.2	4	213	334	56.4	74.2	0	10
EL3 South Perim Zn (G.S42)	Office (Executive/Private) (52%)	S	714	10,66	1.49	100%	75	7%	0.104	19.2	3	224	334	53.8	72.0	0	0
EL3 South Perim Zn (G.S43)	Office (Executive/Private) (52%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C44)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 South Perim Zn (G.S45)	Office (Executive/Private) (52%)	S	29,02	27,77	0.95	100%	303	11%	0.104	19.2	8	349	334	34.4	57.6	0	0
EL3 SSW Perim Zn (G.SSW46)	Office (Executive/Private) (52%)	S	250	508	2.03	100%	26	5%	0.104	19.2	2	165	334	72.9	88.6	0	0
EL3 Core Zn (G.C47)	Corridor (43%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 SSE Perim Zn (G.SSE48)	Office (Executive/Private) (52%)	U	184	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 South Perim Zn (G.S49)	Office (Executive/Private) (52%)	S	227	505	2.22	100%	24	5%	0.104	19.2	2	150	334	79.8	91.7	0	0
EL3 South Perim Zn (G.S50)	Office (Executive/Private) (52%)	S	18,04	27,77	1.54	100%	188	7%	0.104	19.2	8	217	334	55.3	73.3	0	0
EL3 South Perim Zn (G.S51)	Office (Executive/Private) (52%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C52)	Corridor (43%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C53)	Corridor (43%)	U	83	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 SE Perim Zn (G.SE54)	Office (Executive/Private) (52%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C56)	Corridor (43%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C56)	Corridor (43%)	S	14,46	13,98	0.97	100%	172	12%	0.119	55.8	4	348	334	34.7	57.9	0	0
EL3 Core Zn (G.C57)	Corridor (43%)	S	15,38	14,78	0.96	100%	183	12%	0.119	59.2	4	348	334	34.5	57.7	0	0
EL3 Core Zn (G.C58)	Corridor (43%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C59)	Corridor (43%)	S	508	575	1.14	100%	60	10%	0.119	55.8	2	294	334	40.8	82.4	0	0
EL3 Core Zn (G.C60)	Corridor (43%)	S	13,81	12,08	0.87	100%	164	14%	0.119	55.8	4	382	334	31.4	55.4	0	8
EL3 Core Zn (G.C61)	Corridor (43%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C62)	Corridor (43%)	S	250	220	0.88	100%	30	14%	0.119	55.8	1	381	334	31.5	55.4	0	4
EL3 Core Zn (G.C63)	Corridor (43%)	U	184	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C64)	Corridor (43%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
EL3 Core Zn (G.C65)	Corridor (43%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow			Design Ventilation			Design Capacity			Hrs Outside Thri-Range		Cool Hrs	Heat Hrs	
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf			Heat Btu/h/sf
EL4 Sys4 (PMZS) (G)	Pkgd Var Vol Var Temp	d	3,07.82	3,25.84	1.08	96%	33,84	10%	0.109	17.6	106	289	306	41.5	84.2	0	2
... EL4 NE Perim Zn (G.NE1)	Office (Executive/Private) (57%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C2)	Corridor (35%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NNE Perim Zn (G.NNE3)	Office (Executive/Private) (57%)	U	492	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NE Perim Zn (G.NE4)	Office (Executive/Private) (57%)	C	16.66	16.54	0.99	11%	174	11%	0.105	19.1	5	337	335	36.6	59.7	0	1
... EL4 NW Perim Zn (G.NW5)	Office (Executive/Private) (57%)	U	85	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N6)	Office (Executive/Private) (57%)	U	21	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C7)	Corridor (35%)	S	275	373	1.35	100%	32	9%	0.115	43.5	1	247	335	48.8	89.5	0	0
... EL4 Core Zn (G.C8)	Corridor (35%)	U	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N9)	Office (Executive/Private) (57%)	U	14.52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N10)	Office (Executive/Private) (57%)	S	20.27	23.03	1.14	100%	212	9%	0.105	19.1	7	296	335	40.7	63.8	0	1
... EL4 North Perim Zn (G.N11)	Office (Executive/Private) (57%)	U	35.14	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 North Perim Zn (G.N12)	Office (Executive/Private) (57%)	U	515	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C13)	Corridor (35%)	U	33	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C14)	Corridor (35%)	S	19.77	17.30	0.87	100%	228	13%	0.115	43.5	5	383	335	31.4	56.5	0	0
... EL4 Core Zn (G.C15)	Corridor (35%)	U	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C16)	Corridor (35%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C17)	Corridor (35%)	S	200	299	1.19	100%	29	10%	0.115	43.5	1	280	335	42.8	65.2	0	0
... EL4 Core Zn (G.C18)	Corridor (35%)	U	184	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C19)	Corridor (35%)	U	34	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 NW Perim Zn (G.NW20)	Office (Executive/Private) (57%)	U	509	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C21)	Corridor (35%)	U	159	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 West Perim Zn (G.W22)	Office (Executive/Private) (57%)	U	53	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 WSW Perim Zn (G.WSW23)	Office (Executive/Private) (57%)	S	11.24	20.70	1.84	100%	118	6%	0.105	19.1	6	182	335	66.0	82.7	0	0
... EL4 Core Zn (G.C24)	Corridor (35%)	U	29	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 West Perim Zn (G.W25)	Office (Executive/Private) (57%)	S	638	906	1.42	100%	67	7%	0.105	19.1	3	236	335	50.9	71.3	0	0
... EL4 West Perim Zn (G.W26)	Office (Executive/Private) (57%)	S	15.46	16.16	1.04	100%	162	10%	0.105	19.1	5	320	335	37.5	61.1	0	0
... EL4 WNW Perim Zn (G.WNW27)	Office (Executive/Private) (57%)	U	575	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C28)	Corridor (35%)	U	136	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C29)	Corridor (35%)	S	233	331	1.42	100%	27	8%	0.115	43.5	1	235	335	51.0	71.3	0	0
... EL4 Core Zn (G.C30)	Corridor (35%)	U	18	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C31)	Corridor (35%)	U	51	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 West Perim Zn (G.W32)	Office (Executive/Private) (57%)	U	56	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C33)	Corridor (35%)	S	13.50	14.44	1.07	100%	156	11%	0.115	43.5	4	313	335	38.4	61.8	0	0
... EL4 Core Zn (G.C34)	Corridor (35%)	U	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C35)	Corridor (35%)	S	16.82	14.71	0.87	100%	194	13%	0.115	43.5	4	383	335	31.3	56.5	0	0
... EL4 Core Zn (G.C36)	Corridor (35%)	S	17.03	14.89	0.87	100%	196	13%	0.115	43.5	4	383	335	31.3	56.5	0	0
... EL4 SW Perim Zn (G.SW37)	Office (Executive/Private) (57%)	U	543	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C38)	Corridor (35%)	U	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S39)	Office (Executive/Private) (57%)	S	20.20	30.31	1.50	100%	212	7%	0.105	19.1	9	223	335	53.8	73.4	0	0
... EL4 South Perim Zn (G.S40)	Office (Executive/Private) (57%)	S	714	10.42	1.46	100%	75	7%	0.105	19.1	3	230	335	52.3	72.3	0	0
... EL4 South Perim Zn (G.S41)	Office (Executive/Private) (57%)	U	516	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C42)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S43)	Office (Executive/Private) (57%)	S	20.32	20.50	1.01	100%	213	10%	0.105	19.1	6	332	335	36.2	60.2	0	0
... EL4 SSW Perim Zn (G.SSW44)	Office (Executive/Private) (57%)	S	250	897	2.78	100%	26	4%	0.105	19.1	2	120	335	99.8	108.1	0	0
... EL4 SSE Perim Zn (G.SSE45)	Office (Executive/Private) (57%)	U	164	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C46)	Corridor (35%)	U	75	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 South Perim Zn (G.S47)	Office (Executive/Private) (57%)	S	21.39	33.06	1.55	100%	224	7%	0.105	19.1	10	217	335	55.4	74.7	0	0
... EL4 South Perim Zn (G.S48)	Office (Executive/Private) (57%)	U	510	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C49)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C50)	Corridor (35%)	U	22	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 SE Perim Zn (G.SE51)	Office (Executive/Private) (57%)	U	530	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C52)	Corridor (35%)	S	839	10.72	1.28	100%	97	9%	0.115	43.5	3	262	335	45.8	67.4	0	0
... EL4 Core Zn (G.C53)	Corridor (35%)	U	63	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 East Perim Zn (G.E54)	Office (Executive/Private) (57%)	S	33.77	44.34	1.31	100%	354	8%	0.105	19.1	13	255	335	47.1	68.4	0	0
... EL4 Core Zn (G.C55)	Corridor (35%)	U	23	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 SSE Perim Zn (G.SSE56)	Office (Executive/Private) (57%)	U	80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
... EL4 Core Zn (G.C57)	Corridor (35%)	S	19.27	16.85	0.87	100%	222	13%	0.115	43.5	5	383	335	31.3	56.5	0	0
... EL4 Core Zn (G.C58)	Corridor (35%)	S	30.12	26.35	0.87	100%	347	13%	0.115	43.5	8	383	335	31.4	56.5	0	0

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow			Design Ventilation			Design Capacity			Hrs Outside Thri-Range		Cool Hrs	Heat Hrs	
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf			Heat Btu/h/sf
EL5 Sys4 (PMZS) (B)	Pkgd Var Vol Var Temp	d	576	728	1.28	8%	60	8%	0.104	0.7	2	279	353	42.9	69.5	0	0
... EL5 NE Perim Zn (B.NE1)	Office (Open Plan) (40%)	C	576	728	1.28	8%	60	8%	0.104	20.0	2	279	353	42.9	69.5	0	0

System & Zone Name	System Type Principal Zone Activity	Type*	Area sqft	Design Flow			Design Ventilation			Design Capacity			Throttling Range		Hrs Outside Thri-Range	
				Supply cfm	Supply cfm/sf	Min Flow	OSA cfm	OSA %	OSA cfm/sf	OSA cfm/per	Cool tons	Cool sf/ton	Cool cfm/ton	Cool Btu/h/sf		Heat Btu/h/sf
Sum of SYSTEMS	11,43.82	12,17.15	1.06	96%	1,24.57	10%	0.109	14.5	384	298	317	40.3	62.4	5%
Sum of ZONES	12,86.05	1.12	...	...	...	...	...	384	...	...	...	...	...
Sum of Zones / System Total	100%	...	...	...	...	...	100%	...	...	...	...	...	...

* Return Types: ... 'P' = Plenum Return ... 'D' = Ducted Return ... 'd' = Direct return ... (Plenum Zones are not shown on this report)
 * Zone Types: ... 'C' = Conditioned Zone ... 'U' = Unconditioned Zone ... 'S' = Slave Zone ... (conditioned but no t-stat)

Annexure 2: Solar PV generation calculation sheet from snapshot

PVWatts® Calculator



My Location
hisar, India
Change Location

English
Español
HELP
FEEDBACK

RESOURCE DATA
SYSTEM INFO
RESULTS



RESULTS

Print Results

Go to system info

8,702 kWh/Year*



Month	Solar Radiation <small>(kWh / m² / day)</small>	AC Energy <small>(kWh)</small>	Value <small>(\$)</small>
January	4.35	611	N/A
February	5.31	654	N/A
March	6.42	829	N/A
April	6.82	836	N/A
May	6.52	806	N/A
June	5.71	701	N/A
July	5.46	711	N/A
August	5.91	781	N/A
September	6.17	793	N/A
October	5.67	744	N/A
November	4.80	626	N/A
December	4.43	611	N/A
Annual	5.63	8,703	0

Annexure 3: Cut Sheets

6.1 Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in:

6.1.1 Cement mortar 1:4 (1 cement : 4 coarse sand)

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1 cum MATERIAL				
2602	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	1000 Nos	0.494	4500.00	2223.00
2201	Carriage of Bricks	1000 Nos	0.494	276.72	136.70
	Cement mortar 1 : 4 (1 cement : 4 coarse sand)				
3.9	Rate as per item No 3.9 of SH: Mortar	cum	0.25	4010.35	1002.59
9999	Sundries	L.S.	2.73	2.00	5.46
	LABOUR				
0123	Mason (brick layer) 1st class	day	0.36	738.00	265.68
0124	Mason (brick layer) 2nd class	day	0.36	679.00	244.44
0115	Coolie	day	1.37	558.00	764.46
0101	Bhisti	day	0.20	617.00	123.40
	TOTAL				4765.73 W
	Add 1 % Water charges on "W"				47.66
	TOTAL				4813.38 X
	Add GST on "X" (multiplying factor 0.1405)				676.28
	TOTAL				5489.66 Y
	Add 15% CPOH on "Y"				823.45
	TOTAL				6313.11 Z
	Add Cess @ 1% on "Z"				63.13
	Cost of 1 Cum.				6376.25
	Say				6376.25

6.1.2 Cement mortar 1:6 (1 cement : 6 coarse sand)

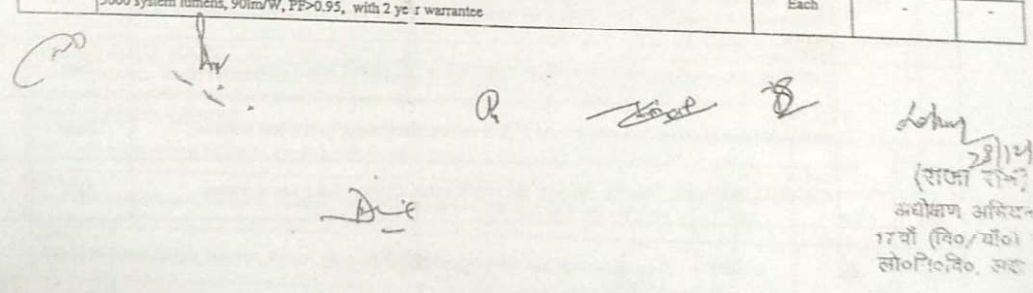
Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1 cum MATERIAL				
2602	Common burnt clay F.P.S. (non modular) bricks class designation 7.5	1000 Nos	0.494	4500.00	2223.00
2201	Carriage of Bricks	1000 Nos	0.494	276.72	136.70
	Cement mortar 1 : 6 (1 cement : 6 coarse sand) (Rate as per item No 3.11)				
3.11	Rate as per Item No.3.11 of SH: Mortar	cum	0.25	3356.15	839.04
9999	Sundries	L.S.	2.73	2.00	5.46
	LABOUR				
0123	Mason (brick layer) 1st class	day	0.36	738.00	265.68
0124	Mason (brick layer) 2nd class	day	0.36	679.00	244.44
0115	Coolie	day	1.37	558.00	764.46

- 6.47 Providing and laying autoclaved aerated cement blocks masonry with 150mm/230mm/300 mm thick AAC blocks in super structure above plinth level up to floor V level with RCC band at sill level and lintel level with approved block laying polymer modified adhesive mortar all complete as per direction of Engineer-in-Charge. (The payment of RCC band and reinforcement shall be made for seperately).

Code	Description	Unit	Quantity	Rate ₹	Amount ₹
	Details of cost for 1 cum. MATERIAL				
8655	Autoclaved areated cement (AAC) blocks	cum	1.00	2600.00	2600.00
0357	Polymer modified adhesive mortar	Kg	30.00	15.00	450.00
9999	Sundries	L.S.	2.73	2.00	5.46
	LABOUR				
0123	Mason (brick layer) 1 st class	day	0.36	738.00	265.68
0124	Mason (brick layer) 2nd class	day	0.36	679.00	244.44
0115	Coolie	day	1.37	558.00	764.46
	Extra labour element required for lifting of materials (above floor two level upto floor five level) (0.75x 1.50 = 1.13)				
0115	Coolie	day	1.13	558.00	630.54
	TOTAL				4960.58 W
	Add 1 % Water charges on "W"				49.61
	TOTAL				5010.19 X
	Add GST on "X" (multiplying factor 0.1405)				703.93
	TOTAL				5714.12 Y
	Add 15% CPOH on "Y"				857.12
	TOTAL				6571.23 Z
	Add Cess @ 1% on "Z"				65.71
	Cost of 1 cum				6636.95
	Say				6636.95

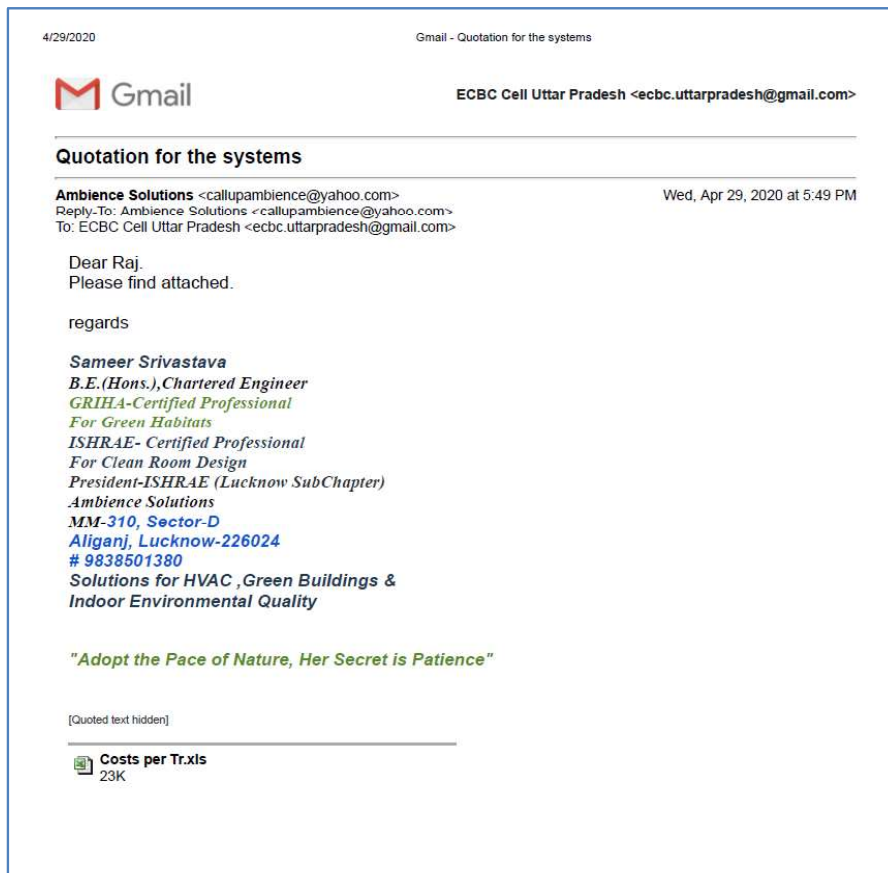
Code No.	Description	Unit	Rate ₹
8308	PPR Union 32 mm	each	137.20
8309	PPR Union 40 mm	each	184.80
8310	PPR Union 50 mm	each	352.80
8311	PPR Union 63 mm	each	483.60
8312	PPR Union 75 mm	each	933.00
8500	Water for jetting / blowback	1000 litre	1500.00
8501	Polymer modified cementation coating	kg	140.00
8502	Fibre glass cloth	sqm	25.00
8504	Multi surface paint	litre	255.00
8505	Acrylic exterior paint	litre	170.00
8506	Premium Acrylic exterior paint	litre	180.00
8507	Textured exterior paint	litre	240.00
8508	Primer for cement paint	litre	79.00
8509	Special Primer (C.W.)	litre	140.00
8510	Metal Primer (U.G.)	litre	90.00
8511	Fibre reinforced elastomeric liquid water proofing membrane	litre	198.69
8512	Cementitious water proofing coating with elastic polymers	kg	189.13
8513	Acrylic modified resin based texture	kg	36.00
8514	40 mm long S.S screws with plastic rawl plugs	100	40.00
8515	Galavanised MS 8 mm outer diameter M-6 dash fastener 50mm long	each	31.00
8516	ZMB 60/equivalent	kg	105.00
8517	ZMB thinner	litre	205.00
8518	Zycoprime / equivalent	litre	210.00
8519	Zycosil / equivalent	litre	1800.00
8520	Elastobar / equivalent	kg	300.00
8552	Mineral fibre beveled tegular edged ceiling tiles 595 x595mm,16 mm thick	sqm	830.00
8553	Mineral fibre beveled tegular edged ceiling tiles 595 x595mm,16 mm thick with bio-block conforming to ISO 5 (class 100) specifications.	sqm	920.00
8554	Mineral fiber beveled tegular edged ceiling tiles 595 x595mm,20 mm thick.	sqm	1040.00
8555	G.I main runner 15 x32 mm of 3000 mm length, 0.33 mm thick	each	185.00
8556	G.I cross-T 15 x32 mm of 1200 mm length, 0.33 mm thick	each	78.00
8557	G.I cross-T 15 x32 mm of 600 mm length, 0.33 mm thick	each	35.00
8558	G.I hanger rod 6mm dia fully threaded upto 1000 mm length	each	26.00
8559	Stainless steel U Channel of size (50x25x2mm)	metre	160.00
8560	Non staining water resistant clear silicon	metre	65.00
8561	Extruded polystyrene rigid insulation board 50 mm thick	sqm	525.00
8562	Expanded Polystyrene insulation board 120 mm thick confirming to IS 4671-1984, Fire retardant property self-extinguishing type as per EN 13501-1	sqm	800.00
8563	15 mm thick, light weight, integral densified micro look edged,false ceiling tiles of size 595x595 mm.	sqm	720.00
8564	15 mm thick, light weight,fully perforated square/butt edge integral densified,false ceiling tiles of size 595x595 mm.	sqm	900.00
8565	Galavanised MS hanger rod 6 mm dia MS fully threaded up to 1000mm length	each	26.00
8566	Powder coated steel section main-T ceiling sections 15x42x0.40 mm (3000 mm long)	each	235.00
8567	Galvanized mild steel perimeter wall angle 22x19x0.40 mm (3000mm long)	each	115.00

Schedule Item No	Common Specification	Unit	Complete Rate	Labour Rate
1416	Supply and fixing of Recess/pendent mounting having having 1' X 4' Size 36 to 46 Watt seamlessly integrateds LED luminaire with acrylic sheet diffuser and integral electronic driver, .Complete in all respect.			
	CAT-AAA 3960-5060 system lumens, 110lm/W, PF>0.95, THD <10% at full, CR>80, with 5 years warrantee	Each	6200	122
	CAT-AA 3600-4600 system lumens, 100lm/W, PF>0.95, THD <10% at full, CR>80, with 3 year warrantee.	Each	4290	122
	CAT-A 3220-4140 system lumens, 90lm/W, PF>0.95, THD <20% at full, CR>80, with 2 year warrantee	Each	2200	122
1417	Supply & fixing of water tight oblong 10 watt LED Bulkhead luminaire having die cast housing with driver set confirming to IP65 and above protection, .Complete in all respect.			
	CAT-AAA 1100 system lumens, 110lm/W, PF>0.95, with 5 years warrantee	Each	1400	122
	CAT-AA 1000 system lumens, 100lm/W, PF>0.95, with 3 year warrantee.	Each	1250	122
	CAT-A 900 system lumens, 90lm/W, PF>0.95, with 2 year warrantee	Each	-	-
1417(A)	Supply and fixing of Single LED light wall bracket 3 to 6 Watt on matching M.D.F.E.G Board base etc. complete in all respect.			
	CAT-AAA 330-660 system lumens, 110lm/W, PF>0.95, with 5 years warrantee	Each	2600	82
	CAT-AA 300-600 system lumens, 100lm/W, PF>0.95, with 3 year warrantee.	Each	-	-
	CAT-A 270-540 system lumens, 90lm/W, PF>0.95, with 2 year warrantee	Each	-	-
1418	Supply and fixing of Surface/Pendent mounting 20 Watt LED Surface Mounting weather proof Luminaire with PC Housing and opal finish cover confirming to IP65 Complete in all respect.			
	CAT-AAA 2200 system lumens, 110lm/W, PF>0.95, with 5 years warrantee	Each	2030	122
	CAT-AA 2000 system lumens, 100lm/W, PF>0.95, with 3 year warrantee.	Each	-	-
	CAT-A 1800 system lumens, 90lm/W, PF>0.95, with 2 year warrantee	Each	-	-
1418(A)	Supply and fixing of Surface/Pendent mounting 40 Watt LED Surface Mounting weather proof Luminaire with PC Housing and opal finish cover confirming to IP65. Complete in all respect.			
	CAT-AAA 4400 system lumens, 110lm/W, PF>0.95, with 5 years warrantee	Each	2290	122
	CAT-AA 4000 system lumens, 100lm/W, PF>0.95, with 3 year warrantee.	Each	-	-
	CAT-A 3600 system lumens, 90lm/W, PF>0.95, with 2 year warrantee	Each	-	-



 (अभय शंकर श्रीवास्तव)
 मुख्य अधिकारी (वि०/या०)
 लोकोपयोगिता केंद्र
 28/11/24
 (सफा रात)
 अधीक्षण अधिकारी
 17 वीं (वि०/या०)
 लोकोपयोगिता केंद्र

BILL OF QUANTITIES - NON HARYANA PWD SCHEDULES ITEMS						
S. No	Non HSR / CPWD DSR 2014 Item	Description of item	Unit	Quantity	Rate	Amount
1			3	4	5	6.00
43	NS-AR06	Providing and laying one layer of Extruded polystyrene insulation board 100mm thickness of 32 to 35 kg cubic meter density (Foamular) , with shiplap joint at all levels, as shown in drawing. (A)	sqm	1,864.40	1,634.15	3,046,709.26
44	NS-AR07	Providing and fixing antistatic carpet roll 22 OZ weight per sqm as per approved sample laid with adhesive and protected with polythene till handover. (price Rs. 100 per sqft plus tax)	sqm	292.69	1,451.00	424,693.19
45	NS-AR08	Providing and fixing one layer of Extruded polystyrene insulation board 75mm thickness of 32 to 35 kg cubic meter density (Foamular) , with shiplap joint in partitions at all levels, fixed to existing framing as shown in drawing. (AR)	sqm	850.00	1,253.00	1,065,050.00
46	NS-AR09	Extra (DGU having) for 6mm thick solar glass on external side with properties having SHGC 0.32, and VLT having 59% and U value of 1.5 w/m2degK in place of HSR item 17.104 with 6mm glass shall have U value < 1.8, solar factor <0.35 light transmission> 49%	sqm	1,487.00	2,237.00	3,326,419.00
47	NS-AR10	Providing and fixing 50mm thick Glass Reinforced Concrete (G.R.C) Screens in approved size, pattern, design, thickness and color of M/S Unistone make or equivalent. The Screens should be made from '53 grade' White Portland Cement manufactured by 'JK Cement' or equivalent, Quartz, Fine Silica Sand, Alkali Resistant Glass Fiber manufactured by 'Saint Gobain' or equivalent, Super Plasticizers manufactured by 'BASF' or equivalent, Polymers manufactured by 'BASF' or equivalent and U.V resistant Synthetic inorganic pigments should be used for pigmentation manufactured by 'BAYFERROX (Germany)' or equivalent. The material casting should take place in Synthetic Rubber / FRP Mould manufactured by 'Reckli' or equivalent. The fixing of Screens should be 'Dry fixing' i.e. to be done with Stainless Steel (SS - 304) 'L' shaped Clamps, dash fasteners and pins	sqm	70.26	8,056.70	566,063.74
48	NS-AR11R	Supplying and applying 1.14 mm EPDM rubbergard membrane in horizontal surface waterproofing of roof consisting of 1st layer of with 200 gsm geotextile membrane on bottom, laying EPDM membrane as second layer jointed with quick seam tape, quick seam primer for jointing, fom flash, adhesive, top layer 200 GSM geotextile i/c overlap, complete as per manufacturer's specifications, testing of waterproofing for 48 hrs.	sqm	3,386.93	1,123.70	3,805,893.24
		Technical parameters FIRESTONE RubberGard: MATERIAL : 1.14 mm thick non reinforced vulcanized EPDM RUBBERGARD meeting ASTM D 4437 requirement. The sheet should be as large as possible but not less than 6m unspliced width. Weight - 1.4 kg per sqm, Tensile strength - > 9 N/ mm², Elongation - > 300 %, Tear resistance - > 35kN/m, Brittleness point - < -45 ° C, Water absorption - < 2 % Provide EPDM membrane, splice tape, primer and bonding adhesive that are FM approved . Identify materials with FM Approvals markings. All the materials used should be from the same manufacturer.				



	A	B	C	D	E	F
0						
1	S.no	Equipment	Minimum EER at Full Load (Cooling Mode)	Minimum COP at Full Load (Cooling Mode)	Rate per Tr. (W.O. Tax)	
2	1	VRF System	3.02		53000.00	
3	2	VRF System	3.65		59000.00	
4						
5	3	Water Cooled Chiller- Centrifugal Type (< 150 Tr.)		5.4	56000.00	
6	4	Water Cooled Chiller- Centrifugal Type (150 Tr. To 300 Tr.)		6.1	60000.00	
7	5	Water Cooled Chiller- Centrifugal Type (> 300 Tr.)		6.3	70000.00	
8						

Annexure 4: Compliance Forms

Whole Building Performance Method Compliance Form

Haryana Energy Conservation Building Code WBP Compliance Form

Project Info	Project Address: "Administrative Block – Mini Secretariat" Building at Charkhi Dadri	Date
		For Building Department Use
	Project Built-up Area [m ²]: 24875.7	
	Project Above-grade Area [m ²]: 19729.5	
	Project Conditioned Area [m ²]: 10575.0	
	Applicant Name and Address	
	Project Climatic Zone: Composite	

Building Classification	<input type="checkbox"/> Hospitality	<input checked="" type="checkbox"/> Business
	<input type="checkbox"/> Health Care	<input type="checkbox"/> Educational
	<input type="checkbox"/> Assembly	<input type="checkbox"/> Shopping Complex

Project Description	<input checked="" type="checkbox"/> New Building	<input type="checkbox"/> Addition	<input type="checkbox"/> Alteration
	<input type="checkbox"/> Self-occupied	<input type="checkbox"/> Core and Shell	<input type="checkbox"/> Mixed-Use
Compliance is sought for Energy efficiency level	<input checked="" type="radio"/> ECBC Compliant	<input type="radio"/> ECBC+ Compliant	<input type="radio"/> SuperECBC Compliant
EPI Ratio			0.9

The following information is necessary to check a building permit application for compliance with the Whole Building Performance Method requirements in the Haryana Energy Conservation Building Code.

Applicability			Code Section	Component	Information Required	Location on Plans	Building Department Notes
Yes	No	N/A					
Whole Building Performance Method							
✓			9.1	General			
✓			9.1.2	Compliance	As per specified in the code		
✓			9.1.3	Annual Energy Use	As per specified in the code		
✓			9.1.4	Tradeoff Limited to Building Permit	As per specified in the code		

✓			9.1.5	Documentation Requirements	As per specified in the code		
✓			9.2	Mandatory Provisions			
✓			4	Building Envelope			
✓			4.2	Mandatory Requirement	As per specified in the code		
✓			5	Comfort System and Controls			
✓			5.2	Mandatory Requirement	As per specified in the code		
✓			6	Lighting and Controls			
✓			6.2	Mandatory Requirement	As per specified in the code		
✓			7	Electrical & Renewable Energy System			
✓			7.2	Mandatory Requirement	As per specified in the code		
✓			9.3	Simulation Requirements	As per specified in the code, Bureau of Energy Efficiency Approved Software for Demonstrating Compliance with ECBC in Table 14-1		
✓			9.4	WBP Compliance Report	As per HECBC Section 9.0		