ECO-NIWAS SAMHITA (ENS) COMPLIANCE EVALUATION REPORT

Project Information

Project Name	Sector 65 Faridabad
State	New Delhi
City	New Delhi
Climate	COMPOSITE
Latitude	>= 23.5° N
Building Construction Type	New Building
Compliance Method Used	Point System

Housing Category Information

Housing Category	Plot Area(m^2)	Total No. of Residential Blocks	Total Basement Area(m^2)	Total Exterior Light Area(m^2)	Total Roof Area(m^2)
Affordable High-Rise	11050	4	2025.0	8361.0	1353.0

Housing Category- Affordable High Rise

Block Name for Compliance Check	No. of Blocks	No. of Floors
Block-A	2	12
BlockB-Tower1	1	12
BlockB-Tower2	1	12

1. Affordable High-Rise : Compliance Result

1.1. Building Envelope:

S.No.	Component	Mandatory Requirements	Calculated value	Points Achieved	Maximum Points
1	RETV(W/m².K)	NA	9.29	63	80
2	U-Value Roof(W/m².K)	NA	0.63	5	7
3	WFRop	Achieved	12.95	NA	NA
4	VLT %	Achieved	60.0	NA	NA

1.2. Building Services:

S.No.	Component	Mandatory Requirements	Calculated value	Points Achieved	Maximum Points
1	Exterior Lighting	NA	--	3	3
2	Basement Lighting	NA	--	3	3
3	Corridor Lighting	NA	--	3	3
4	Lift	NA	--	22	22
5	Pump	NA	--	14	14
6	Diesel Generator Sets	Achieved	--	NA	NA
7	Power Factor Correction	Achieved	--	NA	NA
8	Energy Monitoring System	Achieved	--	NA	NA
9	Electric Vehicle Supply Equipment	Achieved	--	NA	NA
10	Transformer	NA	--	6	6
11	Power Distribution Loss	Achieved	--	NA	NA
12	Car Parking Basement Ventilation	Achieved	--	NA	NA

1.3. Indoor Electrical End Use:

S.No.	Component	Mandatory Requirements	Calculated value	Points Achieved	Maximum Points
1	Indoor Lighting	NA	--	12	12
2	Ceiling Fan	NA	--	9	9
3	Cooling Equipment	NA	--	41	41

1.4. Renewable Energy System:

S.No.	Component	Mandatory Requirements	Calculated value	Points Achieved	Maximum Points
1	Solar Hot Water Requirements	NA	--	5	10
2	Solar Photovoltaic System	NA	--	5	10

Consolidated Compliance Status of the Project:

S.No.	Housing Categories	Total Points	Maximum Points	Minimum Points	Compliance Status
1	Affordable High-Rise	191	220	70	Compliant

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1. Site Level Informaion:

1.1. Affordable High-Rise :

1.1.1. Basement Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	1.0	110.0

1.1.2. Exterior Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	Total Wattage	13377.0	105.0

1.1.3. Pump:

S.N	VVVF Drive Technology	Pump Type	Automatic Control	Water Closet Flow(LPF)	Water Faucet Flow(LPM)
1	Yes	BEE 5 Star	Yes	4.0	4.0

1.1.4. Diesel Generator Set:

S.N	BEE Star Rating	Specific Fuel Consumption(g/kWh)	Capacity Range(kW)

1.1.5. Power Factor Correction:

S.N	Computation Method	Total Connected Load(kW)	Contract Demand(kVA)	Calculated Power Factor	Power Factor Reading
1	Direct	0.0	0.0	0.0	0.98

1.1.6. Energy Monitoring:

S.N	Energy Metering Type	Data Recording Interval	Digital Control System	Data Retaining Capability(yr)
1	Smart	15 Min	Yes	5

1.1.7. EV Supply Equipment:

S.N	Charger Category	Charger Type	Charger Connector Type	Rated Output Voltage(V)	Converter Efficiency(%)	Standby Power Consumption(W)
1	DC	Fast	Combined	200.0	95.0	0.0

1.1.8. Transformer:

S.N	Select Type	BEE Star Rating	Voltage Rating Class	KVA Rating	Max Losses at 50%(W)	Max Losses at 100%(W)
1	Dry	BEE 5 Star	Upto 11KV	100	50.0	100.0

1.1.9. Power Distribution Loss:

S.N	Total Connected Load(kW)	Current Rating of Cable(A)	Total Cable Length(m)	Max Impedence(Ohm/m)
1	120.0	15.0	200.0	0.026

1.1.10. Solar Photovoltaic System:

S.N	PV System Location	Input Method	Area Reserved for Solar PV(m^2)	Installed Capacity(kWp)	Efficiency of PV Panel(%)
1	On Roof	Roof Area Equivalent	50.0	0.0	21.0

2. Affordable High-Rise -Block -1 Information

2.1. Dwelling Unit Details:

S.N	Type of Dwelling Unit	No. of Units	Carpet Area (m^2)	Corridor Area (m^2)	Basement Area (m^2)	Exterior Area (m^2)	Total Area (m^2)
1	2 BHK	8	74.0	60.0	593.0	100.0	592.0
						Total Carpet Area (m^2)	*4744.0*

2.2. Building Envelope:

2.2.1. Mandatory Compliance:

SN	Requirements	Minimum Requirements	User Value	Compliance Status
1	Openable Window-To-Floor Area Ratio (WFRop)	12.5	12.95	Compliant
2	Visible Light Transmittance (VLT %)	27.0	60.0	Compliant

2.2.2. Window Level Information:

2.2.2.1. Window Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Window 1	Rectangle	2.0	3.5	7.0	30	Casement	90.0	10.0
Window 2	Rectangle	2.0	1.5	3.0	30	Casement	90.0	10.0
Window 3	Rectangle	2.0	1.8	3.6	30	Casement	90.0	10.0
Window 4	Rectangle	2.0	1.5	3.0	30	Casement	90.0	10.0
Window	Rectangle	2.0	2.5	5.0	30	Casement	90.0	10.0

2.2.2.2. Window Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Window 1	80.0	1.6	3.5	Material	3.4	0.35	60.0
Window 2	80.0	1.6	1.5	Material	3.4	0.35	60.0
Window 3	80.0	1.6	1.8	Material	3.4	0.35	60.0
Window 4	80.0	1.6	1.5	Material	3.4	0.35	60.0

Window	80.0	1.6	2.5	Material	3.4	0.35	60.0

2.2.2.3. Window Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value (W/m².K)
Window 1	20.0	Properties	---	0.0	1.8
Window 2	20.0	Properties	---	0.0	1.8
Window 3	20.0	Properties	---	0.0	1.8
Window 4	20.0	Properties	---	0.0	1.8
Window	20.0	Properties	---	0.0	1.8

2.2.2.4. Window Shading Details:

2.2.2.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.2.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.2.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.2.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.2.4.5. North-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.2.4.6. North-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.2.4.7. South-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.2.4.8. South-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.3. Ventilator Level Information:

2.2.3.1. Ventilator Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Ventilator 1	Rectangle	0.8	1.2	0.96	16	Casement	90.0	10.0
Ventilator	Rectangle	0.8	1.5	1.2	16	Casement	90.0	10.0

2.2.3.2. Ventilator Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Ventilator 1	80.0	0.72	1.2	Material	3.4	0.35	60.0
Ventilator	80.0	0.72	1.5	Material	3.4	0.35	60.0

2.2.3.3. Ventilator Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)
Ventilator 1	20.0	Properties	---	0.0	1.8
Ventilator	20.0	Properties	---	0.0	1.8

2.2.3.4. Ventilator Shading Details:

2.2.3.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.3.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.3.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.3.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	W1	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

2.2.3.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.3.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.3.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.3.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4. Door Level Information:

2.2.4.1. Door Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed

2.2.4.2. Door Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT

2.2.4.3. Door Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)

2.2.4.4. Door Shading Details:

2.2.4.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.4.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

2.2.5. Wall Level Information:

2.2.5.1. Wall Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	W1	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
2	W1	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
3	W1	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
4	W1	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386

2.2.5.2. Wall Area Details:

S.N	Construction Name	Orientation	Height(m)	Width(m)	Area(m²)
1	W1	N	36.0	42.0	1512.0
2	W1	E	36.0	17.0	612.0
3	W1	S	36.0	42.0	1512.0
4	W1	W	36.0	17.0	612.0
				Total Wall Area (m²)	*4248.0*

2.2.6. Roof Level Information:

2.2.6.1. Roof Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	Roof 1	Material	Concrete (laid to slope) [50.0 mm]	0.632
			Expanded polystyrene (16 kg/m3) [50.0 mm]	
			Cement screed [20.0 mm]	

2.2.6.2. Roof Area Details:

S.N	Construction Name	Height(m)	Width(m)	Area(m²)
1	Roof 1	35.0	17.0	595.0
			Total Roof Area (m²)	*595.0*

2.3. Building Services:

2.3.1. Mandatory Compliance:

S.N	Requirements	Minimum Requirements	User Value	Compliance Status
1	Diesel Generator Set Specific Fuel Consumption (g/kWh)	--	--	Achieved
2	Power Factor Correction (All 3 phase connections)	0.97	--	Achieved
3	Energy Monitoring	--	--	Achieved
4	Electric Vehicle Supply Equipment	--	--	Achieved
5	Car Parking Basement Ventilation	>=600	896.75	Achieved

2.3.2. Common Area Lighting:

2.3.2.1. Corridor Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	3.0	105.0

2.3.2.2. Basement Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	1.0	105.0

2.3.2.3. Exterior Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Automatic Control	Luminous Efficacy(lm/W)
1	Total Wattage	160.0	Yes	105.0

2.3.3. Lifts Details:

S.N	VVVF Drive Technology	Motor Class	Regenaration Drive System	Group Control	Luminous Efficacy(lm/W)	Automatic Light & Fan Control
1	Yes	IE4	Yes	Yes	105.0	Yes

2.3.4. Pumps Details:

S.N	VVVF Drive Technology	Pump Type	Automatic Control	Water Closet Flow(LPF)	Water Faucet Flow(LPM)
1	Yes	BEE 5 Star	Yes	4.0	4.0

2.3.5. Electric System:

2.3.5.1. Diesel Generator:

S.N	BEE Star Rating	Fuel Consumption(g/kWh)	Capacity Range(kW)
1	BEE 5 Star	40.0	120.0

2.3.5.2. Power Factor Correction:

S.N	Computation Method	Total Connected Load(kW)	Contract Demand(kVA)	Calculated Power Factor	Power Factor Reading
1	Direct	0.0	0.0	0.0	0.98

2.3.5.3. Energy Monitoring:

S.N	Energy Metering Type	Data Recording Intervel	Digital Control System	Data Retaining Capability
1	Smart	15 Min	Yes	3

2.3.5.4. EV Supply Equipment:

S.N	Charger Category	Charger Type	Charger Connector Type	Rated Output Voltage(V)	Converter Efficiency(%)	Standby Power Consumption(W)
1	DC	Fast	Combined	200.0	95.0	0.0

2.3.5.5. Transformer:

S.N	Select Type	BEE Star Rating	Voltage Rating Class	KVA Rating	Max Losses at 50%(W)	Max Losses at 100%(W)
1	Dry	BEE 5 Star	Upto 11KV	100	50.0	100.0

2.3.5.6. Power Distribution Loss:

S.N	Total Connected Load(kW)	Current Rating of Cable(A)	Total Cable Length(m)	Max Impedence(Ohm/m)
1	120.0	15.0	200.0	0.026

2.3.6. Car Parking Basement Ventilation:

S.N	Car Parking Location	CO Sensor Installed	Ventilation Strategy	Car Parking Area(m^2)	Fan Motor Power(W)	Fan Motor IE Class	Fan Motor Efficiency(%)
1	Basement	Yes	Mechanical	896.75	400.0	IE4	95.0

2.4. Indoor Electrical Use:

2.4.1. Indoor Lighting:

S.N	Select Area	Luminous Efficacy(lm/W)
1	BedRoom+Kitchen+Hall	105.0

2.4.2. Comfort System:

2.4.2.1. Ceiling Fan:

S.N	BEE Star Rating	Ceiling Fan Blade Sweep(mm)	Service Value(m^2/min.W)	No. of Fans Installed
1	BEE 5 Star	<1200 mm	4	24

2.4.2.2. Cooling Equipment:

S.N	Equipment Type	BEE Star Rating	System Capacity(Tonnage)	Chiller/VRF Type	Chiller/VRF Capacity(kWr)	Chiller/VRF COP	Chiller IPLV	Low Energy Comfort System
1	Low Energy CS	--	120.0	--	0.0	0.0	0.0	Evap Cooling

2.5. Renewable Energy System:

2.5.1. Solar Hot Water System:

S.N	Hot Water System Installed For	Hot Water Requirement/Floor(ltr/day)	Capacity of Solar Water Installed(ltr/Day)
1	Top 4 Floor	20	100.0

2.5.2. Solar PhotoVoltaic System:

S.N	Input Method	Roof Area Reserved for Solar PV(m^2)	Installed Capacity(kWp)	Efficiency of PV Panel(%)
1	Roof Area Equivalent	150.0	0.0	21.0

3. Affordable High-Rise -Block -2 Information

3.1. Dwelling Unit Details:

S.N	Type of Dwelling Unit	No. of Units	Carpet Area (m^2)	Corridor Area (m^2)	Basement Area (m^2)	Exterior Area (m^2)	Total Area (m^2)
1	2 BHK	8	70.0	40.0	554.0	70.0	560.0
						Total Carpet Area (m^2)	*3432.0*

3.2. Building Envelope:

3.2.1. Mandatory Compliance:

SN	Requirements	Minimum Requirements	User Value	Compliance Status
1	Openable Window-To-Floor Area Ratio (WFRop)	12.5	14.05	Compliant
2	Visible Light Transmittance (VLT %)	11.0	60.0	Compliant

3.2.2. Window Level Information:

3.2.2.1. Window Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Window 1	Rectangle	2.0	2.0	4.0	30	Casement	90.0	10.0
Window 2	Rectangle	2.0	1.2	2.4	30	Casement	90.0	10.0
Window 3	Rectangle	2.0	2.5	5.0	30	Casement	90.0	10.0
Window	Rectangle	2.0	1.8	3.6	30	Casement	90.0	10.0
Window 4	Rectangle	2.0	1.28	2.56	20	Casement	90.0	10.0

3.2.2.2. Window Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Window 1	80.0	1.6	2.0	Material	3.4	0.35	60.0
Window 2	80.0	1.6	1.2	Material	3.4	0.35	60.0
Window 3	80.0	1.6	1.12	Material	3.4	0.35	60.0
Window	80.0	1.6	1.8	Material	3.4	0.35	60.0

Window 4	80.0	1.6	1.28	Material	3.4	0.35	60.0

3.2.2.3. Window Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value (W/m².K)
Window 1	20.0	Properties	---	0.0	1.8
Window 2	20.0	Properties	---	0.0	1.8
Window 3	20.0	Properties	---	0.0	1.8
Window	20.0	Properties	---	0.0	1.8
Window 4	20.0	Properties	---	0.0	1.8

3.2.2.4. Window Shading Details:

3.2.2.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.2.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.2.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.2.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 4	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.2.4.5. North-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.2.4.6. North-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.2.4.7. South-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.2.4.8. South-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.3. Ventilator Level Information:

3.2.3.1. Ventilator Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Ventilator 1	Rectangle	0.8	1.2	0.96	16	Casement	90.0	10.0
Ventilator	Rectangle	0.8	1.5	1.2	16	Casement	90.0	10.0

3.2.3.2. Ventilator Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Ventilator 1	80.0	0.72	1.2	Material	3.4	0.35	60.0
Ventilator	80.0	0.72	1.5	Material	3.4	0.35	60.0

3.2.3.3. Ventilator Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)
Ventilator 1	20.0	Properties	---	0.0	1.8
Ventilator	20.0	Properties	---	0.0	1.8

3.2.3.4. Ventilator Shading Details:

3.2.3.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.3.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.3.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.3.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 2	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

3.2.3.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.3.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.3.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.3.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4. Door Level Information:

3.2.4.1. Door Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed

3.2.4.2. Door Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT

3.2.4.3. Door Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)

3.2.4.4. Door Shading Details:

3.2.4.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.4.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

3.2.5. Wall Level Information:

3.2.5.1. Wall Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	Wall 2	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
2	Wall 2	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
3	Wall 2	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386
4	Wall 2	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [200.0]	0.386

3.2.5.2. Wall Area Details:

S.N	Construction Name	Orientation	Height(m)	Width(m)	Area(m²)
1	Wall 2	N	3.0	17.5	52.5
2	Wall 2	E	3.0	19.6	58.8
3	Wall 2	S	3.0	17.5	52.5
4	Wall 2	W	3.0	19.6	58.8
				Total Wall Area (m²)	*222.600000000000002*

3.2.6. Roof Level Information:

3.2.6.1. Roof Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	Roof B1	Material	Concrete (laid to slope) [50.0 mm]	0.632
			Expanded polystyrene (16 kg/m3) [50.0 mm]	
			Cement screed [20.0 mm]	

3.2.6.2. Roof Area Details:

S.N	Construction Name	Height(m)	Width(m)	Area(m²)
1	Roof B1	17.5	24.5	428.75
			Total Roof Area (m²)	*428.75*

3.3. Building Services:

3.3.1. Mandatory Compliance:

S.N	Requirements	Minimum Requirements	User Value	Compliance Status
1	Diesel Generator Set Specific Fuel Consumption (g/kWh)	--	--	Achieved
2	Power Factor Correction (All 3 phase connections)	0.97	--	Achieved
3	Energy Monitoring	--	--	Achieved
4	Electric Vehicle Supply Equipment	--	--	Achieved
5	Car Parking Basement Ventilation	>=600	665.0	Achieved

3.3.2. Common Area Lighting:

3.3.2.1. Corridor Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	3.0	105.0

3.3.2.2. Basement Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	1.0	110.0

3.3.2.3. Exterior Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Automatic Control	Luminous Efficacy(lm/W)
1	Total Wattage	112.0	Yes	105.0

3.3.3. Lifts Details:

S.N	VVVF Drive Technology	Motor Class	Regenaration Drive System	Group Control	Luminous Efficacy(lm/W)	Automatic Light & Fan Control
1	Yes	IE4	Yes	Yes	105.0	Yes

3.3.4. Pumps Details:

S.N	VVVF Drive Technology	Pump Type	Automatic Control	Water Closet Flow(LPF)	Water Faucet Flow(LPM)
1	Yes	BEE 5 Star	Yes	4.0	4.0

3.3.5. Electric System:

3.3.5.1. Diesel Generator:

S.N	BEE Star Rating	Fuel Consumption(g/kWh)	Capacity Range(kW)
1	BEE 5 Star	40.0	120.0

3.3.5.2. Power Factor Correction:

S.N	Computation Method	Total Connected Load(kW)	Contract Demand(kVA)	Calculated Power Factor	Power Factor Reading
1	Direct	0.0	0.0	0.0	0.98

3.3.5.3. Energy Monitoring:

S.N	Energy Metering Type	Data Recording Intervel	Digital Control System	Data Retaining Capability
1	Smart	15 Min	Yes	3

3.3.5.4. EV Supply Equipment:

S.N	Charger Category	Charger Type	Charger Connector Type	Rated Output Voltage(V)	Converter Efficiency(%)	Standby Power Consumption(W)
1	DC	Fast	Combined	200.0	95.0	0.0

3.3.5.5. Transformer:

S.N	Select Type	BEE Star Rating	Voltage Rating Class	KVA Rating	Max Losses at 50%(W)	Max Losses at 100%(W)
1	Dry	BEE 5 Star	Upto 11KV	100	50.0	100.0

3.3.5.6. Power Distribution Loss:

S.N	Total Connected Load(kW)	Current Rating of Cable(A)	Total Cable Length(m)	Max Impedence(Ohm/m)
1	120.0	15.0	200.0	0.026

3.3.6. Car Parking Basement Ventilation:

S.N	Car Parking Location	CO Sensor Installed	Ventilation Strategy	Car Parking Area(m^2)	Fan Motor Power(W)	Fan Motor IE Class	Fan Motor Efficiency(%)
1	Basement	Yes	Mechanical	665.0	400.0	IE4	95.0

3.4. Indoor Electrical Use:

3.4.1. Indoor Lighting:

S.N	Select Area	Luminous Efficacy(lm/W)
1	BedRoom+Kitchen+Hall	105.0

3.4.2. Comfort System:

3.4.2.1. Ceiling Fan:

S.N	BEE Star Rating	Ceiling Fan Blade Sweep(mm)	Service Value(m^2/min.W)	No. of Fans Installed
1	BEE 5 Star	<1200 mm	4	24

3.4.2.2. Cooling Equipment:

S.N	Equipment Type	BEE Star Rating	System Capacity(Tonnage)	Chiller/VRF Type	Chiller/VRF Capacity(kWr)	Chiller/VRF COP	Chiller IPLV	Low Energy Comfort System
1	Low Energy CS	--	120.0	--	0.0	0.0	0.0	Evap Cooling

3.5. Renewable Energy System:

3.5.1. Solar Hot Water System:

S.N	Hot Water System Installed For	Hot Water Requirement/Floor(ltr/day)	Capacity of Solar Water Installed(ltr/Day)
1	Top 4 Floor	20	100.0

3.5.2. Solar PhotoVoltaic System:

S.N	Input Method	Roof Area Reserved for Solar PV(m^2)	Installed Capacity(kWp)	Efficiency of PV Panel(%)
1	Roof Area Equivalent	75.0	0.0	21.0

4. Affordable High-Rise -Block -3 Information

4.1. Dwelling Unit Details:

S.N	Type of Dwelling Unit	No. of Units	Carpet Area (m^2)	Corridor Area (m^2)	Basement Area (m^2)	Exterior Area (m^2)	Total Area (m^2)
1	2 BHK	4	71.25	20.0	285.0	70.0	285.0
						Total Carpet Area (m^2)	*640.0*

4.2. Building Envelope:

4.2.1. Mandatory Compliance:

SN	Requirements	Minimum Requirements	User Value	Compliance Status
1	Openable Window-To-Floor Area Ratio (WFRop)	12.5	17.08	Compliant
2	Visible Light Transmittance (VLT %)	11.0	60.0	Compliant

4.2.2. Window Level Information:

4.2.2.1. Window Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Window 1	Rectangle	2.0	2.0	4.0	12	Casement	90.0	10.0
Window 2	Rectangle	2.0	1.1	2.2	12	Casement	90.0	10.0
Window 3	Rectangle	2.0	1.12	2.24	12	Casement	90.0	10.0
WIndow 4	Rectangle	2.0	1.28	2.56	1	Casement	90.0	10.0
Window	Rectangle	2.0	1.8	3.6	4	Casement	90.0	10.0

4.2.2.2. Window Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Window 1	80.0	1.6	2.0	Material	3.4	0.35	60.0
Window 2	80.0	1.6	1.1	Material	3.4	0.35	60.0
Window 3	80.0	1.6	1.12	Material	3.4	0.35	60.0
WIndow 4	80.0	1.6	1.28	Material	3.4	0.35	60.0

Window	80.0	1.6	1.8	Material	3.4	0.35	60.0

4.2.2.3. Window Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value (W/m².K)
Window 1	20.0	Properties	---	0.0	1.8
Window 2	20.0	Properties	---	0.0	1.8
Window 3	20.0	Properties	---	0.0	1.8
WIndow 4	20.0	Properties	---	0.0	1.8
Window	20.0	Properties	---	0.0	1.8

4.2.2.4. Window Shading Details:

4.2.2.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.2.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	WIndow 4	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.2.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.2.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Window 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 2	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Window 3	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.2.4.5. North-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.2.4.6. North-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.2.4.7. South-East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.2.4.8. South-West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3. Ventilator Level Information:

4.2.3.1. Ventilator Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed
Ventilator 1	Rectangle	0.8	0.6	0.48	4	Casement	90.0	10.0
Ventilator	Rectangle	0.8	0.4	0.32	4	Casement	90.0	10.0

4.2.3.2. Ventilator Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT
Ventilator 1	80.0	0.72	0.6	Material	3.4	0.35	60.0
Ventilator	80.0	0.72	0.4	Material	3.4	0.35	60.0

4.2.3.3. Ventilator Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)
Ventilator 1	20.0	Properties	---	0.0	1.8
Ventilator	20.0	Properties	---	0.0	1.8

4.2.3.4. Ventilator Shading Details:

4.2.3.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.3.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		
1	Ventilator 1	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35
1	Ventilator	Wall 3	0.0	0.0	0.0	0.0	0.0	0.0	1.0	0.35

4.2.3.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.3.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4. Door Level Information:

4.2.4.1. Door Construction Details:

Name	Shape	Height(m)	Width(m)	Area(m^2)	Number	Type	% Open	% Fixed

4.2.4.2. Door Glazing Details:

Name	Glaze %	Glazing Height(m)	Glazing Width(m)	Definition Type	U-value ($W/m^2.K$)	SHGC	VLT

4.2.4.3. Door Opaque Area Details:

Name	Opaque Area %	Definition Type	Material Type	Thickness(m)	U-value ($W/m^2.K$)

4.2.4.4. Door Shading Details:

4.2.4.4.1. South Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.2. North Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.3. East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.4. West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.5. North East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.6. North West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.7. South East Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.4.4.8. South West Shading details:

S.N	Name	Parent Wall	Overhang		Side Fin-Left		Side Fin-Right		ESF Total	Effective SHGC
			Depth (m)	Distance (m)	Depth (m)	Distance (m)	Depth (m)	Distance (m)		

4.2.5. Wall Level Information:

4.2.5.1. Wall Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	Wall 3	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [50.0]	0.563
2	Wall 3	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [50.0]	0.563
3	Wall 3	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [50.0]	0.563
4	Wall 3	Material	Cement plaster (1762 kg/m3) [12.0] Expanded polystyrene (16 kg/m3) [50.0] Aerated autoclaved concrete (AAC) Block (642 kg/m3) [50.0]	0.563

4.2.5.2. Wall Area Details:

S.N	Construction Name	Orientation	Height(m)	Width(m)	Area(m²)
1	Wall 3	N	3.0	16.0	48.0
2	Wall 3	E	3.0	10.0	30.0
3	Wall 3	S	3.0	16.0	48.0
4	Wall 3	W	3.0	10.0	30.0
				Total Wall Area (m²)	*156.0*

4.2.6. Roof Level Information:

4.2.6.1. Roof Construction Details:

S.N	Name	Construction Type	Layer Details	U-value(W/m².K)
1	Roof 3	Material	Concrete (laid to slope) [50.0 mm]	0.632
			Expanded polystyrene (16 kg/m3) [50.0 mm]	
			Cement screed [20.0 mm]	

4.2.6.2. Roof Area Details:

S.N	Construction Name	Height(m)	Width(m)	Area(m²)
1	Roof 3	20.0	14.25	285.0
			Total Roof Area (m²)	*285.0*

4.3. Building Services:

4.3.1. Mandatory Compliance:

S.N	Requirements	Minimum Requirements	User Value	Compliance Status
1	Diesel Generator Set Specific Fuel Consumption (g/kWh)	--	--	Achieved
2	Power Factor Correction (All 3 phase connections)	0.97	--	Achieved
3	Energy Monitoring	--	--	Achieved
4	Electric Vehicle Supply Equipment	--	--	Achieved
5	Car Parking Basement Ventilation	>=600	285.0	Achieved

4.3.2. Common Area Lighting:

4.3.2.1. Corridor Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	3.0	105.0

4.3.2.2. Basement Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Luminous Efficacy(lm/W)
1	LPD	1.0	105.0

4.3.2.3. Exterior Lighting:

S.N	Input Method	Lighting Power/Density(W or W/m²)	Automatic Control	Luminous Efficacy(lm/W)
1	Total Wattage	112.0	Yes	105.0

4.3.3. Lifts Details:

S.N	VVVF Drive Technology	Motor Class	Regenaration Drive System	Group Control	Luminous Efficacy(lm/W)	Automatic Light & Fan Control
1	Yes	IE4	Yes	Yes	105.0	Yes

4.3.4. Pumps Details:

S.N	VVVF Drive Technology	Pump Type	Automatic Control	Water Closet Flow(LPF)	Water Faucet Flow(LPM)
1	Yes	BEE 5 Star	Yes	4.0	4.0

4.3.5. Electric System:

4.3.5.1. Diesel Generator:

S.N	BEE Star Rating	Fuel Consumption(g/kWh)	Capacity Range(kW)
1	BEE 5 Star	40.0	120.0

4.3.5.2. Power Factor Correction:

S.N	Computation Method	Total Connected Load(kW)	Contract Demand(kVA)	Calculated Power Factor	Power Factor Reading
1	Direct	0.0	0.0	0.0	0.98

4.3.5.3. Energy Monitoring:

S.N	Energy Metering Type	Data Recording Intervel	Digital Control System	Data Retaining Capability
1	Smart	15 Min	Yes	3

4.3.5.4. EV Supply Equipment:

S.N	Charger Category	Charger Type	Charger Connector Type	Rated Output Voltage(V)	Converter Efficiency(%)	Standby Power Consumption(W)
1	DC	Fast	Combined	200.0	95.0	0.0

4.3.5.5. Transformer:

S.N	Select Type	BEE Star Rating	Voltage Rating Class	KVA Rating	Max Losses at 50%(W)	Max Losses at 100%(W)
1	Dry	BEE 5 Star	Upto 11KV	100	50.0	100.0

4.3.5.6. Power Distribution Loss:

S.N	Total Connected Load(kW)	Current Rating of Cable(A)	Total Cable Length(m)	Max Impedence(Ohm/m)
1	120.0	15.0	200.0	0.026

4.3.6. Car Parking Basement Ventilation:

S.N	Car Parking Location	CO Sensor Installed	Ventilation Strategy	Car Parking Area(m^2)	Fan Motor Power(W)	Fan Motor IE Class	Fan Motor Efficiency(%)
1	Basement	Yes	Mechanical	285.0	400.0	IE4	95.0

4.4. Indoor Electrical Use:

4.4.1. Indoor Lighting:

S.N	Select Area	Luminous Efficacy(lm/W)
1	BedRoom+Kitchen+Hall	105.0

4.4.2. Comfort System:

4.4.2.1. Ceiling Fan:

S.N	BEE Star Rating	Ceiling Fan Blade Sweep(mm)	Service Value(m^2/min.W)	No. of Fans Installed
1	BEE 5 Star	<1200 mm	4	12

4.4.2.2. Cooling Equipment:

S.N	Equipment Type	BEE Star Rating	System Capacity(Tonnage)	Chiller/VRF Type	Chiller/VRF Capacity(kWr)	Chiller/VRF COP	Chiller IPLV	Low Energy Comfort System
1	Low Energy CS	--	120.0	--	0.0	0.0	0.0	Evap Cooling

4.5. Renewable Energy System:

4.5.1. Solar Hot Water System:

S.N	Hot Water System Installed For	Hot Water Requirement/Floor(ltr/day)	Capacity of Solar Water Installed(ltr/Day)
1	Top 4 Floor	20	100.0

4.5.2. Solar PhotoVoltaic System:

S.N	Input Method	Roof Area Reserved for Solar PV(m^2)	Installed Capacity(kWp)	Efficiency of PV Panel(%)
1	Roof Area Equivalent	75.0	0.0	21.0