

Project Name: Plaza Logistica Tortugas WH2  
Subproject Name: Plaza Logistica Tortugas WH2

## Project Details

Project Name <b>Plaza Logistica Tortugas WH2</b>	Address Line1 <b>Av. Constituyentes y Calle B. Houssay</b>
Number of Distinct Buildings <b>1</b>	Address Line2
Number of EDGE Subproject(s) associated <b>1</b>	City <b>Garin</b>
Total Project Floor Area (m²) <b>38,962</b>	State/ Province <b>Buenos Aires</b>
Project Owner Name <b>Plaza Logistica SRL</b>	Postal Code <b>B1619NVM</b>
Project Owner Email <b>ebh@plazalogistica.com.ar</b>	Country <b>Argentina</b>
Project Owner Phone <b>Office 54 - 1152361010</b>	Project Number <b>1000584117</b>
Share with Investor(s) or Bank(s)? <b>No</b>	

Associated Subproject(s)  
**Plaza Logistica Tortugas WH2**

## Subproject Details

Subproject Name <b>Plaza Logistica Tortugas WH2</b>	Address Line1 <b>Av. Constituyentes y Calle B. Houssay</b>
Retail Store Name <b>Plaza Logistica Tortugas WH2</b>	Address Line2
Subproject Multiplier for the Project <b>1</b>	City <b>Garin</b>
Certification Stage <b>Preliminary</b>	State/ Province <b>Buenos Aires</b>
Status <b>Pending certifier acceptance</b>	Postal Code <b>B1619NVM</b>
Auditor	Country <b>Argentina</b>
Certifier	Subproject Type <b>New Building</b>

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## Location Data



## Basic Parameters

Type of Retail <b>Warehouse</b>	Landscaped Area (m <sup>2</sup> )
Site Area (m <sup>2</sup> ) <b>66,100.66</b>	
Car Parking <b>None</b>	Kitchenette
Use <b>1 Shift (8hrs, 6d/wk)</b>	

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## Building Data

Floors Above Ground (no.)	Floor to Floor Height (m)
1	12.7
Floors Below Ground (no.)	Gross Internal Area (m <sup>2</sup> )
0	38,962

<i>Default</i>	<i>User Entry</i>	<i>Set Point Temperature</i>			
		<i>Space Conditioning</i>	<i>Cooling &amp; Heating</i>	<i>Cooling</i>	<i>Heating</i>
Gross Internal Area (m <sup>2</sup> ) 38,962					
Office Spaces (m <sup>2</sup> ) <del>2,095</del>	150.93	Office Spaces None			
Data Center (m <sup>2</sup> ) 1,676	0.0000001	Data Center None			
Inventory Control (m <sup>2</sup> ) 1,257	524.33	Inventory Control None			
Storage (m <sup>2</sup> ) 16,758	32,204.85	Storage None			
Frozen Storage (m <sup>2</sup> ) 1,257	0.0000001	Frozen Storage None			
Cold Storage (m <sup>2</sup> ) 4,189	0.0000001	Cold Storage None			
Fruits & Vegetables Storage (m <sup>2</sup> ) 4,189	0.0000001	Fruits & Vegetables Storage None			
Packaging (m <sup>2</sup> ) 2,095	1,879.95	Packaging None			
Receiving & Shipping (m <sup>2</sup> ) 2,095	890.79				
Restroom (m <sup>2</sup> ) 1,641	46.91				
Mechanical & Electrical Room (m <sup>2</sup> ) 3,264	264				

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## Building Orientation

		<i>Building Lengths</i>	
<i>Default</i>	<i>User Entry</i>	<i>Default</i>	<i>User Entry</i>
Floor Plan Depth*** (m)		North	
-	135	-	
Main Orientation***		South	
Northeast		-	
		East	
		-	
		West	
		-	
		Northeast	
		<del>288.6</del>	287
		Northwest	
		<del>135.0</del>	135
		Southeast	
		<del>135.0</del>	135
		Southwest	
		<del>288.6</del>	287

\*\*\* These parameters will be used to estimate building dimensions. If the exact details of the dimensions and orientation are available, then complete the User Entry fields in the Building Lengths section. The orientation of the building will have a direct effect on energy consumption.

## Building Systems

Does the building design include an AC system?

No

Does the building design include a space heating system?

No

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## Key Assumptions for the Base Case

<i>Default</i>	<i>User Entry</i>	<i>Monthly Average Outdoor Temperature (deg.C)</i>	
Fuel Used for Electric Generator Diesel	Diesel	<i>Default</i>	<i>User Entry</i>
Fuel Used for Hot Water Generation Electricity	Electricity	Jan	24.5
Fuel Used for Cooking Electricity	Electricity	Feb	23.4
Fuel Used for Space Heating Electricity	Electricity	Mar	21.3
% of Electricity Generation Using Diesel (% Ave. Yrly)	5.00%	Apr	17.6
Cost of Electricity (\$/kWh)	0.058	May	14.4
Cost of Diesel Fuel (\$/L)	3.05	Jun	11.2
Cost of Natural Gas (\$/L)	0.53	Jul	11.0
Cost of Water (\$/kL)	0.10	Aug	12.3
CO <sub>2</sub> Emissions from Electricity Generation (g/kWh)	493.01	Sep	14.4
Window to Wall Ratio (%)	10.00%	Oct	17.2
Solar Reflectivity for Paint - Wall (%)	30.00%	Nov	20.3
Solar Reflectivity for Paint - Roof (%)	30.00%	Dec	23.0
Roof U-value (W/m <sup>2</sup> .K)	1.99	Latitude (Deg)	34.60
Wall U-value (W/m <sup>2</sup> .K)	1.86	Average Annual Rainfall (mm)	950.00
Glass U-value (W/m <sup>2</sup> .K)	5.75		
Glass SHGC (Factor)	0.50		
Cooling System ASHRAE 90.1.2007	ASHRAE 90.1.2007		
AC System Efficiency (COP)	4.50		
Heating System ASHRAE 90.1.2007	ASHRAE 90.1.2007		
Heating System Efficiency (Eff.)	1.00		

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## Results

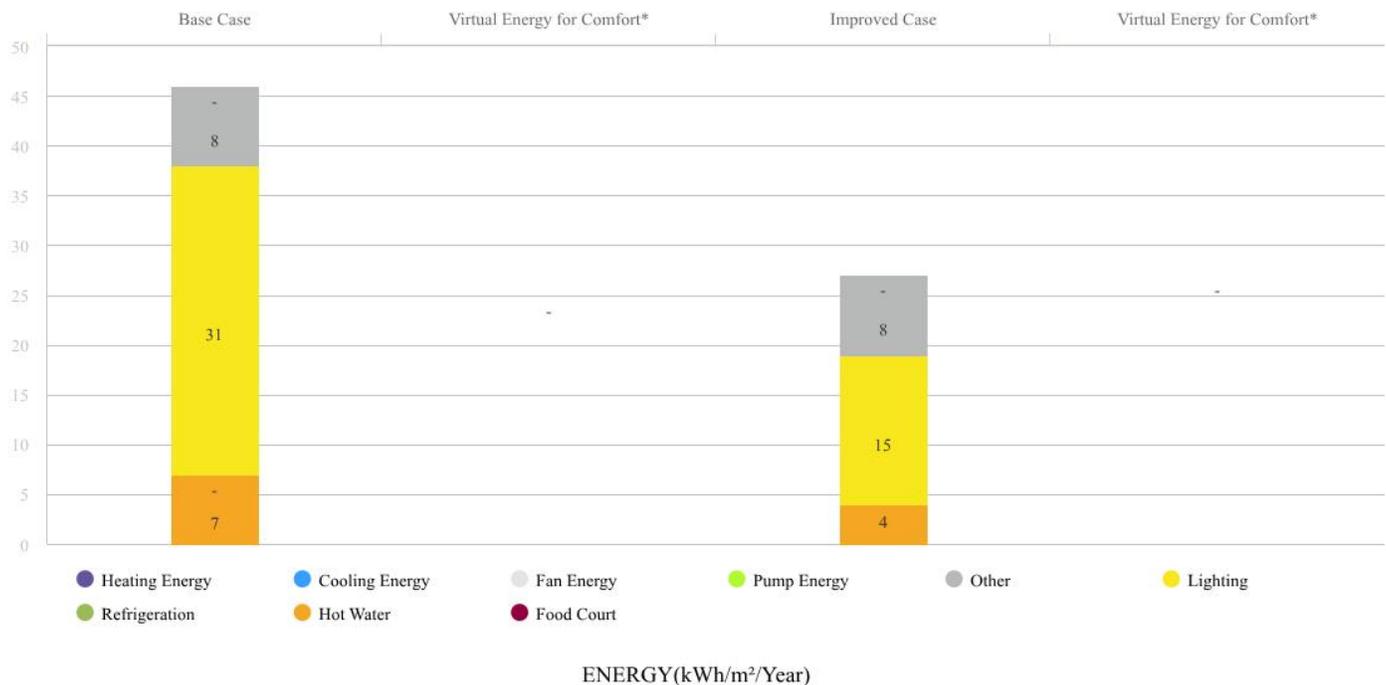
Final Energy Use (kWh/Month) <b>87,737.19</b>	Operational CO <sub>2</sub> Savings (tCO <sub>2</sub> /Year) <b>382.71</b>
Final Water Use (m <sup>3</sup> /Month) <b>5,262.85</b>	Embodied Energy Savings (MJ/m <sup>2</sup> ) <b>1,876.16</b>
Base Case Utility Cost (\$/Month) <b>14,787.24</b>	Incremental Cost (\$) <b>1,382,595.48</b>
Utility Cost Reduction (\$/Month) <b>6,266.00</b>	Payback in Years (Yrs.) <b>18.39</b>
Energy Savings (MWh/Year) <b>764.87</b>	Water Savings (m <sup>3</sup> /Year) <b>55903.94</b>
Embodied Energy in Materials Savings (GJ) <b>67470.02</b>	Total Subproject Floor Area (m <sup>2</sup> ) <b>38962.00</b>
Carbon Emissions (tCO <sub>2</sub> /Year) <b>526.79</b>	

## ENERGY SAVINGS

**EDGE ADVANCED**

Energy Efficiency Measures 42.08%

**Meets EDGE energy standard**

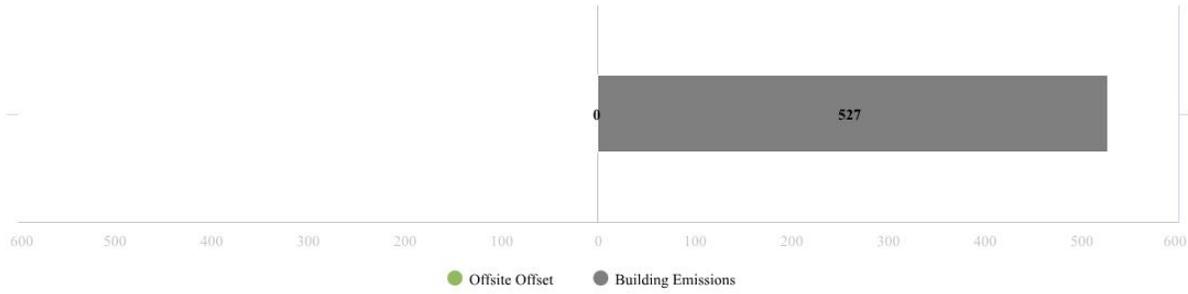


\* Virtual energy is the amount of energy that will be required based on the assumption that the retail will eventually install air conditioning or heating.



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## Carbon Emissions: 526.79 tCO<sub>2</sub>/Year



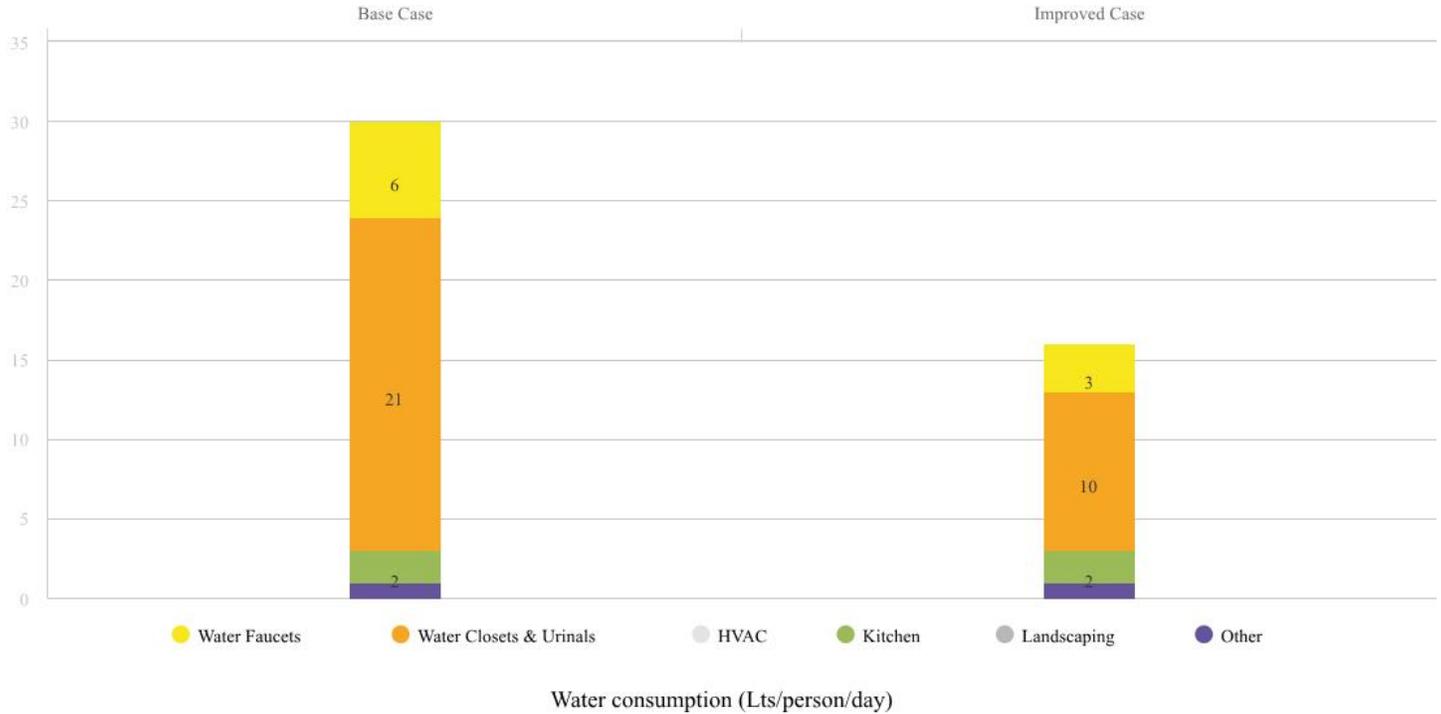
## Energy Efficiency Measures 42.08%

✓ RTE01 Reduced Window to Wall Ratio - WWR of 3.37% Northeast <b>5.20</b> Northwest <b>0.10</b> Southeast <b>0.00</b> Southwest <b>4.89</b>	RTE18 Variable Speed Drives Pumps
✓ RTE02 Reflective Paint/Tiles for Roof - Solar Reflectivity (albedo) of 0.75 SR <b>0.75</b>	RTE19 Sensible Heat Recovery from Exhaust Air - Efficiency of 60%
✓ RTE03 Reflective Paint for External Walls - Solar Reflectivity (albedo) of 0.7 SR <b>0.70</b>	RTE20 CO2 Sensor/Demand-Controlled Ventilation for Fresh Air Intake
RTE04 External Shading Devices - Annual Average Shading Factor (AASF) of 1	RTE21 High-Efficiency Condensing Boiler for Space Heating - Efficiency of 90%
✓ RTE05 Insulation of Roof : U-value of 0.48 W/m <sup>2</sup> .K <b>0.48</b>	RTE22 High-Efficiency Boiler for Water Heating - Efficiency of 90%
✓ RTE06 Insulation of External Walls : U-value of 5.44 W/m <sup>2</sup> .K <b>5.44</b>	✓ RTE23 Energy-Saving Light Bulbs - Sales Area
RTE07 Low-E Coated Glass : U-value of 3 W/m <sup>2</sup> .K and SHGC of 0.45	✓ RTE24 Energy-Saving Light Bulbs - Corridors and Common Areas
RTE08 Natural Ventilation with Operable Windows for Corridors, Atrium, and Common Areas	✓ RTE25 Energy-Saving Light Bulbs - External Spaces
RTE09 Air Economizers During Favorable Outdoor Conditions	RTE26 Occupancy Sensors in Bathrooms
RTE10 Variable Refrigerant Flow (VRF) Cooling System - COP of 3.5	RTE27 Higher Efficiency Refrigerated Cases
RTE11 Air Conditioning with Air Cooled Screw Chiller - COP of 3.63	RTE28 Solar Hot Water Collectors - 50% of Hot Water Demand
RTE12 Air Conditioning with Water Cooled Chiller - COP of 4.95	RTE29 Solar Photovoltaics - 25% of Total Energy Use
RTE13 Ground Source Heat Pump - COP of 5.2	RTE30 Skylight(s) to Provide Daylight to 50% of Top Floor Area
RTE14 Absorption Chiller Powered by Waste Heat - COP of 0.7	RTE31 Other Renewable Energy for Electricity Generation
RTE15 Recovery of Waste Heat from the Generator for Space Heating	RTE32 Offsite Renewable Energy Procurement - Equal to 100% of total Operational CO2
RTE16 Variable Speed Drives on the Fans of Cooling Towers	RTE33 Carbon Offset - 100% of Total CO <sub>2</sub>
RTE17 Variable Frequency Drives in AHUs	RTE34 Insulation for Cold Storage Envelope : U-value for Exterior & Internal wall, Floor & Roof slab and Window Glass
	RTE35 Improved System for Cold storage with Air Cooled Screw Chiller - Avg COP of 4

## WATER SAVINGS

Water Efficiency Measures 46.61%

Meets EDGE Water Standard



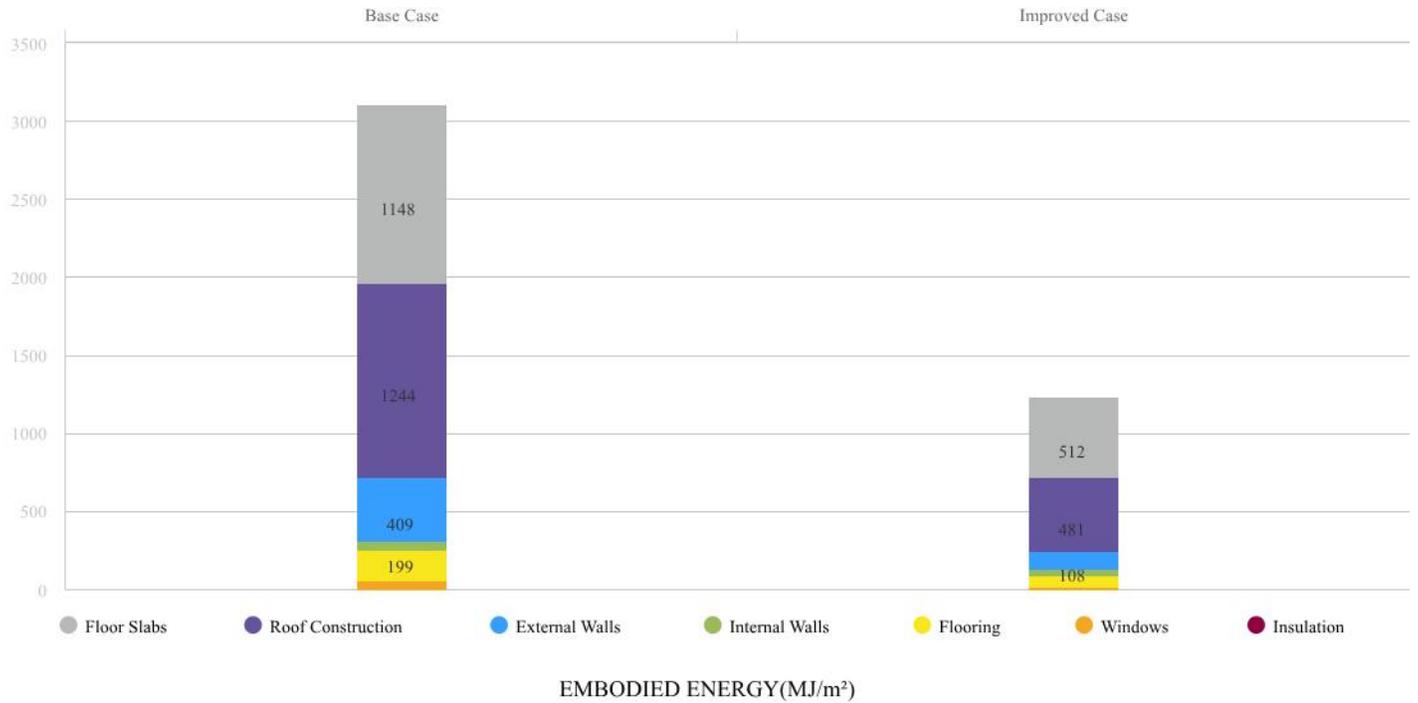
- ✓ RTW01 Dual Flush for Water Closets in All Bathrooms - 6 L/first flush and 3 L/second flush  
1st - L/flush 6                      2nd - L/flush 3
- ✓ RTW02 Water-Efficient Urinals in All Bathrooms - 0.6 L/flush  
L/flush 0.6
- ✓ RTW03 Aerators and Auto Shut-off Faucets in All Bathrooms - 3 L/min  
L/min 3
- ✓ RTW04 Water-Efficient Kitchen Faucets - 7 L/min  
L/min 7
- RTW05 Water-Efficient Dishwashers - 2 L/Rack
- RTW06 Pre-Rinse Valve for Rinsing Operation - 6 L/min
- RTW07 Water-Efficient Landscaping - 3 L/m<sup>2</sup>/day
- RTW08 Condensate Water Recovery
- RTW09 Rainwater Harvesting System - 50% of Roof Area Used for Rainwater Collection
- RTW10 Grey Water Treatment and Recycling System
- RTW11 Black Water Treatment and Recycling System

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## Embodied Energy Savings

Materials Efficiency Measures 60.30%

Meets EDGE Material Standard



			Proportion %	Thickness (mm)	Steel Rebar (kg/m <sup>2</sup> )
RTM01	Floor Slabs In-Situ Reinforced Concrete Slab 350 mm Steel : 35 kg/m <sup>2</sup>	In-Situ Reinforced Concrete Slab		120	20
RTM02	Roof Construction In-Situ Reinforced Concrete Slab 350 mm Steel : 35 kg/m <sup>2</sup>	Type 1 Steel (Zinc or Galvanised Iron) Sheets on Steel Rafters	100 %		
RTM03	External Walls Common Brick Wall with Internal & External Plaster 200 mm	Type 1 Steel Profile Cladding Type 2 Medium Weight Hollow Concrete Blocks	88 % 12 %	200	
RTM04	Internal Walls Common Brick Wall with Plaster on Both Sides 100 mm	Type 1 Cored (with Holes) Bricks with Plaster on Both Sides	100 %	150	
RTM05	Flooring Ceramic Tile	Type 1 Finished Concrete Floor	100 %		
RTM06	Window Frames Aluminium Single Glazing	Type 1 Aluminium	100 %		Single Glazing
RTM07	Wall Insulation Polystyrene U : ~ 1.86 W/m <sup>2</sup> k	No Insulation			
RTM08	Roof Insulation Polystyrene U : ~ 1.99 W/m <sup>2</sup> k	Glass Wool		80	

## EDGE Certification Checklist

Building Type	Certification Stage	Subproject Name
Retail	Preliminary	Plaza Logistica Tortugas WH2
Energy Measures		Preliminary Audit Requirements
RTE01	Reduced Window to Wall Ratio	<ul style="list-style-type: none"> <li>✓ Calculation of "Glazing Area" and "Gross Exterior Wall Area" for each façade of the building and the average building area weighted WWR using the WWR calculator</li> <li>✓ All façade elevation drawings showing glazing dimensions and general building dimensions.</li> </ul>
RTE02	Reflective Paint/Tiles for Roof	<ul style="list-style-type: none"> <li>✓ Building design drawings showing the roof material and roof finish.</li> <li>✓ Roof specification with solar reflectivity of the roof surface indicated.</li> <li>✓ Bill of quantities with the roof finish clearly marked.</li> </ul>
RTE03	Reflective Paint for External Walls	<ul style="list-style-type: none"> <li>✓ Building design drawings showing the wall finish.</li> <li>✓ Wall specification with solar reflectivity of the wall's surface indicated.</li> <li>✓ Bill of quantities with the wall finish clearly marked.</li> </ul>
RTE05	Insulation of Roof	<ul style="list-style-type: none"> <li>✓ A roof construction detail drawing showing the type and thickness of insulation material. Ideally the roof detail drawing should be annotated with the U Value of the roof.</li> <li>✓ Calculations of U value either using the formula or U value calculators.</li> <li>✓ Manufacturer's data sheet of specified insulation material for the roof.</li> </ul>
RTE06	Insulation of External Walls	<ul style="list-style-type: none"> <li>✓ External walls construction detail drawing showing the type and thickness of the insulation material. Ideally the external walls detail drawing should be annotated with the U Value of the external walls.</li> <li>✓ Calculations of U value either using the formula or U value calculators.</li> <li>✓ Manufacturer's data sheet of specified insulation material for the external walls.</li> </ul>
RTE23	Energy Saving Light Bulbs- Sales Area	<ul style="list-style-type: none"> <li>✓ Lighting schedule listing type and number of bulbs specified.</li> <li>✓ Electrical layout drawings showing the location and type of all installed bulbs.</li> </ul>
RTE24	Energy Saving Light Bulbs- Corridors and Common Areas	<ul style="list-style-type: none"> <li>✓ Lighting schedule listing type and number of bulbs specified.</li> <li>✓ Electrical layout drawings showing the location and type of all installed bulbs.</li> </ul>
RTE25	Energy Saving Light Bulbs- External Areas	<ul style="list-style-type: none"> <li>✓ Lighting schedule listing type and number of bulbs specified.</li> <li>✓ Electrical layout drawings showing the location and type of all installed bulbs.</li> </ul>

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Water Measures		Preliminary Audit Requirements
RTW01	Dual Flush for Water Closets in Bathrooms	<ul style="list-style-type: none"> <li>✓ Plumbing drawings/specifications including make, model, and flush volumes of water closet(s).</li> <li>✓ Manufacturer's data sheet for water closet(s) with information on the flush volume of the main and reduced flushes.</li> </ul>
RTW02	Water-Efficient Urinals in all Bathrooms	<ul style="list-style-type: none"> <li>✓ Plumbing drawings/specifications including make, model, and flush volume of the urinal (s).</li> <li>✓ Manufacturer's data sheet for urinal(s) with information on the flush volume.</li> </ul>
RTW03	Aerators for Faucets/ Auto Shut-Off Faucet	<ul style="list-style-type: none"> <li>✓ Plumbing drawings/specifications including make, model, auto shut-off mechanism and flow rate of the washbasin faucet(s)</li> <li>✓ Manufacturer's data sheet for faucet(s)/flow aerator(s) confirming the flow rate at 3 bar.</li> </ul>
RTW04	Water-Efficient Faucets for Kitchen Sinks	<ul style="list-style-type: none"> <li>✓ Plumbing drawings/specifications including make, model, and flow rate of kitchen(s) faucet(s) or flow restrictor(s).</li> <li>✓ Manufacturer's data sheet for faucet(s)/flow restrictor(s) confirming the flow rate at 3 bar.</li> </ul>
Material Measures		Preliminary Audit Requirements
RTM01	Floor Slabs	<ul style="list-style-type: none"> <li>✓ Floor sections showing build-up of the floor; or</li> <li>✓ Manufacturer's data sheet for specified building material if applicable; or</li> <li>✓ Bill of quantities with the floor slab specification clearly highlighted.</li> </ul>
RTM02	Roof Construction	<ul style="list-style-type: none"> <li>✓ A section drawing of roof showing the materials and thicknesses; or</li> <li>✓ Manufacturer's data sheet for specified building material; or</li> <li>✓ Bill of quantities with the materials used for roof construction clearly highlighted.</li> </ul>
RTM03	External Walls	<ul style="list-style-type: none"> <li>✓ Façade drawings clearly marking the external wall specification selected; and</li> <li>✓ Drawings of the external wall sections; or</li> <li>✓ Manufacturer's data sheet for specified building material; or</li> <li>✓ Bill of quantities with the materials used for the external wall clearly highlighted.</li> </ul>
RTM04	Internal Walls	<ul style="list-style-type: none"> <li>✓ Drawings of the internal wall sections; or</li> <li>✓ Manufacturer's data sheet for building materials used for internal wall specifications if available; or</li> <li>✓ Bill of quantities with the materials used for the internal wall clearly highlighted.</li> </ul>
RTM05	Flooring	<ul style="list-style-type: none"> <li>✓ Drawings clearly marking the flooring specification selected; or</li> <li>✓ Manufacturer's data sheet for building materials used for floor specifications; or</li> <li>✓ Bill of quantities with the materials used for the flooring clearly highlighted.</li> </ul>



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RTM06	Window Frames	<ul style="list-style-type: none"><li>✓ Façade drawings clearly marking the window frame(s) specification; or</li></ul> <hr/> <ul style="list-style-type: none"><li>✓ Manufacturer's data sheet for glazing specified; or</li></ul> <hr/> <ul style="list-style-type: none"><li>✓ Bill of quantities with the windows/window frames clearly highlighted.</li></ul>
RTM08	Roof Insulation	<ul style="list-style-type: none"><li>✓ Drawings clearly marking the insulation specification selected; or</li></ul> <hr/> <ul style="list-style-type: none"><li>✓ Manufacturer's data sheet for insulation specified; or</li></ul> <hr/> <ul style="list-style-type: none"><li>✓ Bill of quantities with the insulation materials clearly highlighted.</li></ul>

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