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  Notes


Run Name: house_1_comprehensive.xml_Lighting_0.37_W/sqft


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Project Template Applied: tesis_default Default  |
 Building Type: SingleFamily |
 Electric Cost: €0.06 / kWh |
 Utility Data Used: [Project Default](#) |
 Location: Medan Maimun, North Sumatra  |
 Floor Area: 306 m² |
 Fuel Cost: €0.02 / MJ |
 [Utility Rates](#)

1 Base Run	2 Design Alternative	Carbon Footprint										
<p>Energy, Carbon and Cost Summary</p> <p>Annual Energy Cost €536</p> <p>Lifecycle Cost €7,296</p> <p>Annual CO₂ Emissions</p> <ul style="list-style-type: none"> Electric 1.6 Mg Onsite Fuel 0.4 Mg Large SUV Equivalent 0.2 SUVs / Year <p>Annual Energy</p> <p>Energy Use Intensity (EUI) 86 MJ / m² / year</p> <ul style="list-style-type: none"> Electric 5,386 kWh Fuel 8,386 MJ Annual Peak Demand 1.4 kW <p>Lifecycle Energy</p> <ul style="list-style-type: none"> Electric 161,566 kW Fuel 251,590 MJ <p>Assumptions </p>	<p>Estimated Energy & Cost Summary</p> <p>Annual Energy Cost €509</p> <p>Lifecycle Cost €6,931</p> <p>Annual CO₂ Emissions</p> <ul style="list-style-type: none"> Electric 1.4 Mg Onsite Fuel 0.4 Mg Large SUV Equivalent 0.2 SUVs / Year <p>Annual Energy</p> <p>Energy Use Intensity (EUI) 86 MJ / m² / year</p> <ul style="list-style-type: none"> Electric 4,946 kWh Fuel 8,386 MJ Annual Peak Demand 1.3 kW <p>Lifecycle Energy</p> <ul style="list-style-type: none"> Electric 148,390 kW Fuel 251,590 MJ <p>Assumptions </p>	<p>Alternate Run Carbon Neutral Potential </p> <p>Annual CO₂ Emissions Mg</p> <ul style="list-style-type: none"> 1 Base Run 2.0 2 Alternate Run 1.8 <p>Onsite Renewable Potential -59.4</p> <p>Natural Ventilation Potential 0.0</p> <p>Onsite Biofuel Use -0.4</p> <hr/> <p>Net CO₂ Emissions -58.0</p> <p>Net Large SUV Equivalent: -5.8 SUVs / Year</p> <p>Assumptions </p>										
<p>Electric Power Plant Sources in Your Region</p> <table border="1"> <tr><td>Fossil</td><td>70 %</td></tr> <tr><td>Nuclear</td><td>N/A</td></tr> <tr><td>Hydroelectric</td><td>30 %</td></tr> <tr><td>Renewable</td><td>N/A</td></tr> <tr><td>Other</td><td>N/A</td></tr> </table> <p>Assumptions </p>			Fossil	70 %	Nuclear	N/A	Hydroelectric	30 %	Renewable	N/A	Other	N/A
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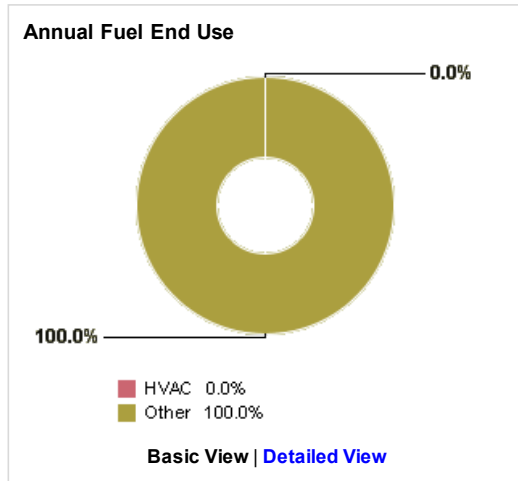
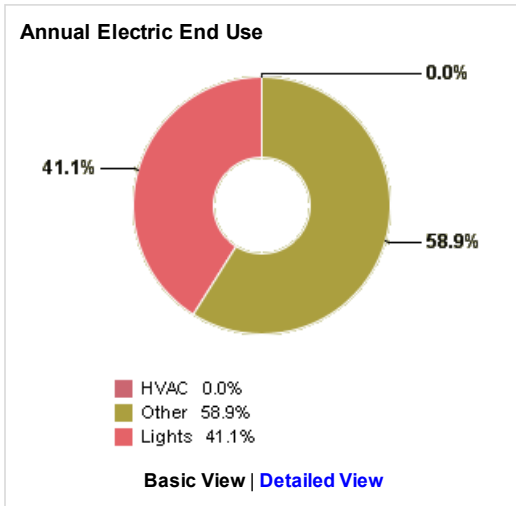
LEED, Photovoltaic, Wind Energy, and Natural Ventilation Potential

 **Note:** Details shown below are for the Alternate Run house_1_comprehensive.xml_Lighting_0.37_W/sqft

<p>LEED Daylight (more details)</p> <p>Percentage of building area with glazing factor over 2%: 0.0% - No LEED Credit</p>	<p>Photovoltaic Potential (more details)</p> <p>Annual Energy Savings: 139,120 kWh</p> <p>Total Installed Panel Cost: €639,356</p> <p>Nominal Rated Power: 80 kW</p> <p>Total Panel Area: 579 m²</p> <p>Maximum Payback Period: 46 years @ €0.06 / kWh</p>	<p>Natural Ventilation Potential</p> <p>Total Hours Mechanical Cooling Required: 0 Hours</p> <p>Possible Natural Ventilation Hours: 0 Hours</p> <p>Possible Annual Electric Energy Savings: 0 kWh</p> <p>Possible Annual Electric Cost Savings: €0</p> <p>Net Hours Mechanical Cooling Required: 0 Hours</p> <p>Assumptions </p>												
<p>LEED Water Efficiency (more details)</p> <table border="1"> <thead> <tr> <th></th> <th>L / yr</th> <th>€ / yr</th> </tr> </thead> <tbody> <tr> <td>Indoor:</td> <td>377,726</td> <td>€607</td> </tr> <tr> <td>Outdoor:</td> <td>444,056</td> <td>€305</td> </tr> <tr> <td>Total</td> <td>821,782</td> <td>€912</td> </tr> </tbody> </table>		L / yr	€ / yr	Indoor:	377,726	€607	Outdoor:	444,056	€305	Total	821,782	€912	<p>Wind Energy Potential</p> <p>Annual Electric Generation: 147 kWh</p>	
	L / yr	€ / yr												
Indoor:	377,726	€607												
Outdoor:	444,056	€305												
Total	821,782	€912												

▼ Energy End Use Charts

* Note: Details shown below are for the Alternate Run house_1_comprehensive.xml_Lighting_0.37_W/sqft



▼ Building Details and Assumptions

* Note: Details shown below are for the Alternate Run house_1_comprehensive.xml_Lighting_0.37_W/sqft

Updating your building assumptions ⓘ

Building Summary - Quick Stats

Number of People:	3 people ↓
Average Lighting Power Density:	3.98 W / m ² ↓
Average Equipment Power Density:	4.89 W / m ² ↓
Specific Fan Flow:	2.4 LPerSec / m ² ↓
Specific Fan Power:	1.221 W / LPerSec
Specific Cooling:	47 m ² / kW ↑
Specific Heating:	11 m ² / kW
Total Fan Flow:	736 LPerSec
Total Cooling Capacity:	7 kW
Total Heating Capacity:	29 kW

↑ higher than typical value
↓ lower than typical value

Alternate Run Construction

Roofs	R13 Wood Frame Roof U-Value: 0.36 ⓘ	3 m ²
Exterior Walls	R13 Wood Frame Wall, Wood Shingle U-Value: 0.46 ⓘ	320 m ²
Interior Walls	Uninsulated Interior Wall U-Value: 2.35 ⓘ	113 m ²
Raised Floors	R13 Wood Frame Floor U-Value: 0.41 ⓘ	323 m ²
Slabs On Grade	Uninsulated concrete slab U-Value: 0.16 ⓘ	0 m ²
Air Walls	Air Surface U-Value: 15.32	344 m ²
Nonsliding Doors	R2 Default Door (46 doors) U-Value: 2.39 ⓘ	58 m ²
Air Openings	North Facing Windows: Unglazed opening (1 doors) U-Value: 0.00 W / (m ² -K), SHGC: 1.00 , Vlt: 1.00	0 m ²
	Non-North Facing Windows: Unglazed opening (2 doors) U-Value: 0.00 W / (m ² -K), SHGC: 1.00 , Vlt: 1.00	9 m ²
Fixed Windows	North Facing Windows: EverGreen Reflective Single, U-SI 3.66, U-IP 0.65, SHGC 0.36, VL (16 windows) U-Value: 3.66 W / (m ² -K), SHGC: 0.36 , Vlt: 0.48	8 m ²
	Non-North Facing Windows: EverGreen Reflective Single, U-SI 3.66, U-IP 0.65, SHGC 0.36, VL (43 windows) U-Value: 3.66 W / (m ² -K), SHGC: 0.36 , Vlt: 0.48	8 m ²
Operable Windows	North Facing Windows: EverGreen Reflective Single, U-SI 3.66, U-IP 0.65, SHGC 0.36, VL (5 windows) U-Value: 3.66 W / (m ² -K), SHGC: 0.36 , Vlt: 0.48	1 m ²
	Non-North Facing Windows: EverGreen Reflective Single, U-SI 3.66, U-IP 0.65, SHGC 0.36, VL (6 windows) U-Value: 3.66 W / (m ² -K), SHGC: 0.36 , Vlt: 0.48	1 m ²

[> 3D VRML View](#)

Alternate Run Hydronic Equipment

Note: this information should not be used for sizing purposes.

 Domestic Hot Water	Average Demand	977
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Alternate Run Air Equipment

Note: this information should not be used for sizing purposes.

 Packaged Single Zone	Supply Fan Flow	144 LPerSec
	Cooling Capacity	2
	Heating Capacity	5
 Packaged Single Zone	Supply Fan Flow	165 LPerSec
	Cooling Capacity	2
	Heating Capacity	6
 Packaged Single Zone	Supply Fan Flow	18 LPerSec
	Cooling Capacity	0
	Heating Capacity	1
 Packaged Single Zone	Supply Fan Flow	238 LPerSec
	Cooling Capacity	1
	Heating Capacity	10
 Packaged Single Zone	Supply Fan Flow	171 LPerSec
	Cooling Capacity	2
	Heating Capacity	6

