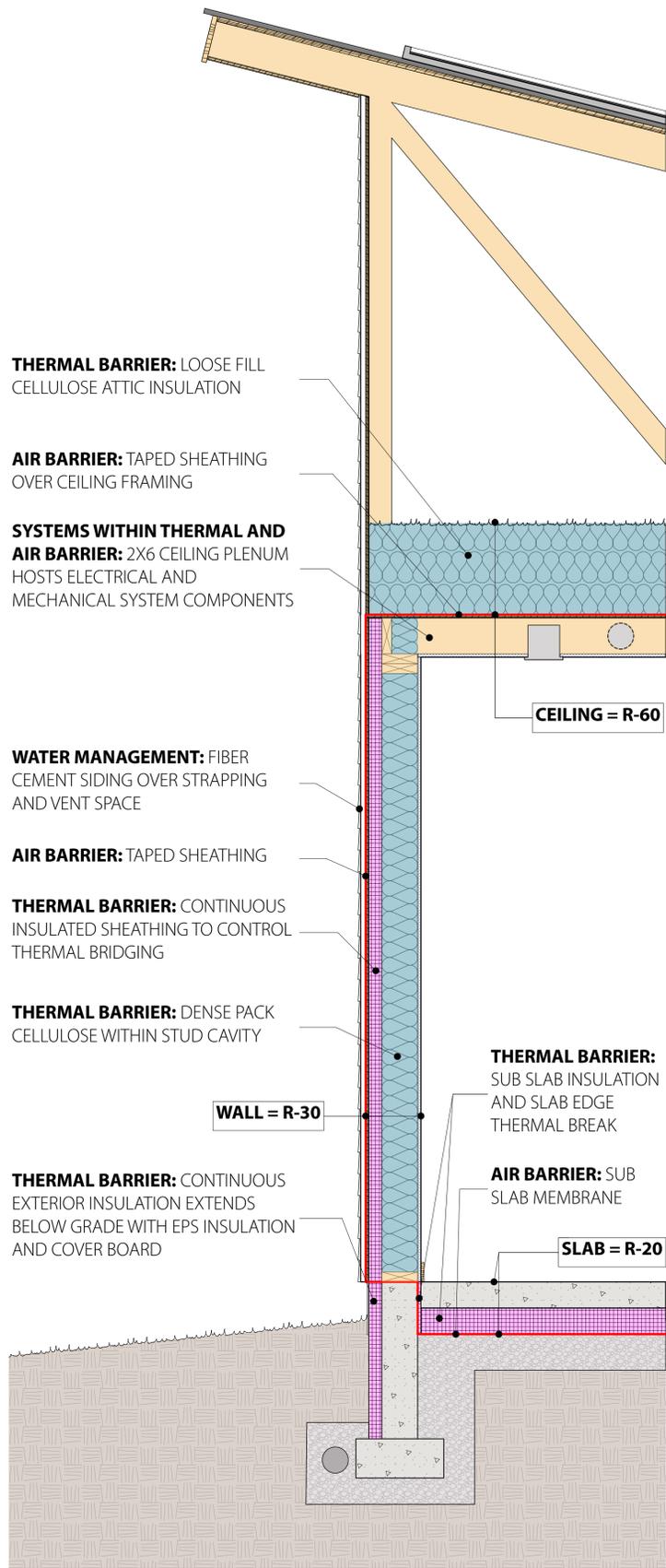


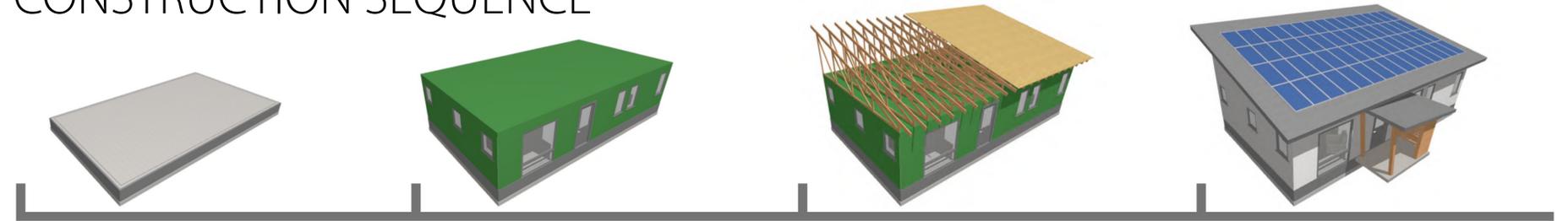
JUST BIG ENOUGH

net-zero energy homes, built with industry standard techniques





CONSTRUCTION SEQUENCE

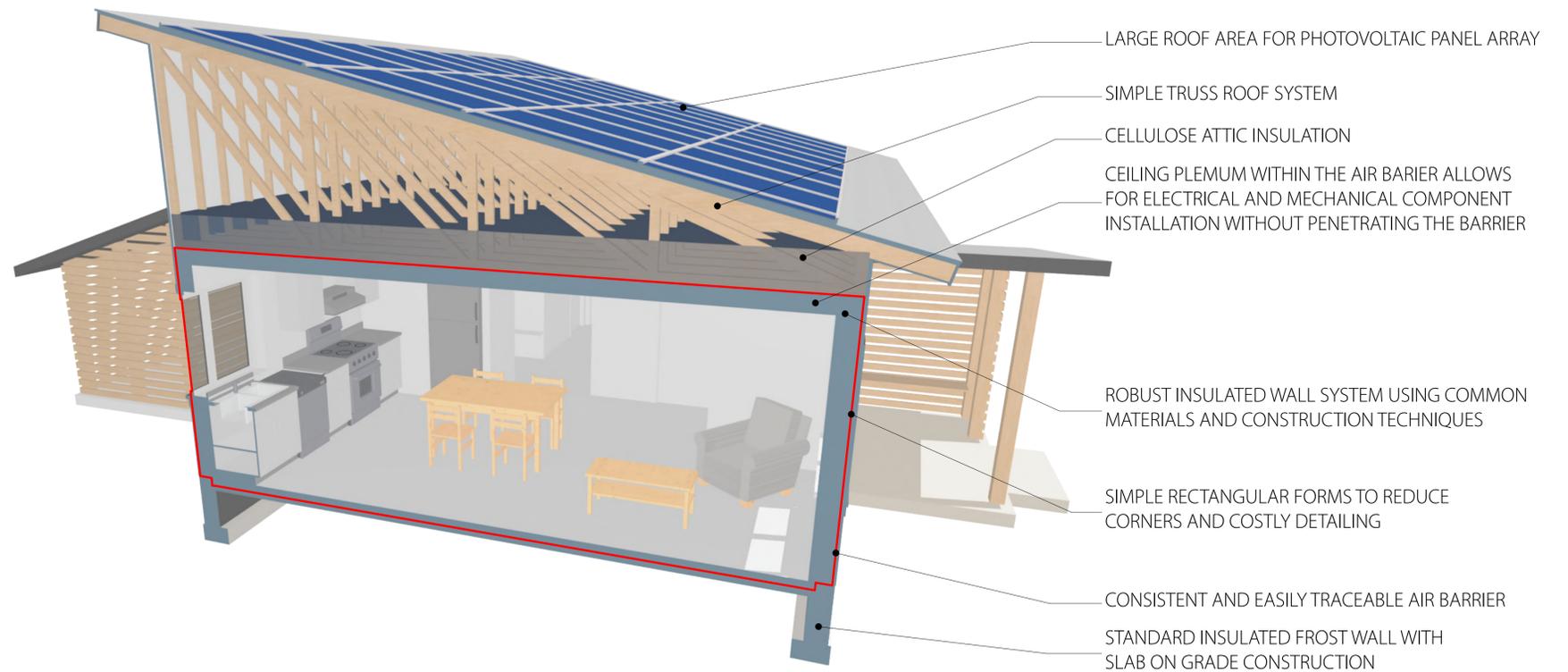


STEP 1 - Traditional insulated frostwall and slab on grade using common construction techniques- the simple rectangular form reduces costly extra details.

STEP 2 - Stick framed 2X6 exterior walls and ceiling, wrapped with insulated sheathing and taped seams creating a robust air sealed box, allowing for simple air barrier inspection and blower door testing.

STEP 3 - After the air barrier is tested and confirmed, standard single-story vented truss roof construction creates the roof form with speed and ease. The attic and stud cavities are insulated with cellulose.

STEP 4 - Exterior and interior finishes are applied without tracking complicated envelope details or complex building forms.



PROGRAM	SYSTEMS	ENERGY	COST																																						
<p>1 Bd, 1 Bath: 667sf 2 Bd, 1 Bath: 809sf 3 Bd, 1+1/2 Bath: 961sf</p> <p>All Homes Include:</p> <ul style="list-style-type: none"> • separate office • washer and dryer • covered entry • attached storage shed • single floor access for all spaces 	<p>Heating and Cooling: Mini-split heat pumps (COP 2.25)</p> <p>Ventilation: Central ERV located in the mechanical closet (75% efficient)</p> <p>Hot Water: Electric hot water heater located in the mechanical closet (85% efficient)</p>	<p>Predicted Energy Use</p> <table border="1"> <thead> <tr> <th>House</th> <th>Total Predicted Energy Use (kWh/yr)</th> <th>PV Array to reach Net-Zero (SunPower 225W)</th> <th>Maximum Size PV Array Possible for Roof Area (SunPower 225W)</th> <th>Miles that could be driven in a Nissan Leaf with the extra production (34 kWh/100 miles)</th> </tr> </thead> <tbody> <tr> <td>1 Bedroom</td> <td>5,767</td> <td>4.8 kW (21 panels)</td> <td>10 kW (44 panels)</td> <td>18,265</td> </tr> <tr> <td>2 Bedroom</td> <td>7,460</td> <td>6.2 kW (28 panels)</td> <td>13.4 kW (60 panels)</td> <td>25,412</td> </tr> <tr> <td>3 Bedroom</td> <td>9,039</td> <td>7.5 kW (33 panels)</td> <td>16.3 kW (72 panels)</td> <td>30,971</td> </tr> </tbody> </table> <p>1 Bedroom Detailed Energy Prediction</p> <table border="1"> <thead> <tr> <th>Use</th> <th>kWh/year</th> <th>Notes</th> </tr> </thead> <tbody> <tr> <td>Heating</td> <td>716</td> <td>Heat load based on 5 year average heating degree days. Building assembly as noted and including R-4.5 windows with 0.5 SHGC. Assumed air leakage of 0.06 CFM50/sf</td> </tr> <tr> <td>Cooling</td> <td>133</td> <td>Heating and cooling provided by mini-split heat pump with COP of 2.25</td> </tr> <tr> <td>Hot Water</td> <td>1,677</td> <td>Electric tank heater with an efficiency of 85%, 20 gal. of hot water per person per day</td> </tr> <tr> <td>All Other</td> <td>3,240</td> <td>LED fixtures, Energy Star Appliances, typical electricity usage for 2 people. ERV efficiency min 75%, 50 CFM constant.</td> </tr> <tr> <td>Total</td> <td>5,767</td> <td></td> </tr> </tbody> </table>	House	Total Predicted Energy Use (kWh/yr)	PV Array to reach Net-Zero (SunPower 225W)	Maximum Size PV Array Possible for Roof Area (SunPower 225W)	Miles that could be driven in a Nissan Leaf with the extra production (34 kWh/100 miles)	1 Bedroom	5,767	4.8 kW (21 panels)	10 kW (44 panels)	18,265	2 Bedroom	7,460	6.2 kW (28 panels)	13.4 kW (60 panels)	25,412	3 Bedroom	9,039	7.5 kW (33 panels)	16.3 kW (72 panels)	30,971	Use	kWh/year	Notes	Heating	716	Heat load based on 5 year average heating degree days. Building assembly as noted and including R-4.5 windows with 0.5 SHGC. Assumed air leakage of 0.06 CFM50/sf	Cooling	133	Heating and cooling provided by mini-split heat pump with COP of 2.25	Hot Water	1,677	Electric tank heater with an efficiency of 85%, 20 gal. of hot water per person per day	All Other	3,240	LED fixtures, Energy Star Appliances, typical electricity usage for 2 people. ERV efficiency min 75%, 50 CFM constant.	Total	5,767		<p>Common construction materials and techniques with low complexity single-story forms will allow for fast and low-cost construction, ideal for the Habitat For Humanity construction model.</p> <p>If these houses were built by for-profit builders, we estimate a construction cost range of \$175-\$200 per square foot.</p>
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