

# DESIGNING & BUILDING A NEW HOME CHECKLIST

If you're looking to design and build a home, you'll want to consider many of the questions covered in the **Single-Family Home Checklist** section, especially those related to location, green rating systems, energy efficiency, and water efficiency. When building a new home, you have the opportunity to build it to be as energy efficient as possible. Here are some additional questions to consider when building a new home.

## WHAT TO ASK FOR



If you are interested in a net zero home, look for a net zero builder. If constructing a new net-zero home isn't feasible for you right now, consider a pathway to net zero over the lifetime of your home by prioritizing the most effective efficiency measures::

BUILDING TO NET ZERO

1. **Make it tight.**

Efficient homes don't let as much air escape and conserve energy required to heat or cool your home.

A blower door test during construction allows leaks to be repaired. After construction, a blower door test can be used to confirm the air leakage rate of the home. A value below 2.5 ACH (air changes per hour) means your home is well sealed, but achieving an ACH between 1.0 and 1.5 will set you up for future net zero success.



2. **Insulate right.**

Insulation reduces heat lost through exterior surfaces (attics, walls, windows & doors).

- » This is easiest and most cost effective to do when the home is first being built.
- » Insulating and air tightness ensure a home can be efficiently electrified later.



3. **Size for the space.**

Homes with better insulation and improved air tightness require less space heating and smaller equipment is possible. Electric heat pumps are an alternative to furnaces in energy efficient homes and can also provide cooling (replacing the need for separate AC!).

- » An air source heat pump combined with a natural gas furnace backup may be the most cost effective option to both heat and cool your home if you want to keep gas service at your home for other purposes (eg a gas stove, barbecue, or water heater). If you don't need a gas line for these other purposes, going all electric might be more cost effective.
- » A ground source heat pump is easiest to install when a home is first being constructed. The upfront cost is higher, but ongoing operating expenses may be lower compared to an air source heat pump



**WHAT TO ASK FOR**



cont.	<p>4. <b>Make up the difference.</b></p>	<p>An effective path to net zero requires significant energy efficiency improvements, heat recovery (water and air), and appropriately sized mechanical systems and appliances - powered by electricity. With that combination, a rooftop solar panel installation can generate enough green electricity to meet your needs.</p> <p>If you aren't able to install solar panels right away, you can still make it easier to add them later by constructing a solar-ready home. Solar-ready homes have their roofs and electrical systems designed for solar panels. See the Solar Energy and Heating chapter to learn more.</p>	<input type="checkbox"/>
<p>For more details, read the blog post and watch the video, "Climate-ready home: Reduce emissions, save money", from the Changing For Climate video series: <a href="http://edmonton.ca/ChangingForClimateSeries">edmonton.ca/ChangingForClimateSeries</a></p>			
ENERGY MODELLING	<p>Ask for an energy modelling report.</p>	<ul style="list-style-type: none"> <li>» The report will help you understand the energy use and emissions from your house's design. Your energy advisor can help with any questions you have about your energy modeling report.</li> <li>» Energy modeling can help to evaluate how energy efficiency upgrades translate into ongoing utility savings, and help you select what is most cost effective over time.</li> </ul>	<input type="checkbox"/>
ENERGUIDE LABEL	<p>Get an EnerGuide label for your home.</p>	<p>The label:</p> <ul style="list-style-type: none"> <li>» Shows how your home compares to a typical new home.</li> <li>» Provides an estimate of annual utility use and emissions.</li> <li>» Can be shown to future purchasers to demonstrate the value of any energy efficiency upgrades you chose.</li> <li>» Can be shared on the City's home energy map.</li> </ul> <p>If you are planning to have an energy model and blower door test, you are already meeting most of the requirements.</p>	<input type="checkbox"/>
OTHER	<p>Plan for electrification.</p>	<p>Look for lots in neighbourhoods that offer 200 Amp electrical service. This provides flexibility for electrification on net zero homes and opportunities for additional rental suites.</p>	<input type="checkbox"/>
	<p>Plan for electric vehicle charging.</p>	<p>If you are planning to switch to an electric vehicle in the future, ask about home charging options. This might include upgrading the electrical service to your home, which is easiest and cheapest to do when the home is first built, especially if the electrical service is underground.</p>	<input type="checkbox"/>