1. Start with Smart Design

Cost-effective zero energy homes begin with smart design strategy and architecture, as well as builders, should be familiar with the latest methods and technologies and build a home that ensures, and should design the home that not only builds and sustains the house, but is completely of the house, as well as a home that should be designed to save energy and comfort as a whole. There are several design aspects to a building project, and making sure that the home is designed to meet strict energy standards and regulations.

2. Use Modeling

Using the design phase, the home’s energy needs can be reduced by using energy modeling software, ensuring that the home can be reduced by at least 15% and saving costs. Based on results, design choices can be made to modify the building’s performance and increase its efficiency.

3. Super Seal the Building Envelope

Super-sealing the building envelope is the single most cost-effective measure builders can take to increase the energy efficiency of their homes. There are many approaches available, each of which matches your climate, skills and budget.

4. Use Highly Insulated Indoor Windows

Doors and windows are like energy holes in a well insulated, energy efficient Zero Energy Home. Choose the right LED lights for the task, locating lights strategically, and optimizing their needs from very bright white light to soft, warm light. Selecting high-efficiency lighting can increase light efficiency in your home, and return that same heat to the home with fresh air.

5. Heat Water Wisely

Water heating is often the largest energy expense for a zero energy home after heating and cooling. It is important for designers and builders to select an energy-efficient water heating technology, along with other measures, to minimize hot water waste.

6. Use Highly Insulated Indoor Windows and Doors

Water and doors play a key role in creating a highly effective building envelope and are the first major cost savings for achieving a Zero Energy Home. As mentioned in chapter 1, there are several approaches available that can help you optimize the insulation levels for the ceiling, walls and doors.

7. Use the Sun for Solar Tempering

Using the sun for solar tempering can drastically increase a home’s comfort and convenience. This need for ventilation has a silver lining: zero energy homes have a high efficiency and building a net-zero energy home requires the right LED lights for the task, locating lights strategically, and optimizing their needs from very bright white light to soft, warm light. Selecting high-efficiency lighting can increase light efficiency in your home, and return that same heat to the home with fresh air.

8. Create an Energy Efficient Ventilation System

This need for ventilation has a silver lining: zero energy homes have a high efficiency and building a net-zero energy home requires the right LED lights for the task, locating lights strategically, and optimizing their needs from very bright white light to soft, warm light. Selecting high-efficiency lighting can increase light efficiency in your home, and return that same heat to the home with fresh air.

9. Select an Energy Efficient Heating and Cooling System

High-efficiency, cost-effective, heating and cooling systems are essential to meeting the zero energy goal. The good choice is an air source heat pump or a highly efficient water heating technology, utilizing natural light as effectively as possible to drastically reduce a home’s energy use.

10. Install Energy Efficient Lighting

Installing energy efficient lighting, while optimizing light for use, is one of the most cost-effective forms of renewable energy for a zero energy home. High-efficiency lighting, while optimizing light for use, is one of the most cost-effective forms of renewable energy for a zero energy home.

11. Select an Energy Efficient Appliances and Electronics

In a typical energy efficient home, the use of efficient appliances and electronics reduces the running costs of labor and energy. While appliances and electronics may account for as much as 20% of total energy use, reducing energy use and cost-effective appliances and electronic devices can significantly affect the total cost of energy use. These systems are highly energy efficient and don’t have the shortcomings of traditional systems.

12. Use the Sun for Renewable Energy

A significant energy saving comes from using the sun to meet the most cost-effective forms of renewable energy for a zero energy home. The sun’s position in the energy ratings chart indicates heating, lighting and cooling systems, appliances and hot water heaters. These are the most cost-effective forms of renewable energy for a zero energy home and strategies for reducing or eliminating these costs are important to consider.

Guidelines for Warmer Climates

While thick layers of insulation get most of the attention in colder climates, in warmer climates, there are other issues that would be treated differently in warmer climates.