



## SOLAR HOT WATER READY

# Are you building a new home and considering solar hot water heating?

### What is Solar Hot Water Heating?

Solar hot water heating is a well-tested technology that is becoming commonplace in North America. Water is pumped through a solar panel on your roof, is heated by the sun's rays, and is piped through a second hot water storage tank in your home warming the water. This water then flows through a double wall heat exchanger that will in turn warm the water that is stored in your hot water tank. Instead of heating your water from cold to the temperature you need, the water is already warm (sometimes hot), reducing the energy you need to get that hot water.

### Benefits of Solar Hot Water Heating

Energy consumption has a huge and serious effect on the environment. Electric water heating is the biggest contributor to household greenhouse gas emissions, accounting for around 25% of the average home's carbon footprint. Installing a solar hot water system can be beneficial in the home as it uses practical and simple technology that is effective and relatively low in cost. A solar hot water system is expected to reduce a domestic hot water bill by 50%, and if it is used efficiently may reduce your hot water heating bill by up to 70%. The installation process is easy, but there are factors that will determine the performance of the system that need to be considered before the installation begins, such as location, weather, shade and tilt of the panels.

### Benefits of Making Your New Home Solar Hot Water Ready

Solar hot water "ready" refers to a residence that has been designed to accommodate the future installation of a solar domestic hot water system. Specifically, a pipe chase is installed from the water service room to the attic space at the time of construction to facilitate future wiring and plumbing lines for the solar collectors. An area is designated for solar collectors (either wall or roof area) and the structure is designed to carry the additional loading of a solar collector, consistent with the Provincial Solar Hot Water Ready Regulations.

Cost estimates for the installation of the required pipe chase and strengthening of the roof or wall framing at the time of the initial construction of the residence will be in the order of \$300 to \$500. With these features in place, future installation of a solar domestic hot water system will be less invasive and therefore less costly to the home owner. A typical solar domestic hot water system costs approximately \$7,000 per residence.

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### FOR MORE INFORMATION:

City of Victoria, Permits and Inspections

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## Zoning and Building Requirements

Zoning and Building Code regulations for the installation of solar hot water systems reside at the local level. Residents should be sure to research the zoning regulations in the City of Victoria to ensure these rules are met. It is important to hire a certified installer familiar with local requirements and proper installations to address backflow issues. The City of Victoria requires a plumbing permit for the installation of a solar hot water heater system in both new construction and renovations to an existing house.

## Solar Hot Water Ready Regulation Design Guidelines:

- Incorporate an area of not less than 9.3 sq m, with no dimension less than 2.7 m, for the future installation of solar collectors for a solar domestic hot water system in compliance with CAN/CSA-F383-87, Installation Code for Solar Domestic Hot Water System, as referred to in the British Columbia Building Code.
- Design structural members (trusses or rafters) to accommodate the anticipated load, but not less than an additional load of 0.2 kilopascals (kpa) in addition to the design loads in the British Columbia Building Code.
- Provide at least two straight, continuous conduit runs that extend from the area directly adjacent to the building's primary service water heater to:
  - (a) an accessible attic space adjacent to the roof area designated for installation of solar collectors for a solar domestic hot water system,
  - (b) the roof area designated for installation of solar collectors for a solar domestic hot water system, or
  - (c) the exterior wall surface directly adjacent to the area designated for installation of solar collectors for a solar domestic hot water system.
- Provide conduit runs that are:
  - (a) accessible at both ends,
  - (b) capped or sealed at both ends to prevent water ingress and air leakage,
  - (c) identified by markings that are permanent, distinct and easily recognized,
  - (d) a minimum inside diameter of 50 mm, and
  - (e) able to accommodate the installation of insulated plumbing services for a solar domestic hot water system in compliance with CAN/CSA-F383, Installation Code for Solar Domestic Hot Water System, as referred to in the British Columbia Building Code.

## Contact information:

City of Victoria  
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