

# NZEB COMPLIANCE

## HEAT PUMP SOLUTION

NZEB standards will become mandatory for new dwellings constructed after 2020. The NZEB standards require an increased level of energy efficiency in a building, reducing the current BER Energy Performance Coefficient (EPC) requirement from 0.4 to 0.3. It is important for developers and consultants to consider the build timescale of a development, if the development will continue past 2020 then it may be beneficial to consider designing for NZEB now.

### Solution:

#### **Separate Space heating and Water heating,**

This system uses a Toshiba CIAT monobloc heat pump to provide space heating and another unit called a Kronoterm hot water heat pump to provide hot water.

In an NZEB house hot water heating can present the most significant energy requirement as the space heating load has been minimized. Kronoterm hot water heat pumps are the most efficient way to heat water so using this technology provides an improved BER. NZEB standards are attained using this system on many typical housing specifications without the need for significant upgrades or the use of Solar PV.

#### **Kronoterm Hot Water Heat Pump**

Hot water heating is provided by a 200L or 270L Kronoterm Hot Water Heat Pump. This unit is installed just as a standard cylinder in a hot press and extracts waste air from the bathrooms. It uses this to create hot water at the cheapest rate available on the market. The act of extracting the moist air from the bathroom automatically boosts ventilation and eliminates mould risk which can be an issue in modern air tight buildings. The unit is standalone and not connected to the space heating circuit which simplifies plumbing requirements and reduces the size of the space heating heat pump.

#### **Toshiba CIAT Heat Pump**

The Toshiba CIAT heat pump is a monobloc Air to Water heat pump which can serve both radiators and underfloor heating systems. It is connected simply using a flow and return connection to the heating circuit. No refrigeration connection required. The Toshiba CIAT unit operates without the use of a buffer cylinder with appropriate design of the heating system.

