

## Kilkenny, leisure centre

### DRAINBACK SOLAR SYSTEM



#### General discription:

Sustainable solar-based energy systems have already been installed on a large scale in domestic systems. Also industrial applications have proven their success. Industrial use of solar energy is growing rapidly.

The county council of Kilkenny decided to make use of solar energy for a new leisure centre.

For sanitaire use, the heating system needs 9.000 litres hot tap water each day. The consumption pattern is evenly spread over the day. The system consists of a solar panel array with a gross area of 140 m<sup>2</sup> with 30 ZEN Renewables "Thermic 42" solar panels .

Over a full year, 40 % of the hot tapwater need is covered by this installation. The leisure centre is able to save 12.16 m<sup>3</sup> of natural gas each year.

The solar panels are fully developed for the unique ZEN Drain back system. No Chemicals (filled with water only), no maintenance (cost reduction); no pollution (absence of any chemicals) and the highest efficiency.



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## ZEN Project InFormation

## Leisure Centre Kilkenny, Ireland

### Closed Drainback principle:

- No risk of overheating.
- Collectors empty when the pump stops.
- 10-15% Higher performance. (hot collector water drains into the insulated drain-back tank)
- No risk when power fails.
- No need for additional expansion vessel.
- Transfer fluid is pure H<sub>2</sub>O.
- No risk of pollution due to absence of chemicals.
- Compact all in one design.
- Increases life expectancy of the solar system to more than 25-30 years.
- Minimal maintenance. A short check every 3-5 years.
- 10 year collector warranty. Extra warranty possible with a system commissioned by ZEN service.



### Project killkenny: 30 collectors 3-module (HxW = 2596 x 1776 m) aperture surface 4,20 m<sup>2</sup>

Absorber Plate	Selectively coated surface layer: absorption coefficient = 0.96; emission coefficient = 0.08-0.12. Copper sheet and tube bonded over the full length of the pipe in an automated process. Interchangeable by means of compression fittings, after removal of glass cover
Glass Cover	Low iron, tempered, low reflection glass, 3.2mm. Removable with black aluminium frame cover. Light transmittance = 92%.
Collector Box:	Heavy aluminium box section with anodized aluminium glass cover frame. A temperature sensor pocket is located at the top back side of the collector. Extra wind supports at the back
Insulation:	Glass wool, 100% CFC-free
Storage tank	2.000 litres in Total; 1.000 litres, drain back tank—1.000 in litres, solar pre-heater tank
Storage medium	Water
Function	Heat storage for heating tapwater
Tested by:	TNO - The Netherlands, ISFH - Germany

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