

## PROJECT: THE WATERSHED LEISURE CENTRE, KILKENNY



### System Specification

500kW Fröling Turbomat (TM) boiler with underground wood fuel store

### Fuel

Locally sourced woodchip

### Fuel Consumption

480 Tonnes per annum

HGV with moving floor delivers the woodchip into the underground store

### CO2 Saving

270 Tonnes per annum

Equivalent to approx. 56 cars being driven for one year

### Financial Saving

Support Scheme for Renewable Heat

A building with a similar heat profile would expect to receive annual payments of approx. €40,000 per annum for 15 years under the support scheme.

Projected payback on capital expenditure for full turnkey system 4-5 years.

### Fuel feed system

The system consists of two hydraulic rams and sliding floor which push the woodchip into a feed auger from where the boiler control unit adjusts the rate of feeding into the combustion chamber.



### About the Renewable Energy System

The Fröling 500kW Turbomat woodchip boiler is equipped with a high temperature cast iron step grate inside the combustion chamber. Combustion is efficiently controlled from the Fröling H3000 Lambdatronic PLC control system. Primary, Secondary and Tertiary air are injected at separate combustion areas via rotary slide valves and modulating actuators.

Combustion air is drawn from between the outer panels and the insulation of boiler casing reducing the heat losses from the boiler and preheating the combustion air. The air then circulates around the outside of the fire brick preventing the outside of the fire brick from overheating and further preheating the combustion air for higher efficiency combustion before it's injected into the combustion chamber.

The heat exchanger of the Fröling Turbomat is a vertical 4 pass exchanger with integrated dust separator. The heat exchanger is equipped with automatic cleaning system. Automatic ash removal via auger transports fly ash from below the heat exchanger to 2no 30 litre ash storage containers.

### About the Client

Situated in Kilkenny, The Watershed is a state of the art leisure centre constructed in 2008. Leisure facilities at The Watershed include:

- 25m x 6 lane competition pool with movable floor and toddler pool
- tiered spectator/viewing gallery
- Sports/events hall - 45 x 27m with 3 courts,
- Gym facilities including aerobics studio, sauna, steam room, spa pool, toilets & shower facilities
- Viewing gallery to sports hall with retractable seating for 540 people.
- reception area with atrium and café
- club meeting rooms & offices