

## THE EARL OF DESMOND HOTEL PROJECT



### **Description:**

The Earl of Desmond Hotel is located in the southwest of Ireland, close to the city of Tralee. The hotel has 170 rooms and is opened during the spring, summer and autumn. The number of occupied beds during the summer is high, about 80-90% with about 300-400 guests.

The purification standard in Ireland is fairly low and many of the villages and cities do no more than separate the sludge, possibly followed by a BOD step in the form of a simple aeration after which the water is released into a nearby stream.

The hotel purifying system keeps a current standard of a 256 m<sup>3</sup> aeration pool which is decanted 2 times a day where the sewage water is driven to smaller open dams, about 70m from the hotel and 20m from a smaller watercourse. The watercourse, which is also known for its trout, is adversely affected downstream by the effluent discharge.

To improve the quality of the discharge, and to give the hotel a more environmental profile, a 3 hectare soil plant-system of irrigated willow been installed. A reduction of 90-95% of nitrogen and phosphorous is expected. The climate in Ireland is considerably milder than in Sweden, therefore an all-year-round application is possible without storing any irrigation water.

The willow plantation is an interesting solution in many aspects for the Irish. A plantation can, for a farmer, compliment today's breeding problems, which have been affected by several different diseases. Within the EU there is a desire for a changeover to bioenergy from today's fossilised coal and oil.

The cost of energy is generally higher in Ireland compared to Sweden and the price for willow is comparable to the price of electricity, oil and coal. To these prices there are also different taxes added. The establishment costs in Ireland are about 3 times higher, but the willow plantation is still a profitable business.

The hotel can, in addition to its cleaning of effluent, also change from burning oil to home grown Salix.

The existing purification plant is complimented with the following new equipment:

Pump with filter, Mainline, 3 ha of RWIS-irrigation system, Controller

From the pump runs a mainline to a nearby field of willow. The "RWIS" irrigation system is divided into 5 sections. RWIS is an irrigation system that works on the principle of controlled flooding. There is a pipe system with PE 32 hose with holes at 9/10 m centres covered by a cowl. The water is released in such a quantity that it makes a circle with water. The technique is well tried with its first trial in Kågeröds purifying complex 1996 and in Northern Ireland, Londonderry 1999. The technique has worked well and has been received with a genuine interest for more installations from both farmers and from the government.

### **Achieved results:**

Oct 2002: The operation has been running since July. The willow is growing well and all sides are pleased with the results so far. The water volume was slightly higher than the calculation basis said during high season, but since the plant was well dimensioned, after adjustment, it has worked well. The quality of the water in the nearby stream has improved. No operation disruptions have been reported and the authorities are content. There have been many interested representatives from other companies and from the Government who have come to visit the plant. Further plants are undergoing planning.

### **The positive sides:**

No longer dependant on fossil fuel

Creates work opportunities

Increases the purification standard

Makes it possible for local purification

Creates a positive attitude for environmental arrangements

Economic because it generates an income, contrary to the investment in today's conventional purification system

### **Cooperation partners**

Rural Generation, Londonderry, Northern Ireland