

Biological water filtration systems in Wicklow

In late May a small group of designers was invited to a private house in Newtownmountkennedy to study their biological water filtration systems.

Two separate systems for the conservation and recycling of non-mains water are in operation in this Co Wicklow home. One draws on well water which is used for all domestic purposes. It then goes through the biological water filtration system described by speaker **Raf Seghers** at the GLDA's seminar last February.

The other system in operation uses filtered and stored roof water to feed an attractive natural swimming pool, the water in the pool being circulated through gravel filtration beds for cleansing and re-use. It is planned, in future years, to visually 'soften' the edges of the pool with suitable planting. The roots of these plants will, in turn, help to support the purifying process. The design and basic construction of the swimming pool was carried out by **Gordon Ledbetter MGLDA**, a specialist in water gardening. The purification technology was provided and installed by Raf Seghers of Eco Plant Ltd [Belgium].



In the first [biological] system, specially designed and planted reed beds take the effluent straight from a septic tank. The 'grey', or household, water is piped separately from the house to a grease trap and thence to the reed beds. This initial and complete separation of the two types of waste [septic tank effluent and grey water] before entering first one and then a second reed bed, is essential for the proper functioning of water purification. The resulting pure water could be recycled for re-use in the house. The existence of the well, however, meant that the owners already had a good source of pure water and they chose, instead, to use the water from the reed beds to create a wild life pond teeming with frogs, newts and insects and enjoyed by birds. Should the need arise, however, either system is capable of being extended to take

over some or all of the functions of the other. This is more clearly demonstrated on site.



Another interesting, but purely 'fun' or recreational, feature of this 'living in harmony with nature' project is the custom-made timber hot tub, serviced by well water. The hot tub water is heated by a fire [fuelled by discarded timber pallets] directly under a metal water-filled radiator. As the water in the radiator heats it rises and circulates

through the tub to provide a pleasantly comfortable temperature of 40 degrees C. There seems no end to this family's ingenuity when it comes to making good use of 'recyclables'.

They also have their own 'home-grown' electricity. A small wind turbine, and several solar panels provide enough energy to make them nearly self-sufficient. Excess energy is stored in giant batteries in an outhouse.



Any attempt at landscaping [some trees, shrubs and soft fruits] has been dictated by the desire to keep the appeal of a totally natural environment. As the [mainly] clay-walled main house was completed as recently as 1998, the whole project will continue to evolve. Some

judicious screening is a possibility; it would add to the attractions of this very beautiful setting. Nonetheless, in this interesting visit, there is a lesson for everyone to learn in the conservation of valuable and shrinking natural resources. □ **Maeve Kearns MGLDA**

*Previous page: the swimming pool. Above: at the hot tub.
Below: See how clean the water is!*