chambers (bark pits), reed beds and in the ponds on site: the foul water will be converted into usable compost. Compost will be formed by planting nutrient-absorbing species onto sediment collection bunds situated next to the forest garden. Rainwater will be collected and some treated for use as drinking water and for kitchen use. The bulk of the rainwater will be stored in a subterranean tank, purified, and introduced into the building under pressure for WCs, washing machine and dishwasher.

The wildlife pond, being at the end of all aquaculture systems, acts as a large buffer for all water systems. In the summer, a solar PV panel pumps water from the wildlife pond to the aquaculture pond to prevent adverse conditions affecting the various species in the pond. The wildlife pond benefits from fluctuations in depth, as water is pumped to the aquaculture pond permitting a unique habitat to be formed, supporting species which otherwise would not exist on the site.[23]

This is a holistic concept for building and landscape based upon ecological sustainability. The individual elements interact to form the complete ecosystem. It is a concept designed to change and develop as the users come to terms with, and form a symbiotic relationship with, the plants and creatures which also occupy the site. The project designed by Gale and Snowden is a practical application of the principles of permaculture as developed by Mollinson: 'The philosophy behind permaculture is one of working with, rather than against nature; of protracted and thoughtful observation, rather than protracted and thoughtless action; looking at systems in all their functions: and of allowing systems to demonstrate their own evolutions'.[24]

Figure 5.18 Design for ecological sustainability in Surrey.