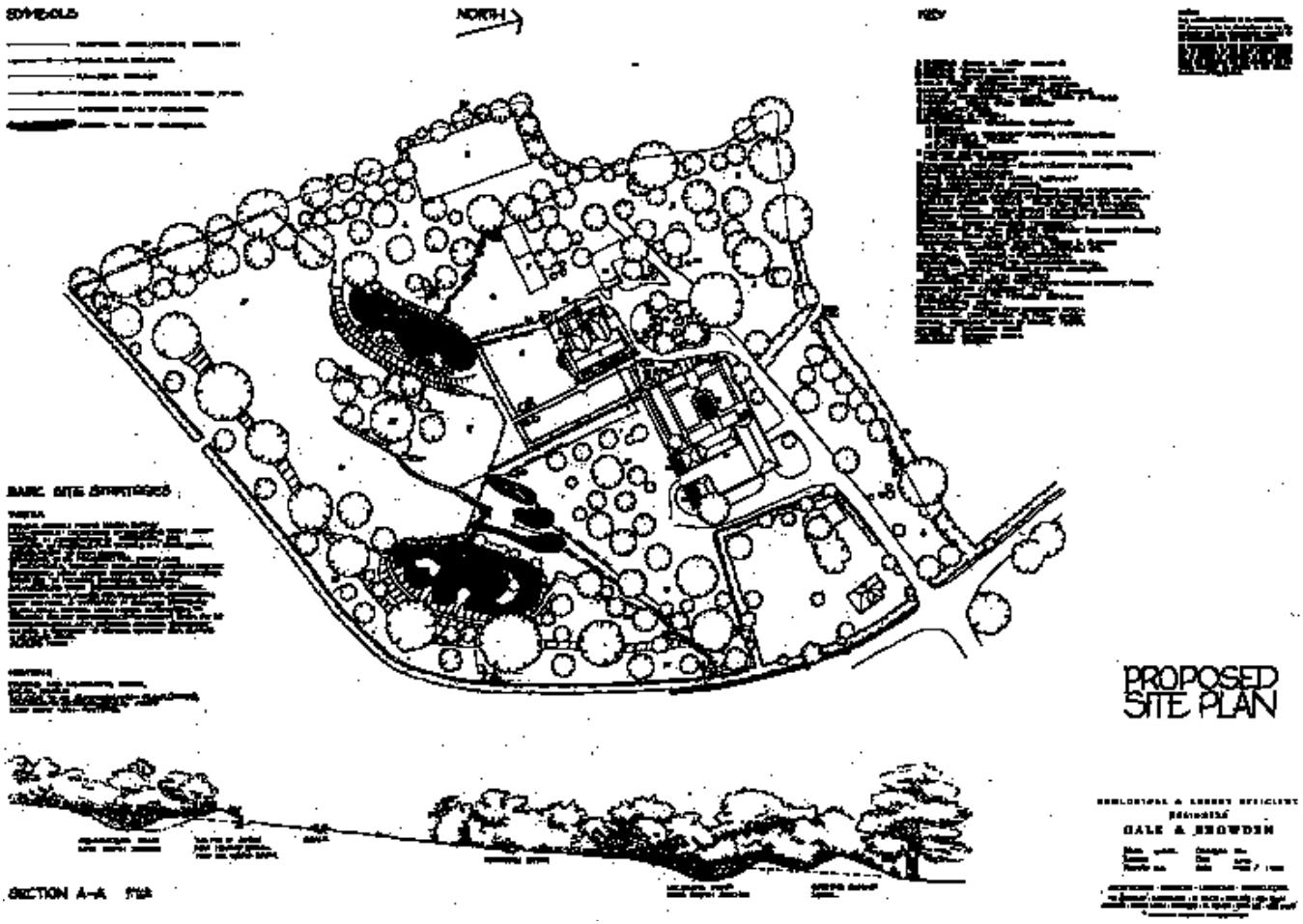

Figure 5.16 Design for ecological sustainability in Surrey, by Gale and Snowden. Plan.

16 Great Guilford Street, London SE1, was designed by Gale and Snowden, an architectural practice based in Barnstaple and specializing in ecological and energy efficient design.

The main concept for the site is the integration of building and landscape to provide the occupants with shelter, energy, food and water in an ecologically sustainable way. The principles of design follow the philosophy of permaculture. An existing seventeenth-century building, when completed and refurbished can, together with the landscape, provide a robust, efficient, self-perpetuating, balanced ecosystem (Figures 5.16 to 5.19). The building will use on-site renewable energies including passive solar heat and coppiced wood, along with effective superinsulation. Sympathetic energy-efficient window and door detailing, draught proofing, passive ventilation and low-energy appliances

Figure 5.17 Design for ecological sustainability in Surrey.

are also features of the design. All materials and products used in the building will be 'healthy', that is, those products and materials which minimize pollution and energy use in manufacture, on the site and in transport.

The landscape is laid out strategically in zones related to their frequency of use, the topography and micro-climate. Planting is mainly native perennial and self-seeding annual vegetation with appropriate introduced species. The aim, over a short period of time, is to increase the diversity of stock of native woodland, plants and animal species. To achieve this, the landscape scheme is designed to increase habitat-diverse micro-climates by the planting of windbreaks, the development of the hedgerow system, the creation of ponds, marsh areas and meadows.

The landscape has also been designed for food production. Low maintenance forest gardens provide fruit, nuts, salads and vegetables. In addition to food production and shelter for wild life the forest garden's other function is to build soil structure for the herb and vegetable gardens surrounding the house. An aquaculture pond and associated marsh area is a feature of the landscaping, producing food in the form of a variety of fish, crustacea and water plants. In addition, the landscape could be organized to support chickens, geese and ducks which are all essential to the ecosystem.

All waste will be recycled on site, creating cyclical systems which mimic the natural ecosystem. Rainwater is used in the home, grey water taken to the aquaculture pond, sewerage is treated by biological means in carbon-filled (wood chips) collection