



Modern house in a Cotswold Village



Our client, a property and construction professional turned to KB² in 2005 to advise him on the design of the structural elements and the drainage of his new family home adjoining a pond in a walled garden. Acting as Project Manager, the client and his wife sought an integrated approach to sustainability and energy efficient construction.

The south facing two storey structure was approximately 480m² in floor area and partially tucked 3m into the hillside. It uses a modern, highly insulated, reinforced concrete structural basement walling system onto which the bespoke traditional green oak framing and breathing timber walls clad in untreated Siberian larch are placed. A combination of recycled newspaper, sheep's wool and high performance modern materials create the insulation. The building's green credentials were further enhanced by the use of; a biomass boiler, heat recovery, an air to water heat pump and on-site sewage treatment using reed beds. The roof covering included green 'Sedum' extensive construction.

The ground conditions across the site varied considerably; from stiff clay at one end of the building to soft clay ground adjacent to a pond. Foundations to the reinforced concrete structure, therefore, comprised of a concrete raft supported on sectional 'ductile' iron piles. Attention had to be paid to the stability of an old boundary wall behind the house.

KB² provided the client with an expert service, delivering technical advice for the mix of materials and building processes which enabled the various sub-contract elements to be designed properly, co-ordinated and proceed smoothly and to programme. The client has been able to fulfil his dreams of a unique home for his family, built to sustainable construction principles.



“KB² quickly picked up the need for a flexible approach to work alongside the suppliers of the structural basement system and the designers of the green oak frame and provided practical solutions for our contractors to work with.”

Client - The Walled House

KB² Consulting Civil & Structural Engineers

Providing engineering certainty by delivering intelligent designs, minimising project risk and applying principles of sustainability.

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