

CASE STUDY

BUILDING ENERGY STRATEGY-ATKINSON HOUSE

BESPOKE DESIGN

Each installation is designed to meet specific client requirements with full computer simulation used to prove all designs.

ENERGY EFFICIENCY

As approved carbon trust consultants we will ensure that the system energy performance is optimised to produce lower operational costs.

PROJECT CDM AND MANAGEMENT

Our engineers and consultants will ensure that all aspects of the design and installation are fully compliant and all relevant permissions and safety requirements are fully adhered with.

MCS ACCREDITED

ESP is an accredited installer approved under the Micro-generation certification scheme,

CARBONTRUST

ESP are approved carbon trust energy and biomass consultants.



- Holistic energy strategy for local authority office premises
- Dynamic thermal modelling
- Renewable energy technology appraisal – biomass, micro-CHP, photovoltaics
- Architectural and building services survey and recommendations
- Lifecycle analysis for financial and carbon savings



Atkinson House was constructed in circa 1950 for use as a primary school, but is now owned by Newcastle City Council who use the site as an office premises and for city-wide CCTV monitoring purposes. The site currently suffers from poor thermal performance as a result of minimal insulation, single-glazed windows and a high rate of air infiltration, and the building services are in need of replacement due to their age and lack of effective control.

ESP was asked by Newcastle City Council to undertake a technical-financial feasibility assessment in order to investigate opportunities for reducing energy consumption and expenditure at the site as well as carbon emissions associated with this energy usage. In conjunction with Fitz Architects and NaREC, ESP has produced a holistic energy strategy that identifies a number of areas in which energy savings can be made.

An audit of existing energy consumption and expenditure was carried out, and a comprehensive site survey examined ways in which the building fabric could be improved. Recommended building alterations were then modelled using dynamic thermal modelling software to enable future energy demand to be determined. A survey of existing building services and heating plant was also undertaken, and an appraisal of renewable energy technology opportunities considered options for biomass, micro-CHP and photovoltaics.

Following the site surveys and technical-financial analysis a number of refurbishment and heating/electrical plant options were presented to the Council. It was recommended that a micro-CHP unit and 100kW wood pellet boiler be installed to supply the base thermal and electrical load, in conjunction with measures to improve thermal insulation and the airtightness of the building. Potential annual financial savings of up to £16,000 and a per annum carbon reduction of up to 75% were identified.

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