

<b>CLIENT</b>	Higgins Construction
<b>PROJECT</b>	Braintree Sheltered Housing Refurbishment (18 No. Blocks)
<b>ARCHITECT</b>	N/A
<b>VALUE</b>	£15m
<b>SCOPE OF WORK</b>	Decent Home upgrades to suit 'Warm Homes, Greener Homes Strategy'



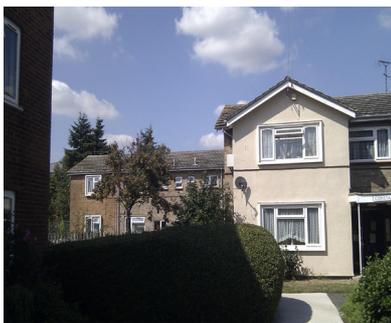
Retrofitting of existing building stock is a major objective of the UK Government's Warm Homes, Greener Homes strategy, which aims to reduce household sector Co2 emissions by 29% by year 2020 and 80% by year 2050.

Braintree Sheltered Housing consists of 18 No. existing self contained blocks for elderly people. It is part of Greenfields Community Housing, which was the third 'Community Gateway Association' set up in the country with the concept of greater input for residents, in decisions that affect their homes and communities.

NLG Associates were invited by Higgins Construction to submit proposals for retrofitting of low/zero carbon (LZC) technologies for use in conjunction with the mechanical services presently installed. NLG Associates carried out an initial energy assessment report together with calculations. A detailed presentation was given to the client outlining potential technologies to meet Greenfields aspiration for 'Warm Homes, Greener Homes' standard.



The project deliverables include detailed energy strategy reports together with financial analysis of the viable systems to be installed. NLG Associates undertook detailed site surveys of Constable, Tom Davies, Weston, Oxley, Rexam Court, The Manors, Oak Yard, Bendyshe Court and Woodlands, taking into account the existing mechanical and electrical services. Full SAP calculations were undertaken of each site to establish the site wide baseline Co2 emissions, further calculations were performed to determine the low/zero carbon (LZC) technologies suitable for the refurbished blocks.



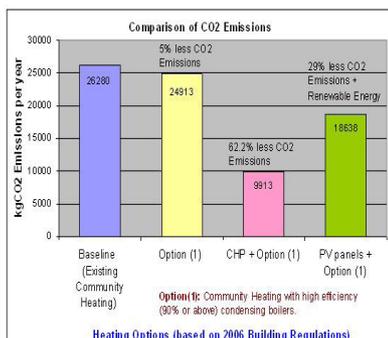
NLG Associates were mindful that all the building services remedial works were to be undertaken with minimal disruption to the residents together with financial viability for the client. Various LZC technologies comprising of wind turbine, air source and ground source heat pumps, solar thermal, solar photovoltaic's (PV) panels, biomass and combined heat & power (CHP) units were assessed.

Taking account of the site constraints, three options were proposed comprising of the following :-

Option (1): to replace the existing district heating boilers with 90% efficient condensing boilers, reducing Co2 emissions by 5% approximately.

Option (2): Option 1 combined with renewable energy from 72 No. PV panels Generating 13kWp electricity, utilising the advantage of south facing roof. This option will reduce Co2 emissions by 29%.

Option (3): Option 1 together with a CHP unit (10kWe, 17kWt output) combined with high efficiency condensing boilers will achieve a 62.2% reduction in Co2 emissions.



Comparison charts outlining savings from selected technologies were produced, allowing the client to have a clear understanding of the savings generated from recommended technologies. Due to limited financial resources, the client selected the PV option as an immediate implementation with an option of installing a CHP unit in the future. With PV the client can benefit from the feed in tariff estimated at delivering payback in 9.5 years approximately.

In addition electrical services comprising of lighting, small power, lightning protection and fire alarm systems were upgraded and accommodated. NLG Associates scope of works and specifications together with drawings, schematics and sections enabled other design team members to carry out full coordination of building services and architectural layout of the building.