Project Title:	'The development of rational strategies for the design of zero carbon commercial buildings.'
Principle Investigator:	Dr R. Edwards (University of Manchester)
Project duration:	01/10/08 – 01/10/09
Grant Value:	£32613.00

Most existing buildings in Britain were constructed with little regard for energy conservation and consequently there is a large potential for improvement. Buildings currently represent 75% of Britain's demand for heat; but with new builds insulated and designed effectively; this could be reduced to almost zero. The Government has announced plans for all new non domestic buildings to be "zero carbon" in operation by 2019, "zero carbon" is a term for a building with zero net energy use, but this objective brings with it a huge number of technical complexities.

There are many design approaches and permutations of energy saving technologies by which "zero carbon" performance might be achieved. One possible solution is to use buildings as platforms for energy generation devices such as solar panels or small wind to help offset its fossil fuel consumption. This approach would still not address the key problem of reducing the overall demand for electricity. Another extreme approach would be to construct a building using a radically different type of construction which could address overall energy demand. However the resulting building may well be impractical from the users' perspective and uneconomical from the developers. In order for one of these proposed solutions to make a significant impact on the UK's total energy they must be widely taken up by the construction industry. To achieve this designer's must be able to demonstrate their solution is feasible not only technically but economically because construction is a cost driven industry. Understanding of the technical issues is at an early stage and such knowledge that exists is fragmentary and there has been minimal consideration of the economic implications of zero carbon design. A design consultancy that could bring together the technical and the economic would gain a significant commercial advantage and would undoubtedly be able to bring in extra work as a result of this vital expertise.

The project brings together technical and economic issues in order to produce a set of feasible design solutions for zero carbon commercial buildings for a range of designated regions within the North West. It will identify the most cost effective method of achieving "zero carbon emissions" and identify any knowledge gaps which will need to be filled by means of future research.