Sustainable Construction CPD

Module 7/15
Renewable Energy

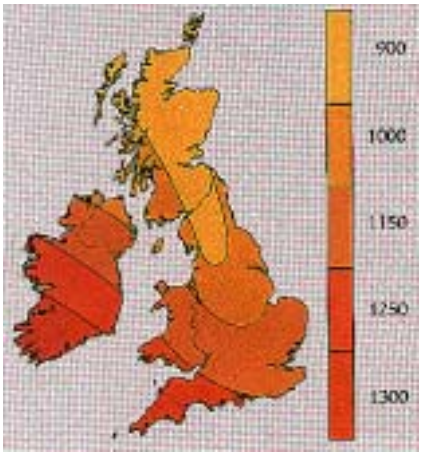
CPD Programme by Gaia Research: Info from 0131 558 7227 and www.gaiagroup.org

Sustainable Building Design

Achieving sustainability requires us to live within the limits of the earth's capacity to provide the materials for our activities and to absorb the waste and pollution which our activities generate.

The construction, fit out, operation and ultimate demolition of buildings is a huge factor in human impact on the environment both directly - through material and energy consumption and the consequent pollution & waste - and indirectly - through the pressures on often inefficient infrastructure.

There is already a significant amount of information available to all professions on how to design buildings which are attentive to the needs of sustainable construction. But most practice still falls radically short of applying even the most easily applicable principles in most projects. Opportunities which could bring real advantage are being missed every day. The result is that buildings and the industries which supply building designers with products, materials and services are less efficient, less economical and more polluting than they might otherwise be.



This module aims to investigate renewable energy technologies and how they can contribute to meeting sustainability objectives. The information is not exhaustive, but it is intended to give the reader a grasp of the priorities affecting energy sourcing in the design of buildings and a realistic perspective on the range of issues which will affect decision making. There is already a range of good quality guidance available but it is not always clear to designers where they can get answers to the most commonly asked questions. This document directs the reader to the contemporary tools and guidance which will assist in implementing best practice. It will be a success if it excites interest and also if it provides assistance in communication between the disciplines which can follow through into better quality spaces.

Continuous Professional Development

This CPD module is the seventh of a series which will summarise the existing sources of best practice guidance on sustainable building design. These modules do not attempt to repeat what other documents contain, except to summarise the most important environmental issues.

Each module provides information on critical aspects of a particular topic and sources of further guidance by way of an annotated bibliography. Case studies highlight best practice solutions to improve understanding and encourage implementation. Each module is supplemented by seminars which provide opportunity to discuss design projects in interdisciplinary groups with peers and specialists.

It is hoped that over time the modules will act as a catalyst in the creation of distance learning opportunities which will allow participants to share information on live design projects with their own and other professions.

With the support of the professional institutions we hope to develop an accreditation scheme to encourage consistent application of sustainable design skills to building projects.

Objectives

By the end of this module the reader should be able to:

- Respect the fact that energy sourcing has wide ranging impact;
- Understand that issues concerned with renewable energy selection and system design and their relevance throughout the building life cycle and beyond;
- Appreciate that careful selection of appropriate energy generation technologies can contribute significantly to reduction in pollution of the local and global environment;
- Make informed decisions to assist in designing buildings that use sustainable design principles in energy technology selection without excess cost and maintenence implications and without detriment to fitness for purpose;
- Communicate to clients the importance of careful energy sourcing in seeking to achieve sustainable development;
- Appreciate that selection of renewable energy sources generates architectural opportunities;
- Appreciate best practice in renewable energy in relation to building services strategies;
- Understand the requirements and constraints in the selection of different technologies, in relation to operation, maintenance and control strategies;
- Understand the requirements and constraints in the selection of different technologies, in relation to local climatic and vernacular context;
- Understand that sustainable design can contribute to local economies through development of materials and skills with local added value;
- Understand contemporary policy and funding support issues in relation to renewable energy technology;
- Understand and be able to access the guidance, tools and techniques available for staying abreast of choices and issues in renewable energy.

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Top left photo: Shettlestone Housing by John Gilbert Architects with geothermal heating. Bottom left solar energy availability in the UK in kWh/m^2