Sustainable Construction CPD

Module 1/15
Materials Selection

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.

Continuous Professional Development

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

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

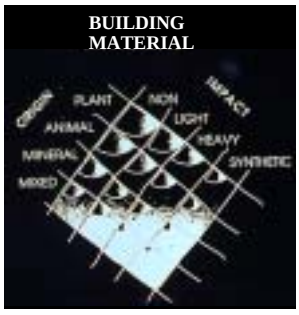
It is hoped that over time the modules will act as a catalyst in the creation of distance learning opportunities which will allow participants to share information on live design projects with their own and other professions.

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

Objectives

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

- Understand that issues concerned with sustainable materials selection are relevant throughout the construction process, the building life cycle and beyond;
- Respect the fact that material selection has wide ranging impact;
- Communicate to clients the importance of careful materials selection in seeking to achieve sustainable development;
- Make informed decisions to assist in designing a building that uses sustainable design principles in materials selection without detriment to fitness for purpose or over-engineering;
- Appreciate that careful materials selection can contribute significantly to reduction in pollution of the indoor, local and global environment. Hence it can contribute to improved health, welfare and productivity of building occupants and to improved planetary ecology;
- Appreciate that selection of sustainable materials generates architectural opportunities;
- Appreciate best practice in materials selection in relation to building services strategies;
- Understand the requirements and constraints in the selection of different materials, in relation to operation, maintenance and control strategies;
- Understand the requirements and constraints in the selection of different materials, 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 and be able to access the guidance, tools and techniques available for staying abreast of choices and issues in material selection;



Rule of Thumb for Materials Selection
The more inorganic and processed it becomes the more it requires to demonstrate its benign pedigree.

This module aims to highlight aspects of materials selection which can contribute to sustainability. This information is not exhaustive, but it is intended to give the reader a sound and broad grasp of the issues and priorities affecting materials selection in the design of places, buildings, services and objects and a realistic perspective on the range of issues which will affect decision making.

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Top left photo: German Housing in Kamen, by Joachim Eble, constructed using 100% eco-labelled materials.