Sustainable Construction CPD

Module 3/15

Water and Sewage Management

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 that 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 and 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 that 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 that 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 third in a series which summarises the 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 in 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.

"The society which scorns excellence in plumbing because it is a humble activity, and tolerates shoddiness in philosophy because it is an exalted activity, will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water."– John W. Gardner.

Content

In this module we consider the flow of water and wastewater through buildings. We look at its efficient use, appropriate treatment of wastewater discharged and the potential for reuse. We also consider rain falling on and around buildings, the potential for reuse and appropriate discharge.

All good building design should respond to the local environment. However, sustainable water management is particularly sensitive to context and resistant to standard bolt-on solutions.

The module aims to give a strategic overviewand to demonstrate relevant principles. Recommended introductory texts for water efficiency, wastewater treatment and sustainable urban drainage are given in the bibliography and will be essential to a thorough understanding of the subject.

Objectives

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

Understand that appropriate water and sewage management are relevant through the design and construction process, and beyond;

Respect that water use and management has wide ranging impact;

Appreciate that good water management contributes to reduction in pollution and to improved ecology;

Communicate to clients the importance of careful water use and wastewater management, including cost in use benefits;

Appreciate the importance of site-specific solutions;

Appreciate that attention to detail is more important than grand ideas when it comes to saving water and energy;

Appreciate that water efficiency can lead to improved function and comfort;

Be able to access the guidance, tools and techniques available for assessing options and issues in water use and management so as to:-

- Make informed judgements about the credentials of 'green' technologies for water management;
- Evaluate the appropriateness of water efficiency measures, rainwater reuse and water recycling.
- Make informed decisions regarding on-site wastewater treatment.
- Understand the operation, maintenance and control requirements and constraints of different strategies.

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Top left: Image courtesy of the Environment Agency. For information on how and why you should be saving water, log onto www.environment-agency.gov.uk/savewater
Bottom Left: Urine separating WC in Swedish school © Elemental Solutions.
The authors would like to express thanks to all those who commented on the draft