

Internet resources for

# environmental engineering



## The best of the Web

**Welcome to this guide to the best of the Web for Environmental Engineering.**

In these pages you will find a selection of some of the most useful websites for students, lecturers and researchers working in Environmental Engineering.

The selection is by no means exhaustive, but it should give you a flavour of the range of resources available on the Internet for education and research.

## Supporting your Internet research

For those interested in exploring the wider Web, we offer free Internet search and training services for further and higher education via *Intute* – details of these can be found at the end of the guide.

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## Intute

This booklet is brought to you by *Intute*, a free Internet service providing you with access to the very best Web resources for education and research, selected and evaluated by a network of subject specialists.

[www.intute.ac.uk](http://www.intute.ac.uk)

## Expert advice

*Intute* services are developed in collaboration with staff from over seventy universities, colleges and research institutions across the UK – pooling expertise to share nationally.

Your guide for this booklet is:

**intute: science, engineering and technology**

– based at Heriot-Watt University and the University of Manchester.

*Intute* is funded by the Joint Information Systems Committee (JISC).

### Contact:

[www.intute.ac.uk/feedback.html](http://www.intute.ac.uk/feedback.html)

*Note: Intute was formerly known as the Resource Discovery Network (RDN).*

*Intute: Science, Engineering and Technology comprise the former RDN hubs, EEVL, PSIGate and GESource.*

## Journals and magazines

*Many paper journals and magazines have online versions; some exist only in online form. Tables of contents and abstracts are usually provided for all users. In some cases full-text articles have to be paid for, but many, like those listed here, have at least some free full-text articles. Intute: Engineering points to many freely available journals and magazines.*

### Home Power Magazine

<http://www.homepower.com/>

This has articles on renewable energy systems such as photovoltaic, wind and water power for domestic use as well as an index of back issues. There are schematics of renewable energy system and also descriptions of how various alternative energy sources work. Events listings, job vacancies, links to related sites and news items are provided. An online store for books and magazines is available.

### Renewable Energy World

<http://www.renewable-energy-world.com/>

This provides full-text articles from current and previous issues covering renewable energy topics, as well as a database of companies working in the area. Links to related sites with white papers and other technical information are provided. There is information on relevant books. Users can also subscribe to an email newsletter.

### Environmental Updates

<http://www.battelle.org/Environment/publications/EnvUpdates/>

This site contains the full-text of magazine articles from 2000 to 2005 in both HTML and PDF format covering environmental issues such as climate change, water supply, the effects of pollution on human health, pollution prevention strategies, persistent contaminants and integrated solutions. It is provided by the Battelle Memorial Institute in the USA.



## **International Journal of Environment and Waste Management (IJEWM)**

<http://www.inderscience.com/browse/index.php?journalCODE=ijewm>

This site includes sample issues with abstracts, bibliographic details and PDF format full-text articles covering environmental science, engineering, management and technology. Recent topics include landfill, liquid effluents, urban pollution and wastewater. There are original research papers, literature review reports, technical reports, case studies, conference reports, management reports, commentaries, news and book reviews. The journal is peer-reviewed and is published by Inderscience.

## **Tutorials**

*Tutorials may be provided by university departments, organisations or individuals. They can be aimed at higher education, further education, schools or the general public.*

### **Interactive Learning System for Renewable Energy (ILSE)**

[http://emsolar.ee.tu-berlin.de/~ilse/index\\_e.html](http://emsolar.ee.tu-berlin.de/~ilse/index_e.html)

This online tutorial site contains four sections: energy policy, solar energy, wind energy and tools. The energy policy pages offer three headings: beyond the limits; climate and energy; sustainable economy; and market and society. The solar energy section provides information on solar radiation, solar cells, setting up solar modules and fields of application for photovoltaic systems, solar heat collectors, and thermal solar power stations. Wind energy deals with: the wind; wind power; methods of exploitation; plant concepts; electrical engineering basics; operation of wind power plants; design; economic efficiency/statistics. Quizzes and tools are provided. ILSE is part of the Institute of Electrical Power Engineering Renewable Energy Section at the Technical University of Berlin.

### **World Lecture Hall for Environmental Science**

<http://web.austin.utexas.edu/wlh/results.cfm?count=1&from=browse&DescriptorID=34>

This site contains links to university-level academic courses that are available on the Web. Some are distance-learning courses delivered entirely over the Internet while others are designed for students at particular institutions. There is also a list of environmental science courses from various institutions. The WLH is based at The University of Texas at Austin, USA.

## Water Wells Tutorial

<http://www.lifewater.ca/ndexdril.htm>

This site is provided by Lifewater Canada and includes detailed instructions on how to construct and maintain a well and hand pump. It is intended for use in the Third World to provide cheap access to safe drinking water.

## MIT OpenCourseWare – Civil and Environmental Engineering

<http://ocw.mit.edu/OcwWeb/Civil-and-Environmental-Engineering/index.htm>

Gives free, searchable access to MIT's course materials. Courses in this section include Fundamentals of Ecology, Computing and Data Analysis for Environmental Applications, Chemicals in the Environment: Toxicology and Public Health, Regional Socioeconomic Impact Analysis and Modeling, and Waste Containment and Remediation Technology. Course pages include a syllabus, lecture notes, assignments, required reading lists, exam papers, links to related resources, tools and projects, and simulations.

# Organisations and associations

*These can be professional organisations, charities, lobbyists, or associations of companies working in particular areas. Their areas of responsibility often include taking part in public consultations on policy issues, regulations and standards.*

## National Energy Foundation

<http://www.nef.org.uk/>

This includes details of its projects to promote efficient, innovative, and safe use of energy, focusing on renewable energy and energy efficiency as well as the services it provides, including consultancy and education. Illustrated articles on energy issues such as carbon dioxide emissions and green electricity are provided. There is information on various types of environmentally friendly energy such as solar heating, photovoltaic, wind power, hydropower, biomass and geothermal. News stories, a list of events around the world and links to related websites are available. The National Energy Foundation is an independent educational charity based in the UK.

## Chartered Institution of Wastes Management

<http://www.iwm.co.uk/>

This has an archive of newsletters with links to articles covering the waste and resource management industry in the UK as well as full-text technical reports. There are details of publications that can be purchased from the institution, plus a searchable database of job vacancies. Information on the institution's role in the development of scientific, technical and management standards, the implementation of practical competency policies and procedures, and the promotion of high professional standards is provided.

### **International Hydropower Association**

<http://www.hydropower.org/>

The IHA tackles social, environmental, technical, financial and strategic issues restricting the use of hydropower resources and seeks to increase awareness of the role hydropower can play in sustainable development. The site features reports relating to hydroelectricity and topical argument on the ongoing question of its benefits versus the environmental and social damage it may inflict. The work of its six Permanent Committees (Public Awareness, Environment, Finance and Economics, Technology, Pumped Storage and Research and Education) is reported.

### **British Metals Recycling Association**

<http://www.recyclemetals.org/>

This site provides articles about recycling metals as well as press releases and policy statements. There are links to members' websites and to the websites of other relevant organisations.

### **International Solar Energy Society**

<http://www.ises.org/>

Summaries of projects on the technology and implementation of renewable energy are given. A list of conferences is provided. There are links to ISES sites around the world, to WIRE (Worldwide Information System on Renewable Energy) and to the magazines Solar Energy Journal and ReFocus Magazine. White papers are also available.



## IEA Bioenergy

<http://www.ieabioenergy.com/>

This has a library of publications with abstracts online and downloadable full-text documents. There is a worldwide 'what's on' section, and details of research and development networks are provided. It was set up by the International Energy Agency with the aim of improving cooperation and information exchange between countries that have national programmes in bioenergy research, development and deployment.



## Water UK

<http://www.water.org.uk/>

This has information about UK water, a news archive, speeches, policy statements, position papers, water facts and newsletters addressing issues of common interest to UK water operators and wastewater service providers and to communicate its views. There is a forum, a list of links and a 'water for health' section. Information on conferences and events is provided. Members can view full-text articles on the site library section.

## Resource guides and information sites

*These are designed to provide a range of articles and links to information on other websites which is relevant to their particular subject area.*

### Enviropedia

<http://www.enviropedia.org.uk/>

This includes detailed full-text articles with cross reference links to definitions covering topics such as acid rain, climate change, air quality, global warming, sustainability, weather patterns and ozone depletion. There are links to relevant books and websites. A reference and bibliography list is provided.

### Photovoltaic Power Resource Site

<http://www.pvpower.com/>

This site includes a detailed description of photovoltaic energy equipment and the various technologies and materials used in it. There is information on research, descriptions of projects around the world which use photovoltaic energy and news items. Lists of manufacturers and training companies are provided. A bibliography, FAQ, a recruitment section and a list of conferences are given.

## **World-wide Information System for Renewable Energy (WIRE)**

<http://wire.ises.org/>

WIRE is provided by the International Solar Energy Society and offers a suite of information resources and tools for the renewable energy community. It covers current affairs, including news, newsletters, and projects. Details of conference proceedings are given, with some papers available as full-text in PDF format. Other publications include: a glossary of terms, a Perspectives page with a few full-text items, research reports, and white papers. There is a conference calendar, profiles of organisations, and country statistics. A discussion forum is offered. A components module contains system elements for PV installations, while there are also links to sites with educational content, an image library and a links library. Information on books and software is provided. There is a restricted area, access to which requires (free) registration and which allows users to contribute to the site. An email newsletter is available, as is a site search facility.

## **Fuel Cell Today**

<http://www.fuelcelltoday.com/>

Fuel Cell Today contains a news section and a reference centre. The latter provides a media kit and background information giving details of key issues, history, types, and uses and applications of fuel cells. It also offers a glossary, links to related sites and some FAQs. A knowledge bank section comprises industry, organisation and people directories, full-text reviews, reports and articles, and details of patents and legislation. Events are listed, and community pages give access to discussion boards and an industry forum. The performance of publicly traded fuel cell companies can be monitored, and there is a section for job opportunities.

## **HyWeb**

<http://www.hydrogen.org/index-e.html>

HyWeb promotes the use of hydrogen as renewable energy. The website in German and partially in English, provides information about the organisation's vision, companies and products, news and events. Developments in the hydrogen arena are covered by the freely available HyWeb Gazette. A searchable knowledge section provides various studies including a survey of acceptance of hydrogen as a fuel, and downloadable articles on all aspects of hydrogen and its applications, a projects database and a glossary of terms.



## Microhydro Web Portal

<http://microhydropower.net/>

This site provides definitions of the topic, and also an illustrated introduction to microhydro basics. It offers a discussion forum, a business database of companies involved in the field, and an expert database. Literature on the subject is identified, together with links to sites of related interest. In addition, case studies are highlighted, and a microhydro Web ring is available. Some software is available to download with documentation and the full-text of Layman's guide on how to develop a small hydro site is available in PDF format.

## Pollution Online

<http://www.pollutiononline.com/>

Pollution Online is a source for product, technology, regulatory and management information for the pollution equipment and control industries. This site includes directories of companies and products, an industry news section and various other feature articles including case studies, a downloads section, jobs search and links to related sites. Information is given about trade magazines and newsletters.

## **RadWaste**

<http://www.radwaste.org/>

This provides information on radioactive waste processing, storage, disposal, handling procedures, characterisation, transportation and decommissioning as well as mixed waste issues and health. It includes links to government agencies, laws, regulations, standards, technical reports, research centres, technical consultants, international organizations, professional societies, trade associations, environmental organizations and technical journals.

## **Environmental Organization Web Directory**

<http://www.webdirectory.com/>

This is a directory of links to businesses, databases, education, employment, government agencies, health, conservation, news, events, products, publications and newsgroups dealing with renewable energy, pollution, recycling, sustainable energy, transportation and water resources. The site also provides an environmental bulletin board and a letters page.

## **Electronic Waste Guide**

<http://www.ewaste.ch/>

This guide includes case studies on the disposal of obsolete electronic equipment as well as a glossary of terms. There are news stories, statistics and a discussion forum. Presentations, reference documents and guides can be downloaded. The site is provided by the Swiss State Secretariat for Economic Affairs (SECO).

## **Water Framework Directive Information Centre**

<http://www.euwfd.com/>

This site includes a glossary of technical terms as well as PDF format documents covering the management of UK water resources on the basis of the European Water Framework Directive. There is a PDF format newsletter and also a FAQ about the Directive.

## **Letsrecycle**

<http://www.letsrecycle.com/>

Provides news and information on recycling and waste management for businesses, local government and community groups. There is information on legislation relating to the disposal of a range of products as well as an archive of news articles. A directory of suppliers and service providers is available. Information on events, job vacancies and links to related sites are provided.

## Government agencies

*Government sites provide information on legislation, enforcement, standards, projects and incentive programmes.*

### European Environmental Law

<http://www.eel.nl/>

Provides full-text cases, legislation and other materials related to European Environmental Law. Apart from these primary sources, several dossiers and articles offer a more in-depth view on specific issues. Also available are details of conferences, reviews of new publications and a discussion forum. Links to related sites are given.

### Drinking Water Inspectorate

<http://www.dwi.gov.uk/>

The DWI is responsible to the Department for the Environment, Food and Rural Affairs for checking that water companies in England and Wales supply fully potable water and meet regulatory standards, and for investigating consumer complaints and incidents affecting water quality. The site describes the work and responsibilities of the DWI, provides a business and technical section including the text of relevant regulations, reports, papers and presentations, consumer information with FAQs on topics such as chlorine, approved products and process information for use in connection with water supply and detailed press releases back to 1998.

### EPA Hazardous Waste Clean-Up Information

<http://www.clu-in.org/>

Includes articles describing the operation of equipment and techniques for cleaning up hazardous waste and contamination. There are PDF format white papers on policies and strategies. News stories, details of events and information on regulations are provided. Databases on remediation and monitoring are available. Users can subscribe to an email newsletter. The site can be searched.

### Envirowise

<http://www.envirowise.gov.uk/>

Envirowise is a UK Government programme to promote the effective use of raw materials and the avoidance of waste. The site gives information about the programme and the products and services offered. Details are given about the Environment and Energy helpline, on-site waste reviews, waste minimisation clubs and events such as best practice seminars and workshops. Also available are details of the programme's more than 350 publications including benchmarking guides, case studies, good practice guides, newsletters, programme information and materials. The tools section includes videos, Excel spreadsheets and PowerPoint presentations which may be downloaded or ordered. Publications and tools are free of charge to any organisation or individual within the UK, provided they have registered with the site (again, free of charge).

## Market Transformation Programme

<http://www.mtprog.com/>

This aims to encourage products which do less harm to the environment, using less energy, water and other resources. It also aims to encourage public awareness of government policy and related issues in the UK. There are industry news stories and also review papers dealing with different areas of environmentally friendly technology. Information on policies and issues is provided as well as a buyer's guide for consumer goods. Reports can be downloaded in Word or PDF format. Links to related sites are provided. There are conference announcements.

## Discussion groups

*Some Internet discussion groups are open to anyone, others are restricted to members or may have posts moderated.*

### Bioremediation Discussion Group Home Page

<http://www.bioremediationgroup.org/>

Bioremediation is defined as the use of living organisms to reduce or eliminate environmental hazards resulting from accumulations of toxic chemicals and other hazardous wastes. The BioGroup includes over 2,400 members worldwide, including environmental consultants, industry representatives, regulators, researchers, educators, and students. BioGroup membership is open to environmental engineers, hydrogeologists, soil scientists, microbiologists, environmental chemists, and all who wish to contribute. The archives can be browsed or searched. The site has information on the group, and links to bioremediation websites.

### The Environment Site Forum

<http://www.theenvironmentsite.org/Forum/>

This forum has threads discussing a wide range of topics including environmental news, global warming, climate change, solar energy, GMOs, energy conservation, wind energy, fossil fuels, nuclear energy, biofuels, deforestation and recycling.

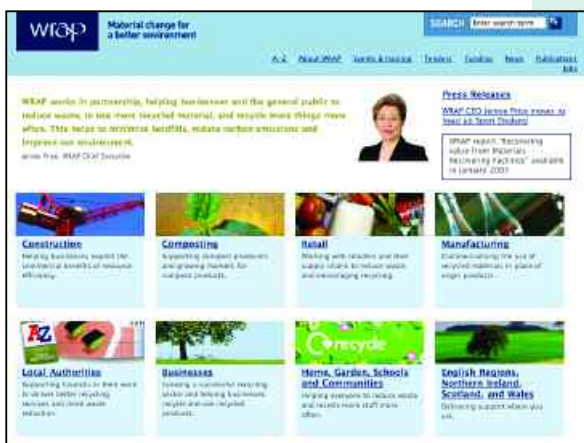
## Research centres

### Waste Management and Research Center

<http://www.wmrc.uiuc.edu/>

Includes information about the centre including reports on current projects to reduce and manage solid and hazardous wastes released to air, water or land.

There are full-text fact sheets and research reports on a range of topics and a bibliography of works by members of the centre including some available in full-text. There are also reference guides on a number of subjects covering a range of publications and websites which include links to full-text articles. WMRC is based at the University of Illinois at Urbana-Champaign and is a division of the Office of Scientific Research and Analysis in the Illinois Department of Natural Resources.



## Databases

### PAN Pesticides Database

<http://pesticideinfo.org/>

The PAN Pesticide Database, a Pesticide Action Network North America project, contains detailed information for about 5,400 pesticide active ingredients and their transformation products, as well as solvents used in pesticide products. Human toxicity (chronic and acute), aquatic ecotoxicity, regulatory information and types of use are stated. The database is searchable by product or chemical name and the advanced searches allow users to search for pesticides that meet certain criteria – toxicity type, regulatory category, chemical class, and more.

### DAIN Metadatabase of Internet Resources for Environmental Chemicals

<http://www.wiz.uni-kassel.de/dain/>

Allows cross searching and browsing across a very large number of environmental chemical databases. Databases to be searched can be selected by name or by subject. Links to related sites are provided.

## Commercial companies

*These can have useful product information, data sheets and technical drawings. They may also have software tools, downloads, articles and FAQs relevant to the company's market. Unlikely to offer an unbiased viewpoint, but nonetheless potentially very useful when considered along with other sources of information.*

### **Bergey Windpower Co**

<http://www.bergey.com/>

Includes spreadsheet models of power generation characteristics and costs as well as a series of short descriptions of factors to consider for wind energy. There are descriptions, photos and specifications of small wind turbines and wind-electric water pumping systems produced by the company and also articles and FAQs on a variety of topics. Short studies of projects are available.

### **Energy Equipment Testing Service Ltd**

<http://www.eets.co.uk/>

This is a provider of equipment and services for companies in the solar and general renewables industry. The site includes descriptions of projects undertaken by the company as well as specifications of products. Product brochures are available.

### **Lenntech Water Purification and Air Treatment**

<http://www.lenntech.com/>

The site gives details about the company, its products and services for environmentally friendly water treatment and air purification solutions for water disinfection, water recycling, odour control and water filtration. It is divided into the sections: odour control; water treatment; air treatment; products; cooling towers; applications, which contains some brief documents on various treatment processes; and a library containing an FAQ section, details of relevant standards and industry links. Lenntech is a spin-off of the Technical University Delft.

### **Oil Cleaning Bio-Products Ltd**

<http://www.ocbp.co.uk/>

OCBP is a supplier of the HEG range of biodegradable cleansers, absorbents and bacterial bioremediation products. It is aimed at businesses in all sectors in their dealing with contaminated land, with spills of oil, other organic chemicals and acids, and with contamination and effluents arising from routine plant maintenance and from manufacturing and processing operations. The site gives information about the company and its products, with specifications and price lists.

## Discover the best of the Web using Intute

The Internet can be a powerful tool for learning, teaching and research, offering a huge range of information and services. However, finding relevant resources online can be a daunting task, and issues of trust, quality and poor search skills are very real and significant concerns – particularly in education and research contexts.

*Intute* exists to help students, teachers, researchers and librarians make sense of the Web by providing access to the very best Internet resources for education and research, selected and evaluated by a network of subject specialists.

### intute : science, engineering and technology

- The **Intute database** provides access to thousands of high-quality Internet resources, selected and described by subject specialists, and covers all key areas of the physical sciences, mathematics, computing, engineering and geography.
- The **Virtual Training Suite** offers free Internet training with a set of “teach-yourself” online tutorials, designed to help students develop their Internet research skills.
- Free **support materials** for universities and colleges, such as flyers, posters, leaflets and presentations as well as a range of “best of the Web” subject booklets.
- **Recommended subject services** - such as **The World Guide** comprising guides to over 270 countries, interactive maps, thousands of satellite images, etc.; **Ejournal Search Engine (ESEE)** with access to over 250 freely available full-text ejournals relevant to engineering, mathematics and computing; the **Spotlight Magazine** providing a growing database of unique articles on current topics in science; and thematic **Timelines** containing dozens of key events which have shaped the world as we know it, together with suggested Intute searches for further research.



## Getting involved with Intute

- Sign up for a personal **MyIntute** account, which provides weekly email updates of recently added websites and allows you to save resources of interest.
- **Working with Intute.** Join our community of users of online resources by suggesting sites for the database or embedding *Intute* services in your own websites and Virtual Learning Environments using our sophisticated **MyIntute Include** services.  
<http://www.intute.ac.uk/myintute/>

