

LANDFILLS AND LANDFILLING ON THE INTERNET.

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SUMMARY: The Internet, the World Wide Web (www) is the most outstanding means for present and future communication. Currently, the WWW is mainly used for e-mailing, presentation and publishing of legislation. Unfortunately today there is not enough published. However, a lot of valuable information is available in the Web. However, you will face a problem if you start to surf the net. You have to have the correct Internet “address” (URL) of the institution, consultant or scientist you want to get the information from. In the poster presentation, examples are given of what is available and what benefits one can get using the information available on the Web. There will also lists been provides of some of the most interesting URLs. Last but not least, recommendations will be given as to how the Internet could and should be used by smaller companies, consultants, scientists, etc.

1 Introduction

The Internet, the World Wide Web (www) is the most outstanding means for present and future communication. It can be and is used for fast message transfer (e-mail), for fast and cheap transfer of drawings or photographs, and last but not least for publishing laws, rules, regulations, guidelines, statistics, publications on landfill issues.

Currently, the WWW is mainly used for e-mailing and presentation by companies, but also by ministries and agencies. Unfortunately today there is not enough published. However, a lot of valuable information is available in the Web.

Most of us, interested in landfilling and landfill design, landfill construction, landfill operation as well as landfill closure and post closure, are always hunting for the latest information. To get information from your own country may be difficult enough, but getting information from other countries is much harder. Perhaps you would have to wait for something like the next Sardinia International Landfill Conference to get an overview on what is available in various countries. But if you are keen to look in the documents referred to in the oral or written presentations you feel as if you hit a brick wall: it’s impossible to go on. However, there is a simple and easy to use solution for getting information on landfilling from all over the world: surf the Internet and you may find what you are looking for.

There is a lot of information on landfilling already published, and there will be much more on the days the Sardinia 99 International Landfill Conference takes place, but unfortunately it is not available on the Web. I hope very soon it will become normal to publish laws, guidelines, etc. and technical papers free of charge on the Internet in most countries.

However, you will face a problem if you start to surf the net. You have to have the correct Internet “address” (URL) of the institution, consultant or scientist you want to get the information from.

In my poster presentation, examples are given of what is available and what benefits one can get using the information available on the Web. I will also provide lists of some of the most interesting URLs. Last but not least, I will give recommendations as to how the Internet could and should be used by smaller companies, consultants, scientists, etc.

For the purpose of this publication I have tried to refer mostly to homepages available in English. I'm sorry about missing out all of the good and exciting websites available in other languages.

2 Ministries and Environmental Protection Agencies

Basic information on environmental issues in general and landfill issues in particular should be provided by Ministries for the Environment and/or Environmental Protection Agencies.

In fact rules and regulations can be found very often, but data and facts on landfills are not very often available. Good examples found are:

1. Homepage of the Austrian Ministry for the Environment (unfortunately not in English)
<http://www.bmu.gv.at/>

From this site there are links to the very important Homepage of the Law-Information System provided by the Office of the Chancellor of the Federal Republic of Austria (RIS Rechtsinformationssystem des Bundeskanzleramtes)

<http://www.ris.bka.gv.at/> where you can find most, if not all legislation, and of course the Austrian Deponieverordnung (Landfill Order).

In addition the Austrian Environmental Protection Agency Homepage

<http://www.ubavie.gv.at/> is worth looking at, in particular if you are interested in landfill issues and contaminated land cleanup (including abandoned waste site cleanup). A Catalogue with Environmental Data has also been published (<http://udk.bmu.gv.at/>).

2. The Homepage address of the Danish Ministry of Environment and Energy is <http://www.mem.dk/ukindex.htm>. Here legislation is also published (<http://www.mst.dk/rules/>). So you can easily read through e.g. the Waste Deposits Act online and print the most interesting paragraphs on landfilling or disposal.

Selected publications in English, are available (<http://www.mem.dk/publeng.htm>).

<http://www.mst.dk/magazine/issue7/catalogue/default.htm> says that information about contaminated sites in Denmark is being catalogued, but no details are given about technical features at present.

3. The Homepage of the German Ministry for the Environment, Nature Conservation and Nuclear Safety (<http://www.bmu.de>) (not in English) offers regulations for download, but no facts on landfilling.

On the Homepage of the German Environmental Agency (Umweltbundesamt UBA) you'll find a nice and very informative site on Contaminated Sites (<http://www.umweltbundesamt.de/altlast/web1/start.html>). Facts and data about landfills or landfilling are a little bit general, but there is some statistical data available. Further information on landfilling can be found in the Annual Reports of UBA, but they are only in German.

More detailed information on landfilling and clean up programmes can be obtained from homepages published by State Ministries, e. g.

Bavaria

(<http://www.bayern.de/STMLU>), which gives information on all landfills in Bavaria, the waste disposed of and the expected landfill lifetime for 1997.

Hamburg

(http://www.hamburg.de/Behoerden/Umweltbehoerde/duawww/dea8/27e2_22e.htm) with

comprehensive facts on the contaminated land problems and clean up operations at hazardous wastes sites (incl. photographs), e. g. on the closed Hamburg-Georgswerder Landfill.

4. Especially interesting is the homepage of the United States Environmental Protection Agency US EPA (<http://www.epa.gov>) There is not enough space here to mention all the interesting sites on this EPA Homepage.

Some examples are:

- Help to browse through the sites offered by EPA
<http://www.epa.gov/epahome/browse.htm>
- EPA - Laws and Regulations <http://www.epa.gov/epahome/laws.htm> More than a dozen major statutes or laws form the legal basis for the programs of the Environmental Protection Agency (EPA).

Of interest concerning landfill issues are

- Content referring to hazardous waste <http://www.epa.gov/epaoswer/hazwaste/>
- Content referring to non hazardous waste landfilling
<http://www.epa.gov/epaoswer/osw/non-hw#landfill>
- Corrective actions <http://www.epa.gov/epaoswer/osw/catalog.htm>

5. Very worthwhile for landfill experts, who are looking for the HELP Model on the Web, will be the Homepage published by the U.S. Army Engineer Waterways Experiment Station (WES). WES is the principal Research, Testing, and Development facility of the U.S.

The Hydrologic Evaluation of Landfill Performance (HELP) Computer Program for Landfill and Confined Disposal Facility (CDF) Design is seen as a valuable tool for landfill design.

- An introduction is given: <http://www.wes.army.mil/el/elmodels/helpinfo.html>.
- <http://www.wes.army.mil/el/elmodels/index.html>
- One can download HELP: <http://www.wes.army.mil/el/elmodels/index.html>.
- Visual help is given for the use of HELP:
- http://www.flowpath.com/Software/VisualHELP/Visual_HELP.html.

3 Consultants on the Internet

Consultants often work on international projects and/or are speakers at international conferences. Therefore many homepages are available written in the mother tongue and in English, giving information on projects done or planned projects as well as publications written.

Examples for consultants on the Web publishing interesting papers or project summaries are:

IGB Geotechnical and Environmental Engineering <http://www.igb-ingenieure.de/homeeng.htm>

HYDROPLAN Ingenieurgesellschaft <http://www.hydroplan.de/engframe.htm>

RYTEC LTD <http://www.eucanet.com/business/rytec.html>

Aspinwall & Company Consultants in Environmental Management
<http://www.aspinwall.co.uk/>

4 Companies on the Internet

Companies purchasing products, machines, etc. interested in international commerce usually publish homepages in English. Advertisements and product information are company specific. Products of interest for landfilling are : geosynthetics, drain pipes, compacting machines,

weighbridges, wheel cleaning facilities, leachate treatment plants, landfill gas utilisation facilities.

Companies are not usually very difficult to find in the WWW, as their domain mostly is very similar to the company name. (e.g. <http://www.naue.com>; <http://www.nsc.com>)

5 Science on the Internet

Most Universities have published homepages on the internet. However, the Institutes where the research on landfill issues is done is more interesting with respect to landfilling than the main homepages of the various universities.

Examples given here are restricted to:

Technical University of Hamburg, Department of Waste Management <http://www.tu-hamburg.de/aws/index-e.html>.

You can find information on fields of research, on finished and ongoing projects, on publications - not only in the fields of landfilling and contaminated sites. Short project descriptions are given and the names and addresses of the researchers are available, so that fast direct contact is possible.

Technical University of Denmark, Department of Environmental Science and Engineering <http://www.imt.dtu.dk/imt.html>.

A long list of publications on Waste (Characterisation), Landfill Processes, Landfill Gas, Landfill Leachate, Landfill Technology, Anaerobic Waste Treatment, General is published. You are informed what Ph.D. Theses and what Master Theses were produced at the Department. Current research projects are listed under <http://www.imt.dtu.dk/research/waste.htm>. A short project summary is given and name and address of each researcher is made available.

6 The European Union on the Internet

The European Union is to be found on the Internet under <http://europa.eu.int/index.htm>.

More important of course is that the European Commission (<http://europa.eu.int/comm/>) and the European Parliament (<http://www.europarl.eu.int>) are on the Web.

- Users are guided in how to get access to the documents at (<http://europa.eu.int/comm/sg/citguide/en/citgu.htm>).
- The European Commission (<http://europa.eu.int/com>) is publishing its Official Journal (<http://europa.eu.int/eur-lex/en/oj/index.html>)
- Official documents are published (http://europa.eu.int/comm/off/index_en.htm).
- Selected instruments taken from Treaties of the European Union are available (<http://europa.eu.int/abc/obj/treaties/en/entoc.htm>).
- Consolidated versions of the EU Treaty and the EC Treaty are also published (<http://ue.eu.int/Amsterdam/en/traiteco/en1.htm>).

The European Parliament Homepage address is <http://www.europarl.eu.int/>

Sometimes it is of interest to look at the results of recent Plenary discussions about the Draft Landfill Directive available, e.g. the proposals for amendments made on Feb, 9 th, 1999. If so go to <http://www.europarl.eu.int/plenary/en/default.htm>, click reports available "by Committee responsible" or "by A number" if known (e.g. A4-28/99), and find *Decision on common position (EC) No 49/98 established by the Council with a view to adopting a Council Directive on the landfill*.

7 International Organisations on the Internet

International organisations publish Homepages to make their programs available world wide, and to save the effort of conventional mailing (snail mailing). Examples for International Organisation Homepages are:

7.1 European Environment Agency

European Environment Agency (EEA) <http://www.eea.eu.int/>

7.2 ISWA International Solid Waste Association

ISWA homepage gives information on their activities <http://www.iswa.dk/index.htm>.

Announcements for conferences and, e.g the next Landfill Workgroup meeting, are made (<http://www.iswa.dk/calendar/conferences.htm>).

7.3 OECD

Information on environmental documents published by OECD are available (<http://www.oecd.org>). Free documents are available at <http://www.oecd.org/freedoc.htm>.

Very helpful may be a comprehensive collection of links to international organisations <http://www.oecd.org/env/soe/links.htm#links>

7.4 UNEP

The United Nations Environmental Program documents are available under <http://www.unep.org>.

8 Particular Means to Search on the Internet

It can be very troublesome to look for documents on the Internet. However, there are some services available to find the right path through the jungle. Particularly helpful in the search for legislation in Germany are for example:

- <http://www.umweltrecht.de/> where German legislation is offered for free download
- <http://www.umweltonline.de/> where literature is offered (on charge) but also rules and regulations (free)

A special guide through the Web on the issues "landfilling", "mechanical-biological pre-treatment of waste", "remediation of abandoned waste sites in Germany and other countries has been published (<http://www.landfillonline.de>). In addition a lot of addresses and links are provided.

9 Conclusions

There is much valuable information available with respect to landfilling of waste on the Internet. The larger portion unfortunately is written in the mother tongue of the publisher. If this is English it is advantageous for many more people all over the world. However, it is a pity that all the other Homepages can be used only by a very restricted circle of experts. I would therefore

strongly recommended to all those interested in transferring their knowledge all over the world, to publish on the Web in English in addition to publishing in their own language .

This recommendation refers in particular to Environmental Ministries and Environmental Agencies. It is a waste of money as well as a waste of time having international conferences, telling people about the benefits of their research, projects, legislation, guidelines etc., and not making the text available (or at least the basics) in a language most people are able to understand to some extent.

In particular all member states of the European Union, and all States working together in the OECD, will already have made English language documents available. But they are not available on the Internet – and they should be. This should not be expensive in terms of either time or money as it is easy to convert the documents and publish them as pdf-files.

As a minimum, summaries of articles in scientific or technical journals etc. should be available in English , to interest foreign experts and to get support for having the full text translated.

Publishers of proceedings from international conferences should be persuaded to allow the authors of papers to publish those on their Homepages. I doubt that this will result in fewer books being sold, or that fewer experts would attend the conferences. On the contrary, more people will be interested in the conference and/or the books.

Research funding organisations should require at least written English language summaries of the project reports, and should publish them on the Internet or stipulate publishing on the homepages of the Universities or elsewhere.