CER: A Handy Tool for the Civil Engineer

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Published in:
First International Conference on New Information Technologies for Decision Making in Civil Engineering

1998

This paper was presented and published in the Proceedings of the First International Conference on New Information Technologies for Decision Making in Civil Engineering, Montreal, Canada, October 11-13, 1998, vol 1, pp 65-70.

CER: A HANDY TOOL FOR THE CIVIL ENGINEER

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Abstract

Because of the dynamic developments in information technology, the role of the libraries is also changing dramatically. Access to electronic resources, as a service, has become more common for all those working in libraries.

This paper focuses on the Civil Engineering Resources (CER), an electronic resource service available on the World Wide Web. It was developed within the library of Civil Engineering at Lund Institute of Technology, compiling about 500 selected Internet Resources emphasizing the field of Building and Construction Engineering. The efforts made in the development of this website demonstrate the possibilities of providing efficient services for electronic resources as well as in the traditional media.

Keywords: civil engineering, www resource collection, internet resources, library service

1. Introduction

Civil Engineering Resources (CER) is a collection of approximately 500 selected Internet Resources in all categories emphasizing Building and Construction Engineering. CER is available on the World Wide Web at URL: http://www.ldc.lu.se/lthvbibl/civ-www.htm.

It evolved from the ordinary library work at the Civil Engineering Library, Lund Institute of Technology, as the researchers and faculty members do not always have the time or the skill to keep up with the information on Internet. Thus, it was necessary to provide the same service for electronic resources as for traditional media. Through the CER, it is easier to provide better services to researchers, individuals and corporate users interested in the subject area.

The purpose of CER is to provide a service that can be used:

- as a handy tool and a time saving "mega-bookmark"
- as a guide and starting point on Internet for further searching
- as a way of discovering and exploring new and interesting websites.

The collection provides a broad mix of both valuable and useful resources to reach more users, even those outside the academic community. It also aims to highlight the good resources from Sweden and Northern Europe, since most other similar collections contain resources from other English speaking nations, such as, US, Canada, England and Australia.

2. Description and Selection Criteria

CER is simply a "Megabookmark**",** a handy help tool with an "easy-to-use layout".
The nine categories below classify and organize the resources, for easy navigation:

- Research and Education: Civil Engineering Programmes in Universities World Wide
- International Organisations, Research Institutes, Associations, Societies, etc.
- Swedish Building Trade: professional associations, companies, marketplaces, etc.
- Discussion Forums (mailing lists and news groups), including descriptions, etc
- Civil Engineering Events (conference, seminars, meetings, etc.)
- Information Sources for searchers on your own: e.g. search guides, databases, etc.
- Civil Engineering Journals on Internet (with links to publishers, other indices, etc.)
- Miscellaneous Topics, e.g. bridges, construction, building materials, environment, etc.
- Useful Tips and Tools, e.g., image archives, softwares, glossaries, educational resources, job vacancies and not to forget fun stuff like engineering jokes and quotations, etc.

The presentation and layout have been regarded as very important in the design of the CER website. However, the layout of webpages is often rendered differently on different machines with different browsers and different resolutions. This is a challenge to achieve a compromise between presentation and accessibility. It is the intent of CER, to be 'user friendly', i.e., easy and practical for navigating through all the pages. The pages are in most cases formatted using HTML-tables in two columns, with the resources at the left column and the corresponding URLs at the right. The description of the resources contains titles and usually a brief presentation. Most of the Swedish entries in the CER website, for example in the Swedish Building Trade, are bilingual to serve as many users as possible. Since most of the resources also have their respective URLs, the CER website can be a handy reference list when printed out.

The resources have been primarily chosen because they are well-known and significant for the library's local users, as well as those which are generally interesting, useful and seem to be maintained and updated on a regular basis. Efforts were specially made to find the so called meta-sites (sites that point to other sites), market and meetingplaces in every topic as starting points for further searches.

It is impossible to choose the 'most useful sites', since usefulness depends entirely on the information required by the searcher at a given time. Thus, it is important to have a broad range of resources. Furthermore, even though all resources in the compilation have to meet a minimum quality standard, the required structure and coverage of the collection influence the selection. Thus, a resource of lower quality is also included if the options from the Internet are limited.

Many of the best resources are found in the major well known Subject Directories, such as, *Argus Clearinghouse* [1], *BUBL Information Service* [2], *EEVL, Edinburgh Engineering Virtual Library* [3], *The Scout Report for Science & Engineering* [4] *World-Wide Web Virtual Library: Civil Engineering* [5], *Yahoo*: *Civil Engineering* [6] etc., which all use different rating systems or criteria to include only the good quality sites.

Other specialized Civil Engineering directories which are worth mentioning *are ICARIS Construction Resources Database* (Slovenia) [7], *Construction Information Sources* (Canada) [8], *Construction IT Sites* (Finland) [9], etc. Thus, it has been useful to make bookmarks for these subject directories and in order to be able to monitor news regularly. It is also important to be updated with the relevant newsgroups and mailing lists as well as with the other media, among others, printed specialized magazines, which occasionally promote new interesting sites. Other resources were discovered through various ways, by chance while surfing aimlessly and naturally through the use of the search engines. And not to forget, several suggestions of links from website visitors turned out often to be valuable resources which are highly appreciated.

3. Development Phases

In September 1995, the first homepage of the Civil Engineering Library was created together with the initial collection of the Civil Engineering Resources (CER). For a small library with limited resources, the Internet provided the great opportunity to improve the services for the department and its researchers and students.

The CER rapidly became the most popular and the most visited part of the library's WWW site. Since there was an obvious need for such a collection, it was worth the effort to improve it. The first step was not only to expand the collection, but also to include brief descriptions to the resources. As the collection has been growing, the number of categories have been increased and the material splits into several files. It was an advantage to include the URLs in the collection since it reveals useful facts, for instance, the country of origin, and if it is a commercial or university server to be able to determine the credibility of the resource. Furthermore, knowing if the website has its own domain or not, helps determine if the URLs are stable or at risk of being changed.

The CER website includes a special site for "Civil Engineering Journals on Internet". Many researchers within the departments absolutely wanted to have the lists of contents of journals in printed form, although they had access to several electronic services. In order to avoid printing these lists for them the whole time, the links to all the journals which the school subscribed were compiled into a single handy list. Then the researchers could easily follow a hyperlink from the title and print out their own copy if needed. To make the compilation even more useful for frequent use, links were included to many relevant and valuable databases, such as, the well

known *Uncover* (periodical database and document delivery service) [10], *ASCE's excellent Civil Engineering Database* [11], other useful indices and even some interesting journals in full text. The list could be a practical way to keep the research up to date since there are links to all the well-known publishers which provide a number of valuable services as table of contents services.

After a while, many important events related to the further development and appreciation of the CER homepage took place. Many articles were written about it, for example, the *Byggindustrin*, (Sweden's largest construction journal) [12] and *Byggdok* (the Swedish Institute of Building Documentation) [13] which referred the CER website as, "Sweden's best collection of web links within the building and construction field."

These positive developments resulted in the need to announce the homepage to relevant newsgroups and mailing lists in the civil engineering field, such as, the *Sci.Engr.Civil* [14], the *Engineering-Concrete* [14], and the *Built-Environment* [14], among others. Afterwards, many users sent new link proposals and positive comments. Interestingly, users from other countries who have visited the Swedish Building Trade's page of the website, often inquire, for instance, about how to contact various Swedish companies and product manufacturers and also about on-going researches in Sweden. This positive feedback resulted in addition of some of the special services of the CER website appreciated by the users. It has been beneficial to keep track of the usage statistics since it initiates the improvements and updating of website.

4. Future Electronic Services

Development is very fast and endless both when it comes to the number of new services and the demand the users have for better services. Search engines are improved constantly and there are more interesting large markets and meeting places in every business or field. Within the engineering field, there is the very excellent and professional UK-based directory, *EEVL, Edinburgh Engineering Virtual Library* [3]. *EEVL* is not only a gateway to the increasing resources which at the moment are more than 3,000, but also provides a large number of valuable additional services, e.g., numerous searchable full text engineering journals. The American *EI, Engineering Information Village* [15] is another major and valuable engineering site which also develops tremendously the whole time. Many countries maintain their own meeting and marketplaces as starting points for local users. For example, *Byggtorge*t, a relatively new and fast developing Swedish marketplace within the field of building and environment [16], is a very commendable starting point service for Swedish users.

In addition to such major actors, many libraries try to widen their services to cover net-based information resources. However, much of this work is entirely uncoordinated and many initiatives overlap resulting in waste of resources. For example, the *Euler* and *Desire* projects [17] try to amend some of these problems. Lund University library, through its development department *NetLab*, [18] is a partner in both of the projects. The *Euler* project [17] develops a service whose target audience is European mathematicians. Through this service, it should be possible to cross search many databases through a simple user interface. Then, the bibliographic database, library catalogues, electronic journals, online archives of preprints and grey literature, and internet resources, are all integrated into a "one stop shopping site". The *Desire* project [17], on the other hand, develops tools and procedure for maintaining and searching distributed subject based collection of WWW resources. Both projects implement the *Dublin Core* (DC) *Metadata standard* [17] for resource description. DC is built upon a minimum set of standard elements for facilitating resource discovery.

5. New Challenges

The libraries, in general, continuously play an important role as a centre of knowledge and service organisation for information search and document delivery. However, their role has dramatically changed because of all these new possibilities with information technologies. Now, one can have access to electronic resource service in the same way as one has access to the traditional media. The development of electronic resource services, however, demands the cooperation among many actors since it is both time and effort consuming. Thus, for everyone who work within libraries, with all the developments affecting the professional role, there is a need to be constantly active and updated with these changes and work together so as to be able to serve all users, both academic and non-academic, in the best manner.

Website Addresses

The following are references to URLs mentioned in this article. You will find all these websites through the CER website at < http://www.ldc.lu.se/lthvbibl/civ-www.htm>.
As the web grows and continuously changes, there can be no guarantee that addresses given will still be operational at any time in the future. However, these websites were effective and last visited by the author in July 1998.

[1] **Argus Clearinghouse**.
http://www.clearinghouse.net/

[2] **EEVL, Edinburgh Engineering Virtual Library**
http://www.eevl.ac.uk/

[3] **BUBL Information Service**
http://www.bubl.ac.uk/

[4] **The Scout Report for Science & Engineering**
http://www.scout.cs.wisc.edu/scout/report/sci-engr/

[5] **World-Wide Web Virtual Library: Civil Engineering**
http://www.ce.gatech.edu/WWW-CE/

[6] **Yahoo: Civil Engineering** (Yet Another Hierarchical Officious Oracle)
http://www.yahoo.com/Science/Engineering/Civil_Engineering/

[7] **ICARIS Construction Resources Database** (Slovenia)
http://www.fagg.uni-lj.si/ICARIS/

[8] **Construction Information Sources** (Canada)
http://ctca.unb.ca/CTCA/Sources/

[9] **Construction IT Sites** (Finland)
http://www.vtt.fi/cic/links/

[10] **Uncover Database** (periodical database and document delivery service)
http://uncweb.carl.org/

[11] **ASCE's Civil Engineering Database**
http://www.pubs.asce.org/

[12] **Byggindustrin** (Sweden's largest construction journal)
http://www.byggindustrin.com/

[13] **Byggdok** (Swedish Institute of Building Documentation)
http://www.byggdok.se/

[14] **Sci.Engr.Civil, Engineering-Concrete, Built-Environment** (mailing lists)
http://www.ldc.lu.se/lthvbibl/ce-part5.htm

[15] **EI, Engineering Information Village**
http://www.eevl.ac.uk/

[16] **Byggtorget** (Swedish marketplace in the building and environment field)
http://www.byggtorget.byggdok.se/

[17] **Euler, Desire, Dublin Core Metadata** (NetLab's projects in progress)
http://www.lub.lu.se/netlab/projects-current.html

[18] **NetLab, Lund University Library Development Department**
http://www.lub.lu.se/netlab/

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Note:
The author, aside from her tasks in the traditional library, has also created and regularly maintains the homepage of Division of Building Materials at Lund Institute of Technology. As a new project, she also assists the different institutions within the School of Civil Engineering to start with electronic publishing of their reports.

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