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PUBLICATIONS 161

*Petra Hauke, Karen Latimer,
Klaus Ulrich Werner (Eds)*

THE GREEN LIBRARY DIE GRÜNE BIBLIOTHEK



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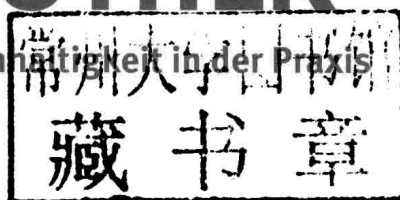
IFLA Publications 161

THE GREEN LIBRARY

The challenge of environmental sustainability

DIE GRÜNE BIBLIOTHEK

Ökologische Nachhaltigkeit in der Praxis



Edited on behalf of IFLA by

Petra Hauke, Karen Latimer and Klaus Ulrich Werner

**DE GRUYTER
SAUR**

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In the German articles and abstracts the use of the masculine gender (genus masculinum) includes both male and female nomenclature.

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About IFLA www.ifla.org

IFLA (The International Federation of Library Associations and Institutions) is the leading international body representing the interests of library and information services and their users. It is the global voice of the library and information profession. IFLA provides information specialists throughout the world with a forum for exchanging ideas and promoting international cooperation, research, and development in all fields of library activity and information service. IFLA is one of the means through which libraries, information centres, and information professionals worldwide can formulate their goals, exert their influence as a group, protect their interests, and find solutions to global problems.

IFLA's aims, objectives, and professional programme can only be fulfilled with the co-operation and active involvement of its members and affiliates. Currently, approximately 1,600 associations, institutions and individuals, from widely divergent cultural backgrounds, are working together to further the goals of the Federation and to promote librarianship on a global level. Through its formal membership, IFLA directly or indirectly represents some 500,000 library and information professionals worldwide.

IFLA pursues its aims through a variety of channels, including the publication of a major journal, as well as guidelines, reports and monographs on a wide range of topics. IFLA organizes workshops and seminars around the world to enhance professional practice and increase awareness of the growing importance of libraries in the digital age. All this is done in collaboration with a number of other non-governmental organizations, funding bodies and international agencies such as UNESCO and WIPO. IFLANET, the Federation's website, is a prime source of information about IFLA, its policies and activities: www.ifla.org.

Library and information professionals gather annually at the IFLA World Library and Information Congress, held in August each year in cities around the world.

IFLA was founded in Edinburgh, Scotland, in 1927 at an international conference of national library directors. IFLA was registered in the Netherlands in 1971. The Koninklijke Bibliotheek (Royal Library), the national library of the Netherlands, in The Hague, generously provides the facilities for our headquarters. Regional offices are located in Rio de Janeiro, Brazil; Pretoria, South Africa; and Singapore.

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Dorothea Sommer

Preface

Sustainability and going green are a trend. The two concepts seem to be applicable in every context and have already reached library architecture and design too. They are, of course, more than a trend and encompass a comprehensive and complex set of concepts and policies that are directed towards many aspects of life. They focus essentially on the aim of social responsibility and consideration for future generations by reducing the ecological footprint, which is an expression and accounting system for bio-capacity and compares human demands on nature with the biosphere's ability to provide and regenerate resources.

It was the German mining official Hans Carl von Carlowitz (1645–1714)¹ who coined the term “sustainability” as early as 1713 in answer to the shortage of wood, a result of the developing industry of iron ore smelting. In his work *Sylvicultura oeconomica*² he stated that one should only cut down as many trees as can be grown again and consequently demanded a sustainable exploitation of wood. The concept of sustainability and sustainable development evolved further in the 20th century, but this time within the global and political agenda of the United Nations. Important milestones were the Report of the Brundtland Commission, *Our common future*, 1987, and the action plan *Agenda21* regarding a sustainable development for the 21st century, which was signed by 178 countries during the United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro in 1992. The Brundtland Report provides the modern definition of sustainability: “Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”³ The inherent emphasis on ecology was later extended with the three constituent dimensions of sustainability: the environmental, social and economic. Since 2004 the umbrella organization United Cities and Local Govern-

1 “Lexikon der Nachhaltigkeit”, www.nachhaltigkeit.info/artikel/hans_carl_von_carlowitz_1713_1393.htm?sid=9b6bf4ebdd2a7738b99774b339d167b2. Accessed on 28 March 2013.

2 *Sylvicultura oeconomica: hausswirthliche Nachricht und naturmäßige Anweisung zur wilden Baum-Zucht* / Hannß Carl von Carlowitz. Reprint der 2. Aufl. Leipzig: Braun, 1732. Remagen-Oberwinter: Kessel, 2009 (Forstliche Klassiker, Bd. 1). S.a. the first use of the term sustainability: “Wird derhalben die größte Kunst/Wissenschaft/Fleiß und Einrichtung hiesiger Lande darinnen beruhen / wie eine sothane Conservation und Anbau des Holtzes anzustellen / daß es eine continüierliche beständige und nachhaltende Nutzung gebe / weils es eine unentherliche Sache ist / ohne welche das Land in seinem Esse nicht bleiben mag.” (Carlowitz 2009, 150)

3 *Report of the World Commission on Environment and Development: Our common future*. (1987). New York: United Nations, p. 41.

ments (UCLG),⁴ which adopted *Agenda21 for culture*⁵ as a reference document for its programmes, has added culture as a fourth dimension of sustainability. Today sustainability has become a central principle for all kinds of public action. This is in line with policies of IFLA, which passed a *Statement on libraries and sustainable development* during its 75th Congress in Glasgow in 2002 and also stressed the concept with the motto of the 2010 Congress in Gothenburg, “Open Access to knowledge – sustainable progress”.

The policies and selected definitions mentioned above provide an initial, general theoretical framework. Sustainability should, however, be actively incorporated in the daily life of each citizen and be transformed into an experience that can be actively and permanently shared by all. Architecture, which is both a manifestation and a reflection of functional, technical, social, environmental and aesthetic considerations within a certain time span, is only one area, albeit a very important area, for the application of the concept. The transition to the construction and design of sustainable buildings as well as (in the library world) sustainable services, encompasses many aspects and strategies and requires a rethinking of the appropriate use of building materials and technologies. It has transformed the way buildings are constructed and demands a responsible re-evaluation of the outcome of the building process by all parties involved, but pays particular attention to acceptance by users. The process could even be said to have an educational benefit in itself, encouraging users to act and live in a sustainable and ecologically responsible way, finding expression both in daily routines and in the environment. Recent analysis on the gross energy consumption in the European Union has shown, for example, that 40% of energy resources are allotted to the building sector.⁶ This demonstrates that there are considerable economic implications in improving the energy consumption of new buildings, or, what is even more challenging, in adjusting existing buildings with aging systems and structures. In Europe, the aim is to reach the level of 20% renewable energy by the year 2020.⁷ In China a new project named “Energy Saving and Emission Reduction of Libraries (ESERL)”⁸ has been launched – also taking into consideration that the energy costs of many libraries in China have become larger than the book-purchasing funds.

⁴ www.uclg.org/. Accessed on 2 April 2013.

⁵ www.agenda21culture.net/. Accessed on 2 April 2013.

⁶ http://europa.eu/legislation_summaries/internal_market/single_market_for_goods/construction/en0021_de.html, see also: *Richtlinie über die Gesamtenergieeffizienz von Gebäuden der Europäischen Union*. See: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32010L0031:DE:NOT>. Accessed on 28 March 2013.

⁷ www.bmvbs.de/cae/servlet/contentblob/46918/publicationFile/, p. 10. Accessed on 30 April 2013.

⁸ <http://conference.ifla.org/past/ifla77/196-wang-en.pdf>. Accessed on 2 April 2013.

This book mirrors the current efforts to create sustainability through varied solutions for the particular challenges of library architecture and related services. The articles collected in this book provide many examples and approaches from a range of countries, which will give the reader an overview of current solutions and provide examples of sustainable and green libraries and their respective requirements and applications.

Obviously a common and very prominent feature of the sustainable design and construction of library buildings is the special emphasis given to the concept of protection. Protection in this sense covers natural resources (earth, air and water). Depending on the site chosen it will cover nature and landscape; it will encompass the use of material-related and energy resources and finally, it covers the protection of the climate and thus the health of each individual. Environmental protection has become one of the social and cultural values of citizens when stating the necessity of taking responsible action and finds expression within the design and building process. Institutions, including libraries, increasingly choose to implement Environmental Sustainability strategic plans.

A new library building does not inherently possess green or sustainable qualities and features – in order to achieve that, it is necessary for architects and building engineers to embrace and implement innovative, energy-efficient, post-fossil technologies and special building materials and last, but not least, to assess the impact on the local climate. Libraries, as highly trusted public institutions, have the capacity to serve with their buildings as models for the use of environmentally friendly building materials and regenerative energy or for the successful conservation of existing building fabric. They can be constructed as low- or even zero-energy buildings or adjusted accordingly to new standards.

However, potential users of library buildings should not be placed in a situation where they have “Eyes that do not see”, as Le Corbusier put it in his 1923 book *Vers une architecture*. They should be in a position to be able to judge whether a library building is sustainable or green or whether these terms are just being used as a fashionable label. They need to develop an understanding of what a sustainable building actually entails, including the financing, administration and management of facilities and green campuses throughout their whole life-cycle. This extends from the planning stage, through the selection of the building site, the construction of the building and its interior design via the maintenance and renovation of the building to its re-purposing, re-cycling or even demolition. The majority of articles in this book prove that libraries are very much aware of these issues and well on their way to sustainable library buildings and services with their individual projects.

A number of tools has been developed at national and international levels to support a reliable assessment of whether a building meets the desired standards.

They encompass certificates such as Leadership in Energy and Environmental Design (LEED, USA), Building Research Establishment Environmental Assessment Method for buildings (BREEAM, UK, Netherlands, Spain), Deutsches Gütesiegel Nachhaltiges Bauen (Germany),⁹ Minergie (Switzerland),¹⁰ Haute Qualité Environnementale des bâtiments (HQE, France),¹¹ Comprehensive Assessment System for Built Environment Efficiency (Casbee, Japan)¹² or the Green Star Certificate (Australia).¹³ The concept of sustainability has been integrated also into various ISO-Norms, such as the *DIN ISO 14001*, which deals with the Ecological Management systems for companies, or the *ISO/TR 11219:2012 Information and Documentation*, which focuses on qualitative conditions and basic statistics for library buildings. To ensure sustainability, well supported documentation is necessary to underpin the maintenance of a facility. All these aspects are covered in individual articles in this book.

The qualities of library buildings and their spaces have been summed up in the famous “Ten Commandments” of the British architect Harry Faulkner-Brown, which have been adopted widely in the library world. They contain in his list a reference to the demand that libraries should be “constant in environment”. Later in 2006, Andrew McDonald revisited these requirements, referring to them as “qualities”. According to MacDonald, libraries should be “environmentally friendly”. He demands suitable conditions not only for the comfort of readers, but also for the operation of computers and the preservation of library materials. He writes: “Any building or energy management system should be designed to accommodate the lowest common denominator of building management, and the building should be environmentally appropriate.”¹⁴ There is clearly an emerging need to redefine and extend these terms and to establish sustainability as a core principle in building environmentally friendly libraries.

It should be possible to trace the story of sustainable library architecture and services in the articles collected in this book. I hope it will find many interested readers who will find in it inspiration to take appropriate action in their own future library building projects.

Dorothea Sommer

IFLA Library Buildings and Equipment Section, Chair

9 www.stz-egs.de/wp-content/uploads/2009/01/dgnb_systembeschreibung_online_20090112a.pdf. Accessed on 2 April 2013.

10 www.minergie.ch/. Accessed on 2 April 2013.

11 <http://assohqe.org/hqe/>. Accessed on 2 April 2013.

12 www.ibec.or.jp/CASBEE/english/. Accessed on 2 April 2013.

13 www.gbca.org.au/green-star/certification/. Accessed on 2 April 2013.

14 <http://liber.library.uu.nl/index.php/lq/article/view/7840/8010>. Accessed on 2 April 2013.

Petra Hauke, Karen Latimer and Klaus Ulrich Werner

Introduction

Libraries, both public and academic libraries, are obviously ecologically sustainable – are they really?

On the one hand we have libraries as mainly deep-plan buildings with high energy consumption for lighting, heating, air-conditioning, and ventilation and with a lot of computer installations, many copiers making many paper copies all day, and – last but not least – printed books which one can define as “dead forests”. None of this can be considered sustainable.

On the other hand we have lending, the sharing of books and other media, and also the sharing of computers, the move from printed to electronic resources, common spaces for learning and socializing, retaining cultural heritage, offering information and a variety of materials about a responsible way of life. This is summed up by the statement below:

“[...] environmental sustainability in libraries is obvious as such, but no one has systematically spelled out why or how it should be implemented. The discussion around green libraries has been largely limited to the buildings, i. e., to subjects like the energy-efficiency of new constructions and basic renovations. [...] However, we cannot rebuild all libraries and make them energy efficient, and we have to find other ways. Libraries have to operate environmentally now and in the future in existing buildings and without new resources. But how do we achieve this?”¹

The green library movement

Debate and discussion about the role of libraries and librarians as leaders in the ecological sustainability movement was already taking place in the 1970s (Armstrong 1971). It developed slowly, although there have been efforts to promote the idea that the mission of libraries should include the taking on of a leading role in teaching responsibility to the public (Boyden & Weiner 2000).

Going through earlier publications, one will find that from about 2000 on a “green library movement” (Antonelli 2008), apparently inspired by the US American Sustainable Communities Movement (Long 2000), was recognized. But most efforts focused on the eco-building when identifying e.g. “a new century in public library architecture” (Tseng 2007). More initiatives arose to promote environ-

¹ See the article “... proud that my own library is such a responsible operator!” by H. Sahavirta in this publication.

mental awareness and sustainable design and services in libraries published in books, journals and online on special webpages (Coyle 2008).

In addition library associations and organizations like SLA, the Special Libraries Association (Davis 2008) became aware of “green conferences”; they supported their member libraries by setting up specific groups like the Australian Library and Information Society (ALIA Sustainable Libraries Group 2010); they held conferences on green themes like the 16th Seminar of the LIBER Architecture Group held in Prague, Czech Republic 2011 (Sommer & Feldsien-Sudhaus 2012), and the American Library Association – which has been handling this issue since the 1990s (Link 1992) – recently started a petition for a new Sustainability Round Table² to aid in the advancement and dissemination of sustainable practices.

IFLA and environmental sustainability

On the occasion of the 75th anniversary of IFLA, the International Federation of Library Associations and Institutions

- declared that all human beings have the fundamental right to an environment adequate for their health and well-being,
- acknowledged the importance of a commitment to sustainable development to meet the needs of the present without compromising the ability of the future,
- asserted that library and information services promote sustainable development by ensuring freedom of access to information.³

Although this statement, published in 2002, does not focus directly on ecological environmental sustainability, this issue should be considered included.

The IFLA Library Buildings and Equipment Section⁴ picked up IFLA's directive on sustainable development in their *IFLA library building guidelines* (Wagner et al. 2007). During the 75th IFLA World Library and Information Congress 2009 in Milan, Italy, the newly formed IFLA Special Interest Group ENSULIB (Environmental Sustainability and Libraries), sponsored by the IFLA Preservation and Conservation Section,⁵ offered their first conference session, entitled “Libraries

2 <http://greeningyourlibrary.wordpress.com/2013/01/11/petition-to-start-a-new-sustainability-round-table-through-ala/>. Accessed on 7 March 2013.

3 www.ifla.org/publications/statement-on-libraries-and-sustainable-development. Accessed on 7 March 2013.

4 www.ifla.org/ES/library-buildings-and-equipment. Accessed on 7 March 2013.

5 www.ifla.org/preservation-and-conservation. Accessed on 7 March 2013.

and awareness about sustainability”,⁶ followed by related conference sessions in 2010–2012. From 2009 on, articles on environmental sustainability and libraries were also published in the *International Preservation News*, published by the IFLA Preservation and Conservation Core Activity PAC.⁷

At the 77th IFLA Congress 2011 in San Juan, Puerto Rico, the IFLA Library Buildings and Equipment Section hosted a conference session on “Sustainability issues in the design of libraries: the importance of creating environmentally responsible library facilities and spaces in the 21st century”.⁸

The Green Library – what is it all about?

While in the past most publications on libraries and sustainability issues came from the United States, this book, written by experts in their field from all over the world, covers subjects and best-practice examples not only from the USA but also from Europe, Asia, and Australia. The articles in this book cover a wide range of ideas and best-practice examples on “how to green” libraries and how and where libraries demonstrate both ingenuity and ethical leadership. It answers such questions as what does “sustainable” mean in the context of libraries. What examples are there of building projects across the world that have developed sustainable, green libraries?

“However, we cannot rebuild all libraries and we have to operate environmentally in existing buildings and without new resources. Libraries can express their commitment to green values and offer an open and easy access to environmental knowledge. Moreover, offering shared space and new kinds of items to be borrowed are examples of new environmentally sustainable activities. To take a clear stand and to create a visible green image for the library is an important part of the environmental work.”⁹

Therefore the articles in the book, written in German or English with both English and German abstracts, cover all aspects of designing and managing environmentally sustainable libraries and library services.

⁶ www.ifla.org/node/6202. Accessed on 7 March 2013.

⁷ www.ifla.org/pac. Accessed on 7 March 2013.

⁸ <http://conference.ifla.org/past/ifla77/library-buildings-and-equipment-section.htm>. Accessed on 7 March 2013.

⁹ See the article “... proud that my own library is such a responsible operator!” by H. Sahavirta in this publication.

The book is divided into four main sections: “General”; “Case Studies from Academic Libraries and from Public Libraries”; “Sustainability Specials / More than Libraries ...”, and “Appendices”.

In the “General” articles the reader will be introduced to “Sustainable thinking: Passageway to better buildings, budgets and beyond” (R. S. Aldrich, S. Benton, L. Schaper and J. A. Scherer) and find that “Sustainability can serve as a tool to build community ...: Sustainable libraries, sustainable services – A global view” (P. Genovese and P. Albanese). There is also an interview with the Canadian-German architect M. Stankovic and the engineer T. Jortzick who put the case for not leaving the responsibility to industry and politicians: “Die Verantwortung nicht der Industrie und der Politik überlassen ...”. O. Eigenbrodt provides information on “The impact of standardization on responsible library design: Rereading ISO/TR 11219:2012 from a sustainability perspective” while T. Schelling refers to Swiss standards “Auf dem Weg zur 2000-Watt-Gesellschaft: Schweizer Standards und ihre Umsetzung in nachhaltigen Bibliotheksbauprojekten” to achieve the so-called 2000-Watt society.

L. Sonkkanen presents her Finnish survey on “Sustainability hides in libraries: The state of ecological sustainability in libraries”, and this is followed by a description of a student project to pilot an international survey: “Sustainable libraries: A pilot survey of international delegates attending the IFLA World Library and Information Conference 2012 and comparison with the Finnish national survey” by E. Karioja and J. Niemitalo.

Energy-saving concepts from bookshops which can be transferred to libraries are the theme of the German interior designer M. Franz “... dass sich Menschen wohlfühlen: Energiesparende Konzepte aus dem Buchhandel übertragen auf Bibliotheken”. Another article from Germany, by S. Witthaus, “Gebäudedokumentation zur Sicherung der Nachhaltigkeit: Bibliotheken nachhaltig planen, bauen, betreiben und dokumentieren” deals with the question of how structured building documentation contributes to ecological sustainability.

“The second-hand library – a way of reducing the ecological footprint” by P. Hauke and K. U. Werner discusses the transformation of existing buildings with a prior non-library function into libraries, and highlights the challenges and the opportunity for sustainable thinking in library planning this brings.

The second section, “Case studies”, starts with best-practice examples from academic libraries. The first article refers to a new building opened in 2009 which implements “Sustainability in all phases of the building’s life-cycle ...: A case study of The McClay Library, Queen’s University Belfast” by K. Latimer, which also discusses trends in 21st-century library design, including the growing importance of energy-efficiency measures.