



WP2: Report and discussion on Module specifications and the use of International scientific databases during preparation of teaching materials



Presentation outline

- **Laboratory for eco-sustainable architectural planning**
- **International scientific database, used during preparation of teaching materials**
- **Intelligent library system at MGSU**
- **Module specification – green built environment (Bachelor)**
- **Module specification – green built environment (Master)**

History

- **The laboratory for eco-sustainable architectural planning at the MGSU was founded in 2013. At the moment 15 master students are taught in the field of sustainable and energy efficient architecture.**
- **In 2008 Prof. M. Eichner was developing a 4 years diploma course “eco-sustainable architectural design” at the Moscow architectural Institute – MARCHI. The course is hold currently the 5th year.**
- **The course “Green built environment” at the MGSU is based on regularly every semester newly developed student research and design program on varying topics related to sustainable urban development, climate saving architecture and resource saving technology innovation.**

From 2003 till 2005 teaching at the Technical University of Munich TUM



Since 2005 teaching at the Moscow Architectural Institute MARCHI



Since 2013 Moscow State University of Civil Engineering - MGSU



Aims + key competence

- **Eco-sustainable architectural design and student research**
- **Cooperation: 2010 with city administration of Moscow and Kolomna**
- **Project: Energy-efficient reconstruction of school buildings in Moscow, 2011**



Aims + key competence

- Application of new design methods in accordance with international green building standards.
- Urban student research: sustainable urban development of Kolomna, 2010
- Analysis of urban environments based on green building standards BNB



Project presentation in public



Aims + key competence

- Bachelor, Master and PhD programs on globally arising questions in the field of climate saving design strategies, future building construction and efficient space utilization.
- Student research project: “Urban reconstruction method” for post soviet housing districts in Moscow, in cooperation with architectural committee, 2013



Aims + key competence

- Research based learning along in adjoining discipline like bionics, climatology, digital design, artistic space research.
- Using digital data and virtual space as source for design concepts.



Aims + key competence

- **Competence in material and technology inventions.**
- **In cooperation with leading companies of building technology, like Schoeck, Knauf, Caparol.**
- **Current student research and design project in cooperation with Caparol: „CITY - SPACE + HEALTHY ENVIRONMENT”**
- **3D printing technology for buildings and construction components**



International scientific database during preparation of teaching materials

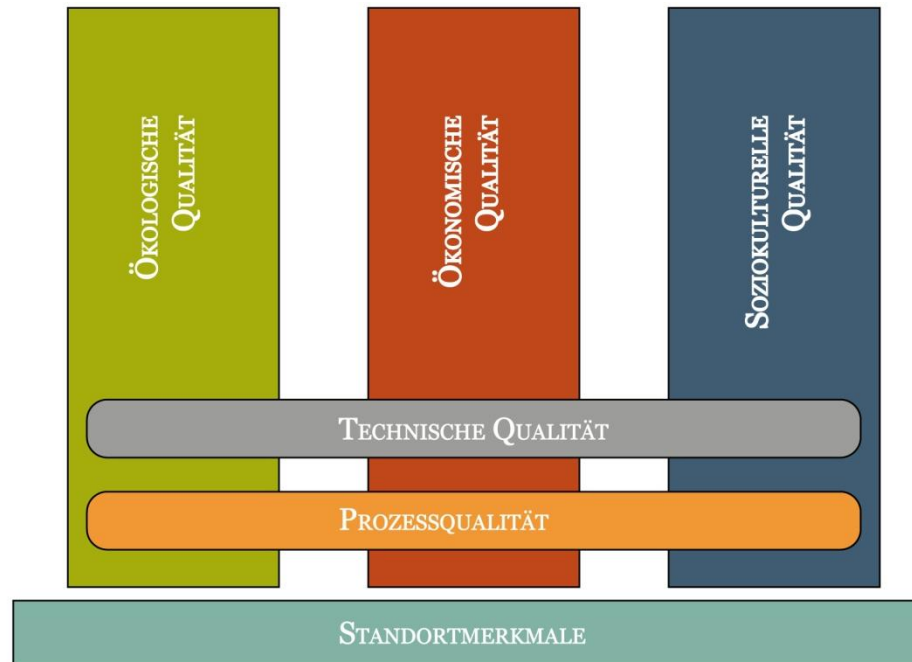
International scientific databases

Following international scientific databases are used for the preparation of teaching materials, student research and design programs, lectures and seminars. All scientific information is free accessible and available partly in German and English language.

- **German certification system for sustainable buildings – BNB**
- **Data base - Federal Ministry of Transport, Building, Urban development , BMVBS**
- **Quality evaluation system for sustainable housing buildings – NAWOH**
- **Experimental housing department – OBB (Bavarian Ministry of the Interior)**
- **Research database of the Fraunhofer-Gesellschaft**

German certification system for sustainable buildings BNB

The assessment system BNB is distinguished for its comprehensive consideration of the entire life cycle of buildings. Not only ecological, economical, social and cultural qualities are evaluated, but also technical and procedural aspects.



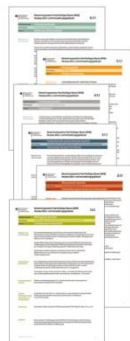
Advantages:

- Scientifically continuously updated
- Open accessible on the internet

International scientific database during preparation of teaching materials

German certification system for sustainable buildings BNB

Assessment System (BNB)



The Federal Ministry of Transport, Building and Urban Development (BMVBS) has developed, as part of a two-year collaboration with the German Sustainable Building Council (DGNB), an initial criteria checklist for the comprehensive assessment of sustainability aspects for building. Along this resulting Assessment System for Sustainable Building for Federal Buildings (BNB) a first holistic assessment procedure for newly constructed office and administration buildings is available.

The planning-based assessment system is distinguished for its comprehensive consideration of the entire life cycle of buildings. Not only ecological, economical, social and cultural qualities are evaluated, but also technical and procedural aspects. The assessment of building qualities is accomplished in accordance with transparent rules and objective, essentially quantitative methods.

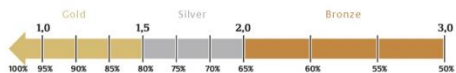
The existing assessment system for office and administrative construction will be further developed for application with other types of buildings and kinds of utilisation. Furthermore, it shall be continuously revised to reflect results of current research and to accommodate changes in the area of statutory regulations and standardisation.

Revisions and updates of the assessment system are continuously published via the Sustainable Building information portal of the ministry BMVBS.



The assessment system is precisely defined on the basis of 46 criteria and is structured in six main criteria groups. The weighing of the criteria against one another is accomplished with the aid of a factor of relevance. The site characteristics are identified in a separate note.

According to the achieved degree of performance, a certificate can be obtained in bronze, silver and gold.



Ecological Quality 22,5%*

Effects on Global and Local Environment	in %*
1.1.1 Global Warming Potential	3,375
1.1.2 Ozone Depletion Potential	1,125
1.1.3 Photochemical Ozone Creation Potential	1,125
1.1.4 Acidification Potential	1,125
1.1.5 Eutrophication Potential	1,125
1.1.6 Risks to the Local Environment	3,375
1.1.7 Sustainable Logging / Wood	1,125

Demand of Resources	
1.2.1 Primary Energy Demand Not Renewable	3,375
1.2.2 Total Primary Energy Demand and Amount of Renewable Energy	2,250
1.2.3 Fresh Water Demand and Quantity of Wastewater	2,250
1.2.4 Demand of Space	2,250

* maximum of achievable percentage for each main criteria group or criterion in Version 2011_1



Economical Quality 22,5%*

Life Cycle Costs	in %*
2.1.1 Building-related Life Cycle Costs	13,50
Performance	
2.2.1 Value Stability	9,00



Socio-Cultural and Functional Quality 22,5%*

Health, Comfort and User Satisfaction	in %*
3.1.1 Thermal Comfort in Winter	1,607
3.1.2 Thermal Comfort in Summer	2,411
3.1.3 Indoor Air Quality	2,411
3.1.4 Acoustic Comfort	0,804
3.1.5 Visual Comfort	2,411
3.1.6 Influence of the User	1,607
3.1.7 Building-related Outdoor Qualities	0,804
3.1.8 Safety and Incident Risks	0,804

Functionality	
3.2.1 Barrier-free Building	1,607
3.2.2 Space Efficiency	0,804
3.2.3 Capability of Conversion	1,607
3.2.4 Public Accessibility	1,607
3.2.5 Bicycle Comfort	0,804

Ensuring Design Quality	
3.3.1 Design and Urban Quality	2,411
3.3.2 Art in Architecture	0,804

German certification system for sustainable buildings BNB

www.nachhaltigesbauen.de

Full information about the certification system, certification method, best practice buildings and research results related to sustainable buildings is openly available.

The German certification system for sustainable buildings – BNB (Beurteilungssystem fuer nachhaltiges Bauen), was developed by the Federal Ministry for Transport, Building and Urban Development (BMVBS).

- Explanations and advice for sustainable construction
- Federal guidelines and practical aids
- Information regarding the BNB evaluation system for sustainable building
- Comprehensive data basis for the assessment of sustainability
- Scientific information regarding research projects and events
- Exhibition of good examples of sustainable building

International scientific database during preparation of teaching materials

Data base - Federal Ministry of Transport, Building, Urban development, BMVBS

The screenshot shows a Mozilla Firefox browser window displaying the BMVBS website. The address bar shows the URL www.bmvbs.de/EN/Service/Publications/publications_node.html. The page header includes the logo of the Federal Ministry of Transport, Building and Urban Development, contact information, and a search bar. A navigation menu contains links for Transport and Mobility, Building and Housing, Urban and Rural Areas, The Ministry, Service, and Press. The main content area features a large image of a smiling woman wearing a headset. Below this, there are two article teasers: 'Efficiency House Plus with Electromobility' and 'Road Safety Programme 2011 (highly accessible)'. A sidebar on the right contains a navigation menu with links for Contact us, Visitor service, Publications (highlighted), and User help. Below the sidebar is a 'GRAPHICS' section with a grid of images.

BMVBS - Publications - Mozilla Firefox

Datei Bearbeiten Ansicht Chronik Lesezeichen Extras Hilfe

BBR Homepage x BMVBS - Publications x +

www.bmvbs.de/EN/Service/Publications/publications_node.html

Contact us DE Sitemap A A*

Search term find

Transport and Mobility Building and Housing Urban and Rural Areas The Ministry Service Press

Homepage → Service → Publications

Efficiency House Plus with Electromobility

The responsible stewardship of resources and climate change mitigation are undoubtedly among the major challenges facing government and society. An important starting point here is the issue of energy efficiency. The buildings and transport sectors have an important role to play. Because these two sectors, taken together, account for around 70 percent of final energy consumption and around 40 percent of all CO2 emissions in Germany. What could therefore be more obvious than to seek ways that result in reductions in both sectors?

Next →

Road Safety Programme 2011 (highly accessible)

One of our main objectives is to reflect the changed environment and new challenges in road traffic. It is thus logical that road users, infrastructure and technological developments are at the focus of the new Road Safety Programme.

Next →

→ Contact us
→ Visitor service
→ **Publications**
→ User help

GRAPHICS

<http://www.bmvbs.de>

International scientific database during preparation of teaching materials

Data base - Federal Institute for Research on Building, Urban Affairs, Spatial Development

BBSR Homepage - Homepage - Mozilla Firefox

www.bbsr.bund.de/BBSR/EN/Home/homepage_node.html

CONTACT SITEMAP IMPRINT GERMAN

Bundesinstitut für Bau-, Stadt- und Raumforschung
im Bundesamt für Bauwesen und Raumordnung

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Info Portal Energieinsparung

INTERREG
ZUSAMMENARBEIT. GRENZENLOS.

WERKSTATTSTADT

Federal Institute for Research on Building, Urban Affairs and Spatial Development

The Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) within the Federal Office for Building and Regional Planning (BBR) is a departmental research institution under the portfolio of the Federal Ministry of Transport, Building and Urban Development (BMVBS). It advises the Federal Government with sectoral scientific consultation in the political fields of spatial planning, urban development, housing and building.

News from research

- Strategies for an optimal materials cycle
Project of the research programme "Future Building"
- Overcoming vacancies in allotment gardens in structurally weak regions
Project of the research programme "General Departmental Research"
- Monetary assessment of risk assumption by private energy service provider of energy performance contracting
Project of the research programme "Future Building"
- Taxonomy for integrating the requirements of sustainability in design competitions
Project of the research programme "Future Building"
- All News

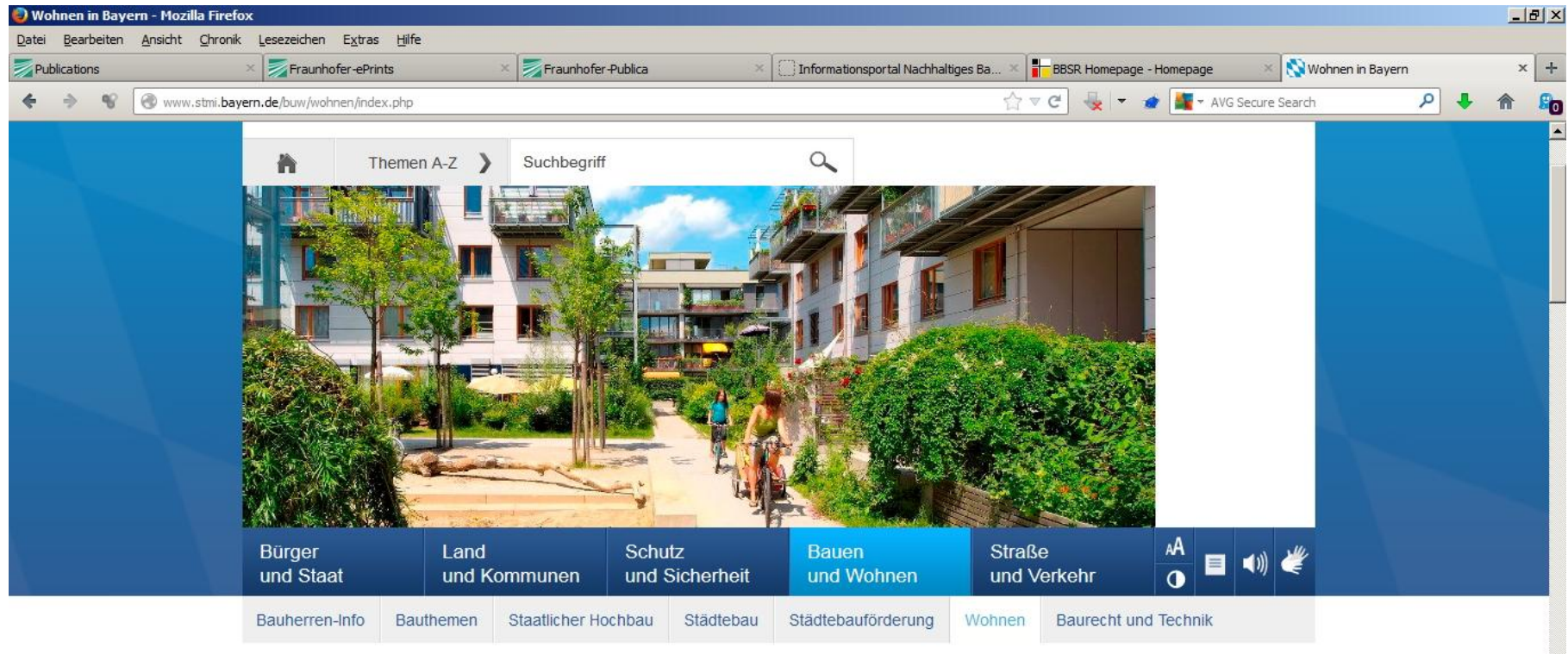
New publications / abstracts

- Local forces, criteria and success factors for steering sustainable urban development in smaller cities - Cittaslow
Abstract / Special publication
- City instead of noise
Abstracts / IzR 3.2013
- ImmoRisk - Risk assessment of future climate impacts in real estate economy
Abstract / Forschungen 159
- Climate protection measures in historic districts
Abstract / Special publication
- All News

www.bbsr-energieinsparung.de/EnEVPortal/EN/Home/homepage_node.html

<http://www.bbsr.bund.de>

International scientific database during preparation of teaching materials
Experimental Housing department of the OBB
(Construction department of the Bavarian Ministry of internal affairs)



<http://www.stmi.bayern.de>

<http://www.experimenteller-wohnungsbau.bayern.de>

Quality evaluation system for sustainable housing buildings – NAWOH

The quality evaluation system for sustainable housing buildings – NAWOH (Nachhaltiger Wohnungsbau) was developed in 2012 in scientific cooperation with the German Ministry for Transport and Construction;

Nachhaltigkeit im Wohnungsbau - NaWoh - Home - Mozilla Firefox

www.nawoh.de

Verein zur Förderung der Nachhaltigkeit im Wohnungsbau

Home Der Verein Presse Nachhaltiger Wohnungsbau Siegelvergabe Downloads Impressum Suche...

Startseite

Willkommen

Nachhaltiger Wohnungsbau im modernen Sinne bringt ökologische, ökonomische, soziale und kulturelle Aspekte in Einklang. Das Qualitätssiegel Nachhaltiger Wohnungsbau gibt die Möglichkeit, für den Wohnungsneubau gelebte Nachhaltigkeit zu dokumentieren und sichtbar zu machen. Das zugrundeliegende System zur Beschreibung und Bewertung der Nachhaltigkeit kann unabhängig vom Qualitätssiegel als Leitfaden, Planungshilfe und zur Unterstützung der Qualitätssicherung eingesetzt werden. Informieren Sie sich hier über das Qualitätssiegel und das Bewertungssystem NaWoh!

Das Qualitätssiegel Nachhaltiger Wohnungsbau - NaWoh

Das Qualitätssiegel Nachhaltiger Wohnungsbau wird für neue Wohngebäude vergeben, die den Kriterien des Bewertungssystems NaWoh entsprechen und die sich einer Prüfung unterzogen haben. Es erlaubt die Beschreibung und Bewertung der Qualität und Nachhaltigkeit neu zu errichtender Wohngebäude auf freiwilliger Basis.

Aktuelles

25.09.2013
Auslegungen 1 bis 4 veröffentlicht. Sie betreffen:
1 - Systemgrenze zwischen Wohnungsbau und anderen Nutzungen
2 - Mindesttiefe von Freisitzen
3 - gemeinsames Zertifikat für mehrere Objekte
4 - Regeln für die Erstellung eines Planungszertifikates

Siehe [Downloads/Zertifizierung](#)

05.08.2013
Es wurde eine [Datei](#) zur Unterstützung der Berechnung des

www.nawoh.de

International scientific database during preparation of teaching materials

Research database of the Fraunhofer-Gesellschaft

The screenshot shows a Mozilla Firefox browser window displaying the Fraunhofer-Publica website. The browser's address bar shows the URL `publica.fraunhofer.de/starweb/pub09/en/index.htm`. The website features a navigation menu on the left with links for Main, Search Form, Current Publications, Document Delivery, Data Export, Guidelines, and Contact. A central blue box lists 'Current Publications from the Fraunhofer research areas' with sub-links for Materials and Components, Production, Information and Communication Technology, Microelectronics, Surface Technology and Photonics, Life Sciences, and Technical-Economics Studies. The main content area has a green header with the word 'Publica' and a search bar with a 'Search' button. Below the search bar, there is a description of the 'Publication Database of the Fraunhofer-Gesellschaft' and a footer with copyright information for 2009.

Fraunhofer

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- Microelectronics
- Surface Technology and Photonics
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- Technical-Economics Studies

Publica

Fraunhofer-Publica

Search

use the asterisk (*) as a truncation symbol

Publication Database of the Fraunhofer-Gesellschaft

The database "Fraunhofer-Publica" documents the research-related publications and patents of the Fraunhofer institutes.

Contained in this database are bibliographic data of articles, conference papers and proceedings, research reports, studies, theses, patents, etc. that are written by researchers of the Fraunhofer-Gesellschaft.

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<http://www.fraunhofer.de/en/publications.html>