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What is ÖKOBAUDAT?



The ÖKOBAUDAT platform

ÖKOBAUDAT is a platform with data, information and links related to the life cycle assessment of construction works (Figure 1). ÖKOBAUDAT is published in German and English at www.oekobaudat.de [1]. The ÖKOBAUDAT Users' Advisory Group and the international working group International open Data Network for Sustainable Building (WG InData) have stored their working environments on the ÖKOBAUDAT platform. At the platform's core is the online database with life cycle assessment datasets on building materials, construction, transport, energy and disposal processes. With the help of life cycle assessment tools, such as eLCA provided by the BBSR, the entire life cycle of a building can be reconstructed with the ÖKOBAUDAT database.

The data is subject to strict quality requirements and can be used in many different building assessment systems. The database system with its search and filter functions enables user-friendly online searches of the datasets. Previous datasets are archived online to ensure no information is lost.

DIN EN 15804-compliant data

Currently more than 1,000 datasets are provided on all important construction product groups, and these have been in compliance with DIN EN 15804 since 2013. This means ÖKOBAUDAT is the first life cycle assessment database that completely complies with this standard.

ÖKOBAUDAT

- › online database
- › compliant with the Assessment System for Sustainable Building (BNB)
- › EN 15804-compliant
- › high data consistency
- › verified data quality
- › free of charge
- › standardised data format
- › data transfer to advanced tools

Image above

Source: enzberg/IBO

BNB-compliant data and additional data

ÖKOBAUDAT is the mandatory database for the Assessment System for Sustainable Building (Bewertungssystem Nachhaltiges Bauen, BNB). It is published regularly, up to twice a year, with the year and version clearly indicated (for example ÖKOBAUDAT 2016-I). The data for the BNB system is primarily available in German.

Suppliers and users of life cycle assessment data outside of Germany are showing increasing interest in submitting and using ÖKOBAUDAT data. The ÖKOBAUDAT platform therefore also offers datasets based onecoinvent background data as well as datasets available only in English. In all other respects, this data fully adheres to the ÖKOBAUDAT requirements in terms of quality and data format and, in justified cases, can therefore be used for BNB life cycle assessments.

Who is responsible for ÖKOBAUDAT?

The publisher of ÖKOBAUDAT is the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).

Responsibility under the Press Act lies with the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR) in the Federal Office for Building and Regional Planning (BBR).

ÖKOBAUDAT was developed with support from the German building materials industry and within the framework of research projects as part of the Future Building (Zukunft Bau) research initiative, in which thinkstep, IBO, KIT (Austrian Institute for Healthy and Ecological Building), Institute for Applied Computer Science ok*worx consulting and Online Now! GmbH were involved.

The BMUB provides the ÖKOBAUDAT data free of charge. The respective owners of the datasets remains responsible for the contents and values.

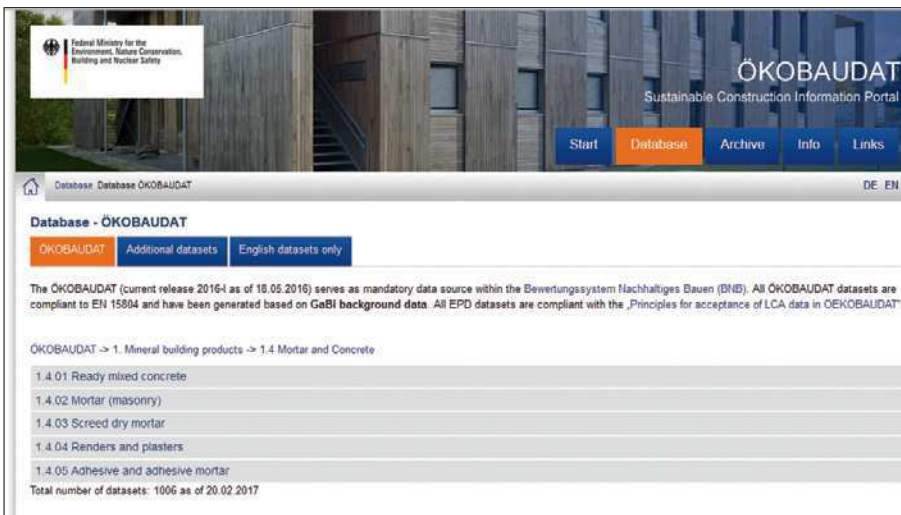


Figure 1
The ÖKOBAUDAT database system.
Source: BBSR

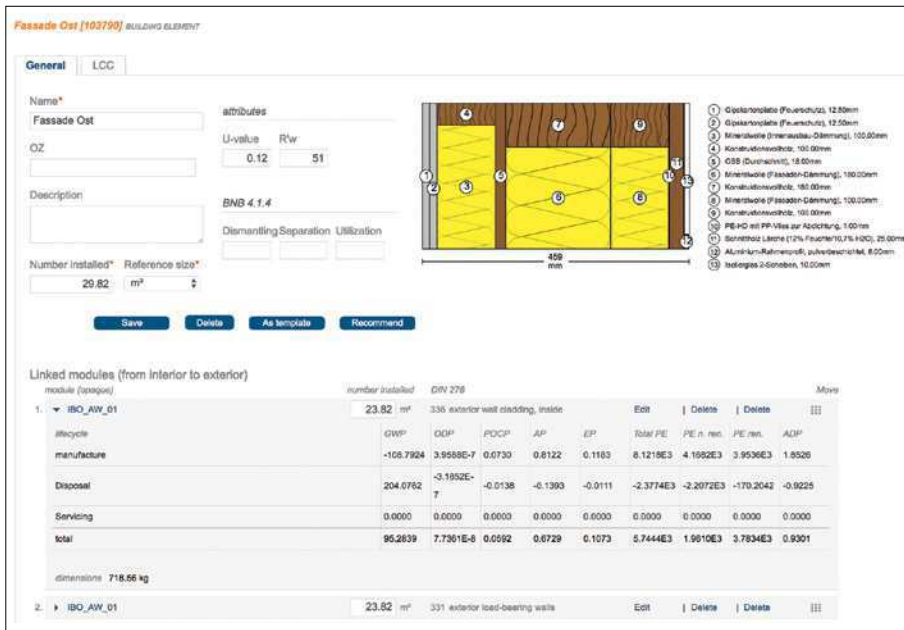


Figure 8
Representation of components in eLCA: the components are presented directly in a dynamic graphic. The resulting environmental effects can be read immediately.
Source: BBSR

With the aid of the assistant, complex components can also easily be created in eLCA (Figure 9).

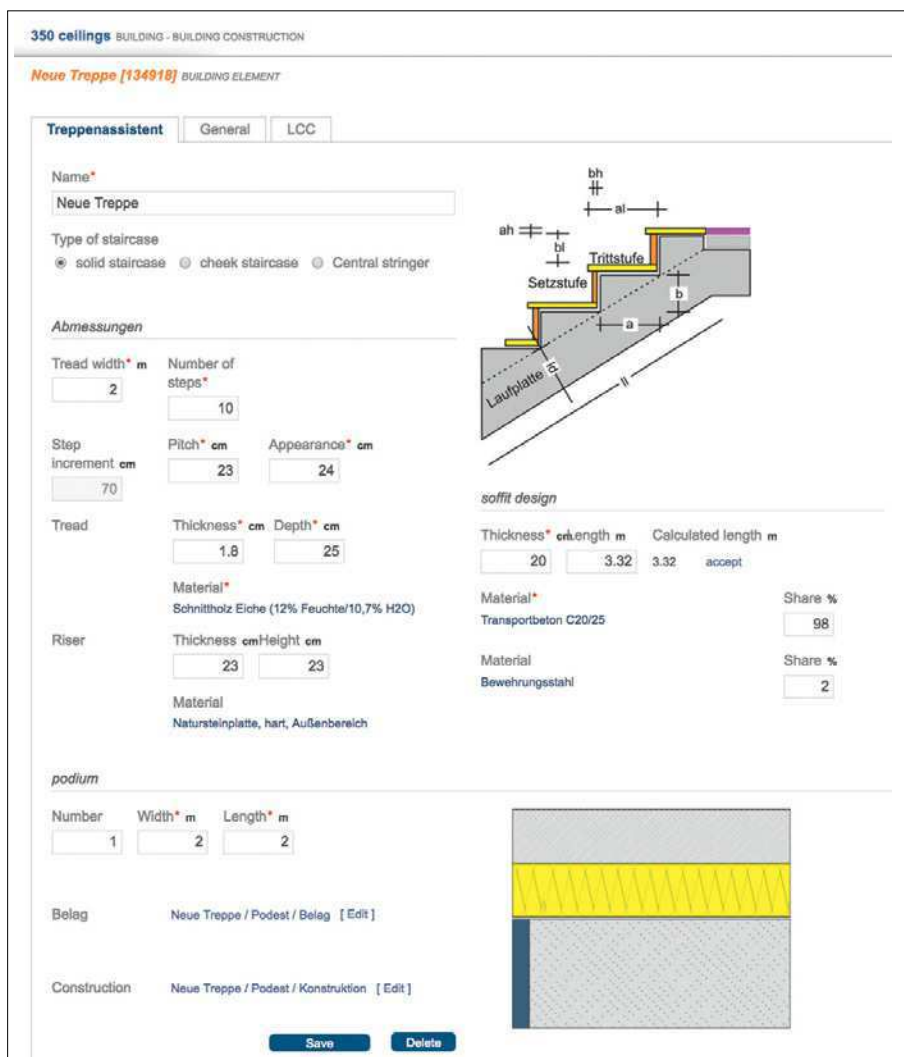


Figure 9
Assistants help eLCA users to create complex components. Source: BBSR

The results - the calculated environmental effects - are derived from the proportion of the building construction that the components represent and the amount of energy needed to operate the building for a year. They can be read directly and can be compared with the benchmarks for the assessment systems. The project results are then shown as a percentage of the benchmark (Figure 10).

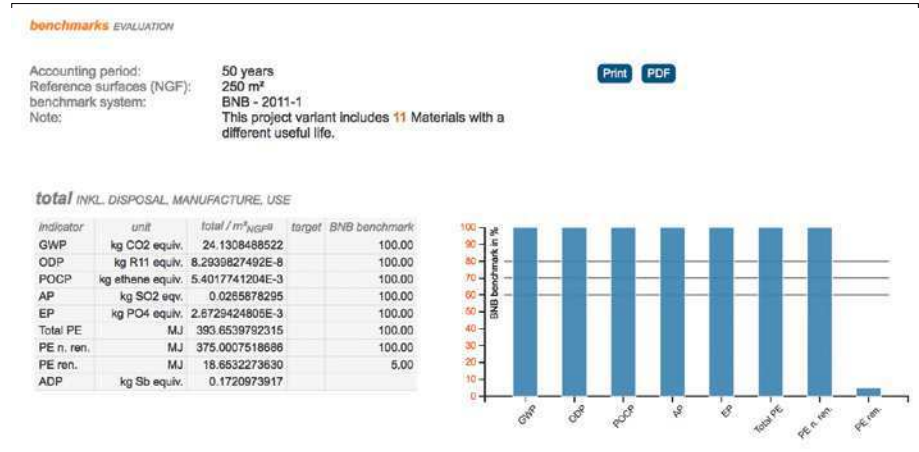


Figure 10
 Benchmarking the environmental effects in eLCA. Source: BBSR

Practical evaluations integrated in eLCA present the calculated results clearly and transparently, and thereby enable detailed analysis of the results (Figure 11).

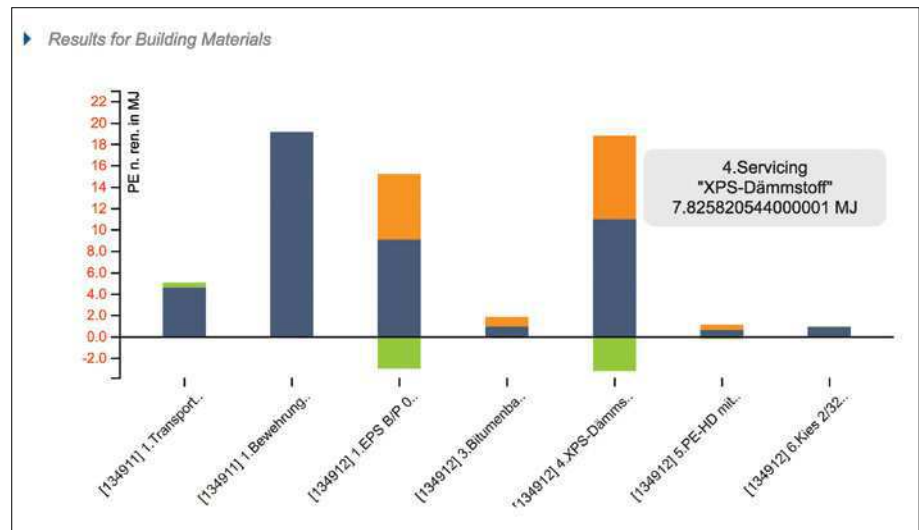


Figure 11
 Material-related evaluation of the PENRT (total use of non-renewable primary energy resources) in eLCA. Source: BBSR

Image right
 Source: enzberg/IBO

The calculations are based on the ÖKOBAUDAT datasets. To ensure that incomplete ÖKOBAUDAT building material datasets that do not represent the entire life cycle can also be used directly in life cycle calculations, the missing data is completed in eLCA with the aid of generic disposal datasets (and the required version is selected here in each case).

eLCA is provided free of charge in German and English by the BBSR online [4].

Scope of functions in eLCA:

- dynamic screen graphics
- transparent calculations
- comparison of variants
- BNB-compliant results
- graphical evaluation
- life cycle analysis of new buildings and existing buildings
- BNB-compliant linking of material datasets over the life cycle
- import and export interfaces
- online availability





Standards

- DIN EN ISO 14020 Umweltkennzeichnungen und -deklarationen – Allgemeine Grundsätze (ISO 14020:2000); German version EN ISO 14020:2001, February 2002 (Environmental Labels and Declarations – General Principles)
- DIN EN ISO 14025 Umweltkennzeichnungen und -deklarationen – Typ III Umweltdeklarationen – Grundsätze und Verfahren (ISO 14025:2006), German and English version EN ISO 14025:2011 (Environmental Labels and Declarations – Type III Environmental Declarations – Principles and Procedures), October 2011
- DIN EN ISO 14040 Umweltmanagement – Ökobilanz – Grundsätze und Rahmenbedingungen (ISO 14040:2006); German and English version EN ISO 14040:2006 (Environmental Management – Life Cycle Assessment – Principles and Framework)
- DIN EN ISO 14044 Umweltmanagement – Ökobilanz – Anforderungen und Anleitungen (ISO 14044:2006); German and English version EN ISO 14044:2006 (Environmental Management – Life Cycle Assessment – Requirements and Guidelines)
- DIN EN 15804 Nachhaltigkeit von Bauwerken – Umweltproduktdeklarationen – Grundregeln für die Produktkategorie Bauprodukte; German version EN 15804:2012, April 2012 (Sustainability of Construction Works – Environmental Product Declarations – Core Rules for the Product Category of Construction Products)
- DIN EN 15978 Nachhaltigkeit von Bauwerken – Bewertung der umweltbezogenen Qualität von Gebäuden – Berechnungsmethode; German version EN 15978:2011, January 2012 (Sustainability of construction works – Assessment of Environmental Performance of Buildings – Calculation Method)

Image above and right
Source: enzberg/IBO



Abbreviations

API	Application programming interface
BBR	Federal Office for Building and Regional Planning
BBSR	Federal Institute for Research on Building, Urban Affairs and Spatial Development
BMUB	Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
BNB	Assessment System for Sustainable Building
eLCA	Software provided by the BMUB/BBSR for building life cycle assessment
EPD	Environmental product declaration
ILCD	International Reference Life Cycle Data System
LCA	Life cycle assessment
ÖKOBAUDAT	Platform provided by the BMUB/BBSR with data, information and links related to the life cycle assessment of construction works
PENRT	Total use of non-renewable primary energy resources
PCRs	Product category rules
WG InData	Working group International open Data Network for Sustainable Building
CO2	Carbon dioxide
GaBi	The life cycle assessment database Ganzheitliche Bilanzierung
IBU	Institut Bauen und Umwelt e. V. (Institute for Building and the Environment)
openLCA	Open source life cycle assessment tool
Soda4LCA	Software on which the ÖKOBAUDAT database is based in technical terms