Further Information

A wide variety of information on the subject of sustainable building is available at the internet portal www.nachhaltigesbauen.de of the Federal Ministry for the Environment, Naturconservation, Building and Nuclear Safety (BMUB).

Here, general explanations and statements regarding sustainable building can be found as well as information about federal guidelines and working aids. Furthermore, the Assessment System for Sustainable Building is explained alongside extensive data for use as a basis for sustainability assessment. This offering is supplemented by information regarding research topics, current events and an array of good examples for sustainable building.

More information on the „Assessment System for Sustainable Building" is available via:
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Assessment System (BNB)

The Federal Building Ministry (BMUB) 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.

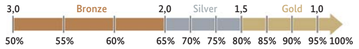
The existing assessment system for office and administration building has been further developed for application with other types of buildings and kinds of utilisation. Furthermore, it shall be continuously revised to reflect results of current research and to accommodate changes in the area of statutory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

Revisions and updates of the assessment system are continuously published via the Sustainable Building Information Portal of the BMUB.

Nachhaltiges Bauen

The assessment system is precisely defined on the basis of up to 50 criteria according to the system variant 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 location 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 the system variant "Office and Administration Building" Version 2011_1

Economic Quality 22,5 %*

Life Cycle Costs		in %*
2.1.1	Building-related Life Cycle Costs	13,500
Performance		
2.2.1	Value Stability	9,000

Socio-Cultural 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	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

Technical Quality 22,5 %*

Technical Execution		in %*
4.1.1	Sound Insulation	5,625
4.1.2	Heat Insulation and Protection against Condensate	5,625
4.1.3	Cleaning and Maintenance	5,625
4.1.4	Dismantling, Separation and Utilisation	5,625

Process Quality 10,0 %*

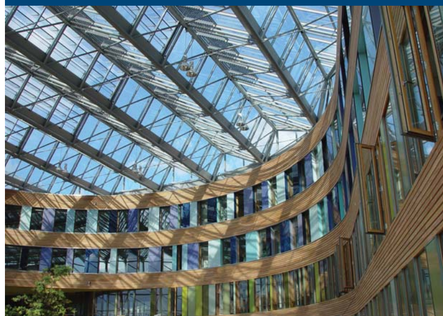
Management and Design		in %*
5.1.1	Project Preparation	1,429
5.1.2	Integrated Design	1,429
5.1.3	Optimisation and Complexity of Planning	1,429
5.1.4	Sustainablity Issues in Tender and Placing	0,952
5.1.5	Requirements for an Optimal Utilisation and Management	0,952
Building Construction		
5.2.1	Building Site / Building Process	0,952
5.2.2	Quality Assurance of the Building Construction	1,429
5.2.3	Controlled Commissioning	1,429

Location Profile

6.1.1	Risks at the Micro-Site	
6.1.2	Conditions at the Micro-Site	
6.1.3	Image and Character of Location and Quarter	
6.1.4	Public Transport Connections	
6.1.5	Vicinity to Use-Specific Services	
6.1.6	Supply Lines / Site Development	

Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety

Sustainable Building Activities by the Federal Government

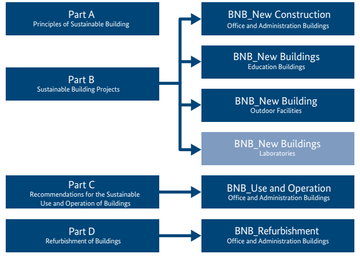


Guideline for Sustainable Building

The Guideline for Sustainable Building offers concrete and practical assistance for planning, constructing, maintaining, operating and using federal properties. It serves as a toolkit for meeting the comprehensive requirements of federal construction measures where its implementation is mandatory.

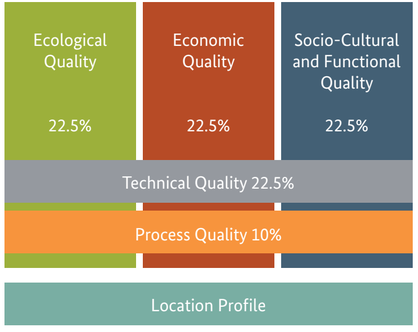
Other clients, such as the federal states, the local authorities or private-sector players, can also make use of the guide. Moreover, the Guideline for Sustainable Building examines the implementation of the Assessment System for Sustainable Building which provides the basis for assessing the final quality of a building.

Part A of the guide deals with the general principles and methods of sustainable building that are equally applicable to public and private sector projects. Part B is concerned with the task-related principles, scenarios and bases for planning of new construction projects and major construction work in the building stock (i. e. extensions to existing buildings). Part C contains recommendations for optimising use and management processes. Part D explains the particularities of the refurbishment of existing buildings.



Part A: Basic Principles

The classic approach with respect to sustainability is based on the three dimensions of ecology, economy and sociocultural factors, each of which is to be given equal and long-term consideration. Protective goods and targets are deduced from these dimensions, as for example the protection of the environment, of capital and of health.



Furthermore, sustainable building also exhibits cross-sectional qualities which have an effect on all of the classic areas of sustainability. Of immediate relevance to building quality in this context are technical quality and process quality. The quality of the location is also significant for the sustainable utilisation of a building, but this can be influenced only to a limited extent by the design. The location characteristics therefore need to be considered separately from the structure itself.

All evaluation and assessment benchmarks named above are to be applied to the entire life cycle of a building.

Ecological Quality

Here, the protective good is the natural environment. Sustainable building is distinguished by the protection of resources and the minimisation of effects on the global and local environment. In order to achieve these objectives, the flows of material and energy need to be optimised for the entire life cycle of the building.

Economic Quality

In terms of economics, the resource worthy of protection is capital. Here, it is not primarily the investment expenditure which is to be considered. Instead, the costs over the entire life cycle of a building are to be optimised. As a result, it is not only the follow-up costs of an investment, but also the aspects of economic efficiency and value stability which become the focus of scrutiny.

Sociocultural and Functional Quality

The building users and their needs are the centre of attention for assessing sociocultural and functional quality. Accordingly, the protective targets here are the health, safety and comfort of the users and the quality of design. These aspects have a decisive influence on identification with the build environment and have the capability of satisfying the functional requirements the user expects a building to meet.

Technical Quality

The technical quality focuses on the technical execution of a building and its systems. As a cross-section quality, it exercises influence on all areas of sustainability. Aspects to be considered are the structural integrity, fire and sound protection, moisture and thermal insulation, cleaning, maintenance and the dismantling capability of buildings.

Process Quality

In light of the fact that the decisions made in early planning stages exercise great influence on the quality of the building, special significance is given to planning quality. A high process quality in the erection stage of a building is a prerequisite for the optimisation of the entire life cycle. In this context, it is particularly the aspects of the quality of the planning process, of the building execution and of the preparation for the operations which merit the greatest scrutiny.

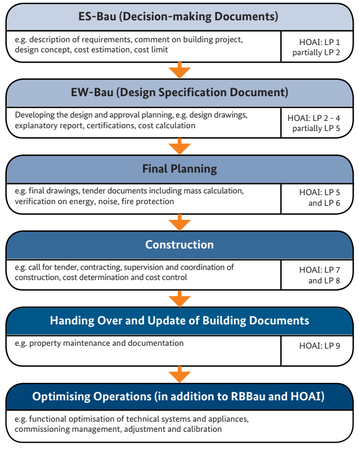
Location Profile

Site characteristics can be influenced to only a limited extent by the construction of a building. Conversely, however, the quality of the site influences all of the objectives of sustainable building. It is therefore necessary that not only political and strategic considerations need to be taken into account when selecting a building site, but also the risks and relationships at the micro-location, the district characteristics and the embedding in the local infrastructure.

Part B: Sustainable Building Projects

Part B ("Sustainable Building Projects") covers the implementation of the basic principles defined in Part A during the entire planning and construction process. Thus, the course for a sustainable quality of future buildings is set at an early stage.

It explains the task-related principles, the life-cycle scenarios to be considered and the planning principles for new construction projects and construction projects in connection with existing buildings. They are based on the chronological order of the planning phases as stipulated in the Guidelines for Federal Construction Measures (RBBau) and on the work phases as stipulated in the Statutory Fee Schedule for Architects and Engineers (HOAI). All actors involved in the planning process can make use of these resources to implement measures that are based on the principles and aims of sustainable development.



Part C: Use and Operation

Part C ("Recommendations for the Sustainable Use and Operation of Buildings") describes methods for optimising use and management processes while taking account of the Assessment System for Sustainable Building criteria. During the period of use of a building, the focus is on its actual properties and characteristics; the description, assessment and targeted influencing of planned features are of secondary importance in this phase.

Costs, environmental impacts and resource consumption during the period of use can be lowered by a continuous monitoring of performance and consumption, providing information to and educating owners/operators as well as users about the effect of certain measures on sustainability as well as by periodic operation and usage analyses.

Part D: Refurbishment of Buildings

Part D contains specific comments, provisions and recommendations for the refurbishment of existing buildings; it complements Parts A and B which are in principle also applicable to construction work in the building stock.

The refurbishment of existing buildings is treated separately for two reasons. On the one hand, the planning and construction processes in refurbishment projects differ in many ways from those in new construction projects. On the other hand, certain sustainability aspects must be looked at from a different perspective when dealing with building stock.

Annexes

The annexes to the Guideline for Sustainable Building contain a comprehensive toolkit to facilitate quality assurance, such as templates for target agreements, preliminary evaluations and reports. In addition, binding limits and target values for federal construction measures are defined.