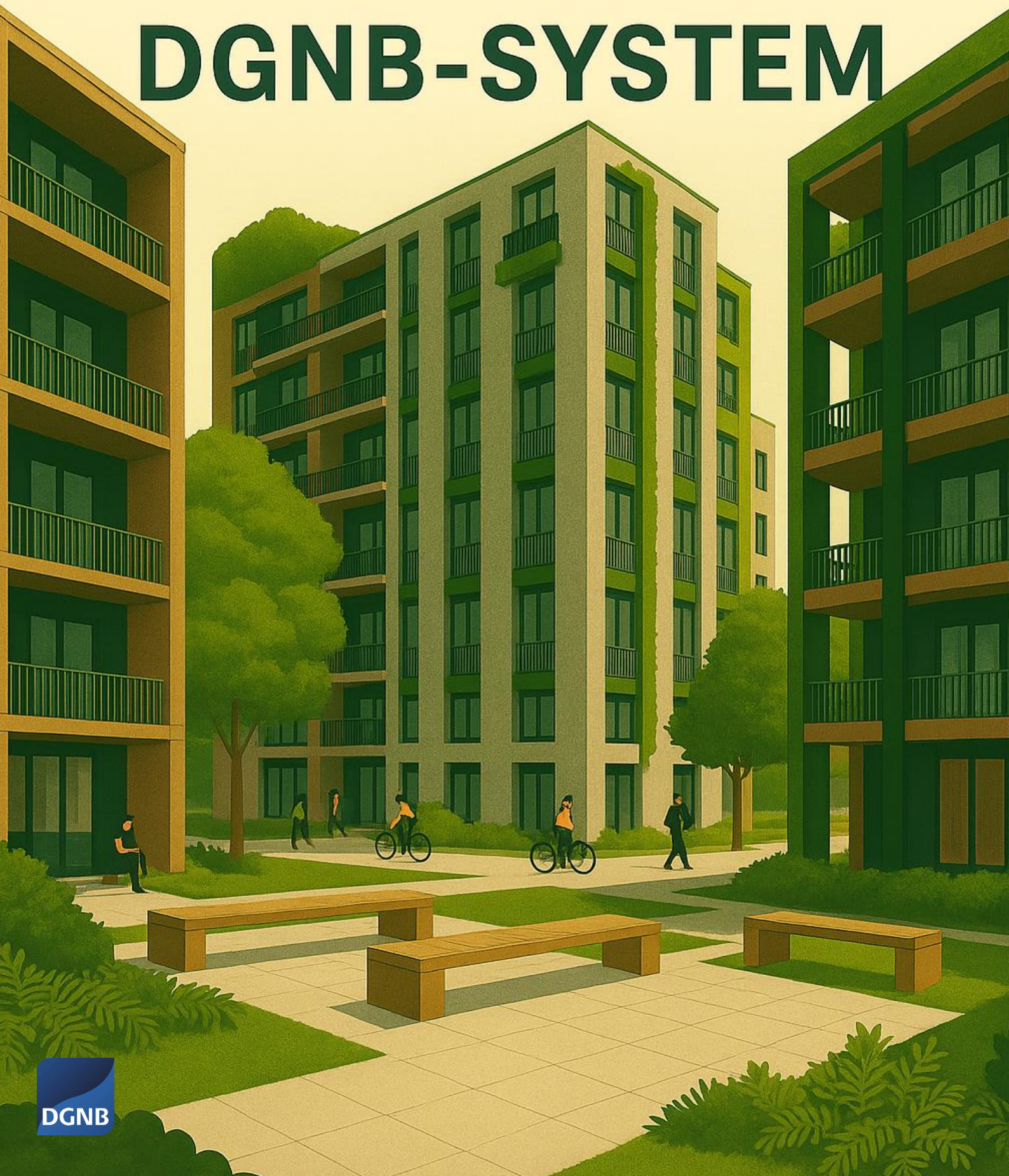
SUFFICIENCY IN THE DGNB-SYSTEM



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Sufficiency in the DGNB system – starting points for further development.

As early as the 1970s, it became clear that economic growth was reaching planetary limits. Sustainable development cannot therefore be achieved through greater efficiency and technical innovation alone – it also requires sufficiency: the conscious limitation of resource consumption through smaller areas, fewer new buildings, longer use, and careful use of space, land, and materials. Sufficiency, derived from sufficere ("to be sufficient"), asks how much is enough – for a good life within ecological limits, today and in the future. It complements the familiar sustainability strategies of efficiency and consistency and focuses on social justice, quality of life, and optimization of use.

In the construction industry in particular, a key lever is the reduction of living and working space and the better use of existing buildings. This not only reduces emissions and resource consumption but also avoids further soil sealing. In addition, sufficiency-oriented approaches can contribute to solving current challenges such as housing shortages – without creating new environmental impacts. Nevertheless, sufficiency remains "the least loved sustainability principle" (Paech, 2013), which "is hardly ever practiced systematically" (Schoof, 2014).

Holistic analyses of building structures and their potential for sufficient use are rare, as is reliable data on their influence on ecological impacts – in particular, greenhouse gas emissions over their life cycle.

During a CPEA workshop in January, various approaches to sufficiency were discussed – from affordable housing and waste prevention to flexible design. It became clear that a lack of data, real estate speculation, and short-term thinking are considered major obstacles. Proposals included the creation of clear databases, the recording of vacancies, and the promotion of the circular economy, which should lead to concrete recommendations for action. A small working group of ÖGNI auditors came together with the aim of systematically anchoring sufficiency as an equal sustainability strategy in the DGNB system.

Objectives of the working group

The working group is developing well-founded proposals to strengthen the integration of sufficiency principles into the certification system, focusing on behavioral change, critical needs analysis, and usage optimization. It is guided by the criteria of the DGNB New Construction Version 2023 and the guidelines of the DGNB Future Vision 2030.

The results developed should be understood as impulses and practical recommendations.

Possible future developments include:

The creation of a guide “Sufficiency in the DGNB System”

- The development of a checklist for sufficiency measures in the planning process.
- The systematic integration of sufficiency criteria into existing DGNB evaluation catalogues

In addition, sufficiency approaches also appear meaningful in the context of the GIB system, especially through targeted user surveys to better capture actual needs and avoid redundant measures. This was considered in the further development of the GIB system (Version 2025).

The working group sees itself as an initiator that makes sufficiency visible and measurable in the evaluation system.

Set of tasks

The aim of the working group is to identify specific starting points for systematically and meaningfully anchoring sufficiency principles in the DGNB/ÖGNI certification system.

To this end, the working group held two meetings to conduct a detailed analysis of all criteria categories of the DGNB system for new buildings, version 2023 (ENV, ECO, SOC, PRO, TEC), regarding existing sufficiency approaches. The focus is on examining the extent to which sufficiency-related content is already considered, whether requirements go beyond the target, or whether no additional sustainability benefits are achieved.

In addition, potential for improving the accessibility of sufficiency is to be tapped, for example through the introduction of suitable benchmarks, minimum standards, or qualitative additions.

Finally, existing obstacles that hinder sufficient planning and construction were systematically identified. The identification of these “pain points” serves to make structural barriers transparent and, based on this, to initiate targeted further developments in the certification system.

Criteria in the DGNB system

ECOLOGICAL QUALITY – ENV

Sufficiency aims to limit resource consumption through needs-based planning, speed efficiency, and long service lives. In the ecological criteria of the DGNB Version 2023, it offers great potential for reducing environmental impacts, for example through lower material use and avoiding new construction. Its integration enables realistic demand assessment and strengthens holistic ecological evaluation.

ENV1.1	Climate protection and energy
Goal	Holistic assessment of a building's environmental impact throughout its entire life cycle using life cycle assessment (LCA)
Suggestions	Sufficiency in planning: Sufficiency strategies (e.g., less space per user) can be represented in planning variant comparisons and evaluated ecologically.
	Instead of further tightening limits, user behavior should be encouraged to change — e.g., through user manuals and clear communication about realistic comfort levels. → Connection to PRO criteria
	Building type E as a catalyst: This shows that resource-efficient and affordable construction is possible even outside of common standards.
Suggestions	**Assessment framework:** Focusing solely on greenhouse gas emissions (in the 2023 version) is too narrow. Other environmental indicators (like EPD) must also be considered.
Conclusio	The above suggestions are intended as inspiration. However, no change to the criterion is necessary: although sufficiency influences life cycle assessment, it does not require any adjustment to the ENV1.1 evaluation criteria. The evaluation system offers sufficient scope for representation.

ENV	General
Suggestions	**Land efficiency** as an environmental indicator: Pure land consumption should be given greater weight as an evaluation criterion—not just how much land is used, but how efficiently it is used. Greenfield development should be critically examined and linked to other environmental factors.
	Sufficiency as a minimum requirement: It is not only CO_2 that counts – the actual demand for space, technology, and comfort (e.g., room temperature) must also be considered. Sufficiency principles such as lower land consumption or consciously reduced energy use should become mandatory.
	Efficient use of land resources **The assessment should not only focus on efficient use within a building, but also take urban density into account:** **Multi-story buildings (**e.g., six stories) are often significantly more resource-efficient than low-rise, sprawling developments (e.g., single-family homes or retail parks). ➔ A usage-specific assessment may be necessary. There is considerable potential here for some usage profiles.

ECONOMIC QUALITY – ECO

Sufficiency contributes to the economic criteria of the DGNB Version 2023 by reducing life cycle costs through lower space and material requirements and adapted equipment standards. By avoiding oversizing and consciously reducing, investments can be used in a more targeted manner. The focus to date has been on cost-effectiveness and efficiency – sufficiency-oriented approaches complement this with the question of actual demand.

ECO1.1	Building-related costs over the life cycle
Goal	The goal is to use economic resources consciously throughout the entire life cycle of a building. The greatest potential for optimization lies in the early planning phases, when design decisions should be made with consideration for their follow-up costs.
Suggestions	**Sufficiency reduces life cycle costs:** smaller floor space, reduced fittings, and lower material usage reduce construction, operating, and maintenance costs in the long term.
	Cost efficiency through sufficiency strategies: Examples such as building sufficiency show how ecological and economic advantages can be combined.
	Missing illustration in the DGNB system: The current m^2/m^3-based assessment of LCC does not adequately reflect the added value of sufficient construction.
Suggestions	Introduction of an additional reference standard (e.g., unit costs per workplace/apartment) for better evaluation of sufficiency measures in the criterion – **Agenda 2030 Bonus bonus**
Conclusio	Currently, common evaluation systems lack a direct reference to sufficiency. It would make sense to consider construction costs and environmental impacts relatively—e.g., via unit costs per residential unit: How many usable units can be realized with minimal effort?

ECO2.4	Value stability
Goal	The goal is to create buildings with high user acceptance and long-term market potential. Adaptability and convertibility ensure value retention, extend the useful life, and make an important contribution to climate protection and resource conservation.
Suggestions	**Sufficiency promotes value stability**: Lower consumption through moderate use of space and simple furnishings can increase long-term value retention and adaptability.
	Synergy effects strengthen sufficiency: The combination of multifunctional concepts, shared spaces, and flexible use maximizes the benefits of sufficient strategies.
	AGENDA 2030 Bonus (Indicator 4.3): If a sufficiency concept is developed and implemented with the client, this can be viewed positively – specific criteria for this are currently being developed (e.g., area per user).
Conclusio	Value stability is already rewarded but should perhaps be anchored more firmly elsewhere. Recommendation: Transfer criterion 8.2 from the Future Project 2030 to the 2023 version to systematically reflect sufficiency and space efficiency.

ECO2.6	Climate resilience
Goal	The aim is to strengthen the resilience of buildings to current and future environmental influences in order to ensure long-term and resource-efficient use. Climate change is making this issue increasingly relevant.
Suggestions	In criterion ECO 2.6 (climate resilience), passive adaptation measures (e.g., shading, natural ventilation) should be given greater weight.
	Indicator 3 (radon) from ECO 2.6 is technically more relevant to the SITE criterion.
Conclusio	The role of comfort should be critically examined: Where does comfort end and health impairment begin (e.g., noise)? A differentiated assessment is necessary instead of a blanket scoring system.

SOCIOFUNCTIONAL QUALITY – SOC

Sufficiency can be integrated into the social criteria of the DGNB system by formulating comfort requirements in a needs-based and user-centered manner. Adaptive solutions, individual control (e.g., of air, light, temperature), and the avoidance of blanket over-performance ensure well-being with reduced resource consumption. Targeted renovation approaches and the strengthening of user awareness should be supported by the system, especially in existing buildings.

SOC1.1	Thermal comfort
Goal	The aim is to ensure thermal comfort in both winter and summer that corresponds to the intended use and provides adequate comfort.
Suggestions	Allow adaptive models for air conditioning as well, increase the permissible deviation frequency to 10%, define zones with higher requirements (e.g., work and sleeping areas), and prioritize passive measures in the building concept.

SOC1.2	Indoor air quality
Goal	The aim is to ensure indoor air quality that does not impair the well-being and health of those using the space.
Suggestions	Switch from general room conditioning to individual adjustment and use at the workplace.

SOC1.3	Sound insulation and acoustic comfort
Goal	The aim is to ensure sound insulation appropriate to the use of the rooms, which prevents unreasonable disturbance and ensures adequate comfort of use.
Suggestions	Apply requirements in a differentiated manner: avoid over-compliance, adapt to renovation and timber construction (e.g., impact sound), implement room acoustic measures in stages and according to need.

SOC1.4	Visual comfort
Goal	The aim is to provide sufficient and uninterrupted daylight and artificial lighting in permanently used indoor spaces to promote health, well-being, performance, and energy efficiency.
Suggestions	In renovations, maintaining or moderately improving window areas—depending on the existing structure—can be positively evaluated in terms of sufficiency and visual connection to the outside. Avoid full-area illuminance levels of 500–800 lx and instead meet the requirements of the ASR (German Social Security Regulations) for individually controllable workplace lighting.
Conclusio In General SOC	Building type E in Germany should be examined in detail. Reducing comfort requires user acceptance and support; strengthen user awareness through transparency and guidance; systematically differentiate requirements for existing buildings and, if necessary, give them greater weight (promote renovation).

TECHNICAL QUALITY – TEC

Sufficiency can be effectively anchored in the technical quality of the DGNB system by focusing on simple, durable, and resource-efficient solutions. In the building envelopes, technology, and mobility, the focus is on the essentials—for example, through passive measures, reduced use of technology, separable components, or the avoidance of over-equipment. Technical effort is minimized through adapted comfort standards, preservation of existing buildings, and neighborhood-specific solutions—while maintaining high functionality and sustainability.

TEC1.3	Quality of the building envelope
Goal	Our goal is to exploit the full potential of the building envelope. It should serve as a protective shell to minimize the energy required for air conditioning buildings, while at the same time ensuring a high level of thermal comfort, preventing structural damage, and acting as both an energy source and an extended exterior surface.
Suggestions	▪ Balanced heat losses and gains ▪ Facade surface efficiency, with high intensity of use ▪ Less steel, better hybrid construction methods and/or increased recycling content ▪ Durable components and non-destructive replacement of components ▪ Use PV modules as facade and/or roof-integrated outer shell (BIPV) ▪ Use variable, external sun and glare protection instead of external sun protection and internal glare protection

TEC1.4	Use and integration of building technology
Goal	The aim is to create a building design that makes optimal use of passive systems, integrates renewable energies, and can be adapted to new uses or technical developments with minimal effort—ideally in conjunction with the neighborhood.
Suggestions	▪ Design that allows for flexible adjustments to changes in use with minimal effort. ▪ Technical concept designed for simplicity and minimal maintenance. ▪ Visualization of energy consumption for users to ensure optimal use of building services ▪ Adjusted comfort level sufficient for summer and winter. ▪ Limited bathroom fittings (shower or bathtub) ▪ No elevators in buildings with <5 floors, for example ▪ Instead of a continuous hot water temperature of at least 60°C, optimize circulation. ▪ No drinking water for toilet flushing; better to use service water. ▪ Focus on neighborhood supply instead of many smaller generation plants

TEC1.6	Circular construction
Goal	The aim is to use natural resources sparingly and efficiently by recycling materials with no loss and significantly reducing their use. In this way, the DGNB promotes

	a truly implemented circular economy that preserves existing value and secures resources for future generations.
Suggestions	▪ Preservation of existing buildings: Evaluation of conversion, further construction, redensification, and addition of floors to preserve existing buildings and reduce material use. ▪ More separable connections instead of adhesives or inseparable connections. ▪ Waste-free/minimized production, supply chains, construction sites, building use, and/or demolition—reduction of waste in all phases. ▪ Ensuring ease of repair ▪ Use of tools for creating circularity balances or circularity indices: optimization of planning regarding sufficiency.

TEC3.1	Mobility infrastructure
Goal	The aim is to use resources sparingly in infrastructure and services, reduce traffic-related emissions, and promote comfortable and affordable sustainable mobility solutions.
Suggestions	▪ Location-appropriate, environmentally friendly mobility and shared use of synergies and multiple uses in the surrounding area. ▪ No underground parking or parking spaces; better integration of car/scooter/bike sharing ▪ No elevators in buildings with <5 floors, for example ▪ All traffic areas to be constructed in exposed concrete or without surface coating

PROCESS QUALITY – PRO

Sufficiency can be specifically embedded in the process quality of the DGNB system by asking key questions such as “How much is enough?” during the project preparation phase and setting resource-saving targets. Sufficiency-oriented tenders, needs-based planning, reduced standards, and shared usage models optimize material, space, and technology requirements at an early stage. In construction, commissioning, and operation, sufficiency helps to make processes efficient, save resources, and raise user awareness of sustainable behavior—while maintaining functionality and quality.

PRO1.1	Quality of project preparation
Goal	The aim is to achieve the best possible building quality through an optimized and transparent planning process by defining the relevant framework conditions at an early stage (“Phase 0”).
Suggestions	▪ Define sufficiency as a target value in requirements planning. ▪ “How much is enough?” – this question should be an integral part of phase 0. ▪ Anchor sufficiency in the requirements/specifications document. ▪ Implementation: Critically review technical standards, comfort requirements, or space allocation plans, reduce them if necessary, and document the changes.

PRO1.4	Ensuring sustainability aspects in tendering and awarding contracts
Goal	Our goal is to integrate sustainability aspects early on, right from the tendering phase, to ensure that all decisions are based on an integrated approach.
Suggestions	▪ Set sufficiency as a project goal: Define space efficiency, resource conservation, and flexible use as goals in the tender. ▪ Specify performance requirements: Promote needs-based, resource-conserving solutions with clear criteria such as minimized use of space and resources. ▪ Adapt evaluation criteria: Give preference to designs with lower material, space, or technology requirements while maintaining the same user quality. ▪ Strengthen shared use: Specifically request variants with higher usage intensity and shared infrastructure.

PRO1.6	Procedure for urban planning and design concepts
Goal	The goal is to create sustainable buildings that people enjoy using for a long time. Sustainability and building culture are mutually dependent and inextricably linked. Against this backdrop, the DGNB's goal is to improve the design quality of our built environment.
Suggestions	▪ Establish sufficiency as a guiding principle: Demand resource-saving, space-efficient, and flexible concepts right from the start. ▪ Prioritize space efficiency: Focus designs on needs-based rather than maximum space utilization. ▪ Promote multiple use: Provide targeted support for communal and dual-use spaces. ▪ Minimize space consumption: Give preference to designs with low sealing and high open space quality.

PRO2.1	Construction site / Construction process
Goal	The aim is to minimize negative impacts on the local environment during the construction phase. To achieve this, it is necessary to raise awareness and train construction workers on relevant environmental issues.
Suggestions	▪ Minimize material consumption: Avoid surpluses (e.g., through just-in-time delivery), recycle unused materials, minimize waste. ▪ Keep construction site infrastructure lean: Reduce vehicle fleet, share infrastructure with neighboring construction sites if necessary. ▪ Plan processes in a resource-efficient manner: Design construction processes efficiently – without idle time, duplication of work, or unnecessary effort.

PRO2.3	Ordinate commissioning
Goal	The aim is to commission the building in an orderly manner after completion and to implement the planned performance with minimal deviations.
Suggestions	▪ technology meets requirements: Align technical systems such as heating, ventilation, and cooling with actual user requirements—no oversizing. ▪ Activate space utilization: Upon handover, ensure that communal and multi-use areas are used as planned. ▪ Design monitoring to be sufficiency-oriented: Record consumption and usage data and take targeted corrective action in the event of inefficient use.
Conclusio	Sufficiency in orderly commissioning means adjusting and using technology, space, and operations in such a way that only as much energy, space, and resources are used as is necessary – no more. This not only supports environmental goals but also reduces operating costs.

PRO2.4	Preparing for sustainable use
Goal	The aim is to commission the building in an orderly manner after completion and to implement the planned performance with minimal deviations.
Suggestions	▪ Raise user awareness of sustainable behavior: Provide training on resource-efficient behavior, e.g., heating and ventilation according to need, or shared use of rooms and equipment. ▪ Align the operating concept with needs: The operating manual should support resource-saving use, e.g., through zoned heating strategies, daylight-based lighting, or simple controls.

Possible measurable sufficiency benchmarks in the DGNB system

Reduction in the use of primary raw materials:

- Key figure: Total mass or mass % of primary material saved compared to standard planning.
- Target: Minimization of the use of primary raw materials through reuse, recycling, or the use of renewable raw materials.

Space efficiency/space sufficiency:

- Key figure: Space consumption in square meters per user.
- Target: Reduction of space and resource consumption.

Energy efficiency / emissions reduction (TEC 1.3):

- Key figure: Energy consumption (electricity and heat) per square meter or per user.
- Target: Reduction of energy consumption through efficient building technology and passive systems.

Material efficiency (TEC 1.6):

- Key figure: Material intensity (e.g., material use per square meter of building area).
- Target: Optimization of material use through lightweight and multifunctional materials.

Reuse rate (TEC 1.6):

- Key figure: Percentage of reused materials or components.
- Target: Maximizing the reuse of existing materials and components.

Water consumption (ENV / ECO):

- Key figure: Water usage per square meter or per user.
- Target: Reduce water consumption through water-saving technologies and rainwater harvesting.

Life cycle analysis (ENV / ECO):

- Key figure: Environmental impact over the entire life cycle of a product or building.
- Target: Assess the environmental impact from manufacturing to disposal to identify more sustainable solutions.

Outlook

The systematic integration of sufficiency into the DGNB/ÖGNI certification system marks a major step toward a holistic and sustainable sustainability assessment. While efficiency and consistency have been

the focus so far and are well established, it is becoming increasingly clear that limiting absolute resource consumption is crucial to not exceeding planetary boundaries. Sufficiency does not require technical excellence, but rather a smart needs analysis, the courage to simplify, and a conscious approach to space, materials, and comfort.

The working group initiated by ÖGNI has created a concrete framework for action by analyzing existing criteria and developing initial proposals. The results show that sufficiency is already implicit in some criteria of the DGNB-system, but needs greater visibility, targeted indicators, and a conscious assessment logic - for example, through benchmarks for space efficiency, material use, or reuse rates.

The next steps will include, for example, a practical guide, checklists for planning teams, and suggestions for further developing the evaluation system. The aim is to establish sufficiency not only as an attitude but also as a measurable variable, especially where land expansion, technical overload, or comfort requirements conflict with sustainability goals.

Building type E from Germany is a prime example of how simple, cost-effective, and resource-efficient buildings can be achieved without exceeding standards.

The further development of the DGNB/ÖGNI system into a sufficiency-sensitive assessment framework is therefore not only a logical technical step, but also a necessary contribution to the construction transition – for climate-friendly, resilient, and affordable construction.

The planned DGNB Essentials System can effectively support the integration of sufficiency by formulating key principles such as space efficiency, simple technology, reuse, and need-based equipment as minimum requirements. By focusing on the essentials, it provides an ideal framework for implementing sufficiency-oriented planning and construction in a practical and low-threshold manner – especially for projects that aim to achieve maximum sustainability impact with limited resources.

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