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Guide to the HypZert Scoring Model for Sustainability Criteria

In order to be able to value and finance property in a future-proof manner today, sustainability factors and ESG risks relating to a property must be assessed and the relevant data collected over the long term. This is the only way to validly identify influences on value, comprehensively assess property portfolios or holdings and manage steps to be taken. But how can these ESG and sustainability criteria be mapped appropriately?

Appraisers or valuers can map the opportunities and risks associated with a property as part of the valuation by carrying out a comprehensive inspection and analysing the available information. The question is: What additional information is needed to assess the sustainability of a property? What assessments can be made as part of the ESG risk assessment? This guide outlines an approach to the risk assessment of sustainability criteria.

Background

Initiated by the adoption of the Paris Climate Agreement in 2015 and the UN Sustainable Development Goals, an international process has been launched to implement sustainability in all areas of society known as ESG (Environment, Social and Governance).

The European Union is also committed to the above-mentioned goals and is working intensively on their implementation. Among other things, capital flows are to be channelled into sustainable economic activities in the future. With the so-called taxonomy, the EU created a standardised European framework for assessing the sustainability of economic activities in summer 2020.

The taxonomy includes the following environmental goals:

» Climate protection;

» adaptation to climate change;

» sustainable use and protection of water and marine resources;

» transition to a circular economy;

» prevention and reduction of environmental pollution, and

» protection and restoration of biodiversity and ecosystems.

In the building sector, the taxonomy defines sustainability criteria for new construction, the purchase and ownership of existing buildings and energy-efficient refurbishment measures.

Regulatory requirements from the German and European financial supervisory authorities also require ESG risks to be taken into account when assessing collateral.

ESG in the context of property valuation

Property financing is closely linked to property valuation, as a market and mortgage lending value appraisal must be prepared for every financing arrangement. The property valuation is usually carried out by certified valuers who can also assess the property from an ESG perspective, as they have been taking climate and environmental risks and energy-related building characteristics into account in their valuation for many years, in some cases quantitatively

in the market and mortgage lending value (via valuation parameters) and qualitatively in the market and property rating (to assess medium-term saleability). There are various proposals for assessing climate and environmental risks as well as energy-related building characteristics, but as yet there is no detailed, standardised valuation model that is specifically aimed at appraisal activities. As a rule, consideration is still largely given in the context of other assessment criteria and/or in conjunction with a generalised assessment in text form.

Impact of sustainability criteria in a valuation

Sustainability aspects can have an impact on all valuation parameters. Production costs, net rents and the tenant's operating costs will be increasingly influenced by sustainable construction methods, energy consumption, etc. in the future. The level of management costs (e.g. maintenance, allocation of CO_2 tax to tenants and landlords, ...) and the remaining useful life (e.g. after energy modernisation) will also be directly affected. Sustainability criteria influence prices and therefore also the property yield.

ESG risks must also be taken into account when determining the mortgage lending value. The characteristics of the ESG factors can be taken into account by the valuer by adjusting the valuation parameters of the individual valuation methods.

Consideration of sustainability in a market and property rating

The assessment of the medium-term saleability of a property in a typical market and property rating sometimes also evaluates environmental/climate risks and energy-related building characteristics in addition to other criteria. However, the rating result itself does not allow any conclusions to be drawn as to the extent to which it is influenced by sustainability characteristics.

Currently, various ESG assessment procedures are already being developed or applied in financial institutions, especially those that have to implement EBA-GLOM. If a separate model is not yet available, the following proposal can be helpful as an independent scoring system.

ESG scoring model

Definition

ESG scoring is a standardised procedure that identifies and quantifies the sustainable characteristics of a property. This is done in particular by taking into account the energy properties and location-relevant environmental and climate risks as well as the environmentally relevant impairments caused by the property. The focus here is on analysing environmental factors (E). Social aspects are also taken into account where relevant.

Properties within the meaning of the definition are existing properties and, in the case of projects, notionally completed properties. The benchmark is the current and future CO_2 emissions caused by the use of the property at the location on the reporting date and the degree of fulfilment of the existing environmental targets in accordance with the Taxonomy Regulation.

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Methodological approach

For ESG scoring, four criteria groups with qualitatively and quantitatively measurable criteria are defined based on the market and property rating. Quantitative (measurable) criteria, such as final energy consumption and CO_2 emissions, can be taken from the energy performance certificate or determined with the help of an energy classification tool. For the qualitative criteria, we provide examples of measurement standards below that can form the basis of the assessment. The basis insofar as it provides information on possible indicators for assessing a criterion without claiming to be exhaustive.

The weighting of the individual criteria in the groups and of the criteria groups among themselves is also predefined. The HypZert ESG scoring for real estate is based on a six-point rating scale and a score as the final result. How the result determined in this way is integrated into the business policy of the credit institution is not the task of the valuers. However, it is a helpful tool for them to create transparency about the sustainability of a property.

Classification of sustainability criteria by categories

The following four groups of criteria can be used to comprehensively assess the sustainability of a property from an expert's perspective:

| Environment/climate risks | Property | Building | Energy |
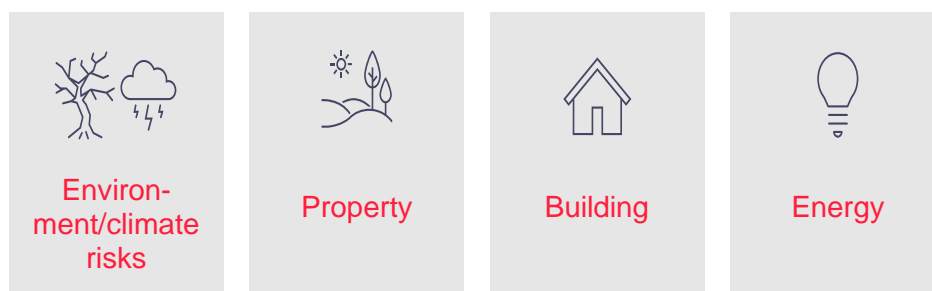
The following table shows the four criteria groups for residential and office properties, including the individual criteria and their respective weighting:

15 %	**Environmental influences & climate risks**	12,5 %	Storm/tornado
		12,5 %	Hail, heavy rain
		12,5 %	Flooding, storm surge
		12,5 %	Emissions
		12,5 %	Forest fire
		12,5 %	Heat/drought, lightning strike
		12,5 %	Earthquake/ground subsidence
		12,5 %	Landslide
20 %	**Property**	25 %	Social infrastructure
		25 %	Ecological infrastructure
		20 %	Soil pollution
		30 %	Property situation
25 %	**Building**	25 %	Architecture
		30 %	Construction method
		35 %	Fit out
		10 %	Third-party usability
40 %	**Energy**	50 %	Final energy demand and consumption
		50 %	CO_2 emissions

The weighting and measurement standards for other commercial properties may differ from the above. An extension of the guidelines and the scoring sheet is currently being worked on or planned.

Scoring scale

The ESG scoring has a scale with six gradations to visualise the risk:

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
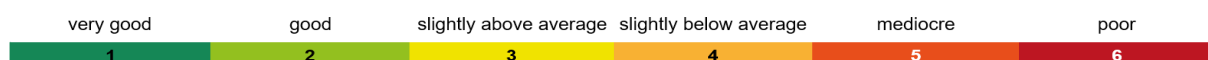
The scoring sheet is made available to HypZert valuers and qualified valuers free of charge by vdpResearch via download.

ESG scoring sheet

ESG scoring

vdpResearch HypZert

Valuer:	
Valuation date:	
Property type:	**Office/Residentail**
Building type: Year of construction/ modernisation:	

Gesamtüberblick	Weighting
Criteria group 1: environmental impacts & climate risks	15 %
Criteria group 2: property	20 %
Criteria group 3: building	25 %
Criteria group 4: energy	40 %
Overall scoring for the existing property	

Scoring legend:

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

Criteria group 1: environmental impacts & climate risks	Valuation	Weighting
Storm/tornado		12,5 %
Flooding/storm surge		12,5 %
Hail/heavy rain		12,5 %
Emissions		12,5 %
Forest fire		12,5 %
Heat/drought, lightning strike		12,5 %
Earthquake/landslide		12,5 %
Mining damage/soil subsidence		12,5 %
Scoring for criteria group 1		

Criteria group 2: property	Valuation	Weighting
Social infrastructure		25 %
Ecological infrastructure		25 %
Soil pollution		20 %
Property situation		30 %
Scoring for criteria group 2		

Criteria group 3: building	Valuation	Weighting
Architecture		25 %
Construction method		30 %
Fit out		35 %
Third-party usability		10 %
Scoring for criteria group 3		

Criteria group 4: energy	Valuation	Weighting
Endenergiebedarf/-verbrauch		50 %
CO_2-Emissionen		50 %
Scoring for criteria group 4		

Criteria group 1: environmental & climate risks

Significant location-relevant risks are hazards due to force majeure or the probability of e.g. storm or tornado, storm surge, hail, heavy rain, flooding, emissions, earthquakes, forest fires, heat, lightning and/or mining damage.

These can be obtained from validated providers (such as K.A.R.L.®), but in some cases can also be determined by the valuer's in-depth local knowledge or by expert third parties. How the weighting of the individual risks changes with the probability of one or other natural hazard or mining damage remains open at this point. Professional providers can deliver a valid result here.

Criteria group 2: property

Criteria group 2 is concerned with the affected property in its surroundings and the property situation itself. These are the following quantitative (measurable) criteria as well as qualitative criteria to be assessed by the valuer using measurement standards:

» **Social infrastructure**
  Accessibility of daycare centres, schools, local amenities, cultural and sports facilities, doctors and medical care facilities, senior citizens' facilities

» **Ecological infrastructure**
  Biodiversity-promoting connected green spaces, cycle paths, e-charging stations, car sharing, connection to public transport

» **Soil contamination**
  Contaminated sites and groundwater contamination, (risk of) use-related pollution or emissions, previous uses*

» **Property situation**
  Sealing of the property area, number of/possibilities for bicycle parking spaces, media connection (communication)

only for new buildings/projects (brownfield/greenfield)

Criteria group 3: buildings

Criteria group 3 looks at the sustainability of the building. The aim here is to focus on criteria that, in contrast to marketability, are aimed at long-term resilience, i.e. the ability to adapt to climatic and social changes:

» **Architecture**
  Building design, adaptation to climate change, biodiversity in the building, social indicator: health and well-being in the property

» **Construction method**
  Physical building properties, recyclability of the building, pollutants in the building, recyclability of construction and demolition waste*

» **Fit out**
  Water consumption fit out, windows, renewable energies (electricity), heating/cooling,

» **Third-party usability**
  Sufficient demand (subjective DP), alternative use, easy conversion (objective DP), social indicator: accessibility/poverty

Criteria group 4: energy

The "Energy" criteria group is the most meaningful criterion regarding ESG. Even though consumption depends on many of the criteria already mentioned (fittings, construction, etc.), final energy consumption/demand and CO_2 emissions play an important role in the scoring. The energy performance certificate – if available – helps to assess this. If the relevant data for the assessment is not available, alternative energy classification tools (e.g. from SkenData, Credium or HypZert Professional Group Energy & Environment) can help.

Challenges for the valuation of office properties

We currently face the following challenges and hurdles when determining measurement standards for the energy quality of office properties: There is no public or official data collection on energy consumption in office buildings and, accordingly, no or hardly any public or official benchmarks. Furthermore, there are no energy efficiency classes for non-residential buildings in Germany from which conclusions could be drawn about the energy quality.

Furthermore, the office building stock is very heterogeneous in terms of building size (and therefore surface-to-volume ratio) and technical building fit out (e.g. air-conditioned versus non-air-conditioned). Accordingly, the energy requirements and consumption vary greatly.

Insofar as individual energy parameters for office buildings have been published (e.g. average values, TOP 15% benchmarks), these are not congruent.

To summarise, the data situation for the office asset class is extremely unsatisfactory.

Preconditions

The model should be as simple as possible and be able to be filled with a small amount of data, usually available for valuations. The following preconditions defined the framework for deriving the measurement standards:

» Selected measured variables: Final energy parameters and CO_2 emissions.

» Final energy parameters can be taken from the energy performance certificate (in accordance with the Energy Savings Regulation (EnEV) or the Building Energy Act (GEG)); the sum of the building-related heat and electricity demand is decisive. The "user electricity" is not taken into account.

» No distinction is made between energy demand and consumption.

» The CO_2 values were calculated on the basis of the CO_2 emission factors in accordance with the Building Energy Act (GEG), assuming a flat-rate ratio of heat to electricity of 70% to 30%.

» A "one size fits all" approach is chosen - i.e. no property-specific derivation of the measurement standards on the basis of property-specific variable primary energy requirement values with a slightly forward-looking perspective in relation to the goals regarding the property.

» The static time model is updated at suitable intervals.

» The final energy parameters and CO_2 emissions are weighted equally.

Glossary

In the comprehensive glossary of the DFGE (Institute for Energy, Ecology and Economy) you will find many terms explained in detail: https://dfge.de/esg-glossar/

Example of measurement standards for residential properties

(without claiming to be exhaustive)

Measurement standards for residential property; criteria group 2: social infrastructure

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

Very good to good connections to social and cultural facilities	Average connection to social and cultural facilities	Moderate to poor connection to social and cultural facilities
▪ Daycare centre, schools, local amenities and doctors are within walking distance (max. 20 min.). ▪ Cultural, sports and senior citizens' facilities are easily accessible by public transport or bicycle.	▪ Daycare centres, schools, local amenities and doctors are easily accessible by public transport or bicycle. ▪ Cultural, sports and senior citizens' facilities can be reached within 30 minutes by public transport.	▪ The daycare centre, schools, local amenities and doctors are more than 30 minutes away by public transport. ▪ Cultural, sports and senior citizens' facilities are more than 30 minutes away, even by private transport.

Measurement standards for residential properties; criteria group 2: ecological infrastructure

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

The ecological infrastructure promotes biodiversity and the reduction of CO_2 emissions	The ecological infrastructure has no significant impact on biodiversity and the reduction of CO_2 emissions	The ecological infrastructure leads to a loss of biodiversity and has no approach to reducing CO_2 emissions
▪ The green spaces on and around the property are connected and designed to promote biodiversity. ▪ A well-developed network of cycle paths and good public transport connections are available for mobility. ▪ There are sufficient e-charging stations and sharing offers for private transport.	▪ The site and surrounding area are averagely greened, but only partially suitable for promoting biodiversity. ▪ Public transport and cycle path networks are available, but there are gaps in terms of time and space. ▪ E-charging stations and car-sharing services are available to a limited extent.	▪ The property and surrounding area are heavily to predominantly sealed. ▪ Public transport and cycle path network are poorly developed. ▪ E-charging stations and car-sharing services are at best very time-consuming to reach.

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Measurement standards for residential properties; criteria group 2: soil pollution

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

Environmentally hazardous soil contamination is not present	No environmentally hazardous soil contamination is known	Environmentally hazardous soil contamination is known
▪ There is no contamination. An expert opinion on contaminated sites is available and an inspection of the property / previous use did not reveal any recognisable signs of contamination. The property has not been affected by soil contamination/ use-related pollution in the past. (DNSH 5) ▪ Contamination was present, for which a contaminated site report is available. Comprehensive remediation and protective measures were carried out and documented.	▪ There is no known contamination. The property has not been affected by soil contamination/use-related pollution in the past.	▪ There is contamination or indications of contamination. A contaminated site report is not available. The property was affected by particular soil contamination/use-related pollution in the past. ▪ There are indications of contamination, but no documentation is available. No conclusive statements can be made about this.

Measurement standards for residential properties; criteria group 2: property situation

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

The property situation is conducive to sustainability goals	The property situation has no influence on the sustainability goals	The property situation runs counter to the sustainability goals
▪ The outdoor facilities of the property to be assessed are only marginally sealed and sufficient water infiltration is guaranteed on site. ▪ A sufficient number of bicycle parking spaces are available on the property or in the immediate vicinity of the property. ▪ The location has a state-of-the-art network infrastructure with an acceptable capacity (fibre optic connection).	▪ The outdoor facilities of the property to be assessed are sealed on average and sufficient water infiltration is hardly guaranteed on site. ▪ Some bicycle parking spaces are available on the property or in the immediate vicinity of the property. ▪ The location has a minimum standard of network connection with slow transmission rates (broadband).	▪ The outdoor facilities of the property to be assessed are almost completely sealed and sufficient water infiltration is not guaranteed on site. ▪ There are no bicycle parking spaces on the property or in the immediate vicinity of the property. ▪ The property in question does not have a modern network infrastructure.

Measurement standards for residential properties; criteria group 3: architecture

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

Environmentally friendly, resource-saving architectural features	Average to generally below-average architectural features (environmental friendliness)	Simple architectural features that no longer meet today's requirements
- Green roof, green façade, green inner courtyard - Integrated nesting boxes, bat boxes [DNSH2] All relevant properties with regard to resilience (above-average dimensioning of the drainage, rainwater retention basin, doors and light wells above ground level, non-return valves in the wastewater, storm clips for roof tiles) are available - Design lies between cube and squat cuboid (favourable A/V ratio) - Passive utilisation of solar energy - View/wide view (water, mountains, greenery) - Flexibly usable floor plans for various stages of life and family situations (detached house with extra-living apartment)	- Potentially plantable flat roof or flat pitched roof, inner courtyard - One or a few relevant properties with regard to resilience are present - Design resembles an elongated cuboid - Time-limited passive utilisation of solar energy - View of buildings with green enforcement - Floor plans with limited flexibility for various stages of life and family situations (3-4-room flat)	- Unplantable roof, inner courtyard - Internal roof drainage, risk of a heating oil tank floating up during heavy rain or flooding, high building height, funnel-shaped slope to basement window - The design is angular or a cuboid with several bays/projections - No utilisation of passive solar energy - View of commercial or industrial property or technical infrastructure - No flexibility in terms of floor plan utilisation (1-room flat) - Severely oversized/undersized room heights

Measurement standards for residential properties; criteria group 3: construction method

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6

Environmentally friendly, resource-saving architectural features	Average to generally below-average architectural features (environmental friendliness)	Simple architectural features that no longer meet today's requirements
- Green roof, green façade, green inner courtyard - Integrated nesting boxes, bat boxes [DNSH2] All relevant properties with regard to resilience (above-average dimensioning of the drainage, rainwater retention basin, doors and light wells above ground level, non-return valves in the wastewater, storm clips for roof tiles) are available - Design lies between cube and squat cuboid (favourable A/V ratio) - Passive utilisation of solar energy - View/wide view (water, mountains, greenery) - Flexibly usable floor plans for various stages of life and family situations (detached house with extra-living apartment)	- Potentially plantable flat roof or flat pitched roof, inner courtyard - One or a few relevant properties with regard to resilience are present - Design resembles an elongated cuboid - Time-limited passive utilisation of solar energy - View of buildings with green enforcement - Floor plans with limited flexibility for various stages of life and family situations (3-4-room flat)	- Unplantable roof, inner courtyard - Internal roof drainage, risk of a heating oil tank floating up during heavy rain or flooding, high building height, funnel-shaped slope to basement window - The design is angular or a cuboid with several bays/projections - No utilisation of passive solar energy - View of commercial or industrial property or technical infrastructure - No flexibility in terms of floor plan utilisation (1-room flat) - Severely oversized/undersized room heights

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Measurement standards for residential properties; criteria group 3: fit out

very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6
Environmentally friendly, resource-saving fit out		**Average to generally below-average fit out features (environmental friendliness)**		**Simple fit out features that no longer meet today's requirements**	
▪ Windows with triple-pane insulating glazing, external sun protection ▪ Centralised controlled ventilation system, decentralised ventilation system ▪ Heating via fuel cell with hydrogen production via climate-neutral electricity generation (e.g. PV system), heat pump, modern pellet or log heating, district heating ▪ Solar system for DHW heating and/or central heating backup ▪ PV system (with wallbox) ▪ [DNSH3] Resource-saving fittings in the sanitary sector ▪ Rainwater and grey water utilisation		▪ Windows with double-pane insulating glazing, refurbished box-type windows ▪ Low-temperature heating or condensing boiler heating up to 10 years old ▪ Single lever mixer, toilet flush with water volume control ("economy button")		▪ Composite windows, single-glazed windows ▪ Outdated low-temperature heating, heating via individual stoves (coal, heating oil, gas), central heating without thermostat control ▪ Hot water preparation via electric instantaneous water heater (without climate-neutral electricity generation) ▪ Two-handle mixer, unregulated toilet flush	

Measurement standards for residential properties; criteria group 3: third-party usability

very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6
Environmentally friendly, resource-conserving subsequent utilisation or conversion		**Conditionally environmentally friendly, resource-conserving subsequent utilisation or conversion**		**Only very costly or impossible environmentally friendly, resource-conserving subsequent utilisation or conversion**	
▪ Functional floor plan ▪ Existing building fabric can still be used ▪ Barrier-free, low-barrier access, internal development and floor plans (threshold-free access, lift > 1.1 x 1.4 m, clear door width > 80 cm, straight flights of stairs, handrails on both sides)		▪ Limited functional floor plan ▪ Accessible development (multi-storey apartment building with lift, but steps in the entrance area, clear door width between 69 and 80 cm)		▪ "very individually designed" villa ▪ Considerable accessibility issues (multi-storey apartment building/ETW on upper floor without lift or lift stop only on every second mezzanine floor, doors <69 cm clear width, spiral staircase in EFH)	

Measurement standards for residential properties; criteria group 4: energy

	very good	good		slightly above average		slightly below average	mediocre	poor			Weight
Energy efficiency class *	A+	A	B	C	D	E	F	G	H		
	30	50	75	100	130	160	200	250	>250		
Final energy (kWh/sqm/a) **	<=30	>30 – 50	>50 – 75	>75 – 100	>100 – 130	>130 – 160	>160 – 200	>200 – 250	>250		50%
	7,2	12	18	24	31,2	38,4	48	60	60		
CO_2 emissions (kg/sqm/a)	<=7,2	>7,2 – 12	>12 – 18	>18 – 24	>24 – 31,2	>31,2 – 38,4	>38,4 – 48	>48 – 60	>60		50%

Good, long-term marketable energy quality and low CO_2 emissions	Average energy quality and average CO_2 emissions	Problematic energy quality and high CO_2 emissions in the long term

* Classification Maximum value according to the German Building Energy Act (Gebäudeenergie-Gesetz)

** CO_2 emission factor natural gas according to German Building Energy Act (Gebäudeenergie-Gesetz) 0.24 kg/kWh CO_2 emissions (kg/sqm/a)

Example of measurement standards for office properties

(without claiming to be exhaustive)

Measurement standards for office properties; criteria group 2: social infrastructure

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
Very good to good connections to social facilities and service providers for short-term needs		**Average connection to social facilities and service providers for short-term needs**		**Moderate to poor connections to social facilities and service providers for short-term needs**	
▪ Restaurants, local shops, service providers, doctors, a gym and a day care centre are all within walking distance (max. 10 minutes).		▪ Restaurants, local shops, service providers, a gym and daycare centre are easily accessible by public transport or bike.		▪ Restaurants, local shops, service providers, a gym and daycare centre are more than 30 minutes away by public transport.	

Measurement standards for office properties; criteria group 2: ecological infrastructure

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
The ecological infrastructure promotes biodiversity and the reduction of CO2 emissions		**The ecological infrastructure has no significant impact on biodiversity and the reduction of CO2 emissions**		**The ecological infrastructure leads to a loss of biodiversity and has no approach to reducing CO2 emissions**	
▪ The green spaces on and around the property are networked and designed to promote biodiversity. [DNSH6] ▪ A well-developed network of cycle paths and good public transport connections are available for mobility. ▪ There are sufficient e-charging stations and sharing options for private transport.		▪ The site and surrounding area are averagely greened, but only partially suitable for promoting biodiversity. ▪ Public transport and cycle path networks are available, but there are gaps in terms of time and space. ▪ E-charging stations and car sharing services are available to a limited extent.		▪ The property and surrounding area are heavily to predominantly sealed. ▪ Public transport and cycle path network are poorly developed. ▪ E-charging stations and car sharing services are at best very time-consuming to reach.	

Measurement standards for office properties; criteria group 2: soil pollution

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
Environmentally hazardous soil contamination is not present		**No environmentally hazardous soil contamination is known**		**Environmentally hazardous soil contamination is known**	
- There is no contamination. A contaminated site report is available and an inspection of the property/previous use revealed no recognisable signs of contamination. The property has not been affected by soil contamination/use-related contamination in the past. [DNSH5] - Contamination was present, for which a contaminated site report is available. Comprehensive remediation and protective measures were carried out and documented.		There is no known contamination. The property has not been affected by soil contamination/use-related pollution caused by use in the past		- There is contamination or indications of contamination. A contaminated site report is not available. In the past, the property was affected by particular soil contamination/use-related contamination in the past. - There are indications of contamination, but no documentation is available. No conclusive statements can be made about this.	

Measurement standards for office properties; criteria group 2: property situation

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
The property situation is conducive to sustainability and inclusion goals		**The property situation has no influence on the sustainability and inclusion goals**		**The property situation runs counter to the sustainability and inclusion goals**	
- The outdoor facilities of the property to be assessed are only marginally sealed and sufficient water seepage is guaranteed on site. - A sufficient number of bicycle parking spaces are available on the property or in the immediate vicinity of the property. - The property and outdoor facilities are barrier-free.		- The outdoor facilities of the property to be assessed are sealed on average and sufficient water infiltration is hardly guaranteed on site. - Some bicycle parking spaces are available on the property or in the immediate vicinity of the property. - The property situation and the outdoor facilities are partially barrier-free.		- The outdoor facilities of the property to be assessed are almost completely sealed and sufficient water infiltration is not guaranteed on site. - There are no bicycle parking spaces on the property or in the immediate vicinity of the property. - The property situation and the outdoor facilities are not barrier-free.	

Measurement standards for office properties; criteria group 3: architecture

very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6
Environmentally friendly, resource-saving architectural features		**Average to generally below-average architectural features (environmental friendliness)**		**Simple architectural features that no longer meet today's requirements**	
▪ Green roof, green façade, green inner courtyard ▪ Integrated nesting boxes, bat boxes ▪ [DNSH2] All relevant properties with regard to resilience (above-average dimensioning of the drainage, rainwater retention basin, doors and light wells above ground level, non-return valves in the wastewater, storm clips for roof tiles) are available ▪ Design lies between cube and squat cuboid (A/V ratio) ▪ Passive utilisation of solar energy ▪ View/wide view (water, mountains, greenery) ▪ Flexibly usable floor plans for various office concepts		▪ Potentially plantable flat roof or flat pitched roof, inner courtyard ▪ One or a few relevant properties with regard to resilience (above-average dimensioning of the drainage, rainwater retention basins, doors and light wells above ground level, non-return valves in the wastewater, storm clips for roof tiles) are available ▪ Design resembles an elongated cuboid ▪ Time-limited passive use of solar energy ▪ View of buildings with green enforcement ▪ Limited flexible floor plans for various office concepts		▪ Unplantable roof, inner courtyard ▪ Internal roof drainage, risk of a heating oil tank floating up during heavy rain or flooding, high building height, funnel-shaped slope to basement window ▪ The design is angular or a cuboid with several bays/projections ▪ No utilisation of passive solar energy ▪ View of commercial or industrial properties or technical infrastructure ▪ No flexibility in terms of floor plan utilisation	

Measurement standards for office properties; criteria group 3: construction method

very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6
Environmentally friendly, resource-saving features of the construction method		**Average to below-average characteristics of the construction method**		**Simple construction features that no longer meet today's requirements**	
▪ Blower door test results in air exchange rate < 3/h or < 1.5/h with ventilation system ▪ Insulation made from recycled materials, untreated natural fibres ▪ U-value from ENEV (1 February 2002) ▪ Easily recyclable materials that are easy to dispose of during their life cycle (untreated wood, steel, clay, natural fibres) ▪ Use of recycled concrete and plaster ▪ [DNSH5] No harmful substances ▪ [DNSH4] for new buildings: at least 70 % of the non-hazardous construction and demolition waste generated on the construction site must be reused or recycled		▪ Blower door test results in an air exchange rate of 3 to 6/h ▪ Insulation with artificial mineral fibre (KMF) produced after 2000; polystyrene ▪ U-value in accordance with the Thermal Insulation Ordinance (from 1 November 1977) ▪ Recyclable materials (concrete, masonry) ▪ Harmful substances whose installation is permitted (wood-based materials containing formaldehyde labelled "E", parquet sealant containing solvents)		▪ Blower door test results in air exchange rate > 6/h, interior unplastered masonry exterior walls ▪ Insulation with artificial mineral fibre (KMF) produced before 2000; missing insulation of the top storey ceiling or roof ▪ Composite building materials that are difficult or impossible to separate (external thermal insulation composite system) ▪ Pollutants whose installation is no longer permitted (PCB, lead, asbestos)	

Measurement standards for office properties; criteria group 3: fit out

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
Environmentally friendly, resource-saving fit out features		**Average to below-average fit out features (environmental friendliness)**		**Simple fit out features that no longer meet today's requirements**	
- Windows with triple-pane insulating glazing, external sun protection - Central air conditioning - Heating via fuel cell with hydrogen production via climate-neutral electricity generation (e.g. PV system), heat pump, district heating, district cooling - Solar system for DHW heating and/or central heating backup - PV system [DNSH3] Resource-saving fittings in the sanitary sector - Rainwater and grey water utilisation - Wallboxes		- Windows with double-pane insulating glazing - Central partial air conditioning, ventilation system - Low-temperature heating or condensing boiler heating up to 10 years old - Hot water preparation via electric instantaneous water heater (without climate-neutral electricity generation) - Single lever mixer, toilet flush with water volume control ("economy button")		- Composite window, metal frame without thermal break - Outdated low-temperature heating (heating oil, gas), central heating without thermostat control - Two-handle mixer, unregulated toilet flush	

Measurement standards for office properties; criteria group 3: third-party usability

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
Environmentally friendly, resource-conserving subsequent utilisation or conversion		**Conditionally environmentally friendly, resource-conserving subsequent utilisation or conversion**		**Only very costly or impossible environmentally friendly, resource-conserving subsequent utilisation or conversion**	
- Functional floor plans, suitable for single and multi-tenants - Technical infrastructure and premises for canteen with multiple use provided - Barrier-free, low-barrier access, internal development and floor plans (threshold-free access, lift > 1.1 x 1.4 m, clear door width > 80 cm, straight flights of stairs, handrails on both sides)		- Single-tenant floor plans that can only be converted into multi-tenant floor plans with considerable structural effort - Accessible development (lift but steps in the entrance area, clear door width between 69 and 80 cm)		- Floor plans specially tailored to the owner. - Significant barrier-free accessibility (without lift or lift stop only on every second mezzanine floor, doors < 69 cm clear width)	

Measurement standards for office properties; criteria group 4: energy

	very good	good	slightly above average	slightly below average	mediocre	poor	Weight
Final energy (kWh/sqm/a)	<=75	>75 – 110	>110 – 150	>150 – 200	>200 – 275	>275	50%
CO_2 emissions (kg/sqm/a)	<=25	>25 – 37	>37 – 50	>50 – 67	>67 – 92	>92	50%
	Good, long-term marketable energy quality and low CO_2 emissions		Average energy quality and average CO_2 emissions		Problematic energy quality and high CO_2 emissions in the long term		