HypZert

Guide

HypZert Scoring Model for Sustainability Criteria

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HypZert

Guide to the HypZert Scoring Model for Sustainability Criteria

Contents

1 General information on the HypZert scoring model for sustainability criteria (ESG scoring for short)

To be able to value and finance real estate in a future-proof manner today, sustainability factors and ESG risks relating to a property should also be assessed and data collected over the long term should be evaluated accordingly. This is the only way to validly identify influences on a property's value, comprehensively assess property portfolios or holdings and manage and efficiently control steps to be taken. But how can these ESG and sustainability criteria be mapped appropriately?

Experts or valuers can document the opportunities and risks associated with the property to be assessed as part of their valuation by carrying out a comprehensive on-site inspection on the one hand and by evaluating existing information on the other. The following questions arise in this process: 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 a viable 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 in practice. Achieving this purpose includes channelling capital flows 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 of the 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.

The regulatory requirements from the German and European financial supervisory authorities also require ESG risks to be considered 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, based on their experience, are able to assess the property in accordance with ESG aspects, as they have already taken climate and environmental risks and energy-related building characteristics into account in their valuations for many years, partly quantitatively in the market and mortgage lending value (via valuation parameters) and partly qualitatively in the property and market 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 the CO_2 tax to tenants and landlords, ...) and the remaining useful life (e.g. after energy modernisation) will also be directly affected by these aspects. 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 property and market rating

The assessment of the medium-term saleability of a property in a typical property and market rating sometimes also evaluates environmental and climate risks as well as 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 will be 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[1] guidelines. If a separate model is not yet available, the following proposal can be helpful as an independent scoring system.

[1] The 'Guidelines on loan origination and monitoring' (GLOM) were issued by the European Banking Authority (EBA) and are intended to ensure that institutions have solid standards for the assumption, management and monitoring of credit risks.

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 the 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 = Environmental). Social aspects (S = Social) are also taken into account where relevant. Governance (G) refers to compliance with ethical corporate management. As we are looking purely at the property here and compliance with legal regulations (such as the building code BauGB, the Federal Land Utilisation Ordinance BauNVO, state building regulations, monument protection, building energy law, the prohibition to use space for other purposes, preservation ordinance, labour protection law, workplaces ordinance, etc.) are already considered / assessed in valuations, the governance (G) area is not discussed here for now.

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.

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.

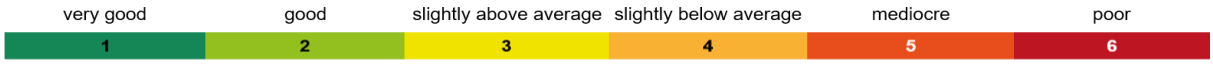
The weighting of the individual criteria in the groups and of the criteria groups among themselves is also predefined. The HypZert ESG scoring for real estate is based on a six-point rating scale and a score as the final result. How the result determined in this way is integrated into the business policy 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 the 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:

Scoring scale

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



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		

ESG scoring sheet using the example of the asset class residential

Note: The scoring sheet can be filled out using the Adobe Reader (free download here). Once you have selected the asset class, the relevant criteria and weightings appear in the scoring sheet and can be evaluated. You can save the sheet or print it out and attach it to your report. For all LORA and vdpIB+ users, the scoring sheet is already stored in the evaluation program.

Criteria groups

Criteria group 1: environmental and climate risks

This group of criteria assesses the potential environmental and climate risks of a location based on the hazards identified, for example, by the natural hazard model K.A.R.L. (Cologne Insurance Risk Solutions). Eight types of risk that are relevant for Germany are taken into account: storms/tornados, floods/storm surges, hail/heavy rain, emissions, forest fires, heat/drought and lightning, earthquakes/subsidence and landslides. The assessment is made on a scale of 1 (very good) to 6 (poor).

» **Storms and tornados**
Strong wind events with wind speeds of 75 km/h or more, tornados can reach over 400 km/h, inclusion of regional climate parameters and geographical factors.

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
Average annual expected damage value as a percentage of the restoration costs due to **storms** and **tornados**	<0,05	0,05 - 0,1	0,1 - 0,4	0,4 - 0,7	0,7 - 1	>1
A risk value of 1% p. a. means that, statistically speaking, a total loss must be expected within 100 years.	The occurrence of natural hazards or associated potential damage is negligible.	Possible damage from storms and tornados is low. Substantial damage very unlikely.		Storm and tornado damage is expected to be moderate. In exceptional cases, substantial damage is possible.		A relevant risk has been identified. Substantial damage is possible.

» **Floods and storm surges**
Flood maps with different flood zones, statistical probability and intensity of flood events.

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
In which **flood zone** is the site located?	outside of flood zones	very rare (>200 years)	not assigned	HQ100	not assigned	HQ10-30
		Location can be affected by a 200-year event ("HQ200").		Location can be affected by a affected by a 100-year event ("HQ100").		The site can be affected by a 10 to 30-year event ("HQ10-30").

» **Hail and heavy rain**
Hail: frozen precipitation with a diameter of 0.5 cm or more, inclusion of regional climate parameters and local hail potential

Heavy rain: intense rainfall, flash floods and flooding possible, assessment based on the capacity of local sewage systems and exceedance of design rainfall amounts

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
Average annual expected damage value as a percentage of the restoration costs due to **hail** and **heavy rainfall**	<0,05	0,05 -0,1	0,1-0,4	0,4-0,7	0,7-1	>1
A risk value of 1% p. a. means that, statistically speaking, a total loss must be expected within 100 years.	The occurrence of natural hazards or associated potential damage is negligible.	Possible damage caused by hail and heavy rain are low. Substantial damage is very unlikely.		Moderate damage is to be expected due to hail and heavy rain. In exceptional cases, substantial damage is possible.		A relevant risk has been identified. Substantial damage is possible.

» Emissions

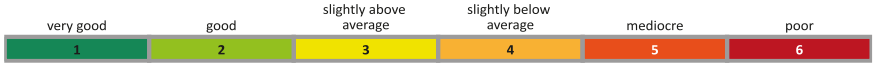
Air quality index: fine dust concentration, nitrogen dioxide, ozone, compliance with EU and WHO limits

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
Substance/unit						
PM10 (annual average in µg/m)³	≤10	≤12,5	≤15	≤20	≤40	>40
PM2.5 (annual average in µg/m)³	≤5	≤7,5	≤10	≤15	≤25	>25
NO_2 (annual average in µg/m)³	≤10	≤12,5	≤15	≤20	≤40	>40
O_2*	≤10	≤12,5	≤15	≤20	≤25	>25
Evaluation is based on the worst evaluation of the individual pollutants. *PM = Particle size smaller than 10 micrometres (PM10) or smaller than 2.5 micrometers (PM2.5)*	Values are below the limits recommended by the WHO (WHO global air quality guidelines).	Gradations between the stricter limit values of the WHO and the values of the German Federal Immission Control Act (BImSchV).				Values are above the limit values of the German Federal Immission Control Act (39th BImSchV).

* Number of days with exceedance of the daily maximum 8-hour average of 120 µg/m³

» Forest fires

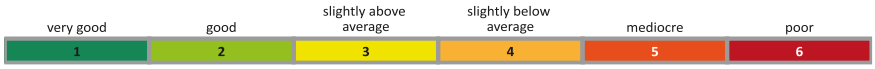
Forest fire index: climatological conditions and amount of combustible material, risk assessment according to these factors



Qualitative risk classification of the **forest fire risk** (according to K.A.R.L.®-TAXO)	not relevant	low	not assigned	medium	not assigned	high
	The occurrence of a forest fire or the associated possible damage is negligible as there are no flammable vegetation components.	Possible damage caused by forest fires is low, as either only small amounts of flammable vegetation are present and/or the climatological conditions at the site only favor forest fires to a small extent.		The risk of damage from forest fires is medium due to the climatological conditions and the amount of flammable vegetation at the site.		A relevant risk has been identified, meaning that substantial damage is possible. The climatological conditions at the location strongly favor the occurrence of forest fires and there is a medium or large amount of flammable vegetation at the site.

» Heat/drought and lightning

Heat stress: duration and intensity of heat waves
Drought stress: water shortage due to low rainfall and high temperatures
Lightning strike: sudden discharge of electrical energy, lightning activity



Heat risk for a real estate property assessed on the basis of the heat stress index (values: 1 to 10)	<1	≥1	≥3	≥5	≥7	≥9
Drought risk for a real estate property assessed on the basis of the drought stress index (values: 1 to 10)	<1	≥1	≥3	≥5	≥7	≥9
Lightning strike risk assessed on the basis of a lightning climatology (lightning per km² per year)	<1	<2	<3	<4	<6	≥6
Qualitative risk classification (according to K.A.R.L.®-TAXO) for the dangers of heat/drought and lightning. The risk classification is decided according to the highest of the three risks.	Possible damage due to heat/drought and lightning strikes are negligible.	Possible damage due to heat/drought and lightning is low. Substantial damage very unlikely.		Moderate damage is to be expected due to heat/drought and lightning strikes. In exceptional cases, substantial damage is possible.		A relevant risk for heat/drought and lightning strikes has been identified. Substantial damage is possible.

» **Earthquakes and subsidence**
Earthquakes: shaking of the ground caused by tectonic processes or human activities; subsidence of the ground due to groundwater depletion

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
Average annual expected value of damage as a percentage of reconstruction costs due to **earthquakes**	<0,05	0,05 -0,1	0,1-0,4	0,4-0,7	0,7-1	>1
Risk of **ground subsidence** assessed on the basis of ground subsidence probability*	not relevant	low	not assigned	medium	not assigned	high
The risk classification is based on the highest of the two risks.	Possible damage caused by earthquakes and/or ground subsidence is negligible.	Possible damage from earthquakes and/or ground subsidence low. Substantial damage very unlikely.		Earthquakes and/or ground subsidence are likely to cause moderate damage. In exceptional cases, substantial damage is possible.		A relevant risk of earthquakes and/or ground subsidence has been identified. Substantial damage is possible.

* Qualitative risk classification (according to K.A.R.L.®-TAXO) for the risk of ground subsidence

» **Landslides**
Downward movement of material on slopes, analysis of precipitation, earthquakes, geological conditions at a site

	very good	good	slightly above average	slightly below average	mediocre	poor
	1	2	3	4	5	6
Risk of **landslide** over an area of 1 x 1 km	not relevant	low	not assigned	medium	not assigned	high
Qualitative risk classification (according to K.A.R.L.®-TAXO) for the landslide hazard.	There is no danger of landslides at the site.	The probability of occurrence for landslides is low.		The probability of occurrence for landslides is medium.		The probability of landslide occurrence is high.

Criteria group 2: property

Criteria group 2 is concerned with the affected property embedded 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 and 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*, mining damages

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

**Only for new buildings and/or 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, building shape, adaptation to climate change, biodiversity in the building, social indicator: floor plan concept with quality of stay for health and well-being in the property

- **Construction method**
  Physical building properties, building materials, recyclability of the building (cradle to cradle), pollutants in the building, recyclability of construction and demolition waste*

- **Fit out**
  Technical fit out of the building, water consumption features, windows, renewable energies (electricity), heating/cooling,

- **Third-party usability**
  Sufficient demand (subjective 3rd party usability), alternative use, easy conversion (objective 3rd party usability), social indicator: accessibility and/or lack of it

**Only for new buildings and/or projects (brownfield/greenfield)*

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.

Preconditions

The model should be as simple as possible and be able to be filled with a small amount of data that is 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.

- If no CO_2 rates are specified in the available data sets for the evaluation of criteria group 4 (energy), these were determined on the basis of the CO_2 emission factors according to the Building Energy Act (GEG).
- The measured variables for final energy and CO_2 emissions are taken into account with equal weighting.
- The static time model is updated at suitable intervals.

Glossary

In the comprehensive glossary of the DFGE (Institute for Energy, Ecology and Economy) you will find many technical terms regarding sustainability explained in detail.

https://dfge.de/esg-glossar/

2 Special features of the different property types

HypZert ESG scoring for residential and office properties

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

Challenges for the valuation of office properties in criteria group 4

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.

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 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 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.	

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 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 location has a minimum standard of network connection with slow transmission rates (broadband). ▪ 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 in question does not have a modern network infrastructure. ▪ The property and outdoor facilities are not barrier-free.	

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

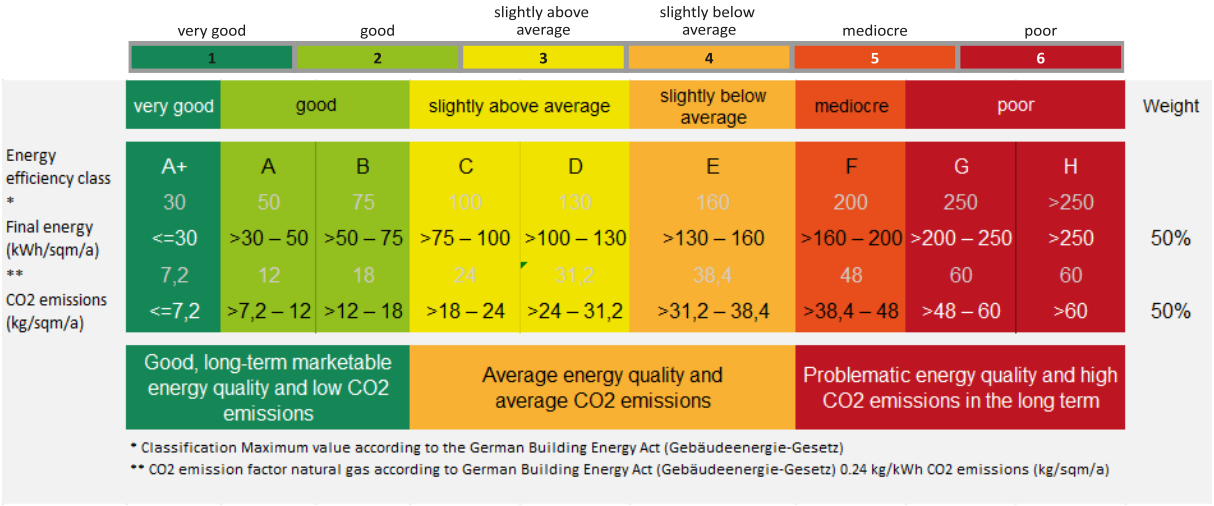
Measurement standards for residential properties; criteria group 3: fit out

very good	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	6
Environmentally friendly, resource-saving fit out		**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	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 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



Example of measurement standards for office properties

(without claiming to be exhaustive)

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

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	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 (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	good	slightly above average	slightly below average	mediocre	poor
1	2	3	4	5	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%
CO2 emissions (kg/sqm/a)	<=25	>25 – 37	>37 – 50	>50 – 67	>67 – 92	>92	50%
	Good, long-term marketable energy quality and low CO2 emissions		Average energy quality and average CO2 emissions		Problematic energy quality and high CO2 emissions in the long term		

HypZert ESG scoring for local supply properties

Due to the heterogeneous structure of the German retail market and the buildings assigned to the individual types of business, as well as the number of analysable energy performance certificates available to our professional group, this publication is deliberately limited exclusively to the sub-sector of local supply properties.

The following table shows the four criteria groups for local supply 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
25%	**Property**	20%	Social infrastructure
		30%	Ecological infrastructure
		20%	Soil pollution
		30%	Property situation
20%	**Building**	25%	Architecture
		30%	Construction method
		30%	Fit out
		15%	Third-party usability
40%	**Energy**	50%	Final energy demand and consumption
		50%	CO_2 emissions

Challenges in the assessment of local supply properties

We currently face the following challenges and hurdles when determining measurement standards for the energy quality of retail properties: There is no public or official data collection on energy demand or energy consumption for retail properties 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 building stock is very heterogeneous depending on the different types of business in terms of building size, property utilisation (buildings versus open spaces or outdoor facilities) and the technical building equipment. Accordingly, energy requirements and consumption vary greatly depending on the type of business.

Nevertheless, there are similarities between the most widespread local shopping centres and food-anchored properties, from which generally applicable standards and benchmarks can be derived. Specifically, these are the following generally free-standing business types, which are defined by the professional group in its study 'Valuation of retail properties' (as at April 2023) in Fig. 2.3:

- Food markets
- Drugstores
- Speciality stores (up to 5,000 m^2 sales area)
- Local supply centres

With a sales area of 5,000 m^2 or more, retail properties, particularly multi-storey or mall-based types of business, are considered more individually, so that measurement standards can only serve as a guide or be applied by analogy.

Special features of local supply in criteria group 2: property

Criteria group 2 is concerned with the property in question embedded 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 the measurement standards:

- **Social infrastructure**
  Location in a residential area, at transport hubs and other frequented locations – accessibility for customers in the catchment area – mixed use at the location, e.g. with other retail offerings (one-stop shopping) and/or medical care facilities – meeting point function, e.g. through on-site catering – outdoor space quality (marketplace character)
- **Ecological infrastructure**
  Connection to the catchment area's cycle path network – connection to public transport e-charging points (in public spaces) – connected green spaces that promote biodiversity
- **Soil pollution**
  Contaminated sites and groundwater contamination – (risk of) use-related pollution or emissions – previous uses (for new buildings/projects)
- **Property situation**
  Sealing of the land – bicycle parking spaces – e-charging stations (on the site) – media connection-communication – outdoor landscaping that supports biodiversity

Special features of local supply in criteria group 4: energy

A data set of over 300 properties for which energy performance certificate data was available was used to derive these measurement standards. Measurement standards were derived for the parameters final energy and CO_2 emissions. In accordance with the system of energy performance certificates specified in the Building Energy Act (GEG) and its predecessor, the

Energy Savings Ordinance (EnEV) (regardless of whether it is an energy demand or consumption certificate), the final energy parameters for heat and electricity only include the energy required to operate the building, but not the user-specific electricity demand.
Where CO_2 emission values are not shown in the data set in individual cases, these were derived using the CO_2 emission factors specified in the Building Energy Act.

Exemplary measurement standards for local supply properties

(without claiming to be exhaustive)

Measurement standards for local supply 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 connections to social and cultural facilities as well as service providers for short-term needs	Average connection to social and cultural facilities and service providers for shortterm needs	Moderate/poor connection to social and cultural facilities and service providers for shortterm needs
▪ Short distances: integrated location with good to very good connections for residents and customers in the catchment area ▪ Marketplace character: location in a local supply center with mixed use (various retail uses, medical care, other social services, gastronomy, outdoor areas with recreational quality) ▪ Barrier-free access and approachability	▪ Peripheral location with average connections ▪ Location with various retail uses ▪ Bake shop/café with seating ▪ Property is the only local supply location in the rural area ▪ Limited accessibility in terms of access and approachability	▪ Moderately to poorly connected location; only accessible by car ▪ Location with retail use (supermarket/discounter/specialty store) in solitary location without additional offerings ▪ No barrier-free access and approachability

Measurement standards for local supply 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 the loss of biodiversity and has no effect reducing CO_2 emissions
▪ Good to very good public transport connections ▪ Good to very good network of cycle paths ▪ E-charging stations available in public spaces ▪ Green spaces available to promote biodiversity	▪ Average connection to public transport ▪ Partially accessible by bike/on the cycle path ▪ Limited availability of e-charging stations in public spaces ▪ Green spaces to promote biodiversity partially available	▪ Moderate to poor public transport connections ▪ No cycle paths available, only accessible via busy roads ▪ No e-charging stations available in public spaces ▪ No green spaces to promote biodiversity

Measurement standards for local supply properties; criteria group 2: soil contamination

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

1	3	5
Environmentally hazardous soil contamination does not exist	**No environmentally hazardous soil contamination is known**	**Environmentally hazardous soil contamination is known**
▪ The property has not been affected by soil contamination/use-related pollution in the past. [DNSH5] Contamination is not present. A contaminated site report is available or an inspection of the property and previous use(s) give no recognizable signs of contamination. ▪ Contamination was present for which a contaminated site report is available. Removal and protective measures have been comprehensively carried out and verified.	▪ 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 has been affected by particular soil contamination/use-related pollution in the past. ▪ There are indications of contamination, but no documents are available. No conclusive statements can be made about this.

Measurement standards for local supply properties; criteria group 2: property situation

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

1	3	5
The property situation is conducive to sustainability and inclusion goals	**The property situation has no influence on sustainability and inclusion goals**	**The property situation prevents the realization of sustainability and inclusion goals**
▪ There are sufficient areas for water infiltration; parking areas are broken up by green strips/green islands. ▪ Numerous bicycle parking spaces are available on the property or in the immediate vicinity, some of which are covered. ▪ The legal requirements for e-charging stations are met. ▪ The location has a state-of-the-art network infrastructure with acceptable transmission capacity (fiber optic connection). ▪ The property itself and outdoor facilities are barrier-free.	▪ Areas for water infiltration are partially available, parking areas are not completely sealed. ▪ A sufficient number of bicycle parking spaces are available on the property or in the immediate vicinity. ▪ The site has a minimum standard of network connection with slow transmission rates (broadband). ▪ The property itself and the outdoor facilities are partially barrier-free.	▪ The outdoor facilities are (almost) completely sealed, and sufficient water supply is not guaranteed on site. ▪ There are no or too few bicycle parking spaces on the property. ▪ There are no e-charging points available. ▪ The property itself does not offer any modern network infrastructure. ▪ The property itself and the outdoor facilities are not barrier-free.

Measurement standards for local supply properties; criteria group 3: architecture

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

Eco-friendly, resource-saving architecture	Average architecture (eco-friendliness)	Simple architecture that no longer meets today's requirements
▪ Green roof, green façade, urban gardening ▪ All relevant properties with regard to resilience (above-average drainage dimensions, rainwater retention basins, light wells above ground level, non-return valves in the wastewater) are available. [DNSH2] ▪ Design lies between cube and squat cuboid (favorable area-to-volume ratio) ▪ Integrated nesting boxes and bat boxes ▪ Adaptable design (divisibility)	▪ Roof partially greened ▪ Potentially plantable flat roof or flat pitched roof ▪ One or a few relevant features in terms of resilience present ▪ Design resembles an elongated cuboid ▪ Limited divisibility	▪ Unused roof areas (no greenery) ▪ Unplantable roof ▪ 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 ▪ Building shape is angular or a cuboid with several bays or porches ▪ No flexibility in terms of floor plan utilization, no divisibility possible ▪ Severely oversized/undersized room heights

Measurement standards for local supply properties; criteria group 3: construction method

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

Eco-friendly, resource-saving construction method	Average construction (environmental friendliness)	Simple design that no longer meets today's requirements
▪ Energetically up-to-date building condition (new construction or extensively modernized), U-value meets Energy Savings Regulation (01/02/2002) ▪ Insulation made from recycled materials or untreated natural fibers ▪ Easily recyclable materials that are easy to dispose of during the life cycle (untreated wood, steel, clay, natural fibers) > Cradle to Cradle ▪ No harmful substances [DNSH5]	▪ Insulation with artificial mineral fibers produced after 2000; polystyrene ▪ U-value in accordance with the Thermal Insulation Ordinance (from 01/11/1977) ▪ Recyclable materials (concrete, masonry) ▪ Pollutants whose installation is permitted (wood-based materials containing formaldehyde with “E” label)	▪ No contemporary energy-efficient building condition ▪ Exterior masonry walls not plastered on the inside ▪ Insulation with artificial mineral fibers produced before 2000; lack of insulation of the top floor 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 local supply properties; criteria group 3: fit out

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

Eco-friendly, resource-saving fit out	Average fit out (environmental friendliness)	Simple fit out that no longer meets today's requirements
▪ Ventilation and cooling system with integrated heat recovery ▪ Heating via fuel cell, climate-neutral electricity generation, heat pump ▪ Rainwater and gray water utilization ▪ Photovoltaic system (PV) for self-consumption (on roof, parking lot, facade) ▪ Windows with triple-pane insulating glazing, external sun protection ▪ Resource-saving fittings in the sanitary area [DNSH3]	▪ Conventional refrigeration system up to 10 years old ▪ Windows with double-pane insulating glazing ▪ Low-temperature heating or condensing boiler up to 10 years old ▪ Photovoltaic system exists, electricity is exclusively fed into the grid	▪ Refrigeration system older than 10 years ▪ Heating with fossil fuels ▪ Composite windows, single-glazed windows ▪ No photovoltaic system

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

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

Eco-friendly, resource-saving subsequent use or conversion	Eco-friendly to a limited extent, resource-conserving subsequent use or conversion	Only very costly or not at all possible eco-friendly, resource-conserving reuse or conversion
▪ Building condition and technology can be adapted to changing user requirements ▪ Flexible floor plan concept ▪ Barrier-free or low-barrier access, internal circulation and floor plans	▪ Building fabric and technology can only be adapted with great effort ▪ Limited flexibility in the basic floor plan concept ▪ Barrier-prone development	▪ Conversion hardly or not possible / economical ▪ Floor plan cannot or is difficult to change or only with great effort ▪ Considerable accessibility problems

Measurement standards for local supply properties; criteria group 4: energy

	very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6	Weighting
Final energy (kWh/m2a)	≤75	>75–120	>120–160	>160–205	>205–250	>250	50%
CO_2 emissions (kg/m2/a)	≤30	>30–48	>48–65	>65–85	>85–100	>100	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**		

HypZert ESG scoring for logistics properties

The following table shows the four criteria groups for logistics 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
25%	**Property**	35%	Social infrastructure
		25%	Ecological infrastructure
		15%	Soil pollution
		25%	Property situation
20%	**Building**	20%	Architecture
		25%	Construction method
		25%	Fit out
		30%	Third-party usability
40%	**Energy**	50%	Final energy demand and consumption
		50%	CO_2 emissions

Special features of logistics properties in criteria group 2: property

Criteria group 2 is concerned with the respective property within 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 on the basis of the measurement standards:

- **Transport infrastructure**
  Number of local roads and stops – distance to the motorway network, airport, railway or seaport – connection to public transport – accessibility of the location on cycle paths – filling stations and e-charging stations – parking situation – catering facilities or supply offers – integration into the urban environment

- **Ecological infrastructure**
  Connected green spaces and small biotopes that promote biodiversity – degree of sealing

- **Soil contamination**
  Contaminated sites and groundwater contamination – risk of use-related pollution or emissions and previous use*
- **Property situation**
  Employee car parks (for bicycles and cars) – utilities (energy and media) – accessibility and break facilities

** Only for new buildings or construction projects (brownfield/greenfield).*

Criteria group 4: energy – challenges for the assessment of logistics properties

We currently face the following challenges and hurdles when determining measurement standards for the energy quality of logistics properties:

- There is no public or official data collection on energy consumption in logistics buildings and, accordingly, no or hardly any public or official benchmarks. In addition, there are currently no energy efficiency classes for non-residential buildings in Germany from which conclusions could be drawn about the energy quality.
- Furthermore, the logistics building stock is heterogeneous in terms of building size and technical building equipment (e.g. heated, air-conditioned, cold storage). Accordingly, energy requirements and consumption vary greatly. The fundamentally lower energy demand and consumption of logistics properties compared to other asset classes is recognised by the weighting of the ESG scoring.
- Insofar as individual energy indicators for logistics buildings have been published (e.g. average values, TOP 15% benchmarks), these are not directly comparable. This categorisation can serve as a basis for assessment if the owners do not provide their own classification of the energy parameters (e.g. according to the BVI method* or the Fraunhofer model).

To summarise, it must be noted that the public data situation for the logistics asset class is currently intransparent.

** https://www.bvi.de/uploads/tx_bvibcenter/BVI_2015_01_BVI_Methode.pdf#:~:text=BVI%20Methode%20beruht%20auf%20der%20%E2%80%9Etime%20weighted%20rate%20of*

Special premises for logistics properties

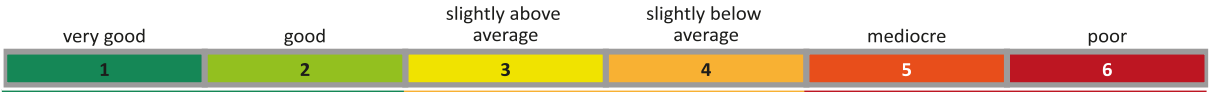
The model should be as simple as possible and be able to be filled with the limited data generally available for valuations. The following premises defined the framework for deriving the measurement standards:

- Energy performance certificates were analysed on the basis of a separate statistical survey. The classification of logistics properties is based on a sufficient internal database. Valid energy performance certificates for logistics properties up to the year 2023 form the data basis for the statistical survey. The majority of the logistics properties analysed are heated logistics buildings.
- A ‘one-size-fits-all’ approach is chosen, which does not differentiate between property-specific features of the individual logistics property types (e.g. refrigerated warehouse, parcel distribution centre, cold warehouse).

Exemplary measurement standards for logistics properties

(without claiming to be exhaustive)

Measurement standards for logistics real estate; criteria group 2: transport infrastructure



Good to very good connections to the transport network and mobility facilities	Average connection to the transport network and mobility facilities	Moderate to poor connections from a transport and supply perspective
▪ Convenient connection (with short distance and travel time) to the transportation network (highway, rail connection, airport and seaport) ▪ Few to no through roads without stopping points to the property ▪ Good transport infrastructure for employees (public transport, cycle paths, parking spaces, e-charging stations, filling stations) available ▪ Catering facilities and any local suppliers within walking distance (maximum 15 minutes) or provided on site	▪ Average connection (distance and travel time) to the transport network (highway, rail connection, airport and seaport) ▪ Several through roads with stops up to the property ▪ Average transport infrastructure for employees (public transport, cycle paths, few parking spaces, e-charging stations, filling stations) available ▪ Catering facilities and local suppliers can be reached by bike (in a maximum of 30 minutes)	▪ Unfavorable connection (distance and travel time) to the transport network (highway, no rail connection, no airport or seaport) ▪ Many through roads with stops or restrictions (road and usage restrictions) to the property ▪ Poor to no transport infrastructure for employees (public transport, cycle paths, no parking spaces for employees, no e-charging stations, no filling stations) available ▪ No catering facilities and local suppliers accessible by car (in a maximum of 20 minutes) ▪ No local amenities in the immediate vicinity of the property

Measurement standards for logistics real estate; criteria group 2: ecological infrastructure

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

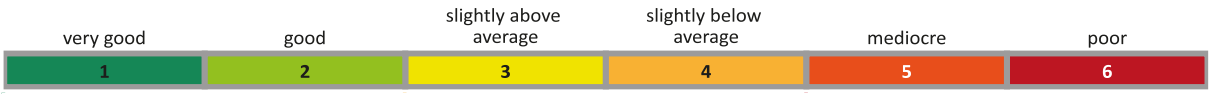
The ecological infrastructure promotes biodiversity and the reduction of CO_2 emissions	The ecological infrastructure has no significant impact on biodiversity and the reduction of CO_2 emissions	The ecological infrastructure leads to the loss of biodiversity and has no effect on reducing CO_2 emissions
▪ The green spaces on and around the property are designed to promote biodiversity with minimal disruption. ▪ For mobility, there are good public transport connections and a well-developed network of cycle paths. ▪ Charging and cable infrastructure for electromobility is integrated into the property.	▪ The site and surrounding area have an average amount of greenery, but are only partially suitable for promoting biodiversity. ▪ Public transport and cycle path network are available, but there are gaps in terms of time and space. ▪ Property-integrated charging and cable infrastructure for electromobility is limited.	▪ The property and surrounding area are heavily to predominantly heavily sealed. ▪ Public transport and cycle path network are poorly developed. ▪ Property-integrated charging and cable infrastructure for electromobility is only available in a very time-consuming manner at best.

Measurement standards for logistics properties; criteria group 2: soil contamination

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

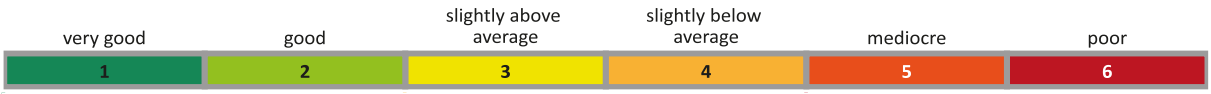
Environmentally hazardous soil contamination does not exist	No environmentally hazardous soil contamination is known	Environmentally hazardous soil contamination is known
▪ The property has not been affected by soil pollution/use-related contamination in the past. [DNSH5] Contamination is not present. A contaminated site report is available or an inspection of the property and previous use(s) give no recognizable signs of contamination. ▪ Contamination was present for which a contaminated site report is available. Removal and protective measures have been comprehensively carried out and verified. ▪ The property has not been affected by soil pollution/use-related contamination in the past.	▪ No contamination is known. ▪ According to assessments, the property was not affected by soil pollution or use-related contamination in the past.	▪ There is contamination or indications of contamination. A contaminated site report is not available. ▪ The property has been affected by particular soil contamination/use-related pollution in the past. ▪ There are indications of contamination, but no documents are available. No conclusive statements can be made about this.

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



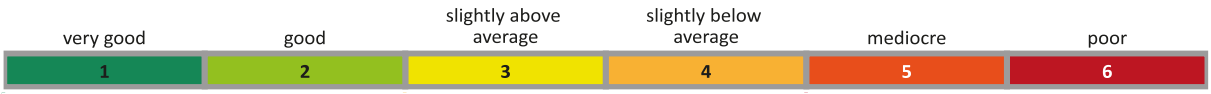
The property situation is conducive to sustainability and inclusion goals	The property situation has no influence on the sustainability and inclusion goals	The property situation prevents the realization of sustainability and inclusion goals
▪ The outdoor facilities of the property to be assessed are only sealed for the technically necessary areas and sufficient water infiltration is ensured on site. Rainwater is collected and reused in a controlled manner. ▪ A sufficient number of bicycle and electrified car parking spaces are available for employees on the property or in the immediate vicinity of the property. ▪ There are sufficient areas on the site for staff to take breaks. ▪ The property has a state-of-the-art network infrastructure with an acceptable transmission capacity (fiber optic connection). ▪ The property itself and the outdoor facilities are barrier-free for employees, guests and customers.	▪ The outdoor facilities of the property to be value are sealed on average and sufficient water infiltration or collection is only guaranteed to a limited extent on site. ▪ A limited number of bicycle and electrified car parking spaces for employees are available on the property or in the immediate vicinity of the property. ▪ There are few areas on the property for staff breaks. ▪ The site has a minimum standard of network connection with slow transmission rates (broadband). ▪ The site situation and the outdoor facilities are partially barrier-free.	▪ The outdoor facilities of the property to be valued are almost completely sealed and sufficient water infiltration or retention is not guaranteed on site. ▪ There are no or only a few bicycle and electrified car parking spaces for employees on the property or in the immediate vicinity of the property. ▪ No space available for staff breaks. ▪ The property in question does not offer a modern network infrastructure. ▪ The property situation and outdoor facilities are not barrier-free.

Measurement standards for logistics real estate; criteria group 3: architecture



Eco-friendly, resource-saving architecture	Average architecture (eco-friendliness)	Simple architecture that no longer meets today's requirements
▪ Optimized construction shape ▪ Sufficient structural reserves for roof/façade use (e.g. photovoltaics, green roofs) ▪ Attractive façade design, use of different materials in the façade design ▪ User requirements: areas highlighted structurally for easy recognition by staff and visitors ▪ Social and recreational areas with a recreation and well-being concept ▪ Use of daylight ▪ Separate social and sanitary facilities for staff and visitors/drivers ▪ Catering in the building (cafeteria) for a high proportion of employees ▪ Biodiversity on the building (green façades/façades clad with natural materials), nesting opportunities ▪ Holistic concept for rainwater, fresh water and service water use ▪ Safety concept for hazardous substances in place	▪ Less optimized building shape ▪ Partial structural reserves for roof/façade use (e.g. photovoltaics, roof greening) ▪ Average façade design, use of uniform materials for the façade design ▪ User requirements: individual areas highlighted structurally for easy recognition by staff and visitors ▪ Social and recreational areas with recreation and well-being concept partially available ▪ Biodiversity on the building partially present (green façades/ façades clad with natural materials) ▪ Concept for rainwater, fresh water and service water utilization partially available ▪ Safety concept for hazardous substances partially available	▪ Individual building shape ▪ No structural reserves for roof/façade use (e.g. photovoltaics, green roofs) ▪ No façade design ▪ User requirements: areas without structural emphasis for staff and visitors ▪ Social and recreational areas without recreation and well-being concept ▪ No biodiversity on the building (no green façades/façades clad with natural materials) ▪ Concept for rainwater, fresh water and service water use not in place ▪ No safety concept for hazardous substances available

Measurement standards for logistics real estate; criteria group 3: construction method



Eco-friendly, resource-saving construction method	Average construction (environmental friendliness)	Simple design that no longer meets today's requirements
▪ Energetically up-to-date building condition (new construction or extensively modernized), U-value meets Energy Savings Regulation (01/02/2002) ▪ Insulation made from recycled materials or untreated natural fibers ▪ Easily recyclable materials that are easy to dispose of during the life cycle (untreated wood, steel, clay, natural fibers) > Cradle to Cradle ▪ No harmful substances [DNSH5]	▪ Insulation with artificial mineral fibers produced after 2000; polystyrene ▪ U-value in accordance with the Thermal Insulation Ordinance (from 01/11/1977) ▪ Recyclable materials (concrete, masonry) ▪ Pollutants whose installation is permitted (wood-based materials containing formaldehyde with “E” label)	▪ No contemporary energy-efficient building condition ▪ Exterior masonry walls not plastered on the inside ▪ Insulation with artificial mineral fibers produced before 2000; lack of insulation of the top floor 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 logistics properties; criteria group 3: fit out

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

Eco-friendly, resource-saving fit-out	Average fit out (environmental friendliness)	Simple fit out that no longer meets today's requirements
▪ Use of renewable energies (e.g. PV, solar, wind, geothermal, hydrogen H2), at least for own consumption or surplus transfer to local users (neighborhood) or storage/transfer both for tenants (e.g. production facilities, low-floor vehicles, e-/H2 charging stations for trucks) and for employees (e.g. e-charging stations for cars and e-bikes) ▪ No use of fossil fuels, use of renewable energy sources (PV, geothermal energy, solar collectors, wind power) ▪ Natural lighting/window strips with shading devices ▪ Energy-saving indoor climate/heating and ventilation concept ▪ Room climate control using automated ventilation technology to utilize day and night differences ▪ Building management system, digitalized building technology (monitoring and data acquisition of the technical building infrastructure (e.g. SmartMonitoring)) ▪ Rainwater and graywater utilization	▪ Partial use of renewable energies (e.g. PV, solar, wind, geothermal energy, hydrogen H2) ▪ Use of fossil fuels with energy-saving technology (e.g. condensing boilers), possibly in combination with renewable energy sources ▪ Partial natural lighting/window strips, possibly with shading devices ▪ Partially energy-saving indoor climate/heating and ventilation concept ▪ Limited room climate control ▪ Partial building management system, digitalized building technology (monitoring and data collection of the technical building infrastructure (e.g. SmartMoni-toring)) ▪ Partial use of rainwater and grey water	▪ No use of renewable energies (e.g. PV, solar, wind, geothermal, hydrogen H2) ▪ Use of fossil fuels without renewable energy sources ▪ Limited natural lighting/no ribbon windows ▪ No energy-saving indoor climate/heating and ventilation concept ▪ No room climate control ▪ No building management system or digitized building technology (monitoring and data collection of the technical building infrastructure) ▪ No rainwater and gray water utilization

Measurement standards for logistics real estate; criteria group 3: third-party usability

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

Eco-friendly, resource-saving subsequent use or conversion	Limited eco-friendly, resource-saving subsequent use or conversion	Only very costly or not possible eco-friendly, resource-saving reuse or conversion
▪ Flexibly usable, functional floor plan concepts (multi-tenant usability, access etc.) ▪ Sufficient criteria for subsequent use (see the study by the professional group for logistics “Type sheets with key figures from 2022/2023”) ▪ Low costs for conversion (e.g. light industrial, cold and deep-freeze logistics) ▪ Barrier-free access	▪ Limited flexibility of use or functional floor plan, only partially suitable for multi-tenant use ▪ Partial criteria for subsequent use given (see the study by the professional group for logistics “Type sheets with key figures from 2022/2023”) ▪ Medium effort required for conversion (e.g. light industrial, cold and deep-freeze logistics) ▪ Partially barrier-free access	▪ Individual or rigid floor plan concepts (multi-tenant usability not possible, delivery etc.) ▪ Criteria for subsequent use given to a limited extent (see the study by the professional group for logistics “Type sheets with key figures from 2022/2023”) ▪ High costs for a reuse option (e.g. light industrial, cold and frozen food logistics) ▪ No barrier-free access

Measurement standards for logistics properties; criteria group 4: energy

	very good 1	good 2	slightly above average 3	slightly below average 4	mediocre 5	poor 6	Weighting
Final energy[1,2] (kWh/m²a)	≤60	>60–75	>75–90	>90–110	>110–140	>140	50%
CO_2 emissions[1] (kg/m²/a)	≤17	>17–21	>21–25	>25–30	>30–40	>40	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		

1 Assessment by the professional group for logistics based on its own statistical survey, valid energy certificates until 2023.

2 Depending on company's internal regulations or available data, primary energy can also be used instead of final energy. According to the assessment by the professional group for logistics, primary energy is approx. 20% higher than the final energy values.

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