



Taxonomy of Commercial Real Estate

Structuring the substantive submarket of commercially used real estate for the purpose of market observation and valuation

3. results report (May 2023)

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Imprint

The report is a summary of expert discussions with representatives of institutions such as

- the German Property Federation (ZIA),
- the Working Group of the Chief Valuation Boards, Central Offices and Valuation Boards of the Federal Republic of Germany (AK OGA),
- the Association of German Pfandbrief Banks (vdp),
- the Valuation Working Group of the German Association of Cities,
- the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR),
- the Royal Institution of Chartered Surveyors (RICS), and
- the Deutsche Bundesbank (observer status), as well as
- the Gesellschaft für Immobilienwirtschaftliche Forschung (gif)
- the Urban Land Institute (ULI), and
- the Federal Statistical Office (observer status).

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Executive Summary

In an optimal market, all relevant information about a property is accessible to all stakeholders. The more transparent the market is, the better sustainable, ecologically and economically sensible market behavior and comprehensible pricing will develop. Better political and economic decisions can be made. The crucial basis for property market monitoring is a common understanding of what types of property there are and how to delineate and meaningfully aggregate them.

In Germany, there are currently inconsistent and incomplete classifications of commercial real estate. The present work fills a gap here and comprehensively covers the particular need for definition. A taxonomy has been developed that allows commercial real estate types to be uniformly defined nationwide and hierarchically classified without overlap. As a result, the taxonomy differentiates nine commercial real estate segments, including mixed-use properties.

Property market analyses also at the level of individual property types benefit from greater comparability, the quality and verifiability of the published data are improved (e.g., floor space data for office sales). This is of great importance not only for the real estate and banking industry, but also for policymakers and government financial supervisory authorities.

Taxonomy means a uniform model (classification scheme) that categorizes objects according to certain criteria.¹ *Commercial real estate* (“*Wirtschaftsimmobilien*”) refers to accessible buildings that are used by the user for to create a product or service as a production factor. Users of such commercial real estate are companies in the broadest sense or the public sector. It should be noted, however, that the taxonomy focuses exclusively on the substantive (or product) submarket. It does not address the residential, spatial, buyers', agricultural, forestry and fishing submarkets.

The property type was operationalized based on the premise of functional use at the time of sale (determining the segment, e.g., office). If more than one use exists at the same time, the floor area ratio is used to delineate the dominant segment. Hierarchical subdivision into non-overlapping subsegments was another model rule. The number and, if necessary, further subdivision of the subsegments is based primarily on the results of iterative expert discussions with representatives of various institutions. Additionally checking was made for completeness and consistency with significant national and European classifications. As a conclusion, the comprehensively coordinated taxonomy contributes to greater market transparency in the real estate market in Germany and thus meets current requirements.

¹ Cf. Koschnik (1993): Standard Dictionary for the Social Sciences, vol. 2, Munich London New York Paris.

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Background, occasion and goal

1.1 Background and occasion

The financial and economic crisis of 2007 to 2009 showed that sudden economically unexplained price movements in property markets can have a significant impact on a country's financial stability. This can lead to a prolonged recession, as in Greece in 2010, as well as economic and political damage. Recent crises such as the war in Ukraine (since 2022) or the Corona pandemic (since 2020) also show how real estate markets react, or sometimes fail to react to economic shocks. This makes it even more important to analyze real estate data in order to quickly and reliably assess the macroeconomic consequences of the development of these markets.

This is another reason why the requirement for transparency in real estate markets, which was already established in 1960 in the then Federal Building Act ("Bundesbaugesetz"), is taking on a new dimension of the importance: primarily to safeguard the financial stability of countries, an initiative of international financial supervisory authorities aimed to monitor the respective national real estate markets more closely. In 2013, the International Monetary Fund (IMF), the International Financial Stability Board (FSB) and the G-20 finance ministers and their central banks stated that, in addition to indices on the price development of residential real estate, so-called CPPIs (Commercial Property Price Indices) should also be formed and monitored. They identified CPPIs as one of the 20 gaps that need to be filled in order to provide better information on financial stability.

The European Systemic Risk Board (ESRB) in its recommendation on filling gaps in real estate data² has pointed out that "national macroprudential authorities should be encouraged to break down the common set of indicators according to relevant dimensions, such as the property type, the location of the property, and the type and nationality of the market participants(...)". The price development of so-called *commercial property* should also be monitored by means of appropriate indices. It is obvious that these indices must be harmonized as far as possible throughout Europe so that the corresponding submarkets can actually be compared with each other. To this end, the European Statistical Office (Eurostat) published a working paper entitled "Commercial Property Price Indicators: Sources, Methods and Issues" in 2017.³ It was found that there is no uniformity in terms of categorization, even globally. In the Eurostat report, the first version of the present results report from August 2016 was cited as an example.⁴ The results report was also presented at the "International Conference on Real Estate Statistics" in Luxembourg on February 21, 2019.

The basis for sufficiently accurate price monitoring that is comparable across state and national borders is that there must be agreement on the definition of the different types of real estate. In the case of residential real estate, this is initially relatively straightforward, as a clear distinction can be made here between, for example, owner-occupied homes, apartment buildings or apartments. When it comes to classifying property that is primarily used for commercial purposes, the types of property are much more diverse. This submarket is very inhomogeneous and the property types are more difficult to aggregate. Most importantly, there is a wide variety of identification characteristics across industries and regions to classify the different property types.

² European System Criteria Committee, *On Closing Gaps in Real Estate Data*, in: Official Journal of the European Union 60th year (2007), p. C31/1 ff.

³ European Union (Eurostat), *Commercial property price indicators sources, methods and issues*, Luxembourg 2017.

⁴ Ibid., p. 38 ff.

Almost in parallel with the developments on the financial markets described above, the German Federal Constitutional Court (Bundesverfassungsgericht) ruled on November 7, 2006⁵ that the legislator must adjust the rules on the valuation of property in such a way that the levying of inheritance tax in the future is linked to values that satisfy the requirements of the principle of equality. As a result of this decision and the subsequent amendments to the statutory provisions, regulations and guidelines for the Property Valuation Boards in Germany, there has been a significant increase in the requirements for the performance of the tasks of the Valuation Boards; most recently also in connection with the determination of the assessment basis for the levy of property tax (see also the decision of the Federal Constitutional Court of 10 April 2018)⁶. The amendments to the relevant provisions of the German Building Code (BauGB), the newly revised German Ordinance on the Valuation of Property (ImmoWertV) and the publication of the associated federal guidelines were aimed at shifting the official valuation from a purely location-based valuation to a property valuation that is comparable throughout Germany. A new ordinance on the principles for determining the fair market value of property and the data required for the valuation (ImmoWertV)⁷ has been in force since January 1, 2022. It replaces the non-binding guidelines and is a further step towards greater uniformity in property valuation in Germany. This "conversion process" is not yet complete and will continue to improve the transparency of the property market. The process of implementing the legislation has also not yet been fully realized by the Property Valuation Boards in Germany. Nevertheless, there have been significant developments in recent years.

1.2 Need for knowledge

The increased attention of the banking supervisory authorities for the reasons outlined above and the equally increased demands on the Property Valuation Boards in Germany since 2006 to improve the transparency of the real estate market provided the fundamental impetus for the regular expert discussions that led to the present report. The key questions were:

- How and in what form should the different types of commercial real estate be classified?
- What are the identifiers for classification into the different classes?
- How can this approach be made as consistent as possible across sectors and regions?

Against this background, Peter Ache, Head of the Office of the Higher Expert Committee for Land Values in Lower Saxony for the Working Group of the Chief Valuation Boards, Central Offices and Valuation Boards of the Federal Republic of Germany (AK OGA), and the German Property Federation (ZIA) initiated expert meetings with participants from the various professional fields.

The technical discussions were chaired by Dr. Michael Hellwig (ZIA) and led by Peter Ache (AK OGA), Sabine Georgi (ULI), Dr. Michael Hellwig (ZIA) and Eva Katharina Neubrand (BBSR).

The first technical meeting took place on 17.10.2013. Over time, the participating institutions and their representatives have changed. Almost regularly, representatives of

⁵ Federal Constitutional Court, judgment of 07.11.2006, 1 BvL 10/02.

⁶ Federal Constitutional Court, Judgment of 10.04.2018, 1 BvL 11/14

⁷ BGBl 2021 Part I No. 44 of July 19, 2021, page 2805 et seq.

- the Working Group of the Chief Valuation Boards, Central Offices and Valuation Boards of the Federal Republic of Germany (AK OGA),
- the German Property Federation (ZIA),
- the Association of German Pfandbrief Banks (vdp),
- the Valuation Working Group of the German Association of Cities,
- the Federal Institute for Research on Building, Urban Affairs and Spatial Development (BBSR),
- the Royal Institution of Chartered Surveyors (RICS), and
- the Deutsche Bundesbank (observer status), as well as
- the Gesellschaft für Immobilienwirtschaftliche Forschung (gif)
- the Urban Land Institute (ULI), and
- the Federal Statistical Office (observer status)

are also involved in the meetings and in securing the results.

In the course of the regular technical exchange between the various players, it also became clear that the unambiguous definition of property types is also indispensable for data matching, e.g. between transaction databases and offer databases of different players. Combining and analyzing the data is only possible if all actors have the same understanding of the property types (substantive submarkets) to be assigned to the offer or purchase cases.

The experts noted that there are still no clear definitions of property types that are recognized across the respective business areas of the real estate sectors. Instead, the classification is made on a sector-specific basis according to the requirements of each sector and according to criteria that have been used for a long time. Over time, there has generally been no critical questioning of the validity of the categorizations used, nor has there been any coordination with other industry participants. A similar situation was found in the handling of the registration of purchase cases by the expert committees in the purchase price surveys according to § 195 BauGB. Although there is a certain uniformity in the identification of property types - usually due to the software used for the purchase price surveys - this is rather rudimentary, especially in the case of commercial property. This is particularly the case when it crosses national borders.

Overall, the expert discussions revealed that there is a considerable need to reach a coordinated result among the various industry players in order to enable a meaningful exchange of data or a targeted analysis of merged databases in the long term. This result should then be discussed intensively within the respective institutions in order to produce a joint paper as widely accepted as possible, such as the one presented here.

1.3 Gains in knowledge

Over the course of time, it has become apparent that the discussion process has already led to changes in the way transactions are recorded. The structure of the AK OGA's Report on the German Real Estate Market is based almost entirely on the findings of the expert discussions;⁸ the purchase price surveys of the Real Estate Valuation Boards, for example, are also gradually

⁸ Arbeitskreis der Oberen Gutachterausschüsse, Zentralen Geschäftsstellen und Gutachterausschüsse in der Bundesrepublik Deutschland, Immobilienmarktbericht Deutschland 2021, available at: <https://redaktion-akoga.niedersachsen.de/startseite/> (as of 21.01.2023).

being revised and the previously published categories of property types are emphatically considered here. Similarly, the groupings proposed in the first results report have achieved a high degree of consistency with the databases maintained by the companies.

In addition, it can be observed that the arguments for changing the terminology of “*Gewerbeimmobilien*” have met with a broad response and that the proposed term “*Wirtschaftsimmobilien*” (*commercial real estate*) has found its way into the industry.⁹ The technical term “commercial real estate” is also increasingly finding its way into the federal government.¹⁰ In addition, the choice of this term also makes it clear in an international context what types of property are involved (commercial properties).

All in all, it can be said that the study of the taxonomy of the substantive submarkets in general and of commercial real estate in particular will have an extremely high added value for all players in the property market in the medium term. In particular, the analysis of the different submarkets will lead to significant gain in market knowledge by matching different databases from different sectors. In addition, it can be assumed that market analyses can be significantly improved and made more efficient, up to and including automated procedures.

Three key improvements are achieved through a unified taxonomy of property types:

- Official property market reports, special analyses and reports from other agencies can be compared with each other. This makes it possible to verify the results of analyses and to evaluate the quality of analyses. This allows a critical discussion of the publications, which increases the reliability of the individual reports and thus leads to a progressive improvement in the transparency of the market.
- The methods and models for deriving essential market information and the data required for property valuation (e.g. time series, property interest rates or other capitalization rates, comparative or tangible value factors, etc.) are related to standardized property types across regional boundaries and can be used in the context of market or mortgage lending value appraisals with improved legal certainty. The consolidation of data collections also improves the data situation for transactions that occur less frequently.
- The presentation of statistical parameters on the respective samples of actually comparable property types allows better conclusions to be drawn about the basic population and enables the quality of published market and valuation data on specific property types to be assessed. This increases the reliability of market value and mortgage lending value determinations and improves the comparability of property valuations from different sources.

⁹ e.g., Tobias Just, Michael Voigtländer, Rupert Eisfeld, Ralph Henger, Markus Hesse, Alexandra Toschka, *Wirtschaftsfaktor Immobilien 2017* Wirtschaftsfaktor Immobilie 2017, Berlin 2017, p. 40 ff; Branchendienst der Sparkassen-Finanzgruppe (ed.), *Branchenreport 2020 Grundstücks- und Wohnungswesen*, Stuttgart; Marco Boksteen, Torsten Bölting, *Praxishandbuch kommunale Immobilienwirtschaft*, Freiburg 2022; Zentraler Immobilien Ausschuss e.V. (ZIA) (ed.), *Frühjahrgutachten Immobilienwirtschaft 2022 des Rates der Immobilienweisen*, Berlin 2022.

¹⁰ e.g., Federal Statistical Office on behalf of the Federal Government, the National Standards Control Council and the Federal Chamber of Notaries, *Digitale Abwicklung von Immobilienkaufverträgen*, Projektbericht, Wiesbaden 2019; Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR), *Wohn- und Wirtschaftsimmobilien in Deutschland 2020*, Bonn 2021.

Improved market transparency and more efficient analysis options

1.4 Real estate and its classification perspectives

In the professional communities of property market analysts and property valuation experts, there are still a variety of terms and definitions of property types that are interpreted in different ways. This often depends on the point of view and the objective of the analysis. In addition, real estate types and "asset classes", i.e. forms of investment products, are often confused; in this context, designations for asset classes are more fast-moving than real estate types according to the taxonomy made here.

There is broad agreement on the following basic definition of real estate:

REAL ESTATE IS A FIXED ASSET FOR WHICH THE CAPITAL EXPENDITURE REQUIRED TO ACQUIRE OR CONSTRUCT IT IS COMPARATIVELY HIGH AND IS GENERALLY TIED UP OVER A LONG PERIOD OF TIME.

In the literature, the concept of real estate is defined, inter alia, as follows:

REAL ESTATE IS AN ASSET CONSISTING OF UNDEVELOPED LAND OR DEVELOPED LAND WITH ASSOCIATED BUILDINGS¹¹ AND OUTDOOR FACILITIES. THEY ARE USED BY PEOPLE WITHIN PHYSICAL, TECHNICAL, LEGAL AND TEMPORAL LIMITS FOR PRODUCTION, TRADE, SERVICE OR CONSUMPTION PURPOSES.¹²

A similar, but more precise definition of real estate was also used in the report "Wirtschaftsfaktor Immobilien 2017"¹³. The German government has also adopted this definition in its reports.

For this taxonomy, in addition to the definitions presented above, the unanimous complementary view of **residential real estate** has emerged:

RESIDENTIAL REAL ESTATE IS NOT JUST A PURE COMMODITY; IT SERVES TO PROVIDE THE POPULATION WITH ADEQUATE AND CONTEMPORARY HOUSING. AS SUCH, THIS TYPE OF REAL ESTATE IS OF FUNDAMENTAL IMPORTANCE TO THE QUALITY OF LIFE AND, AT THE SAME TIME, TO THE LONG-TERM FINANCIAL SECURITY OF THE POPULATION. FOR THIS REASON, THE PROVISION OF HOUSING IS ONE OF THE PUBLIC SERVICES PROVIDED BY THE STATE. RESIDENTIAL REAL ESTATE THEREFORE HAS A DIFFERENT SIGNIFICANCE FROM COMMERCIAL REAL ESTATE.

According to this view, for example, apartment buildings that serve the owner to generate profits are not classified as commercial real estate, but as residential real estate.

For a possible categorization of real estate types based on criteria, it is also conceivable to divide them into different views¹⁴ related to a property:

¹¹ According to the Systematics of Buildings of the Federal Statistical Office, buildings are independently usable, roofed structures that are erected permanently and that can be entered by people and are suitable or intended to serve the protection of people, animals, or property.

¹² Stephan Bone-Winkel, Karl-Werner Schulte, Christian, *Begriff und Besonderheiten der Immobilie als Wirtschaftsgut*, in: Immobilienökonomie - Betriebswirtschaftliche Grundlagen, by: Karl-Werner Schulte, Munich 2005, pp. 3-25.

¹³ Tobias Just, Michael Voigtländer, Rupert Eisfeld, Ralph Henger, Markus Hesse, Alexandra Toschka, *Wirtschaftsfaktor Immobilien 2017*, Berlin 2017.

¹⁴ Ursula Holthaus, *Economisches Modell mit Risikobetrachtung für die Projektentwicklung*, Dissertation, University of Dortmund, Dortmund 2007, p. 16 ff.

- The **physical view**, which is limited only to the physical characteristics of a property and does not include its use.
- The **legal view** according to which real estate is defined in the German Civil Code (BGB) as spatially delimited parts of the earth's surface that represent things that are firmly connected to the land and whose buildings and parts of buildings are essential components of the land in accordance with §§ 93 to 97. In the Federal Republic of Germany, the delimitation of real estate and the ownership of real estate are guaranteed by the real estate cadaster in connection with the entries in the land register. In addition, other rights to real estate (heritable building rights, condominium rights, rent, leases, etc.) are defined according to legal norms.
- The **economic view**, on the other hand, describes the investment and production theory view. The investment theory view considers real estate as a capital investment with a commercial purpose. The production theory view evaluates the real estate as a production factor in the performance production of a company. From both perspectives, real estate is used during its economic life as a commodity with the aim of generating income; this can also mean saving expenses, as can be done in the case of residential real estate and its own use by saving on rent payments.

In connection with the observation and analysis of the real estate market, all three perspectives are basically relevant. In particular, the **usability of properties** is of paramount importance in determining or observing property values.

This leads directly to the following definition of the market value of properties:

THE MARKET VALUE OF A PROPERTY IS DECISIVELY DETERMINED BY THE PURPOSE FOR WHICH THE PROPERTY IS HELD OR ACQUIRED.¹⁵ THEREFORE, THE PURPOSE OF THE PROPERTY DETERMINES ITS VALUE. IT MUST BE POSSIBLE TO REALIZE SUCH A USE WITH SUFFICIENT CERTAINTY AT THE TIME OF PURCHASE.

In this context, it should be noted that the understanding of value associated with the term "market value" is now equivalent to the term "fair market value" as defined in German law. This approach essentially results from the standards of the concept of market value according to the European Law Adaptation Act of June 24, 2004 (BGBL. I 2004, p. 1359) and the European Council Directive of 1991 (Art. 49 Para. 2 - 91/647/EEC). It is also consistent with the concept of fair value as defined in the International Financial Reporting Standards (IFRS). More detailed information can be found in the fair value measurement under IFRS 13 and is reflected in the high standards of German property valuation law under the German Building Code (BauGB) and the German Mortgage Bond Act (PfandBG). The International Valuation Standard Council (IVSC) also defines the term "market value" in a similar way.¹⁶

¹⁵ Wolfgang Kleiber, *International Valuation Standards (IFRS/IAS)* in: Kleiber digital Part III, Fair Value Measurement of Real Estate, 2015.

¹⁶ IVSC 2021, IVS 104, para. 30.1.

1.5 Market monitoring

The basic objects of property market monitoring are

- transaction figures as the number of properties sold,
- monetary sales as the total amount of investment in the purchase of properties,
- sales of land, residential and floor space, and
- property prices as purchase prices of individual properties.

The above-mentioned objects of observation arise within the respective factual and regional market environment (submarket) on the basis of supply and demand. For this reason, the analysis of the four basic categories mentioned above must take place

- through longitudinal and cross-sectional analyses over time,
- in **spatial** submarkets related to the purpose of the analysis (regional market environments), and in **substantive** submarkets (types of real estate) related to the purpose of the analysis.

The data basis for the observation of the real estate market are, e.g., the purchase price surveys of the official Property Valuation Boards according to § 195 BauGB or also transaction databases of banking associations or larger brokerage houses. In addition, market analyses can also be carried out on the basis of offer databases, such as those available on Internet platforms. The subject of the market monitoring is either the property sales themselves or the property offers. In both cases, it is a matter of analyzing either purchases already made (transactions) or intended sales (offers) of property or also rights equivalent to real estate for which there are separate land registers (e.g., leasehold sales, etc.). So-called share deals, i.e. sale of companies or shares in companies whose purpose is to hold and operate property - cannot be analyzed at present, or only to a very limited extent, due to the lack of comprehensive data.

The generation of property market data is strongly influenced by the heterogeneity of the properties themselves. In addition, the property purchase contracts to be notarized are subject to the protection of personal data. Corresponding databases such as the purchase price surveys of the Property Valuation Boards, but also data collections of banks, brokerage houses and other institutions must therefore be managed with appropriate care.

In order to improve the quality of analyses and to meet the demands of a transparent property market in a timely manner, it is important to combine information from different data sources. For this reason, meaningful and valid property market information from a wide variety of databases must be processed into high-quality market indicators that can be verified through comparability. Privacy concerns must not be compromised.

1.6 Importance of real estate market transparency

Transparency in the broadest sense is at the heart of democratic action. This applies to political action and in particular to the right to equal treatment under Article 3 of the Basic Law (Grundgesetz). This has been clarified in certain cases by the decisions of the Basic Law. In connection with the valuation and analysis of property markets, this has been demonstrated in the context of inheritance tax and on land tax (see Chap. 1.1) has become clear.

An optimal market environment, and thus the basis for decisions at all levels is characterized by the accessibility of all property-related information to all stakeholders. The more comprehensive and accessible this information is, i.e. the more transparent the market is, the more sustainable, ecologically and economically sound market behavior and comprehensible pricing will develop. In contrast to the legally required purchase price surveys of the Property Valuation Boards, there are no official rent price surveys, for example, due to a lack of legal regulations. This problem makes it almost impossible to create real transparency on the tenant market. The fact that there is a need to catch up here, given that more than 50 percent of the apartments are rented, was made clear time and again in the expert discussions.

Based on the provisions of Sections 192 et seq. of the German Building Code (BauGB), transaction data on the sale of property in Germany is registered by Property Valuation Boards. On the basis of this data, it can be concluded that approximately one million sales in Germany each year are notarized by notaries, acquired by knockdown or transferred to the ownership of another person through other legal transactions defined in the German Building Code. Sales by companies whose purpose is to hold and acquire properties (share deals) are not included here.¹⁷ Banking associations (e.g. Association of German Pfandbrief Banks (vdp)), brokerage houses or other institutions also register transactions from their own business activities. In addition, there are sometimes comprehensive databases of property sales offers.

Since around 2010, the German real estate market, and in particular the residential real estate market, has been characterized by price increases, some of which have been very strong. The development of the real estate market in Germany has been the subject of heated debate in recent years. Market experts now see a trend reversal on the real estate markets, triggered by a confluence of various events and also as a result of the Russian war of aggression against Ukraine. These include the sharp rise in construction and energy costs, supply chain issues, a turnaround in interest rates in the financial markets and the ongoing labor shortage in the construction sector. Uncertainty about future market developments is high among industry experts, and at the time of writing the forecasts of various institutes and official bodies differ widely.

Particularly in view of the political and social sensitivity of what is happening on the real estate market, the real estate industry itself, as well as politics and administration, business and research, are increasingly calling for better comparability and stronger networking of the analysis results of expert committees, research institutes and other players.

The comparability of reports and other publications on the property market, and in particular the comprehensive presentation of the data situation, the methods and the models used in the respective publications, leads to an increase in the transparency of the analyses and to an improvement in the quality of the transparency of the market itself, driven by mutual critical observation.

The crucial basis for this is a common understanding of what types of property exist, how they can be defined without overlap, and how the individual categories can be combined into groups, i.e. aggregated. Only on this basis can a meaningful discussion of methods and models take place. The fundamental uniformity of the definition of property types is not only of great interest to the real estate industry, but also to the banking industry, policymakers and, last but not least, government financial regulators.

¹⁷ Arbeitskreis der Oberen Gutachterausschüsse, Zentralen Geschäftsstellen und Gutachterausschüsse in der Bundesrepublik Deutschland, Immobilienmarktbericht Deutschland 2021, available at: <https://redaktion-akoga.niedersachsen.de/startseite/> (as of Jan. 21, 2023).

Finally, the importance of the correct classification of property types is illustrated by the example of financing property investments:

Under the provisions of the European Capital Requirements Regulation (CRR), loans secured by real estate liens may continue to be treated as privileged, i.e. subject to a more favorable risk approach. This is subject to the competent national supervisory authorities demonstrating that the national markets meet certain stability criteria. This means that credit institutions using the Credit Risk Standardized Approach (CRSA) may apply more favorable risk weights to exposures secured by real estate liens (e.g. by real estate collateral) when measuring their capital requirements.

Exposures secured by commercial real estate generally receive a 50 percent risk weight. For exposures secured by residential real estate, the risk weight is 35 percent. The competent national supervisory authorities may also set higher risk weights based on loss experience, taking into account forward-looking market developments and financial stability considerations.

Similar mechanisms apply to credit institutions that use internal ratings-based approaches to measure their own funds. Because of the different treatment of residential and commercial real estate exposures, the question of how to define the related real estate markets is particularly relevant. In the real estate industry and among policymakers, the view has long prevailed that rental housing is part of the residential real estate market, and this view is reflected in banking regulation.¹⁸

The need for high-quality and timely data analysis is also evident in the context of policy debates on rising house and rental prices as well as housing affordability. This is especially true given the much more dynamic nature of the real estate market and its importance as an asset class. In order to achieve this, however, it is essential that a common set of standards be agreed upon by stakeholders, especially public and private data holders.

¹⁸ EU Regulation No. 575/2013 of the European Parliament and of the Council, *Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation (EU) No. 646/2012*, of June 26, 2013, Article 4 (Definitions) No. 75.

Creation of categories and hierarchical levels

1.7 Spatial and product submarkets

The collection of property market data (purchase contract, lending or offer data) on the sale of property or rights equivalent to real estate (e.g., leasehold) must be carried out with regard to the entire real estate market. A taxonomy already starts with the distinction between the spatial, substantive and buyer submarkets (Fig. 1). These must be separated from each other, as mixtures can complicate data analysis, e.g. if spatial and substantive criteria are not recorded separately from the outset (e.g. "downtown hotel") and cannot be disentangled afterwards. It should be noted, however, that the spatial submarkets arise in the context and according to the requirements of the respective substantive submarkets. For example, spatial submarkets in the residential real estate category do not correspond to spatial submarkets in the agricultural land category. Spatial submarkets are to be located geographically or spatially structurally differently, depending on the depth of consideration and depending on the substantive submarkets. A further consideration of the spatial and buyer submarkets was not initially undertaken here.

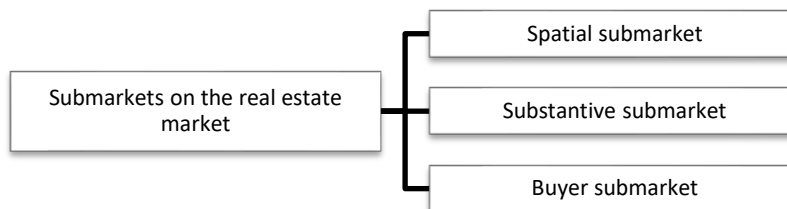


Fig. 1: Submarkets on the real estate market

The hierarchical order of the substantial submarket is as follows

- groups (e.g., developed land),
- categories (e.g., commercial real estate),
- segments (e.g., retail properties) and
- subsegments (e.g., properties for large-scale retail).

Below the hierarchical level of the subsegments, further property types may be named for a more specific description.

1.8 Groups of developed and undeveloped land in the substantive submarket

The substantive submarket describes the real estate market in terms of property types. ***The property types are primarily determined by their existing use at the time of sale.***

Unless a change in use is known with sufficient certainty, it is assumed that the property will be used as it was before the transfer of ownership.¹⁹ Undeveloped and developed land can be grouped into similar categories in this respect, as land is characterized in particular by planning

¹⁹ In addition, there are also properties that are subject to transformation and are sometimes referred to as transformation properties. In this case, however, the transformation represents a process, and it is primarily a project development. The former use is decisive for the classification at the time of the transaction, so that these often fall into the subsegment of properties with manufacturing space, for example, as former production facilities or industrial sites. However, they may also be former office buildings, for example, which would then be classified as office properties.

law requirements with regard to its potential for use. The question of whether the substantive submarket should be divided into undeveloped and developed land at the first stage was discussed intensively. In the end, it was decided to retain the most widely used method of distinguishing between developed and undeveloped land (Fig. 2).

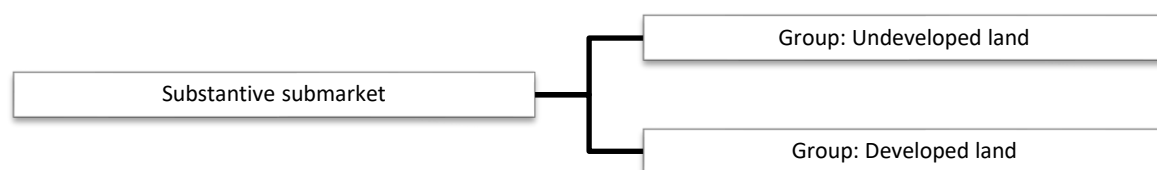


Fig. 2 Groups of undeveloped and developed land in the substantive submarket

The developed land group covers a large and very complex part of the real estate market. The group of undeveloped land has not been considered further for the time being.

1.9 Developed land categories

For developed land, three categories are formed as the third level of the hierarchical classification: residential real estate, commercial real estate and agricultural, forestry and fishing properties (Fig. 3). The respective category is relevant if the corresponding share²⁰ of the type of use is predominant, i.e. exceeds 50 percent.

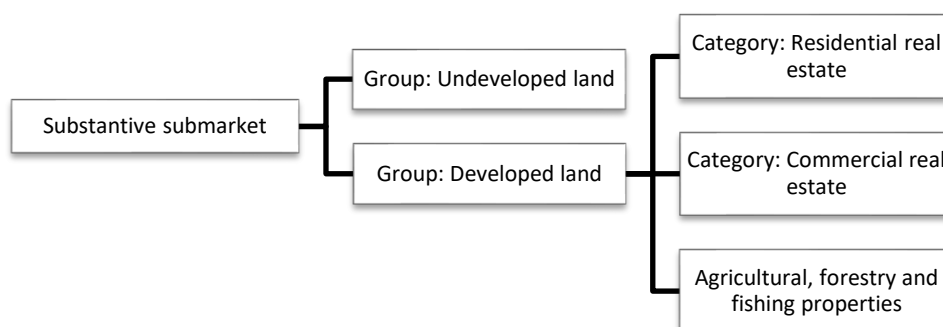


Fig. 3: Developed land categories

1.9.1 Residential real estate category

Within the third level, the term “residential real estate” is the clearest, as it focuses on the basic function of living and thus implies a specific use. The European Banking Directive also paints a clear picture by defining: "Residential property: a dwelling occupied by the owner or the tenant of the dwelling, including the right to occupy an apartment in a cooperative housing association."²¹ The term can be more clearly defined than in the case of commercial real estate, where the use as a factor of production is more diverse, e.g. as sales space, storage space or office space (cf. chapter. 1.9.2).

²⁰ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

²¹ EU Regulation No. 575/2013 of the European Parliament and of the Council, *Prudential Requirements for Credit Institutions and Investment Firms and Amending Regulation (EU) No. 646/2012*, of June 26, 2013, Article 4 (Definitions) No. 75.

According to the experience of the institutions involved in the expert discussions, there is also a strong public interest in a summary presentation of the residential real estate submarket. This is because that the provision of adequate housing for the population is part of the state's provision of services of general interest and is largely regulated by law. In addition, the provision of rentable residential properties is more important in Germany than in other countries due to the low proportion of owner-occupied housing compared to the rest of Europe. In addition, the separation of rental and owner-occupied housing poses the difficulty that, especially in the case of owner-occupied housing, the intention to use the housing is not static and it is therefore not clear to which category the housing should be assigned when the contract is concluded. For this reason, government agencies, in particular, also review the effectiveness of housing subsidy programs, examine the overall housing situation of the population, and analyze sales and price trends in the residential real estate market.

For residential real estate, the provision of permanent housing is determined by the predominant use:

- **Condominiums** under the Condominium Act are always assigned to the residential real estate category, as the intention to rent may change during the holding period and is not statically fixed at the time of purchase.
- Residential real estate includes **owner-occupied homes and multi-family buildings**.
- **Weekend homes** are also included in the residential real estate category because they are used primarily for private living on weekends and days off.
- **Vacation homes or apartments belong to** the commercial real estate category if they are used for renting to different users.

The category of residential real estate is not generally covered in this report, but demarcations have been made, e.g. senior citizens' and residential properties within the commercial real estate segment of healthcare and social properties (see Chap. 1.15).

1.9.2 Commercial real estate category

For the category of "commercial real estate" used here, the German term "Gewerbeimmobilien" has generally been used up to now. This term is strongly linked to the planning regulations of the German Building Code in connection with the regulations on the permissibility of projects in the context of built-up areas (§ 34 BauGB). Therefore, this term is not comprehensive enough to describe real estate used for commercial purposes in the broadest sense. Industrial properties, large, combined leisure, shopping or accommodation facilities are more likely to be subsumed under "commercially used real estate". For these reasons, the following definition, which has now been adopted by the German government, is used as the basis for classifying commercial real estate ("Wirtschaftsimmobilien"):

Commercial real estate comprises (accessible) buildings that the user utilizes as a factor of production to create a product or service.²² Users of commercial real estate are companies in the broadest sense (e.g. also associations) or the public sector.

²² The service can be both commercial and non-commercial.

1.9.3 Agricultural, forestry and fishing property category

According to the above definition, properties used for agricultural, forestry or fishery purposes (such as stables, sheds, greenhouses, etc.) would be classified as commercial real estate. However, the separate designation of these property types is considered reasonable because it focuses on a completely different use of the land. Also, the previous view, especially the official valuation and official statistics, should be taken into account. On the other hand, properties used for the production of food within the premises and which are more similar to industrial production facilities (e.g. slaughterhouses), should be included in the commercial real estate category.

Commercial real estate category segments

Hierarchical categorization

The results of the expert discussions focus on clear, non-overlapping and hierarchical definitions of the different property types. As far as possible, the naming of the categories follows professional logical criteria; however, convention, i.e. the simple definition of certain categories, was also necessary where appropriate. It is important to the authors of this report that generally accepted criteria for property types be used first. However, where clear and non-overlapping classifications are not possible, the aim has been to make the most unambiguous definitions possible.

The focus is on the category of developed commercial real estate. This category includes properties with very heterogeneous uses and return targets. The individual segments and subsegments are described and classified in more detail below by property type and use.

Categorization by location

No differentiation has been made according to location criteria, knowing well that location differences in location have a significant impact on the property value. The main reason for this approach is that mixing spatial and substantive submarkets regularly leads to ambiguous categorizations. Classifying a property into a spatial submarket and, in addition, into a substantive submarket prevents such "blurring" of categories and leads to clearer and non-redundant classifications. For example, the retail property segment "small-scale retail properties" is very clear and is described with the spatial reference "in downtown locations". In the following, the taxonomy of the substantive submarket of commercial real estate is made; a link to spatial submarkets is avoided.

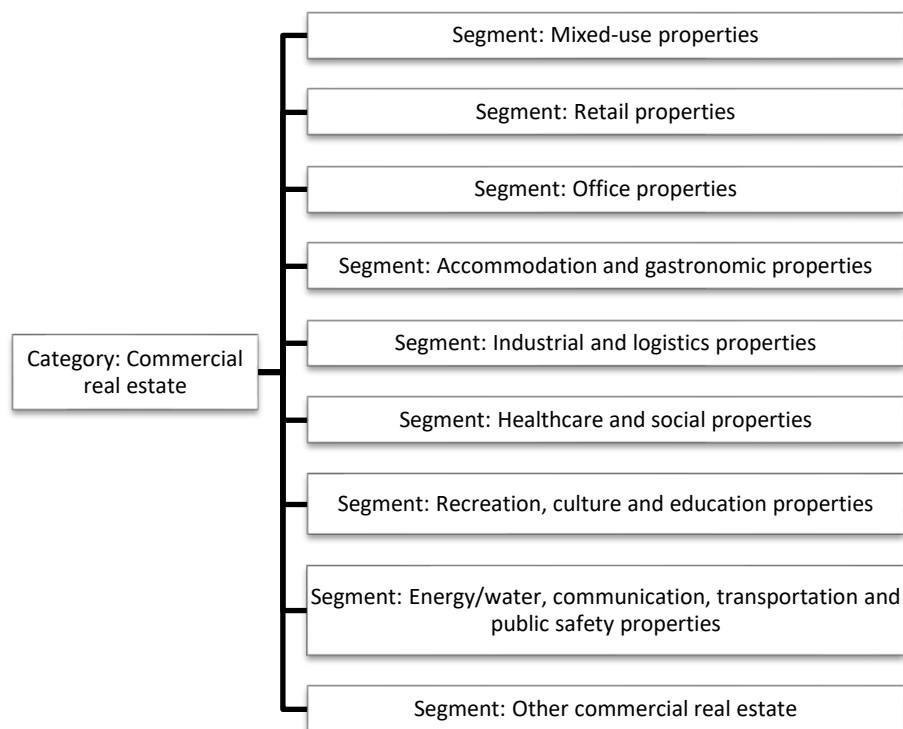


Fig. 4: Commercial real estate category segments

A taxonomy is a uniform procedure or model (classification scheme) that classifies objects according to certain criteria, i.e. places them in categories or classes.²³

²³ Cf. Koschnik (1993): Standard Dictionary for the Social Sciences, vol. 2, Munich London New York Paris.

1.10 Mixed-use property segment

Mixed-use properties are an expression of the trend away from monofunctional to mixed use (city of short distances, mobility, resilience, risk reduction) that has been observed at least since the coronavirus pandemic. In this context, different types of use and living spaces are combined in one property in order to increase the quality of use through synergy effects.

Mixed-use properties are those in which at least two different, unrelated types of use²⁴ are located and in which none of the types of use accounts for more than 50 percent^{25,26} of the total use (see Figure 5).

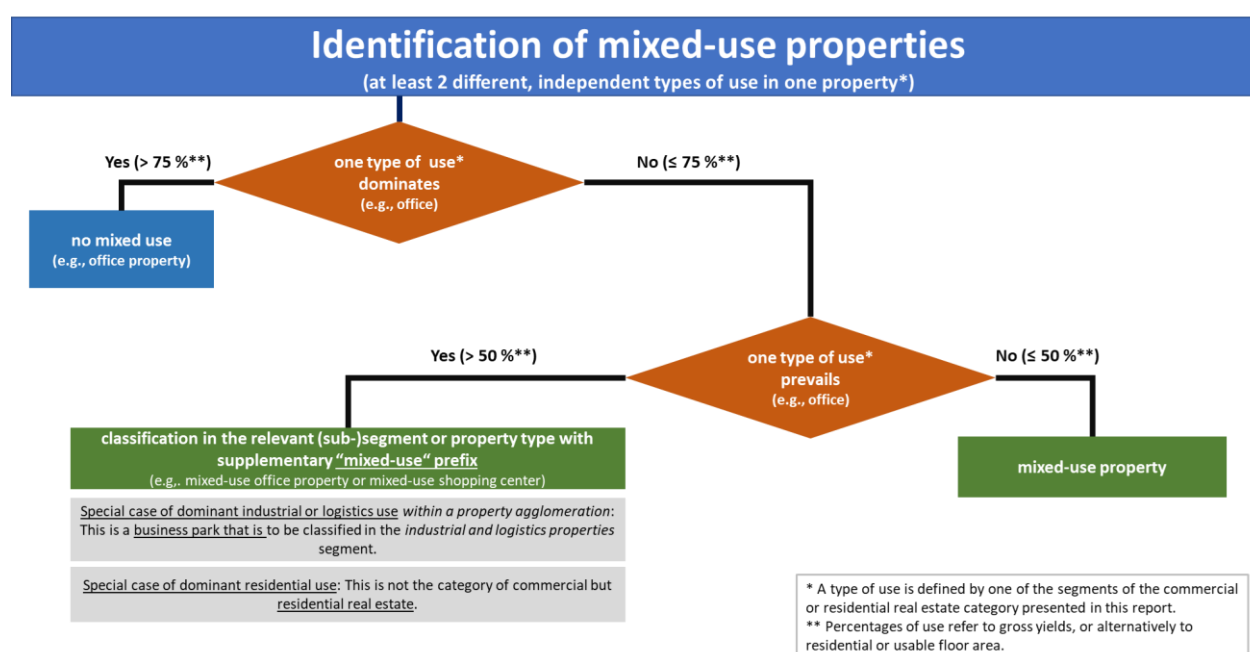


Fig. 5: Distinguishing characteristics for mixed-use properties

If a property has more than 75 percent of one type of use, that use is dominant and the property is classified in the appropriate segment (e.g., office property segment with more than 75 percent office use).

If, on the other hand, the property has one use type with a share between 50 and 75 percent, the property is classified in the relevant subsegment and given the "mixed-use" prefix.²⁷ For example, 60 percent office use would identify a mixed-use office property; a shopping center with, say, 55 percent retail, 30 percent restaurant and 15 percent recreational use would be considered a mixed-use shopping center. This ensures that properties that actually have a clear core use generally remain distinguishable.

If a property has more than one type of use that is independent of the other(s) but each type of use accounts for no more than 50 percent of the total use, the property is classified as a (classic) mixed-use property (i.e. without a prefix).

²⁴ A type of use is defined by one of the segments of the commercial or residential real estate category shown here.

²⁵ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

²⁶ Cf. sections 181, 249 of the German Valuation Act (BewG).

²⁷ For reporting reasons, these properties could also be allocated to the mixed-use property segment - but they may then no longer be counted in the original segments. Alternatively, the mixed-use share could also be shown in the corresponding segments.

Mixed-use principle

Mixed-use properties are generally classified according to the "dominance principle". This means that the predominant use²⁸, i.e. more than 50 percent leads to the corresponding designation.²⁹

In principle, the yield ratio should be used against the background of the benefit of the property to the owner. In practice, however, the area ratio is regularly used as an alternative.

1.10.1 Excursus: Quarters

"Mixed-use quarters" or "quarters" in general are becoming increasingly important as a new property use class for investors. In the proposed definition of gif (2022), the classification elements mentioned are, in particular, at least two different main uses (each with no more than 75 percent of the total area), a mandatory social use value (e.g. through the integration of a school, a day care center or a training workshop) and several buildings in a publicly accessible space (e.g. a public square) that are traded as a whole in a transaction.³⁰ Thus, building agglomerations that contain only one type of use (e.g., residential or office "quarters") are not included in this definition. In addition, there should be a commitment on the part of the owners to maintain the character of a quarter (e.g., through centralized quarter management or covenants or agreements).

This type of building agglomeration with mixed-use properties can be captured as a subsegment of mixed-use properties if the gif definition is finite.

1.11 Retail property segment

The categorization of retail property is based on operating formats or types in combination with typological characteristics such as floor space size and structural-functional criteria (Fig. 6). In this way, the basic physical structures of the building fabric and the economic aspects of the acquisition, construction or sale of the property are taken into account.

²⁸ A type of use is defined by one of the segments of the commercial or residential real estate category shown here.

²⁹ A similar approach is also relevant in the construction activity statistics of the Federal Statistical Office, which defines residential buildings as buildings that serve residential purposes for at least half of the area.

³⁰ The sale of a building within a quarter would be included in the transaction statistics with its individual use type (e.g., residential, office, or mixed-use).

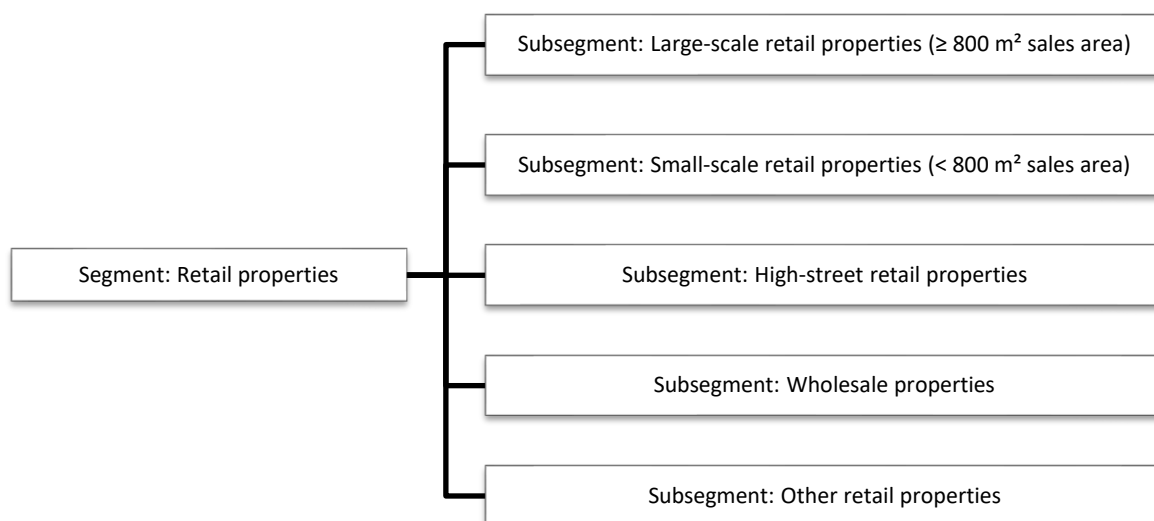


Fig. 6: Retail properties segment

Retail properties are properties that are used for at least 50 percent retail purposes. This means that up to 50 percent of the property³¹ can be characterized by usually complementary types of use (such as offices, cafés or restaurants, but also logistics). If there are several independent types of use and the proportion of retail use is between 50 and 75 percent, the property is referred to as a mixed-use retail property; the prefix "mixed-use" is then added to the relevant subsegment or property type (see also Fig. 5). If the share of complementary use types is less than 25 percent, these play a subordinate role in terms of yield, so that this form of mixed use is not explicitly taken into account in the designation, i.e., the relevant property type is referred to without a prefix (e.g. retail warehouse, even if there is a 20 percent share of use for a bistro or logistics space or similar).

When distinguishing between large-scale and small-scale retail properties, it should be noted that smaller stores (e.g. drugstores, smaller supermarkets, bakeries or smaller service shops) with generally less than 800 m² of sales area are to be assigned to the small-scale retail properties. Grouped, spatially adjacent stores in a so-called "functional unit" are only allocated to large-scale retail if the properties are subject to uniform management and are perceived as a coherent complex in terms of their basic structural design. A functional unit exists only if several independent businesses form a structural and operational unit and cannot be operated independently of each other or are contractually bound to each other.

1.11.1 Large-scale retail property subsegment

The spatial planning and urban development function of large-scale retail stores and centers is an important starting point for the legal definition of "large-scale". Therefore, the following principle can be applied: If there is a corresponding planning designation, it can be assumed that such a real estate category has been realized on the property in question.

The category "large-scale retail" includes all retail properties which are classified as large-scale retail trade objects according to §11 Abs.3 BauNVO with a floor area³² of 1,200 square meters

³¹ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

³² The floor area is calculated according to DIN 277 and refers only to the sum of the areas of all full floors. The external dimensions of the full floors of a building are decisive. The gross floor area (GFA), on the other hand, is calculated from the sum of the floor areas of all floor levels, i.e., also the non-full floors such as basements, attics, and underground garages.

or, according to a decision of the Federal Administrative Court (BVerwG), with a sales area of 800 square meters.³³

The distinction between property types within the subsegment of large-scale retail properties is usually and primarily made on the basis of sales area. Guidance on the delimitation of sales areas, which may be located inside or outside buildings, can be found in case law,³⁴ gif guidelines³⁵ (in particular MF/V, Guideline for the Calculation of Retail Sales Area) and in the retail trade regulations of the federal states. If the sales area is not available, the usable area or gross floor area can be used as a proxy. Experience-based conversion factors for various types of property from the HypZert Retail Group, which are also listed in Tab. 1, are suitable as criteria.³⁶ In addition, the product range is mentioned as a further (subordinate) differentiation criterion.

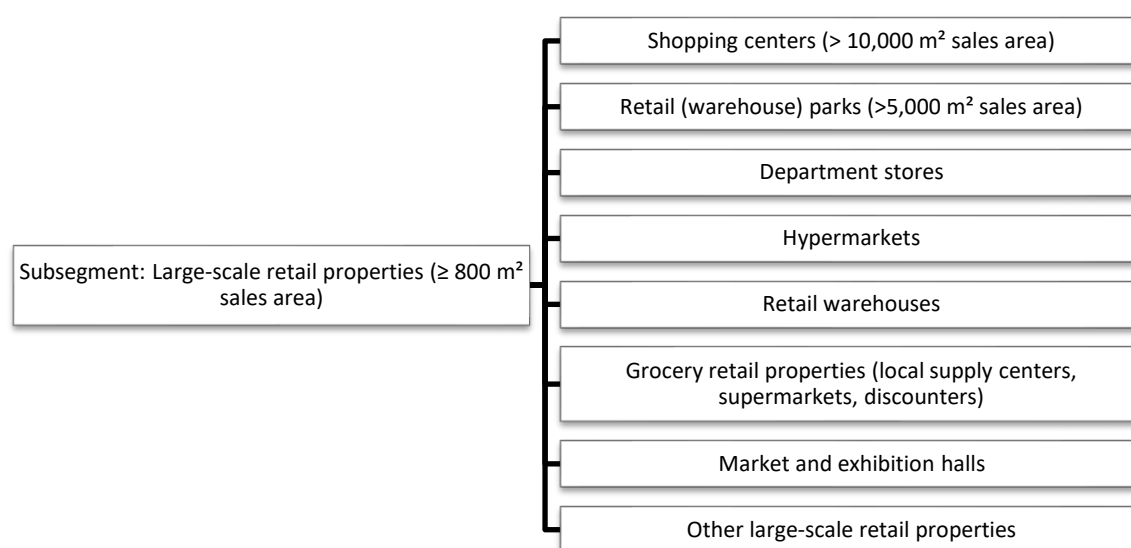


Fig. 7: Property types in the "large-scale retail" subsegment

³³ Cf. Federal Administrative Court, judgment of November 24, 2005, BVerwG 4 C 10.04.

³⁴ Cf. *ibid.*

³⁵ gif: Society for Real Estate Research e. V.

³⁶ S. HypZert study "Valuation of retail properties (as of October 2019). The most recent version should always be used.

Property type	Sales area	Usual ratios/conversion factors ³⁷	Assortment	Number of tenants	Floors	Agglomeration
Shopping center	> 10.000 m ²	VK/NUF ³⁸ approx. 80 % NUF/BGF ³⁹ approx. 65-70 %	Focus on SMCG ⁴⁰ , integrated service offerings (such as catering).	several; generally small-scale tenant mix	mostly usually multi-story	possible, always with joint management
Retail (warehouse) parks	usually > 5,000 m ²	VK/NUF approx. 85 % NUF/BGF approx. 85 %	Focus SMCG	several, usually large-scale tenant occupation	mostly ground level	possible, usually with joint management
Retail warehouses	(unlimited)	VK/NUF approx. 90 % NUF/BGF approx. 90 %	Focus on one product group	1	mostly ground level	possible, but with independent operation
Warehouses	10.000 m ² to 30.000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 75 %	Focus on SMCG (deep and broad), integrated service offerings (such as hospitality).	1	multistory	no
Department stores	1.000 m ² to 10.000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 75 %	SMCG (deeply structured from one material group)	1	multistory	no
Hypermarkets	5,000 m ² to 15,000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 90 %	Focus on FMCG with a focus on experience orientation	1	mostly ground level	no
Grocery retail properties						
- Discounter	usually < 1,000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 90 %	Food	1	mostly ground level	possible, but with independent operation
- Supermarkets	800 - 1.500 m ²	VK/NUF approx. 75 % NUF/BGF approx. 90 %	Food	1	mostly ground level	possible, but with independent operation
- Consumer markets	1.500 - 5.000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 90 %	Food	1	mostly ground level	possible, but with independent operation
- Local supply centers	usually < 5,000 m ²	VK/NUF approx. 75 % NUF/BGF approx. 90 %	FMCG with a focus on care close to home	several	mostly ground level	yes, joint management possible

Tab. 1: Differentiation guide for property types in the "large-scale retail" subsegment

³⁷ Reading aid based on hypermarkets: 10,000 m² VK / 0.75 ≈ 13,333 m² NUF / 0.9 ≈ 14,815 m² GFA.

³⁸ VK: Sales area, NUF: Usable area (DIN 277-1); Source: HypZert study "Valuation of retail properties" (as of October 2019).

³⁹ NUF: usable floor area, BGF: gross floor area (GFA) (DIN 277-1); Source: HypZert study "Valuation of retail properties" (as of October 2019).

⁴⁰ Slow moving consumer goods (SMCG) are defined in contrast to fast moving consumer goods (FMCG). FMCG includes, but also detergents, cleaning products and personal care products.

1.11.1.1 Shopping center

Shopping centers⁴¹ are large-scale, usually multi-story individual buildings (over 10,000 square meters of sales area) with multiple tenants or agglomerations of retail buildings. In the case of building agglomerations, there is a structural-functional combination with a uniform design which is perceived as a coherent complex and promises a higher quality of stay. This type of construction is used, for example, in factory outlet centers or arcades.

The rental properties are always subject to central management. They are usually built as a unit and work together as a site community. This includes the management of the retail mix, corporate design, uniform marketing and parking management. Shopping centers usually have several, small-scale users with different proportions of space.

The focus is on aperiodic or slow-moving consumer goods (SMCG)⁴², with a relatively high proportion of textiles. Other services such as gastronomy are usually also integrated.

1.11.1.2 Retail (warehouse) parks

Retail parks are large-scale individual buildings, usually at ground level, with a uniform building design and a rather low quality of stay. The sales area is usually more than 5,000 square meters.

Retail parks usually under central management with uniform parking management. There are several large-scale users.

The focus of the goods is on aperiodic needs (SMCG). Other offers (e.g., gastronomy) are limited (e.g., small bistros, fast food restaurants, snack bars), which is one of the reasons for the lower quality of stay compared to shopping centers.

1.11.1.3 Warehouses and department stores

Warehouses and department stores are found in central urban locations. The two terms are often used synonymously.

Warehouses are multi-story buildings with sales areas ranging from 10,000 to 30,000 square meters. *Department stores* can be multi-story or ground level. The sales area is between 1,000 and 10,000 square meters.

Warehouses offer a wide range of products across all sectors. They integrate various additional services such as gastronomy (e.g. KaDeWe). *Department stores* offer a range of service-oriented goods with a deeply structured assortment from only one or a few product groups. The most common of these are textiles, home furnishings and electrical and household appliances. There are no other offerings; the value of the visit is based primarily on the advice.

The flagship store format is a *special case*. Here, the otherwise typical characteristics of breadth and depth of product range take a back seat to an experience-oriented brand or image-oriented corporate positioning (e.g. Apple, Abercrombie & Fitch).

⁴¹ Synonyms use.

⁴² S. Footnote 40.

1.11.1.4 Hypermarkets

Self-service department stores (hypermarkets) are usually built at ground level, in dense regional locations also multi-story. Sales areas range from 5,000 to 15,000 square meters. The main difference between hypermarkets and grocery retail properties (see below) is their size.

The breadth and depth of the assortment focuses on daily and short-term needs (FMCG)⁴³. The other offerings focus on shopping experience itself and longer dwell times. Examples of hypermarkets are Citti, E-Center, Globus and Scheck-In.

1.11.1.5 Retail warehouses

This property type includes large-scale, mostly single-story buildings. It also includes agglomerations in which several specialty stores are spatially and functionally related to each other (grown specialty store agglomeration) but are operated independently. The sales area is not limited and often exceeds 5,000 square meters.

Retail warehouses specialize in a particular product range (including furniture, textiles, shoes, drugstore products, beverages, electronic goods, construction and DIY supplies, but also motor vehicles). They serve non-periodic needs and are therefore not visited on a daily basis. Other offers are limited or unavailable; they are used for customer service or to extend the length of stay.

1.11.1.6 Grocery retail properties (local supply centers, supermarkets, discounters)

Grocery retail properties ensure local supply, i.e. they serve the short-term, periodic needs (FMCG) of a clearly defined local area. This requires a food supply (supermarket, discounter, consumer market) that is located within the property or at least in a spatial-functional connection with the property.

Grocery retail properties primarily include

- consumer markets (1,500 to 5,000 square meters of sales area),
- supermarkets (800 to 1,500 square meters of sales area),
- discount stores (typically less than 1,000 square meters of sales area but increasing).

If it is a retail agglomeration (within a spatial-functional context) with dominant food retailing or convenience goods⁴⁴ to serve a clearly defined local area, it is referred to as a **local supply center**. With additional reference to other complementary uses or the importance in the settlement area, the synonymous term “quarter center” or “district center” is often used. The sales area is usually up to 5,000 square meters.⁴⁵

1.11.1.7 Market and exhibition halls

Market and exhibition halls are buildings used for the large-scale presentation and sale of a variety of products, usually under an overall theme. The buildings consist of flexible, large-scale areas including the necessary functional areas, sanitary rooms and administrative facilities for the operation of the building. Generally, such properties are operated by companies

⁴³ S. Footnote 40.

⁴⁴ S. Footnote 40.

⁴⁵ Particularly in connection with neighborhood and district centers, it should be noted that services such as doctors' offices and daycare centers, which are often present, are not included in the *sales area*. In the case of larger sales areas, the periodicity generally decreases, and the characteristics of retail parks or shopping centers predominate.

of various legal forms. The character of market and exhibition halls is very different. Example: Kleinmarkthalle Frankfurt.

1.11.1.8 Other large-scale retail properties

This category includes large-scale retail properties that do not correspond to the above-mentioned types of large-scale retail property.

1.11.2 Small-scale retail properties subsegment

Small-scale retail properties are defined as space used by retailers or smaller service providers in buildings that are below the 1,200-square-meter floor area limit relevant to building planning (Section 11 (3) BauNVO) or have a sales area of less than 800 square meters.⁴⁶ As a rule, they are hardly suitable for investment. These include, for example, smaller supermarkets and discounters, smaller specialty stores and retail warehouses (e.g. drugstores, smaller car dealers), as well as shops offering local services (e.g. hairdressers, shoemakers, bakeries (without attached cafés, see also Chap. 1.13.3), kiosks and convenience stores, as well as urban (warehouse) spaces of quick-commerce providers such as Gorillas, Flink, etc.).

Retail space in buildings that primarily serve other uses, such as gas stations, airports, and train stations, are not included in this subsegment and are classified in the transportation facilities subsegment of the energy/water supply, communications facilities, transportation facilities, and public safety real estate segment (see Chap. 1.17).

1.11.3 High-street retail properties subsegment

High-street retail properties are mixed-use properties with a focus on retail use, usually complemented by at least one other type of use (residential, office, restaurant, etc.). In order to be classified in the retail segment or in this subsegment, the building must be used primarily for retail, i.e. more than 50 percent.⁴⁷ If the retail share is more than 75 percent, the building is referred to as a (classic) high-street retail property; the other types of use play a minor role in terms of income. If the retail share is between 50 and 75 percent, the property is referred to as a mixed-use high-street retail property (see also Fig. 5 on mixed-use properties).⁴⁸

High-street retail properties are multi-story buildings, with retail space or space for similar public-oriented services typically on the lower floors and complementary office or residential space on the upper floors.⁴⁹ High-street retail properties are typically located in downtown or city districts shopping areas.

1.11.4 Wholesale properties subsegment

In contrast to the other retail-related subsegments, this subsegment includes all wholesale properties (e.g. Metro, Handelshof), which are sometimes also referred to as "cash & carry".

⁴⁶ BVwvG Urt. 24.11.2005, 4 C 10.04

⁴⁷ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁴⁸ In some cases, property market reporting also includes prefixes depending on the second-largest use type, such as "residential and commercial buildings" or "office and commercial buildings," which are considered mixed-use high-street retail properties under this taxonomy (provided the non-retail share is less than 50 percent).

⁴⁹ Even if the number of floors with retail space is often lower than that of the other uses - and the proportion of space can thus be less than 50 percent - the income from the rental of retail space can still predominate, so that the building is a high-street retail property.

1.11.5 Other retail properties subsegment

This category includes those retail properties that do not meet the above criteria.

1.12 Office properties segment

Office properties⁵⁰ are generally located in central business districts of cities and metropolitan areas and are designed for office work and related services, including administrative buildings and city halls as well as co-working spaces. Today's office buildings are almost invariably constructed in a grid pattern, which can accommodate a variety of office sizes depending on the user. In some locations, office properties are complemented by other types of real estate, such as warehouses and commercial space.

The office property segment includes all properties where at least 50 percent of the space is used as office space. This means that up to 50 percent of the property⁵¹ can be characterized by usually complementary types of use (such as cafés or restaurants, but also retail). If there are several independent types of use and the proportion of office use is between 50 and 75 percent, the property is referred to as a mixed-use office property; the prefix "mixed-use" is then added to the relevant subsegment (see also Fig. 5). If the share of complementary types of use is less than 25 percent, they play a subordinate role in terms of yield, so that this form of mixed use is not explicitly considered in the designation (e.g. medium-sized office property without a prefix, even if there is a 20 percent share of use for a bistro or logistics space or similar).

Office properties can be classified based on their leasable commercial floor area (MFG):⁵²

- Small office properties with up to 1,000 m² MFG,
- Medium-sized office properties with leasable areas of 1,000 to 10,000 m² MFG,
- Large office properties with more than 10,000 m² MFG.

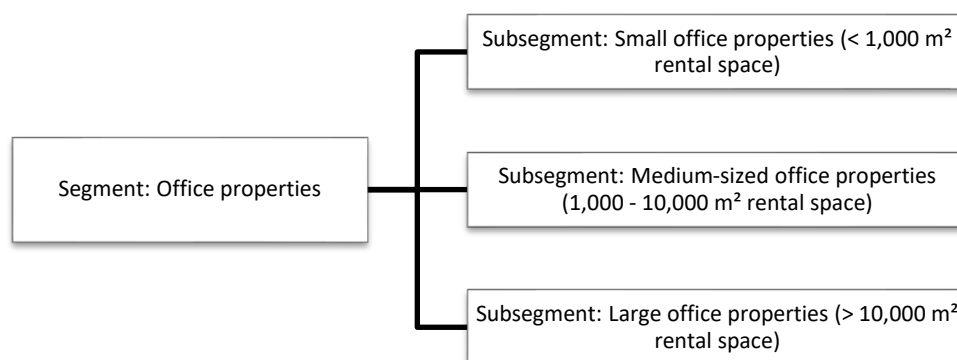


Fig. 8: Office property segment

This categorization by size of rentable area is done in such a way that, as far as possible, a distinction can be made between, for example, freelance offices, traditional multi-story office buildings and high-rise office towers, irrespective of investment qualities and market phases.

⁵⁰ In office market monitoring, medical practices are generally included in office space because space offered on the office market is used for them (cf. gif (2015); gif guide to office market reporting). For the present taxonomy, however, the use at the time of the transaction is decisive; if the space is predominantly used for office work, the property is to be classified in the office property subsegment; if predominantly medical activities are carried out, the property is an outpatient healthcare property (cf. Chap. 1.15.1).

⁵¹ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁵² Since June 2017, the rental area for commercial space (MFG) has been the rental area definition of the Gesellschaft für Immobilienwirtschaftliche Forschung e.V. (gif) for commercially rented or used buildings. It builds on DIN 277, which was amended in January 2016, and replaces the previous MF/G 2012. Further information at: <https://gif-ev.com/flaechendefinition/> (as at: 21.01.2023).

In this way, a differentiation is to be achieved that allows for better differentiated property prices and thus less distorted market values.

Smaller office properties are generally not suitable for investment, are not traded as investment properties and are relatively easy to convert to other uses; their use after sale is therefore not defined as office.

Medium-sized office properties are designed for office use, but can be converted with some effort. Some are investment grade.

Large office properties are classic and investment-grade properties. They are designed for office use, have appropriate facilities such as adequate air conditioning, elevators, storage and IT rooms, necessary facilities for communication equipment, and recreation rooms.

Larger office properties, in particular, have multiple access cores ensure quick access to workplaces even during peak hours, and these cores are often also connected to dedicated parking areas.

1.13 Accommodation and gastronomic properties segment

There have been many different approaches to classifying the accommodation and gastronomy property segment. The taxonomy used here is based on the purpose for which the properties are acquired or held. The classification is thus made from the perspective of the who acquires the property in order to secure a sustainable return that he deems appropriate.

Accommodation and gastronomy property is classified according to the primary use:

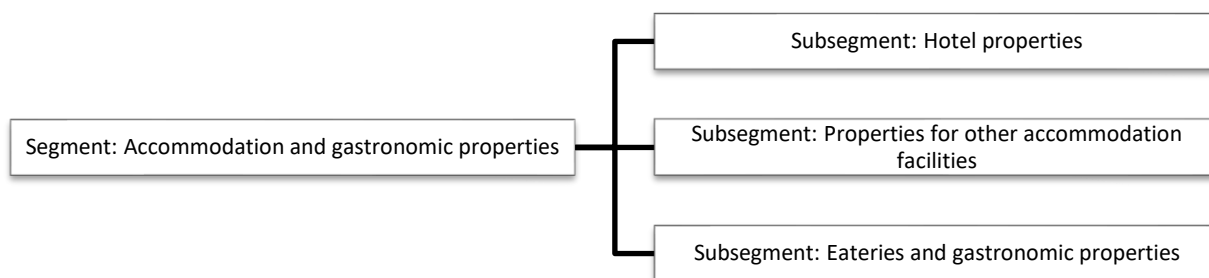


Fig. 9: Accommodation and gastronomic properties segment

The accommodation and gastronomic property segment includes all properties that are at least 50 percent used for accommodation and gastronomy. Thus, up to 50 percent of the property⁵³ can be characterized by usually complementary types of use (such as retail or office, but also residential).⁵⁴ If there are several types of use that are independent of each other and the share of accommodation or gastronomic use is between 50 and 75 percent, the property is referred to as a mixed-use accommodation or gastronomic property; the prefix "mixed-use" is then added to the relevant subsegment or property type (see also Fig. 5). If the share of complementary use types is less than 25 percent, these play a subordinate role in terms of yield, so that this form of mixed use is not explicitly taken into account in the designation, i.e.

⁵³ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁵⁴ Note: However, a mix of uses within this segment, i.e., lodging and food service, does not establish a complementary use of the other.

the relevant property type is referred to without a prefix (e.g., economy hotel, even if there is a 20 percent share of use for office or similar purposes).

1.13.1 Hotel properties subsegment

Hotel properties are used to provide temporary accommodation (lodging) for people. Accommodation usually includes the provision of food and other services, such as conference facilities, spa facilities and the like. Hotel properties regularly provide services that go beyond lodging and food. The target group of hotels is primarily business travelers and vacationers. Charges are made for room and board. Accommodation properties that do not correspond to the hotel properties defined here are assigned to the subsegment "real estate for other accommodation facilities" (see section 4.4.2).

The objective of purchasers of hotel properties is to generate a sustainable return that is economically related to the investment in the purchase and, if applicable, the refurbishment or renovation of the property. It does not matter whether this net income is derived from the rental income or from the income generated by the hotel business.

The categorization of hotel properties into subsegments is based primarily on the hotel's amenities, location and other service offerings, and thus on the different user groups of the hotel categories. The amenities of a hotel property are most likely to be reflected in the German Hotel Classification of the DEHOGA (Deutscher Hotel- und Gaststättenverband).⁵⁵ This is based on objective criteria such as the property's condition, accessibility, service, room size and furnishings, noise insulation, air conditioning, etc..⁵⁶ This classification system is generally known and accepted and is adapted to market conditions from time to time.

In addition, the explanations of the HypZert study on the valuation of accommodation properties are taken into account.⁵⁷ According to this, the classic star classification can be extended by categories. It should also be taken into account that the "chain hotel industry" has meanwhile created its own quality standards (e.g. "Motel One", "Steigenberger" etc.). Through the targeted marketing of corporate labels and the simultaneous expansion of regional presence through franchise systems, these hotels are now firmly established in medium-sized and small towns in Germany.

⁵⁵ DEHOGA, *German Hotel Classification*, available at: <https://www.dehoga-bundesverband.de/branchenthemen/klassifizierung/hotelklassifizierung/> (as of 01/21/2023).

⁵⁶ Currently valid criteria catalog: Hotelstars.eu, *Criteria Catalogue 2020-2025*, available at: https://www.hotelstars.eu/fileadmin/Dateien/GERMANY/Downloads/Kriterienkatalog/20211128_Kriterienkatalog_2020-2025.pdf (as of 21.01.2023).

⁵⁷ S. HypZert study "Valuation of lodging properties" (as of September 2018).

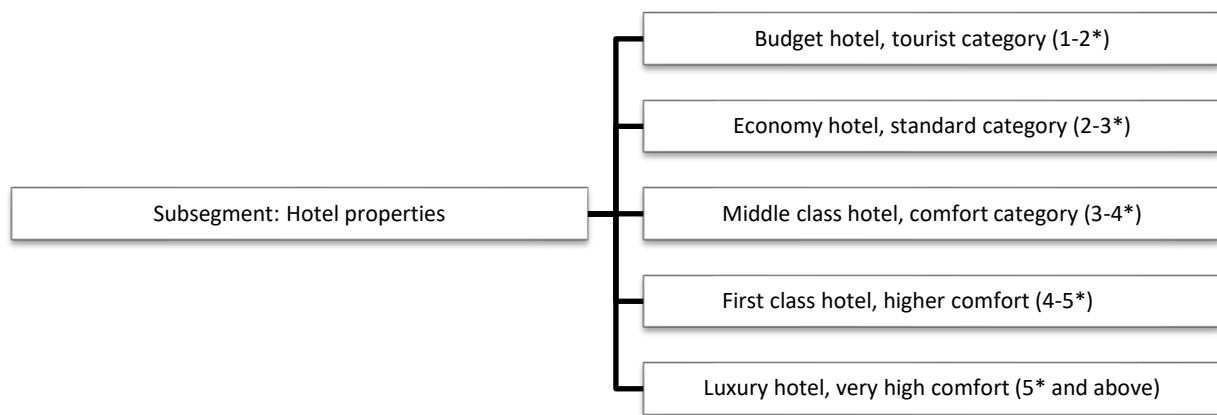


Fig. 10: Property types in the hotel properties subsegment

The two basic approaches mentioned above result primarily in quality and amenity characteristics that lead to the categorization of hotel properties into subsegments. The transitions may be smooth, but the classification should be based on the predominant quality or amenity category. This also applies to newer operating models that offer a mix of different categories in one property.

Location criteria as with the other substantive submarkets are expressed through the division into spatial submarkets and are not used here as classification criterion. In the following descriptions of each hotel property category, location is mentioned only as a supplementary, explanatory characteristic.

1.13.1.1 Budget hotel, tourist category (1-2*)

Tourist hotels are located in medium to large cities, often with good public or private transportation. The hotels are usually operated by hotel chains and have a functional, standardized building style with a practical standard of equipment. The room furnishings correspond to the 1-2* categorization of the DEHOGA. There is usually no hotel lobby. The range of services is reduced, the hotel's own services can be used directly at the reception, a prepared breakfast buffet is offered. This category also includes simple, family-run hotels with comparable standards, but no standardized architectural style or service offering.

The budget hotel sector can be seen as a separate market segment from the DEHOGA star categories and is characterized by a high turnover combined with reduced service and low costs. Breakfast rooms and sometimes smaller hotel bars are available in budget hotels, but these are often located in the hotel lobby. Services are available at the reception desk. Customers range from tradesmen, tourists and "walk-in" guests to business travelers.

1.13.1.2 Economy hotel, standard category (2-3*)

Economy hotels are mainly located in medium to large German cities. The properties are well connected to public and private transportation. The standard of the building is contemporary and can be classified as good, and the construction is functional. Unlike budget hotels, economy hotels have a lobby with a bar as a central meeting point for guests. Breakfast is served in the hotel lobby and there are usually no separate breakfast rooms. Service personnel speak at least the local language and English. Room standards are often reflected in simple but design-oriented furnishings; rooms are of practical size. There are no suites. The typical guest structure is characterized by tourists and business travelers.

This category also includes family-run hotels or hotels with similar operations and standards, but with individual architectural styles and service offerings.

1.13.1.3 Middle-class hotel, comfort category (3-4*)

Medium-class hotels in the comfort category are located in medium to large cities with more than half a million overnight stays per year. Locations in the city center or in city districts can be classified as average to good; in addition to good public and private transport connections, they may also be close to the local airport or the main railway station. The design of the buildings is adapted to the environment and the purpose, sometimes with brand-specific features. The construction method is usually standardized. The hotel lobby is separate from the breakfast room/restaurant, and there are conference rooms and fitness and spa facilities (usually smaller sauna areas in conference hotels).

The additional services depend on the target group of the hotel (conference hotel, wellness hotel, etc.). In addition to reception services, room service, laundry and cleaning services may be available. Service personnel speak at least the national language and English.

The rooms are of the usual standard according to the star classification with good, often design- and trend-oriented furniture. Suites are occasionally available. There is a hotel restaurant and bar, and a limited number of public lounges for guests. The guest spectrum reflects business travelers, conference guests and tourists.

1.13.1.4 First-class hotel, higher comfort (4-5*)

First-class hotels are located in major cities and smaller secondary locations with more than one million overnight stays per year. Often centrally located in the city center or in a good part of town, these properties are characterized by good visibility, prestigious surroundings and very good public and private transportation connections. The mostly individual design of the building has partly brand-related specifications and features an appealing architecture with recognition value. The contemporary standard of furnishings is good to very good.

Hotels in this category have one or more separate breakfast rooms, a restaurant, a hotel lobby, meeting rooms and, usually, sauna and fitness areas. Public areas are generously proportioned and follow a uniform corporate design. Room furnishings are standardized, while room size is sometimes above the standard for the star classification. Customer-facing service personnel speak several international languages. Suites are available, and in some cases there are themed rooms with their own design. Business travelers, tourists and conference guests are usually guests of this segment.

This type of hotel also includes conference and wellness hotels. These hotels are often located in quiet areas, but their services and facilities are similar to those of a 4–5-star hotel.

1.13.1.5 Luxury hotel, very high comfort (5* and above)

Luxury hotels are located primarily in major cities and larger secondary locations with more than one and a half million overnight stays per year. Located in a central downtown location or in a good part of town, the property is characterized by a prestigious environment with very

good visibility of the building. Access to public and private transportation is very good. Occasionally, luxury hotels can be found as wellness or conference hotels can also be found in quiet and more secluded locations.

The building concept is individual, sometimes with brand-related specifications. The building style is modern and has a unique selling point. In some cases, luxury hotels are located in high-quality renovated old buildings ("landmark properties"). The standard of finish is contemporary and very good; there are one or more breakfast rooms, several restaurants, a lobby, conference and banquet rooms, and wellness areas. Suites and spacious function rooms are available with high-quality technical equipment. The public areas are spacious.

The room furnishings are of a very high standard and the size of the rooms is above the usual standard according to the star classification. Services include 24-hour room service. The customer-oriented service personnel speaks several international languages. Business travelers and tourists make up the clientele.

1.13.2 Properties for other accommodation facilities subsegment

In addition to the hotel properties classified above, there is a large number of other accommodation facilities of various types. Here too, different orientations of accommodation facilities are developed according to current needs. The provision of other services is very heterogeneous and depends on the target group. The main criterion for allocation to the accommodation facilities segment is - as in the case with hotel properties - the temporary provision of lodging. The further classification of the subsegment "other accommodation facilities" is primarily based on the target group (e.g., youth groups) and in connection with this also on the respective design of the property (e.g., vacation resort with detached residential units). Those with a significant impact on the real estate market are classified as follows:

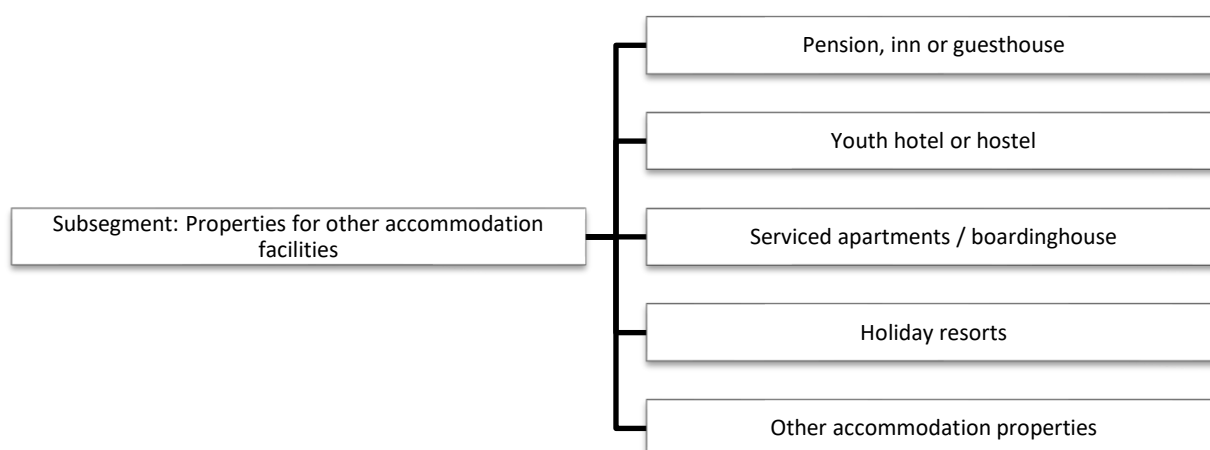


Fig. 11: Property types in the "Properties for other accommodation facilities" subsegment

1.13.2.1 Pension, inn or guesthouse

A *pension* is an establishment that offers fewer services than a hotel. Meals are served only to house guests. In cities, the business name "hotel pension" is often found.

An *inn* is an accommodation facility attached to a pub or restaurant. In its typical form, an inn differs from a hotel in that there are no common rooms other than the guest room, which is

open to the public, and the main income is from catering. However, the catering area is usually smaller than the sleeping area. Such establishments are often located on the outskirts of towns, in small towns and rural areas or in vacation and excursion areas.

Guesthouses are lodging establishments that provide lodging, usually for more than one night and usually without meals. They are often operated in conjunction with an inn or by research institutions (e.g. the Max Planck Society), theaters (as artists' residences), or in government districts. Such guesthouses are often open to a rather limited number of users. Their primary purpose is to enhance the attractiveness of the main use.

1.13.2.2 Youth hotel or hostel

Youth hotels or hostels are low-cost lodging establishments with group dormitories (dorms) and standard dormitories (privates). "Dorms" are mainly offered by bed rather than by room, i.e. independent guests share beds in a common room. Sanitary facilities are sometimes shared. The main target groups of hostels are young individual travelers and groups or school classes. Hostels are usually located in central and trendy areas of large cities.

1.13.2.3 Serviced apartments / boardinghouses

The term "*boardinghouse*", originally used in Germany, is increasingly being replaced by the international term "*serviced apartments*". The offer of a serviced apartment is usually aimed at long-term users in an urban environment. The rooms are more like private apartments. The service varies from very little to a hotel-like "room service" (e.g. with shopping or laundry service). Private rooms offered by private providers on internet platforms (e.g., Airbnb) cannot be assigned to this category.

Comparable properties are usually located in central locations in large German cities, with subordinate public transport and individual transport connections. There are no uniform construction methods and standards of equipment, and there is a wide range of offers from the most basic to the highest standards. In general, larger one- and two-room apartments with integrated, fully equipped kitchenettes or complete kitchenettes are offered as opposed to hotel rooms. Special features include the possibility of self-catering and a spacious layout with separate living and sleeping areas. Some have a separate breakfast room/restaurant with lobby.

The apartment concept is offered for short stays (sometimes just one night) up to one or more months. The target groups for serviced apartments are correspondingly diverse.

1.13.2.4 Holiday resorts

Holiday resorts are accommodation facilities primarily for leisure and vacation use in regions of tourist interest. These include the classic vacation regions in Germany on the North and Baltic Sea, as well as in the Alps and low mountain ranges. The properties are located in good micro-locations, e.g. directly on a lake shore or with a view of the mountains, and predominantly in resorts or seaside resorts within walking distance of the local infrastructure. In the Alps, for example, they are close to cable cars, ski lifts and hiking trails, while in lake regions, resorts are usually located in the first row of the beach or in a single location directly on the beach. The properties are characterized by good individual accessibility via highways or national roads.

Rooms usually have a balcony, some with sea or mountain views. In addition to single and double rooms, there are family rooms, apartments and suites or rooms with extra beds. The standard of furnishings is good and contemporary or according to the period of construction.

Gastronomic services in the resorts are provided by a restaurant and a bar with a café. In addition, the service is supplemented by outdoor catering facilities on a terrace. The restaurant / café or function rooms are often located in a separate building within the property, as are discotheques, sports/fitness areas, wellness/spa areas, childcare facilities and boutiques, tobacconists and newsagents.

The distinction with wellness/spa hotels is blurred; the main difference is the presence of multiple lodging buildings and various other service buildings on the resort property.

1.13.2.5 Other accommodation property

This category includes those accommodation establishments that do not correspond to the types of accommodation mentioned above. For example, boarding schools may be included here as they are not readily accessible to all.

1.13.3 Eateries and gastronomic properties subsegment

Eateries and gastronomy properties provide food and beverage services related to day guests.

Gastronomy is defined here as the provision of food and drink to paying guests. It includes both the classic bar and restaurant business (with consumption on the premises) and the sale of prepared food for immediate consumption. The spectrum ranges from small snack bars and fast-food chains to gourmet restaurants. In addition to the dining room as the main unit of space, there are usually storage and refrigeration rooms, staff rooms, toilets, and possibly a kitchen and outdoor catering areas.

In order to avoid demarcation problems resulting from inconsistent gastronomy terms in building planning and building regulations⁵⁸ and to avoid questions of permission under gastronomy law (also in the case of changes of use), a distinction is made between stand-alone and mixed-use gastronomic properties.

Stand-alone gastronomic properties contain only traditional gastronomy types.

Entertainment facilities are not included in the subsegment of gastronomic properties. They are assigned to the segment of recreation, culture and education properties, due to the ostensible commercial recreational entertainment (including nightclubs of any types), see Chap. 1.16.

Consequently, stand-alone gastronomic properties also include, for example: ⁵⁹

⁵⁸ Building planning law does not recognize the term "restaurant" and speaks of "pubs and restaurants", which, however, as an independent urban development term, does not consistently correspond to the definition in the German Restaurant Act. The Building Code uses the term restaurant without further definition; moreover, a restaurant in the form of a tavern would qualify as a place of assembly if it has a capacity of more than 200 guests (and does not focus on commercial recreational entertainment). Cf. FD Bauaufsicht / Kreis Stormarn (2013): Gaststätten und Versammlungsstätten aus baurechtlicher Sicht, p. 2ff, available at: https://www.kreis-stormarn.de/lvw/forms/5/53/Gaststaetten_und_Versammlungsstaetten_20130203.pdf (as of: 21.01.2023).

⁵⁹ Cf. also DEHOGA definition of types of operation: <https://www.dehoga-bundesverband.de/zahlen-fakten/betriebsarten/> (as of 21.01.2023).

- Bistros,
- Cafes,⁶⁰ pastry shops, coffee bars,
- Caterers,
- Ice cream parlors,
- Snack bars and food stalls or parlors,
- Canteens and dining halls,
- Restaurants (traditional or self-service),
- Taverns (including bars and pubs),
- Drinking places.

In the case of integrated *system gastronomy*⁶¹ it is often referred to as a “freestander” if the object has been newly built (in a standardized way) especially for this purpose. In this case, the construction and equipment follow the – often standardized – gastronomy concept. If necessary, a further distinction can be made, which takes into account the higher profitability of (partly franchising) system gastronomy. The advantages of system gastronomy lie in the synergy effects in operation, personnel, training, etc.

In the case of stand-alone gastronomic properties, the interest in the special location is also in the foreground, often in the immediate vicinity of tourist attractions, but also away from the city center (on the outskirts of the city, on main roads, on highways at excursion destinations etc.).

In contrast to stand-alone gastronomic properties, *mixed-use gastronomic properties* are properties with a predominant gastronomic use where the gastronomy share of the building⁶² is more than 50 percent and at least one other type of use is present. In practice, however, such a share is seldom achieved; rather, the catering areas are usually either located with the respective segments as a supplementary share (of up to 20 percent) to the predominant use or are part of a mixed-use property (without predominant use) (see Fig. 5).⁶³

1.14 Industrial and logistics properties segment

The industrial and logistics properties segment includes all properties used for manufacturing and production purposes. This includes the manufacturing space itself, as well as properties or space used for upstream or downstream processes such as warehousing, distribution, administration or research and development. The property may or may not be located in close proximity. Logistics properties also include properties used for the distribution of goods.⁶⁴

The industrial and logistics properties segment includes all properties that have at least 50 percent of their use in this area. Up to 50 percent of the property⁶⁵ can therefore be characterized by usually complementary types of use (such as offices or restaurants). If there are

⁶⁰ Including bakeries with an attached café, cf. BGH, judgment of October 17, 2019 - I ZR 44/19.

⁶¹ "System gastronomy is operated by anyone who sells beverages and/or food for a fee, which can be consumed on the premise, and has a standardized and multiplied concept that is controlled centrally" (DEHOGA definition). This can still be fast food, full-service or beverage-based.

⁶² Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁶³ An exception is the inn, where the usable area for gastronomy can exceed that for bedrooms. Due to its traditional importance, it is to be classified under accommodation in line with the classification of economic activities of the Federal Statistical Office (see Chap. 1.13.2.1).

⁶⁴ The explanations given here correspond to the nomenclature of industrial and logistics properties of the ZIA Logistics Properties Committee. Further details and characteristics of the property types can be found on the ZIA website.

⁶⁵ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

several types of use that are independent of each other and the share of industrial and logistics use is between 50 and 75 percent, the property is referred to as mixed-use industrial or logistics property; the prefix "mixed-use" is then added to the relevant subsegment (see also Fig. 5). If the share of complementary types of use is less than 25 percent, they play a subordinate role in terms of yield, so that this form of mixed use is not explicitly taken into account in the designation (e.g. fulfilment center without a prefix, even if there is a 20 percent share of use for a bistro or a kindergarten or similar).

A special case is a real estate agglomeration in which industrial or logistics use predominate. This is a *business park* without a prefix (see Chap. 1.14.4).

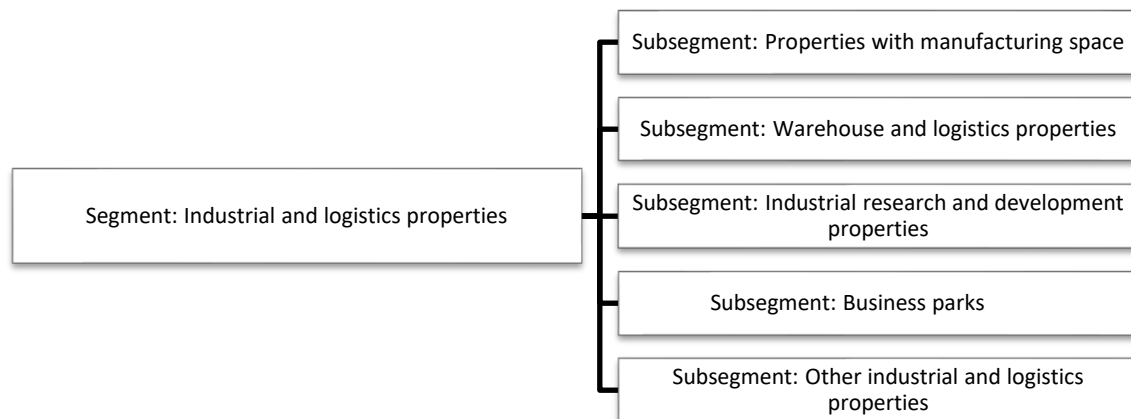


Fig. 12: Industrial and logistics properties subsegments

1.14.1 Properties with manufacturing space subsegment

The industrial production of goods takes place in so-called manufacturing areas by "non-disruptive" or "disruptive" craft, commercial or industrial enterprises. Production areas are usually located in heated halls and have ground-level rolling doors, daylight and sometimes extensive accessories such as crane systems, pits or rack walls.

Manufacturing properties are divided into properties with generic or specialized manufacturing space.

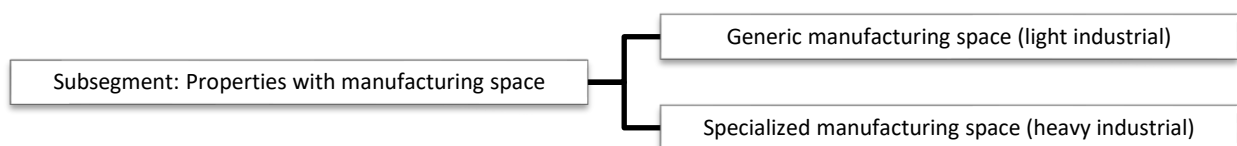


Fig. 13: Types of property in the subsegment of properties with manufacturing space

The distinction between "light industrial" and "heavy industrial" is based on two criteria:

- the usability of the production space by third parties, and
- the ratio of the cost of the building and production facilities to the total investment cost of the property.

1.14.1.1 Properties with generic manufacturing space (light industrial)

Properties with generic manufacturing space (primary for light industry) mainly contain system solutions for the production of consumer goods. Investment in plant and equipment is lower than in heavy industry, and plant construction is less complex. The property value usually exceeds the value of the installed equipment. Thus, these properties are easier to reuse (third-party use). Expansion of plant and equipment is less costly than in more complex heavy industry. As a result, the real estate can be made (re-)usable for other buyers at a manageable cost. This property type is often referred to as "*light industrial*".

1.14.1.2 Properties with specialized manufacturing space (heavy industrial)

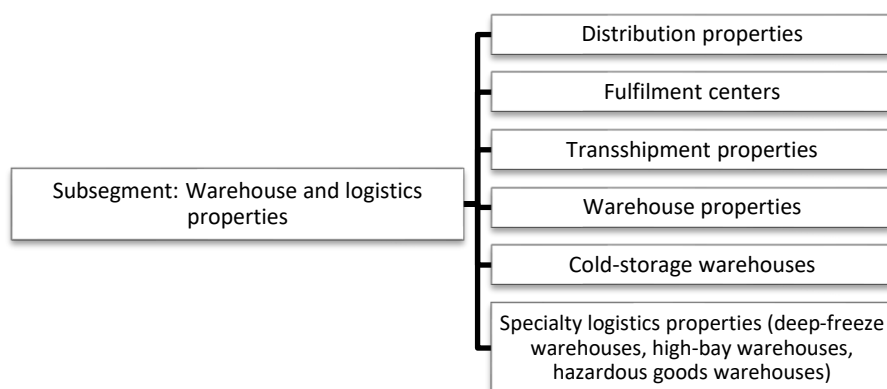
Properties with specialized manufacturing space that is difficult to replace is primarily associated with the heavy or semiconductor industry and unlike *properties with generic manufacturing space*, are characterized by a high degree of individuality and complexity of the production lines. The building and its design follow the production processes and the associated material flow.

This means that the investment in land and buildings is comparatively low compared to the cost of plant and equipment. It also means that third-party use is limited. This property type is often referred to as "*heavy industrial*". Users of this property type are often in the chemical, steel, chip manufacturing or similar industries, but also in food production and the killing and processing of animals (e.g. slaughterhouses), provided that this processing is carried out on an industrial scale. Yet, the type of industry is irrelevant when assigning these properties.

1.14.2 Warehouse and logistics properties subsegment

In the past, logistics properties were mainly used for the storage and distribution of material goods. Today, the scope of logistics tasks and services has expanded considerably. It now includes much more comprehensive services, such as repair work or extensive returns management. In some cases, individual production steps in the manufacturing value chain are being implemented in logistics properties in line with Industry 4.0. Pure warehouse properties with low turnover and low-value-added depth are becoming increasingly rare.

Since the transition between logistics and warehouse properties in other categorization approaches is often not without overlap but rather fluid, a breakdown based on technical characteristics is necessary. The following classification is based on typical characteristics. It is important to note that these are walk-in buildings for tax purposes (i.e. firmly attached to the ground).



1.14.2.1 Distribution properties

Distribution properties are used to distribute of goods with various subtasks:

- storage,
- handling,
- picking/commissioning,
- distribution and transportation.

Distribution properties are typical large-scale logistics properties. In these properties, the logistics intensity is significantly higher than in pure warehouse properties (see Chap. 1.14.2.4). In addition, individual processing steps in production are increasingly being carried out in these buildings as part of the logistics contract. These are usually upstream or downstream parts of the production chain. Examples include the assembly of a single set of tires in just-in-time production in the automotive sector in preparation for delivery or the picking and packaging of patient-specific medications for regular supply.

Fulfilment centers (s. Chap. 1.14.2.2) do not fall under the category of distribution properties and are discussed separately.

In some cases, distribution properties may also contain smaller refrigeration units (e.g., in the above-zero range for perishable distribution) or side unloading ramps (e.g. for automotive distribution) without restricting third-party use. In addition, there are now first attempts in Europe to realize multi-story distribution properties (e.g. in Hamburg Wilhelmsburg).

Real estate type	Task	Hall height in m (UKB) ⁶⁶	Useful area in m ²	Floor bearing load in t per m ²	Gates per 1,000 m ² hall area ⁶⁷
Distribution properties	Goods distribution (storage, handling, picking, distribution, and transport)	≤ 15 (predominantly 10 - 12)	≤ 60,000 (predominantly 15,000 - 30,000)	≤ 10 (predominantly 4 - 5)	≤ 10 (predominantly 5 -6)
Fulfilment centers	E-commerce goods distribution (storage, handling, picking, distribution, and transport)	≤ 18 (predominantly 10 - 12)	≤ 175,000 (predominantly 30,000 - 75,000)	≤ 9 (predominantly 4 - 5)	≤ 4 (predominantly 1 -2)
Transshipment properties	Goods handling	≤ 12 (predominantly 8 - 10)	≤ 50,000 (predominantly 5,000 - 10,000)	≤ 7 (predominantly 4 - 5)	≤ 20 (predominantly 7 -10)
Warehouse properties	Storage of goods close to production	≤ 16 (predominantly 7 -10)	≤ 12,000 (predominantly 3,000 - 9,000)	≤ 8 (predominantly 5 -6)	≤ 3 (predominantly 1 -2)
Cold-storage properties	Storage and shipping of goods at low temperature	≤ 25 (predominantly 8 - 12)	≤ 65,000 (predominantly 5,000 - 15,000)	≤ 9 (predominantly 4 - 5)	≤ 12 (predominantly 1 -4)
Specialty logistics properties ⁶⁸					
- Deep-freeze warehouses	Storage and shipping of goods at very low temperatures	≤ 25 (predominantly 10 - 20)	≤ 30,000 (predominantly 6,000 - 15,000)	≤ 9 (predominantly 4 - 5)	≤ 3 (predominantly 2 -3)
- High-bay warehouses	Storage of goods by means of high shelves	≤ 40 (predominantly 20 - 36)	≤ 20,000 (predominantly 3,000 - 10,000)	≤ 10 (predominantly 7 - 8)	≤ 3 (predominantly 1 -2)

Tab. 2: Differentiation guide for property types in the subsegment "Warehouse and logistics properties"

⁶⁶ The height of the lower edge of the truss (UKB) is an indication of the useful height of a hall. It refers to the distance from the hall floor to the roof truss.

⁶⁷ In addition to the various gates for trucks and vans, there is always at least one gate with ground-level access, which can often also be used for operational purposes. For smaller facilities, this may be only one, for larger ones one per 10,000 m² of hall space.

⁶⁸ Also includes dangerous goods stores, s. Chap. 1.14.2.6.

1.14.2.2 Fulfilment centers

Fulfilment centers are specialized logistics properties where orders from e-commerce merchants are processed and shipped. This includes various tasks such as receiving orders and returns, picking, packing, franking, and shipping to the end customer. Fulfilment centers may have a higher level of automation. Mezzanine levels are also common within the facility. Modern facilities are increasingly being built directly as multi-story structures. Fulfilment centers are also used for services that are necessary for the mail order business, such as product photography, returns processing, or data processing. Compared to other types of logistics real estate, fulfilment centers are often significantly larger.

1.14.2.3 Transshipment properties

Transshipment properties are used exclusively for the handling goods and less frequently for storage. The third-party usability of transshipment properties is limited to other users of CEP⁶⁹ services. The different characteristics also play a role. For example, air and sea cargo handling properties specialize in a particular type of transportation. Other types offer, for example, conveyor chains embedded in the floor that run in a ring through the entire hall along the gates.

Typically, transshipment properties have significantly more gates than other logistics properties. The existing gates are often designed for a combination of trucks and vans. The closer the transshipment property is to the "last mile", the more van gates are needed. They are arranged so that the flow of goods is received on one side of the hall and sorted out on the other side.

Compared to other logistics properties, transshipment properties are less high and deep but have a significantly higher proportion of outdoor space for the transport vehicles used. Depending on their position or function in the transport chain, transshipment properties can be relatively small. However, so-called main transshipment bases (HUBs) can be relatively large.

1.14.2.4 Warehouse properties

Warehouse properties are primarily used for the storage of goods (close to production) and in some cases have service areas. The characteristic factor is the low storage and retrieval frequency, i.e. the stored goods are usually stored for a longer period and the logistics services are less pronounced. For this reason, the need for personnel is significantly lower than in logistics halls (s. Chap. 1.14.2.1). Warehouse properties tend to be much smaller than logistics halls and, especially in the case of older existing halls, are also built lower.

1.14.2.5 Cold-storage warehouses

Cold-store warehouses are warehouses that can have controlled temperatures due to special operating equipment. These temperatures are usually between 0 and 10 degrees Celsius and provide optimal storage conditions for food and pharmaceutical products. Unlike deep-freeze warehouses, cold-storage warehouses, can be relatively easily converted to other types of storage and logistics properties.

⁶⁹ Courier Express Package

1.14.2.6 Specialty logistics properties

Specialty logistics properties serve specific logistics functions and generally meet stricter structural and regulatory requirements. They include deep-freeze warehouses, high-bay warehouses and hazardous goods warehouses. In the case of the latter, for example, the hall floor may be boarded up to prevent potential contamination or there may be a special ventilation system.

Unlike cold-storage warehouses, which can be more easily converted to normal storage use, *deep-freeze warehouses* provide special structural storage conditions for refrigerated goods, including refrigeration systems, insulation, and thermal locks. For this reason, depending on the refrigeration technology used, they are often approved under the Federal Emission Protection Law (BImSchG) rather than through a regular building permit. Cold-storage warehouses have temperatures from -30 to 0 degrees Celsius and store mainly frozen food and industrial products but also products from the chemical and pharmaceutical industries. The number of doors is kept to a minimum for cooling reasons.

High-bay warehouses are vertical warehouses designed to provide large storage capacity and are included in this property type if they are buildings for tax purposes (i.e. firmly attached to the ground). This type of property has a pronounced infrastructure component with high level of automation. The proportion of manual activities is extremely low.

1.14.3 Industrial research and development properties subsegment

Properties for industrial research and development primarily serve the upstream and downstream sectors of industry and production. They differ from industrial and manufacturing properties in terms of their technical, utility and disposal characteristics. Properties for industrial research and development are distinguished from government research facilities or research facilities used by universities, which primarily serve basic research and are classified under the subsegment "Educational institutions and non-industrial research" (see Chap. 1.16).

Properties for industrial research and development include *laboratory properties* in particular. laboratory properties are characterized by the presence of special gas and electrical connections as well as special construction and safety requirements, e.g. for ventilation and lighting of the rooms. Similarly, multi-redundant power and high-performance network connections are required for operation. In the industrial context, the research and development of the goods to be manufactured is often located directly at the workstations. Laboratory/testing stations merge with office space.

So-called *life science properties*, which primarily belong to the biotechnology, medical technology and pharmaceutical sectors, can be allocated to these laboratory properties or to office, logistics or manufacturing properties, depending on their use.

1.14.4 Business parks subsegment

Business parks are typically an agglomeration of small-scale properties that are managed as an ensemble by a central management company and share a common infrastructure (e.g., parking, conference rooms, etc.). Multi-tenant properties have a highly diversified tenant structure, with a strong presence of medium-sized manufacturing companies.

More modern business parks attend to be standardized in design and are significantly smaller than mature former manufacturing sites. While the first group tends to be located on the outskirts or periphery, historically grown sites are often integrated into urban locations and are often characterized by "old industrial charm" (brick architecture, etc.).

Business parks can include all the above types of industrial and logistics properties, with varying proportions of other types of uses⁷⁰, such as office space, which can be up to 50 percent. Contrary to the explanations in Chap. 1.10, the prefix "mixed-use" is not used because business parks traditionally form a separate subsegment of industrial and logistics properties due to their agglomeration character and their tenant clientele.

1.14.5 Other industrial and logistics properties subsegment

This category includes those industrial and logistics properties that do not fit into the above categories. This may include, for example, self-storage facilities and workshops of all types (e.g. car repair shops, manufacturers, craftsmen). It does not include smaller service businesses where the focus is on trade (watchmakers, goldsmiths, shoemakers etc.).

1.15 Healthcare and social properties segment

Healthcare and social properties include a wide range of uses that are primarily of a care, custodial, charitable, medical, healing and/or nursing nature. Social and healthcare properties is typically characterized by the users of the facilities accepting a temporary or permanent restriction or complete cessation of their own independent household management. (For the difference between operator-oriented social properties and residential real estate suitable for seniors, see the excursus in Chap. 1.15.3.7).

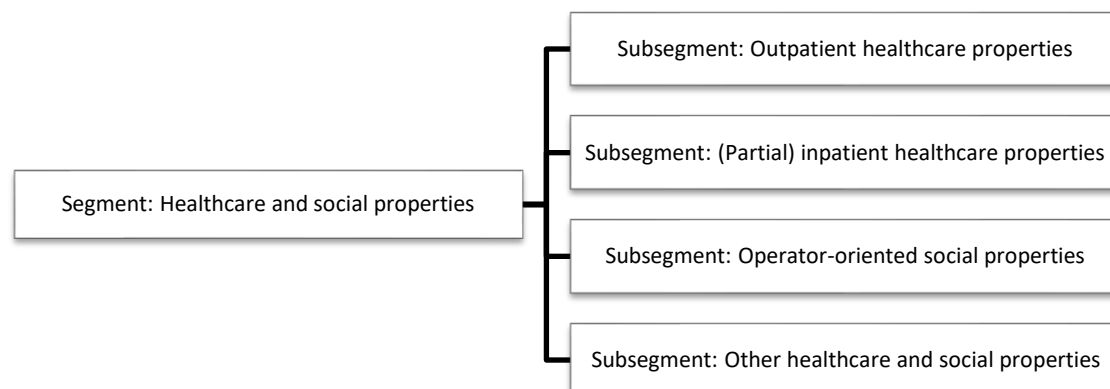


Fig. 15: Healthcare and social properties subsegments

The healthcare and social properties segment includes all properties where at least 50 percent of the space is used for healthcare or social purposes. This means that up to 50 percent of the property⁷¹ can be characterized by usually complementary types of use (such as residential or office).⁷² If there is more than one types of use that is independent of each other and the share of healthcare and social use is between 50 and 75 percent, the property is referred to as a mixed-use healthcare or social property; the prefix "mixed-use" is then added to the relevant

⁷⁰ Note: However, a mix of uses within this segment, i.e., industrial and logistics, does not establish a complementary use of the other.

⁷¹ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁷² Note: However, a mix of uses within this segment, i.e., healthcare and social, does not establish a complementary use of the other.

subsegment or property type (see also Fig. 5). If the share of complementary uses is less than 25 percent, these play a subordinate role in terms of income, so that this form of mixed use is not explicitly included in the designation, i.e. the relevant property type is referred to without a prefix (e.g. outpatient healthcare property, even if there is a 20 percent share of residential or similar use).

1.15.1 Outpatient healthcare properties subsegment

Outpatient healthcare properties (short for "healthcare properties with outpatient services") are properties that are primarily used for medical purposes in order to provide outpatient care. This includes medical services (practices) or medical ancillary services (e.g., physiotherapists, occupational therapists, psychosocial services, midwives, pharmacies, optometrists, medical supply stores, etc.). Thus, the following healthcare facilities fall into this subsegment:

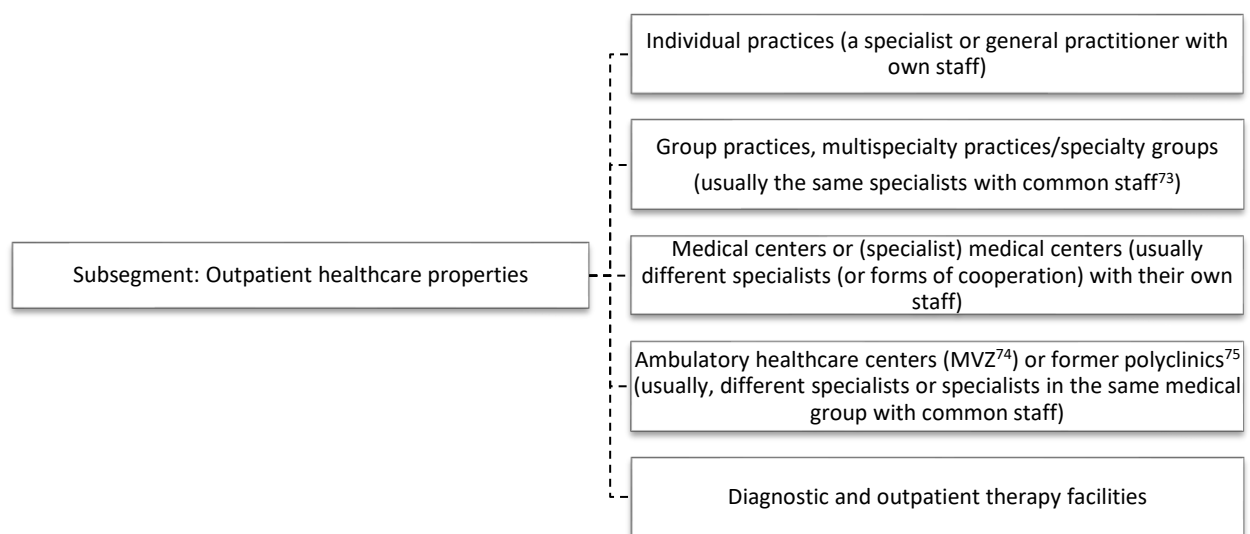


Fig. 16: Healthcare facilities⁷⁶ in the "Outpatient healthcare properties" subsegment

A more detailed definition of healthcare facilities is not given here, as the market often mixes the terms healthcare center, medical center or medical service center.⁷⁷ For example, medical centers can consist of a collection of various independent medical practices (usually between two to 15 individual practices), as well as group practices and ambulatory healthcare centers (MVZs). In some cases, medical centers or MVZs that also include complementary medical services (such as therapeutic practices or pharmacies) in the associated property are referred to as health centers.

⁷³ In addition, there are further differences in the forms of cooperation, which are, however, less relevant for the real estate. Physicians in a joint practice form a cost pool, while a professional practice group/community practice is an economic billing community. Further information can also be found on the website of the National Association of Statutory Health Insurance Physicians at <https://www.kbv.de/html/14347.php> (as of Jan. 21, 2023).

⁷⁴ MVZs can be owned by physicians themselves or by third parties (hospitals, municipalities or non-profit organizations, see Section 95 (1a) SGB V). They must be managed by physicians and the medical director must work in the MVZ himself as an employed physician or contract physician. Investors can participate as a licensed contract physician themselves or via a shareholding in a licensed hospital.

⁷⁵ MVZs are modeled on the polyclinics of the former GDR, which provided outpatient medical care.

⁷⁶ The healthcare facilities presented are not the same as property types. I.e., if there is a medical center, for example, the property should be designated as an outpatient healthcare property. From a valuation perspective, a distinction between practices of registered physicians, MVZs, and diagnostic/outpatient therapy facilities might suffice.

⁷⁷ Cf. Thomas et al. (2020): Ambulante Gesundheitsimmobilien - Definitionsansätze, Marktentwicklungen und Erfolgsfaktoren zur Bildung von Anlageklassen, discussion paper by BFS-Service GmbH, p. 64.

1.15.2 (Partial) inpatient healthcare properties subsegment

(Partial) inpatient healthcare properties (short for "healthcare properties with (partial) inpatient service provision") are properties that are predominantly used by physicians for the purpose of providing at least partial inpatient care. The categorization is based on the availability of beds for possible at least partial inpatient care, so that day or night clinics (mostly for geriatrics and psychiatry/psychotherapy) and medical practice clinics are also classified here, even if the focus of the latter is on outpatient care. Day care differs from outpatient care in that it requires a medical and organizational infrastructure similar to that of a hospital.⁷⁸

Specifically, this subsegment includes all individual buildings and building agglomerations (usually related to several independently managed specialist departments or specialist clinics) of hospitals, university, rehabilitation and spa clinics, which may also be operator oriented. Thus, the subsegment includes all healthcare facilities as defined in Section 2 No. 1 KHG or Section 107 (1) and (2) German Social Code (SGB) V.

Clinics and hospitals also differ from outpatient clinics or health centers, in that their construction and operation are subject to numerous special regulations (including building regulations).

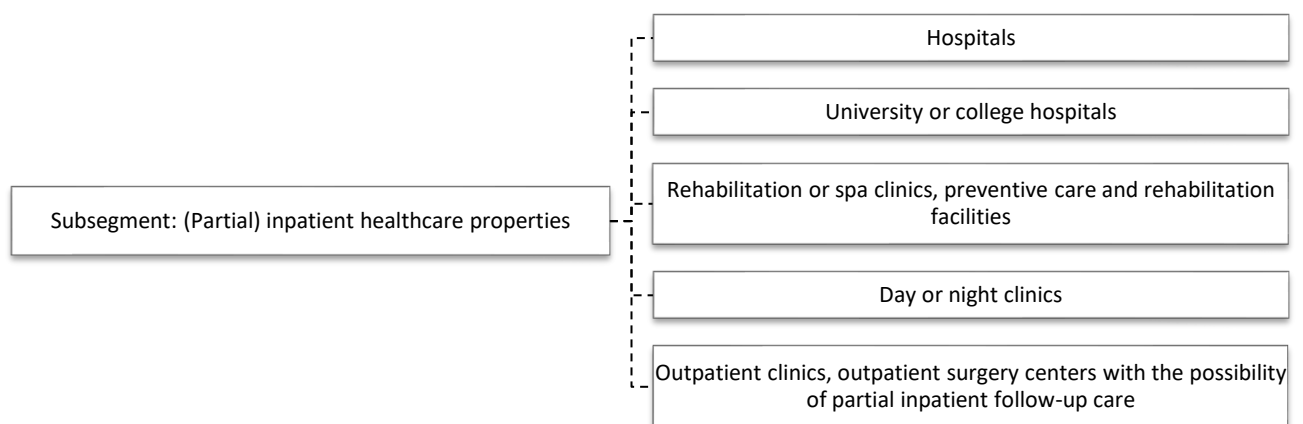


Fig. 17: Healthcare facilities⁷⁹ in the subsegment "(Partial) inpatient healthcare properties".

1.15.3 Operator-oriented social properties subsegment

Social properties come in a variety of forms. A wide variety of terms for social properties have emerged on the real estate market. They are based on target groups, which are currently still strongly focused on senior citizens. Examples of such terms are:

- service living for seniors,
- senior living,
- assisted living (for seniors, for people with disabilities, etc.),
- senior residences/ retirement communities

⁷⁸ The Federal Social Court comments (in the absence of legal definitions): "The characteristic feature here is a time restriction to treatment during the day, in which the night is spent at home (day clinics), or to treatment in the evening and at night, in which the patient is in his normal environment during the day (night clinics). From the time restrictions and the practical areas of application, it can be seen that although day-care treatment does not represent "round-the-clock care" for patients, the treatment is also not essentially exhausted within the framework of a day stay in the hospital. On the contrary, day-care hospital treatment regularly extends over a longer period of time due to the disease patterns in the foreground, although the medical-organizational infrastructure of a hospital is required without the patient's uninterrupted presence in the hospital being necessary" (see Case No. B 3 KR 4/03 R).

⁷⁹ The healthcare facilities presented are not to be equated with property types. I.e. if, for example, there is a day clinic, the property should be referred to as (partially) inpatient healthcare real estate.

- outpatient assisted living communities, or
- (nursing) homes.

Against the background of the categorization to be carried out here, the terms are generally not defined unambiguously and without overlap, and they often blur the focus of the orientation of the user's level of care or, conversely, their independence. In addition, there is no clear distinction between main uses of "residential real estate" and "commercial real estate" (see the excursus in Chap. 1.15.3.7). In this context, it should be noted that these are not necessarily only facilities for the elderly, but also properties for a wide variety of target groups: for example, they can be residential communities for children and young people or for people with disabilities, where a strong care character and limited independent household management are relevant.

Operator-oriented social properties are always commercial real estate, i.e. real estate that generally⁸⁰ serves to generate income for the owner and is not residential real estate (e.g., apartments in apartment buildings). They are distinguished from residential real estate which offer communal living areas with a focus on utilities.

The following principles apply:

- The properties are managed as a whole by a single organization; often called the owner or operator. It provides integrated materials and services to serve the residents.
- Typically, the entire property is leased to the owner or operator by an investor; this allows all services to be provided economically.
- Apartments are centrally rented to residents by the provider of the other services; utilities are also provided by the operator.
- The equipment and services are usually modular and aim to provide the residents with a graduated level of care.
- The necessary common rooms and therapy rooms are available in the building or on the premises.

Taking into account the above aspects, the following property types can be identified in the subsegment of operator-oriented social properties:

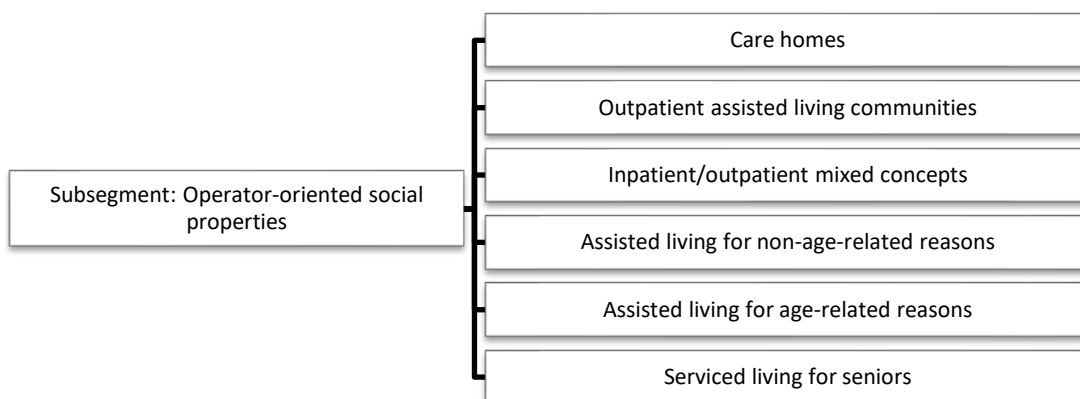


Fig. 18: Property types of the operator-oriented social properties subsegment

⁸⁰ Non-profit associations are also active in the social sector, which fulfill the following principles irrespective of any expectation of return.

1.15.3.1 Care homes

Inpatient and day-care *care homes* are facilities in which inpatient care services are provided in accordance with Section 71 (2) of the German Social Code (SGB) XI. In inpatient care homes, residents/clients receive medical and nursing care on a permanent basis and 24 hours a day.

The majority of care homes cater for elderly people in need of care ("nursing homes for the elderly") in need of care. However, care homes for other target groups are also included here (e.g. children's homes, homes for people with disabilities, hospices).

Care homes differ from apartments or special community living arrangements in the degree to which residents are integrated into a central organization that provides continuous on-site care services (especially supervised therapeutic services) and has appropriate common and therapy rooms. Typically, occupancy is by room or bed. *Care homes are not designed to provide independent housekeeping*; although this may be provided for therapeutic reasons. In most cases, nursing care is provided in addition to meals. In this respect, care homes are subject to the respective state nursing home laws and must comply with the relevant structural requirements as well as the quality requirements of the laws and associated ordinances with non-compliance also leading to the withdrawal of the operating license. There is no freedom of choice with regard to the care provider; this is determined by the operator who also operates the facility as an owner or has entered into a general lease agreement.

Day/night and short-term care facilities are also included in this property type. For example, the German government's health care reporting system groups facilities that provide day/night care and short-term care either alone or in combination with full inpatient care, under the heading of care homes.

1.15.3.2 Outpatient assisted living communities

The principle of "outpatient care before inpatient care" is defined in the Social Code Book XI (SGB) and in the Act to Strengthen the Provision of Long-Term Care (PSG) I-III. In accordance with this principle, small-scale forms of housing have increasingly developed in recent years, especially for seniors in need of care, with outpatient care organized by operators.

These forms of living are intended to avoid inpatient care. There are many different forms of living together in *outpatient assisted living communities*. Typically, each resident has his or her own room or small apartment. There are also common rooms within the living groups. This structure is often supplemented by an attached day care center.

Daily life and household chores are organized by a resident assistant. Individual care is provided by an outpatient nursing service. If the resident requires more care, he or she can be cared for in the affiliated day care. Additional caregivers and home health aides assist support the residents in the community. Residents are encouraged to participate as much as possible - in household management.

Ideally, this care is offered in the immediate residential environment (neighborhood concept). Only if it is organized by the operator is this form of social properties subject to the requirements of home supervision. *Since the focus is on care and other services provided by the operator, this form is classified as commercial real estate.*

Outpatient assisted living communities also include intensive care or respiratory care communities where nine to 15 people are usually cared for in single rooms by a nursing service that provides 24-hour outpatient respiratory care.

1.15.3.3 Inpatient/outpatient mixed concepts

Mixed forms of care are increasingly common. For example, "integrated" or "combined" facilities or group concepts offer outpatient and inpatient services side by side. In addition to the classic care home, service living for seniors or assisted living is also offered. The advantage for the resident is that, if necessary, he or she is covered by the care home, even for the most severe cases of care.

The proportions⁸¹ of assisted living and service living can vary. In general, other complementary types of use are also possible. In line with the explanations in Chap. 1.10 the property is further described as an "inpatient/outpatient mixed concept" if the additional types of use do not exceed 20 percent. If the proportion of additional uses is between 50 and 80 percent, the property is considered to be a "mixed-use inpatient/outpatient mixed concept".

1.15.3.4 Assisted living for non-age-related reasons

Assisted living for non-age-related reasons includes forms of housing that are not designed for the elderly, but rather allow people with disabilities or children to live there for psychosocial reasons - they should therefore be considered separately. Independent household management is not necessarily restricted in these cases. Also, depending on the focus, the operator-oriented property may include self-contained apartments or, similar to *assisted living for age-related reasons*, be structured as a residential group with common areas and rooms with a maximum of one bathroom.

1.15.3.5 Assisted living for age-related reasons

Assisted living for age-related reasons refers to housing types in which seniors are not able to manage their households completely independently and generally due to medical disabilities require care or assistance of a domestic and, if necessary, medical/nursing nature. The properties are structured as residential groups, with the operator providing the residents with (barrier-free) rooms that have a maximum of one bathroom and no kitchen. Cooking and living are provided in the common areas.

1.15.3.6 Serviced living for seniors

The term "*serviced living for seniors*" includes housing types such as "Living Plus" or similar, in which a contractual age limit (e.g. 60 years or older) is specified.⁸² Differences generally exist in the level and type of service and care provided.⁸³

The operator provides the resident with a fully equipped apartment or apartment with bathroom and kitchen. The apartments are generally barrier-free in accordance with DIN 18040

⁸¹ Percentages of use refer to gross yields, or alternatively to residential or usable floor area.

⁸² Service housing that does not focus on seniors is usually serviced apartments that are assigned to the serviced apartments (see Chap. 1.13.2.3).

⁸³ For more detailed demarcation criteria, including those relating to outpatient assisted living communities and care properties, see Union Investment Real Estate GmbH and bulwiengesa AG (2021), "Servicewohnen für Senioren Marktüberblick - Definitionen, Charakteristika, Angebotsstrukturen und Nachfrage in Deutschland," Hamburg/Berlin.

and the circulation areas in particular are wheelchair accessible (DIN 18040 R). However, there are no legal requirements regarding constructional or quality.

The principle of this form of living is: "As much independence as possible - as much help as necessary". In addition to the use of the home, the resident usually receives additional services from a service provider, which are paid for through a basic flat rate. The range of services offered in this form is divided into basic and optional services, some of which are structured very differently. The basic services usually include help with administrative matters or the provision of further assistance. While the basic services are paid for with a monthly (service) fee, optional services that are used on an as-needed basis are billed separately. These may include lunches or regular cleaning service. Both the scope of basic and optional services and the prices charged for them vary considerably.

If a resident requires nursing care, this is provided by outpatient services (outpatient nursing care according to Section 71 (1) of the German Social Code XI (SGB)); the person in need of nursing care is basically free to choose the outpatient nursing care service. However, in contrast to care homes, the need for care is not the primary consideration.

The *gif classification system for assessing serviced living offers for seniors*, which differentiates between categories of up to five stars depending on the range of services, can be used for the classification.⁸⁴ The 4- to 5-star category generally corresponds to the premium category ("senior residences") with an exclusive residential location and building/apartment furnishings as well as included services (e.g. wellness area, care pool, library, restaurant, etc.). The category of one (or less) star(s) is usually classified as residential real estate (see also Chap. 1.15.3.7.); here the care and other services of the operator recede into the background, which are decisive for the classification as commercial real estate. Whether such facilities have general or individual rental agreements for the apartments is irrelevant for the classification of the property type. The service provider usually rents business premises on the premises of the property from which it provides its services.

1.15.3.7 Excursus: Commercial real estate segment "healthcare and social properties" vs. the residential real estate category

In this taxonomy, only the commercial real estate segments are categorized. Therefore, the non-overlapping demarcation to other categories, here to the category residential real estate, is of particular importance.

Properties that are used for residential purposes is to be distinguished from property used for healthcare and social purposes unless the facility is managed by an operator or agency (see explanations in Chap. 1.15.3). For the residents, the focus is on independent living. However, the operator organizes the support services and bears the economic risk, which is decisive for the financing side and displaces the residential purpose. Consequently, operator-oriented social properties are commercial real estate. Residential real estate, on the other hand, includes senior-friendly, low-barrier housing without additional support and service offerings.

⁸⁴ Cf. gif e.V. (2018): Klassifizierungssystem zur Beurteilung von Angeboten des Servicewohnen für Senioren, Wiesbaden.

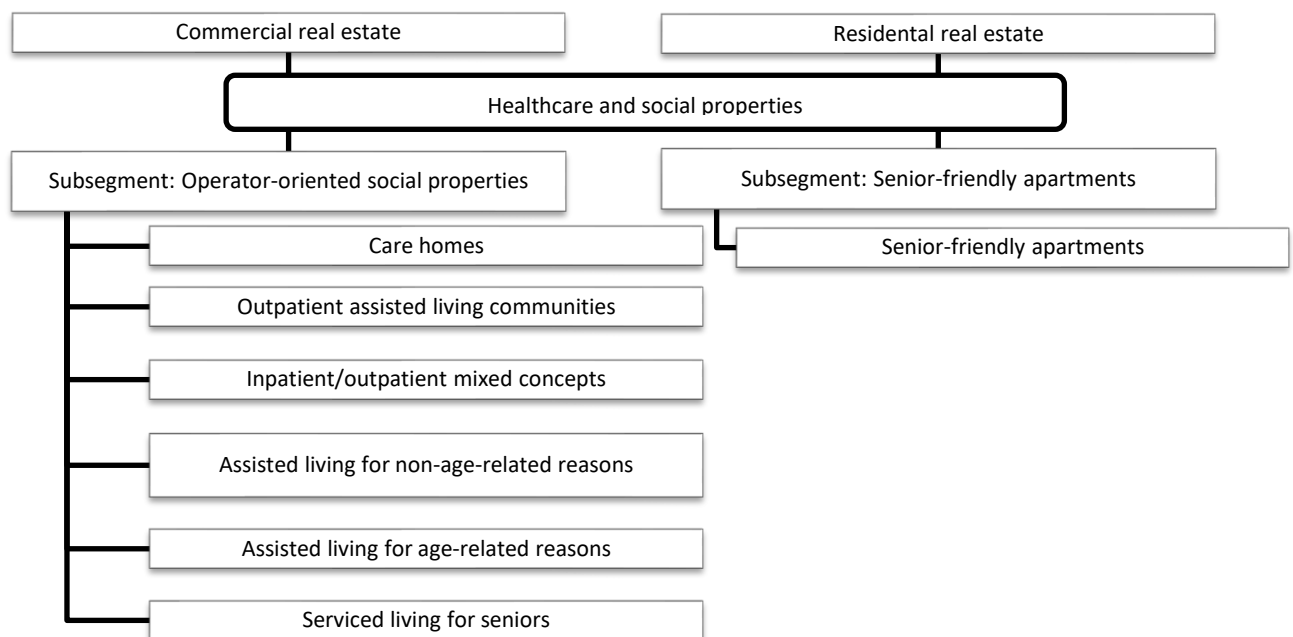


Fig. 19 Classification of "seniors housing" as commercial vs. residential real estate

1.15.3.7.1 Residential real estate: Senior-friendly apartments

This type of property consists of apartments designed to meet the age-specific needs of seniors without the need for additional care or services. They are usually equipped with low or no barriers anticipating the deteriorating health of the residents. The absence of thresholds and larger areas for movement are intended to make it easier for residents to remain mobile as they age. There is no other service or obligation to accept services. In some cases, residents must reach a certain age (60 or 65) before they can move into senior housing.

Because this concept is a subset of the classic apartment and is designed to allow the residents to manage their own household without providing any significant services (apart from an emergency call button, for example), senior housing is classified as residential real estate housing. In the *gif classification system for assessing serviced living for seniors*, senior housing generally corresponds to the 1-star category at most.⁸⁵

1.15.4 Other healthcare and social properties subsegment

This category includes all other social or (healthcare) properties that cannot be allocated to the above subsegments or other segments. For example, social (welfare) centers or similar care facilities are classified as care homes (e.g. short-term care) or office properties (e.g. counseling), depending on the services they provide.

Other small-scale social services, such as chiropodists, could also be classified here, provided that they are not part of the small-scale retail trade (see Chap. 4.1.2). In general, however, the relevant providers are tenants of a larger (mixed-use) property and thus hardly determine the use.

⁸⁵ Cf. gif e.V. (2018): Klassifizierungssystem zur Beurteilung von Angeboten des Servicewohnen für Senioren, Wiesbaden.

Finally, it should be noted that those senior citizens' or care facilities that are primarily used for residential purposes (residential homes, etc.) are not classified here and are therefore part of residential rather than commercial real estate.

1.16 Recreation, culture and education properties segment

The recreation, culture and education properties segment includes a wide range of property types for a variety of uses and user groups. Properties of this type are distinguished from social and health care properties, for example, by their focus on uses that, in the broadest sense, serve the education and physical/mental development of the population and/or satisfy the need for community gathering during leisure time.

The provision of education of a general, cultural or religious nature, as well as sports or other experiential leisure activities, often require highly specialized properties. As a result, the amenities of these facilities are tailored to the specific goals and target groups.

In addition to sports facilities, cultural and church buildings, this category also includes schools and daycare centers. The latter certainly also have a utility or custodial character and are not only subject to educational requirements. Nevertheless, it is more plausible to group them together with schools in this segment. In particular, the focus of day-care centers is not on the provision of accommodation and care, as in the case of social properties, but on, for example, education and support in the broadest sense.

In the expert discussions, the following subsegments were discussed and considered particularly relevant.

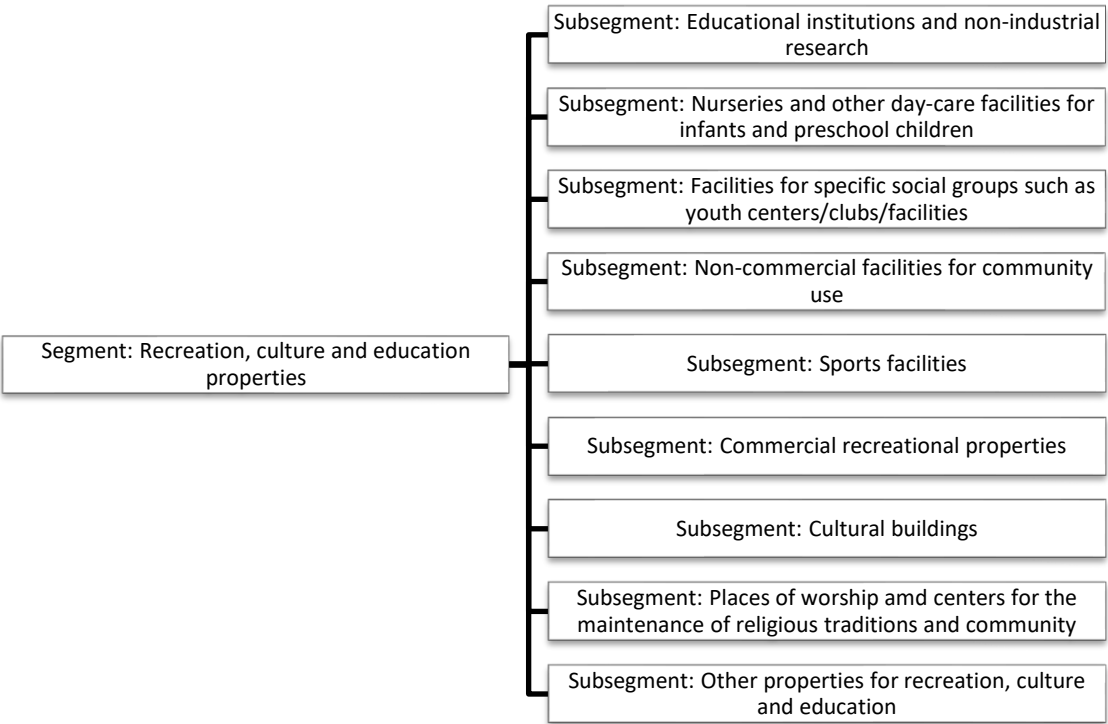


Fig. 20: Recreation, culture and education properties subsegments

The following are examples of property types. A more detailed description and hierarchical structure, as well as the addition or summary of the subsegments, where necessary, will be reserved for an update of the report.

- buildings for educational institutions and non-industrial research such as schools, universities, research buildings (e.g. Fraunhofer Institutes), libraries;
- nurseries and other day-care facilities for infants and preschool children such as day care centers, crèches, kindergartens and after-school care centers;
- non-commercial facilities for community use, such as non-commercial meeting places for all citizens, community and civic centers, club houses, multi-purpose halls, etc.;
- facilities for specific social groups, such as youth centers/clubs/facilities, etc.;
- commercial recreational properties such as clubhouses, cinemas, discotheques, nightclubs, amusement arcades, casinos, amusement parks, science centers, etc.;
- sports facilities and equipment of all types, such as stadiums, sports halls, swimming pools, ice rinks, recreational pools, gyms, etc.;
- cultural buildings for various cultural purposes, such as art centers, theaters, concert halls, libraries, museums, convention halls, etc.;
- places of worship and centers for the maintenance of religious traditions and community, such as sacred buildings, churches and other houses of worship memorial and commemorative buildings, including crematoriums, mortuaries, etc.;
- all other properties for recreational, cultural and educational purposes.

1.17 Energy/water, communication, transportation and public safety properties segment

Properties for energy/water supply, communication facilities, transportation facilities and public safety includes buildings⁸⁶ and other structures that are firmly attached to the ground and are primarily used for the following purposes (the respective examples given here are only exemplary and not exhaustive). Often, the purpose of yield is subordinate to the purpose of providing and securing the population.⁸⁷

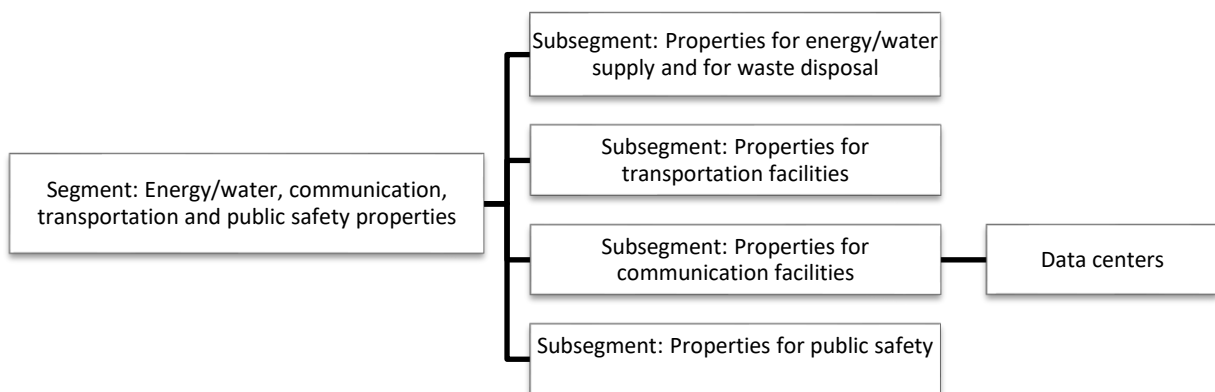


Fig. 21: Energy/water, communication, transportation and public safety properties subsegments

⁸⁶ The term "building" is found in the state building codes. These generally define it as follows: "Buildings are independently usable, covered structural facilities that can be entered by people and are suitable or intended to serve the protection of people, animals or property" (cf. e.g. Landesbauordnung für Baden-Württemberg, 1st part, § 2 Begriffe, Art. 2).

⁸⁷ Utilities aimed primarily at *social services* include the education system, research facilities, welfare and care facilities, hospitals, cultural and religious facilities, sports facilities, cinemas, etc. The types of real estate required for this purpose are allocated to the segments "Real estate for leisure, cultural and educational facilities" (Chap. 1.16) and "Health care and social services real estate" (Chap. 1.15).

- properties for the production and supply of energy or water and for waste disposal includes, for example, power stations, waste incineration plants, recycling plants, gas stations, well buildings, water treatment buildings, water works, biogas plants, wind power plants etc.;
- properties for communications facilities includes, for example, data centers (s. Chap. 1.17.1), television stations and studios, mobile communication stations, and other buildings used for communication, radio and television broadcasting, fixed telephony, mobile communications, postal services, etc.;
- properties for transportation facilities such as:
 - public transport with shipping (port buildings, shipping reception buildings, lighthouses), rail transport (railway station buildings, signal box buildings), local and long-distance passenger transport (road maintenance buildings, bus stations, underground and suburban railway stations), air transport (airport buildings, aircraft hangars), freight transport (on rails),
 - individual transportation (motorized): Gas stations, parking garages, etc. or
 - individual transportation (non-motorized): Bicycle shelters, waiting halls, etc.;
- public safety properties such as civil defense buildings (police stations, fire stations, correctional facilities, shelters, etc.), defense buildings (e.g., barracks) that cannot be used as office buildings.

Overall, it should be noted that the equipment and the primary use of the buildings are of decisive importance for the classification. These must be fundamentally different from production facilities, logistics warehouses or even office and retail properties. As in the case of industrial and logistics properties, it is therefore necessary to distinguish buildings that serve administrative purposes or are used as sales outlets from the actual buildings of properties for energy/water supply, communication facilities, traffic facilities and public safety.

1.17.1 Data centers

Data centers belong to the real estate for communication facilities. They are technical buildings for the centralized placement, interconnection and operation of information technology and network telecommunications equipment used to provide data storage, processing and transport services including facilities and infrastructure for power distribution and environmental control or data security.⁸⁸ Data centers are primarily defined in the marketplace by the data and power capacity they implement rather than by square footage. In addition to the data centers of public and scientific institutions, commercial offerings are becoming more relevant and are increasingly establishing themselves as a separate user class.

1.18 Other commercial real estate segment

This segment includes all commercial real estate that cannot be allocated to the above-mentioned and already defined property types.

⁸⁸ Cf. ISO/IEC 22237-1:2021, 3.1.8 and also DIN EN 50600.

Next steps and outlook

With the present third report on the results of the expert discussions among experts from various institutions and disciplines, it is now possible to define the substantive submarket of commercial real estate and to present a comprehensive taxonomy of this submarket. The main types of property that dominate the market have been clearly defined, without overlap and in agreement with a large number of institutions.

During the discussion, the demarcations made in previous reports, in particular between residential and commercial real estate, were reviewed and confirmed.

As the weaknesses of the official data collection, especially in the area of commercial real estate, became apparent during the course of this project (e.g. lack of information on the economic returns of properties, building descriptive characteristics such as furnishings, etc., or classifications of the quality of the spatial location), it was suggested that further work should focus on the matching of data from different institutions and on finding practical ways to generate analytical results on real estate market events on a broader basis.

Next steps include:

- the definition of the buyer submarket,
- defining the residential real estate category,
- developing the value-determining criteria to represent the market behavior of property types at the segment level,
- the development of testing procedures to reconcile transaction data from different databases.

In addition, the definitions in this commercial real estate taxonomy are also subject to ongoing review and development.

Appendix: Overview Commercial Real Estate Segment

The following overview provides a summary of the commercial real estate segments, subsegments and property types covered by the taxonomy. Numbering is based on chapter numbers.

- 4.1. Mixed-use properties
 - 4.1.1. *Quarters*
- 4.2. Retail properties
 - 4.2.1. Large-scale retail properties (≥ 800 m² sales area)
 - 4.2.1.1. Shopping centers ($> 10,000$ m² sales area)
 - 4.2.1.2. Retail (warehouse) parks ($> 5,000$ m² sales area)
 - 4.2.1.3. Warehouses and department stores
 - 4.2.1.4. Hypermarkets
 - 4.2.1.5. Retail warehouses
 - 4.2.1.6. Grocery retail properties (local supply centers, supermarkets, discounters)
 - 4.2.1.7. Market and exhibition halls
 - 4.2.1.8. Other large-scale retail properties
 - 4.2.2. Small-scale retail properties (< 800 m² sales area)
 - 4.2.3. High-street retail properties
 - 4.2.4. Wholesale properties
 - 4.2.5. Other retail properties
- 4.3. Office properties
 - 4.3.1. Small office properties ($< 1,000$ m² rental space)
 - 4.3.2. Medium-sized office properties (1,000 - 10,000 m² rental space)
 - 4.3.3. Large office properties ($> 10,000$ m² rental space)
- 4.4. Accommodation and gastronomic properties
 - 4.4.1. Hotel properties
 - 4.4.1.1. Budget hotel, tourist category (1-2*)
 - 4.4.1.2. Economy hotel, standard category (2-3*)
 - 4.4.1.3. Middle class hotel, comfort category (3-4*)
 - 4.4.1.4. First class hotel, higher comfort (4-5*)
 - 4.4.1.5. Luxury hotel, very high comfort (5* and above)
 - 4.4.2. Properties for other accommodation facilities
 - 4.4.2.1. Pension, inn or guesthouse
 - 4.4.2.2. Youth hotel or hostel
 - 4.4.2.3. Serviced apartments / boardinghouse
 - 4.4.2.4. Holiday resorts
 - 4.4.2.5. Other accommodation properties
 - 4.4.3. Eateries and gastronomic properties
- 4.5. Industrial and logistics properties
 - 4.5.1. Properties with manufacturing space
 - 4.5.1.1. Generic manufacturing space (Light Industrial)
 - 4.5.1.2. Specialized manufacturing space (Heavy Industrial)
 - 4.5.2. Warehouse and logistics properties
 - 4.5.2.1. Distribution properties
 - 4.5.2.2. Fulfilment center
 - 4.5.2.3. Transshipment properties
 - 4.5.2.4. Warehouse properties
 - 4.5.2.5. Cold-storage warehouses
 - 4.5.2.6. Specialty logistics properties (deep-freeze warehouses, high-bay warehouses, hazardous goods warehouses)
 - 4.5.3. Industrial research and development properties
 - 4.5.4. Business parks
 - 4.5.5. Other industrial and logistics properties
- 4.6. Healthcare and social properties
 - 4.6.1. Outpatient healthcare properties
 - 4.6.2. (Partial) inpatient healthcare properties
 - 4.6.3. Operator-oriented social properties
 - 4.6.3.1. Care homes
 - 4.6.3.2. Outpatient assisted living communities

-
- 4.6.3.3. Inpatient/outpatient mixed concepts
 - 4.6.3.4. Assisted living for non-age-related reasons
 - 4.6.3.5. Assisted living for age-related reasons
 - 4.6.3.6. Serviced living for seniors
 - Residential real estate:* Senior-friendly apartments
 - 4.6.4. Other healthcare and social properties
 - 4.7. Recreation, culture and education properties
 - 4.7.1. Educational institutions and non-industrial research
 - 4.7.2. Nurseries and other day-care facilities for infants and preschool children
 - 4.7.3. Facilities for specific social groups such as youth centers/clubs/facilities
 - 4.7.4. Non-commercial facilities for community use
 - 4.7.5. Sports facilities
 - 4.7.6. Commercial recreational properties (clubhouses, cinemas, discotheques, nightclubs, amusement arcades, theme parks, etc.)
 - 4.7.7. Cultural buildings (i.e. arts centers)
 - 4.7.8. Places of worship and centers for the maintenance of religious traditions and community
 - 4.7.9. Other properties for recreation, culture and education
 - 4.8. Energy/water, communication, transportation and public safety properties
 - 4.8.1. Properties for energy/water supply and for waste disposal
 - 4.8.2. Properties for transportation facilities
 - 4.8.3. Properties for communication equipment
 - 4.8.3.1. Data centers
 - 4.8.4. Properties for public safety
 - 4.9. Other commercial real estate

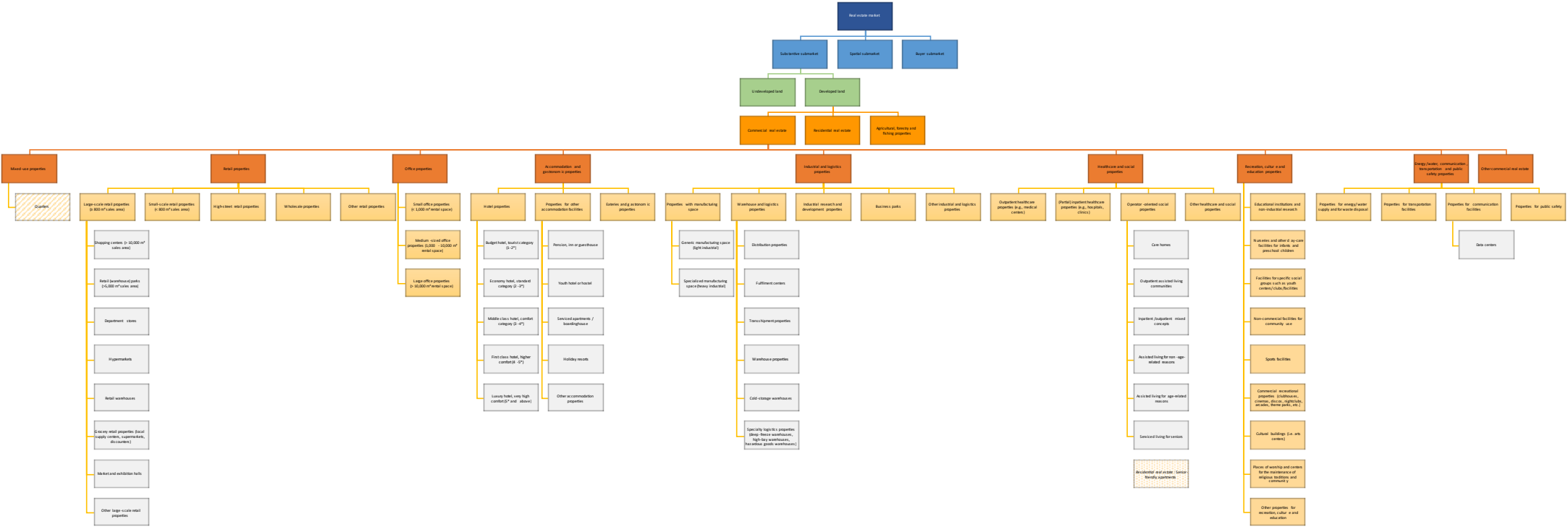
Appendix: Correspondence with Eurostat Classification of Buildings

The following table compares the segments, subsegments and property types of commercial real estate covered by the taxonomy with non-residential buildings from the Eurostat building classification.

CC Classification of Types of Construction (Eurostat), 1998 ⁸⁹		Taxonomy of commercial real estate, 2023	
Code	Designation	Chap.	Segment / subsegment
12	Non-residential buildings		Commercial real estate
121	Hotels and similar buildings	4.4	Segment: Accommodation and gastronomic properties
1211	Hotel buildings	4.4.1	Subsegment: Hotel properties
1212	Other short-stay accommodation buildings	4.4.2	Subsegment: Properties for other accommodation facilities
122	Office buildings	4.3	Segment: Office properties
1220	Office buildings		
123	Wholesale and retail trade buildings	4.2	Segment: Retail properties
1230	Wholesale and retail trade buildings		
124	Traffic and communication buildings	4.8	Segment: Energy/water, communications, transportation and public safety properties
1241	Communication buildings, stations, terminals and associated buildings	4.8	Subsegment: Properties for transport facilities
1242	Garage buildings		
125	Industrial buildings and warehouses	4.5	Segment: Industrial and logistics properties
1251	Industrial buildings	4.5.1	Subsegment: Properties with manufacturing space
1252	Reservoirs, silos and warehouses	4.5.2	Subsegment: Warehouse and logistics properties
126	Public entertainment, education, hospital or institutional care buildings		
1261	Public entertainment buildings	4.7	Subsegments: Commercial recreational properties; Cultural buildings; Non-commercial for community use
1262	Museums and libraries	4.7	Subsegment: Cultural buildings
1263	School, university and research buildings	4.5.3	Subsegment: Industrial research and development properties
		4.7	Subsegment: Educational institutions and non-industrial research
1264	Hospitals and institutional care buildings	4.6	Segment: Healthcare and social properties
1265	Sports halls	4.7	Subsegment: Sports facilities
127	Other non-residential buildings		
1271	Non-residential farm buildings		<i>According to taxonomy not defined as "commercial real estate", but separate category of agricultural, forestry and fishing properties</i>
1272	Buildings used as places of worship and for religious activities	4.7	Subsegment: Places of worship and centers for the maintenance of religious traditions and community
1273	Historic of protected monuments		<i>Not a subject of consideration of the taxonomy of commercial real estate, unless a "building".</i>
1274	Other buildings not elsewhere classified		<i>various</i>

⁸⁹ P. [https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Classification_of_types_of_construction_\(CC\)](https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Glossary:Classification_of_types_of_construction_(CC)) (as of Jan. 21, 2023)

Appendix: Organigram





**Arbeitskreis der Oberen Gutachterausschüsse,
Zentralen Geschäftsstellen und Gutachterausschüsse
in der Bundesrepublik Deutschland**

AK OGA

Based on an administrative agreement between the Federal Government and the Länder on cooperation in the field of official land valuation, a working group of the senior valuation boards, central offices and valuation boards in the Federal Republic of Germany (AK OGA) was formed in 2016. The aim is to intensify cooperation in the field of official land valuation to promote the transparency of the land market throughout Germany. The editorial office of the AK OGA, headed by Peter Ache, is located in Lower Saxony. The main task of the AK OGA is the regular publication of a nationwide real estate market report based on the transaction data registered with the valuation boards in the federal states. In order to publish the report, it is essential that the valuation boards provide comparable market information; in this context, the AK OGA was involved in the work on structuring substantive submarkets.

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ZIA

The German Property Federation (ZIA) is the leading umbrella association for the property sector. With its registered office in Berlin and a European office in Brussels, it speaks through its about 400 members, including 30 associations, on behalf of approximately 37,000 industry companies right across the value chain. ZIA provides comprehensive, unified representation for the interests of the real estate sector in all its diversity at both national and European level, including as a member of the Federation of German Industries (BDI) and the German Economic Institute (IW). The President of the association is Dr Andreas Mattner.

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