

DEVELOP-AND-HOLD STUDY 2019
**NEW HOUSING CONSTRUCTION IN AN ERA OF LOW
INTEREST RATES AND SOCIAL URBAN DEVELOPMENT**

DECEMBER 2019



Dear Reader,



Lahcen Knapp
CEO Empira Gruppe

In its strategic considerations in recent years our company has uncovered ever-stronger indicators that fundamentally question the traditional German construction client approach to housing construction. Ever-increasing land prices, drawn-out approval processes and political debates, coupled with the enormously high investment demand for apartments in German cities, have turned many market mechanisms on their head, so to speak, compared to previous decades. This led to the emergence of our interest in the topic of “develop-and-hold”; planning and building to manage independently and sustainably as an investment as opposed to planning and building to sell. In this respect the word “sustainably” is a key element in terms of urban development.

Before you now is our first study in cooperation with bulwiengesa, presenting you with facts and background information on the German market in the seven A-cities, as the ‘Big Seven’ are commonly called. We intend to develop this into a series with an annual status report because we believe that our considerations are indicative of a trend. bulwiengesa has also been reporting for a number of years now in its renowned annual publication, the ‘Project Developer Study’, on the increasing number of investor-developers who have joined the ranks of the classical trader-developers (planning and building to sell) – and on the constant growth in their share of the market.

Decide for yourself whether you are of the same opinion as us. We believe that the construction of new housing in an era of low interest rates, high demand for real estate investments and political pressure to create socially equitable and modern, functioning cities promotes the develop-and-hold strategy. We hope you find our first report on the topic – which accounts for total investments of nearly 33 billion euros – makes for interesting reading.

¹ Hamburg, Berlin, Düsseldorf, Cologne, Frankfurt (Main), Stuttgart, Munich.

| | |
|---|-----------|
| FOREWORD | 5 |
| CHAPTER 1 | |
| The market for develop-and-hold residential projects in the seven A-cities | 8 |
| 2.1 Total market: A-cities in comparison | 8 |
| 2.2 Regional market portraits | 16 |
| 2.2.1 Berlin | 16 |
| 2.2.2 Düsseldorf | 19 |
| 2.2.3 Frankfurt (Main) | 22 |
| 2.2.4 Hamburg | 26 |
| 2.2.5 Cologne | 30 |
| 2.2.6 Munich | 34 |
| 2.2.7 Stuttgart | 37 |
| CHAPTER 2 – FOCUS TOPIC | |
| Lending on land values in the develop-and-hold context | 40 |
| CHAPTER 3 | |
| Outlook for develop-and-hold in German housing construction | 42 |
| GLOSSARY AND EXPLANATIONS | 44 |

FOREWORD

“Develop-and-hold” is an expression used in the real estate industry which probably still needs some explanation for one or two experts. The two fundamental project development styles in Germany have been defined in the standard reference work by Schulte and Bone-Winkel² as

- trader-development and
- investor-development.

Accordingly, “develop-and-hold” is synonymous with investor-development, with the English expression asserting itself in daily use in the German language in recent years and with trader-development often also referred to as trading-development. In the following study the market activities in the develop-and-hold segment focus on the construction of new apartments.

While the trader-developer, similarly to a construction client³, is akin to a service provider for the end investor, the investor-developer functions as his own service provider as it were. Differentiation is difficult in those areas in which both types avail of specific service providers. Depending on the individual case in question and the self-image of the development company, specific services for all partial stages in the real estate development process are provided either internally or externally. Amongst these services are, for example:

- market and location analysis
- acquisition of plots of land
- financing planning
- procurement of planning permission
- architecture and function planning
- construction planning and supervision
- leasing and marketing
- selling
- technical and commercial completion

One of the most important expressions in real estate project development, and above all for the treatment of the “develop-and-hold” topic, is the risk, both on the whole and in each of the listed partial stages. Whereas the risk with trader-development tends to be associated with the construction project and thus of a more singular nature, with investor-development it is cumulative with all the advantages and drawbacks of risk spread.

In terms of gathering data, an analysis of the housing market with respect to develop-and-hold projects is a challenge as the main protagonists here are virtually exclusively classical owners of residential housing portfolios. Whereas private project developers

² Karl-Werner Schulte/Stephan Bone-Winkel (pub.) 2008: Handbuch Immobilien-Projektentwicklung [Real estate project development manual].

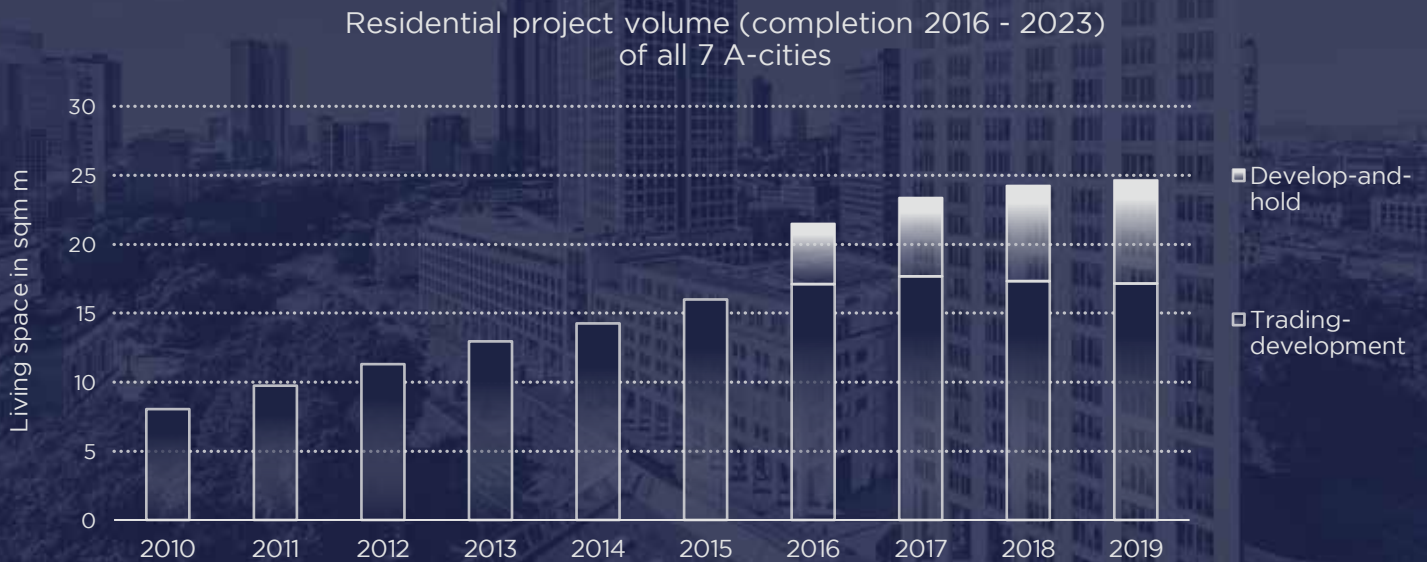
³ In de facto terms construction client projects also fall into the trading-development projects category in this analysis.

frequently position themselves quite openly on the market with their new projects and the resulting potential so as to demonstrate the size and agility of their company, owners of residential housing portfolios are often less transparent. Among other things, there are strategic reasons for this. Thus, for instance, demand for rented apartments from the owners of residential housing portfolios is very high at present and the processing workload for the company is accordingly high due to the avalanche of enquiries from potential tenants. Publications on new projects would significantly amplify this problem.

A degree of reservation regarding detailed data has also been observed with a number of public owners of residential housing portfolios so that they can avoid political discussion at local level. On the other hand there are by all means public companies which publish their activities very openly (e.g. ABG, Frankfurt). Here a trend towards more transparency is undoubtedly to be expected.

A further difficulty is the clear allocation of the projects as investor- or trader-developments. In the seven A-cities it is often customary, for example, for the price-maintained apartments within larger projects not to be implemented by the project developer but sold to the owner of a residential housing portfolio. Sometimes the project developer remains in the development process as a service developer after the sale of the land. The projects are often only handed over as turnkey developments and are thus regarded as trader-developments.

The analysis of the investor-development housing market in the Project Developer Study, which began in 2016 and has been intensified since 2017, has performed important groundwork in this segment in terms of gathering data and methodology development. With the Develop-and-Hold Study by EMPIRA the data are being further verified and optimised. In view of the increase in construction activity by municipal public-sector housing companies, however, the research on this topic began more than ten years ago. Since 2016 it has now been possible to state the develop-and-hold project volume as additional information, comparable to the trading-development project volume.



Source: bulwiengesa Project Developer Study 2019.

Note: The figures on the investor-development market were still only indicative for 2016.

This Develop-and-Hold Study by EMPIRA has the following methodological features in common with the bulwiengesa Project Developer Study 2019:

- The analysis concentrates on the seven A-cities (with clear demarcation by municipalities).
- Projects are allocated as trading-development or investor-development pursuant to the methodology of the Project Developer Study (see glossary for details).
- The cut-off date for collection of the data processed here is 31.12.2018.
- Projects with a minimum of 1,000 square metres of living space are recorded.

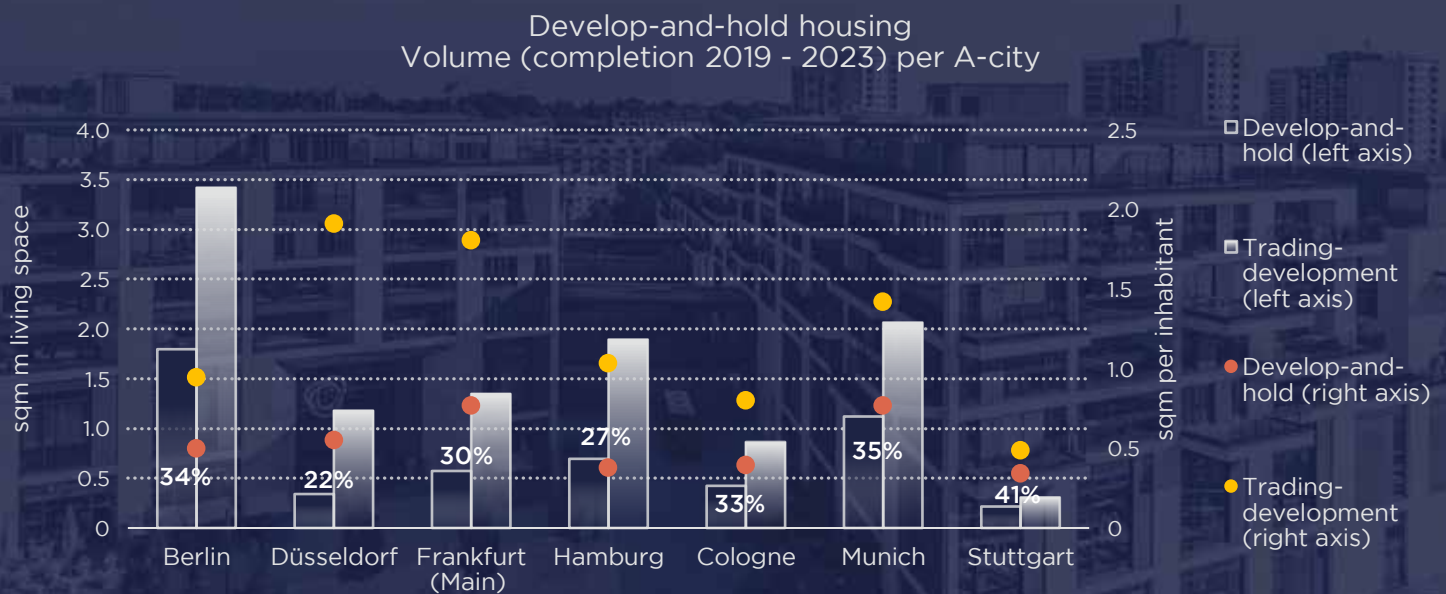
This Develop-and-Hold Study by EMPIRA differs from the classical bulwiengesa Project Developer Study in the following respects:

- Analysis of projects under construction and in planning (without completed projects).
- Some of the data have been updated in the framework of the process design for this study. In particular this affected the allocation of projects to the trading-development or investor-development segments.

CHAPTER 1

The market for develop-and-hold residential projects in the seven A-cities

2.1 Total market: A-cities in comparison



Source: Develop-and-Hold Study by EMPIRA.

At present approx. 5.2 million square metres of residential living space are being developed by develop-and-hold actors (under construction or in planning, completion 2019 to 2023). This corresponds to more than 1 million square metres per year.

If the trading-development project areas are also taken into consideration (ca. 2.2 million sqm p.a.⁴), then each year apartments with a total area of 3.3 million square metres are created in the seven A-cities. By way of comparison, official statistics for the past four years show planning permission for just less than 4.5 million sqm p.a. across all the A-cities⁵. In contrast with this, in its 2019 apartments requirements prognosis bulwiengesa calculates an annual need for approx. 4.2 million sqm of living space in the seven A-cities⁶. In quantitative terms it still does not appear that demand is being met, therefore. In qualitative terms it

is also to be assumed that in some sub-segments there is still a substantial supply deficit. As a result of its size, Berlin is the market with the largest volume of develop-and-hold housing units in absolute terms. In second position – well ahead of Hamburg – is Munich. If the living space under construction and in planning is compared with the number of inhabitants, it can be seen that a large volume of living space is being built with a develop-and-hold strategy, particularly in the Frankfurt and Munich markets (in both cities 0.77 sqm per inhabitant).

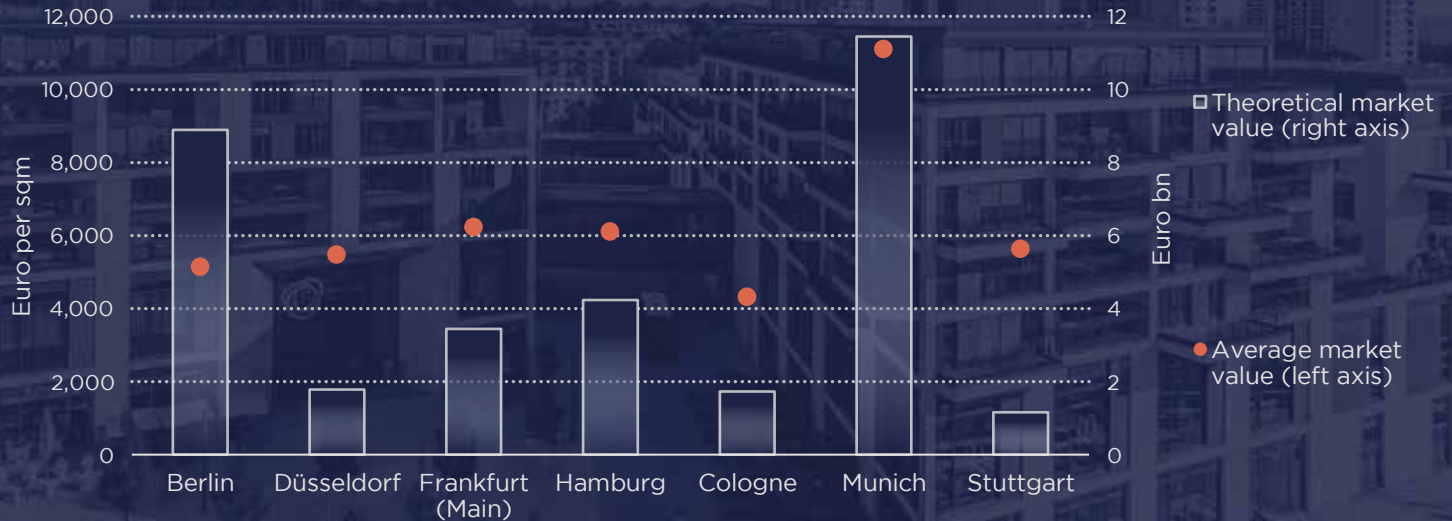
A comparison with the trading-development values shows: depending upon the city in question, the proportion of the develop-and-hold living space to the total area of housing developments fluctuates between 22 and 41%.

⁴ Source: bulwiengesa Project Developer Study 2019.

⁵ Source: Destatis, living space of all approved construction measures, annual average 2014 – 2017 for the 7 A-cities.

⁶ Source: Wohnungsbedarfsprognose bulwiengesa AG [Apartments Requirements Prognosis], spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

Develop-and-hold housing Theoretical market value (completion 2019 - 2023) per city



Quelle: Develop-and-Hold-Studie by EMPIRA.

For the Develop-and-Hold Study by EMPIRA the projects were analysed with regard to their residential areas and were thus given a theoretical market value⁷. With the exception of Munich, which ultimately has the peak value with more than 11,000 euros, the average market values per square metre of living space in the A-cities calculated in this manner are between 4,300 and 6,200 euros/sqm. In absolute terms the market value in Munich is also highest, surpassing Berlin, which is twice as large in terms of population size.

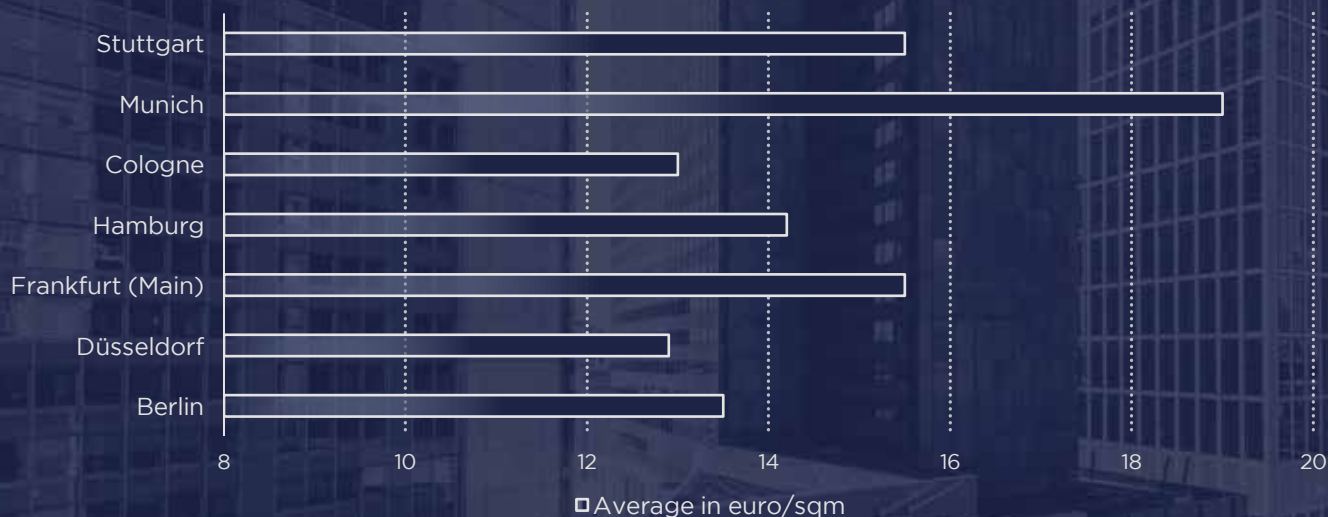
The reason for this is the high market rents and prices in the Bavarian capital. With an average rent level of 19 euros per square metre for the first-ever occupation of a new construction, Munich is significantly more expensive

than the other A-cities. The calculation of the market value in real terms with the actual rents and prices would make the level in Munich recognisably lower and above all in the develop-and-hold market because here the public sector dominates as an investor and these actors set real rental prices that are significantly lower than the market level. This phenomenon can be observed to a similar degree in the other A-cities, however, and so this effect is balanced out.

All in all, the theoretical market value of the develop-and-hold projects evaluated in this study (under construction, planning concrete, completion 2019 to 2023) in the seven A-cities is nearly 33 billion euros.

⁷See glossary for details.

Rent level for new housing construction 2018, first occupation per city

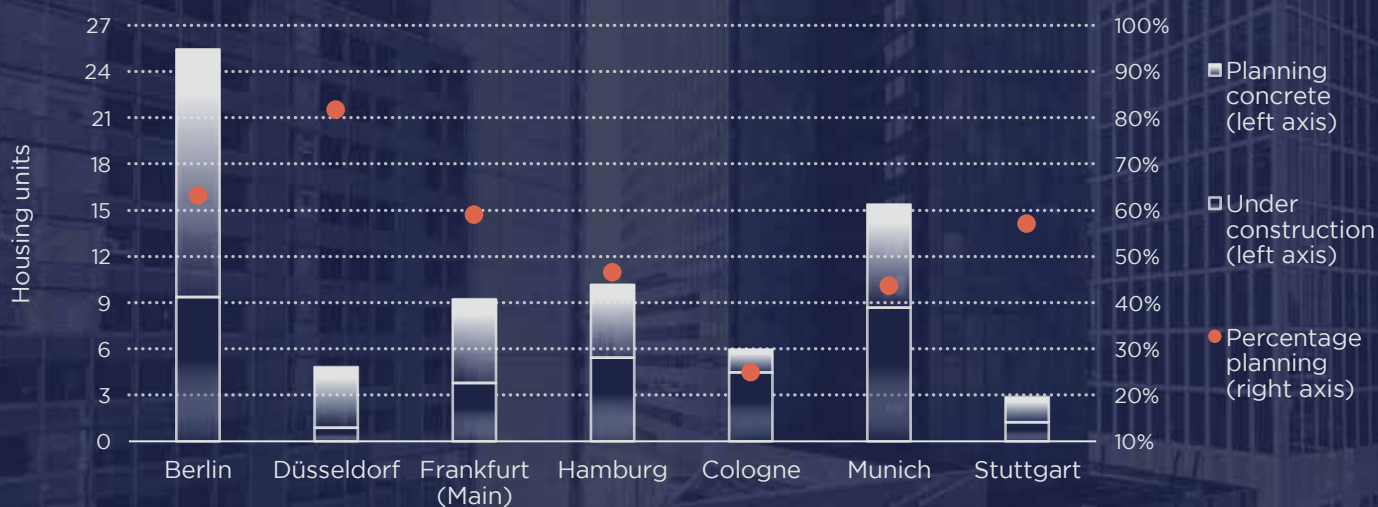


Source: bulwiengesa RIWIS.

The develop-and-hold residential markets in the seven A-cities differ in terms of their structures. This is illustrated in the following on the basis of the housing units.

Clear differences can be seen in the structure of the projects in terms of development status: Thus, for example, more than 80% of the housing units in Düsseldorf analysed here are

still in the planning stage, whereas in Cologne a mere 25% of the housing units are in the planning stage. The reasons for these differences are various. The markets exhibit differences in terms of the potential areas, as well as differing framework conditions with regard to planning approvals. Last but not least, it is necessary to mention the divergences in market transparency from one market to another.

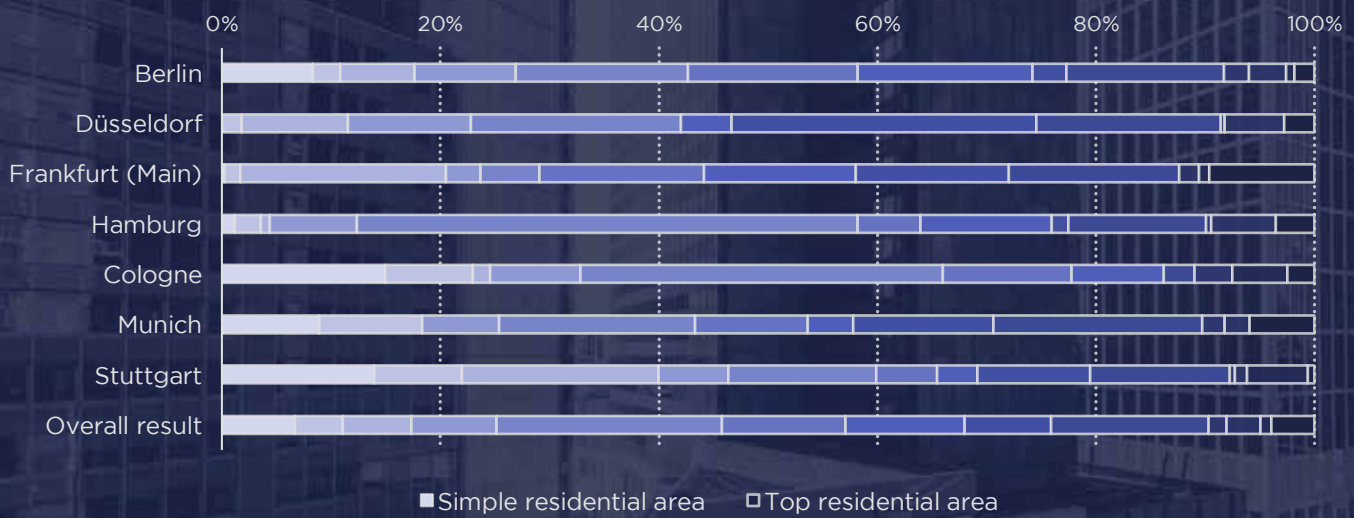
Develop-and-hold housing
Housing units (completion 2019 - 2023) by development status per city


Source: Develop-and-Hold-Studie by EMPIRA.

Across all the A-cities the apartments created in the develop-and-hold market are fundamentally spread very evenly across the various residential areas⁸. A glimpse at the individual cities also shows differences, however: in Colo-

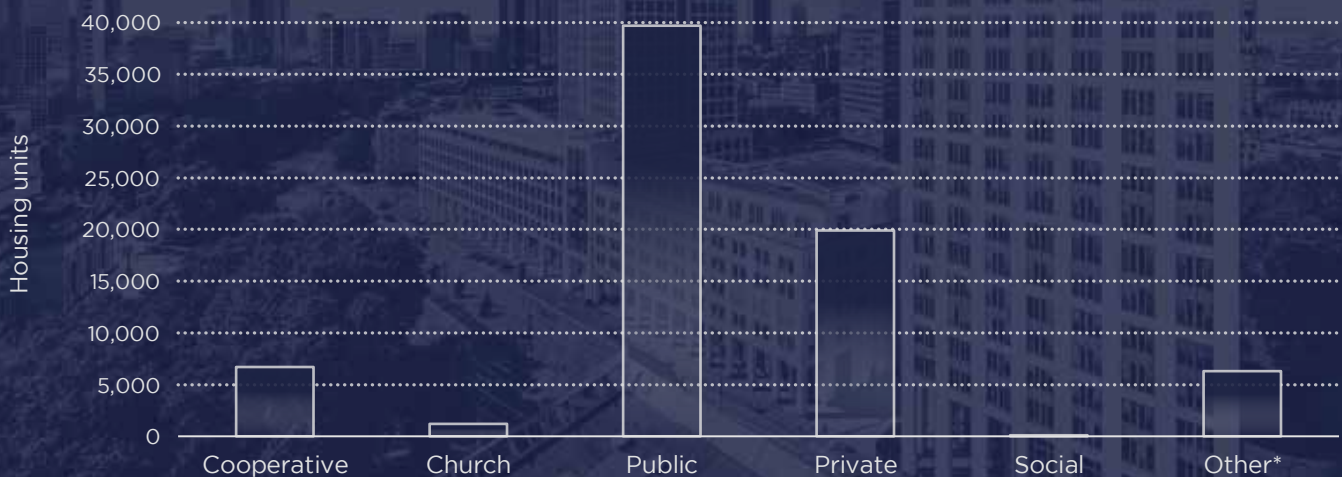
gne, for example, a strikingly small number of apartments are being developed in (currently) very good residential areas, whereas in Frankfurt, for example, a large number of apartments are being built in such residential areas.

Develop-and-hold housing Apartments (completion 2019 - 2023) by residential area per city



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Apartments (completion 2019 - 2023) per type in the 7 A-cities



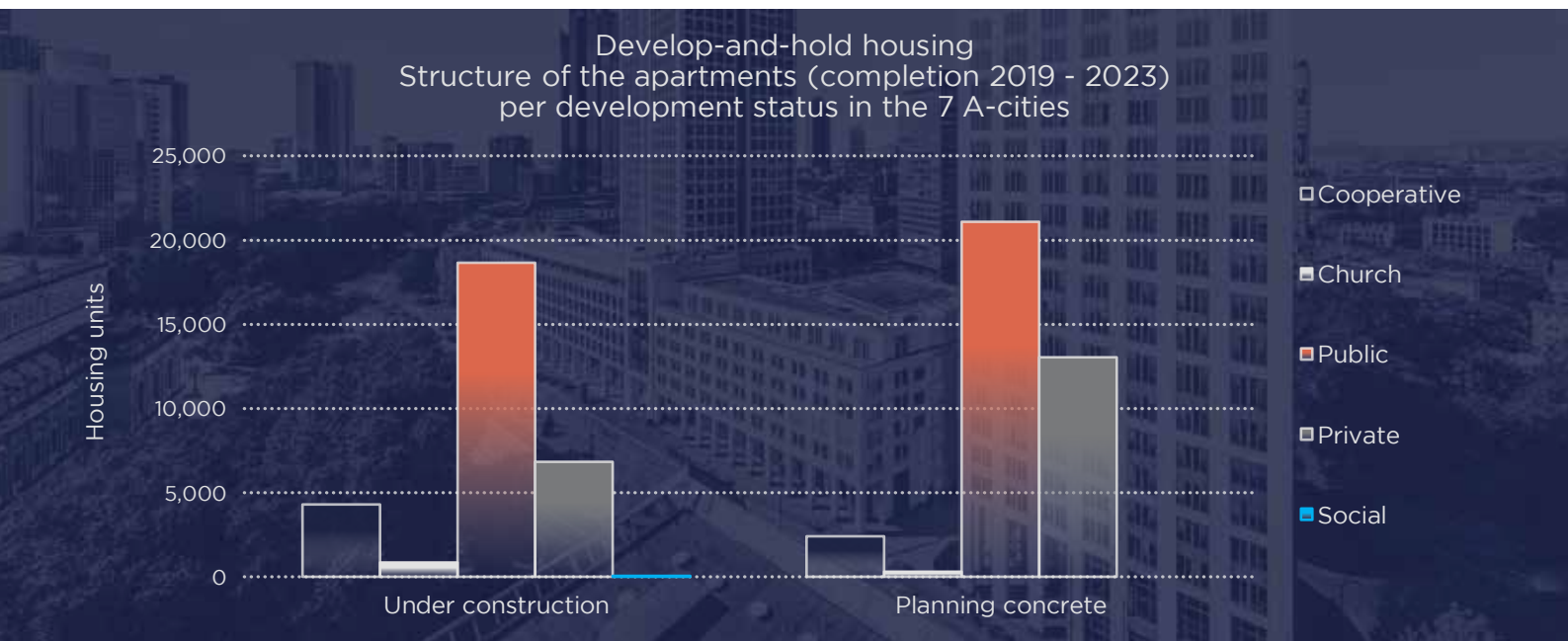
Source: Develop-and-Hold Study by EMPIRA.

* Some of the companies have not been allocated here for methodological reasons. See glossary for details.

⁸ Here the residential areas of bulwiengesa AG were used; these are available for city block level and for urban district/urban quarter level.

In the develop-and-hold residential segment in the seven A-cities 54% of the apartments under construction or in planning are in the hands of public bodies: these are, for example, municipal or state-owned housing companies. They also include companies in which public bodies have significant majority shareholdings and companies in which several different public institutions have pro rata stakes. Moreover,

27% of the to-hold project areas are being developed by private actors. Thus the two most important groups in this segment have been defined. The remaining apartments are accounted for by private non-profit housing cooperatives (9%) and other social organisations that can be clearly allocated to churches and other social institutions (jointly 2%).



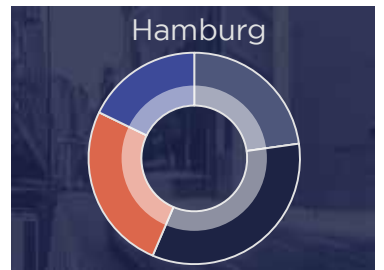
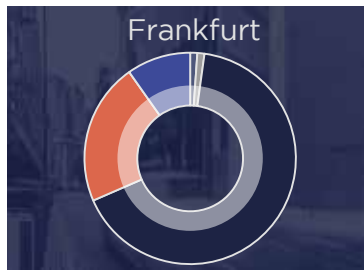
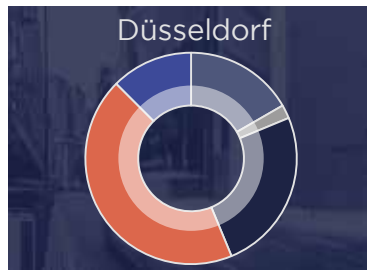
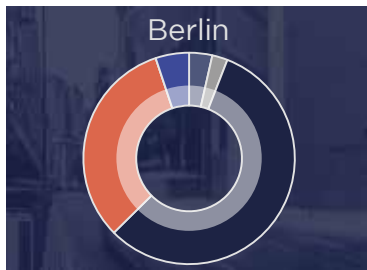
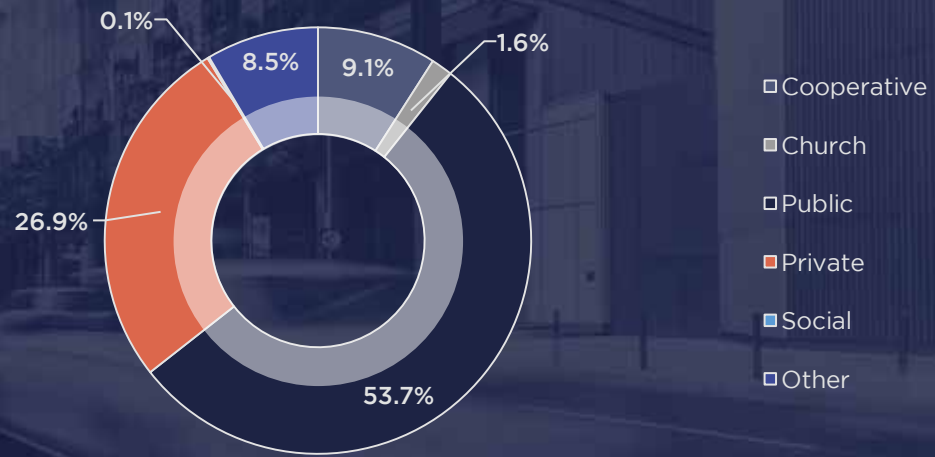
Source: Develop-and-Hold Study by EMPIRA.

Among the private actors the project volumes in planning are nearly twice as great as the areas under construction. The public bodies also currently have more projects in planning than under construction. In contrast, the other market players (cooperatives, church, social) have fewer apartments in the pipeline. These differing structures may in part be explained by differences in data transparency.

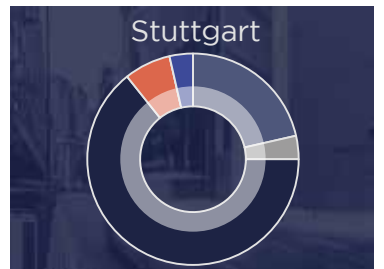
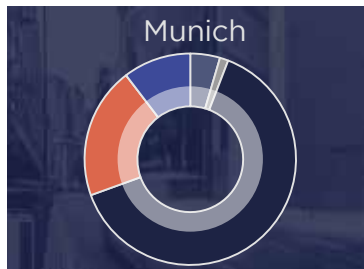
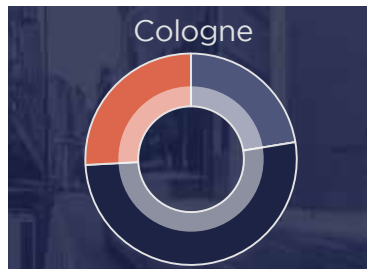
At city level the significance of the developers diverges considerably. For instance, coope-

ratives in Düsseldorf, Stuttgart, Cologne and Hamburg make a major contribution of 20% and more to the project volume in the develop-and-hold market, whereas these play a less important role in Munich, Frankfurt and Berlin. Another example: in Düsseldorf the public institutions account for merely just less than 25% of the housing units, in Frankfurt, by contrast, they are developing 66% of the housing units.

Develop-and-hold housing Apartments (completion 2019 - 2023) by actor groups in the 7 A-cities



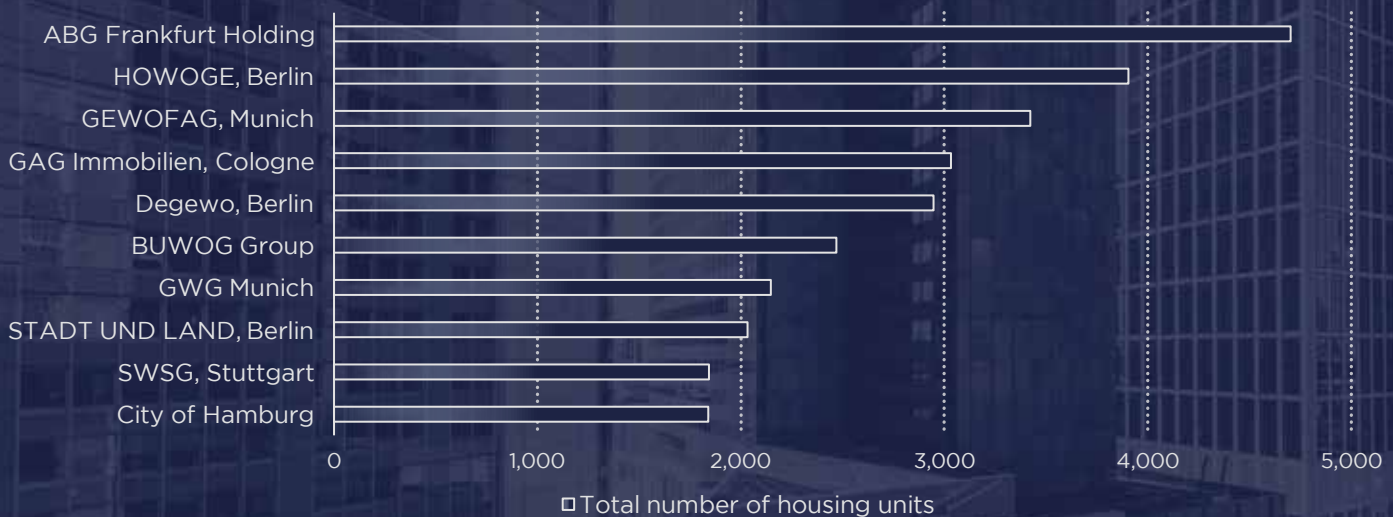
Source: Develop-and-Hold
Study by EMPIRA.



As the operations of the publicly-owned housing portfolio companies are frequently heavily restricted in regional terms, an analysis of all the top players in the develop-and-hold residential segment across all the A-cities has to be interpreted with caution. The list of the top actors is headed by ABG Frankfurt Holding. In this respect the company is making major efforts to communicate its planning activities externally.

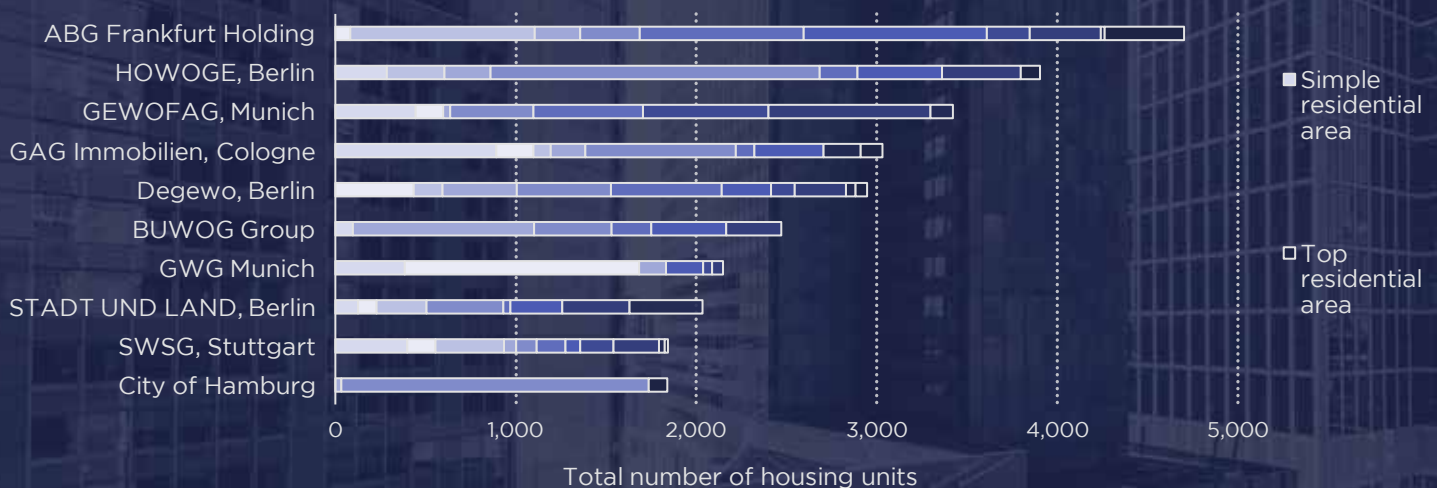
Virtually all the top actors are publicly-owned housing portfolio companies and each is particularly active on one specific market. Among these are ABG Frankfurt (Frankfurt), GEWO-FAG and GWG (both Munich), HOWOGE, Degewo and STADT UND LAND (all Berlin), GAG Immobilien (Cologne), SWSG (Stuttgart) and City of Hamburg (included here in the ranking because of the HafenCity areas). The only private developer operating in more than one city is BUWOG (Berlin and Hamburg).

Develop-and-hold housing
Top actors by apartments (completion 2019 - 2023) in the 7 A-cities



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing
Top actors by apartments (completion 2019 - 2023) in the 7 A-cities



Source: Develop-and-Hold Study by EMPIRA.

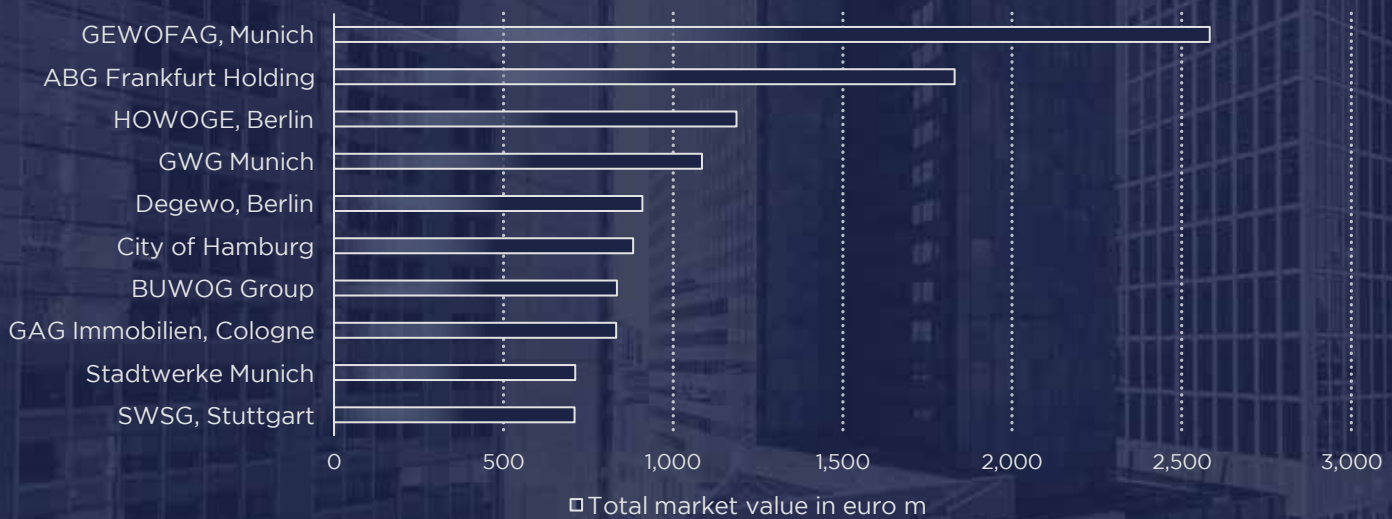
The residential areas of the project developers were used as the basis for the calculation of the market values in an analytical model⁹. The top actors across all A-cities invest to differing degrees in a variety of residential areas.

Some projects are implemented in (below) average residential areas. In such cases private investors often pursue the objective of tapping potential on the basis of the project area itself and by creating better residential areas in the micro-location. At the same time the publicly-owned housing portfolio companies profit from land offerings in very good residential areas which private investors (have to) extend to them as part of special regulations for the creation of price-maintained apartments¹⁰.

Thus there is repeatedly a situation in which public-sector organisations have better residential areas, and consequently better theoretical market values, than many private developers. It may be reasonably assumed, however, that the actual capital values of these projects are lower: the rent levels of the publicly-owned housing portfolio companies are usually lower than the new construction rents and multipliers applied in the calculation model.

If the key players are analysed on the basis of their market values, then there is a new ranking order: in this case Munich's GEWOFAG takes first place, GWG Munich moves upward and Stadtwerke Munich joins the ranks of the TOP 10. This is a result of the high price levels in Munich that have already been mentioned.

Develop-and-hold housing
Top actors by market value (completion 2019 - 2023) in the A-cities



Source: Develop-and-Hold Study by EMPIRA

⁹ See glossary for details.

¹⁰ This usually occurs in the framework of construction land strategies through so-called 'tied quotas'. Examples of these are the socially-equitable land use regulations in Munich (SoBoN) and Stuttgart's urban development model (SIM).

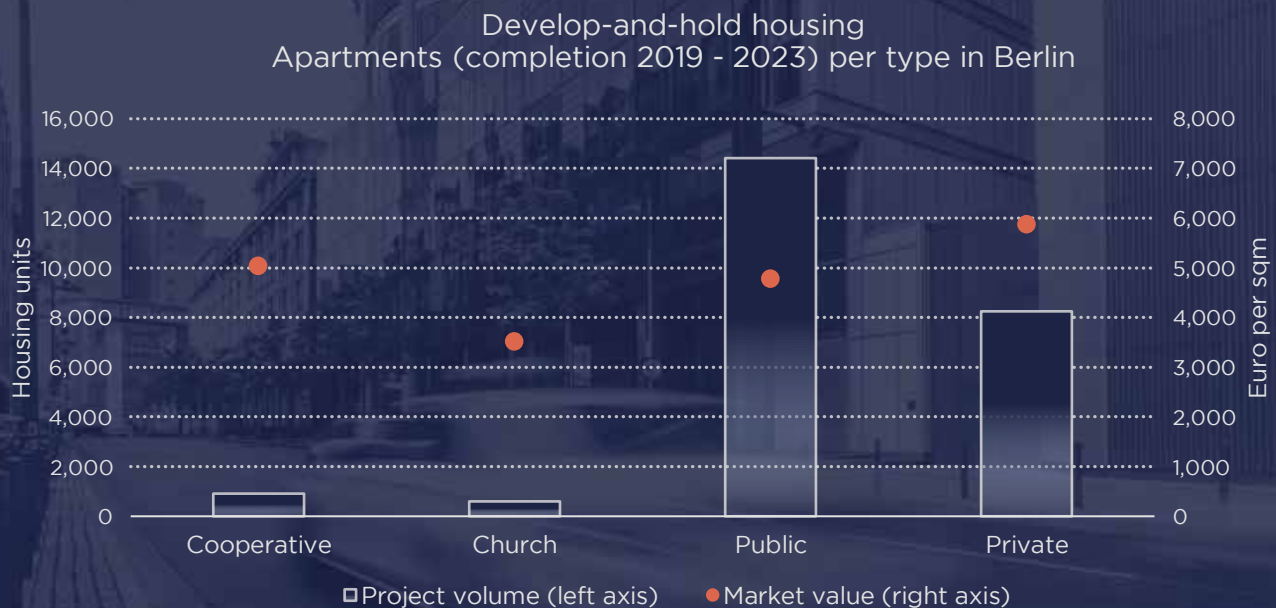
2.2 Regional market portraits

2.2.1 Berlin

The total project volume in the Berlin develop-and-hold residential market in the period under analysis, 2019 to 2023, is 25,400 apartments. In this respect Berlin is – as is already the case in trading-development – the largest market compared to the other A-cities. In addition to these apartments there are an additional 45,600 housing units from trading-development¹¹. Thus a total of 14,200 apartments per year may be expected. Parallel to this, the official approvals statistics for the past five years show that planning permission has been granted for approx. 22,800 apartments¹²

annually for Berlin. In this respect, however, the construction statistics for Berlin are well-known for the high approvals backlog¹³: a comparatively large number of housing units are approved in Berlin but not implemented. This supply contrasts with a need for 18,600 housing units in Berlin¹⁴.

A glimpse at the market values per square metre of living space shows that – depending upon the location – there are considerable differences per type of actor in Berlin. The highest market values per square metre are attained with private projects.



Source: Develop-and-Hold Study by EMPIRA.

¹¹ Source: bulwiengesa Project Developer Study 2019.

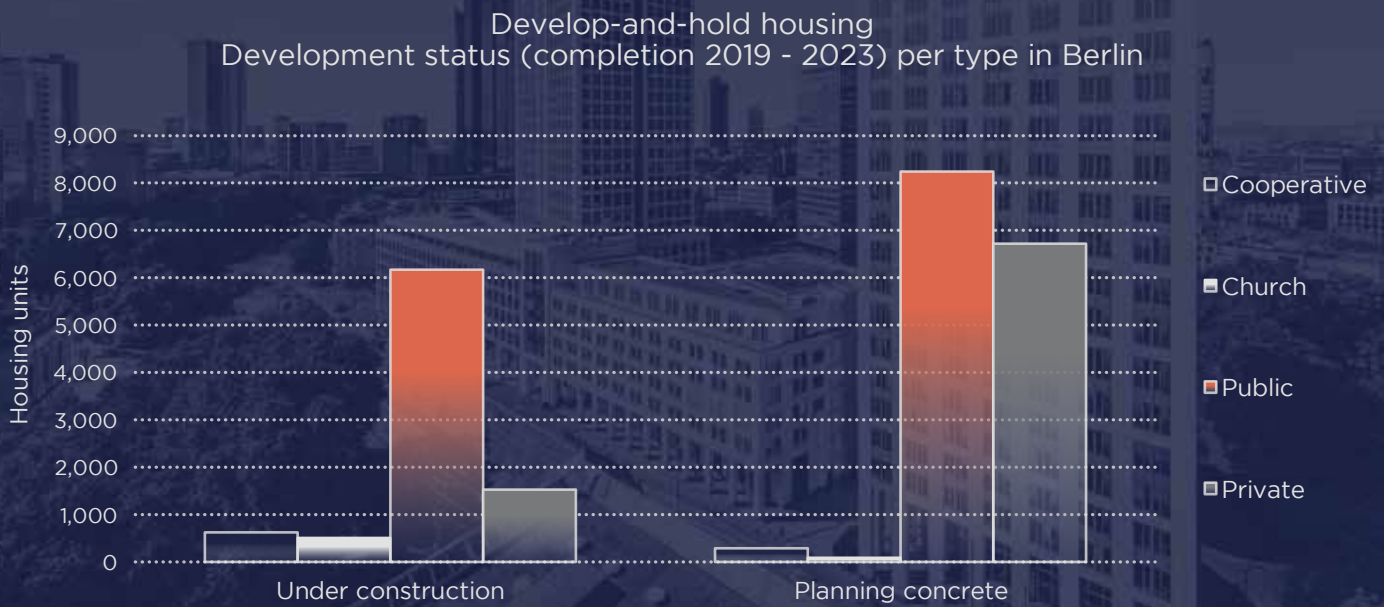
¹² Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

¹³ See calculation here: Cumulative completions 2005 to 2017 from cumulative approvals 2005 to 2017 (in each case apartment incl. measures in the portfolio). For Berlin the figure is 57.8%, for all other A-cities between 74.0 and 103.6%.

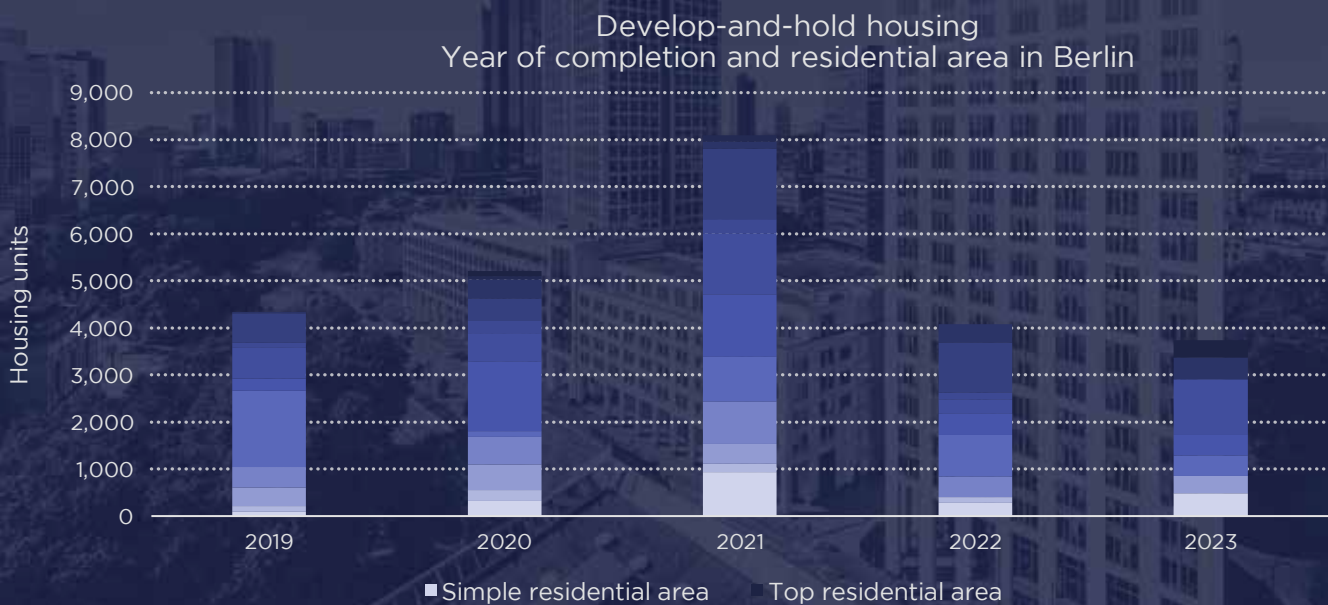
¹⁴ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

About 57% of the apartments are being developed in Berlin by actors in the public sector. Private developers are implementing 32% of

the apartments, with the bulk of these still in the planning stage and thus in the pipeline. Other actors scarcely play a role in Berlin.

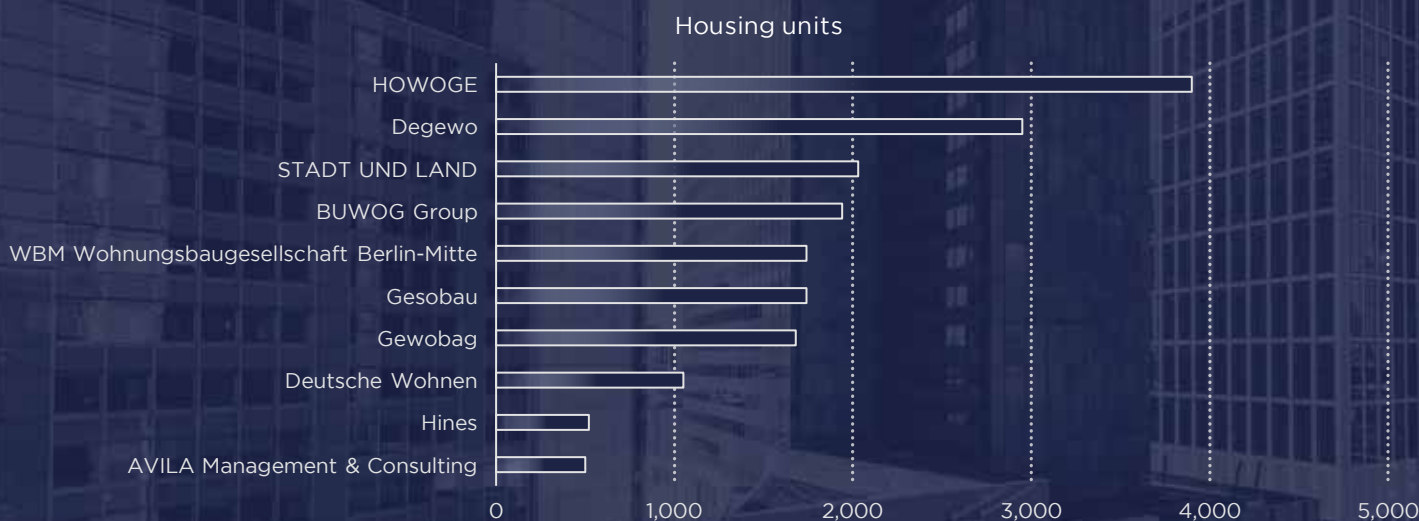


Source: Develop-and-Hold Study by EMPIRA.



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Berlin



Source: Develop-and-Hold Study by EMPIRA.

The ranking of the Berlin develop-and-hold residential market is headed by two of Berlin's six publicly-owned housing associations: HOWOGE Wohnungsbaugesellschaft mbH heads the list with 3,900 projected apartments through to 2023. It is followed by Degewo in second place with nearly 3,000 housing units. With a portfolio of more than 75,000 apartments it is the largest publicly-owned housing association. In the period under analysis Degewo had a total of 29 projects ranging in size from 20 to 340 apartments under construction or in planning.

With the exception of the private actor BUWOG, the Vonovia-owned project developer, the first 7 places in the ranking are exclusively

occupied by publicly-owned housing associations. These are all the housing associations of the City of Berlin. The projects of these companies encompass some 13,300 completed housing units for the years 2019 to 2023.

Places eight to ten are occupied by additional private developers, including the publicly-listed company Deutsche Wohnen AG. The company has some 1,000 apartments in the pipeline through to 2023. With Deutsche Wohnen and BUWOG/Vonovia in Berlin the two major private German housing portfolio companies rank among the top developers.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Berlin



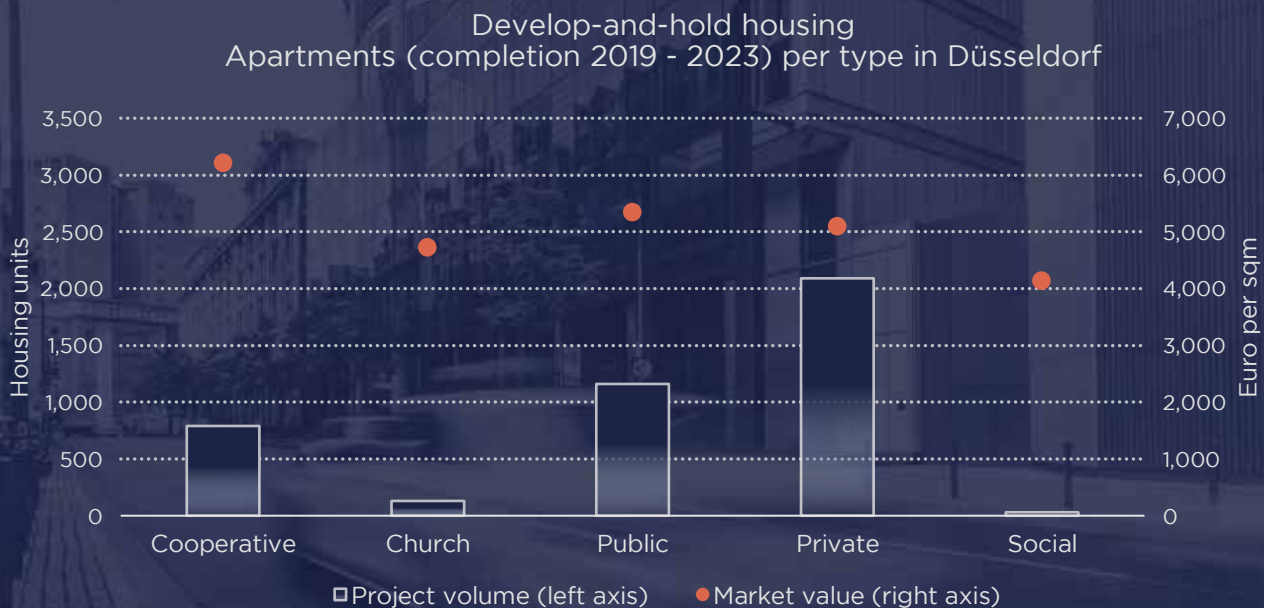
Source: Develop-and-Hold Study by EMPIRA.

2.2.2 Düsseldorf

In Düsseldorf – the capital of the federal state of North Rhine-Westphalia – 4,800 housing units are being built as develop-and-hold apartments in the period analysed, 2019 to 2023. Düsseldorf thus ranks among the small project markets in this segment. In addition to these apartments are a further 15,700 apartments from the classical trading-development segment (including construction client business)¹⁵. Thus only slightly less than 22% of the 4,100 annual apartments are being developed as develop-and-hold in Düsseldorf. In contrast the official planning permission statistics for the past four years show 3,200 apartments per annum¹⁶. When compared with the 3,200 housing units required for Düsseldorf each year¹⁷ demand in the state capital seems to be covered at least in quantitative terms for the

next five years. A prerequisite for this is that the major planned projects included in the analysis of Düsseldorf (e.g. the Glasmacher-viertel district, a trading-development) are actually implemented in the form presented. At the same time there remains the problem that the apartments constructed here may not meet demand in terms of price, location and quality, and that there will therefore continue to be significant surplus demand in individual partial segments.

The theoretical market values per square metre are – as a result of the location – highest for the cooperative-owned apartments in Düsseldorf. The values in Düsseldorf tend to be lower compared to the other A-cities, however.



Source: Develop-and-Hold Study by EMPIRA

¹⁵ Source: bulwiengesa Project Developer Study 2019.

¹⁶ Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

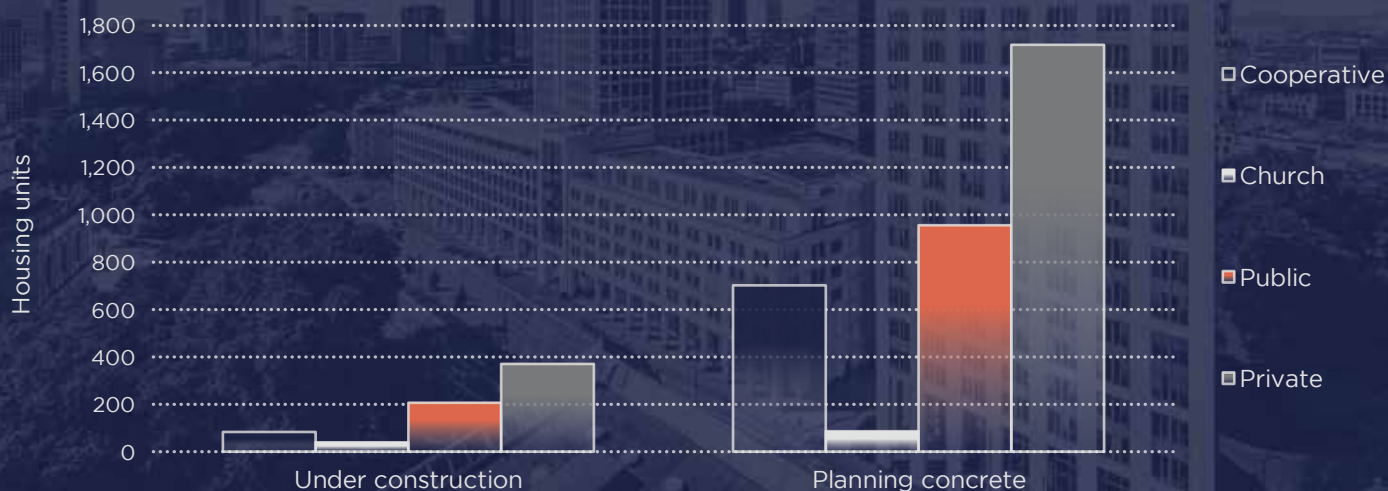
¹⁷ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

Düsseldorf is notable in the classical project developer market above all for its high proportion of private developers. This is also the case in the develop-and-hold market. The private actors are developing 43% of the apartments here. The private developers are not the strongest group in this market in any other A-city. Public-sector companies are only developing 27% of the apartments in Düsseldorf. It is also interesting that cooperatives are of major significance for the housing market in Düsseldorf:

16% of apartments-to-hold are being developed by such companies.

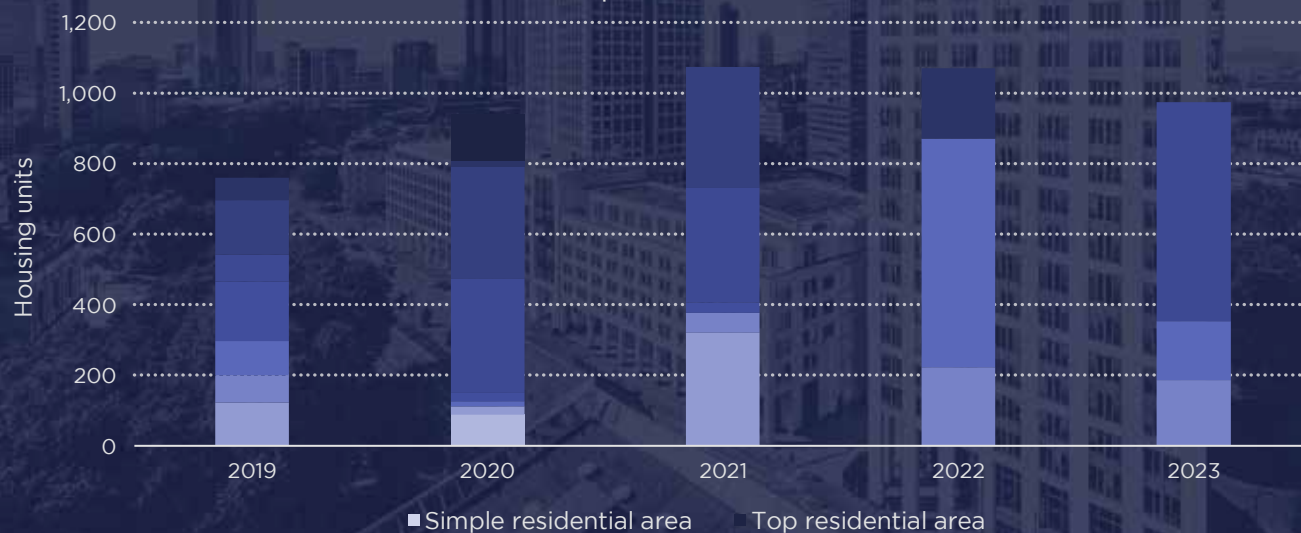
All developers in Düsseldorf are still in the planning stage with the bulk of their projects. Accordingly, the planning pipeline here is much larger compared to the number of apartments under construction. The current planned project completions are spread quite evenly over the analysed years in the develop-and-hold market in Düsseldorf.

Develop-and-hold housing
Development status (completion 2019 - 2023) per type in Düsseldorf



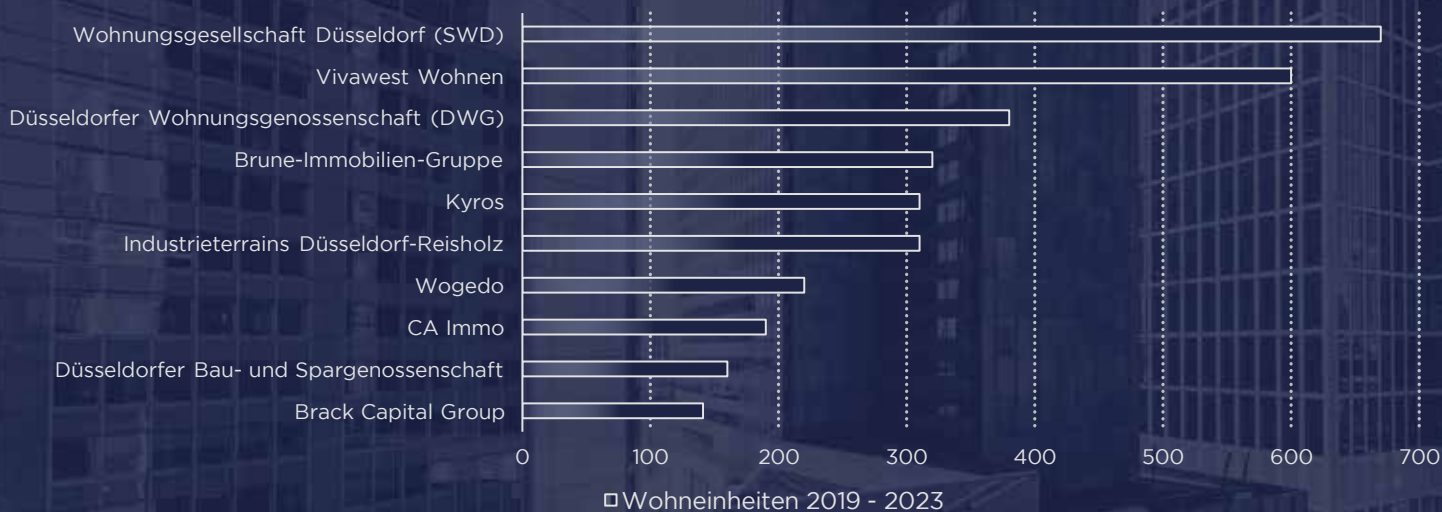
Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing
Year of completion and residential area in Düsseldorf



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Düsseldorf



Source: Develop-and-Hold Study by EMPIRA.

In Düsseldorf's residential develop-and-hold market, with some 670 housing units in the pipeline, Städtische Wohnungsgesellschaft Düsseldorf (SWD) is just ahead of the private company Vivawest Wohnen. The housing units of SWD are spread across six projects, which have 30 to 220 housing units on average. The bulk of the projects are still in the planning phase. The largest cooperative in Düsseldorf, Düsseldorfer Wohnungsgenossenschaft DWG, also ranks among the top developers with 380 apartments under construction or in planning. Its projects are characterised by residential locations of an above-average standard. Positions 7 and 9 in the ranking of top developers are also occupied by two further housing

cooperatives. Brune Immobilien is positioned with the Arcadia Höfe development. The company is creating a new residential area there. CA Immobilien is developing a boarding house on Mindener Strasse which is to be kept in its portfolio. The joint venture project Ben & Mara represents in equal measures the public actor Industrierterrains Düsseldorf-Reisholz and the private company Kyros GmbH in the ranking. Brack Capital Group, which has been active on the project developer market in Germany since 2004, occupies tenth position in the ranking. Together with Vivawest it may be seen that private developers play a major role in the ranking in Düsseldorf.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Düsseldorf



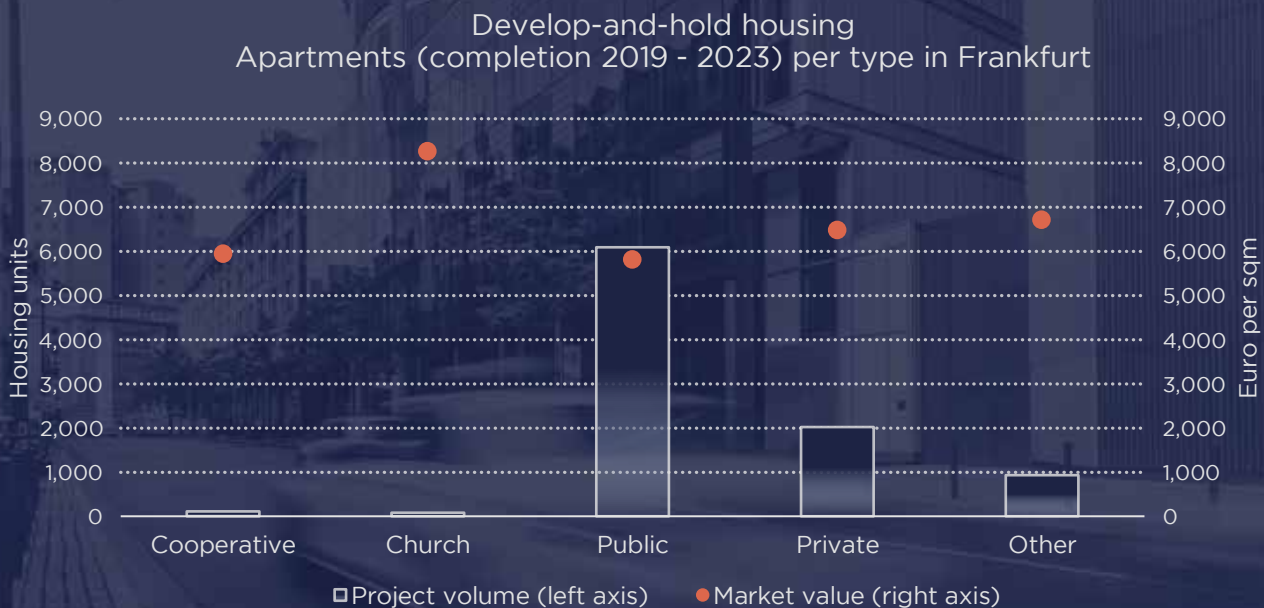
Source: Develop-and-Hold Study by EMPIRA.

2.2.3 Frankfurt (Main)

The financial metropolis Frankfurt (Main) is an A-city of a comparatively smaller size in terms of its number of inhabitants. Nevertheless, in the period under analysis, 2019 to 2023, with 9,200 apartments in the to-hold segment Frankfurt (without the townships in the surrounding environs) has more or less the same project volume as Hamburg, for instance, which is nearly three times as large. In addition to these apartments are a further 18,000 apartments from the trading-development segment¹⁸. Thus 5,400 apartments are being developed per year in Frankfurt, 30% of which

as to-hold projects. The official planning permission statistics for the past four years show 5,300 apartments per annum¹⁹.

This contrasts with a need for 6,100 housing units per year in Frankfurt²⁰. Thus it would appear that the demand in Frankfurt will still not be met in the next five years. It is also possible that the apartments on offer do not meet the demand in terms of quality and price. There can be no talk, therefore, of any easing of the market pressure in Frankfurt.



Source: Develop-and-Hold Study by EMPIRA.

Frankfurt's develop-and-hold housing market is clearly shaped by the major residential housing owner ABG Frankfurt. The share of the public developers in the project volume is correspondingly high. It is striking that co-

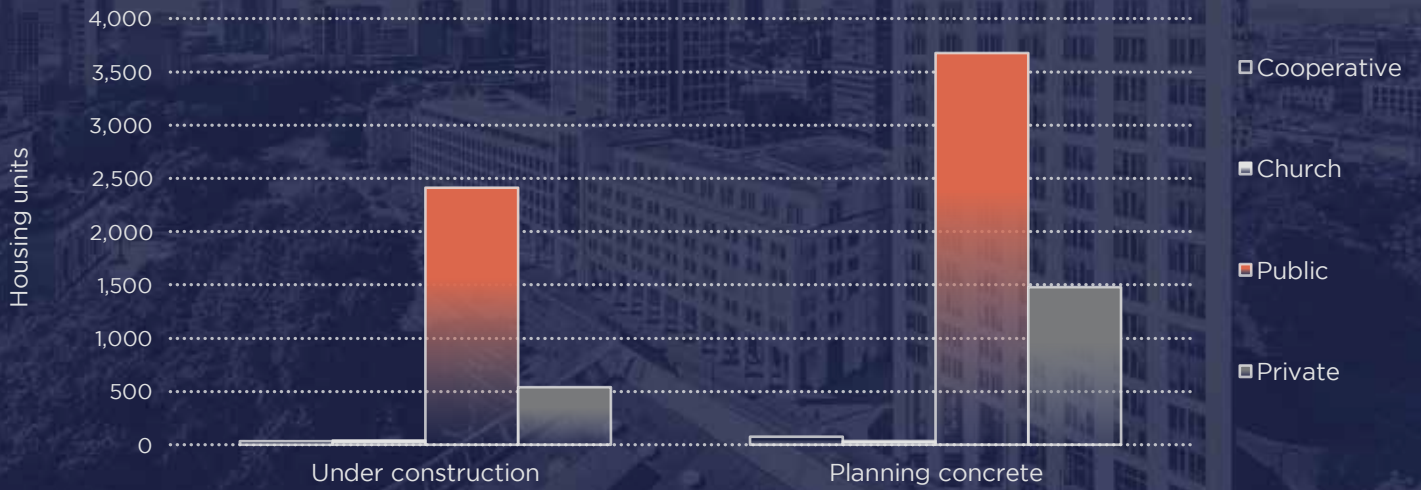
operative construction plays no role at all in Frankfurt. Around 50% of the analysed apartments-to-hold are currently under construction in Frankfurt. The pipeline through to 2023 is distributed evenly.

¹⁸ Source: bulwiengesa Project Developer Study 2019.

¹⁹ Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

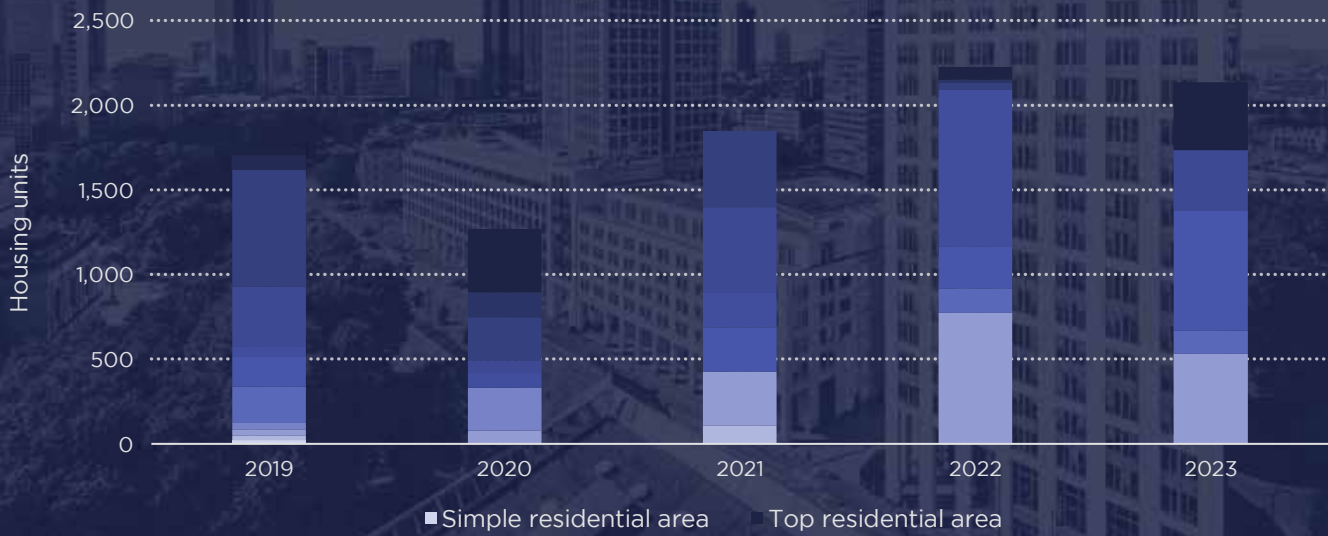
²⁰ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

Develop-and-hold housing Development status (completion 2019 - 2023) per type in Frankfurt



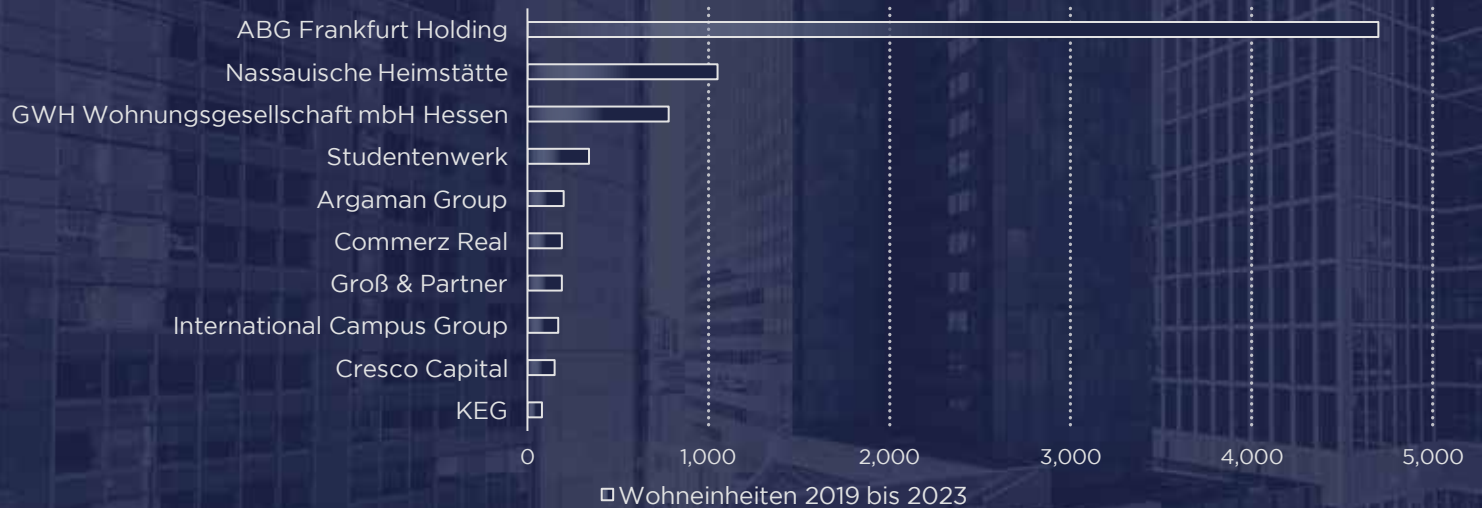
Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Year of completion and residential area in Frankfurt



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Frankfurt



Source: Develop-and-Hold Study by EMPIRA.

ABG Frankfurt Holding clearly dominates the Frankfurt develop-and-hold market with a pipeline of some 4,700 housing units in the period considered in the study. In addition, within the analysis ABG has the largest number of apartments under construction and in planning. ABG Group owns some 52,000 apartments; the majority shareholder is the City of Frankfurt, and thus ABG is included in the “public developer” category. With a share of more than 13% of the total housing stock in Frankfurt, ABG is an influential player on this market.

Nassauische Heimstätte, in which the federal state of Hesse has a majority stake, is also classed in the “public developer” category. In third position is GWH Wohnungsgesellschaft mbH Hessen. The subsidiary of Hessische Landesbank manages some 50,000 apartments. Despite this indirect connection to the public sector it counts as a private developer in this analysis.

The following developers are represented on the market with significantly lower volumes.

The order of the ranking should not be weighted too strongly. Studentenwerk is in fourth position in the ranking with 340 apartments. It currently has a project under construction on Ginnheimer Landstrasse with some 110 housing units; two more projects are in concrete planning. As the housing units for student apartments and business apartments are much smaller, more units per square metre can be built and so providers such as Studentenwerk are regarded as top providers in this ranking. Among these is also International Campus Group, which is currently erecting the second building with apartments for students under the brand THE FIZZ. Other companies are also represented among the top actors in Frankfurt with one project: Argaman Group is represented in the ranking with the KAN-SO project, which also has small-sized apartments. Cresco Capital is active in several markets and segments. Commerz Real and Groß & Partner are developing the common project One Forty West in a top location as joint venture partners.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Frankfurt



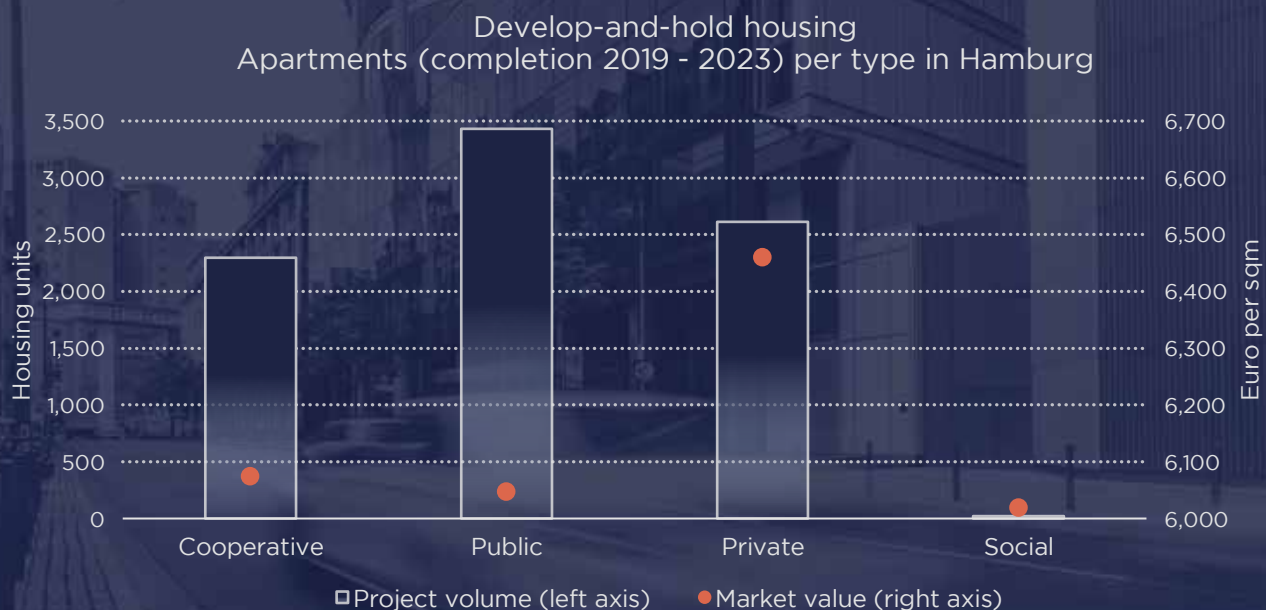
Source: Develop-and-Hold Study by EMPIRA.

2.2.4 Hamburg

In the Free Hanseatic City of Hamburg 10,200 housing units are being erected as develop-and-hold properties between 2019 and 2023. Hamburg is thus the third-largest project market in this segment after Berlin and Munich. Alongside these apartments are a further 25,200 apartments²¹ from the classical trading-development segment. Accordingly, the develop-and-hold segment will account for 27% of the annual total of 7,100 apartments. In contrast, the official planning permission statistics for the past four years show approx. 10,700 apartments per annum²² and thus – contrary to the figures in this study – a higher figure than the annual requirement of 8,200 housing units for Hamburg²³. Even if demand in quantitative terms should be met for Hamburg, in view of the structural differences between supply and demand it is to be expected

that there will continue to be a deficit in supply in individual partial segments at the very least.

In Hamburg both the private owners of housing portfolios and the cooperatives are developing a strikingly high percentage of the to-hold apartments. A distribution in this form is not to be found in any of the other A-cities. Some of the areas shown here as public areas are also to be allocated to private and other developers in the medium term: the HafenCity plot is currently still included in the analysis as “public” with the City of Hamburg as the developer. The city is implementing a policy which has been amended in line with demand, meaning it is marketing plots of land to project developers and owners of housing portfolios, with the effect that in subsequent analyses quite different allocations can be expected.



Source: Develop-and-Hold Study by EMPIRA.

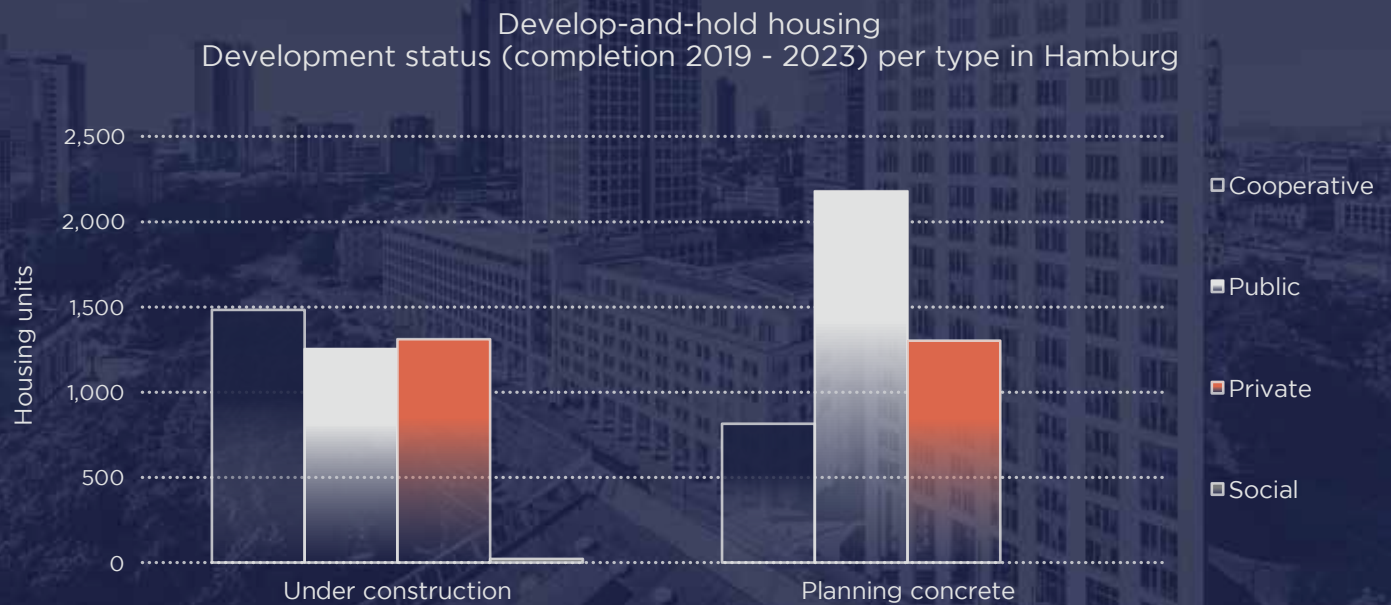
²¹ Source: bulwiengesa Project Developer Study 2019.

²² Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

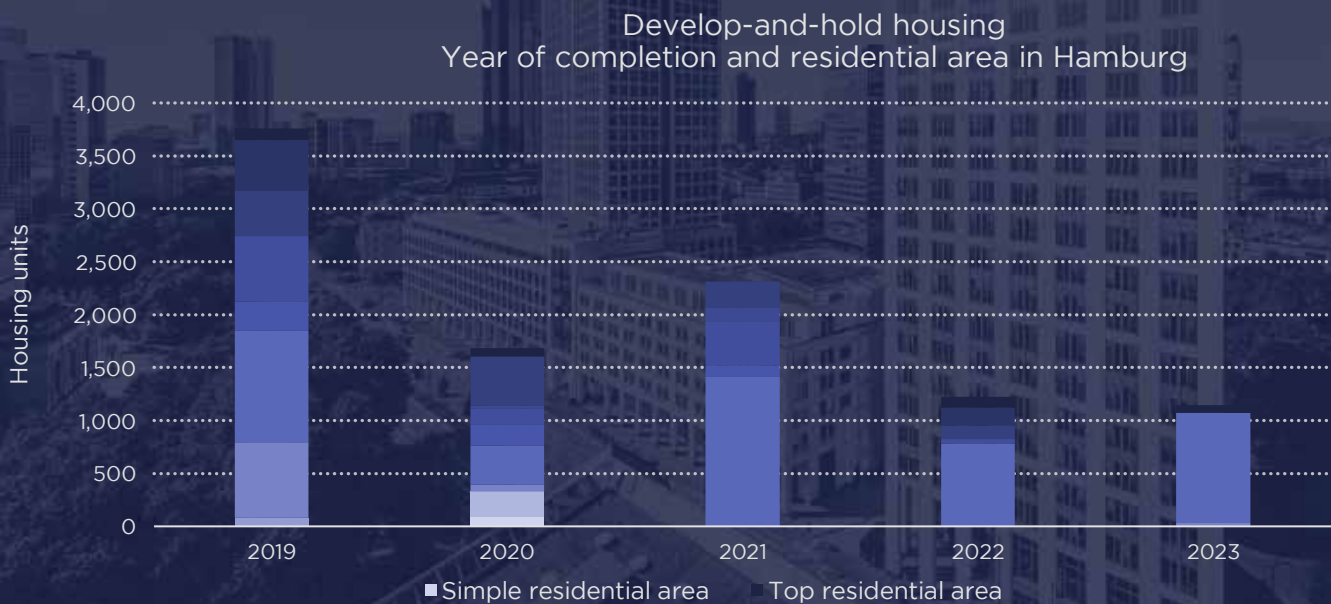
²³ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

The bulk of the to-hold projects in Hamburg included in the analysis are under construction or may be commenced at short notice. The large proportion of projects in planning on the

part of the public developers is once again due above all to the HafenCity area, which is currently attributed to the City of Hamburg.

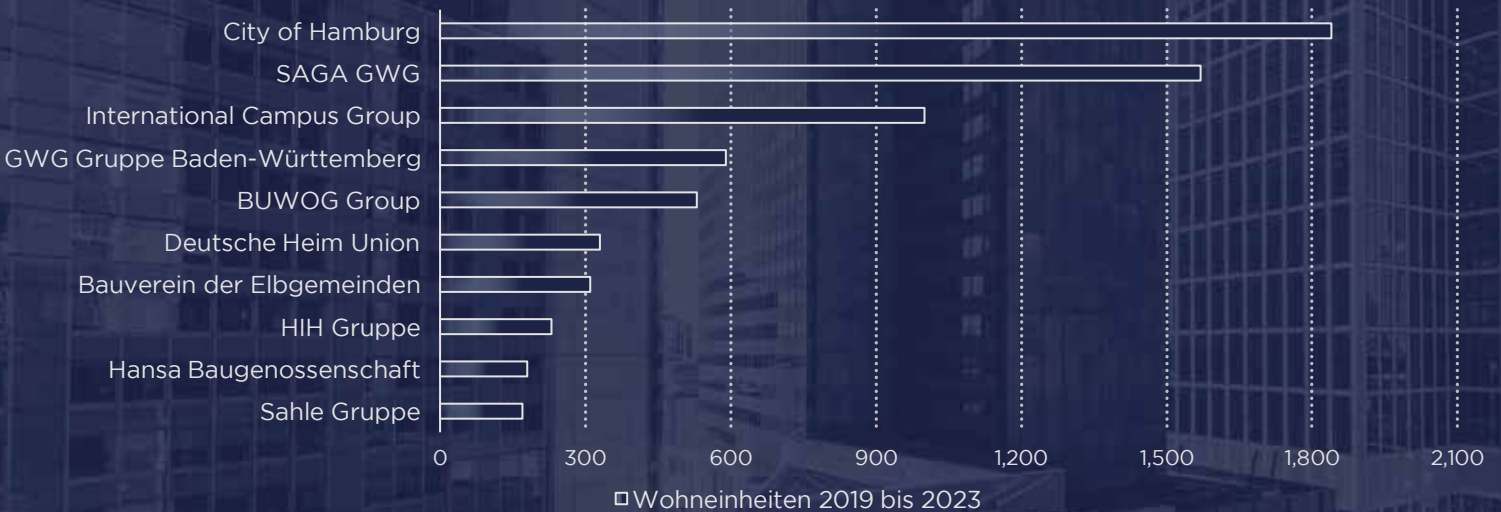


Source: Develop-and-Hold Study by EMPIRA.



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Hamburg



Source: Develop-and-Hold Study by EMPIRA.

The Hamburg develop-and-hold residential market is, alongside the land developments by the City of Hamburg at HafenCity, heavily shaped by the municipal housing association SAGA GWG. The city district Am Weißenberg is the company's largest project with some 430 apartments. 50% of the SAGA GWG apartments are located in good or very good residential areas.

International Campus Group is currently erecting the first building under its THE FIZZ brand in Hamburg Altona. In Hamburg Mitte and St. Georg the company is planning two more buildings scheduled for completion by 2021. As a consequence of the much smaller housing units of the student housing and co-living provider compared with conventional apartments on the market, a total of approx. 1,000 housing units are being erected in the period covered by the analysis.

GWG Gruppe Baden-Württemberg is currently realising a mixture of residential concepts with smaller apartments in "Quartier der Generationen", which involves the creation of subsidised apartments for families, students and senior citizens. BUWOG Group, the project developer and subsidiary of the publicly-listed housing company Vonovia, takes fifth position with the developments in the Bergedorf city district, as well as the rented apartments in the Pergolenviertel district and in the Sportplatzring project.

The following developers are represented on the market with much smaller volumes. The project areas are typically characterised by one to three projects; for this reason the ranking here is not as meaningful. Among the actors are cooperatives (Deutsche Heim Union, Bauverein der Elbgemeinden, Hansa Baugenossenschaft) and private owners of housing portfolios (GWG, HIH Gruppe, Sahle Gruppe).

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Hamburg

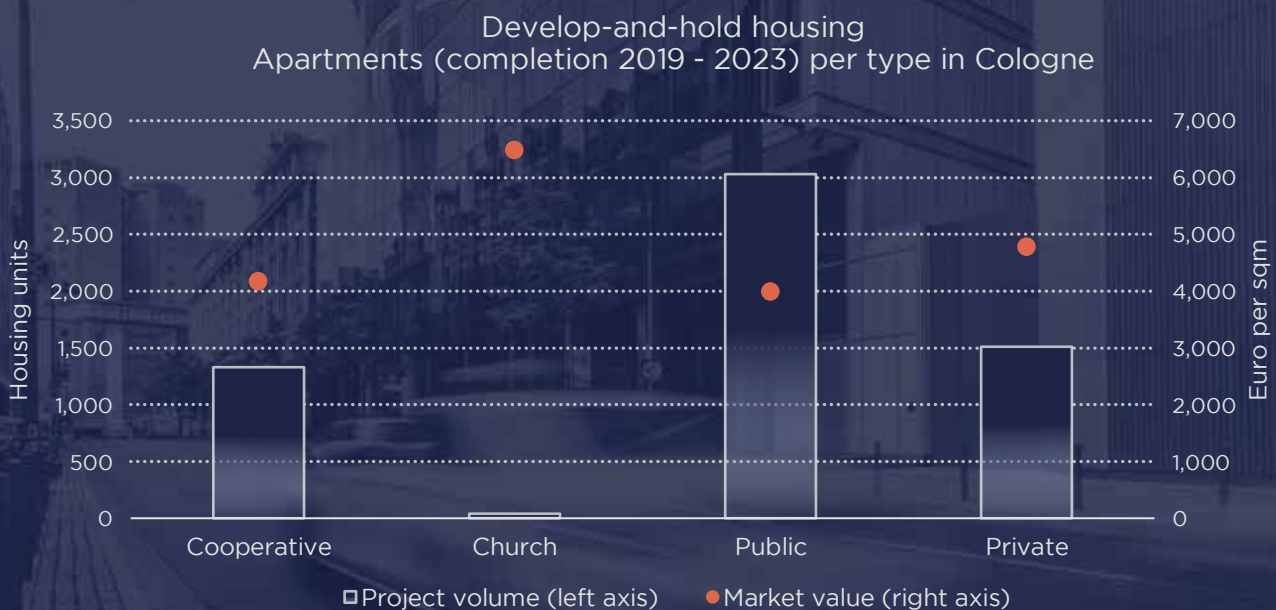


Source: Develop-and-Hold Study by EMPIRA.

2.2.5 Cologne

In Cologne nearly 6,000 housing units are being erected as develop-and-hold apartments in the period analysed, 2019 to 2023. Alongside these apartments are an additional 11,500 apartments from the classical trading-development segment²⁴. In total, therefore, 3,500 apartments are to be developed in Cologne each year. The official planning permission statistics for the past four years show comparable figures (approx. 3,700 apartments per annum)²⁵. In contrast to this is a much higher need of 7,300 housing units per annum in

Cologne²⁶. In Cologne the current recorded supply in the housing construction sector would not seem to meet demand, therefore. The supply volume can, however, change in the short term as a result of possibilities not included in the analysis here. These include, for example, the Deutsche Welle high-rise (completion scheduled for later than 2023), the Rondorf Nordwest building zone (land development by Aurelis) or the land around the port area at Deutz.



Source: Develop-and-Hold Study by EMPIRA.

In addition to public-sector developers, who dominate the market, private developers and a – strikingly – large number of housing co-operatives are active in Cologne.

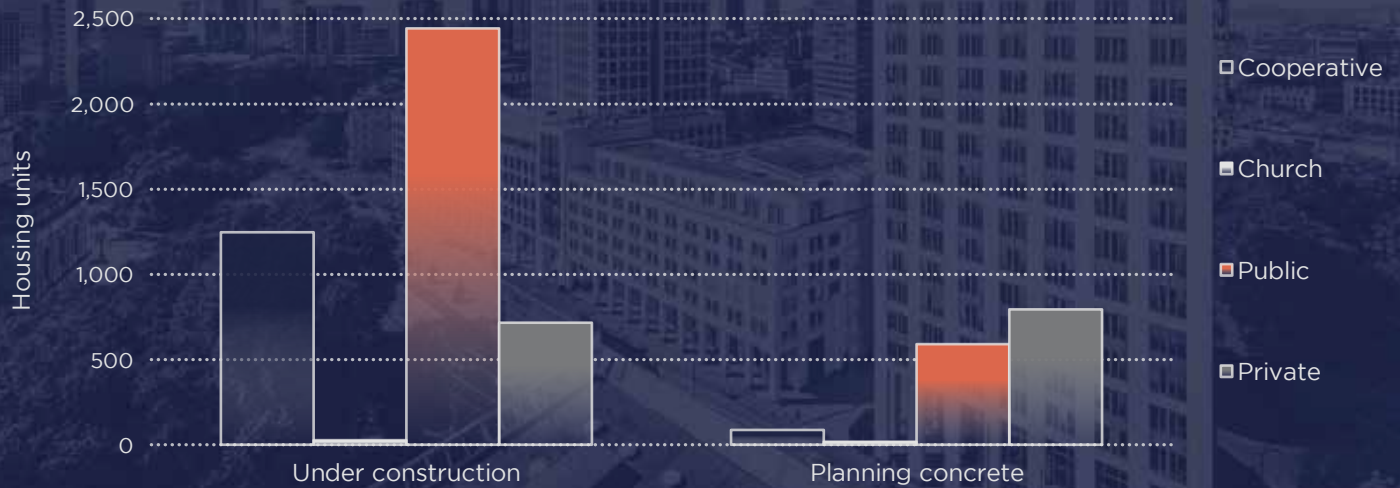
The main focus of all the developers lies on projects which are currently under construction. The pipeline in Cologne is significantly smaller and decreases continually with each analysed year of completion.

²⁴ Source: bulwiengesa Project Developer Study 2019.

²⁵ Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

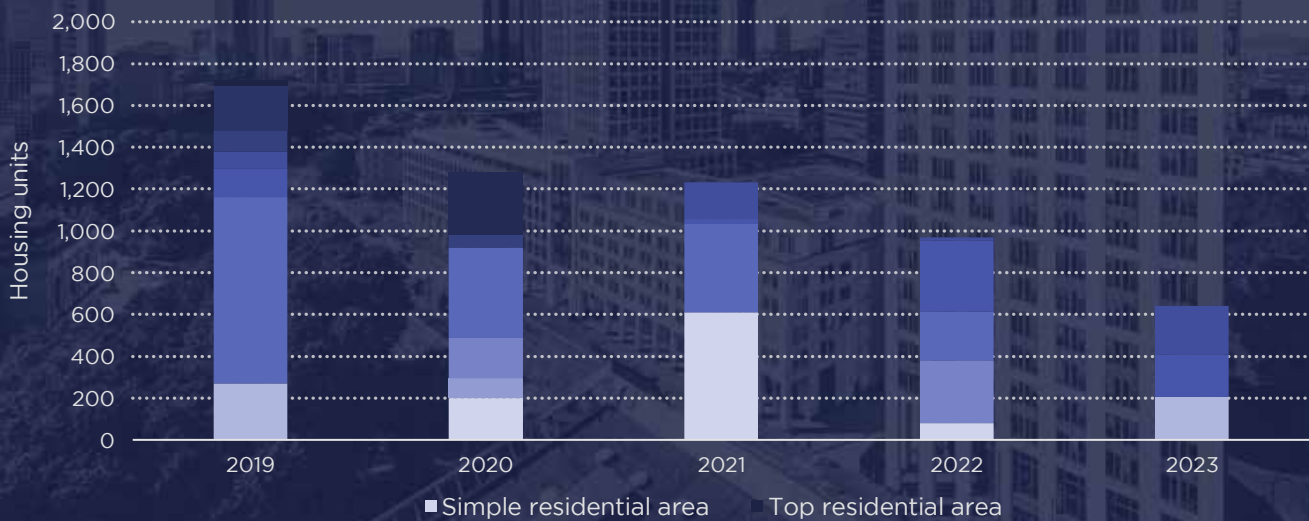
²⁶ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

Develop-and-hold housing Development status (completion 2019 - 2023) per type in Cologne



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Year of completion and residential area in Cologne



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Cologne



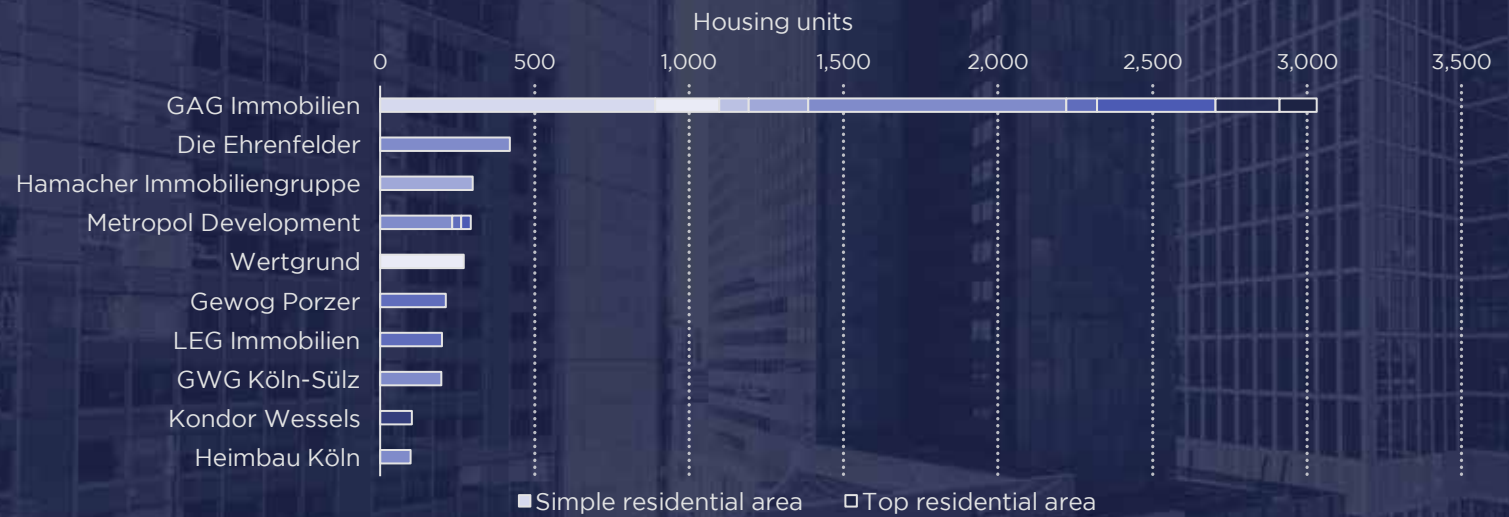
Source: Develop-and-Hold Study by EMPIRA.

The Cologne market for develop-and-hold housing is clearly dominated by GAG Immobilien with just over 3,000 housing units in the Develop-and-Hold Study. The publicly-listed company is owned to significantly more than 80% by the City of Cologne, and accordingly it is included in the “public developer” category in our analyses. With this company, which was created in 2001 through the merger of the two housing associations GAG and GRUBO, the City of Cologne has a strong instrument available with which it can influence the rented apartment market in Cologne. With more than 44,000 apartments in its portfolio GAG is also Cologne’s biggest landlord.

The developers that follow GAG Immobilien in the to-hold ranking are all represented on the

market with considerably fewer apartments. Information on project areas of this size in Cologne is frequently less transparent and often only based on one project planning. For this reason not a lot of weight should be attached to the order in the ranking. Among the developers are cooperatives (Die Ehrenfelder, Gewog Porzer, GWG Köln-Sülz), yet also private owners of housing portfolios such as Metropol Immobilien, for example, which is exclusively active in the Cologne-Bonn region, the company Wertgrund, which is active as a fund manager, asset manager and project developer or the project developer Kondor-Wessel, which according to the latest available information would like to retain the OPAL project in its portfolio.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Cologne



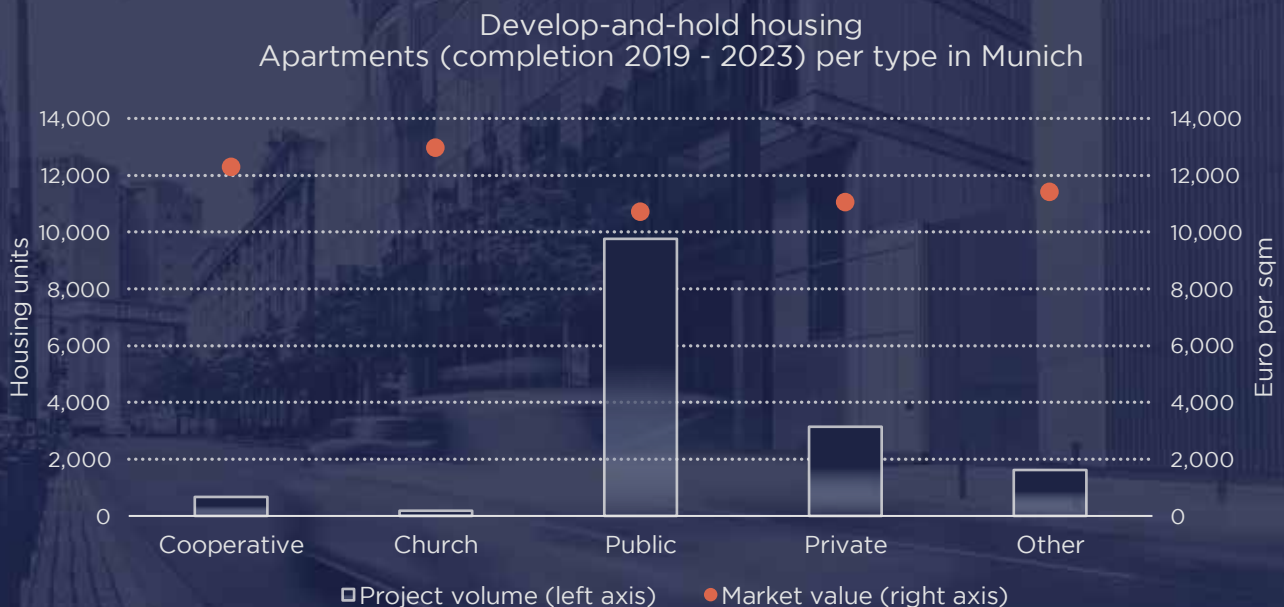
Source: Develop-and-Hold Study by EMPIRA.

2.2.6 Munich

In the capital of the federal state of Bavaria 15,400 housing units are being built on a develop-and-hold basis in the period under analysis, 2019 to 2023. Munich is thus the second-largest project market in this segment after Berlin. Alongside these apartments are a further 27,500 apartments from the classical trading-development segment²⁷. Accordingly, the develop-and-hold segment accounts for 35% of the annual total of 8,600 apartments. The official planning permission statistics for the past four years show approx. 10,000 apartments per annum²⁸. In quantitative terms this more or less meets the annual need for 10,750 housing units in Munich²⁹. This figure does not take into account the fact that the apartments on offer might possibly not meet

demand in terms of quality and price. There can be no talk, therefore, of any easing of the market pressure in Munich.

The high land prices make residential project developments in Munich a challenge, and above all in the mean and lower rent/price segments. At the same time demand for apartments in the state capital remains high and thus rents and prices also remain high, reaching peak values in Munich compared to all the other A-cities. The theoretical market values per square metre in Munich are correspondingly outstandingly high for all developers. The cooperative and church apartments here attain – due to their location – the highest market values.

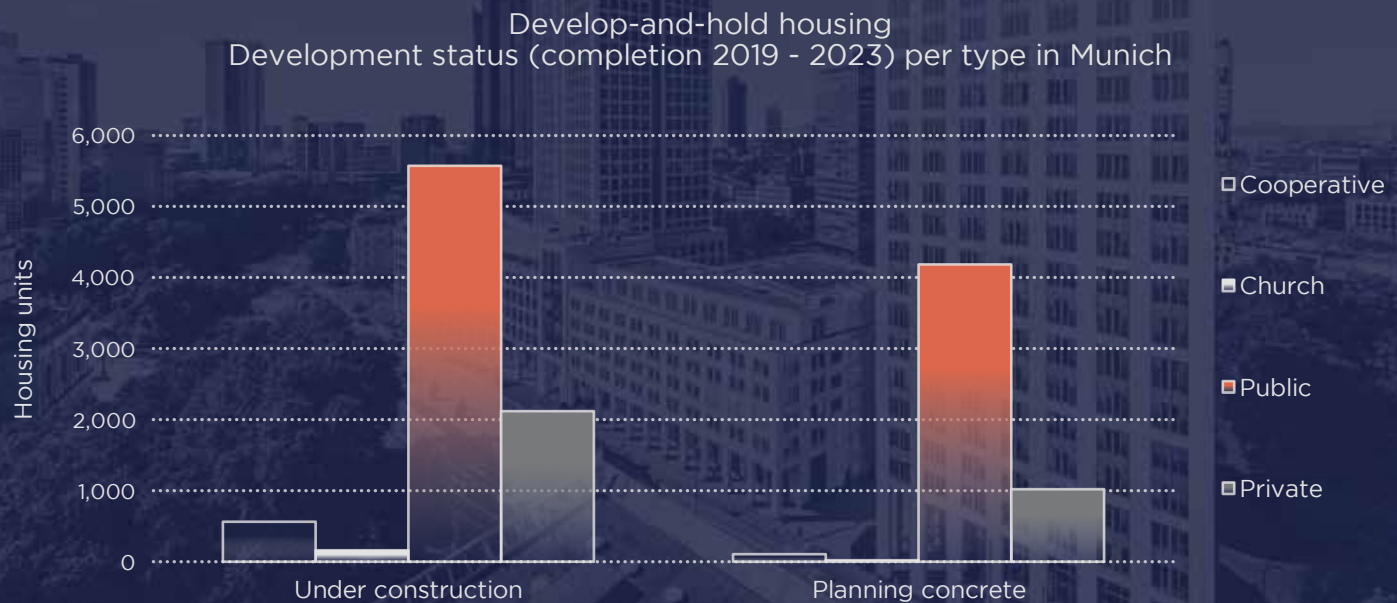


Source: Develop-and-Hold Study by EMPIRA.

²⁷ Source: bulwiengesa Project Developer Study 2019.

²⁸ Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

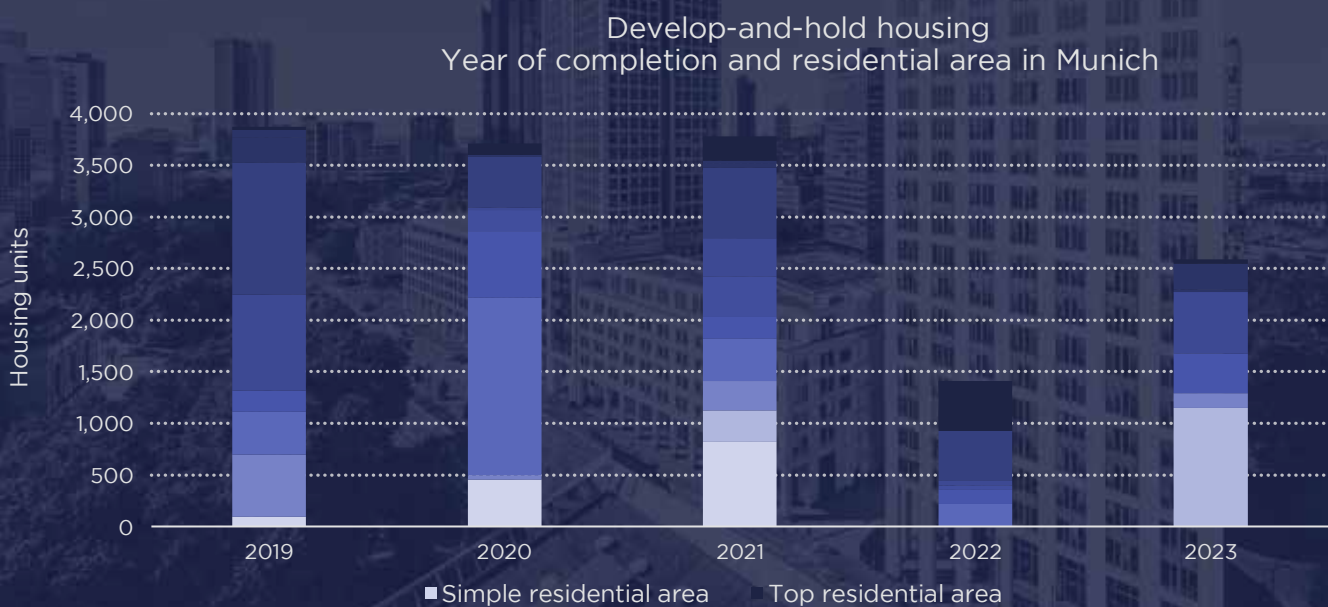
²⁹ Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.



Source: Develop-and-Hold Study by EMPIRA.

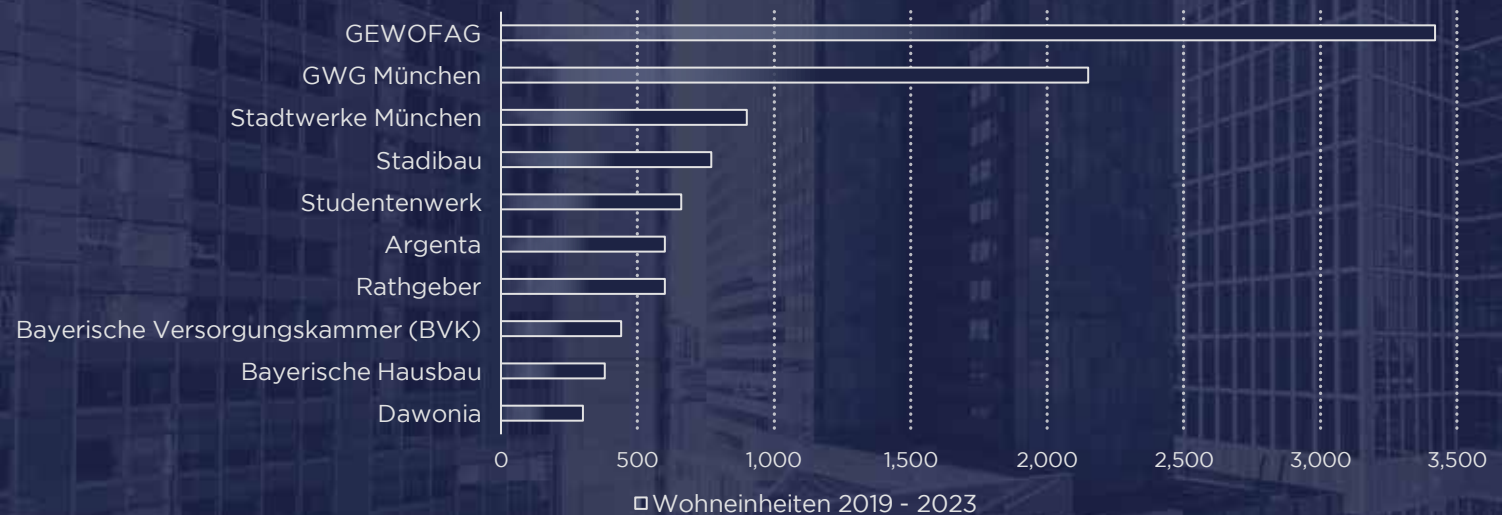
The bulk of the apartments on the Munich develop-and-hold market are being erected by public developers. In this respect there is still a number of apartments in the pipeline. On the part of the private developers, by contrast, there are significantly fewer apartments

in planning than currently under construction. The main focus of the completion schedules for the analysed projects is on the years 2019 to 2021. Thereafter the current planning will decline somewhat.



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Munich



Source: Develop-and-Hold Study by EMPIRA.

The city-owned GEWOFAG Holding, which takes second place in the ranking across all A-cities, will complete approx. 3,400 housing units in Munich in the years 2019 to 2023. The largest project is the Prinz Eugen Park development, the bulk of which is already under construction. Here alone some 700 apartments are to be erected. Just like GEWOFAG, GWG is also a subsidiary of the City of Munich. Together with the utilities company Stadtwerke München, another city-owned subsidiary, the top 3 are developing approx. 6,500 apartments. Together with companies owned

by the Free State of Bavaria (Stadibau, BVK), the ranking is thus clearly dominated by public developers. Moreover, private investors are also active on the market, e.g. Argenta (Parkstadt Schwabing), Rathgeber AG (Meiller Gärten), Bayerische Hausbau (among other things on the partial area Welfenstrasse with the Wohnen am Nockherberg project), as well as the Patrizia subsidiary Dawonia (formerly GBW-Gruppe). Münchner Studentenwerk occupies sixth position in the ranking, as this developer implements a comparatively large number of housing units per square metre.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Munich



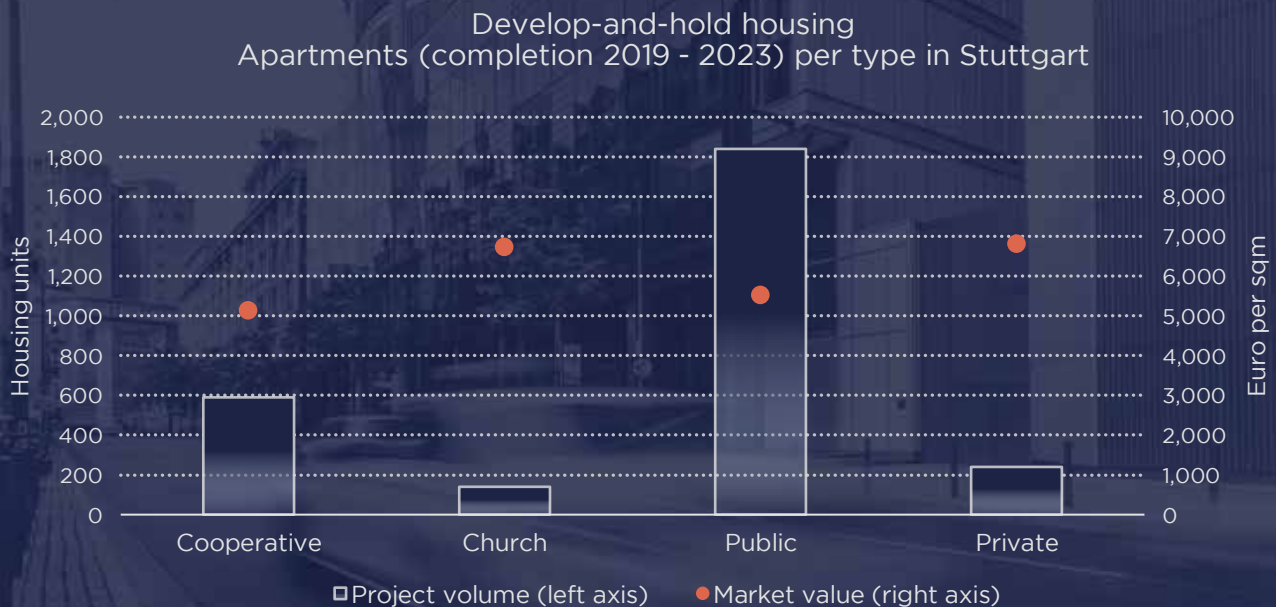
Source: Develop-and-Hold Study by EMPIRA.

2.2.7 Stuttgart

In Stuttgart, the capital of the federal state of Baden-Württemberg and the smallest of the A-cities, a total of 2,900 housing units are being completed as develop-and-hold projects between 2019 and 2023. This is the lowest of the figures for the seven A-cities by far. With 0.34 square metres per inhabitant it is also the lowest figure among the A-cities in relative terms. This fits in with the image of Stuttgart, which only has a limited potential amount of building land available due to its setting in a circular valley. The market will see a further 4,100 apartments as trading-development projects³⁰. Thus in the coming years

Stuttgart will see the creation of just under 1,400 housing units per annum, 41% of which will be in develop-and-hold projects. The official planning permission statistics for the past four years show approx. 1,900 apartments per annum³¹.

This contrasts with an annual need for 2,300 housing units in Stuttgart³². Thus the current foreseeable offering in Stuttgart fails to meet demand in quantitative terms. Additionally, the quality of the projects does not serve all the partial segments, with the effect that there will continue to be a deficit in supply here.



Source: Develop-and-Hold Study by EMPIRA.

Public-sector housing companies dominate in Stuttgart. In concrete terms the main company is Stuttgarter Wohnungs- und Städtebaugesellschaft mbH (SWSG). The other developers

are housing cooperatives, companies connected to churches, private developers, and as an additional publicly-owned company, Studentenwerk. The develop-and-hold market

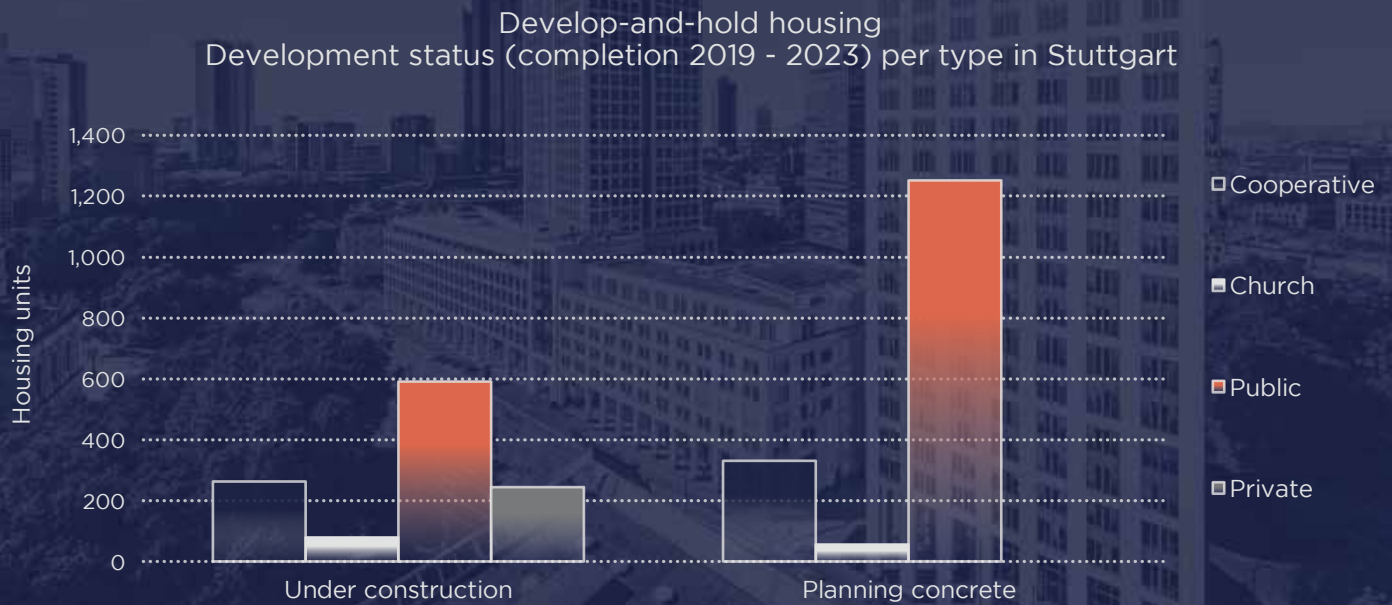
³⁰ Source: bulwiengesa Project Developer Study 2019.

³¹ Source: Landesämter für Statistik, here approvals for apartments incl. measures in the portfolio 2014 to 2017.

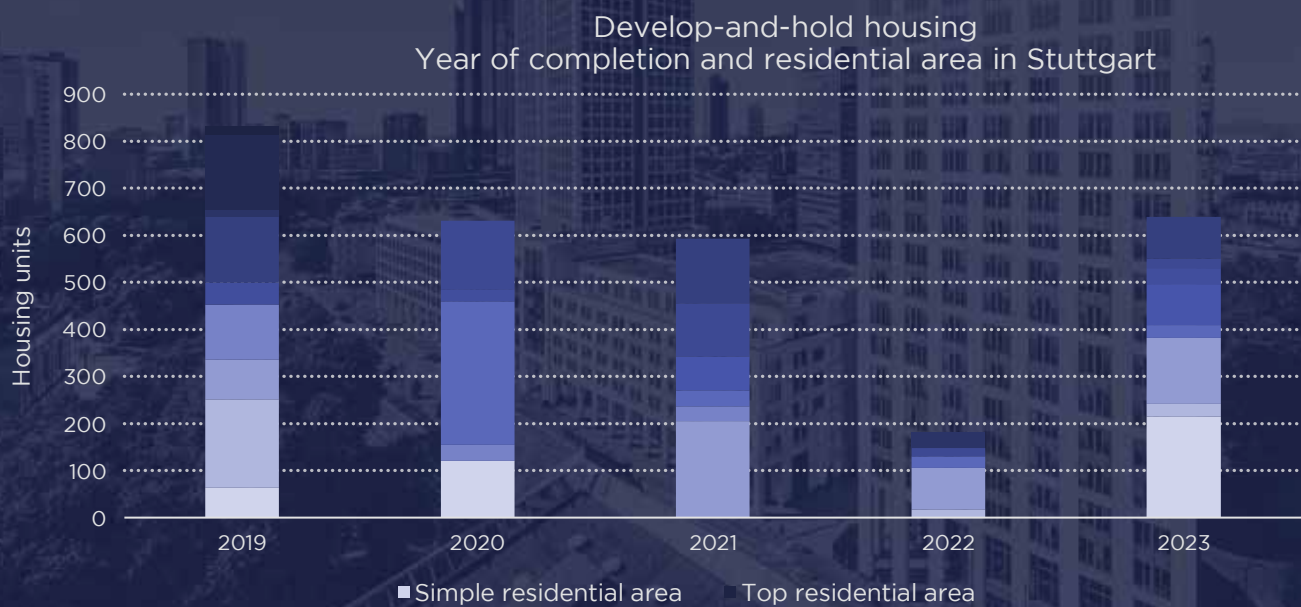
³² Source: Apartments requirements prognosis bulwiengesa AG, spring 2019, here replacement/additional requirements annual average across all 7 A-cities 2019 to 2023.

in Stuttgart is so small that it was not possible to define more than 10 developers in the analysis. Private developers scarcely play any role at all. The generally high rent and price levels are also reflected in the market values. At 6,000 euro/sqm the theoretical market values of the

public developers in Stuttgart are thus higher than the highest market value level in Berlin. 57% of the to-hold apartments in Stuttgart are still in the planning stage. This pipeline is mainly the responsibility of public developers and the housing cooperatives.

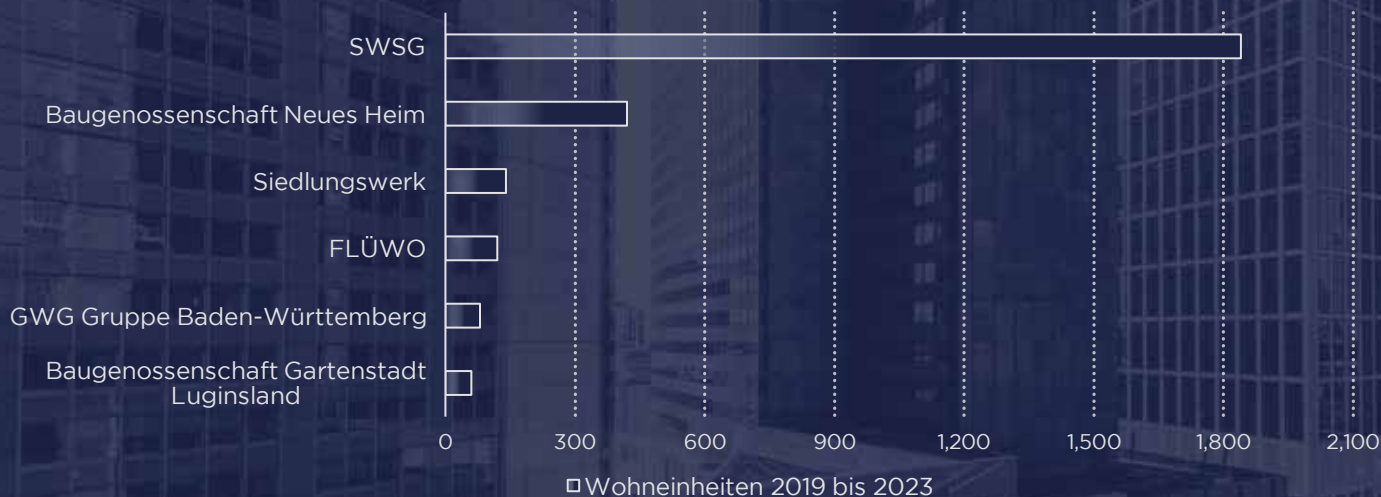


Source: Develop-and-Hold Study by EMPIRA.



Source: Develop-and-Hold Study by EMPIRA.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Stuttgart



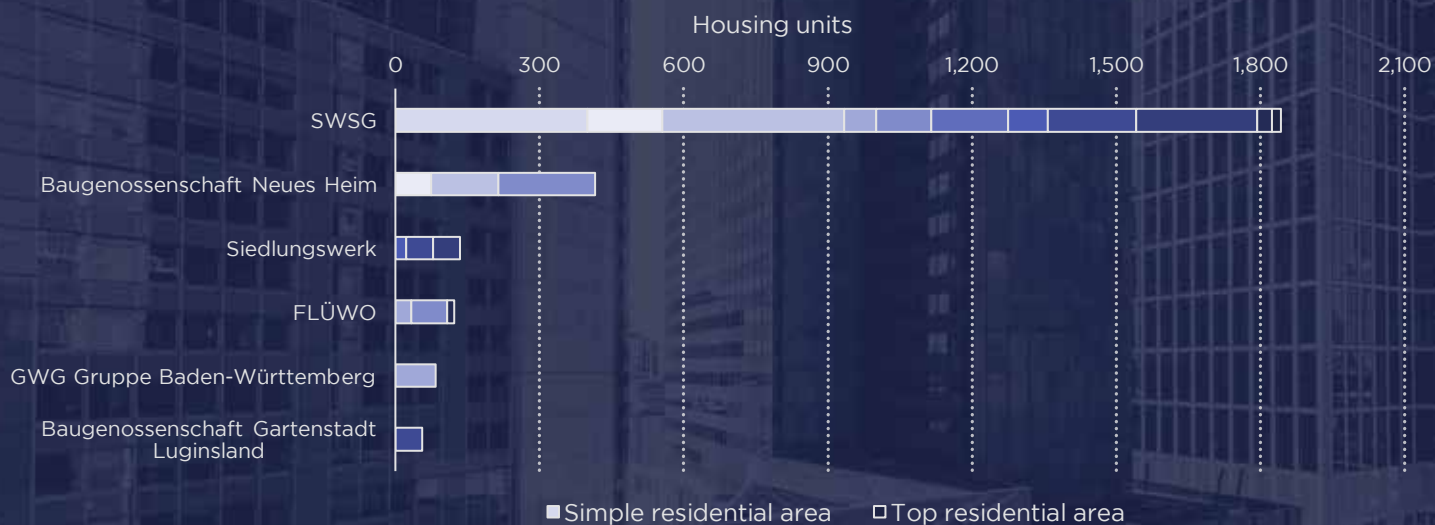
Source: Develop-and-Hold Study by EMPIRA.

The Stuttgart develop-and-hold residential market is relatively straightforward. The leading developer in the ranking by far for the period under consideration is Stuttgarter Wohnungs- und Städtebaugesellschaft mbH (SWSG).

There are three cooperatives among the top players – the housing cooperative Neues Heim (two projects are currently still under construc-

tion, the third and largest project, 200 housing units, is still in the planning phase), and the two cooperatives FLÜWO and Gartenstadt Luginsland. Among the other actors in the top 10 are the church-run non-profit organisation Siedlungswerk. A private owner of a housing portfolio is GWG Gruppe Baden-Württemberg, which is active on the market with six separate construction projects.

Develop-and-hold housing Top actors by apartments (completion 2019 - 2023) in Stuttgart



Source: Develop-and-Hold Study by EMPIRA.

CHAPTER 2 – FOCUS TOPIC

Lending on land values in the develop-and-hold context

In part with information provided by
Willibald Rödiger, Director Risk Office Real Estate & Leasing
Bayerische Landesbank

The land values in German cities are one of the key factors for project developments and thus also increasingly a restrictive factor. Following the economic and financial crisis in 2008, land prices for apartment buildings in Berlin for example have increased by more than 800% through to 2018.

Accordingly, a figure of 30% and more for the ratio of the land value to the overall price of a new real estate construction is customary for virtually all urban locations in the meantime. In Munich – by far the most expensive German city in real estate terms – a land value share of as much as 50% is surpassed in most cases. Thus the land issue is of corresponding significance in the project costing, for the long-term investment horizon and the financing.

The massive increase in land values also has serious consequences in terms of urban development. With the rising market values for land in the conurbations, social urban development measures in housing construction (social and price-subdued housing) and also in the development of commerce and industry (housing-related skilled trades and services) are increasingly being called into question.

One task for central government and local authorities in terms of building regulations is maintaining the scope to influence social policy and prevent unbridled land speculation. Viewed in the long term, therefore, are land values more “real” and less fraught with risk in more sustainable portfolio ownership that focuses less on land trading?

The key questions are:

1. Can actors with a develop-and-hold strategy use other financing conditions and accounting rules as a basis compared to developers whose business models revolve around the later sale of the project?
2. Is the land value of a development measure – current or future – perhaps treated and assessed differently depending on the type of project development?

Based on the project development risk with a possible loan default, which has to be evaluated comprehensively and in a very differentiated manner, the borrowing costs are not only dependent on the construction project itself, but generally speaking on the creditworthiness of the borrower. In this respect companies – and in particular those with a long-standing relationship with their “principal bank” or a shareholder base that does not comprise private individuals – are at an advantage, something which is reflected in better interest rate conditions (regress/recourse and applicable interest rate). In particular companies owned by public corporations, which have to date had a strong influence on the develop-and-hold concept, enjoy a high degree of creditworthiness per se.

At Bayerische Landesbank the valuations of the in-company, certified LB ImmoWert are authoritative for all lending activities. Although there is currently discussion in the risk analysis – beyond standardised real estate valuations therefore – whether the fundamental structure

Basic factors for optimisation potential
of financing conditions for develop-and-hold actors

| | | CREDITWORTHINESS OF BORROWER | |
|--|--------------------------------|--|--|
| | | Average | High |
| DURATION OF PROJECT DE- VELOPMENT PROCESS | Average | Moderate possibility of optimisation of financing conditions | Highest possibility of optimisation of financing conditions |
| | Of above- average length | Lowest possibility of optimisation of financing conditions | Moderate possibility of optimisation of financing conditions |

Source: bulwiengesa on the basis of meetings with experts.

of the development process could have any impact, to date the creditworthiness of the borrower has played a much greater role as an attribute for the conditions than the question of the various development styles.

The duration of the entire project development process and the exact measure to be financed – for example merely the construction or the entire process from building land improvement through to marketing – also impacts on the design and formulation of the financing conditions.

A correlation between land value and development styles has so far only been ascertained with land sales by public authorities in the form of a “concept quality award”. In Munich, for instance, large-scale development areas such as the former Prinz Eugen barracks can

only be awarded to selected developers in line with the principle of awarding public land on the basis of the concept quality. Many other cities have also adopted this practice, with the effect that ever-greater regulation of the land market can be expected in the coming years. The ever-greater weighting of a differentiated land value will be taken into account at credit institutions when establishing conditions in the future.

It becomes clear that, with the focus on credit risks in the current market situation, large real estate project developers with excellent creditworthiness can claim an advantage when borrowing capital and that the develop-and-hold actors can extend their already increasing market share and have a mitigating impact on the land markets in German cities.

CHAPTER 3

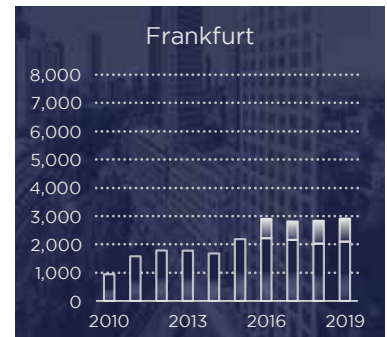
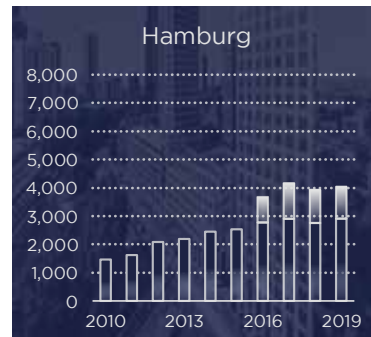
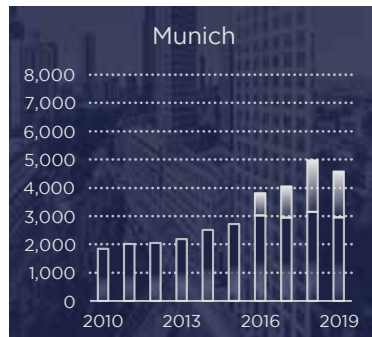
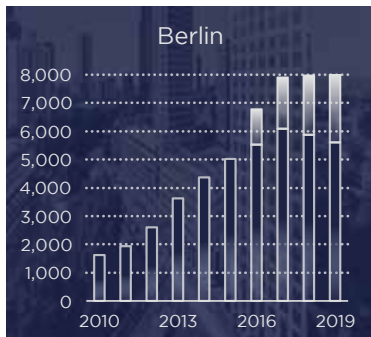
Outlook for develop-and-hold in German housing construction

Despite the extremely friendly investment climate on the German market for housing construction project developments, the trader-developers have not been able to expand their capacities for some years now. At the same time, in spite of high demand for apartments, as well as constantly rising prices and rents in the urban housing markets, land prices and construction costs have risen so sharply that it has become more difficult to attain an entrepreneurial profit, and ultimately the risks have predominated in more and more planning scenarios.

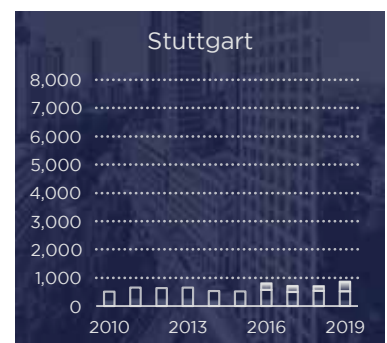
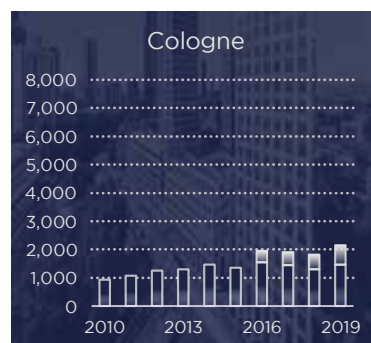
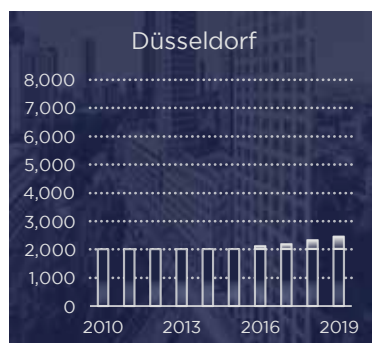
In this situation various groups of actors with a develop-and-hold strategy have already been able to secure market shares in urban hou-

sing construction. In particular Berlin, Hamburg and Munich have been able to maintain or even increase notable volumes and market shares with their construction activities in the “develop-and-hold” sector in the three years analysed to date. In 2018 the develop-and-hold share was 34% in Berlin and 35% in Munich.

In a city comparison Frankfurt (Main) is a discernible growth market for develop-and-hold in the medium term. Nevertheless, new private develop-and-hold actors are also likely to continue looking to Berlin, Hamburg and Munich as investment targets. In these cities it is above all planning policy and land availability which could check or accelerate this trend.



Source: bulwiengesa Project Developer Study 2019
Note: the figures on the investor-development market for 2016 are still indicative.



EMPIRA and bulwiengesa assume that in the eurozone the ongoing market environment with its low interest rates will mean that demand for real estate investments remains high. Socio-political solutions which seek a balance between free market forces – above all on the urban land markets – and social and macroeconomic objectives are gaining in significance. Such solutions undoubtedly also include more binding partnerships between long-term urban planning concepts and real estate and quarter owners acting in a sustainable manner and who are supplementing their portfolios as needed with new construction projects. In this context the develop-and-hold concept is undoubtedly at an advantage over the traditional construction client and trader-developer, because with all actors – be these municipal public-sector companies, cooperatives or institutional-private investors – it is based on more long-term investment and risk structures.

Several factors, such as German monopoly rights, a real estate market which generally displays cyclical tendencies or the advancing industrialisation and digitalisation of the construction process are likely to continue bolstering the more agile and more flexible culture of trading-development.

In addition to German planning legislation, it is above all the financing conditions described in Chapter 2, greater regulation of the awarding of land owned by public bodies and a high-

her volume of price-maintained apartments, however, which are the key to deeper implementation of the develop-and-hold concept in German urban development and housing construction.

The current trend of growth among the private develop-and-hold players, such as Deutsche Wohnen and Vonovia, will also continue in the coming years. Such companies can tap sufficient potential through urban re-densification on their plots of land, for example. In contrast, the stagnation of the public developers is more likely to be amplified, as their customary procedures can hinder the swift implementation of projects. A typical example of this is the somewhat long-winded and cumbersome tendering procedure for the public developers. In the meantime many a construction company no longer participates in such procedures in the current market environment, instead using the considerable demand for construction capacities on the free market for swift, flexible and attractively-priced orders.

According to estimates by bulwiengesa, in the coming years the develop-and-hold volume will grow to a level of around 40 billion euros (in a period of five years with construction and planning) and the market share will increase to the detriment of trader-developers.

GLOSSARY AND EXPLANATIONS

Research and universal set of this analysis

In the first Develop-and-Hold Study by EMPIRA the volume of the develop-and-hold housing project developments in the seven A-cities is identified and evaluated.

The universal set for the data analysed in this study is as follows: All of the projects in the required data set which may be researched

- with completion in the years 2019 to 2023,
- with an address within the A-cities (clearly demarcated by municipalities),
- with project land owned by the ranked company,
- which are in concrete planning or already being implemented,
- with a living space of at least 1,000 sqm,
- which are at least a comprehensive refurbishment (not a so-called superficial renovation/pseudo retrofit, not a refurbishment while building is still occupied).

bulwiengesa uses various sources to research the projects and the respective developers, the planned project areas, the development status and construction period, the location and project name, and ultimately also the expected project strategy (trading-development or develop-and-hold).

The developers with a minimum living space of 5,000 sqm in development were allocated to the company types public, private, cooperative, church or social especially for this Develop-and-Hold Study by EMPIRA. All other developers with a smaller project area, as well as all projects whose developers are not known or are not 100% identifiable, are included in this study under the developer type "Other".

In addition, the living spaces of the projects were recorded or calculated specially for this Develop-and-Hold Study by EMPIRA.

The cut-off date for the above definition is 31.12.2018.

Meaningfulness of this analysis

With this definition of the universal set and the cut-off date the study offers a very good overview of the market for develop-and-hold project developments in Germany. This strict approach allowed for the creation of a valid data basis. Nevertheless, the following points should be borne in mind in the interpretation:

- Not included in the study are residential projects of less than 1,000 sqm, which are generally initiated by smaller project developers, construction clients or private individuals.
- A clear differentiation between trading-development and develop-and-hold is not always possible at project level. New information, yet also strategy changes at project/corporate level make such a classification fluid.

- The definition of the refurbishment projects taken into consideration excludes so-called superficial renovations/pseudo retrofits or refurbishment without any major changes in the construction quality.
- For the purposes of gathering data the necessary clear demarcation by municipalities “crops” the functional residential markets in some A-cities.

How are the projects allocated in the ranking?

In the ranking the projects were allocated to the developers as follows:

- Fundamentally exclusively all projects with a develop-and-hold strategy which fulfil the above criteria were taken into account here.
- The relevant unit for the ranking are the housing units.
- With a joint venture the housing units are allocated equally or insofar as known another distribution to the respective developer is used for the ranking.
- Some developers have been combined and assessed in the ranking under a group of companies.
- The important factor is: the plot of land has to be owned by the ranked company.

Classification of the locations

The 127 RIWIS locations have been sub-divided into four classes by bulwiengesa in line with their functional significance for the international, national, regional and local real estate markets.

- A-cities: The most important German centres of national and in part international significance. Large, functioning markets in all segments. E.g.: available office space (gross floor area) of more than 5 million sqm, average take-up of more than 100,000 sqm over many years.
- B-cities: Large towns of national and regional significance. E.g.: available office space of 1.5 to 4 million sqm, take-up of more than 35,000 sqm.
- C-cities: Important German towns of regional and limited national significance, of less significance, with a key impact for the surrounding region.
- D-cities: Small location with a regional focus and a key function for their immediate environs, lower market volumes and take-up.

Definition of trading-development

Projects are regarded as trading-development if a project developer functions as an intermediate investor for project developments from the purchase of a plot of land (possibly also the purchase of an ongoing project) through to completion with the objective of marketing the project. In this respect the projects are developed at its own risk and for its own account.

Definition of develop-and-hold

In the case of projects with a develop-and-hold strategy a company functions as an intermediate and end investor for its (own) project developments from the purchase of a plot of land through to completion with the objective of retaining the project for its own portfolio. In this respect the projects are developed at its own risk and for its own account with the intention of keeping the project in its portfolio.

Definition of service-development

Companies are regarded as service-developers if they are active as a service provider for concept development, consulting, management and marketing services. These companies conduct developments at the risk of and for the account of third parties and can serve trading-developers and investor-developers. Information on service-development actors and projects are not analysed in the study.

Lack of definition in the allocation

With the increase in the frequency of so-called forward deals, and also with the increase in the depth of research, the question of the respective project strategy can now no longer be answered generally. Ultimately it is a question of the risk allocation in the project phase. Through the exchange of data with the project developers in the course of the bulwiengesa Project Developer Study the strategy allocation can be clarified quite well in the meantime. Nevertheless, a certain lack of definition is always to be expected, if only because such project strategies can change daily, both at project level and at the overall corporate level.

Explanations on the methodology theoretical market value model

For each of the analysed housing construction projects a theoretical market value is determined for 2019 and for the planned year of completion. This is based on the available information on the project size (with regard to the living space in sqm), a market rent for newly-constructed apartments derived from the residential location and the gross multiplier for newly-constructed apartments:

Input variables: Project size and year of completion

The project size and the respective year of completion for the residential housing project are the result of an intensive research process, which combines bulwiengesa's desk research methods and a comparison of this information with the respective developer.

Input variable: residential area quality

The residential area quality is an important parameter for land and apartment prices, as well as the local rent levels. In this respect information on the integration in urban planning terms, the sociodemographic environment and criteria specific to real estate are included in the model used to calculate residential location quality. These include:

- Desirability (volume of people moving into the area from further afield),
- Geographic embedding (proximity to parks and greened areas, distance from industrial areas),
- Building structure (apartment sizes new construction/portfolio),
- Population composition in the residential area (social status),
- Microm status variables (dominant milieus, typology, payment index).

There is differentiation between the following four main categories:

- Very good residential area: particularly prestigious locations and areas with expensive villas close to city centres, as well as particularly sought-after residential areas
- Good residential area: residential areas which have traditionally been popular, typical urban “trendy districts”, quiet residential areas with adequate to good infrastructure and a positive image
- Average residential area: areas without the drawbacks of simple residential areas and the benefits of good areas
- Simple residential area: remote residential districts with predominantly compact, dense housing, inadequate infrastructure and/or proximity to larger business parks, industrial areas or heavily frequented transport axes

There are also intermediate categories between these main categories.

The residential areas are available as information at both city block and urban district level. For city blocks without residential use, with predominantly commercial use, with fewer than five households and/or a park/greened area proportion > 80%, no residential area is designated. For the final derivation of the residential area quality the mean value of the residential area quality at city block and urban district level is chosen. In those cases in which there is no available residential area quality at city block level (for example with the development of new quarters) the value for the residential area quality of the urban district is used. In this study the resulting residential area qualities are applicable when deriving the customary benchmarks for new construction rents and multipliers.

Input variable: Market rent

The market rent for new housing developments is derived from the definition as used in bulwiengesa’s own database RIWIS:

“Apartment rents are stated for first occupation (new construction and

retrofit) and re-letting in euro/sqm of living space and apply ideally to an apartment with three rooms and with approx. 65-95 sqm of living space and standard facilities and fittings. As the fittings and size are standardised, the price range for rents fundamentally represents a variable which is influenced by the location and/or the micro-location. The stated rents are nominal values. Rents are recorded exclusive of ancillary costs and without taking into account other possible perks. Minimum, maximum and average values are stated for first occupation and re-occupation in each case. Minimum and maximum rents encompass the lowest and highest 3-5% of the market, from which a mean value is then derived. They do not correspond to the absolute top rents (defined as outliers). Average rents represent the mean value across the defined overall market.”

This range of market rents at partial area level is interpolated on the residential areas.

Input variable: Multiplier

The gross multiplier is based on the customary market definition as it is also used in bulwiengesa's own RIWIS database. Accordingly the multiplier corresponds to the inverse value of the gross initial yield.

“Gross initial yields are understood to be the ratio of the incoming rental income to the purchase price, without taking into account incidental costs (maintenance, incidental purchase costs, taxes and costs which clearly cannot be recovered from other persons). The rent is the rent which can be attained in the first year (viewed as of the point in time of the purchase). The multiplier is applicable to a purely residential property, approx. 20 years (old), at least six tenants, no package sales, no first occupation/complete refurbishment. As the fittings and sizes are standardised, the price range for rents is fundamentally represents a variable which is influenced by the location and/or the micro-location. Minimum, maximum and average values are stated. Minimum and maximum values encompass the lowest and highest 3-5% of the market, from which a mean value is then derived. They do not correspond to the absolute top multipliers (defined as outliers). The average multiplier represents the mean value across the defined overall market.”

This range of multipliers at partial area level is interpolated on the residential areas.

The derivation of multipliers for newly-constructed residential properties is conducted by adding three years' rent to the respective multiplier for existing residential properties.

Manual adjustment with apartment projects

In the case of projects with average apartment sizes of less than 40 sqm of living space the initial calculated market rent is adjusted to take into

account the customary significantly higher rent per square metre.

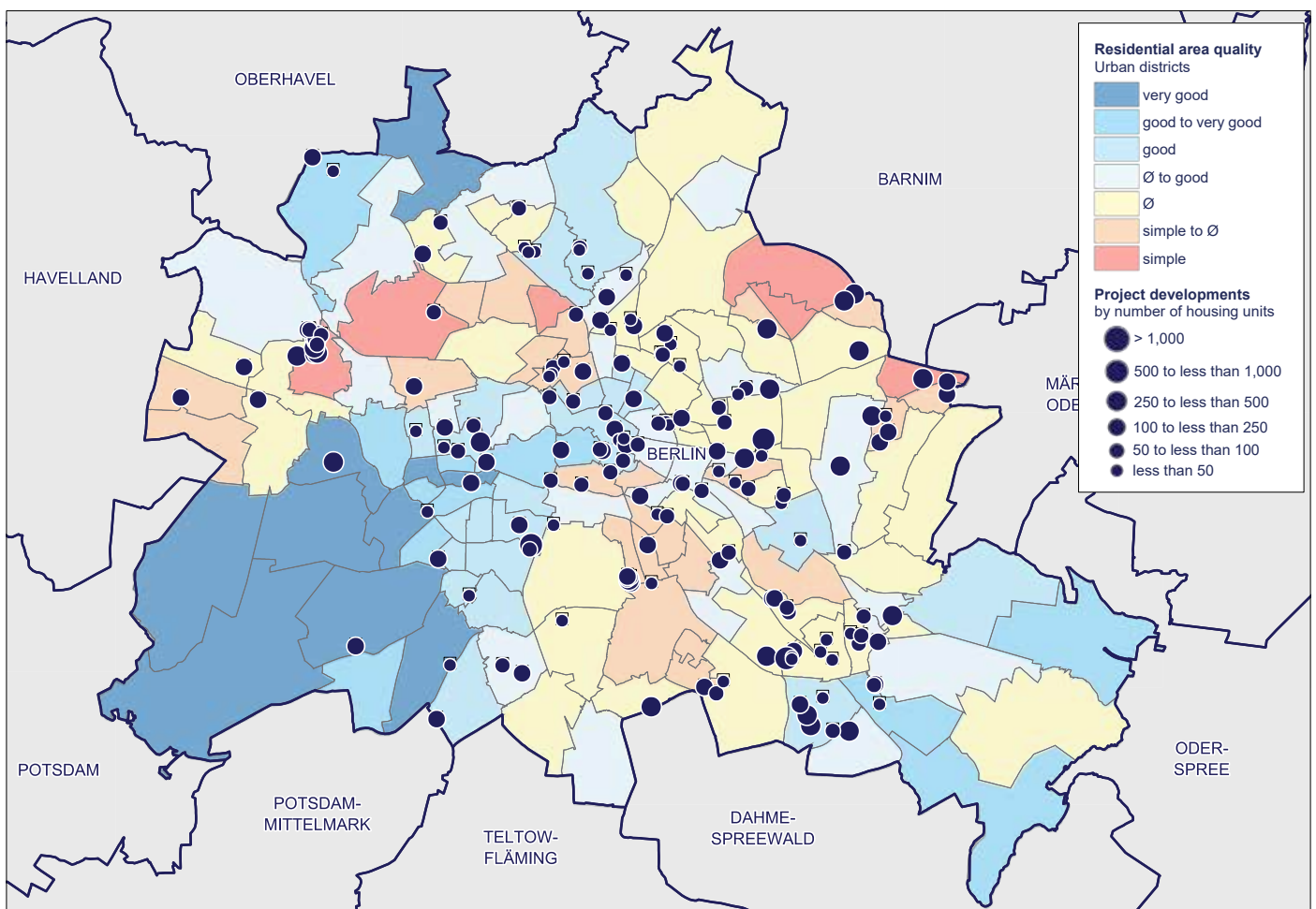
Result: Theoretical market value per housing construction project

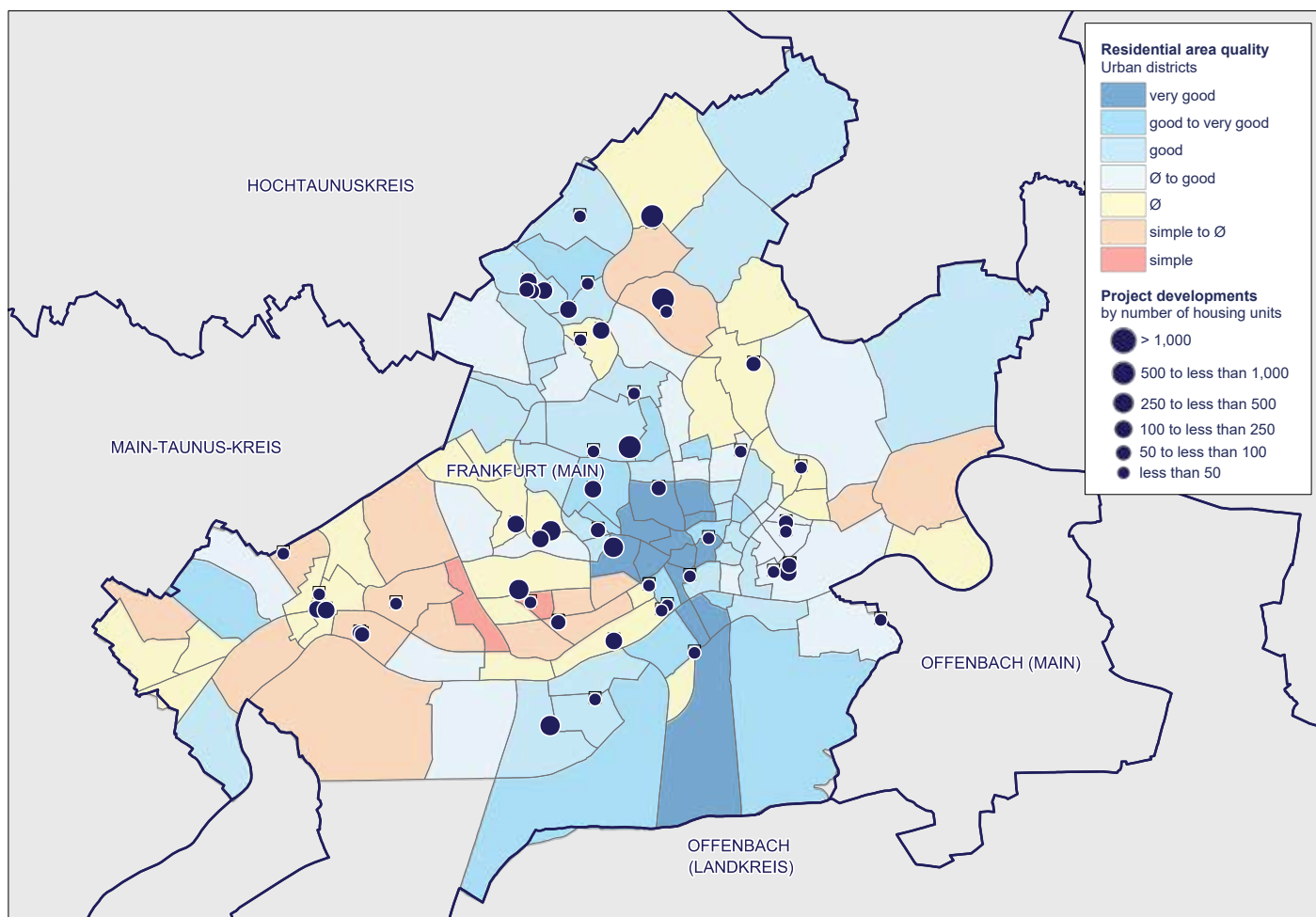
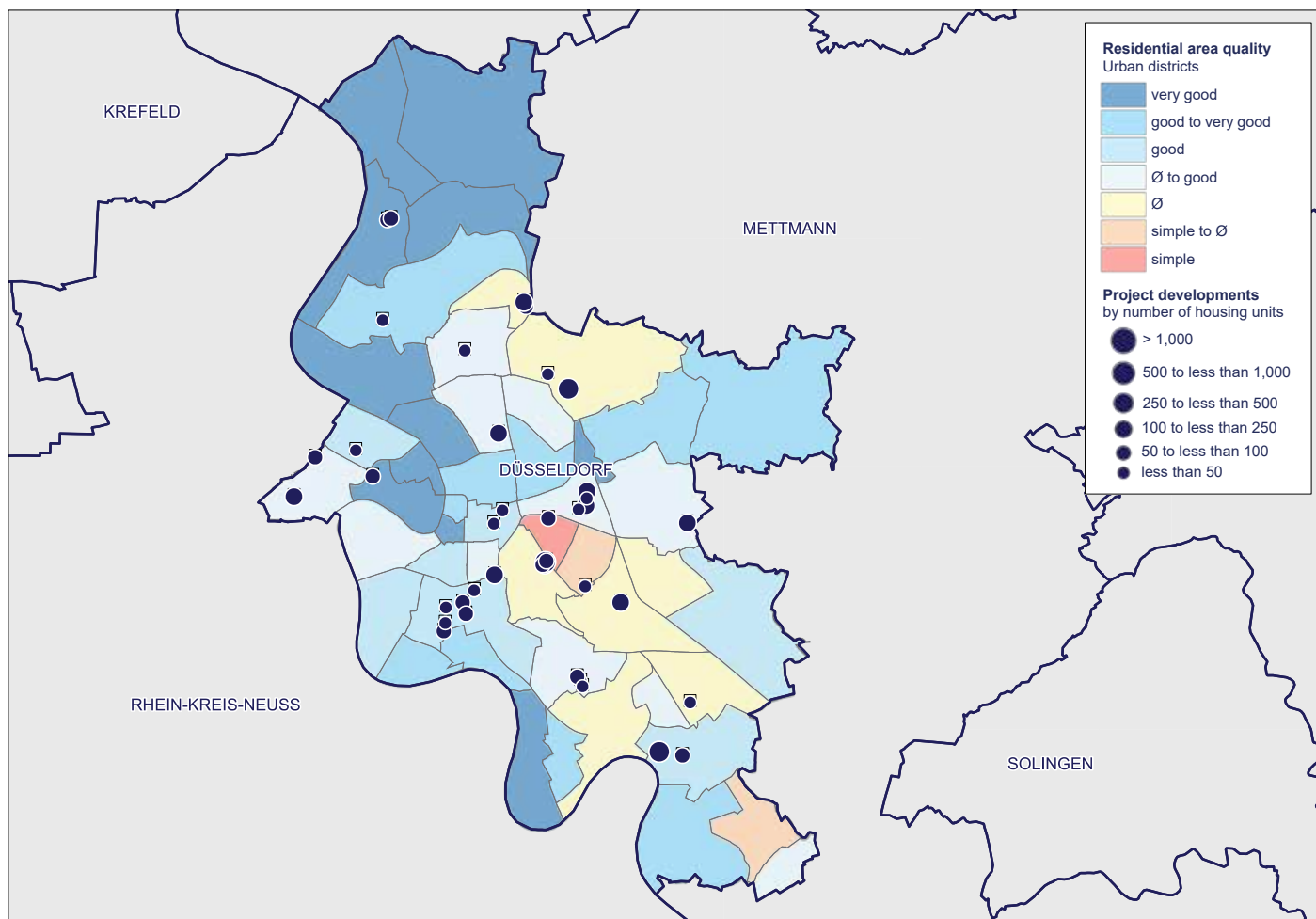
As a result of the above approach, for each analysed housing construction project there is a theoretical market value for 2019 and for the respective year of completion.

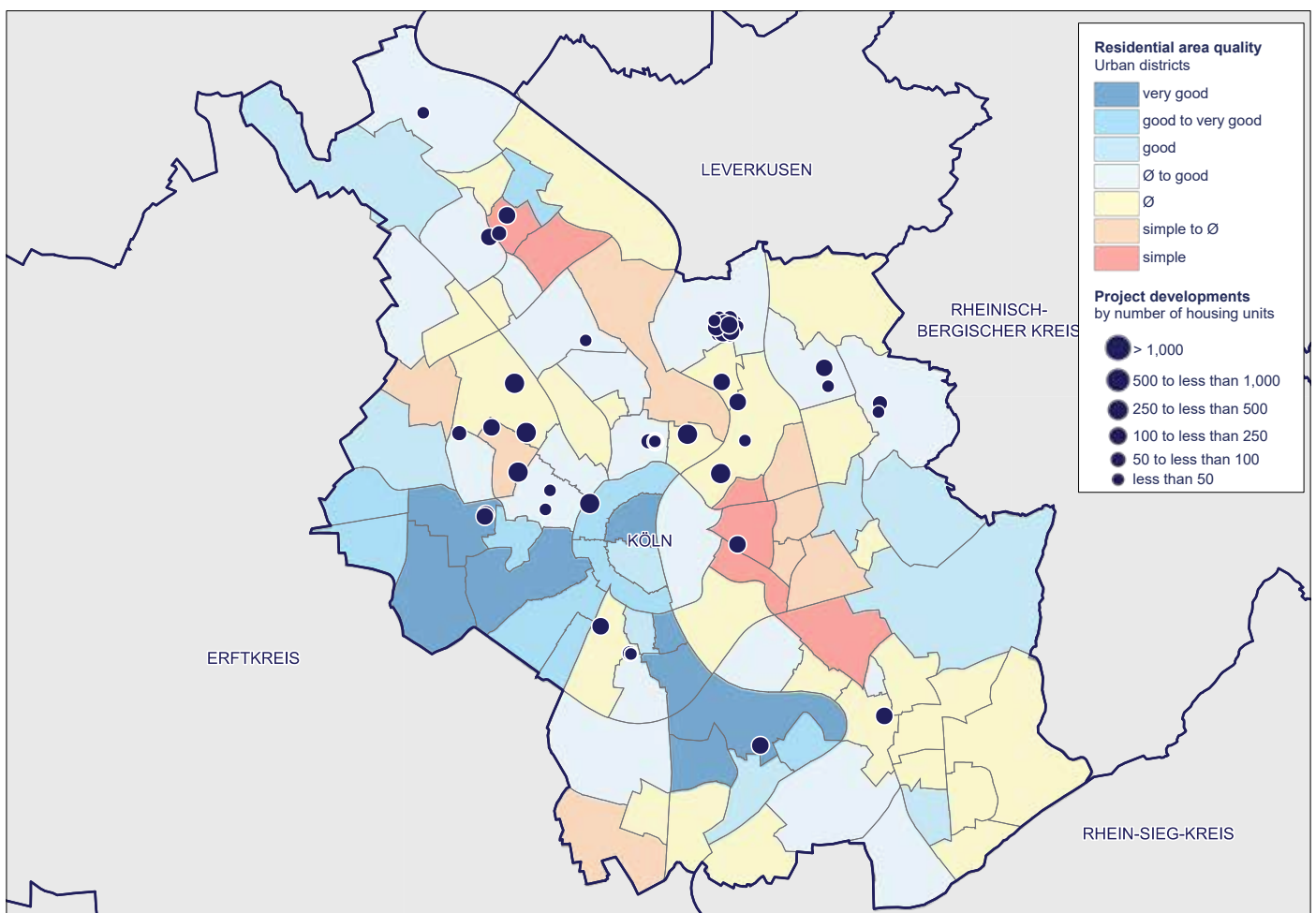
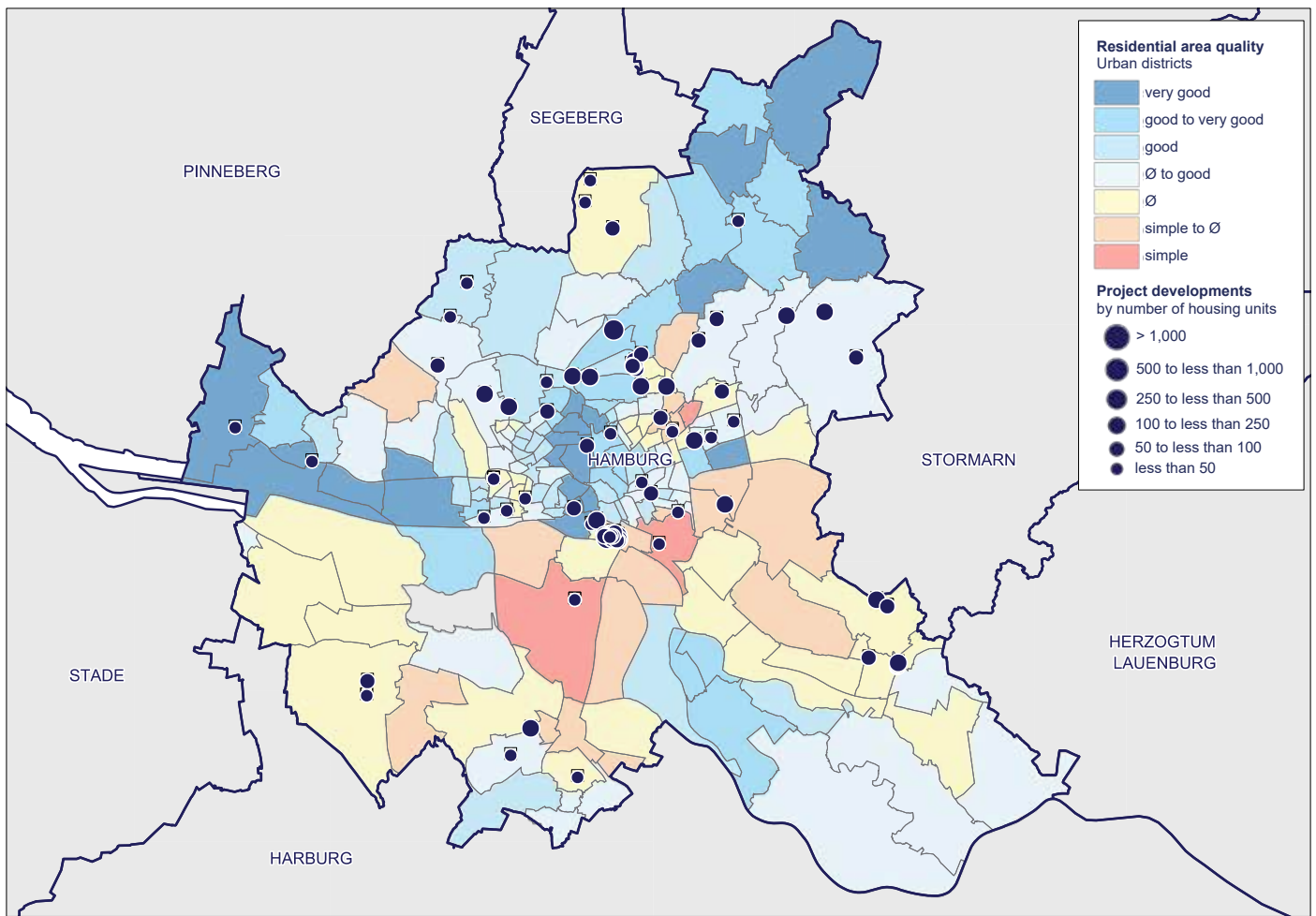
Please note: as the input variables are classical parameters for non-subsidised new housing construction, this theoretical market value may not be equated with a company-specific capitalised value or the like.

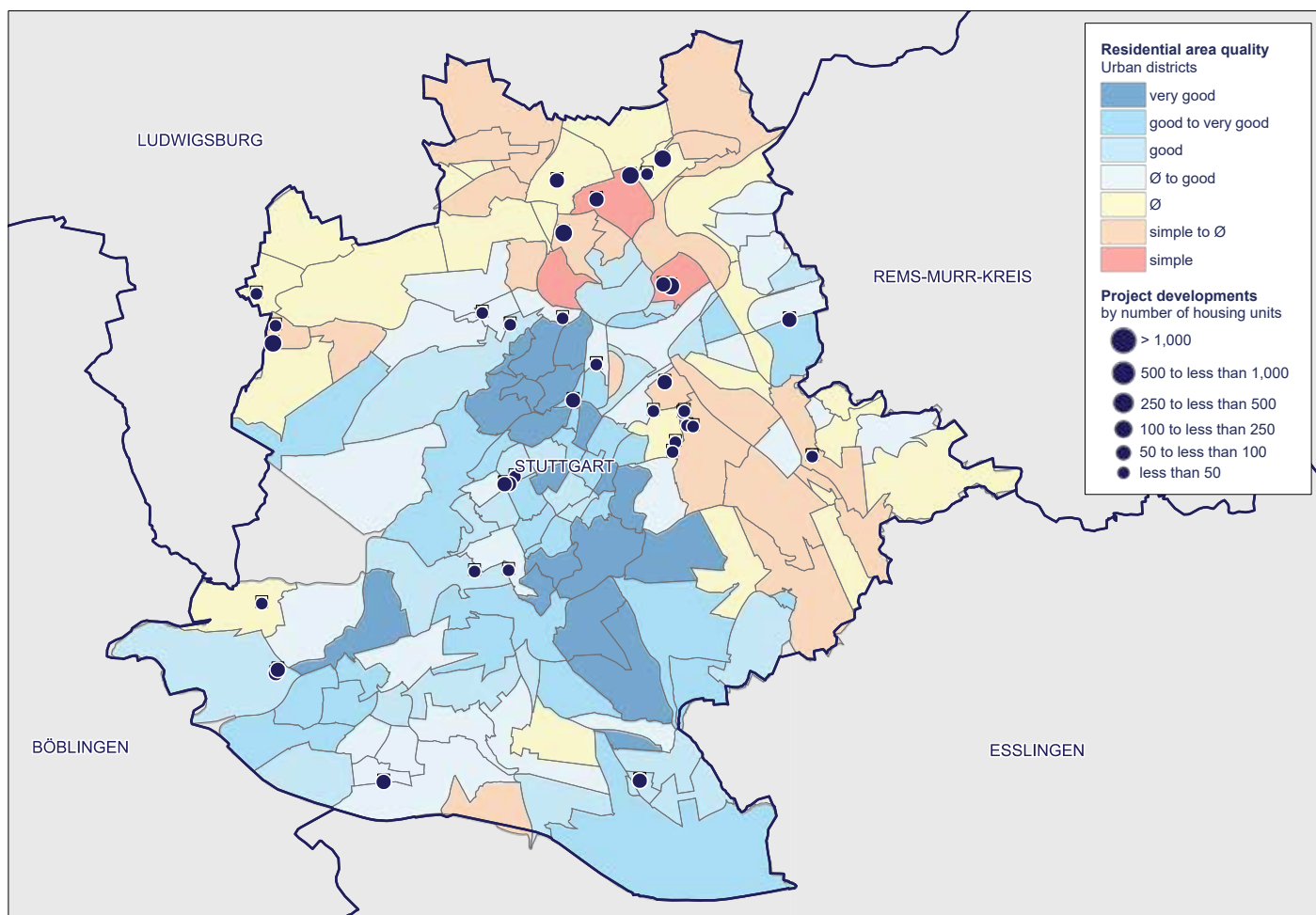
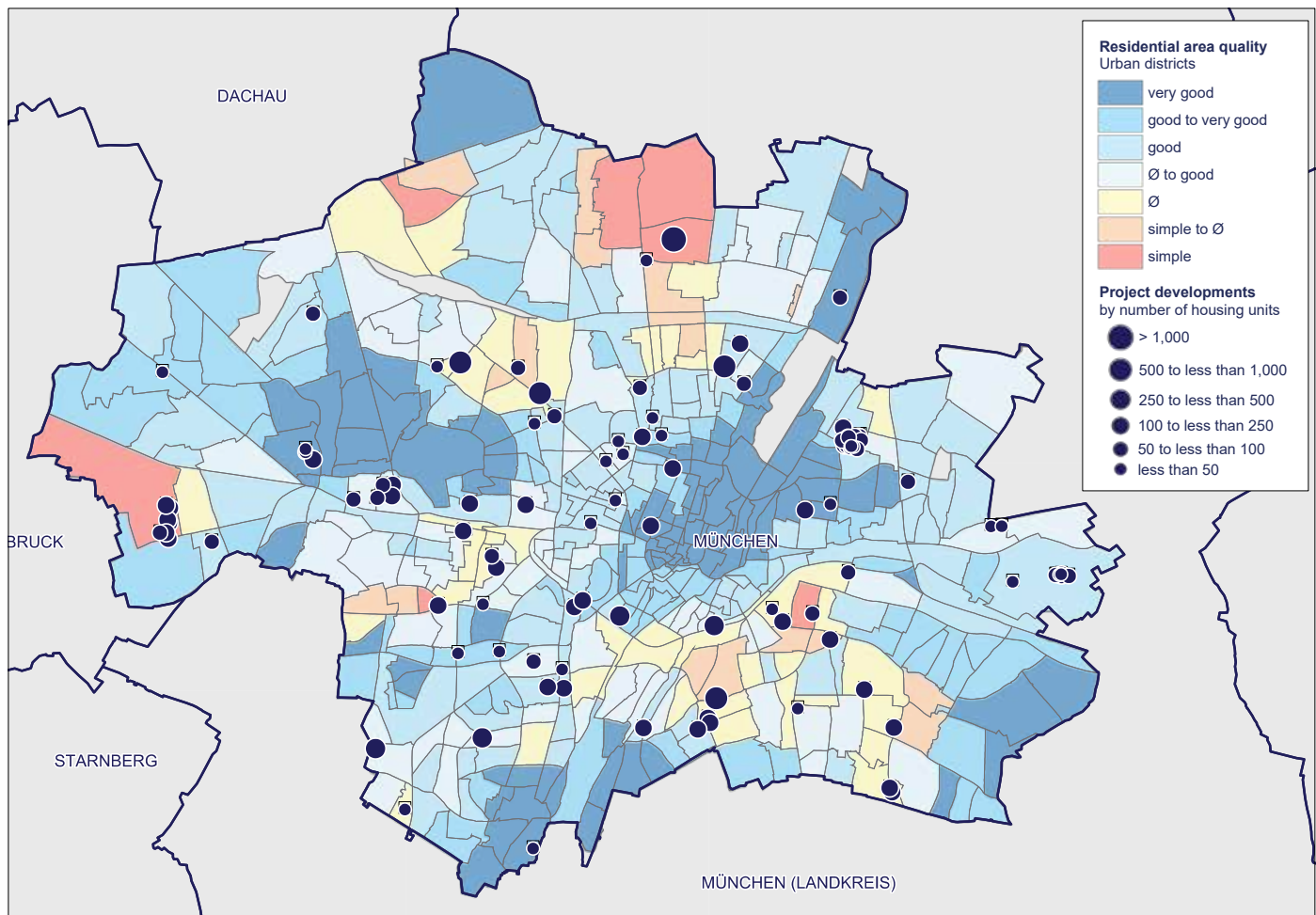
Residential area quality and project development of all seven A-cities

- Berlin
- Düsseldorf
- Frankfurt (Main)
- Hamburg
- Cologne
- Munich
- Stuttgart











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