SKYSCRAPER IN FRANKFURT
A TRANSFORMING MARKET

As a financial and service center, Frankfurt am Main is the only major German city to display impressive high-rise buildings that make up its characteristic skyline. These high-rises, some of which are among Germany’s tallest buildings, are meanwhile part and parcel of the cityscape and their attractive office, hotel and residential space is in high demand among occupiers.

Despite their significance for the real estate market, Frankfurt’s office towers have to date not been sufficiently analysed with regard to their special characteristics, features and their supply structure. After all, skyscrapers appeal to particular target groups, traditionally generate the highest rents on the market and function as representative landmark buildings in central locations of the city. As a result of the increasing shortage of space, more and more new developments are dependent on both city planning and general economic conditions.

With SKYSCRAPER Expert, Colliers International has conducted an in-depth analysis of Frankfurt’s office towers as cornerstones of the office real estate market. In addition to evaluating key industry structures, vacancy, rental trends and the investment market, this analysis also includes future property development activity. All high-rises with office use in central locations* and a height of above 60 metres are included in the analysis, or a total of 39 stock properties and six property developments featuring roughly 1.6 million sq m of office space. This spectrum gives us a precise image of the market.

KEY FACTS
OFFICE HIGH-RISES IN FRANKFURT

<table>
<thead>
<tr>
<th>Fact</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>37%</td>
<td>of office stock</td>
</tr>
<tr>
<td>100,000 sq m</td>
<td>of office space in the highest tower</td>
</tr>
<tr>
<td>€30.70/sq m</td>
<td>weighted average rent</td>
</tr>
<tr>
<td>Almost</td>
<td>€1.5 bn</td>
</tr>
<tr>
<td>4</td>
<td>high-rises are taller than 200 metres</td>
</tr>
<tr>
<td>48%</td>
<td>of all high-rises are owned by foreign investors</td>
</tr>
</tbody>
</table>

*Submarkets Banking District, City, Central Station/Westhafen, Westend
BANKS SET THE TRENDS ON THE MARKET

• The Frankfurt office market is dominated by banks. This is particularly true for high-rises in downtown locations where financial institutions often occupy large-scale, adjoining premises or entire buildings.

• As such, the share of space taken up by banks in Frankfurt’s downtown office skyscrapers is remarkably high. Banks account for roughly 650,000 sq m, or around 50%, of total office take-up. Law firms come in second with a share of just under 14%.

• All eleven of the single-tenant high-rises analysed are occupied by banks or financial advisors, a strong indication of the dominant market position these tenant groups hold. The largest users include DZ Bank and Commerzbank.

• Multi-tenant properties are also primarily occupied by banks. However, the occupier mix here is much more varied, with financial institutions (29%) ranking ahead of legal consultants (21%), although by a small margin.

SUBMARKETS ATTRACT A VARIED TENANT MIX

• The Banking District lives up to its name in terms of the high-rise tenant mix. Banks are by far the most important tenants in the submarket with a market share of well over 50%.

• The adjacent Westend submarket is also in high demand with banks, while the City and Central Station/Westhafen submarkets are dominated by law firms, public administration and associations.

CONSULTING FIRMS PREFER OFFICES WITH GREAT VIEWS

• High-rises offer unobstructed city views in contrast to other office buildings. Law firms particularly seem to prefer offices at lofty heights. They usually look for offices that are at heights above 70 metres or higher than the 15th floor.

• Banks often use open-plan offices on the lower floors of high-rises as customer service areas, making them the dominant tenant group for units below the 15th floor.

• High-rises taller than 150 metres are rare in Frankfurt - only 15 office towers in the city offer space in this segment. In addition to banks and lawyers, management consultants also represent an important demand group for these offices (from floor 36).

CURRENT TRENDS ON THE LEASING MARKET

RECENTLY ENORMOUS VACANCY SHORTAGE

• Vacancy rates for high-rise buildings have dropped significantly due to the high demand for office space in central locations. The reduction in vacancy has accelerated considerably since 2016. Vacancy rates in high-rises have dropped by almost 70% compared to 2013 and by around 60% for the total market.*

• At the end of the first half of 2018, only around 61,000 sq m of high-rise office space was available for immediate tenancy, mostly located in the Banking District. This reflects a vacancy rate of 3.7%.
Historically, prime rents in the Frankfurt office market are achieved in the high-rise segment, mostly for new-builds or revitalised properties. Prime rents have climbed by almost 12% to a current €42.50 per sqm since 2013. The weighted average rent has stabilised since 2016 amounting to €30.70 per sqm in the first half of 2018. That puts asking prices for high-rises roughly 20% above the rents recorded on the market as a whole.

The average rent for high-rise office space is highly dependent on large-scale leases, which is why several contracts signed at lower rents causing a significant drop in 2016.

Banks and Consultants Pay Highest Rents

Legal consultants are more willing to pay higher rents than other sectors, with rents above-average at more than €32.00 per sqm. This can also be attributed to the higher number of leases signed for more expensive offices on higher floors. Financial advisors pay the second-highest average rent, just ahead of banks.

Construction and real estate companies have recently increased their market share considerably, playing an important role in the tenant mix of high-rise buildings. Business centers and coworking providers have established themselves on the market, occupying larger units in high-rise buildings. An average rent of roughly €30.00 per sqm demonstrates the willingness of these tenant groups to pay higher rents.

Rents for Prime Buildings Significantly Higher

The services offered and the high quality of the buildings result in higher office rents in Frankfurt’s high-rises. Office tenants show an increasing willingness to pay more for access to spectacular views, particularly in new buildings. The newest high-rises are posting average rents of just under €35.00 per sqm.

More price-sensitive users looking for relatively affordable high rise office space are finding fewer options in less high-end buildings, paying an average rent of around €24.00 per sqm.

PRIME AND AVERAGE RENTS

<table>
<thead>
<tr>
<th>(IN €/SQ M)</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>H1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime rent high-rises</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
<td>45</td>
</tr>
<tr>
<td>Average rent high-rises</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
<tr>
<td>Average rent total market</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
<td>35</td>
</tr>
</tbody>
</table>

AVERAGE RENTS BY INDUSTRY

<table>
<thead>
<tr>
<th>(IN €/SQ M)</th>
<th>Banking &amp; financial services</th>
<th>Legal consultants</th>
<th>Construction &amp; real estate</th>
<th>Other services</th>
<th>Technology</th>
<th>Media &amp; leisure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime rents</td>
<td>€35.00</td>
<td>€33.00</td>
<td>€35.00</td>
<td>€32.00</td>
<td>€34.00</td>
<td>€30.00</td>
</tr>
<tr>
<td>Average rents</td>
<td>€30.00</td>
<td>€28.00</td>
<td>€28.00</td>
<td>€25.00</td>
<td>€26.00</td>
<td>€24.00</td>
</tr>
</tbody>
</table>

AVERAGE RENT BY BUILDING QUALITY

<table>
<thead>
<tr>
<th>(IN €/SQ M)</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime rents</td>
<td>€35.00</td>
<td>€30.00</td>
<td>€25.00</td>
</tr>
<tr>
<td>Average rents</td>
<td>€30.00</td>
<td>€25.00</td>
<td>€20.00</td>
</tr>
<tr>
<td>Average rent total market</td>
<td>€25.00</td>
<td>€20.00</td>
<td>€15.00</td>
</tr>
</tbody>
</table>

Prime rent high-rises and average rents for prime buildings are calculated based on the top price segment with a 5% share in take-up (not including owner-occupiers) over the past twelve months and indicate the median value based on number of leases signed.

What Role Do Skyscrapers Play as Investment Products?

Prime Yields for High-Rises with Significant Decline

- High-rises shape the investment market in the central Frankfurt submarkets and are popular with both German and foreign investors due to their landmark character and size.
- The market share of Frankfurt office towers has increased considerably over the past couple of years due to a small number of high-volume transactions. Between 2013 and 2017, the average share of the total transaction volume claimed by high-rise buildings came to around 55%. The pipeline is well-stocked and we expect market shares to exceed 60% in 2018 and 2019.
- Due to the high demand for real estate as a safe investment class in a low interest rate environment, prices have started to increase significantly over recent years. Prime yields have decreased accordingly, falling by 165 bps since 2013. Prime yields fell by 100 bps in 2017 alone.
- This trend, however, recently slowed due to the current price level. In H1 2018 prime yields for office towers and multi-storey office buildings were recorded at 3.5%.

Prime yields refer to the (gross) initial yield for top-quality assets with high-end fixtures and fittings in top locations.

Frankfurt Office High-Rises as a Popular Investment Product

- A multiple oversubscription can be observed in numerous sales processes of high-rise buildings. Investors’ investment pressure in the high-rise segment thus encounters a very limited supply and causes a sustained product shortage. Brexit has also contributed to the attractiveness of Frankfurt office towers as an investment product, generating additional demand from foreign investors.
- High-rises shape the market and are achieving above-average prices. In 2017, the average price per sqm for high-rises in central locations exceeded that paid for regular office buildings by almost 50%. Prices paid per sqm for office towers have increased by almost 60% since 2013 due to ongoing high demand.

Ownership Structures of Office High-Rise Buildings

<table>
<thead>
<tr>
<th>(NO. IN %)</th>
<th>Germany</th>
<th>other EMEA-countries</th>
<th>Americas</th>
<th>APAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime yields</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>High-rise prime yields</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
</tr>
<tr>
<td>Transaction volume high-rise</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Transaction volume office</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Transaction Volume / Number of Deals and Prime Yields

Office Towers / Office Properties (IN €BN / %)

<table>
<thead>
<tr>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>H1 2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Office prime yields</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
</tr>
<tr>
<td>High-rise prime yields</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
<td>52%</td>
</tr>
<tr>
<td>Transaction volume high-rise</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Transaction volume office</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
<td>5%</td>
</tr>
</tbody>
</table>

An evolution refers to skyscrapers in the submarkets Banking District, City, Central Station, Westendring, westend with a building height of 60 metres and more.
WHAT WILL BE BUILT IN THE FUTURE?

NEW DEVELOPMENTS WILL CHANGE THE SKYLINE

• In the past, economic boom phases have caused increasing construction activity on the Frankfurt high-rise market. Around the turn of the millennium, for example, numerous projects were realised that contributed significantly to the development of the skyline. These include Commerzbank Tower (1997), Main Tower (1999) and Skyper (2004).

• Recent years saw further landmark buildings such as Opernturm (2009), Tower 185 (2011) and Taunusturm (2014) added to the skyline.

• More major high-rises will be added to the market in the future. Around 250,000 sq m of high-rise office space will be under construction or in the planning stage over the next five years. Although well above the total of around 135,000 sq m for the years 2013-2017, this figure merely reflects an average construction activity considering the current high demand.

• Projects that consistently follow mixed-use concepts are particularly significant for the real estate market. These include OMNITURM (completion in 2019) and FOUR, a large-scale development scheduled for completion in 2022/2023.

CORE SEGMENT ACCOUNTS FOR MAJORITY OF TRANSACTION VOLUME

• Core products dominate the popular high-rise segment, i.e. high-quality properties in prime locations with well-known tenants and long leases. Other acquisition types are generating small market shares due to limited supply. Opportunistic deals and developments account for just 5% of the total transaction volume, including recent sales of properties such as Global Tower and the Deutsche Bank site on Junghofstraße.

• Particularly high volumes in the three-digit million range have recently been achieved in prime properties with well-known tenants. Examples include Tower 185 and the Galileo high-rise.

• Particularly high volumes in the three-digit million range have recently been achieved in prime properties with well-known tenants. Examples include Tower 185 and the Galileo high-rise.

PURCHASE PRICES FOR HIGH-RISE OFFICES/OFFICE BUILDINGS (IN €/SQ M)

TRANSACTIONS BY ACQUISITION TYPE (TAV IN %, 2013 – H1 2018)

CORE SEGMENT ACCOUNTS FOR MAJORITY OF TRANSACTION VOLUME

• Core products dominate the popular high-rise segment, i.e. high-quality properties in prime locations with well-known tenants and long leases. Other acquisition types are generating small market shares due to limited supply. Opportunistic deals and developments account for just 5% of the total transaction volume, including recent sales of properties such as Global Tower and the Deutsche Bank site on Junghofstraße.

• Particularly high volumes in the three-digit million range have recently been achieved in prime properties with well-known tenants. Examples include Tower 185 and the Galileo high-rise.

NEW DEVELOPMENTS WILL CHANGE THE SKYLINE

• In the past, economic boom phases have caused increasing construction activity on the Frankfurt high-rise market. Around the turn of the millennium, for example, numerous projects were realised that contributed significantly to the development of the skyline. These include Commerzbank Tower (1997), Main Tower (1999) and Skyper (2004).

• Recent years saw further landmark buildings such as Opernturm (2009), Tower 185 (2011) and Taunusturm (2014) added to the skyline.

• More major high-rises will be added to the market in the future. Around 250,000 sq m of high-rise office space will be under construction or in the planning stage over the next five years. Although well above the total of around 135,000 sq m for the years 2013-2017, this figure merely reflects an average construction activity considering the current high demand.

• Projects that consistently follow mixed-use concepts are particularly significant for the real estate market. These include OMNITURM (completion in 2019) and FOUR, a large-scale development scheduled for completion in 2022/2023.

CORE SEGMENT ACCOUNTS FOR MAJORITY OF TRANSACTION VOLUME

• Core products dominate the popular high-rise segment, i.e. high-quality properties in prime locations with well-known tenants and long leases. Other acquisition types are generating small market shares due to limited supply. Opportunistic deals and developments account for just 5% of the total transaction volume, including recent sales of properties such as Global Tower and the Deutsche Bank site on Junghofstraße.

• Particularly high volumes in the three-digit million range have recently been achieved in prime properties with well-known tenants. Examples include Tower 185 and the Galileo high-rise.

NEW DEVELOPMENTS WILL CHANGE THE SKYLINE

• In the past, economic boom phases have caused increasing construction activity on the Frankfurt high-rise market. Around the turn of the millennium, for example, numerous projects were realised that contributed significantly to the development of the skyline. These include Commerzbank Tower (1997), Main Tower (1999) and Skyper (2004).

• Recent years saw further landmark buildings such as Opernturm (2009), Tower 185 (2011) and Taunusturm (2014) added to the skyline.

• More major high-rises will be added to the market in the future. Around 250,000 sq m of high-rise office space will be under construction or in the planning stage over the next five years. Although well above the total of around 135,000 sq m for the years 2013-2017, this figure merely reflects an average construction activity considering the current high demand.

• Projects that consistently follow mixed-use concepts are particularly significant for the real estate market. These include OMNITURM (completion in 2019) and FOUR, a large-scale development scheduled for completion in 2022/2023.
SUMMARY

• Frankfurt’s office towers are currently characterised by high demand and decreasing vacancy. They have proven successful on the market despite the fact that their floor plan design is often less efficient in combination with higher rents and operating costs.

• Average rents are currently around 20% above the market average. Law firms and financial service providers in particular are prepared to pay above-average rents for space at prime properties while banks tend to take up the largest-scale space.

• Not least due to their size, high-rises are also a very popular product on the investment market. This is reflected in higher prices per sq m, an extremely high transaction volume and low yields.

OUTLOOK

• Current property developments are creating new quality standards on the market in terms of design and services and will challenge stock buildings despite high demand and low vacancy rates.

• Going forward, it will be important to continue to fully tap the potential of existing properties if they are to remain an attractive product that meets tenant requirements. In this context, the life cycles of skyscrapers between their construction and a complete refurbishment or new development will tend to shorten.

• In order to remain an internationally competitive high-rise metropolis, Frankfurt needs innovative property developments and, above all, suitable building sites. Due to the scarcity of available building sites, an updated framework plan must therefore identify additional potential areas.

MIXED-USE – THE TREND OF THE FUTURE?

• As “vertical cities,” high-rises are ideally suited for accommodating several uses under one roof. This trend has been ongoing for many years on a global scale but has not yet caught on in Germany.

• Frankfurt’s high-rises have typically been subject to a strict separation of use. It wasn’t until the 1990s that greater emphasis was placed on mixed use in the form of public administration tenants. Taunusturm, which was built in 2014, was the first property to integrate offices, apartments and a museum. However, the 44 apartments are located in a separate tower.

• We expect to see a growing interest in mixed-use properties among office tenants going forward. This trend calls for a new type of high-rise building, which is already being implemented in some projects. Mixed-use towers offer tenants and investors a popular product while also making an important contribution to creating an attractive usage mix in the city centre.

ARE DEVELOPMENT SITES BECOMING SCARCE?

• For around 20 years, high-rise development has been regulated by the Frankfurt high-rise framework plan. The idea is to have designated building sites in suitable locations in order to prevent skyscraper developments in residential areas.

• The framework plan was last updated in 2008 and most of the designated sites have either already been developed or are at least scheduled for development (architectural competition finalised).

• Since the publication of the framework plan, some sites have been re-designated for residential development, e.g. in the city centre or near the trade fair. Most of the few sites that are currently available for office development are also located near the trade fair. As such, it is imperative that the planned update of the framework plan creates potentials for new development sites.
ABOUT COLLIERS INTERNATIONAL

Colliers International Group Inc. (NASDAQ: CIGI) (TSX: CIGI) is an industry-leading real estate services company with a global brand operating in 69 countries and a workforce of more than 15,400 skilled professionals serving clients in the world’s most important markets. Colliers is the fastest-growing publicly listed global real estate services company, with 2017 corporate revenues of $2.3 billion ($2.7 billion including affiliates). With an enterprising culture and significant employee ownership and control, Colliers professionals provide a full range of services to real estate occupiers, owners and investors worldwide. Services include strategic advice and execution for property sales, leasing and finance; global corporate solutions; property, facility and project management; workplace solutions; appraisal, valuation and tax consulting; customized research; and thought leadership consulting.

Colliers professionals think differently, share great ideas and offer thoughtful and innovative advice that help clients accelerate their success. Colliers has been ranked among the top 100 global outsourcing firms by the International Association of Outsourcing Professionals for 13 consecutive years, more than any other real estate services company. Colliers has also been ranked the number one property manager in the world by Commercial Property Executive for two years in a row.

Present in 69 countries with unique local expertise

More than 55% of the capital in Colliers’ transactions in Germany is generated from international capital sources

Copyright © 2018 Colliers International Deutschland GmbH
This document has been prepared by Colliers International for advertising and general information only. Colliers International makes no guarantees, representations or warranties of any kind, expressed or implied, regarding the information including, but not limited to, warranties of content, accuracy and reliability. Any interested party should undertake their own inquiries as to the accuracy of the information. Colliers International excludes unequivocally all inferred or implied terms, conditions and warranties arising out of this document and excludes all liability for loss and damages arising there from. This publication is the copyrighted property of Colliers International and/or its licensor(s). © 2018. All rights reserved.