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Decline in nominal construction volume expected for the first time since the financial crisis; residential construction situation worsening

- Nominal construction volume expected to decline by 3.5 percent due to falling construction prices
- Marked decline in residential construction activity; civil engineering cushions the downturn
- Goal of constructing 400,000 residences per year becoming more out of reach

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DIW Weekly Report 1+2 2024

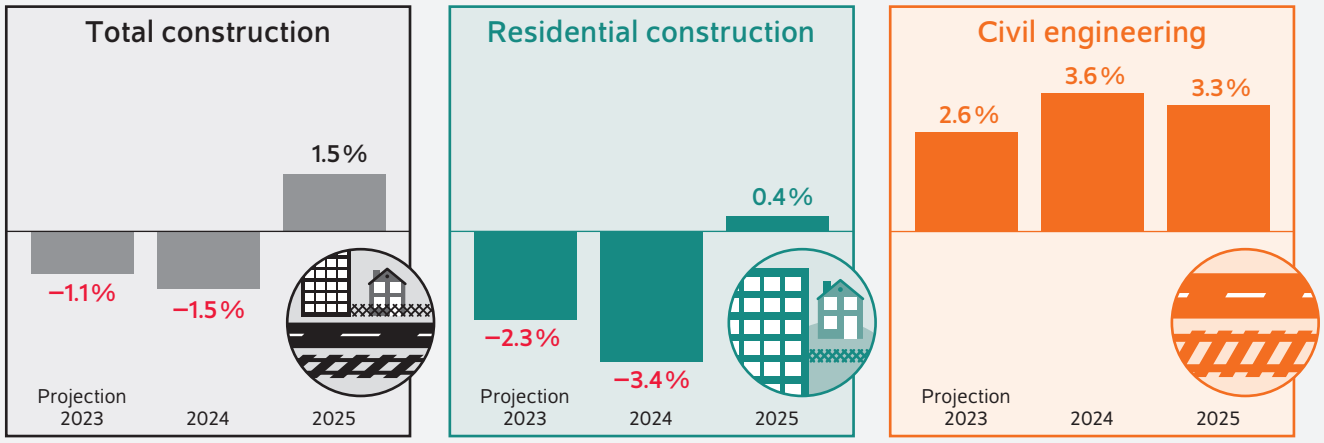
AT A GLANCE

Decline in nominal construction volume expected for the first time since the financial crisis; residential construction situation worsening

By Martin Gornig and Laura Pagenhardt

- Falling construction prices will cause construction volume to decline by 3.5 percent in nominal terms and by 1.5 percent in real terms in 2024
- Residential construction is declining markedly, more so in new construction than in renovation
- Goal of constructing 400,000 residences per year becoming more out of reach
- Only civil engineering is cushioning the downturn and will increase again in 2025
- The situation is expected to stabilize in 2025

2024 even weaker than 2023: Worsening crisis in residential construction, while civil engineering cushions the downturn
Real change in construction volume in percent compared to previous year



Source: DIW Berlin Construction Volume.

FROM THE AUTHORS

"To provide the construction industry with some momentum again, it is very important for policy makers to deal with the uncertainty regarding subsidy programs as soon as possible. This includes the subsidy program for energy-efficient building renovation, but also new residential construction."
— Laura Pagenhardt —

MEDIA

Audio Interview with Laura Pagenhardt (in German)
www.diw.de/mediathek

Decline in nominal construction volume expected for the first time since the financial crisis; residential construction situation worsening

By Martin Gornig and Laura Pagenhardt

ABSTRACT

High construction prices and worsened financing conditions are weighing on the construction industry, especially building construction. Despite a nominal increase of six percent in construction expenses in 2023, it decreased by just over one percent in inflation-adjusted terms. In 2024, the nominal construction volume is likely to contract by around 3.5 percent, declining for the first time since the financial crisis due to falling construction prices. Residential construction in particular experienced a sharp decline in 2023 and will continue on this downward trend more strongly in 2024. Renovation and modernization activity is less affected than new construction. The situation will stabilize by 2025. The prospect of constructing 400,000 new residences annually is thus becoming increasingly out of reach. Only civil engineering is stabilizing the construction industry overall; it is likely to expand in both 2024 and 2025. The different growth prospects of the sectors require restructuring in the construction industry. In particular, capacities freed up in new residential construction should be utilized in the energy-efficient renovation of private and public buildings. Policy makers should actively support this restructuring. In addition, they should provide clarity about the subsidy programs for energy-efficient building renovation and residential unit construction. At the same time, it is important to maintain focus on the new housing construction target.

The construction industry in Germany continues to struggle. The crisis began in 2021 with material and supply bottlenecks and continued in 2022 and 2023 with the energy crisis and loss of household purchasing power due to consumer price inflation. This was compounded by rapidly rising interest rates, which made it considerably more difficult to finance construction projects, particularly for private households, but also for companies. In particular, incoming orders and building permits for new residential construction plummeted last year. Due to the very dynamic development of construction prices, the construction volume in nominal terms increased over the years, but price-adjusted declines have already been recorded in almost all construction sectors since 2021.

Nominal construction volume is expected to contract in 2024. Due to declining capacity utilization and falling material prices, prices are likely to fall as well and a turnaround in interest rates is expected in summer 2024. However, as prices and interest rates are likely to remain high overall and many subsidy programs are in limbo, the building construction volume in particular is likely to suffer and in some cases decline considerably. Development is likely to improve in 2025, but strong growth is not expected.

These are the results of DIW Berlin's calculations of the construction volume,[1] which includes construction investments as well as repairs that do not increase value. Furthermore, in addition to construction in the narrower sense, the calculations encompass related sectors, such as steel and light metal construction, the manufacture of prefabricated buildings, building fittings, planning, and other services. As a supplement to the investment calculation of the Statistical Offices, DIW Berlin's annual construction volume differentiates

1 The construction volume calculation is financed with funds from the *Zukunft Bau* research initiative of the Federal Ministry for Housing, Urban Development and Building (*Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen*, BMWSB). Cf. the most recent construction volume calculation: Martin Gornig and Laura Pagenhardt, "Construction Boom Coming to an End; Change in Policy Strategy Needed," *DIW Weekly Report*, no. 1+2 (2023) (available online; accessed on December 18, 2023. This applies to all other online sources in this report unless stated otherwise).

DOI: https://doi.org/10.18723/diw_dwr:2024-1-1

Box

Method for forecasting construction volume

Indicator-based statistical models are used to forecast the construction volume. The forecasting variable, for example residential construction volume, is regressed on an autoregressive term and on concurrent as well as lagged values of the respective indicator, for example new orders. The construction volumes of new and existing buildings are estimated separately.

The forecast equation is as follows:

$$y_t = \alpha + \sum_{i=1}^{n} \beta_i y_{t-i} + \sum_{j=1}^{m} \gamma_j x_{t-j} + \varepsilon_t$$

y_t stands for the value to be forecast, x_t for the indicator, and ε_t for the statistical error term. α, β_i, and γ_j are the estimated parameters. The numbers of lags n and m (years) are determined based on the autocorrelation or cross-correlation function. The approach of estimating a large number of individual models and using average values for the forecast has proved effective. For an individual series, up to 1,500 single models are estimated. Construction permits, new orders and the order backlog, production, interest, loan volumes, employment and income trends, and surveys of construction companies and freelance architects have proven to be suitable indicators.[1]

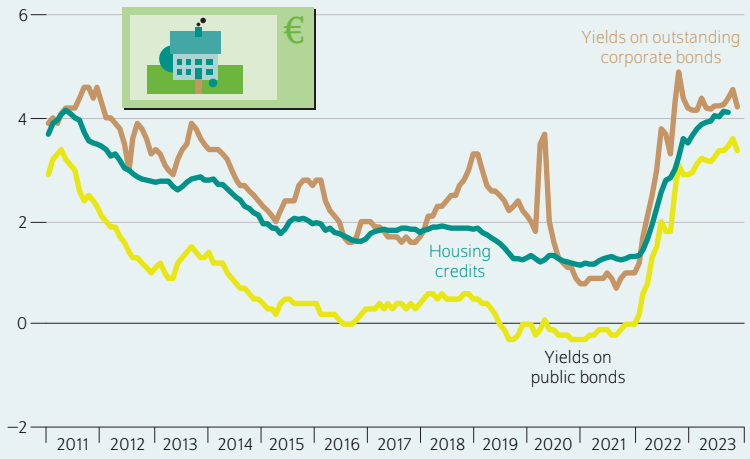
Using this approach, a forecast with a prediction capability of up to two years can be made for all aggregates. It should be noted, however, that the number of point estimates used for averaging decreases significantly as the forecast range increases due to the different prediction capabilities of the individual indicators. To provide the forecast with additional stability, expectations for employment and GDP for 2023 to 2025 are therefore also included in the models as concurrent indicators. Expected civil engineering volume is equal to the difference between total volume and construction volume.

The construction volume forecast for the previous year (2023) is also calculated using this method (nowcast). The indicators are updated using statistical methods to obtain values for 2023. All model results are rationalized using the construction investment forecast. Assumptions about the development of construction prices are based on the DIW Berlin economic forecast for winter 2023 and the authors' calculations. Price forecasts are adjusted for each sectors.

1 Michelsen and Gornig, "Prognose der Bestandsmaßnahmen und Neubauleistungen im Wohnungsbau und im Nichtwohnungsbau."

Figure 1

Interest rates and yields
In percent, monthly average



Source: Deutsche Bundesbank.

Interest rates and yields have returned to the 2011 level.

between new housing construction activity and housing stock modernization.[2]

DIW Berlin not only calculates and documents the construction volume of past years; it also forecasts corresponding values for the current (2024) and upcoming years (2025). This forecast (Box) is integrated into DIW Berlin's Economic Outlook, particularly with regard to investment activity. In addition to the present estimates regarding the development of construction investment, the construction volume calculation includes forecasts on the growth of new and existing housing volumes in the building construction, residential, and non-residential sectors.[3] Moreover, these figures are used to derive the development trends of the core construction industry and the renovation sector.

Residential construction situation worsening

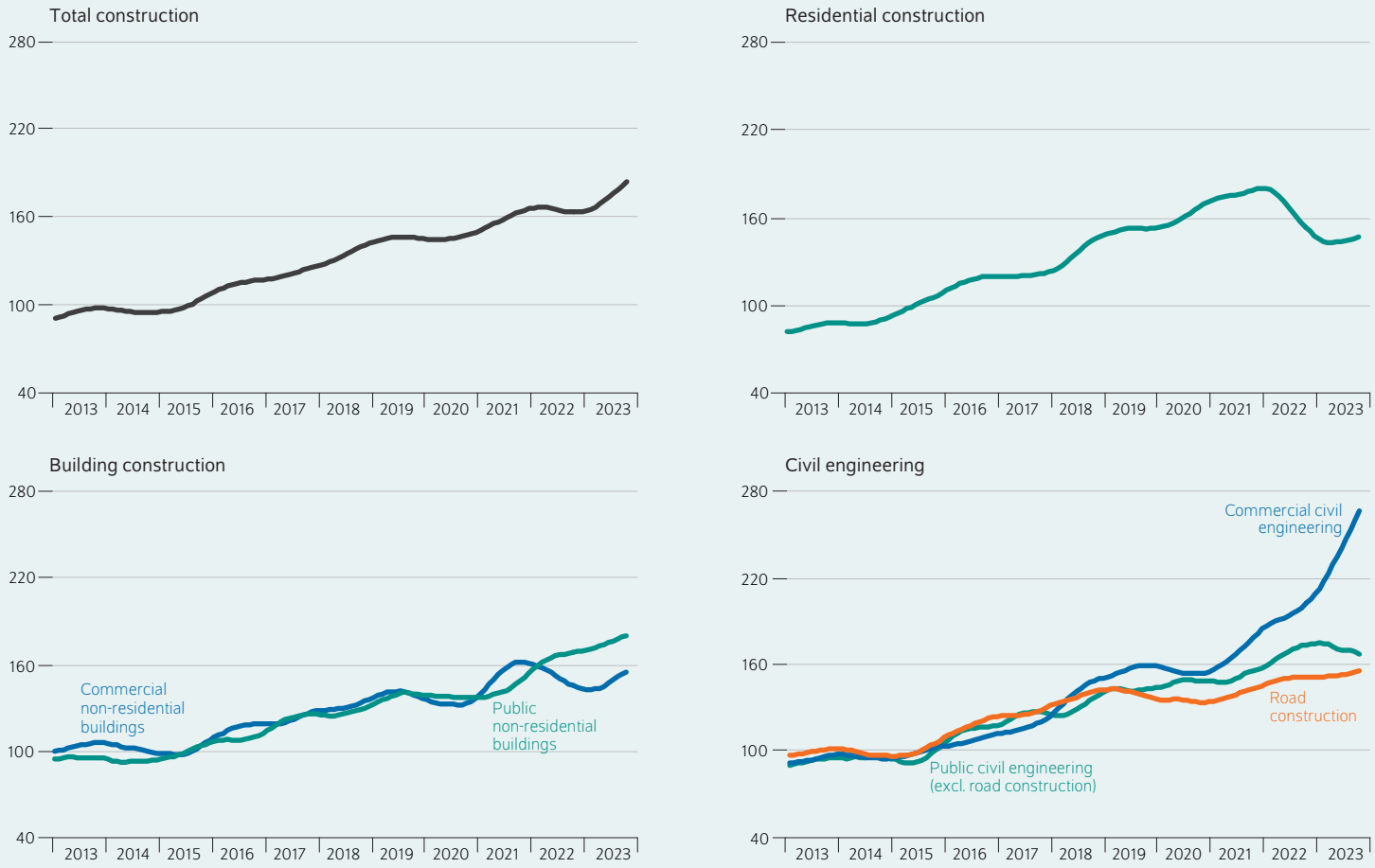
The past three years have been difficult for the residential construction sector. The enormous price increases—which began in 2021 due to supply bottlenecks and material shortages before then being exacerbated by the energy crisis in 2022—were compounded by the ECB's key interest rate hikes, which had an impact on mortgage rates within a very short period of time: Between the end of 2021 and autumn 2023, interest rates rose from 1.3 to over four percent. In 2024, they are now as high as they were last in 2011 (Figure 1). Financing conditions are currently almost impossible to meet, especially for private households, resulting in projects being reduced, canceled, or not initiated at all. This is also reflected in new orders, which have been trending downward since early 2022 and have only recently stabilized (Figure 2).

2 Martin Gornig and Hanna Révész, "Strukturdaten zur Produktion und Beschäftigung im Baugewerbe – Berechnungen für das Jahr 2022," *BBSR Online Publikation*, no. 53 (2023) (in German; available online).

3 Cf. Claus Michelsen and Martin Gornig, "Prognose der Bestandsmaßnahmen und Neubauleistungen im Wohnungsbau und im Nichtwohnungsbau," *BBSR-Online-Publikation*, no. 7 (2016) (in German; available online).

Figure 2

New orders in the main construction industry
Index 2015 = 100, current prices, trend component



Source: Federal Statistical Office.

Extensive new orders were recorded recently, especially in civil engineering.

According to the ifo Institute, nearly half of residential construction companies have complained about a lack of orders, while a fifth of them are dealing with order cancelations.[4] For example, the number of existing orders have shrunk considerably since the peak in spring 2022 (Figure 3). According to an autumn 2023 survey conducted by the *Zentralverband des Deutschen Baugewerbes* (ZDB), 70 percent of construction companies expect the business situation to worsen.[5]

The outlook for 2024 is not much better. Although the price momentum significantly slowed down over 2023, it remains high. In addition to this, there is the general loss of household purchasing power due to the sharp rise in consumer prices, which wage development has so far been unable to compensate for. The uncertainty about the future development of income and the overall economic output is likely to further dampen housing investments. The continuing high demand for (affordable) living space, especially in urban centers, does little to change this. For example, according to studies from the Hans Böckler Foundation and its Macroeconomic Policy Institute (IMK), potentially millions of additional units of social housing are still needed in large German cities.[6]

Following three years of enormous increases, construction prices are expected to decline in 2024: Due to dwindling demand, capacity utilization in building construction has markedly declined to below the 70 percent threshold at the end of 2023 (Figure 4). Together with falling material prices, this reduces price pressures. The price expectations of the

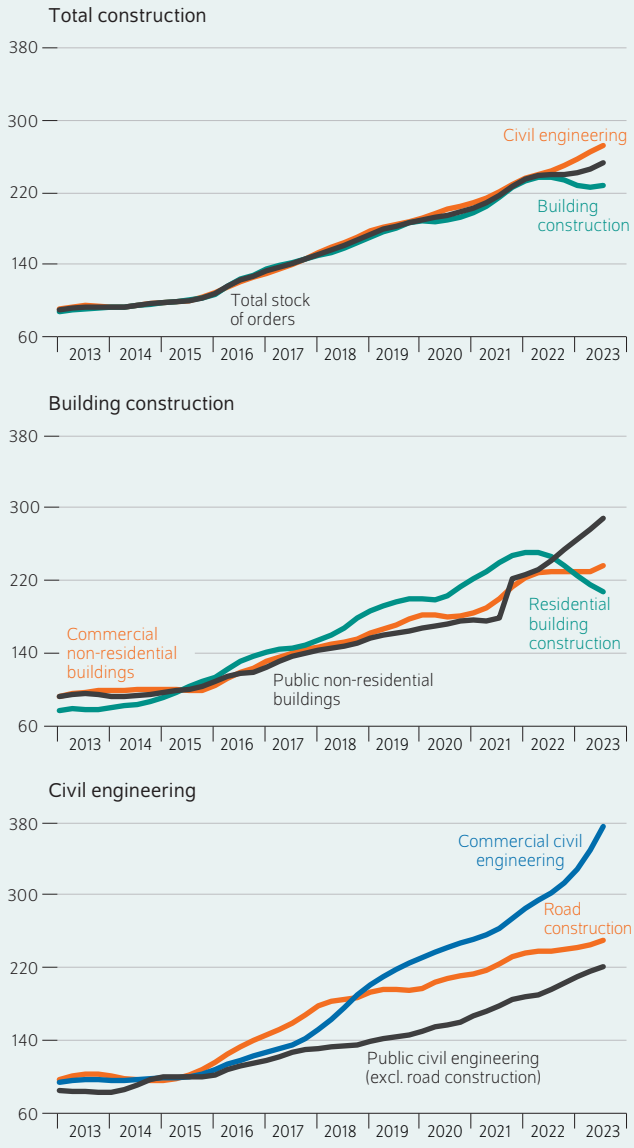
4 ifo Institute, "Düstere Perspektiven für den Wohnungsbau," press release from December 11, 2023 (in German; available online).

5 Zentralverband des Deutschen Baugewerbes, "Baukonjunktur 2023/2024: Zwischen Fachkräftemangel und Kurzarbeit," press release from December 6, 2023 (in German; available online).

6 Lukas Jonas, Carolin Martin, and Thomas Theobald, "Mehr öffentlicher Wohnungsbau zum Erhalt der Kapazitäten?" *IMK Policy Brief*, no. 155 (2023) (in German; available online).

Figure 3

Stock of orders in the main construction industry
Index 2015 = 100, current prices, trend component

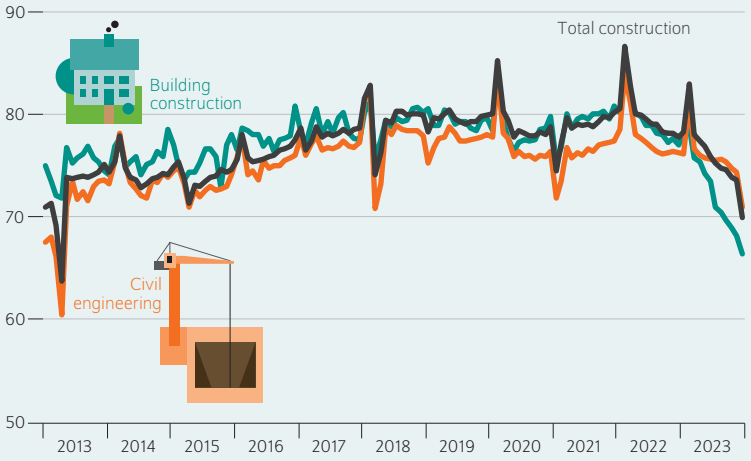


Source: Deutsche Bundesbank.

The stock of orders in residential construction is trending upward.

Figure 4

Capacity utilization in the construction sector
As a percentage of normal seasonal machine utilization



Source: ifo Institute.

In 2023, a lot of capacity in building construction remained unused.

construction companies also indicate falling construction prices. Accordingly, the noticeable wage increases that are expected following the collective wage negotiations are likely to come at the expense of corporate profits.

Meanwhile, a turnaround in interest rates is expected in early summer 2024, when market participants foresee the first ECB interest rate cuts.[7] Financing conditions are therefore likely to ease somewhat this year. The declines in prices, however, will likely be unable to completely compensate for the continued high interest rate.

Overall, the nominal residential construction volume in 2023 likely increased by 5.5 percent (Table 1). Construction price inflation is likely to have completely swallowed up this increase, resulting in a real decline of 2.3 percent. In 2024, the residential construction volume is expected to significantly decrease despite falling prices in both nominal (minus 5.4 percent) and real (minus 3.4 percent) terms. A further nominal decline of 0.4 percent is expected for 2025 (Figure 5). As prices are expected to sink further, there is real growth of 0.4 percent.

Residential unit construction sector in a slump

The problems in residential construction are particularly affecting new construction. There, difficult financing conditions are likely playing the decisive role, making it impossible for a large share of households to start new construction plans. Building permits have plummeted since the beginning of 2022: In autumn 2023, they were almost 40 percent below the peak values in 2021 and 2022 (Figure 6). In addition, a large number of approved projects have not started because financing is no longer viable in many places. This is likely to have a significant impact in new construction activity in the coming years if existing orders are increasingly processed and fewer and fewer new projects are initiated. For example, the *Verband der Wohnungswirtschaft Deutschland* (GdW) is already reporting that many housing companies

7 Timm Bönke et al., "DIW Berlin Economic Forecast: Forecast ranges from cloudy to bright," *DIW Weekly Report*, no. 50+51+52 (2023): 305–313 (available online).

Table 1

Residential construction volume in Germany

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2017	2018	2019	2020	2021	2022	2023	2024	2025
	In billion euros at the respective year's prices										Change from the previous year in percent								
New construction volume[1]	62.8	67.2	71.7	75.4	79.2	85.6	93.4	95.2	87.2	86.7	7.1	6.6	5.1	5.0	8.1	9.2	1.9	−8.4	−0.6
Construction on existing buildings[2]	136.3	143.2	153.1	165.5	173.5	189.1	213.7	228.6	219.2	218.6	5.0	6.9	8.1	4.8	9.0	13.0	7.0	−4.1	−0.3
Total residential construction volume	199.1	210.4	224.8	240.9	252.7	274.7	307.1	323.8	306.4	305.3	5.7	6.8	7.2	4.9	8.7	11.8	5.5	−5.4	−0.4
	Shares in percent																		
New construction volume[1]	31.5	32.0	31.9	31.3	31.3	31.1	30.4	29.4	28.5	28.4									
Construction on existing buildings[2]	68.5	68.0	68.1	68.7	68.7	68.9	69.6	70.6	71.5	71.6									
Total residential construction volume	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0									
	Index 2015 = 100																		
Price development	102.1	105.4	110.3	115.2	117.3	127.3	145.7	156.9	153.9	152.7	3.3	4.6	4.5	1.8	8.5	14.4	7.7	−2.0	−0.8
	Real, chain index 2015 = 100																		
New construction volume[1]	109.2	113.3	115.6	116.4	120.1	119.5	113.3	106.7	99.9	100.1	3.8	2.0	0.7	3.2	−0.5	−5.2	−5.8	−6.5	0.2
Construction on existing buildings[2]	101.7	103.5	105.9	109.8	113.1	113.6	112.0	111.2	108.8	109.3	1.7	2.4	3.6	3.0	0.5	−1.4	−0.7	−2.2	0.5
Total residential construction volume	104.0	106.5	108.9	111.8	115.2	115.4	112.4	109.8	106.1	106.5	2.4	2.3	2.7	3.1	0.2	−2.6	−2.3	−3.4	0.4

1 Estimated using the estimated construction costs (construction activity statistics), plus surcharges for architects' services and fees, exterior facilities, and internal activities of investors.
2 Buildings and housing modernization (incl. conversion and extension measures) as well as repair services in the construction industry.

Sources: Federal Statistical Office; DIW Construction Volume calculations.

Table 2

Non-residential construction volume in Germany

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2017	2018	2019	2020	2021	2022	2023	2024	2025
	In billion euros at the respective year's prices										Change from the previous year in percent								
New construction volume[1]	35.3	38.1	41.7	45.0	46.8	50.2	57.3	59.5	57.0	57.8	8.0	9.3	8.0	4.0	7.2	14.1	3.8	−4.2	1.4
Construction on existing buildings[2]	56.5	57.8	59.7	60.8	61.4	65.3	72.7	77.1	75.6	76.4	2.4	3.3	1.9	0.9	6.4	11.3	6.1	−2.0	1.1
Total non-residential construction volume[3]	91.8	95.9	101.4	105.8	108.2	115.5	130.0	136.6	132.6	134.2	4.5	5.7	4.4	2.2	6.8	12.5	5.1	−3.0	1.2
	Shares in percent																		
New construction volume[1]	38.5	39.7	41.1	42.5	43.3	43.4	44.1	43.5	43.0	43.1									
Construction on existing buildings[2]	61.5	60.3	58.9	57.5	56.7	56.6	55.9	56.5	57.0	56.9									
Total non-residential construction volume[3]	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0									
	Index 2015 = 100																		
Price development	101.9	105.6	110.5	114.6	116.9	126.6	145.7	154.5	151.3	149.4	3.7	4.6	3.7	2.0	8.4	15.1	6.0	−2.1	−1.3
	Real, chain index 2015 = 100																		
New construction volume[1]	108.8	113.5	118.9	124.0	126.5	124.6	123.4	120.7	118.2	121.3	4.4	4.7	4.3	2.0	−1.5	−1.0	−2.2	−2.1	2.7
Construction on existing buildings[2]	95.5	94.3	93.0	91.3	90.4	88.3	84.9	85.0	85.0	87.1	−1.3	−1.3	−1.9	−1.0	−2.3	−3.8	0.1	0.1	2.4
Total non-residential construction volume[3]	100.2	101.1	102.1	102.8	103.0	101.1	98.5	97.6	96.7	99.1	0.9	1.0	0.6	0.2	−1.9	−2.6	−0.9	−0.9	2.5

1 Including agricultural buildings.
2 Including other non-agricultural buildings.
3 Construction volume in commercial and public building construction.

Sources: Federal Statistical Office; DIW Construction Volume calculations.

are having to cancel some of their projects or are currently unable to build any housing at all.[8]

In a surprising move, the *Kreditanstalt für Wiederaufbau* (KfW) stopped applications for its *Klimafreundlicher Neubau* (climate-friendly new builds) subsidy program in December 2023, as the program's funds had been exhausted. Although applications that had already been approved have been secured and applications should be possible again at the beginning of 2024, this is likely to discourage private households from investing in new construction and further reduce new construction activity.

The more difficult financing conditions have so far hardly been offset by the special tax deduction for the construction of new rental units, which was reactivated in January 2023.

8 Wohnungswirtschaft Deutschland (GdW), "Wohnungsbau im freien Fall – Regierung muss jetzt Schluss machen mit 'aber' und 'wird schon'," press release from November 29, 2023 (in German; available online).

Figure 5

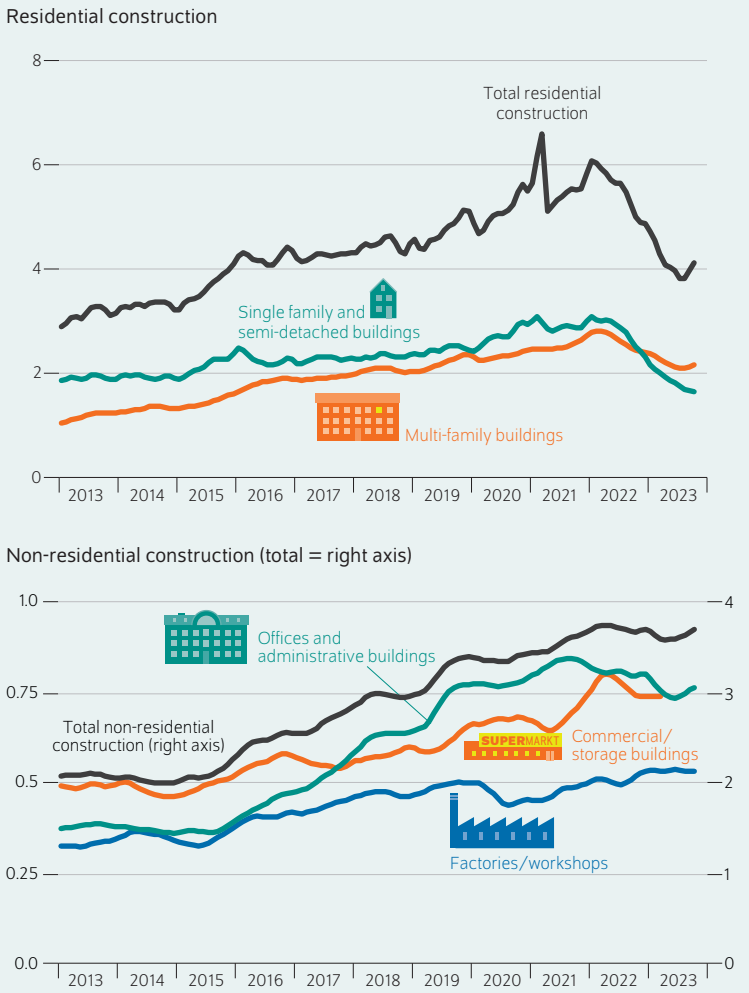
New and existing building construction in Germany
In billion euros in current prices (left axis), change from previous year in percent (right axis)

Source: DIW Berlin Construction Volume Calculation.

Nominal residential construction will decline in 2024, especially new construction.

Figure 6

Building permits in building construction in Germany
Current prices in billion euros, trend component



Source: Federal Statistical Office.

The total number of approved construction projects markedly declined in 2023, but is recovering in the public and commercial sectors.

This regulation allows up to five percent of acquisition and production costs to be written off per year over four years if the approved building meets certain sustainability criteria (efficiency house 40, EH40). Furthermore, at the same time, the linear depreciation rate was increased from two to three percent. Since October 2023, these conditions have been supplemented by the additional possibility of degressive depreciation of six percent, which is also permittable for buildings of the lower efficiency class EH55.[9] With falling interest rates and prices, these measures are likely to have more of an effect from the second half of 2024 and will stimulate new construction activity.

Nevertheless, nominal residential construction is expected to decline by 8.4 percent in 2024 and to not recover in 2025 (minus 0.6 percent). In price-adjusted terms, there is a decline of 6.5 percent in 2024 as well as slight growth of 0.2 percent in 2025.

Work on existing buildings continues to have a stabilizing effect

The robust development in renovation measures is likely to have supported housing construction activity in 2023. While some expansion and renovation projects have likely been cut back or even canceled completely due to higher costs—such projects can be adjusted more quickly and easily than new construction projects—at the same time the decline in new construction is likely to make more builders available for renovation and modernization projects, which in turn will make these projects more feasible.

At the same time, renovation and modernization is likely to be significantly less affected by rising financing costs: Compared to new residential construction, modernization and maintenance measures are much smaller in scale, meaning that households often have sufficient capital to finance the costs.[10] Only the higher incentive for households to save capital must be considered here. However, saving is only worthwhile to a limited extent: The credit interest rates for longer-term investments are currently only half as high as the mortgage rate for ten-year loans.

The fact that households are increasingly switching to renovation and modernization measures is also reflected in the costs for approved construction projects: At the start of 2022, the costs for new construction and for work on existing buildings were still at similar levels. While permit figures and new construction costs have almost halved, the figures for renovation have remained at near constant levels (Figure 7).

Measures to increase energy efficiency are likely to continue to play a central role: Energy prices, despite the declines in recent years, remain high and are expected to rise again somewhat as a result of the Federal Government initiating an additional increase in the carbon price in the *Nachtragshaushaltsgesetz* 2021 in reaction to the recent Federal Constitutional Court ruling.[11] This increases the incentives to invest in energy-related renovations.

9 Cf. the measures of the Federal Government for additional investments in the construction of affordable and climate-friendly residences and for economic stabilization of the construction and real estate industries on the website of the Federal Ministry for Housing, Urban Development and Building (Bundesministerium für Wohnen, Stadtentwicklung und Bauwesen, BMWSB) (in German; available online).

10 Christian Blanke and Katrin Klarhöfer, "Bestandsinvestitionen 2020: Struktur der Investitionstätigkeit in den Wohnungs- und Nichtwohnungsbeständen," *BBSR Online Publikation*, no. 39 (2022) (in German; available online).

11 In November 2023, the Federal Constitutional Court ruled against the German government, prohibiting the reallocation of 60 billion euros borrowed under emergency legislation during the COVID-19 pandemic towards the Climate and Transformation Fund. In order to mitigate the effects of the ruling, amongst other measures, the government decided to increase the price of carbon dioxide further than had been initially planned: Instead of the planned 40 euros per ton, CO_2 costs 45 euros per ton in, 2024. In 2023, CO_2 cost 30 euros per ton.

However, public funding for energy-efficient refurbishment measures is still unclear. For example, around 19 billion euros were planned for funding energy-efficient renovations in the building sector in the *Klima- und Transformationsfonds* (Climate and Transformation Fund, KTF) in 2024. While the Federal Government promised this funding immediately after the Federal Constitutional Court's ruling, the application process at KfW is still on hold. Thus, the development of renovation work may also be slowed down or at least delayed.

Overall, renovation works are expected to decline by 4.1 percent this year, considerably less than new construction work. For 2025, a further slight decline of 0.3 percent is expected. Price-adjusted, this results in minus 2.2 percent in 2024 and in 0.5 percent in 2025.

More robust development in non-residential construction than in residential construction

Non-residential construction was more stable than residential construction in 2023. The worsened financing conditions are likely to have affected companies less than households. While new orders for both public and commercial building construction declined somewhat in 2023, they are currently increasing again due to multiple major projects (Figure 2). Thus, existing orders remain at a record level (Figure 3).

Nevertheless, weak overall economic development and high interest rates are dampening the outlook for commercial construction. The global economy has developed less dynamically recently; in 2023, German exports declined noticeably. The development of the German economy over the course of the year remains uncertain, partly due to the Federal Constitutional Court ruling and despite the planned mitigating measures, dampening both exports and investments in 2024.[12] This is likely to keep companies from investing in capacity expansion, for example by constructing new workshops or warehouses.

In 2023, nominal non-residential construction increased by 5.1 percent. In price-adjusted terms, however, it declined by 0.9 percent. This development is expected to reverse in 2024: A nominal minus three percent is expected, which, due to falling prices, ends up as a real minus of nearly one percent. In 2025, non-residential construction volume is expected to expand by 1.2 percent nominally and by 2.5 percent in price-adjusted terms (Table 2).

Public construction projects supporting new construction of non-residential buildings

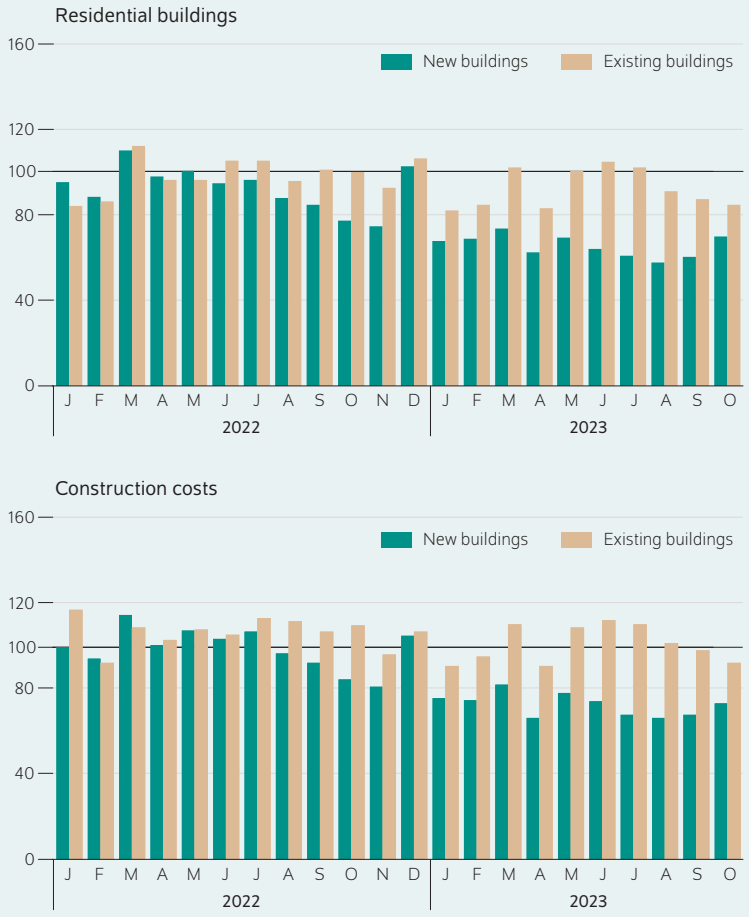
The demand for new commercial buildings has slowed due to weak economic development, which makes investments in new corporate buildings seem imprudent. Moreover, the possibility to work from home, which has become more prevalent since the coronavirus pandemic, is dampening the need for office buildings. In 2022 (the most recent available statistics), nearly a quarter of all employees partially worked at home. This share is likely to not have declined significantly in 2023. Thus, the number of building permits for office and administrative buildings has also continually declined since 2020 (Figure 6). No stimuli are expected here.

Large projects are now stabilizing the order situation in the public construction sector; existing orders have increased considerably (Figure 3). Funds that have been created in recent years should now gradually be converted into project budgets. Falling construction prices facilitate this development. Thus, positive stimuli from public construction are expected in both 2024 and 2025.

Overall, new construction activity in non-residential buildings is likely to decrease by 4.2 percent nominally in 2024 before expanding by 1.4 percent in 2025. Price-adjusted,

Figure 7

Number of permits granted for new construction projects
Index, Monthly average in 2021 = 100



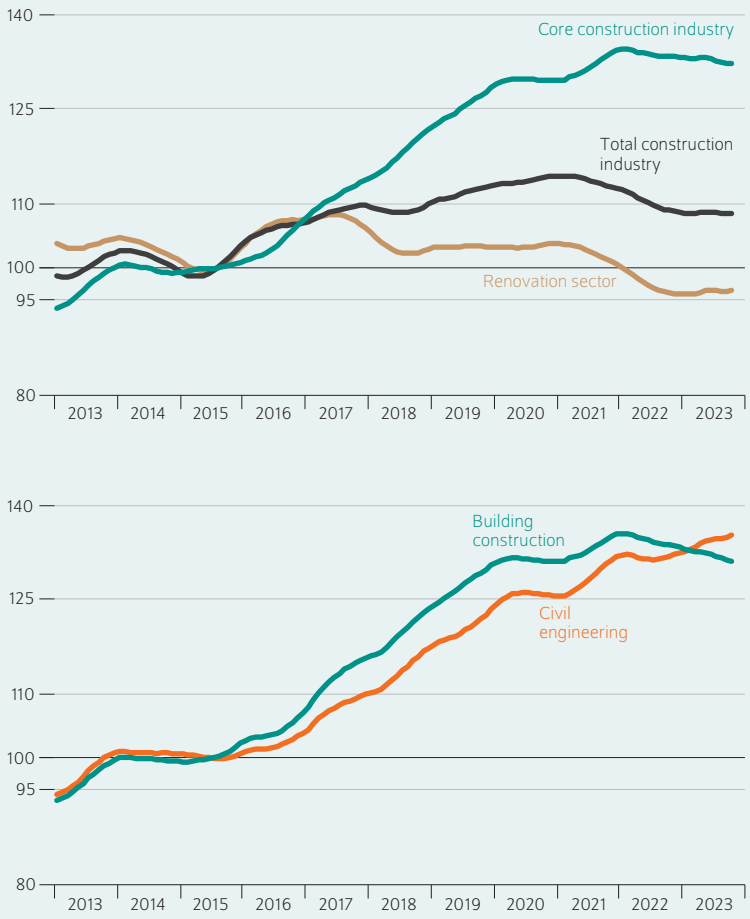
Source: Federal Statistical Office.

The number of construction permits for existing buildings is markedly higher than the figure for new buildings.

12 Bönke et al., "DIW Berlin Economic Forecast."

Figure 8

Production in the construction industry
Index 2015 = 100, constant prices, trend component



Source: Federal Statistical Office.

Civil engineering production continued to trend upward in 2023 in contrast with building construction.

this results in a 2.1-percent decline in 2024 and 2.7 percent growth in 2025.

Energy-related renovation increases construction on existing buildings

Construction on existing non-residential buildings has become less important over recent years: Between 2016 and 2022, its share of total construction volume declined continually (Table 2), primarily because the new construction volume increased substantially. In 2023, this development is likely to have reversed: Higher energy prices increase the incentive to perform energy-related renovations. This is likely to have played a decisive role in the strong increase in renovation and modernization.

The incentives will remain in 2024 and are likely to continue to support renovation and modernization. There is also still a large investment gap, particularly in the public sector: Planned and realized investments have gradually increased in nominal terms in recent years, with an emphasis on investments in school buildings and other childcare facilities. Overall, however, the projects realized remained well below the planned budget.[13] Here, there is still much potential to expand construction work.

Work on existing non-residential buildings is likely to decline by two percent nominally in 2024 before increasing by a good one percent in 2025. Due to the falling prices, the price-adjusted growth is 0.1 percent for 2024 and 2.4 percent for 2025.

Only civil engineering to increase in 2024

The activity in the civil engineering sector stabilized the construction volume in 2023. While construction output in building construction was on the decline, it continued on an upward trend in civil engineering (Figure 8). Capacity utilization in civil engineering also declined less significantly than in building construction (Figure 4).

Because of the considerable need for infrastructure expansion, civil engineering is likely to expand further in 2024 and 2025. Strong stimuli are expected, primarily from the commercial investor side. New orders are already indicating significant growth (Figure 2): In commercial civil engineering, new orders were nearly 30 percent higher in nominal terms in autumn 2023 compared to 2022. Large orders from the Deutsche Bahn are likely to be the decisive factor here, with massive investments being made in the rail network. These investments will likely continue in 2024 and 2025, partly because the KTF funds earmarked for railway infrastructure appear to be secured. In addition, there are investments in the mobility and energy transitions. New orders in road construction, which is part of the public sector, are also trending upward, although with less momentum. A similar picture emerges for the existing orders (Figure 3).

Following nominal growth of 9.5 percent in 2023 (real: 2.6 percent) in civil engineering, it is expected to increase by only 1.8 (real: 3.6) percent this year and to expand again by 2.3 percent (real: 3.3 percent) in 2025 (Table 3).

Civil engineering cannot compensate decline in building construction

Real construction volume is expected to decline for the third year in a row in 2024. Following declines of 2.2 percent in 2022 and of a little over one percent in 2023, construction volume is likely to decline by 1.5 percent in price adjusted terms in 2024. Real growth in the total construction volume is not expected until 2025 (Table 4).

However, the construction industry is divided. The sometimes drastic declines in new residential construction are

13 Christian Raffer and Henrik Scheller, *KfW – Kommunalpanel 2023* (2023) (in German; available online).

Table 3

Civil engineering in Germany

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2017	2018	2019	2020	2021	2022	2023	2024	2025
	In billion euros at the respective year's prices										Change from the previous year in percent								
Commercial civil engineering	30.3	32.9	35.0	37.2	39.2	43.2	50.7	56.2	58.0	59.6	8.6	6.4	6.1	5.6	10.1	17.4	10.9	3.1	2.8
Public civil engineering	28.5	30.9	34.4	36.5	37.7	38.7	45.1	48.7	48.8	49.6	8.4	11.5	6.0	3.2	2.9	16.5	7.9	0.2	1.7
Total civil engineering	58.8	63.8	69.5	73.7	76.9	81.9	95.8	104.9	106.8	109.2	8.5	8.9	6.1	4.4	6.6	16.9	9.5	1.8	2.3
	Shares in percent																		
Commercial civil engineering	51.5	51.6	50.4	50.5	51.0	52.7	52.9	53.6	54.3	54.6									
Public civil engineering	48.5	48.4	49.6	49.5	49.0	47.3	47.1	46.4	45.7	45.4									
Total civil engineering	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0									
	Index 2015 = 100																		
Price development[1]	101.6	106.3	113.0	118.2	119.9	127.6	149.1	159.3	156.4	154.8	4.6	6.4	4.6	1.5	6.4	16.8	6.9	−1.8	−1.0
	Real, chain index 2015 = 100																		
Commercial civil engineering	101.1	105.2	105.7	108.1	112.0	115.2	115.2	121.6	128.3	133.8	4.0	0.4	2.3	3.6	2.9	−0.1	5.6	5.5	4.3
Public civil engineering	102.4	106.3	111.3	112.0	114.5	111.2	111.6	110.6	112.1	114.5	3.8	4.8	0.6	2.3	−2.9	0.3	−0.9	1.4	2.1
Total civil engineering	101.8	105.7	108.4	110.0	113.2	113.4	113.5	116.5	120.6	124.6	3.9	2.5	1.4	2.9	0.2	0.1	2.6	3.6	3.3

1 As no detailed information on price developments in civil engineering is available, the same price changes are assumed for civil engineering and non-residential building construction.

Sources: Federal Statistical Office; DIW Construction Volume calculations.

Table 4

Key figures for the development of construction volume in Germany

	2018	2019	2020	2021	2022	2023	2024	2025	2019	2020	2021	2022	2023	2024	2025
	In billion euros at the respective year's prices								Change from the previous year in percent						
Total construction volume	395.7	420.4	437.8	472.2	532.9	565.3	545.8	548.7	6.3	4.1	7.8	12.9	6.1	−3.5	0.5
Residential construction	224.8	240.9	252.7	274.7	307.1	323.8	306.4	305.3	7.2	4.9	8.7	11.8	5.5	−5.4	−0.4
Commercial construction	116.3	122.0	124.8	135.1	154.4	162.5	159.2	161.6	4.9	2.3	8.2	14.3	5.2	−2.0	1.5
Public construction	54.6	57.5	60.3	62.4	71.5	79.0	80.1	81.8	5.4	4.9	3.5	14.5	10.6	1.4	2.1
	Index 2015= 100														
Price development	110.8	115.6	117.7	127.3	146.5	156.9	153.9	152.4	4.3	1.8	8.2	15.1	7.1	−2.0	−0.9
	Real, chain index 2015 = 100														
Total construction volume	107.0	109.1	111.6	111.2	108.8	107.6	106.0	107.6	2.0	2.3	−0.3	−2.2	−1.1	−1.5	1.5
By construction sector															
Residential construction	108.9	111.8	115.2	115.4	112.4	109.8	106.1	106.5	2.7	3.1	0.2	−2.6	−2.3	−3.4	0.4
Commercial construction	103.3	104.6	104.9	104.8	102.7	102.7	103.1	106.2	1.2	0.3	−0.1	−2.0	0.0	0.3	3.0
Public construction	107.5	108.0	112.0	108.3	107.3	109.3	112.1	114.9	0.5	3.7	−3.2	−1.0	1.9	2.5	2.5
By producer group															
Core construction industry	111.0	114.0	117.9	116.1	115.2	114.7	114.2	116.4	2.7	3.4	−1.5	−0.8	−0.4	−0.5	1.9
Renovation sector	104.1	104.9	107.2	106.3	103.5	101.7	99.2	100.1	0.7	2.2	−0.9	−2.7	−1.7	−2.5	0.9
Other producers	110.2	112.6	114.2	114.8	112.7	111.5	109.8	111.6	2.2	1.4	0.6	−1.8	−1.1	−1.5	1.6

Sources: Federal Statistical Office; DIW Construction Volume calculations.

partly counterbalanced by quite substantial increases in civil engineering. Even some structural engineering sectors, such as roofing and insulation, have a positive outlook for 2024 as a result of increased energy-related renovation.

Overall, real construction volume in the main construction industry is likely to decline only slightly in 2023 and 2024. A significant increase of nearly two percent is expected for 2025. The renovation sector will continue to be heavily impacted by the declines in residential construction. In 2024, the real construction volume in construction installation and other expansion work will likely be 2.5 percent below the 2023 level again. Weak residential unit construction in particular is having a negative impact on other construction-related services such as architecture firms. Real construction volume in the renovation sector will probably contract for the fourth year in a row in 2024. As in the other sectors of the industry, however, the economic outlook should brighten in 2025.

Conclusion: Necessary shifts in capacity require binding political guidelines

Construction services will decline again in 2024. Noticeable real growth in construction volume is not expected until

2025. Nevertheless, many construction companies are facing major challenges. The differing outlooks for various sectors in the industry require major restructuring in its capacity profile. In particular, it will be important to utilize the freed-up capacities in the energy-related renovation of private and public buildings. In some cases, growth opportunities in civil engineering can only be realized by using corresponding capacities from building construction.

Policy makers should actively support restructuring in the construction industry. For example, inter-company training and retraining capacities could be expanded and funded. In many cases, it will be crucial for the success of internal restructuring for workers to receive wage replacement benefits from the short-time work allowance during this phase.

The continuing decline in new residential construction continues to trigger major political pressure for action. The number of completed residential units will not increase in light of shrinking investments in new construction over the next years. The target of 400,000 new dwellings per year is thus becoming less and less likely to be achieved. In reaction to the low completion figures, among other things, the Federal Government passed a package of measures that should incentivize the construction of affordable and climate-friendly dwellings and stabilize the construction and real estate industries.[14]

However, initial assessments, particularly of tax incentives from degressive depreciation, indicate that a considerable increase in the number of newly built residences is unlikely in the short to medium term.[15] The focus, however, should be less on the total number of newly constructed buildings. Instead, as the greatest imbalance between high housing demand and low housing supply exists in metropolitan areas, creating housing in the lower price segment should be prioritized. Densification, which has been discussed for years, can relieve the shortage in metropolitan areas specifically. In terms of cost, densification is more cost effective than creating residences on newly developed and expensive land. Furthermore, there are now cost-effective methods of adding stories to existing buildings.

There is currently a great deal of uncertainty about how the Federal Constitutional Court ruling will affect funding of construction activity and the longer-term funding of the transition to climate neutrality. While clear agreements with federal companies are emerging in civil engineering, there is particular uncertainty as to how energy-efficient building refurbishment and new residential construction will be funded. Policy makers must quickly implement binding regulations here, especially with regard to the KfW, so that its funding can continue.

14 Cf. the BMWSB website.

15 Claus Michelsen, Simon Junker, and Ferdinand Fichtner, "Simulation des Wachstumschancengesetzes: Richtung stimmt, Effekte zu gering," *Economic Policy Brief*, no. 9 (Verband Forschender Arzneimittelhersteller e. V. Berlin: 2023) (in German; available online).

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