Construction Industry Forecasts 2023-2025

Spring 2023 Edition - £210




construction products association

Contents

© 2023 Construction Products Association. All rights reserved.

This document is licensed for the exclusive use of Members of the CPA and purchasers of its economic forecasts (£210).

Please do not publicly distribute this document. Additions to the distribution list can be made by contacting the CPA at 020 7323 3770.

DISCLAIMER

All construction figures (starts, completions, orders and output) refer to Great Britain.

All output figures are in 2019 constant prices using the historic figures from the Office for National Statistics (ONS) – as at 12 April when the Forecasts were finalised.

All new orders figures are in 2019 constant prices using the historic figures from the Office for National Statistics (ONS).

The information in this booklet has been prepared by Construction Products Association and represents the views of Construction Products Association without liability on the part of the Construction Products Association and its officers.

Overview

After strong growth in the last two years, construction output is forecast to fall by 6.4% in 2023, driven primarily by sharp falls in activity in the two largest construction sectors, private new housing and private housing repair, maintenance and improvement (rm&i). Output in the third largest construction sector, infrastructure, has also been revised down in the light of government announcements of delays to major projects that will only add further cost to the projects when they return. Construction output is forecast to recover in 2024, rising by 1.1%, as wider economic growth boosts demand for both new build housing and rm&i activity.

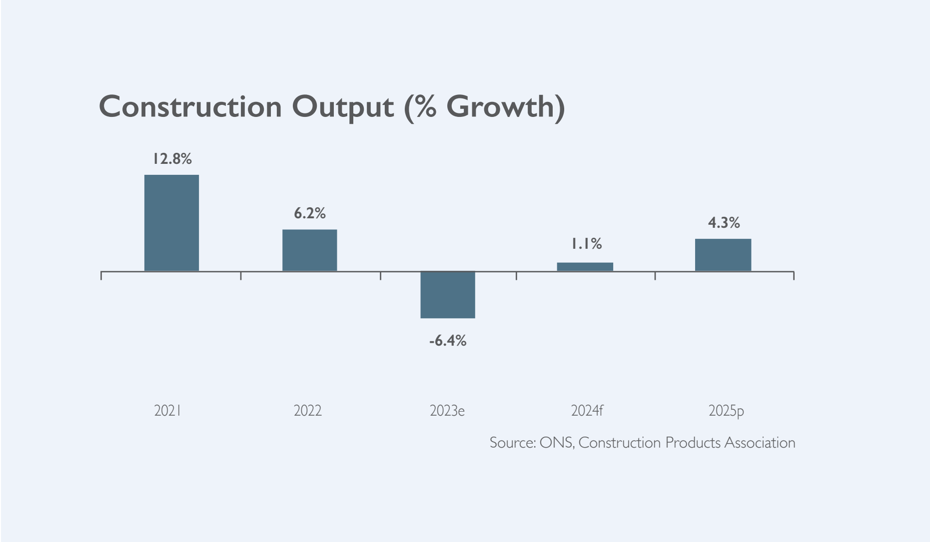
Just over six months on from the political and economic instability after the government's failed Mini Budget, the UK economy appears to be in a considerably better position than it was in Autumn. Inflation is expected to slow from Spring, interest rates appear to have peaked and mortgage rates have been falling. With early macroeconomic data for the year surprising on the upside, this means that UK GDP is expected to flatline this year rather than endure a technical recession. Overall, construction output early in 2023 remained higher than it was pre-pandemic but fortunes vary radically across the different construction sectors and it is difficult to see output not falling significantly this year. This is because private construction sectors are facing hits due to falling real wages, mortgage rates significantly higher than a year ago and double-digit economy-wide inflation hitting households whilst clients in public construction sectors struggle with constrained budgets and double-digit construction cost inflation.

Activity in the housing market and private housing sector was strong until demand and starts fell sharply in 2022 Q4 and even though demand is currently recovering, it is recovering slowly from a low point that means double-digit falls in both private starts and completions before recovering in 2024. Furthermore, private housing rm&i output reached its highest level on record in March 2022, from which it has been falling since and output is forecast to fall further this year. With a strong labour market and slowing inflation, however, real wages and private housing rm&i volumes are both set to rise next year. Infrastructure activity remains at high levels but growth in the next two years is only likely to be marginal as government postpones projects, local authorities face financial constraints and clients in

Key Points

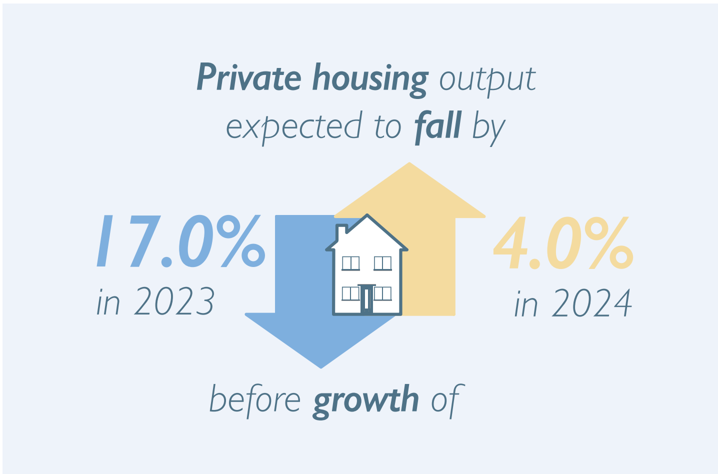
- Construction output falls by **6.4%** in **2023** before growth of **1.1%** in **2024**
- Private housing output falls by **17.0%** in **2023** and rises by **4.0%** in **2024**
- Private housing repair, maintenance and improvement to fall by **9.0%** in **2023** before growth of **2.0%** in **2024**
- Infrastructure output to increase **0.7%** in **2023** and **1.2%** in **2024**
- Industrial output to rise by **1.1%** in **2023** before falling by **14.8%** in **2024**

regulated sectors hesitate on signing off projects due to concerns that construction costs will spiral out of control. Activity in industrial warehouses and factories started this year close to its highest levels on record and it is likely to remain at these elevated levels whilst projects currently in the pipeline feed through. New investment in both warehouses and factories, however, appears to have peaked already and, as a result, industrial activity is forecast to slow considerably in the second half of this year and next year, particularly as it is coming from a historically high level.



Risks to the forecasts primarily remain on the downside and will be dependent on whether there is a financial crisis after the issues experienced by Silicon Valley Bank and Credit Suisse, with further banks expected to experience issues (see Economy). However, there are also positive risks to the forecasts given that macroeconomic data has so far this year surprised on the positive side and with construction inflation starting to slow over the course of the year. As a result, alongside the forecast it is important to note the CPA's Key Risks and also the Upper Scenario and the Lower Scenario in addition to the forecast.

Private housing is the largest construction sector worth £40.8 billion per year. Demand in the housing market and private house building sector remained very strong last year until the government's calamitous Mini Budget in Autumn, which directly led to mortgage rates rising sharply and indirectly led to a sea change in homebuyer sentiment. Demand in 2022 Q4 fell by around 30%-40% compared with a year earlier. In the short-term, this has meant that house builders have focused solely on completions whilst starts and land purchasing were extremely subdued except in some very selected areas where demand remained solid. House builders report that demand has started to recover so far this year, from a very low base and with a considerable increase in the use of incentives. The lack of any further stimulus from government in the Spring Budget, especially policies focused on first-time buyers, who are likely to be the hardest hit by the higher mortgage rates, and particularly after the end of Help to Buy, is of great concern to the industry. House builders will be hoping for the recovery in demand to accelerate during the key Spring selling season as mortgage rates continue to fall. On the supply side, materials and products availability has eased for most materials and products plus the rate of cost inflation is likely to slow considerably although construction costs are unlikely to fall, whilst labour availability remains an issue for some trades despite the slower demand. Overall, however, private housing completions and output are likely to fall by 17.0% this year with starts taking a bigger hit and falling by 20.0%. In the CPA's lower scenario, if demand doesn't accelerate in the key Spring selling season, then it is highly unlikely that starts will



Construction Output

e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

increase significantly from the current low point and, consequently, it would be difficult to see completions rise significantly in the second half of the year.

Private housing repair, maintenance and improvement (rm&i) is now the second largest construction sector worth £28.7 billion per year after reaching historic high levels during the pandemic boom that peaked in March 2022. This was due to the 'race for space' demand for better quality indoor space, outdoor space and better home office facilities. In addition, this demand was enabled by homeowners with additional wealth due to accumulated savings from increased working from home over the pandemic period as well as temporary 'reduced spending on non-essential retail. However, private housing rm&i has been falling since March 2022 as the rising cost of living, falling real wages and falling consumer confidence meant that homeowners paused, or reduced, non-essential discretionary spending. Initially, the greater impact was on smaller improvements work, which was exacerbated by a dip in Summer 2022 as households returned to normal Summer holiday trends of holidays abroad. Larger improvements work largely continued during 2022 as many homeowners had often pencilled in the finance for it at the start of the year and they often already had planning approval. Plus, many homeowners undertaking improvements projects last year were concerned that if they were to postpone them then the

Public & Private Sector Construction Output

£ million	2021	2022	2023	2024	2025
Change on previous year	Actual	Actual	Estimate	Forecast	Projection
Public Sector inc. PFI	41,614	41,005	40,018	40,218	40,900
	9.7%	-1.5%	-2.4%	0.5%	1.7%
Private Sector	128,998	140,241	129,632	131,240	137,870
	13.9%	8.7%	-7.6%	1.2%	5.1%
Total Construction	170,612	181,246	169,650	171,457	178,770
	12.8%	6.2%	-6.4%	1.1%	4.3%

Source: ONS, Construction Products Association

cost of the projects may increase considerably down the line. Planning applications for these type of larger improvements, however, fell in the second half of 2022 and this is likely to feed through into further falls in activity during 2023. It is worth noting that one area of booming activity in private housing rm&i is energy-efficiency retrofit activity, primarily insulation, and solar/PV, which the CPA has been highlighting for over one year as homeowners with finance available have focused on improvements that reduce energy bills, particularly in the light of concern over energy prices and energy security going into Winter. Overall, private housing rm&i output is expected to fall by 9.0% in 2023 before rising by 2.0% in 2024.

Private housing rm&i *anticipated to* ***decline***

9.0% in 2023 *before* ***growth*** *of* **2.0%** in 2024

Infrastructure is the third largest construction sector and worth £27.8 billion per year. Spending plans in regulated sectors such as roads, rail, energy, water & sewerage provide the majority of workloads in the sector whilst major projects such as Hinkley Point C, the Thames Tideway Tunnel and HS2 provide significant growth around the consistent workloads. Whilst government continues to provide publications with pipelines of activity to theoretically give certainty to industry, government *ad hoc* decisions increasingly provide less certainty regarding future infrastructure activity and, as a consequence, industry cannot justify large, up-front investment in the skills and capacity needed to deliver projects. The latest government decisions involve two-year delays to HS2 Phase 2a and Euston station as well as a two-year delay to the Lower Thames Crossing plus delays to other projects such as the A27 Arundel Bypass and the £335 million A5036 Port of Liverpool Access. It is not only central government that is suffering infrastructure issues but local authorities are financially constrained and even in regulated sectors such as energy, wind farm new investment may be hindered by financial viability as government contract prices based on prices last year may not attract investment given the impacts of persistent double-digit construction cost inflation. Despite these issues, infrastructure output is still expected to rise, albeit by only 0.7% this year and 1.2% next year, based on projects started and/or signed up to in previous years.

The **commercial** sector has fallen from the second largest construction sector in 2017 to the fourth largest sector in 2022 but commercial output is still worth £21.8 billion per year. Commercial activity is still strong for fit-out/refurbishment and activity in this area of the sector remains higher than pre-pandemic and higher than in 2017 due to the strong demand for grade 'A' office space. New contract awards for fit-out/refurb fell in 2022 Q4 but firms operating in the sector report that this was likely to have been temporary due to the political and economic uncertainty following the government's failed Mini Budget and that the numbers of tenders appears to have recovered since the start of the year due to greater investor confidence. Conversions of existing commercial developments to residential or industrial/logistics activity also remains high. In addition, activity on data centres and biotech facilities is currently robust. The majority of work in the commercial sector, however, has traditionally been on commercial towers. There are projects in the pipeline, although this is only a fraction of the number of towers when the market peaked in 2017. Furthermore, the indications are that many of the towers projects that have not broken ground remained paused for repricing given concerns from investors over potentially spiralling construction costs and rising financing costs due to interest rate rises globally. Overall, commercial output is forecast to fall by 5.2% in 2023 before growth of 1.0% in 2024 although the fall this year is highly skewed towards new towers activity whilst work on existing commercial developments is expected to remain at a high level.

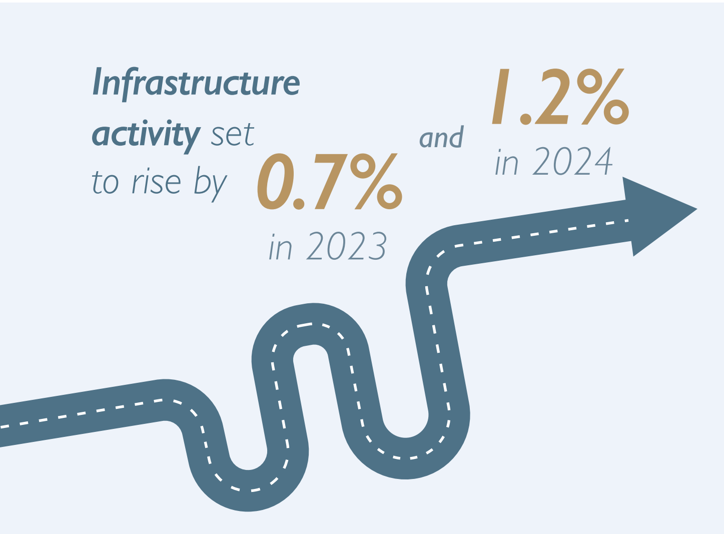
In terms of the recent official data, the volume of total construction output in February rose by 2.4% compared with January on a seasonally adjusted basis according to the ONS, partly due to it bouncing back after the rain-affected early January in which output fell by 1.7%. Construction output in February was 5.7% (£845 million) higher than a year ago, 6.2% higher than in January 2020, pre-pandemic, and at its highest monthly level on record according to ONS (the ONS monthly data only go back to 2010).

It is worth noting, however, that of the £845 million annual increase in construction in the year to February 2023, over two-thirds of the increase (69.5%) was due to the repair and maintenance sectors, which is where the ONS appears to be having its main problems with its estimates of inflation that it uses to turn its value of construction output into volume of construction output.

The ONS estimated that in the year to February inflation in repair and maintenance was only 4% compared to 11% in new housing and 14% in infrastructure. The importance of ONS appearing to underestimate inflation is that it means it is overestimating the volume of repair and maintenance output.

Private housing output in February was 2.0% higher than in January and it was 1.5% higher than a year earlier as February activity was helped by a catch-up in work lost in January due to the rain. But, overall, private housing output peaked in October and it has been on a general downward trend since then. Housebuilders' focus remains on building out existing developments where they have pre-sales and reservations rather than starting any new developments or land purchase except on a few selected sites where demand remains. Output is likely to fall in the next few months as the focus remains on completions whilst the fall in starts in 2022 Q4 feeds through. In addition, March was rain-affected as well, which may affect the month's output data. House builders indicate that demand has been picking up since the start of the year as mortgage rates have fallen but a further acceleration in the vital Spring selling season will be key to whether we see a recovery in starts that will turn in to completions later in the year or whether we see a hiatus in starting new developments that would mean construction activity falling sharply this year overall.

Infrastructure output in February was 1.7% lower than in January but 2.4% higher than a year ago and it remained 19.0% higher than in January 2020, pre-pandemic, due to strong activity on major projects and frameworks. Many projects currently on the ground are going over-budget, which has led to increased client hesitancy signing-off new projects to replace projects finishing due to concerns over cost inflation, which will constrain growth in the volume of infrastructure output this year. This is particularly the case for financially-constrained councils, which are shifting finance away from new projects towards funding the increasing cost of essential repair, maintenance and improvement activity.



According to the ONS, private housing rm&i output in February was 5.0% higher than in January, 8.9% higher than a year ago and was 43.5% higher than in January 2020, pre-pandemic. However, as the CPA stated previously, the ONS still appears to be overestimating the level of private housing rm&i output (due to the ONS underestimating inflation in the sector, which it estimates at 4% in the year to February 2023 whereas firms in the sector report that it is closer to 10%-12%) so firms in the sector report that output fell considerably sharper than the

ONS reported last year. Firms operating in private housing rm&i report that the CPA has spoken to have stated that the volume of activity did rise in February given good weather and catch-up after poor weather in January. However, firms did not experience the extent of rise the ONS reports. Firms reported that energy-efficiency retrofit and solar/PV work remains strong but otherwise output remains on a general downward trend due to the fall in planning applications for improvements work in 2022 H2 feeding through to activity down on the ground.

Industrial output rose by 1.7% in February compared with January and output remained only marginally lower than November 2022's historic high levels. Output in February was also 18.2% higher than in January 2020, pre-pandemic, due to strong warehouses and factories activity, the latter due to manufacturers' decisions in Autumn 2021 to invest in new capacity based on strong demand and capacity constraints. The new investment market for warehouses has now peaked so, after current projects have been built, activity is likely to fall away. Plus, factories activity is based on investment decisions in 2021 when demand was strong and manufacturers were capacity constrained. New manufacturing investment decisions in Autumn 2022, however, were put on hold due to economic and political instability so output is likely to fall away over the next 12-18 months after current projects finish.

Commercial output rose by 1.7% in February and was 3.6% higher than a year ago. However, output remained 26.5% lower than in January 2020, pre-pandemic. Firms working on high-end refurbishment and fit-out of existing commercial developments report that activity is still buoyant, higher than pre-pandemic, and changing the use of commercial developments into housing and industrial/logistics also remains strong. New commercial towers activity is, however, more than one-third lower than pre-pandemic. There are towers projects in the pipeline but those that have not broken ground are still being paused and pushed back due to uncertainty over financial viability due to concerns over demand for new space given an excess of existing commercial space, interest rate increases raising funding costs and double-digit cost inflation.

The S&P Global/CIPS UK Construction PMI was 50.7 in March, down from 54.6 in February. 50=no monthly change so March's PMI still represents growth but a considerable slowdown in the growth rate compared with February.

According to the PMI, civil engineering (52.0) was the fastest growing area of construction in March due to work on HS2 and other transport infrastructure. Commercial building (51.1) also grew but the rate of expansion eased from February's nine-month high. Conversely, housing activity (44.2) decreased and the rate of decline was the fastest since the May 2020, with respondents citing fewer opportunities due to rising borrowing costs and a subsequent slowdown in new house building projects.

Despite subdued housing market conditions, the latest PMI signalled a further increase in new work that was the second fastest since July 2022. Greater workloads led to a solid upturn in staff recruitment, with the rate of job creation accelerating to its fastest since last October. Some firms noted that elevated wage pressures and shortages of available candidates had acted as a constraint on hiring.

46% of the survey panel predicted an increase in business activity during the year ahead, while only 11% foresee a reduction. The resulting index reading signalled the strongest degree of positive sentiment since February 2022. Optimism has rebounded strongly from the two-and-a half year low seen in December, largely reflecting signs of a turnaround in client spending and a more favourable outlook for the wider UK economy.

Construction Industry Forecasts - Spring 2023

	2021	2022	2023	2024	2025
% annual change	Actual	Actual	Estimate	Forecast	Projection
Housing					
Private	37,134	40,795	33,860	35,214	39,440
	16.4%	9.9%	-17.0%	4.0%	12.0%
Public	5,120	5,359	4,555	4,464	4,687
	8.2%	4.7%	-15.0%	-2.0%	5.0%
Total	42,254	46,154	38,415	39,678	44,127
	15.4%	9.2%	-16.8%	3.3%	11.2%
Other New Work					
Public Non-Housing	9,498	8,615	8,487	8,518	8,594
	-1.2%	-9.3%	-1.5%	0.4%	0.9%
Infrastructure	27,931	27,769	27,953	28,289	28,803
	28.1%	-0.6%	0.7%	1.2%	1.8%
Industrial	4,756	6,756	6,834	5,821	5,657
	1.2%	42.1%	1.1%	-14.8%	-2.8%
Commercial	21,939	21,775	20,653	20,853	21,425
	-7.3%	-0.7%	-5.2%	1.0%	2.7%
Total other new work	64,124	64,915	63,926	63,482	64,480
	7.3%	1.2%	-1.5%	-0.7%	1.6%
Total new work	106,378	111,069	102,341	103,160	108,607
	10.3%	4.4%	-7.9%	0.8%	5.3%
Repair and Maintenance					
Private Housing RM&I	25,432	28,717	26,132	26,655	27,988
	25.9%	12.9%	-9.0%	2.0%	5.0%
Public Housing RM&I	7,168	7,052	7,052	7,193	7,337
	5.8%	-1.6%	0.0%	2.0%	2.0%
Private Other R&M	14,537	16,384	16,220	16,545	16,875
	16.2%	12.7%	-1.0%	2.0%	2.0%
Public Other R&M	5,767	5,978	5,859	5,859	5,917
	10.9%	3.7%	-2.0%	0.0%	1.0%
Infrastructure R&M	11,330	12,046	12,046	12,046	12,046
	12.0%	6.3%	0.0%	0.0%	0.0%
Total R&M	64,234	70,177	67,309	68,297	70,163
	17.2%	9.3%	-4.1%	1.5%	2.7%
TOTAL ALL WORK	170,612	181,246	169,650	171,457	178,770
	12.8%	6.2%	-6.4%	1.1%	4.3%

Source: ONS, Construction Products Association

Key Risks

UK Economic Growth and Inflation

UK economic prospects will be highly dependent upon the extent to which economy-wide inflation slows from Spring or remains stubbornly high. The CPA assumes that the CPI annual inflation rate will slow considerably from Spring as it will be over one year on from the spikes in energy, oil and commodity prices. CPI inflation slowing to 3.0%-4.0% at the end of this year or early next year would mean rising real wages and less pressure this year on the Bank of England to keep raising interest rates, which the CPA assumes have peaked at 4.25%. This would boost consumer confidence, household spending and economic activity more broadly. However, if the CPI annual inflation rate remained double-digit or even high single-digit over the course of this year then that would mean continued falling real wages going into next year and, in addition, it would put added pressure on the Bank of England to raise interest rates further this year, both of which would hit consumer confidence and household spending. Given that consumption accounts for 80% of the UK economy, this would be critical to growth prospects.

Financial Sector Troubles

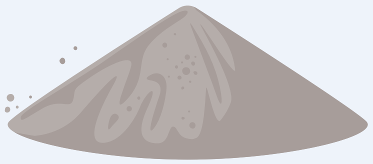
The key risk to the UK economy is now whether there will be a banking crisis or not given the issues faced by Silicon Valley Bank (SVB) and Credit Suisse so far. The tightening of monetary policy that started towards the end of 2021 appears to be revealing weak spots in the global financial system. Other banks are likely to face issues (particularly regional US banks and potentially Deutsche Bank) but in general UK banks appear better capitalised and better regulated than in 2008 plus central banks will act faster than in 2008 to restrict contagion as was seen with SVB and Credit Suisse, which were both swiftly taken over. However, the global financial system is extremely complex and it is worth noting that it will take time for all the issues to play out. For instance, during the financial crisis, BNP Paribas started to experience issues in August 2007 but it was not until October 2008 that the full impacts were felt and Lehman Brothers went under so there remains a large degree of uncertainty. At the very least, banks are likely to be more cautious on lending. For instance, Eurozone lending fell €61billion in February, which was the largest decline since 2013. Banks are also likely to price in additional risk. Central banks are less likely to raise interest rates further given concern over the financial sector.

The Availability and Cost of Labour

The greatest issue facing the industry medium-term once demand recovers in housing and materials price inflation eases will be the number of people that have left the industry and entrants into the industry each year are a drop in the ocean and nowhere near enough to compensate. There were 2.17 million workers in UK construction in 2022 Q4, which is 0.7% higher than in Q3 and 0.5% higher than a year ago according to the ONS. UK construction employment in 2022 Q4 was still, however, 6.0% lower than in 2019 Q4, pre-pandemic, and 10.5% lower than at the recent peak in 2019 Q1. This also means that in 2022 Q4 there were 255,251 fewer workers in UK construction than in 2019 Q1 despite strong demand.

Looking at the breakdown by employees and self-employment in UK construction, the number

Building materials inflation
in February 2023 was
10.6%



of employees in 2022 Q4 was 3.1% higher than a year ago and 1.4% higher than in 2019 Q4, pre-pandemic, albeit still 1.9% (27,336) lower than the recent peak of UK construction employment in 2019 Q1. However, the greatest concern is the loss of UK construction self-employed workers. In 2022 Q4, self-employment was 4.9% lower than a year earlier and 17.5% lower than in 2019 Q4. It was also 23.2% lower than in 2019 Q1, the recent peak of UK construction employment. This means that in 2022 Q4 there were 229,843 fewer self-employed workers in UK construction than in 2019 Q1. Hence the acute shortages in some skilled trades despite the strong construction demand overall.

UK construction employment in 2022 Q4 has a major age-demographic problem in the UK-born workforce, with the big spike in employment in the 50-64 age range, which means that construction will be losing around 500,000 workers (around one-quarter of the workforce) in the next 10-15 years. The age-demographic issue has been a persistent problem that the CPA been highlighting over the years.

However, the greater concern near-term is that the loss of construction employment has accelerated in recent years (since the pandemic and Brexit). The change in employment by age-demographic between 2019 Q1 (the recent peak of construction employment, before the political and economic uncertainty, pre-pandemic and pre-Brexit) and 2022 Q4, has been a loss of 255,200 workers in UK construction in less than four years despite strong construction activity.

The largest losses of employment in the UK-born construction workforce have been between 45 and 59 years old whilst the largest losses in EU workers in UK construction have been between 25 and 34 years old. Older construction workers retiring early and EU workers going back to their home countries (or other EU countries) where activity is also strong, respectively.

Given the loss of EU construction workers and, in particular, the older UK-born construction workers, it suggests that the age-demographic problem in the UK construction workforce has accelerated considerably over the past three years.

The Availability and Cost of Materials and Products

UK construction materials prices in February 2023 were 10.6% higher than a year ago according to ONS, which is a slight upturn from the 10.4% construction materials price inflation in January but UK construction materials inflation in February 2023 has slowed considerably since the 26.8% peak in June 2022 that was due to the energy, oil and commodity price spikes.

However, looking at UK construction materials prices, in February 2023 prices rose 0.4% compared with January but have fallen 3.7% since peak in July 2022 yet prices remained 41.5% higher than in January 2020, pre-pandemic.

UK construction materials inflation varies considerably by material, with the fastest price rises in the year to February 2023 in materials such as insulation (40.3%), where demand is very strong from homeowners with the up-front finance available for energy-efficiency retrofit. In addition, price inflation has been strong in materials that are energy-intensive products such as such as aggregates (26.7%), concrete (20.4%) and cement (19.8%), despite falls in recent energy prices as manufacturers are still moving from forward energy contracts signed 12-24 months ago onto new, higher forward energy price contracts, which particularly impacts energy-intensive manufacturers where energy prices account for between one-quarter and one-third of total costs.

Conversely, the prices of some materials have fallen sharply since June 2022, albeit from historic high levels, and continue to fall, particularly timber and timber-related products, with imported softwood timber prices in February 2023 that were 16.5% lower than a year ago, particle board prices 11.9% cheaper than a year ago and plywood prices 7.8% lower than a year ago.

Overall, UK construction materials inflation will slow over the course of this year, given that we will be a year on from the sharpest rises in energy, oil and commodity prices after Russia's invasion of Ukraine so the annual percentage change will be from a higher base. However, the level of materials prices may still rise overall as the energy-intensive material price rises outweigh the materials in which prices are falling.

Contractor Insolvencies

328 construction firms went out of business in February 2023, which is 12.7% higher than in January and 6.5% higher than a year ago according to the Insolvency Service. In the year to February, 4,156 construction firms went out of business. This is the second highest 12-month total of construction firms to go out of business in the UK since the financial crisis more than a decade ago, after December's 12-month total of 4,160 firms.

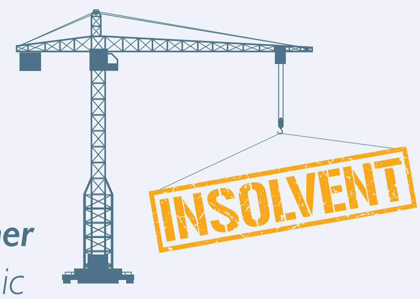
58% of the UK construction firms that went out of business in the 12 months to February 2023 were specialist contractors, as they are primarily smaller firms, often on fixed price contracts signed more than 12 months ago, before the sharp spikes in materials price inflation that were, in turn, due to spikes in energy and commodity prices, after Russia's invasion of Ukraine. Smaller specialist contractors are more exposed than major house builders and main contractors to these price rises as small specialist contractors have considerably less resource to plan and purchase materials well in advance and less market power to negotiate on availability and prices. Plus, smaller specialist contractor problems have been exacerbated by additional issues such as skills shortages and rising labour costs, IR35, reverse charge VAT and rising Personal Indemnity insurance costs whilst trade credit insurance issues have also been hindering firms in the supply chain.

In February 2023, the number of main building contractors going out of business in the UK rose by 4.5% compared with January and it was 1.8% higher than a year ago whilst they accounted for over one-third (36%) of construction firms going out business. The extent of construction materials and labour inflation in the last year, plus costs incurred by project delays due to availability issues, has been such that even with strong construction demand and greater finance available than specialists it has proved difficult building out existing projects profitably when they were signed up to prior to the sharpest rises in construction cost inflation.

Only 6% of construction firms that went out of business were civils contractors, which have tended to be less affected. Firstly, this has been due to infrastructure activity being very strong on major projects and frameworks but, secondly, public sector and regulated sector clients have been more understanding of increasing cost issues and they have so far tended to be less stringent on enforcing fixed-price contracts.

It is worth noting that construction output in February 2023 was still 6.2% higher than in January 2020, pre-pandemic, yet construction materials prices were 41.5% higher and construction insolvencies were 23.8% higher so the key question is going forward is what happens to construction insolvencies as the falls in house building, housing rm&i and government delays to infrastructure projects feed through to the ground, even as the rate of materials price inflation slows (but price still rise, just more slowly).

Construction insolvencies
in February were
23.8% *higher*
than pre-pandemic
despite construction demand higher than pre-pandemic



Upper Scenario

Assumptions

- UK economic activity rises by 1.0% in 2023 as the extension of the energy bills help for households boosts consumer spending
- Unemployment remains broadly flat due to the persistence of skills shortages and growth in consumption
- Property transactions 'only' fall 10.0% but this is matched by a reduction in the supply of homes onto the market, sustaining house prices at levels seen at the end of 2023 Q1
- Consumer spending on non-essential and big-ticket items grows as the rate of inflation slows from Spring 2023 and households utilise savings to offset price rises
- Lending to businesses remains broadly flat despite slower economic growth
- Business investment recovers from a nadir post-Mini Budget due to better economic growth prospects and investment is boosted by large manufacturers using government incentives

Key Effects

- Total construction output falls by 2.8% in 2023 and rises by 2.9% in 2024 with labour availability and materials price inflation becoming less of an issue, allowing a quicker recovery in activity
- Private housing output falls by 12.0% in 2023 but rises by 5.0% in 2024 as falling mortgage rates boost housing market sentiment and demand recovers rapidly from Spring 2023 after the post-Mini Budget nadir
- Commercial output remains broadly flat in 2023 before rising by 4.0% in 2024 as continued strong fit-out activity is initially offset by delays to new towers projects in the pipeline, which return in line with a quicker UK economic recovery and with cost inflation easing
- Private housing rm&i output falls by 5.0% in 2023 but rises 2.0% in 2024 as wider economic recovery in 2023 H2 and easing inflation leads to a recovery in homeowner confidence and spending with continued growth on energy-efficiency retrofit as activity on government's new ECO+ ramps up

Construction Industry Forecasts - Spring 2023 - Upper Scenario

	2021	2022	2023	2024	2025
% annual change	Actual	Actual	Scenario	Scenario	Scenario
Housing					
Private	37,134	40,795	35,900	37,695	40,710
	16.4%	9.9%	-12.0%	5.0%	8.0%
Public	5,120	5,359	4,823	4,823	5,064
	8.2%	4.7%	-10.0%	0.0%	5.0%
Total	42,254	46,154	40,723	42,518	45,774
	15.4%	9.2%	-11.8%	4.4%	7.7%
Other New Work					
Public Non-Housing	9,498	8,615	8,787	9,051	9,141
	-1.2%	-9.3%	2.0%	3.0%	1.0%
Infrastructure	27,931	27,769	28,602	29,746	31,233
	28.1%	-0.6%	3.0%	4.0%	5.0%
Industrial	4,756	6,756	6,959	6,263	6,200
	1.2%	42.1%	3.0%	-10.0%	-1.0%
Commercial	21,939	21,775	21,775	22,646	23,778
	-7.3%	-0.7%	0.0%	4.0%	5.0%
Total other new work	64,124	64,915	66,123	67,706	70,353
	7.3%	1.2%	1.9%	2.4%	3.9%
Total new work	106,378	111,069	106,846	110,224	116,128
	10.3%	4.4%	-3.8%	3.2%	5.4%
Repair and Maintenance					
Private Housing RM&I	25,432	28,717	27,281	27,827	29,218
	25.9%	12.9%	-5.0%	2.0%	5.0%
Public Housing RM&I	7,168	7,052	7,193	7,481	7,780
	5.8%	-1.6%	2.0%	4.0%	4.0%
Private Other R&M	14,537	16,384	16,548	17,044	17,556
	16.2%	12.7%	1.0%	3.0%	3.0%
Public Other R&M	5,767	5,978	5,978	6,098	6,281
	10.9%	3.7%	0.0%	2.0%	3.0%
Infrastructure R&M	11,330	12,046	12,286	12,532	12,658
	12.0%	6.3%	2.0%	2.0%	1.0%
Total R&M	64,234	70,177	69,287	70,982	73,492
	17.2%	9.3%	-1.3%	2.4%	3.5%
TOTAL ALL WORK	170,612	181,246	176,133	181,206	189,620
	12.8%	6.2%	-2.8%	2.9%	4.6%

Source: ONS, Construction Products Association

Lower Scenario

Assumptions

- UK GDP contracts in 2023 and the UK economy endures a recession
- Unemployment rises to 6.0% due to sharp falls in employment in the services sector covering non-essential spending
- House prices fall by more than 10.0% in 2023 as the number of forced sellers rises
- Consumer spending volume falls during 2023 as stubborn inflation leads to falls in real household disposable income, confidence and spending
- Lending to businesses falls as lenders increase borrowing rates in response to higher interest rates and concern over further problems in the banking sector
- Business investment falls by 10.0% as firms focus on near-term cost minimisation at the expense of medium-term investment plans

Key Effects

- Construction output falls by 10.4% in 2023 and 2.4% in 2024 as construction demand responds to a decline in the wider UK economy
- Private housing output falls by 25.0% in 2023 and remains flat in 2024 as a UK economic recession and a greater rise in unemployment adversely affects both the housing market and house building sectors
- Commercial output falls by 8.0% in 2023 and by 2.0% in 2024 as a fall in new fit-out orders at the end of last year continues whilst activity on new towers projects continues to be pushed back in response to investor concerns about new demand and rising costs
- Private housing rm&i output falls by 14.0% in 2023 and by 1.0% in 2024 as further falls in real wages and concern over job security over the next 12-18 months combined with fewer property transactions lead to declines in rm&i next year

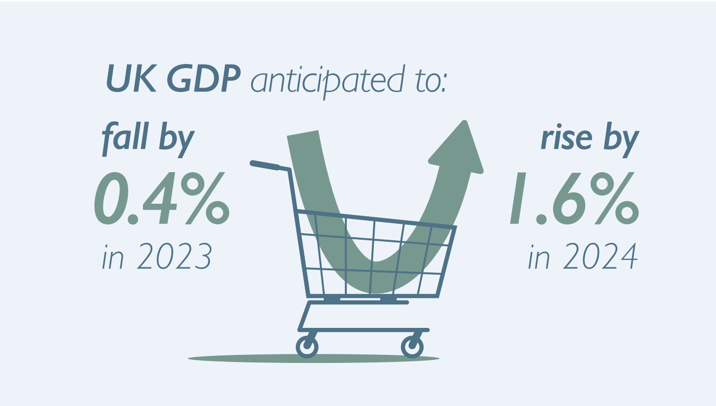
Construction Industry Forecasts - Spring 2023 - Lower Scenario

% annual change	2021 Actual	2022 Actual	2023 Scenario	2024 Scenario	2025 Scenario
Housing					
Private	37,134	40,795	30,596	30,596	33,656
	16.4%	9.9%	-25.0%	0.0%	10.0%
Public	5,120	5,359	4,287	4,116	4,116
	8.2%	4.7%	-20.0%	-4.0%	0.0%
Total	42,254	46,154	34,883	34,712	37,772
	15.4%	9.2%	-24.4%	-0.5%	8.8%
Other New Work					
Public Non-Housing	9,498	8,615	8,270	8,105	7,943
	-1.2%	-9.3%	-4.0%	-2.0%	-2.0%
Infrastructure	27,931	27,769	27,491	26,392	25,336
	28.1%	-0.6%	-1.0%	-4.0%	-4.0%
Industrial	4,756	6,756	6,756	5,405	5,189
	1.2%	42.1%	0.0%	-20.0%	-4.0%
Commercial	21,939	21,775	20,033	19,632	19,632
	-7.3%	-0.7%	-8.0%	-2.0%	0.0%
Total other new work	64,124	64,915	62,551	59,534	58,100
	7.3%	1.2%	-3.6%	-4.8%	-2.4%
Total new work	106,378	111,069	97,434	94,246	95,871
	10.3%	4.4%	-12.3%	-3.3%	1.7%
Repair and Maintenance					
Private Housing RM&I	25,432	28,717	24,697	24,450	25,183
	25.9%	12.9%	-14.0%	-1.0%	3.0%
Public Housing RM&I	7,168	7,052	6,770	6,635	6,502
	5.8%	-1.6%	-4.0%	-2.0%	-2.0%
Private Other R&M	14,537	16,384	15,892	15,892	15,892
	16.2%	12.7%	-3.0%	0.0%	0.0%
Public Other R&M	5,767	5,978	5,739	5,625	5,568
	10.9%	3.7%	-4.0%	-2.0%	-1.0%
Infrastructure R&M	11,330	12,046	11,805	11,569	11,453
	12.0%	6.3%	-2.0%	-2.0%	-1.0%
Total R&M	64,234	70,177	64,903	64,170	64,599
	17.2%	9.3%	-7.5%	-1.1%	0.7%
TOTAL ALL WORK	170,612	181,246	162,337	158,415	160,470
	12.8%	6.2%	-10.4%	-2.4%	1.3%

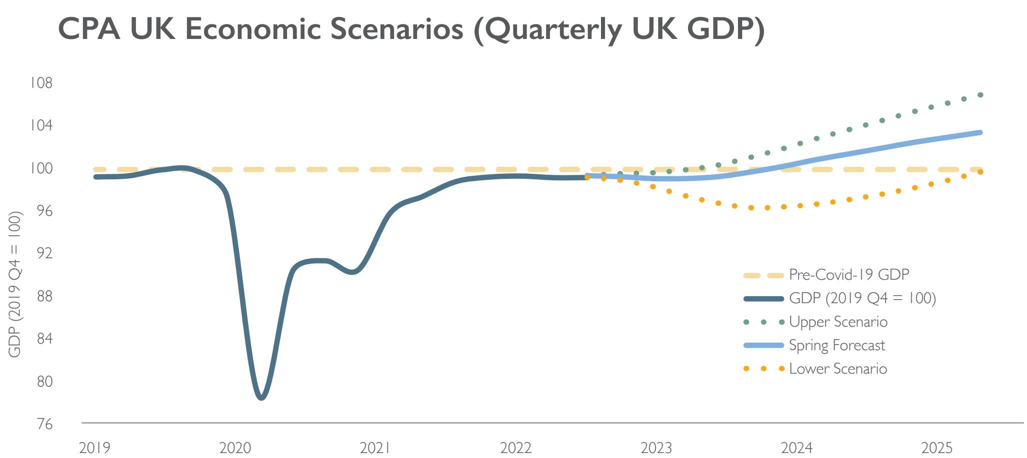
Source: ONS, Construction Products Association

Economy

UK economic prospects have been revised up since the Winter forecasts with a small but positive fiscal policy stimulus announced in the Spring Budget and consumer spending surprising on the upside, sustained by Government's energy bills help for households. UK GDP is now expected to fall by 0.4% in 2023 before growth of 1.6% in 2024. Positive risks to the forecasts entail stronger consumption and, consequently, economic growth but these are outweighed by the risks of tightening financial conditions in the light of increased concern over more banks potentially suffering serious issues following the problems of Silicon Valley Bank and Credit Suisse.



The focus of the media and the Chancellor has been on whether the UK economy will endure or avoid a technical recession, defined as two consecutive quarters of contraction in the economy. However, in practical terms, economic activity is bouncing around on a monthly basis but overall, generally, flatlining and it is likely to be for the majority of this year. UK GDP fell by 0.5% in December according to the Office for National Statistics (ONS) due to the effect of strikes as well as the impacts of poor consumer confidence and mortgage rate rises immediately after the Government's Mini Budget in Autumn on consumer spending towards the end of the year. Within December's fall in GDP, service sector output, which accounts for over 80% of the UK economy, fell by 0.8% and, in particular, consumer-facing services activity fell by 1.2%. Conversely, GDP rose by 0.4% in January 2023, regaining just over half of the ground lost at the end of last year. Services output rose by 0.7% in January and consumer-facing services rose by 0.3%. UK GDP remained flat in February 2023, with services sector output falling by 0.1% although this was primarily due to strikes affecting activity in education and public administration



Source: ONS, CPA Estimates

whilst output in consumer-facing services grew by 0.4%. Industrial production output fell by 0.2% in February following a fall of 0.5% in January and the ONS reported that construction output rose by 2.4% in February after a fall of 1.7% in January although the CPA has concerns regarding some of the ONS construction output data, particularly for the ONS's estimates of repair and maintenance (see Overview).

CPI Inflation *set to average:*

6.1% in 2023

and slow to

2.8% in 2024

On a quarterly basis, GDP rose by 0.1% in 2022 Q4, which is more positive than initially expected, boosted by the energy bills help for households and rose by 0.1% in the three months to February 2023. UK GDP is expected to fall by 0.2% in 2023 Q1, which is an upward revision from 0.4%, given early positive ONS data and PMI data for the first couple of months of the year. However, the continued subdued housing market activity at the start of 2023 is likely to have hindered wider economic activity in Q1. Furthermore, the additional bank holiday for the coronation will reduce the number of working days and have an adverse impact on economic activity in 2023 Q2, which is also expected to decline.

The Chancellor's Spring Budget delivered a boost to economic growth through fiscal policy worth £21.0 billion, or 0.8% of GDP, in each of the next three fiscal years. It announced further financial support to households in the short term, which should lower inflation and support spending activity. Despite this and beyond the headline announcements, however, once changes previously announced by government have been taken into account, government will still be cutting fiscal spending over the next five years.

Despite flatlining economic activity, the Bank of England continued to raise its base rate in February, to 4.25%, due to its concern regarding high, sustained inflation. This is despite expectations that the annual rate of inflation will slow considerably from Spring as it will be one year on from the largest spikes in energy, oil and commodity prices after Russia's invasion of Ukraine. As a result, if only from a purely arithmetic point of view, the percentage change will slow given the higher base. CPI annual inflation rose by 10.4% in the year to February 2022, which is slightly higher than the 10.1% rise in the year to January but, clearly, considerably lower than the 41-year high of 11.1% in October. However, the Bank of England clearly views the

Economic Indicators

	2021	2022	2023	2024	2025
	Actual	Actual	Estimate	Forecast	Projection
GDP	7.6%	4.1%	-0.4%	1.6%	2.4%
Fixed Investment	6.1%	8.6%	-0.7%	0.8%	2.5%
Household Consumption	6.3%	5.3%	-1.0%	1.8%	3.0%
Real Household Disposable Income	0.9%	-1.7%	-1.2%	1.8%	2.4%
Government Consumption	12.5%	1.8%	3.8%	1.9%	1.2%
CPI Inflation	2.7%	9.1%	6.1%	2.8%	0.8%
RPI Inflation	4.1%	11.6%	8.3%	3.8%	1.7%
Bank Base Rates - June	0.10%	1.25%	4.25%	4.00%	3.25%
Bank Base Rates - December	0.25%	3.50%	4.25%	3.25%	3.00%

Source: ONS, Construction Products Association

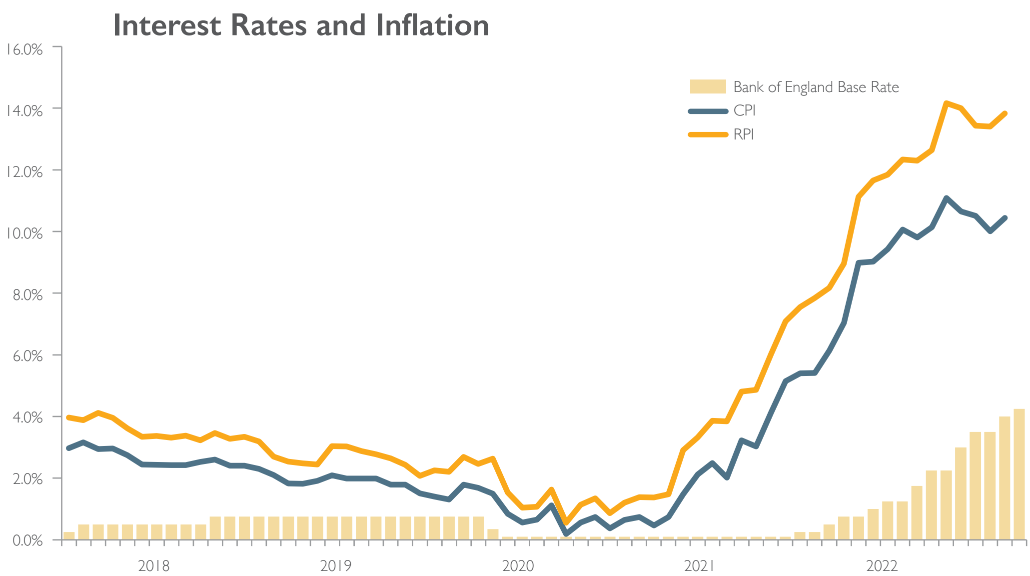
The Bank of England's
base rate is forecast to rise to

4.25%
in Spring 2023

before ***falling*** *to*
3.25%
in 2024

latest CPI data and sees that inflation not slowing quickly is a greater risk than that of recession and it continues to focus on raising interest rates. The CPA assumes that the Bank of England will keep its base rate at 4.25% until closer to the end of this year and then, after inflation has slowed, it will start to reduce interest rates to stimulate economic growth in 2023 Q4. It is worth noting, however, that the CPA had previously assumed that interest rates would peak at 4.00% given the expectations that inflation would slow from Spring and there remains a risk that the Bank of England will continue to raise interest rates in Spring.

Whilst lower energy and commodity prices are likely to lead to slower inflation over the course of this year, a key risk to this may come from oil prices. The immediate peaks in oil prices following Russia's invasion of Ukraine passed through and Brent Crude oil prices reached a recent peak in June 2022 of $120.1 per barrel before falling consistently afterwards to $78.5 per barrel in March 2023, which is below levels before Russia's invasion of Ukraine, despite sanctions placed on Russian oil exports by several major nations. The assumption made in previous forecasts was that oil prices would continue to fall and return to levels seen before the pandemic of $60.0-$70.0 per barrel during 2023 but, as previous forecasts highlighted, this was heavily dependent on whether major oil producing countries cut production in an attempt to artificially sustain oil prices and whether there are external geopolitical issues that hamper global oil production. The 24 members of Opec+ announced in April that they would be cutting oil production by 1.0 million barrels a day in a deliberate effort to sustain oil prices. Either this will ensure prices remain between $80.0 and $90.0 per barrel or Opec+ will take further steps to

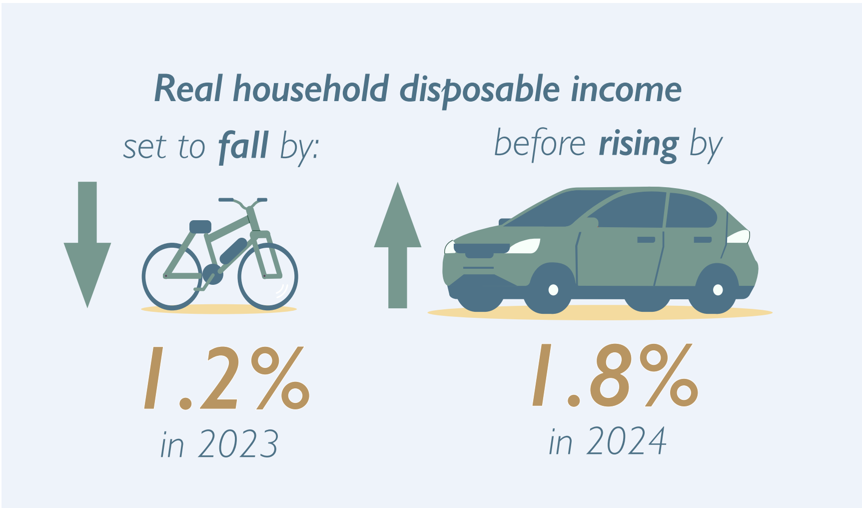


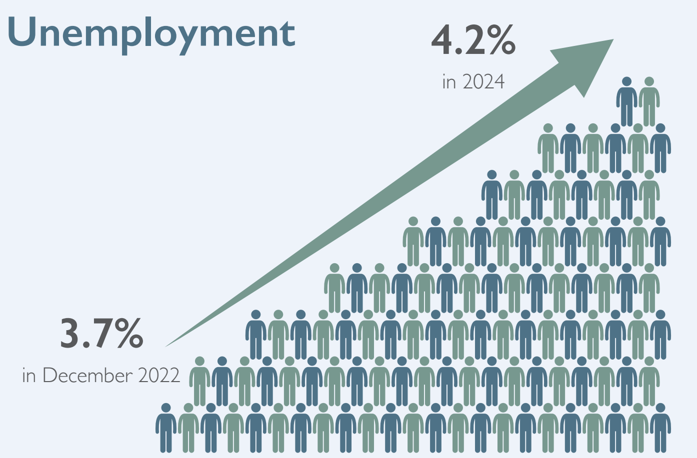
Source: Bank of England, ONS

ensure that prices remain above $80.0 per barrel, which may mean that CPI inflation remains higher than anticipated as higher oil prices feed through the economy over the next few months.

Double-digit CPI inflation has meant that workers have increasingly demanded higher wage increases. This is especially the case in parts of the economy where there are acute skill shortages, which may mean that firms need to increase prices further. The CPA continues to expect that the likelihood of there being a wage-price spiral is low given that demand is slowing in manufacturing and construction whilst wage pressure appears to be easing. It is, however, easing from a high point. Wage increases towards the end of 2022 were considerably higher than firms would have anticipated when they were signing off budgets for 2022. Wage inflation in the private sector in November 2022 was 7.6%. Overall, wage inflation in the UK economy was 7.0% in November due to the impact of public sector pay rises of 4.3% in the year to November. Despite these pay rises, this still means that growth in total pay in real terms fell by 3.7% in November for private sector workers and 6.4% for public sector workers. Since November, whilst the general economy has slowed slightly, private sector pay growth has slowed considerably more. As a result, private sector pay growth in nominal terms was 5.4% in the year to March 2023 with firms and workers increasingly affected by uncertainty over the UK economy, which means that pay in real terms fell by 5.0% in March. However, with general economy concerns playing less of a role and government concerns over strikes, public sector pay in nominal terms accelerated to 5.5% in March 2023 although this still meant that public sector pay in real terms fell by 4.9% in March. As previous forecasts highlighted, it is worth noting that wage increases will be highly diverse across different occupations. In a few specific occupations where there are severe skill shortages, there are likely to be double-digit wage increases whilst in areas of the economy in which activity has slowed, real wage falls are likely to be significant in the first half of this year before general economy inflation slows. Consumers will, therefore, endure a hit to spending power and the increase in mortgage costs for 300,000 homeowners per quarter on fixed-rate mortgages that will be remortgaging comes on top of the increases in prices that consumers face from high inflation, particularly on food and energy. Real household income is expected to fall by 1.2% in 2023 despite the expected slowdown in inflation, primarily because inflation is coming from historic highs whilst wage inflation continues to lag this considerably. This is less of a fall than previously expected though as the government's announcement of its extension of help for households on energy bills should help incomes and spending. In addition, households may use accumulated savings, which has not been the case so far to a great extent, and take on additional credit to fund essential spending patterns where necessary but for many, poorer, households that is unlikely to be enough to sustain spending growth and consumer spending is likely to fall during the first half of 2023.

GfK's Consumer Confidence Index reached its nadir in September 2022, the same month as the Government's failed Mini Budget, at -49. It gradually improved from then and in December it was -42 before it briefly slipped back to -45 in January as a result of concern regarding the UK economy and sentiment was adversely affected by talk of whether the UK would enter a technical recession or not. Since then, however, consumer confidence has improved for two consecutive months and in March 2023 reached its highest level since February 2022. Despite



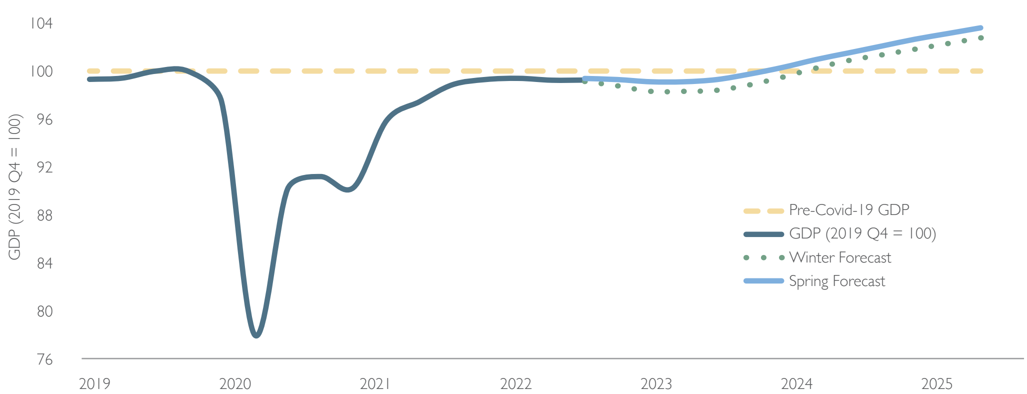


Source: ONS, Construction Products Association

this, the GfK measure remains pessimistic, particularly given that consumers' view of their personal financial situation did not improve in March 2023 whilst consumers also increased their savings despite the cost of living rises. Increases in recent months may merely reflect that sentiment has improved considerably since the economic and political chaos immediately after the Mini Budget in Autumn 2022. In March 2023, the index measuring changes in personal finances during the last 12 months was the same at -26, which is 13 points worse than March 2022. The forecast for personal finances over the next 12 months decreased three points to -21, which is three points lower than the same time last year. The index for the general economic situation of the country during the last 12 months was up three points at -62, which is 11 points lower than in March 2022. Expectations for the general economic situation over the next 12 months have increased by three points to -40, which is nine points higher than March 2022. The Major Purchase Index is up four points to -33; this is nine points lower than last year. The Savings Index was up two points in March at +21, which is three points higher than the same time last year. The rise in the Savings Index reflects a balance of issues for households that increasingly wish to save given the economic uncertainty despite many households also having to use savings to deal with rising inflation issues.

Despite higher interest and mortgage rates than expected a year ago, consumer confidence may continue to be partially offset by energy bills not rising as much as households feared before the government's help and fears over energy supply not being realised. How inflation and poor consumer confidence affect households' spending overall will depend heavily on the type of

CPA UK Economic Scenarios (Quarterly UK GDP)



Source: ONS, CPA Estimates

household. Many households, particularly those that have spent large parts of the past three years working from home, have accumulated savings. According to the ONS, UK households accumulated £210 billion of savings between 2019, pre-pandemic, and 2022, three-quarters of which was forced saving due to inability to spend. In addition, homeowners have also benefited from increased housing wealth after consistent double-digit annual house price rises due to the buoyant housing market.

The UK labour market remains remarkably resilient on the surface with low unemployment and skills shortages in key areas. However, it is worth noting that below the surface the labour market is not as buoyant as it would seem.

The unemployment rate for November 2022 to January 2023 was largely unchanged on the quarter at 3.7% and lower than the 4.0% reported in December 2019 to February 2020, pre-pandemic. The UK employment rate was estimated at 75.7% in November 2022 to January 2023, which is marginally higher than the 75.6% in the previous three months but lower than the 76.6% reported in the three months before the pandemic. This points to a loss of workers in the labour market, with the UK economic inactivity rate estimated at 21.3% in November 2022 to January 2023 compared with 20.5% in the three months before the pandemic.

In addition, total hours worked in November 2022 to January 2023 was 7.3 million higher than in the previous quarter but still 9.5 million hours lower than pre-pandemic levels. This suggests that the UK labour market has lost a significant number of workers that makes the unemployment rate look artificially low compared with pre-pandemic. The loss could potentially be due to EU workers returning to their home countries, early retirees and due to long-Covid-19. In the absence of a significant return of workers to the UK labour market from these sources, it is expected that the UK unemployment rate only rises slightly and remains historically low, even with the UK economy anticipated to flatline over the course of this year. Overall, the unemployment rate is estimated to forecast to rise from 3.7% in 2022 to 4.1% in 2023 and 4.2% in 2024.

On the most recent data from the ONS, UK business investment fell by 0.2% in 2022 Q4, revised down from its provisional estimate of 4.8% growth. The level of business investment in Q4 was 10.8% above where it was the same quarter a year ago but it remained 2.2% below where it was in 2019 Q4, the quarter before the pandemic. The CPA anticipates that UK business investment will fall by 1.0% in 2023. Many firms' new investment plans for 2023 are generally signed-off in the Autumn of the previous year. In this case, Autumn 2022 is when the UK was subject to unprecedented economic and political uncertainty. As a result, many firms took a risk averse strategy towards large up-front investments for a long-term rate of return and put investment plans on hold. These issues are likely to outweigh any benefits from government incentives for business to invest and although UK economic prospects for subsequent years are for general economic growth, it is still likely to be slower than long-term UK economic trend growth in 2024 and 2025. As a result, the CPA forecasts that business investment will fall by 1.0% in 2023 before slow growth of 0.8% in 2024. However, even at the end of 2024, business investment is expected to remain 1.7% lower than in 2019, pre-pandemic.

The key risk to the UK economy is now whether there will be a banking crisis or not given the issues faced by Silicon Valley Bank and Credit Suisse so far. The tightening of monetary policy that started towards the end of 2021 appears to be revealing weak spots in the global financial system. Other banks are likely to face issues (particularly regional US banks and potentially Deutsche Bank) but in general UK banks appear better capitalised and better regulated than in 2008 plus central banks will act faster than in 2008 to restrict contagion as was seen with SVB and Credit Suisse, which were both swiftly taken over. However, the global financial system is extremely complex and it is worth noting that it will take time for all the issues to play out. For instance, during the financial crisis, BNP Paribas started to experience issues in August 2007 but it was not until October 2008 that the full impacts were felt and Lehman Brothers went under so there remains a large degree of uncertainty. At the very least, banks are likely to be more cautious on lending. For instance, Eurozone lending fell €61billion in February, which was the largest decline since 2013. Banks are also likely to price in additional risk. Central banks are less likely to raise interest rates further given concern over the financial sector.

Upper Scenario:

- Economic activity grows from 2023 H2
- Consumer confidence and spending rise as inflation slows and the labour market remains resilient
- Lending to business increases as better economic growth prospects lead to increased business optimism
- Business investment recovers sharply in response to increased business confidence after the post-Mini Budget dip in 2022 Q4

The upper scenario envisages that despite the strong labour market, savings and credit availability sustain consumption despite double-digit inflation towards the end of 2022 and household spending and confidence recover in 2023 H2. Robust demand boosts manufacturing and services whilst supply chain issues ease for the construction sector and housing demand returns quickly.

Lower Scenario:

- Economic activity contracts significantly in 2023
- Consumer confidence remains subdued and spending falls between 2023 Q2 and 2023 Q4
- Unemployment rises significantly in the light of rising prices and falling spending
- Lending to households and businesses tightens as the financial sector becomes increasingly risk-averse and prices in additional risk to lending rates given further issues for US regional and global banks
- Business investment falls sharply during 2023 and only recovers slowly in 2024 due to uncertainty regarding the sustainability of economic growth

The lower scenario envisages that the UK economy slows considerably from 2023 Q2 as households become more risk averse as unemployment rises and both households and businesses suffer from reductions in the availability of finance and increases in the cost of finance. As a result, the economy falls into recession later this year and there is only a subdued recovery in 2024.

Private Housing

Demand in the housing market and house building sector fell around 30%-40% at the nadir in 2022 Q4 following the calamitous Mini Budget in Autumn. It has picked up gradually since the start of the year from that low point and is likely to continue to throughout the year. But, with substantially higher mortgage rates than a year ago likely to continue to suppress buyer demand and no stimulus from government to help first-time buyers, private housing completions are likely to fall by 17.0% this year overall unless there is a startling pick-up in demand in the key Spring selling season. Next year, however, with better economic prospects and inflation likely to be less of an issue, house building is likely to start to recover with growth of 4.0% in completions. The risks for private housing are still weighted towards the downside given that house builders continue to face challenges on the supply side in addition to the hit to demand.

Data covering the housing market and the house building sector are only now beginning to show the extent of the impacts of government's failed Mini Budget in September even though financial markets calmed by November. In the immediate aftermath of the Mini Budget, financial markets' expectations implied mortgage rates of between 7.0% and 8.0% but as government rowed back on its Mini Budget policies and with a change in government, markets' expectations eased and mortgage rates fortunately did not reach that high. The average rate on a three-year fixed-rate 75% loan-to-value mortgage reached a peak of 5.9% in November but fell away gradually each month afterwards and in March 2023 had fallen to 4.55% according to the Bank of England. Even still, this contrasts sharply with mortgage rates of 2.03% just 12 months ago and 1.18% only 18 months ago. Further significant falls in mortgage rates are unlikely given that, firstly, the Bank of England's base rate rose to 4.25% in March and, secondly, troubles in the financial sector, highlighted by the troubles of Silicon Valley Bank and Credit Suisse (see Economy) as well as potentially other banks, are likely to mean at the very least that lenders

Private Housing Starts and Completions Great Britain

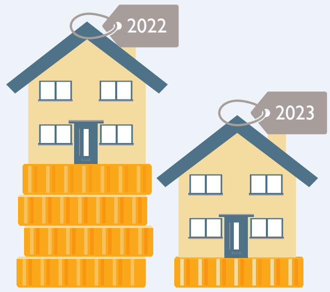
	2021	2022	2023	2024	2025
	Estimate*	Estimate*	Estimate	Forecast	Projection
Starts	162,491	176,727	141,382	144,209	158,630
	37.2%	8.8%	-20.0%	2.0%	10.0%
Completions	161,443	157,060	130,360	135,574	151,843
	19.7%	-2.7%	-17.0%	4.0%	12.0%
Output (£m)	37,134	40,795	33,860	35,214	39,440
	16.4%	9.9%	-17.0%	4.0%	12.0%
RM&I Output (£m)	25,432	28,717	26,132	26,655	27,988
	25.9%	12.9%	-9.0%	2.0%	5.0%

* Data from 2020 onwards for Wales is yet to be published

Source: DLUHC, ONS, Construction Products Association will be more cautious and have to price more risk into lending rates.

The biggest impacts of the higher mortgage rates are clearly likely to be on potential buyers, especially first-time buyers who are more dependent on mortgages, but it is also important to look at potential sellers given that there are still likely to be sharp rises in mortgage repayments for the 300,000 existing homeowners per quarter coming off fixed-rate mortgages that would need to remortgage at rates two or three times previous rates, particularly for those on interest-only mortgages. The alternative would be to sell their property, increasing supply of homes onto the market.

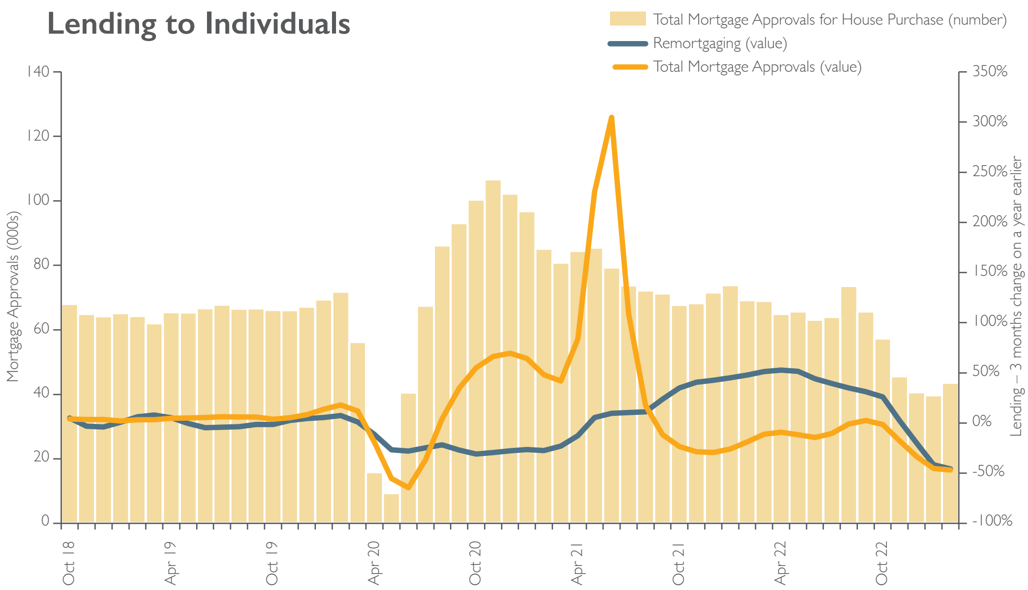
UK house prices *in March 2023 were* **3.1%** *lower than a year earlier according to Nationwide*



On the buyer side, there were 43,536 UK mortgage approvals in February 2023 according to the Bank of England, which is 9.8% higher than in January but 37.0% lower than a year ago. They were also 33.5% lower than the average between 2018 and 2019, pre-pandemic and was anticipated as financial markets chaos, post-Mini Budget (with 40% of mortgage products temporarily pulled) and a sharp rise in mortgage rates, fed through. However, February's approvals were the first rise since August 2022 and the growth since January's low point suggests that mortgage approvals are beginning the upward trend of recovery, albeit from a low point, which was expected as mortgage rates fall.

Despite the rise in February compared with January, it is still the second lowest number since 2009, during the financial crisis. House builders have reported that homebuyer demand continues to pick up as the year has progressed as mortgage rates fall and boosted by an increased use of incentives. Overall, mortgage approvals appear to have passed the nadir but the recovery in mortgage approvals is not likely to be rapid and approvals are still forecast to fall double-digit overall this year as the fall in housing market demand particularly affects mortgage lending, although this fall is likely to be skewed towards the first half of the year.

Lending to Individuals



Source: Bank of England

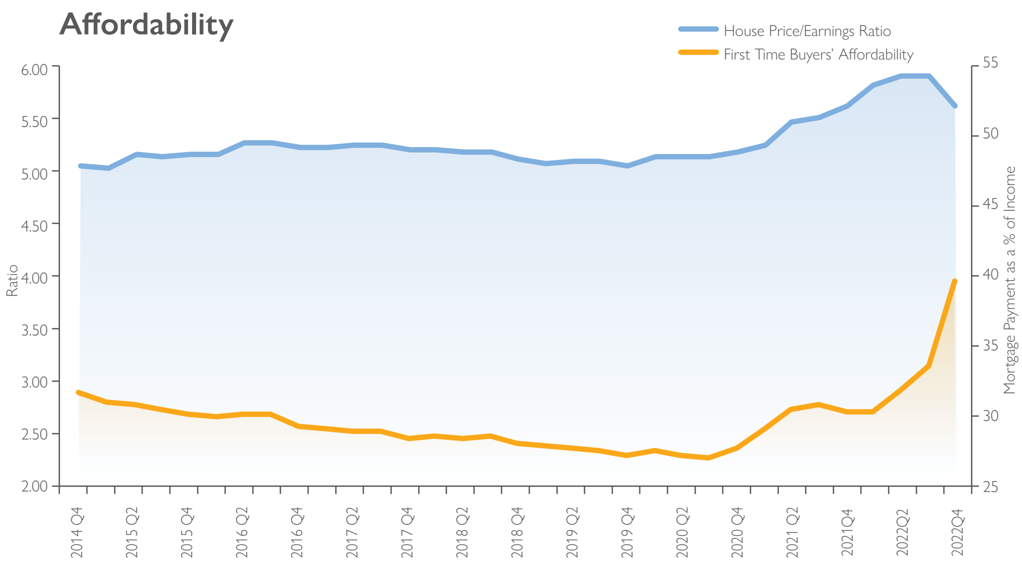
There were 90,340 residential property transactions in the UK in February 2023, which is 4.1% lower than in January and 18.2% lower than a year ago according to HMRC.

The drop off in transactions after the sharp rise in mortgage rates following the Autumn Mini Budget continues to feed through but the collapse in demand that the more pessimistic housing market analysts were anticipating has not occurred yet. Transactions in February were also 7.2% lower than in January 2020, pre-pandemic, and 6.6% lower than the average between 2005 and 2018 (prior to Brexit deadlines and election uncertainty in 2019, national lockdowns in 2020 and the 'race for space' and spikes due to stamp duty holiday and Help to Buy deadlines in 2021). Given that the fall in transactions is considerably less than the fall in mortgage approvals so far, it suggests that, firstly, transactions have further to fall but it also means that, secondly, a higher proportion of transactions in 2023 are likely to be from cash buyers, unhindered by higher mortgage rates. This implies that property transactions are likely to fall much less than mortgage approvals.

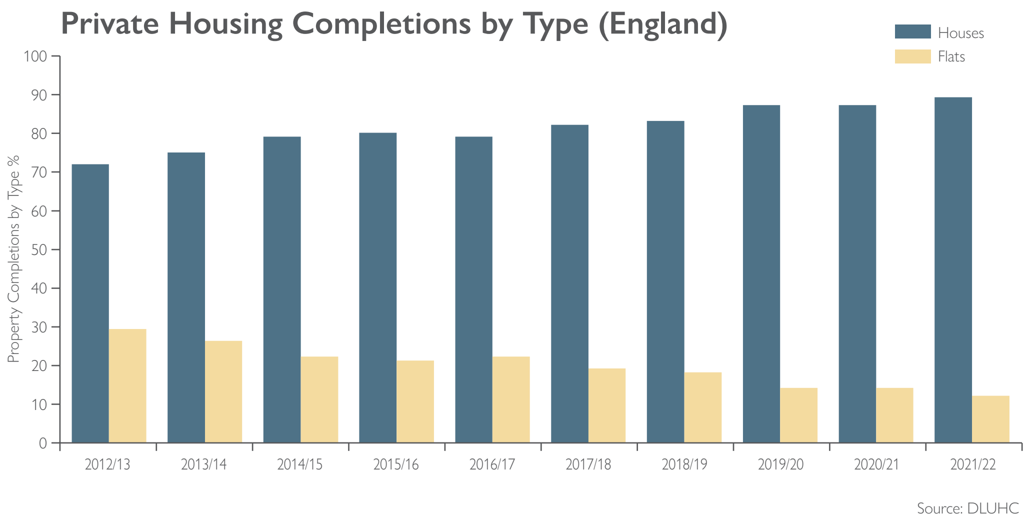
In addition, given that demand is considerably lower in the private housing market, it implies that there is likely to be less of an incentive to put homes onto the housing market although this would need to potentially be balanced with the need for some homeowners to sell as they are faced with sharp increases in mortgage payments. So far, survey information from the RICS in March 2023 suggests that there has not been a significant upturn in sellers onto the housing market, which potentially points to households prioritising spending away from smaller discretionary spending and utilising savings to ensure mortgage payments are covered. This is especially the case given that historically low unemployment rates and acute skill shortages in the UK economy mean that there is unlikely to be a significant upturn in forced sellers from households that involve jobs being lost and mortgage payments that cannot be met.

The average UK house price in February 2023 was £287,506 according to the ONS/Land Registry, which is 1.0% lower than in January and a third successive monthly fall in house prices. It remains 5.5% (£15,052) higher than a year ago but this is down from the 6.5% annual house price growth in January.

The fastest annual house price growth across the UK was in the West Midlands (8.6%) and the North East (7.6%) whilst the slowest annual house price growth remained in London (2.9%)

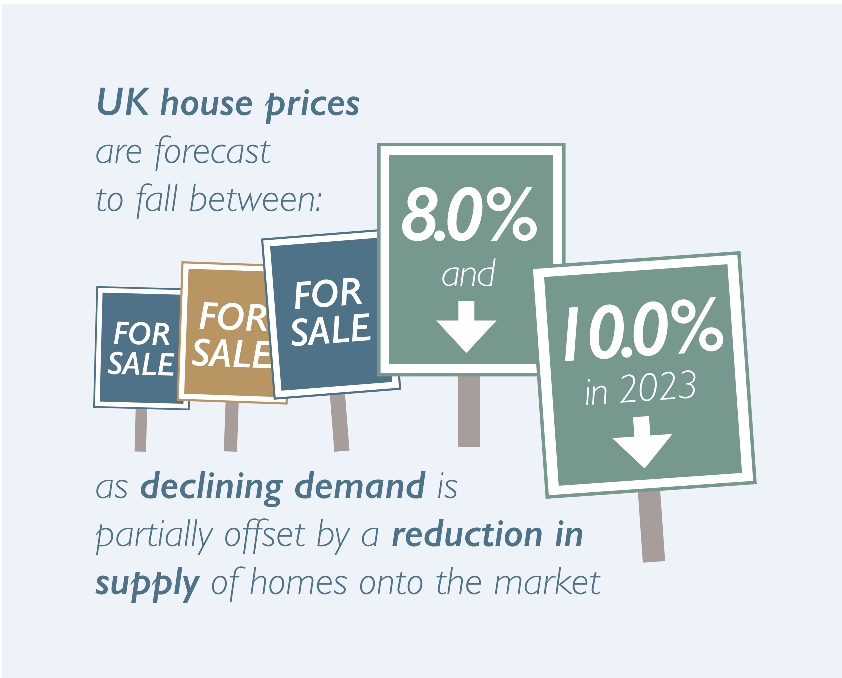


Source: Nationwide



and in Scotland (1.0%). On a monthly basis, however, house prices fell in all regions and nations except Yorkshire and Humber, where they remained flat.

More recently, lender Nationwide reported the average UK house price on its mortgage approvals in March 2023 fell 0.8% compared with February. It was also 3.1% lower than a year ago and 4.6% below the August 2022 peak. It stated the housing market reached a turning point due to the financial market turbulence after the Mini Budget and activity has remained subdued since. It also stated it will be hard for the market to regain momentum near-term as consumer confidence remains weak and household budgets remain under pressure from high inflation. Affordability also remains stretched as mortgage rates remain well above the lows at this point last year. Note the official ONS/Land Registry house price indices, based on property transactions, may not fall by as much as lenders' house prices as demand from cash buyers, unaffected by mortgage rates, are likely to account for a higher proportion of transactions this year.



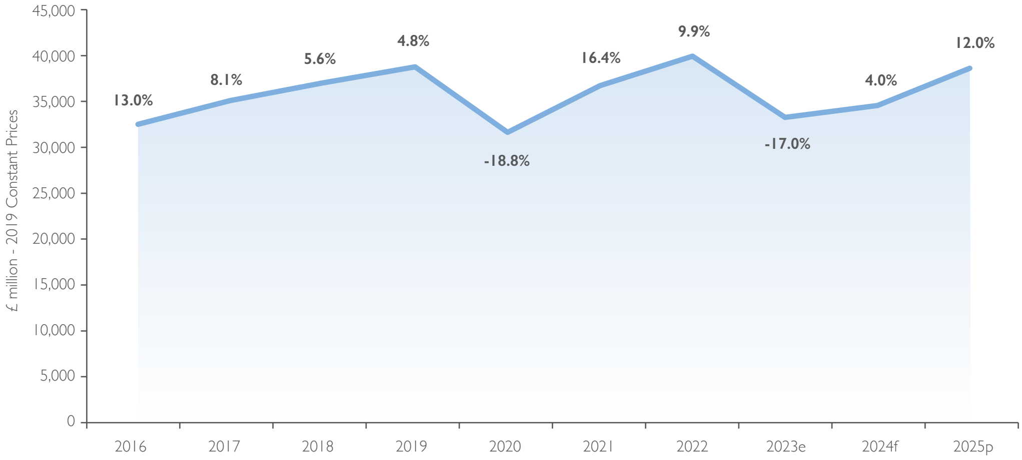
The Nationwide regional house price indices showed a further slowdown in annual house price growth in all regions in 2023 Q1. Scotland remained the weakest performing region with prices down 3.1% compared with a year ago, a sharp slowing from the 3.3% year-on-year increase in the previous quarter. East Anglia, which was the strongest performing region in last quarter, saw a significant slowdown, with prices falling 1.8% year-on-year, making it the weakest performing English region.

Going forward, the CPA maintains its assumption from previous forecasts that UK house price falls will be limited to between 8.0% and 10.0%,

far more optimistic than some of the forecasts in the immediate aftermath of the Mini Budget, who were anticipating house price falls of between 12.5% and 20.0%. According to the HM Treasury consensus of economic forecasters, UK house price forecasts made in the last three months now average out at -5.1% for 2022 but with a wide variance. The most optimistic forecaster anticipates house price falls of 3.3% this year and the most pessimistic forecaster anticipates falls of 10.0% in 2023. Looking to next year, the uncertainty is even greater amongst the economic forecasters. The average forecast for UK house prices in 2024 is for a fall of 1.3% with the most optimistic forecaster anticipating house price rises of 5.0% and the most pessimistic forecaster anticipating falls of 6.8% in 2024. Given that the largest impact on demand is likely to be felt this year and with UK economic prospects improving next year, the CPA's assumption is that UK house prices are likely to rise by around 2.0% although this is on the anticipation that government may attempt to assist first-time buyers, who have been the worst affected by the mortgage rate rises and affordability issues, in the lead up to a General Election, which is expected in Autumn 2024.

Looking at affordability, both the house prices to earnings ratio and mortgage payments as a proportion of income have increased since the end of the initial national lockdown in Spring 2020 according to Nationwide. However, the key changes recently have been the fall in the house price to earnings ratio contrasting sharply with the rise in mortgage payments. A dip in house prices, combined with rising earnings, in the light of economy-wide skills shortages and inflation concerns, has helped affordability in terms of the house price to earnings ratio, which

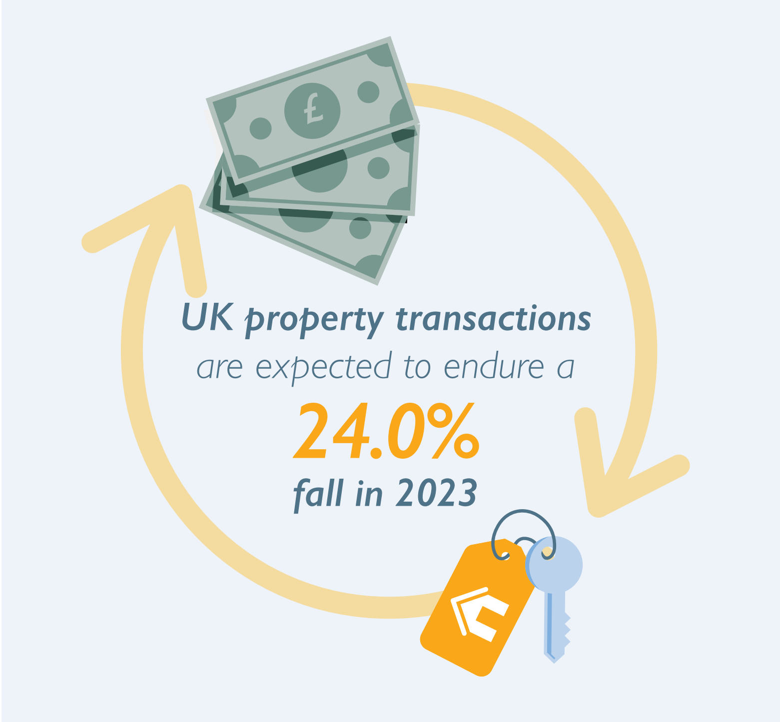
Private Housing Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

peaked at house prices 5.9 times higher than average earnings in 2022 Q2 and Q3 before falling to 5.6 times higher than average earnings in Q4, the same as a year earlier. It remained, however, substantially higher than 5.0 times higher than average earnings that was the norm prior to the pandemic. Unsurprisingly, particularly given the sharp rise in mortgage rates in October and November, affordability in terms of mortgage payments as a proportion of income has deteriorated for first-time buyers and it reached 39.4% in 2022 Q4 compared with 33.6% three months earlier and 30.3% a year earlier. As mortgage rates have been falling since November, mortgage payments as a proportion of income for first-time buyers is likely to fall after Q4 but it is unlikely to return to the 30.3% seen a year earlier even in the medium-term.



Affordability-wise, mortgage repayments have been kept within affordable levels due to historically low interest rates. However, to sustain this, first-time buyers in a sustained period of rapid house price growth but stagnant or falling real wages have had to take out longer mortgages. In 2005, the average term for a first-time buyer was 25.8 years but by 2022 this had risen to 30 years. The latest data from the UK Finance highlights that mortgage terms in excess of 35 years have become more popular for first-time buyers since the start of last year. In January 2022, around 8% of first-time buyers had a mortgage term longer than 35 years. By December 2022, however, after the average mortgage rate for a five-year fix increased from 1.6% to 5.1%, 17% of first-time buyers had a mortgage term longer than 35 years.

The end of the Help to Buy equity loan in March 2023, may also lead to a slowdown in demand for new build homes. However, it is worth noting that similar fears were expressed prior to the end of both the stamp duty holiday and the unconstrained version of Help to Buy in September 2021 yet demand was resilient after the deadline and homebuyers' use of the current Help to Buy was decreasing in advance of the application deadline for Help to Buy in October 2022. House builders do have Deposit Unlock, a scheme set up by lenders and the house building industry enabling first-time buyers and existing homeowners to purchase a new-build home with a 5% deposit. However, at present, although there were 50 house builders signed up as of April 2023, there are only three lenders and it is unlikely to even account for 20% of those taking advantage of Help to Buy, even in its final constrained form. Given the fall in demand, many major house builders were anticipating that there would be either an extension of Help to Buy or a different policy aimed at helping first-time buyers announced by the Chancellor in the Spring Budget. The lack of any help for housing or house building in the Budget, however, heightened concern for house builders at a time of great uncertainty.

For major house builders, visibility of demand in 2023 and 2024 is difficult to ascertain. Clearly, demand appears to have picked up since the start of the year, albeit from low levels. This is illustrated by UK brick sales, which are a useful proxy measure for house building in the absence of monthly house building data.

In February 2023, UK brick sales were 12.9% higher than in January and 14.8% higher than December's nadir according to the Department for Business & Trade (DBT). However, although brick sales turned the corner and began to rise in January 2023 then continued to rise in February, sales in February were still 30.0% lower than a year ago and 35.5% lower than the average between 2018 and 2019. This reflects the fall in house building starts in 2022 Q4 after the Mini Budget and the slow recovery in demand after December as house builders focus on completing existing developments rather than starting new developments except on a few selected regional sites where homebuyer demand remains.

It is still early in the year but taking January and February 2023, UK brick sales year-to-date were 30.9% lower than a year ago (there was a very strong start to 2022) and 28.9% lower than in 2019, pre-pandemic, despite recent demand rising. Even with demand expected to continue to rise over the course of the year, house building is still likely to endure around a 20% fall in house building this year.

It is worth noting that brick sales have historically been a good, clear indicator of new house building starts but there have been short-term distortions recently. For instance, house builders and merchants/distributors were accumulating stocks in 2022 where possible given strong demand, price inflation and tight supply but the slowdown in demand means that they have been destocking recently. Also, we saw a short-term spike in starts approaching the buildings regulations change in June 2022 and may see similar as we approach June 2023 with the end of the grace period for the building regulations change although they would be what we refer to as 'technical starts'. These are starts registered to build under previous building regulations over time but not reflective of near-term house building and there are unlikely to be short-term spikes in bricks sales in Q2.

House builder recent trading statements are often a useful guide to the state of house building down on the ground. The majority of house builders that have reported in the last couple of months have expressed caution, to manage market expectations and the cynical view would be to suggest that they were also anticipating providing information to push government into providing incentives for first-time buyers given that they were badly hit and given that Help to Buy was ending. Conversely, they suggest on the supply side that materials availability has eased for most materials and that they are anticipating that materials inflation will also ease. One major house builder stated that it expects costs to fall this year and although the price of some materials such as timber is falling, this is likely to be offset by the lagged impact of forwards energy contracts on energy-intensive users.

The UK's third largest house builder by volume, Persimmon, reported for the year ended 31 December 2022 that its profit before tax was £730.7 million, reflecting an increase in its provision for building safety remediation from £275.0 million to £350.0 million. Its average selling price rose 5% and build rates were 8% higher, with the second half of the year particularly strong at 15%. It also stated that its underlying operating margin was 27.2% compared with 28.0% a year earlier and build cost inflation was 8-10%. In terms of the outlook, it stated that its forward sales position reflected the significant drop in private sales rates experienced in 2022 Q4 to 0.30 from 0.77 a year earlier although cancellation rates have reverted back to typical historic levels. Its current forward sales was reported to be £1.52 billion, including private average sales of £0.81 billion with an average selling price of £288,638. It also stated that sales rates improved to 0.52 in the first 8 weeks of the year but were significantly below the equivalent period last year (0.96). It reported that it is too early to assess a full year sales rate but should current rates continue for the rest of the selling year, it would imply 8,000-9,000 legal completions for 2023.

***House building starts** are expected to have **hit the nadir** during 2022 Q4 and 2023 Q1*

The second largest house builder by volume, Taylor Wimpey, reported for the year ending December 2022 that group completions (including JVs) were 14,154 compared with 14,302 in 2021 whilst the net sales rate for the year was 0.68 homes per outlet per week compared with 0.91 a year ago. Its average selling prices on private completions were 6% higher, reaching £352,000 compared with £332,000 a year earlier with the overall average selling price up 4% to £313,000 compared with £300,000 a year ago. It also stated that it would be establishing a new timber frame facility in Peterborough in 2023 to drive efficiencies and security of supply.

It terms of current trading and the outlook, it stated that whilst it was still early in the year (before the start of the Spring selling season), current trading shows some signs of improvement from the fourth quarter of 2022. The year-to-date net private sales rate (w/e 26 February 2023) was 0.62 per outlet per week compared with 1.02 a year earlier and the four-week average was running at 0.66 per outlet per week. This improved sales rate follows recent reductions in mortgage rates, early signs of stabilised customer confidence and usual seasonal trading patterns plus promotional activity. The cancellations rate was 17% compared with 14% a year ago.

As at 26 February, its total order book excluding joint ventures was £2.154 billion compared with £2.,899 billion a year earlier, comprising 8,078 homes compared with 10,934 homes a year ago. Assuming prevailing market conditions continue, it currently expects 2023 completions to be in the range of 9,000 to 10,500 with completions more weighted to the second half, reflecting the lower sales rate since 2022 Q3. It expects average pricing for private completions in the first half of 2023 to be at a similar level to the £367,000 achieved on completions in 2022 H2.

House builder Vistry Group (formerly Bovis Homes and housebuilding and partnerships divisions of Galliford Try) reported for the year ending 31 December 2022 that its forward order book was £2,840 million, with 68% of mixed tenure units for the year and all partner delivery revenues secured, implying revenue growth this year. For the Group overall, it has seen an improving trend on private sales in the first 11 weeks of the year, with the Group's average private sales rate per site per week for the year to date at 0.54, increasing to 0.62 in the last four weeks. It also reported increased consumer confidence from 2022 Q4, particularly as mortgage rates have trended downwards and availability has improved. Housebuilding's forward order book totalled £1,339 million compared with £1,324 million a year earlier with 55% of units for the coming year secured.

Vistry Group stated that net pricing held 'relatively firm' in the first 11 weeks supported by an increase in the use of incentives and that it sees opportunity for cost reduction in the year. In particular, it expects falls of 2%-3% in build costs whereas other major house builders that had reported earlier stated that they expected build cost inflation to slow rather than costs to fall this year.

Demand for new flats in England remains on a downward trend. It historically reached a peak in 2008/09 with flats accounting for 46.0% of total completions according to DLUHC from which it steadily fell to 22.0% between 2014/15 and 2016/17, prior to the Grenfell Tower fire. After this, the proportion of flats fell further to 14.0% in 2020/21 and to 12.0% in 2021/22.

In addition to concerns regarding demand house builders are also facing a plethora of other issues. Construction products availability issues have eased for most products apart from the long-term issue regarding products dependent on microchips and semi-conductors, given a global shortage that cuts across all industries. Major house builders have largely adjusted to this issue, which affects boilers, smart meters, heat pumps, white goods and other electrical products by planning in advance. Cost inflation also appears to be easing although materials price inflation was at 10.6% in February 2023 but it is expected to slow over the course of this year (see Overview – Risks). House builders are facing the impacts of increasing impositions from government. In addition to the Residential Property Developer Tax, payable on profits above £25 million at a rate of 4%, there is also the spectre of the Building Safety Levy and the increasing cost of dealing with fire safety issues on their own legacy buildings. House builders have all made provisions for this spending although it is unknown at this stage whether that will be sufficient to cover all issues involved. In addition, the removal of house building targets at the local level may worsen already difficult planning issues for house builders. For house builders this is unlikely to be their greatest issue near-term given concerns over demand, but it is likely to exacerbate problems that they have already been experiencing, particularly for smaller house builders that do not have a long pipeline of sites with planning permission already.

The planning issues that house builders consistently highlight have been exacerbated by the issue of nutrient neutrality as highlighted by the CPA in previous forecasts and there appears to be no easy, quick solution near-term. Natural England issued advice stating that, in certain specified council areas, no developments should be permitted unless they can prove that they are "nitrate and phosphate neutral". Natural England initially outlined 32 areas that would be affected but, in March 2022 this number was extended to 74 areas. Any local authorities that ignore the Natural England advice may be subject to judicial review on any planning permissions issued, making decisions on planning difficult in these areas. The Home Builders Federation (HBF) estimated in June 2022 that 120,000 new homes over the long-term are currently on hold. The regional impact of this issue is varied. The North East is the worst affected region according to the Local Government Association (LGA) with 29% of recent new housing delivery falling within advice areas whilst 16% of delivery in both the South West and South East is covered. Meanwhile, the East of England figure (7%) is similar to the national rate while the two Midlands regions are relatively unaffected at 2%. While the North East has the highest proportion of delivery falling within advice areas, it is the smallest region with the lowest overall housing delivery. Therefore, it has had a relatively small impact on headline national house building figures so far. In March 2023, government announced a call for evidence on nutrient neutrality although it is unknown whether this will end in a solution to the issue and, if so, how long it will take to implement.

Given the slowdown in demand in the private housing market and house building sector, institutional build to rent is likely to be less affected by short-term demand falls given that it is based on longer-term returns on the asset at a higher customer price point and higher quality asset, particularly as rental demand remains strong due to a lack of supply. Research from the BPF and Savills in October 2022 projected that the number of completed Build to Rent homes could increase five-fold to reach 380,000 by 2032, with the sector worth £170 billion, and accounting for 8.0% of UK homes for rent compared with 1.5% in 2021. The medium-term outlook for institutional Build to Rent does appear robust despite short-term volatility but the reliability of such long-term estimates at a time of economic, political and social uncertainty is questionable, however.

The Build to Rent sector covers new build developments for private rent that aim to generate a long-term return on investment and is typically financed by institutional investors. Given the long-term nature of the investment and returns institutional investment in Build to Rent has the potential to provide an uplift to house building activity, although despite strong growth in recent years, Build to Rent still only accounts for a small proportion of the 5.0 million privately-rented housing stock in Great Britain.

According to the British Property Federation (BPF) and Savills Build to Rent publication in February 2023, economic headwinds have stalled activity recently with build cost inflation, labour shortages and wider economic uncertainty adversely affecting the sector. It also highlighted that it expects the Build to Rent sector to continue to expand in the medium-term but that government needs to be careful not to hinder its progress. The removal of local housebuilding targets may mean there is less urgency around allocating land for residential development, and the rent cap introduced in Scotland, plus others being discussed in other areas, is already deterring investment according to the BPF and Savills.

Since 2017, the Build to Rent sector has experienced a 28% per year rise, from a low base. However, the slowdown was most pronounced in 2022 Q4 and new construction starts were 24% lower than the same period a year ago (15,600 in 2022 compared with 20,400 in 2021).

There were 242,548 Build to Rent homes in the UK in 2022 Q4, including both London and the regions, which is a 14.0% increase compared with a year earlier. Of this 78,717 are complete, a 9.0% increase compared with a year earlier. 50,452 Build to Rent homes were under construction, a 22.0% rise compared with a year earlier, and 113,379 units were in planning, an 14.0% rise compared with a year earlier.

In London, there were a total of 91,272 units in 2022 Q4, an 9.0% annual rise although it is worth noting that whilst 38,036 were complete, an 8.0% annual increase, and the number under construction (14,697) only rose by 12.0% compared with a year earlier and there were 38,539 in planning, an 8.0% rise compared with a year earlier. Outside London, there were 151,276 units in 2022 Q4 with 40,681 complete, a 10.0% increase whilst there was a 27.0% annual rise in the number under construction to 35,755. This increasing movement of Build to Rent outside the capital has been notable in the last five years. Initially, developers and investors focused on London. Since 2017, however, there has been a significant movement towards other key cities such as Manchester, Birmingham and Leeds with faster population increases and a growing professional sector. Furthermore, local authorities are also planning for the delivery of build to rent homes with 47% of local authorities having Build to Rent in their housing plans during 2022 Q3 compared with 20% in five years earlier.

Whilst the institutional Build to Rent sector may be relatively safe compared with the general housing market, however, the smaller landlord market is likely to be acutely affected. In the near-term, smaller landlords that are on interest-only mortgages will either need to pass on mortgage payment rises to tenants and risk seeing demand falling or need to take the hit themselves, which increases the probability that they will just sell up. This is particularly the case given the increasing burdens on landlords going forward in the medium-term, which include EPC C minimum standards for new lettings from 2025 and all lettings from 2028 plus the cost of addressing fire safety issues for some landlords in addition to the rapidly increasing costs of general repairs and maintenance.

Overall, private housing starts in England in 2022 Q4 were 8.0% lower than in Q3 and 7.5% lower than a year ago. They were also 28.6% lower than the peak in 2022 Q2 although it is worth noting that 2022 Q2 was an artificial peak generated by technical starts, literally the minimum needed to register as a start in advance of the uprated building regulations on 15 June 2022. Private housing completions in England in 2022 Q4 held up considerably better given that completions in Q4 were based on pre-sales prior to the sharp rise in mortgage rates and with Help to Buy still in place. Completions in Q4 were 5.8% higher than in Q3 and 8.9%

higher than a year earlier. They were also 3.9% higher than in 2019 Q4, prior to the pandemic. However, the sharpest falls in starts are likely to be seen in 2023 Q1 as house builders focus on completions rather than starting new developments, except in a few selected sites. Completions in the second half of the year will be dependent on whether house builders see clear signs of a return of demand in the key Spring selling season to start new developments that will be completed later in the year.

Upper Scenario:

• Residential property transactions slow in 2023 but house prices remain broadly flat

• Cost inflation eases

• Strong labour market

Although housing market demand inevitably falls in the light of rising interest rates, house price growth remains positive as transactions bear the brunt of the fall in demand and there is also a fall in supply of homes onto the housing market as potential sellers pull out, concerned about falling demand. The strong labour market means that there are few forced sellers and easing cost inflation means that the slowdown in house price growth is manageable for house builders.

Lower Scenario:

• Housing market hits a tipping point

• Continued political and economic instability causes interest rates to rise further

• Higher unemployment depresses house prices

If the UK economy suffers a sharp recession and there are double-digit falls in prices plus higher unemployment, there would be a rise in forced sellers placing further downward pressure on the housing market and sharp falls in house building, particularly on starts, over the next 12-18 months.

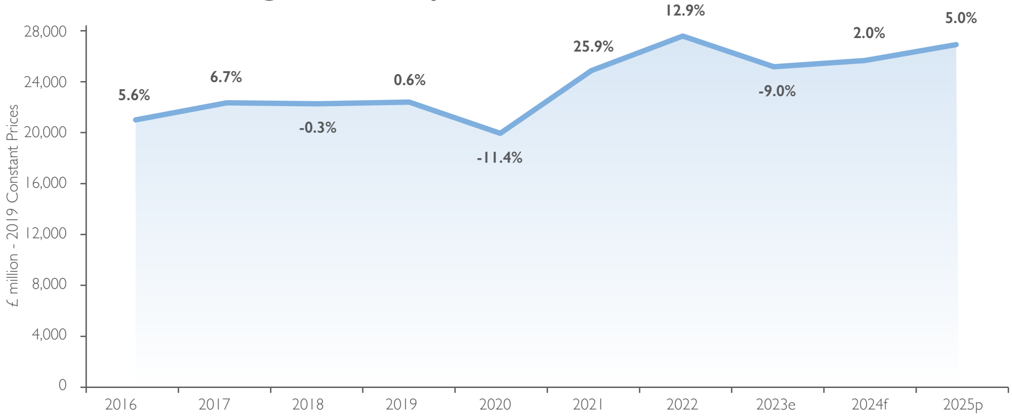
Private Housing RM&I

Private housing repair, maintenance and improvement (rm&i) activity has been on a general downward trend since reaching historic high levels in March 2022 due to a fall in smaller, discretionary spending. Sector output is forecast to fall a further 9.0% in 2023 before growth of 2.0% in 2024, revised up slightly from the Winter Forecast as a sharp fall in larger improvements projects this year is partly offset by strong activity in energy-efficiency retrofit activity and solar/PV work and a recovery in real incomes and spending boosts activity next year.

Note that the CPA has concerns regarding the ONS's historic data on rm&i output as the ONS appears to be underestimating price inflation in rm&i, which the ONS uses to convert the value of output into volume of output that the CPA uses to forecast. This means that the ONS is likely to be overestimating the level of rm&i output in volume terms and so underestimating the rate at which it has been falling since the start of 2022. During 2022, the ONS estimated that price inflation in private housing rm&i was 'only' 5.0% compared with 11.1% in private housing new build and 11.4% in infrastructure. In the latest data, the ONS estimated that in the year to February 2023 inflation in private housing repair and maintenance was only 3.6% compared to 10.6% in new housing and 14.2% in infrastructure. The importance of ONS appearing to underestimate inflation is that it means it is overestimating the volume of repair and maintenance output.

Private housing rm&i output was actually slowing in the second half of 2019 and in early 2020, prior to the pandemic. However, after the enforced shutdown of construction activity between March and May 2020, activity rm&i activity rapidly returned to sites. Subsequent national lockdowns did not directly affect rm&i negatively as construction activity was permitted to continue. On the contrary, many homeowners spending significantly more time working from home and with many households accumulating savings (due to not commuting and not spending as much on non-essential retail and leisure spending as well as not travelling abroad on holiday as frequently), meant that the sector enjoyed a temporary boom through the 'race for space'. Homeowners focused on better quality indoor space and outdoor space plus addressed many longstanding basic repairs and maintenance issues. In addition, the 'race for space' also boosted

Private Housing RM&I Output

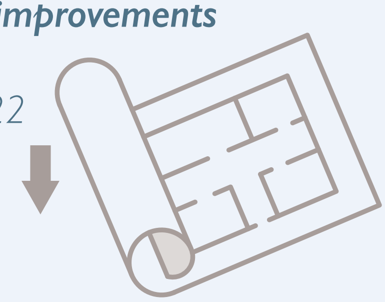


e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

the housing market and greater numbers of transactions led to further growth in rm&i work.

New planning applications *for* **larger improvements** *activity* **fell** *during 2022 Q4*



However, the indications from industry are that with many workers returning to offices, albeit not five days a week, DIY spending (which is not included in rm&i output, which is contracted out activity) fell away from peak levels towards the end of 2021 whilst smaller, discretionary non-essential rm&i activity peaked in March 2022 and started on a general downward trend afterwards as many workers had a partial return to the office combined with households returning to general Summer holiday patterns in 2022 after two years marked a reprioritisation of constrained finances and shifted reduced spending back away from improvements work towards holidays abroad. More importantly, smaller, discretionary non-essential rm&i activity was hit from Spring 2022 by the rising cost of living, falling real wages, increased uncertainty regarding the wider economy and rising interest rates, which have hit consumer confidence and spending.

Larger improvements work requiring planning applications continued throughout 2022, primarily as homeowners that could afford the work had pencilled in the finance for it at the start of the year and already had planning. Furthermore, they also had concerns that delaying these projects would only lead to costs escalating further. However, the indications are that planning applications fell away in the second half of 2022 as a consequence of falls in real wages, rate rises and heightened economic concerns. This is likely to ensure that private housing rm&i output falls significantly this year. Provisional data from Barbour ABI in April 2023 highlighted that planning applications for improvements work fell by 18.7% in 2022 although remained 1.2% higher than 2018 and 2019, pre-pandemic. The sharpest falls were in London, the South East and the North East whilst other regions of England as well as Scotland and Wales endured a significantly lower fall. Across the different types of improvements planning applications, compared with 2018 and 2019, home extensions were still 4.8% higher whilst garage-related work was 15.4% lower and garden-related work was 16.7% lower. However, solar/PV-related planning applications were three times their pre-pandemic levels.

Persistent strong inflation has led to falling real wages every month since November 2021 and real wages are forecast to fall for the majority of this year as well. Clearly, this means less finance directly for non-essential rm&i activity and it also means that lower real disposable income has not been going as far across all areas of spending, particularly on food and energy. Indirectly, persistent inflation also means that as well as having less finance available for smaller improvements works, the cost of doing improvements projects has risen and so many households have been put off doing non-essential projects, particularly in the light of construction labour availability issues that meant homeowners were often being asked to wait 6-9 months to start on projects, by which time projects may have risen further in cost. Another indirect impact of persistent inflation in the economy has been the Bank of England's

Smaller discretionary improvements *activity* **fell sharply** *from historic highs during 2022*

reaction in increasing interest rates, which rose to 4.25% in March 2023. Although further increases are not expected, they cannot be ruled out (see Economy) and, as a result, this raises borrowing costs for many households obtaining finance for projects, particularly larger projects. In addition, higher mortgage rates have a substantial impact on homeowners on variable-rate mortgages, mortgage holders who have just come off fixed-rates onto rates substantially higher than they were on and this will also impact spending decisions for homeowners who will be coming off fixed-rate mortgage deals over the next 12 months.

Construction materials inflation has slowed since the peak in June 2022 (see Overview – Key Risks) but it continues to rise at double-digit rates and is likely to do so until Spring 2023, more than one year on from the spikes in energy, oil and commodity prices after Russia's invasion of Ukraine. UK construction materials inflation was 10.6% in February 2023 and the persistence of this particularly affects smaller contractors working in private housing rm&i. It is the sector most exposed to cost inflation issues, particularly within the improvements part of the sector, as the projects are generally not essential, households can delay them if they are uncertain or becoming cost-conscious. Improvements projects are also reliant on smaller contractors that often do not have foresight of demand beyond their next projects plus do not have substantial finance and space available so they cannot plan and purchase materials well in advance of work to mitigate the inflation issues.

The key early indicators that the CPA uses to look towards the near-term future for private housing rm&i activity are residential property transactions, house prices, savings and unemployment. Historically, the majority of general activity in private housing rm&i (60%-65%) is covered by either basic repairs that cannot be delayed or non-essential maintenance that can be postponed but not indefinitely. As a result, activity in the sector tends to be less volatile than new build sectors. However, the improvements part of the sector tends to provide the significant growth or contraction around the general stable levels.

One of the key drivers for the improvement element of private housing rm&i in the CPA's model is property transactions. There has historically been a 70% positive correlation between property transactions with a three-quarter lag and private housing rm&i output. This means that within 6-9 months of purchasing a property, there is often improvements work when the purchased property is an existing property, as opposed to new build, which tends to have little in the way of significant size improvements works when purchased. In addition, the relationship is stronger when the existing property is a house rather than a flat given the average age of the housing stock compared with flats and the amount of refurbishment work that can be conducted on the property. The 'race for space' and government stimulus to boost an already strong housing market during the pandemic meant that not only was there a sharp rise in property transactions between 2020 Q4 and 2022 Q3 but that this demand was skewed towards houses rather than flats and also in areas of greater affordability, generally outside cities.

Private housing rm&i
is expected to
***fall* 9.0%** *in 2023*

Assessing the impacts of property transactions on the general housing market and, consequently, the rm&i market has been increasingly difficult since the pandemic as transactions have been particularly volatile due to distortions caused by government policies such as the stamp duty holiday, its extension in March and then its tapering from 1 July before ending in September 2021, which meant monthly transactions have been more volatile than usual. It also means that on an annual basis, property transactions in 2022 have also been volatile.

There were 90,340 residential property transactions in the UK in February 2023, which is 4.1% lower than in January and 18.2% lower than a year ago according to HMRC. The drop off in transactions after the sharp rise in mortgage rates following the Autumn Mini Budget continues to feed through but the collapse in demand that the more pessimistic housing market analysts were anticipating has not occurred yet. Transactions in February were also 7.2% lower than in January 2020, pre-pandemic, and 6.6% lower than the average between 2005 and 2018, prior to Brexit deadlines and election uncertainty in 2019, national lockdowns in 2020 and the 'race for space' and spikes due to stamp duty holiday and Help to Buy deadlines in 2021.

Looking forward, the extent of the fall in mortgage approvals points towards further falls in property transactions although transactions are unlikely to fall as much as approvals as cash buyers are likely to be a higher proportion of the housing market than in previous years.

There were 43,536 UK mortgage approvals in February 2023 according to the Bank of England, which is 9.8% higher than in January but 37.0% lower than a year ago. They were also 33.5% lower than the average between 2018 and 2019, pre-pandemic and was anticipated as financial markets chaos, post-Mini Budget (with 40% of mortgage products temporarily pulled) and a sharp rise in mortgage rates, fed through. However, February's approvals were the first rise since August 2022 and the growth since January's low point suggests that mortgage approvals are beginning the upward trend of recovery, albeit from a low point, that was expected as mortgage rates fall. The average rate on a three-year fixed-rate 75% loan-to-value mortgage peaked at 5.9% in October 2022 (contrasting sharply with just 1.12% in October 2021) but rates have been falling and they had fallen to 4.67% by February 2023.

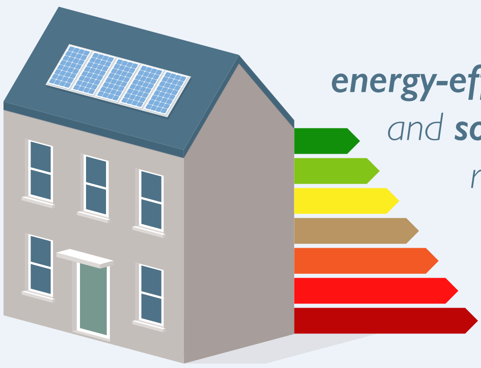
Over the longer-term, the number of mortgage approvals in February was also 34.2% lower than the average between 2014 and 2019. Despite the rise in February compared with January, it is still the second lowest number since 2009, during the financial crisis. House builders have reported that homebuyer demand continues to pick up as the year has progressed as mortgage rates fall and boosted by an increased use of incentives. Overall, mortgage approvals are still forecast to fall double-digit this year as the fall in housing market demand particularly affects mortgage lending. A higher proportion of transactions in 2023 are likely to be from cash buyers, unhindered by higher mortgage rates, which means that house prices are likely to fall much less than mortgage approvals and property transactions.

Furthermore, it is worth noting that when there are significant slowdowns in the general housing market, there is often a partial substitution effect and that some homeowners who would have generally moved home in normal economic conditions often decide that given that they are likely to be staying in their property for a considerable period more than anticipated, it is worth using their available finance to invest in their properties, particularly when there were rm&i jobs that they had put off given that they would have been intending to move previously.

In addition, the incentive for improvements work was boosted by double-digit house price inflation, given the increased rate of return on the sale of the home by investing in increasing the value of the home, particularly at a time of historic low interest rates. This made it particularly favourable compared with saving or other, riskier investments. However, falling house prices and rising interest rates make this less of an attractive proposition albeit still potentially worthwhile compared with many other investments. The CPA continues to assume house price falls of 8%-10% this year, which is not as bad as many of the more pessimistic forecasters were anticipating for this year back in 2022 Q4. In addition, this extent of price falls would largely only return house prices to last year's elevated levels. Furthermore, increased interest rates have raised the cost of borrowing for substantial rm&i work. The house price falls and rate rises mean that the incentive to invest in the home will not be as great and homeowners are more likely to focus on saving, particularly given the heightened economic uncertainty and rising interest rates, rather than undertaking investment in the home unless it is improvements work where there would be a clear rate of return even before selling the property. These measures include energy-efficiency measures or solar/PV, activity on which both increased considerably in the light of increased concern regarding energy cost and security after Russia's invasion of Ukraine and the energy price spikes, which fed through to homeowners later in the year due to the six-month energy price cap for consumers. Even though government provided energy bills help for households in December 2022, which was extended for another three months in March 2023, concern over energy bills has raised energy efficiency and security up many homeowners' lists of priorities for rm&i work.

Whilst finance has increasingly been an issue for homeowners' rm&i plans, even some homeowners with finance available have been affected by deteriorating sentiment and, as a consequence, only a small proportion of the £210 billion that the Bank of England reported UK households accumulated during the pandemic has been spent as yet so many households have finance but remain unwilling to use it unless necessary so far.

GfK's Consumer Confidence Index reached its nadir in September 2022, the same month as the Government's failed Mini Budget, at -49. It gradually improved from then and in December it was -42 before it briefly slipped back to -45 in January as a result of concern regarding the UK economy and sentiment was adversely affected by talk of whether the UK would enter a technical recession or not. Since then, however, consumer confidence has improved for two consecutive months and in March 2023 reached its highest level since February 2022. Despite this, the GfK measure remains pessimistic, particularly given that consumers' view of their personal financial situation did not improve in March 2023 whilst consumers also increased their savings despite the cost of living rises. Increases in recent months may merely reflect that sentiment has improved considerably since the economic and political chaos



Demand for ***energy-efficient retrofit*** *and* ***solar/PV*** *activity remains* ***strong***

immediately after the Mini Budget in Autumn 2022. In March 2023, the index measuring changes in personal finances during the last 12 months was the same at -26, which is 13 points worse than March 2022. The forecast for personal finances over the next 12 months decreased three points to -21, which is three points lower than the same time last year. The index for the general economic situation of the country during the last 12 months was up three points at -62, which is 11 points lower than in March 2022. Expectations for the general economic situation over the next 12 months have increased by three points to -40, which is nine points higher than March 2022. The Major Purchase Index is up four points to -33; this is nine points lower than last year. The Savings Index was up two points in March at +21, which is three points higher than the same time last year. The rise in the Savings Index reflects a balance of issues for households that increasingly wish to save given the economic uncertainty despite many households also having to use savings to deal with rising inflation issues.

Outside of the main drivers of private housing rm&i activity, government funds activity in private sector energy-efficiency retrofit of the private housing stock.

Over the last decade, publicly-funded schemes for energy-efficiency improvements on the social housing stock have either been heavily revised (CERT), cancelled (the Green Deal) or significantly narrowed in coverage (ECO, to ECO: Help to Heat and ECO3) and now ECO4. There was a hiatus in between the ECO3 scheme, which ended on 31 March 2022, and the ECO4 scheme, which came into force on 27 July 2022 and will cover a four-year period until 31 March 2026. However, when it was clear that there was likely to be a hiatus between the schemes energy companies were made aware that once the ECO4 Order had been agreed then it would apply to measures installed from 1 April 2022 and consequently, it does not appear to have led a significant decline in ECO-related work due to the hiatus.

ECO4 continues to focus on lower-income households, providing support for improving heating efficiency. However, the definition of lower-income households has been restricted in terms of households receiving benefits so many consumers who were previously eligible for ECO3 funding will no longer have access to these funds, reducing the number of homes that will have energy-efficiency work.

The ECO4 scheme takes a fabric-first approach, which means it focuses on improving the building itself before installing new heating systems. Any home with an efficiency rating of 'D' or below will have to install loft, roof, and exterior-facing cavity wall insulation before improving any existing heating systems. The government's ECO4 report shows a specific interest in insulating solid walls – aiming to carry out 22,000 solid wall insulation instalments each year. Government states that so far there have been no boiler or electric storage heater repairs through the scheme. Instead of repairing efficient gas boilers, government states that households are replacing them after around three to eight years rather than the end of their expected lifetime of 12 years. ECO4 will incentivise repairing efficient heating systems where possible. Any boiler or electric systems that cannot be repaired will focus on alternative sources such as heat pumps, biomass boilers, solar/photovoltaics (PV) or a District Heat Network.

Government announced a Boiler Upgrade Scheme (BUS) in 2021 that began in 2022 with £450 million of funding over three years to 2025 in England and Wales. The government target of the BUS scheme is to achieve 30,000 annual installations of heat pumps, to replace boilers, using £5,000 vouchers per replacement. However, during the first year of the programme, between 23 May 2022 and 31 March 2023, only 9,981 vouchers were redeemed at a total value of grants paid as £50.2 million, which left £89.7 million left unspent. Given that air source heat pumps cost between £7,000 and £14,000 to purchase and install whilst ground source pumps can cost between £15,000 and £35,000, the extent to which the voucher changes homeowners' decisions regarding heat pumps and the extent to which government meets its target remain highly questionable.

In addition, in November 2022 the government announced a £1.0 billion ECO+ scheme. ECO+ came in on 1 April 2023 and will run to 31 March 2026. Government is focusing on two key groups; low-income groups that already qualify for already qualify for existing energy-efficiency retrofit schemes (such as ECO4) and then households in lower council tax bands, which may or may not be able to afford energy-efficiency measures (all homes in Council Tax bands A-D in England, A-E in Scotland and A-C in Wales with an EPC of D or below). However, the target for homes that government expects to be retrofitted under ECO+ is of the scale of 70,000 over three years, which is relatively small given the need to energy-efficient retrofit 16.7 million homes but whether government meets even the 70,000 target is unknown given a lack of detail regarding the implementation of ECO+ in addition to the skills availability issues that industry already faces.

So far, the CPA has not factored in any significant uptick in activity as a result of ECO+ but, if this were to occur, it could represent a substantial upside risk to the forecasts and is included in the CPA's Upper Scenario.

Near-term, a larger driver of additional activity continues to be the stream of urgent cladding remediation work on privately-owned residential towers that are taller than 18 metres, which is progressing at a slower rate than for public residential buildings.

At the end of February 2023, the Department for Levelling Up, Housing and Communities (DLUHC) reported that there were 233 private sector buildings with ACM cladding systems that are unlikely to meet current Building Regulations, which is unchanged since January and an increase of only one since November. Work has completed on 158 of these, unchanged since January, despite the initial deadline of 31 December 2019 almost three years ago. This leaves 75 private sector residential buildings yet to be remediated. Of these, 55 have started remediation and one further building is known to be vacant.

Going forward, after cladding remediation issues on private residential blocks, fire safety activity will begin to extend work to buildings above 11 metres with ACM cladding as well as buildings above 18 metres with other types of cladding in addition to addressing other key safety issues such as fire stops and fire doors plus other non-essential general issues discovered during remediation. As a result, addressing fire safety issues will provide a long pipeline of activity in the sector over the next decade. However, as highlighted in previous forecasts, even with finance, skills shortages for essential remediation works as well as availability and cost inflation issues for some products, such as pre-coated aluminium and steel, which will be medium-term, will constrain the rate of growth of activity. At this stage, the extent of work on buildings above 11 metres is unknown. The total number of residential buildings between 11 metres and 18 metres is estimated to be 78,000 but what is unknown is the number of these that have fire safety issues.

From the supply side perspective, major house builders in private new housing were able to maintain build costs of around 5.0%-6.0% in 2021 and despite rises last year they still maintained build cost inflation of 9.0%-12.0% in 2022 by planning and purchasing materials and products in advance as well as pushing cost inflation issues onto sub-contractors. After manufacturer price increases in December 2022 and in January 2023, price inflation issues are expected to ease significantly. Whilst larger house builders and contractors have been able to manage cost inflation issues, it has been more challenging for SME renovation contractors that can't operate this way due to a lack of visibility of demand and a lack of resource. It has meant smaller contractors revising prices substantially during projects and availability issues have caused delays to projects, which have also had knock-on effects onto subsequent projects and, consequently, revenue streams. Construction cost inflation has slowed in recent months but ticked up in February and building materials inflation in the year to February 2023 was 10.6%. In addition to materials, products and labour inflation, smaller renovation contractors are also more at risk of issues such as rising Personal Indemnity (PI) insurance, trade credit issues and reverse charge VAT as well as IR35.

Upper Scenario:

• Strong labour market

• Inflation eases in 2023

• ECO+ ramps up activity

With a strong labour market, lower real wage falls than anticipated and with homeowners less affected by energy price rises due to the government's energy bills assistance, the UK economy may endure only a mild recession and if house price growth remains positive, wealthier homeowners less affected by inflation issues may continue to invest in their homes, particularly if construction cost inflation eases. Furthermore, if ECO+ starts generating energy-efficiency (insulation) retrofit activity from April as government states then this would benefit the sector at a time when private housing rm&i demand has been easing, albeit insulation demand has not been easing.

Lower Scenario:

• Acute recession

• Sustained inflation

• Increasing unemployment

If the UK economy experiences a recession with stubborn inflation and rises in unemployment, then all but the most essential maintenance could be paused or cancelled as job insecurity and falling real wages continue to hit consumer confidence and spending power.

Public Housing

House building by housing associations and local authorities is expected to be constrained by uncertainty over the economy and general housing market, along with rising debt servicing costs and a primary focus on the existing stock to address fire safety, general repairs and maintenance and decarbonisation.

Public housing is financed through central government grant funding for housing associations and local authorities, private borrowing, rental revenues, and cross-subsidisation of affordable tenures from open market sales, primarily for housing associations. All of these will continue to face headwinds in 2023. Economic and housing market uncertainty affecting private sector house builders will be countered to some extent by affordable tenures, for which demand remains strong, but development is increasingly being displaced by higher capital spending on the existing stock, to cover fire safety, basic repairs and maintenance and energy efficiency upgrades.

Over the last two years grant funding has been sharply eroded by rising costs and delays related to materials and labour, which have led to further delays for prolonged contract negotiations. In turn, this has knock-on impacts for subsequent projects, including those being planned, with housing associations reducing development forecasts and pausing or removing uncommitted schemes that feature later in the pipeline. In the Regulator of Social Housing (RSH) survey for 2022 Q4, forecasts for development spend decreased to the lowest level in two years, mainly due to economic uncertainty. In addition, rising borrowing costs due to higher interest rates, coupled with the below-inflation rent increases that were implemented in April 2023, will reduce finance for development, whilst a contraction in the private housing market (see Private Housing) is expected to adversely affect housing association demand for market-linked tenures and revenue and confidence going forward. There has also been a growing focus among housing associations and local authorities to increase spending towards addressing legacy fire safety measures on their existing stock, as well as basic repairs and maintenance after high-profile cases and 'naming and shaming' by the Secretary of State, Michael Gove, have drawn attention to the quality of the existing stock (see Public Housing RM&I). This picture of constrained finances for new build public housing, and a lack of additional funding from central government, means that

Public Housing Starts and Completions Great Britain

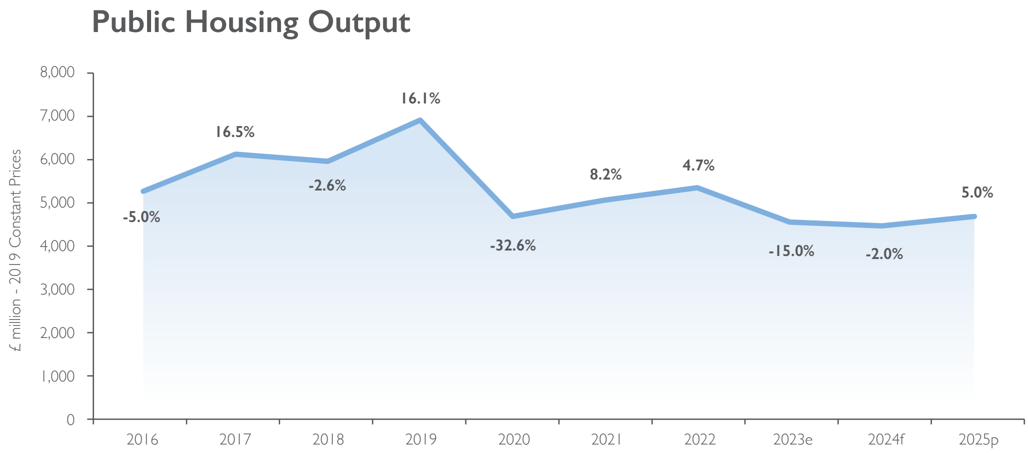
	2021	2022	2023	2024	2025
	Estimate*	Estimate*	Estimate	Forecast	Projection
Starts	41,998	37,363	31,759	32,711	33,693
	22.8%	-11.0%	-15.0%	3.0%	3.0%
Completions	40,502	40,031	34,027	33,346	35,013
	27.0%	-1.2%	-15.0%	-2.0%	5.0%
Output (£m)	5,120	5,359	4,555	4,464	4,687
	8.2%	4.7%	-15.0%	-2.0%	5.0%
RM&I Output (£m)	7,168	7,052	7,052	7,193	7,337
	5.8%	-1.6%	0.0%	2.0%	2.0%

* Data from 2020 onwards for Wales is yet to be published

Source: DLUHC, ONS, Construction Products Association developments may be pushed back into later years, especially as fire safety, basic repairs and maintenance, as well as decarbonisation, remain the priority for finance and resource. Declines in completions and output are expected in both 2023 and 2024, with growth returning in 2025.

Directly publicly-funded housing activity occurs through the Affordable Homes Programme (AHP), which covers starts until March 2026 and its predecessor, the Shared Ownership and Affordable Homes Programme (SOAHP), which was extended to cover starts until March 2023 due to delays in activity during the pandemic. Government policy continues to prioritise home ownership in the private housing market rather than directly raising the new public housing supply. As a result, there has been a greater focus on the delivery of housing such as shared ownership and private sale by housing associations and private house builders rather than more traditional affordable and, in particular, social rent homes, which aligns demand more closely with private housing market drivers. Consequently, public housing demand will be susceptible to rising mortgage costs, decreasing household incomes and falling house prices that are expected to affect the general housing market in 2023, although demand for affordable tenures such as shared ownership may be cushioned given the lower deposits and mortgages required. One of the largest housing associations, L&Q noted that demand for shared ownership picked up in 2022, at the same time as a decrease in market sales. Similarly, the RSH survey for Q4 showed that sales of market sale units fell compared to Q3, although the 18-month pipeline of market sale units increased, suggesting there may be a sharp fall in activity as demand shows clear signs of slowing. The number of affordable home ownership completions also increased in Q4, along with the 18-month development pipeline increasing above the three-year average.

The AHP 2021-2026 provides grant funding of £11.5 billion (£7.5 billion for outside London) with the expectation of providing 180,000 homes (130,000 outside London and 50,000 in the capital) over the duration of the programme. In its supplementary budget published in February, the Department for Levelling Up, Housing and Communities (DLUHC) confirmed a £2.4 billion capital underspend for 2022/23, which was 25% below original plans, and includes £1.0 billion unspent on the Affordable Homes Programme due to economic volatility pausing plans. Of this, £0.9 billion has been reprofiled, with £0.6 billion moved into 2023/24 and £0.3 billion moved into 2024/25. The remaining £0.1 billion was returned to HM Treasury. In 2021/22, the first year of the AHP, there had been 10,773 affordable starts, and 14,853 under the SOAHP. 21.2% of these starts in 2021/22 were for affordable rent, 14.0% for affordable home ownership and 5.7% for social rent. The tenure of the remaining 59.1% was not determined at the starts stage, which suggests a considerable element of uncertainty over the strength of the housing market and the extent to which grant funding can supplement housing associations' own resources in



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

***Social landlords** are **prioritising fire safety work, energy-efficient upgrades** and **basic repair & maintenance** over new build*

an environment of strong cost inflation and a pressing need for remediation work on the existing stock. For the first half of 2022/23, the tenure was undecided for 62.0% of the 10,228 affordable starts under the two affordable homes programmes.

The affordability formula that applied to previous programmes has been removed as part of the Government's Levelling Up White Paper, published in February 2022 and will see a redistribution of funding away from the South East and East of England towards other parts of the country. A higher proportion of housing association completions are flats compared to private sector house builders (30% in 2021/22 compared to 12%), with flats accounting for the highest proportions of housing association completions in these higher-cost regions of London, the South East and East of England. Issues around mortgages for medium and high-rise residential buildings, although now nearing a full resolution, as well as continued post-pandemic demand for lower density housing also leave housing associations exposed to wider housing market trends, and typically are less able to respond as quickly as the private sector. It is also assumed that internal planning processes for high-rise developments will be lengthened to account for uncertainty around the final introduction of legislation to require two staircases in residential towers, which is currently proposed for heights above 30 metres, but may also be aligned with the 18 metre threshold that applies in the Building Safety Act.

The annual rent-setting agreement for housing associations in England allows an increase of the CPI inflation rate in September plus one percentage point. However, with CPI inflation at 10.1% in September 2022, the implied increase in social rents of 11.1% in April 2023 was reduced to 7.0%, to balance the increase in revenue for providers with the ability to pay from social tenants given that the higher costs of living costs particularly impact on poorer households given that they spend a higher proportion of their incomes on energy, food and rent. Nevertheless, the real terms cut in rental revenue adds to the issues constraining housing associations' ability to invest in new developments, with ratings agencies highlighting that the rising cost of borrowing means additional debt funding is unlikely to plug the shortfall. In Wales, the maximum that social rents can rise in April 2023 is 6.5%, whilst in Scotland rents will increase by 5.1% on average.

In addition to a housing market slowdown, rising interest rates and caps on rent increases, another of the main challenges facing housing associations over the next few years will be balancing debt-funded development of new homes with the need to invest in existing stock. Credit ratings agency Standard & Poor's (S&P) anticipates that housing associations will need to borrow £21 billion for capital expenditure and refinancing over the next two years leading to a total debt of over £116 billion by the end of 2023/24, up from the £100 billion that it estimated for 2021/2022. S&P reported that the need to invest in the existing stock to fix building safety issues, alongside the government's Net Zero agenda will weaken profitability as debt increases without a resulting rise in the revenue stream. The increase will be greatest in England, where grant funding is significantly lower and, consequently, the need for debt funding is greater than in Scotland and Wales. The Bank of England's increases in the base rate throughout 2022 and early 2023 have raised refinancing costs for housing associations, and with annual reports for the 2021/22 financial year already showing a widespread reduction in surpluses and building targets not being met, increased interest payments on existing debt and the prospect of additional rises in interest rates on any new debt funding in 2023 will clearly place further constraints on new build activity. The Regulator of Social Housing's quarterly survey for Q4 showed that interest cover (a registered provider's surplus compared to interest payable) for 2022 was at the lowest ever recorded (102%) but respondents forecast interest cover for 2023 at 93%, due to increases in interest payable from higher interest rates, as well as greater r&m capital expenditure and rising operating costs.

The Greater London Authority (GLA) has £4.0 billion of the £11.5 billion funding for the Affordable Homes Programme 2021-2026. In contrast to the requirements for the rest of England, over half of units will be for social rent. The tenure has accounted for a rising proportion of GLA-funded affordable starts, from 22.4% in 2017/18 to 27.4% in 2018/19, 41.5% in 2019/20, 46.3% in 2020/21 and 51.8% in 2021/22. In the first nine months of 2022/23, the proportion reached 64.5%. This has been slower to filter through to completions, however. GLA-funded social rent completions as a proportion of affordable home completions were 6.5% in 2017/18 before rising to 13.9% in 2018/19, 24.9% in 2019/20, falling briefly to 24.4% in 2020/21 but then rising once again to 32.1% in 2021/22 and 38.1% in the first nine months of 2022/23 so it remains consistently lower than the social housing proportion of starts, which points to significant lags between social rent starts and completions plus units initially assigned as social rent shifting towards other tenures as they are built out. As developing for social rent requires a higher grant than for other tenures, it may be impacted more by issues affecting overall affordable housing delivery. The GLA's target for 116,000 affordable home starts by March 2023 is already unlikely to be met, with requests for additional grant funding unlikely to be approved by HM Treasury.

In Scotland, the Scottish Budget for 2022/23 allocated £831.6 million for affordable housing as part of its target for 110,000 affordable, energy-efficient homes over the next 10 years although this is heavily reliant on leveraging private sector investment and remains unchanged in the light of materials, products and labour cost increases. The £831.6 million figure is the same as the previous year but a £174.0 increase on the Scottish Government's previous Capital Spending Review commitments. Capital funding reduces to £752 million for 2023/24, however. Starts by Scottish housing associations and local authorities in 2022 totalled 3,832, which was the lowest since 2014.

In Wales, a five-year rent-setting policy was implemented from April 2020, although it will be limited to below inflation increases in 2023/24. It also announced that a further £35.0 million would be spent over the next three years on the Welsh Government's Land for Housing scheme, which aims to help housing associations buy land. The Welsh government also confirmed in March 2022 that it will spend more than £1.0 billion on building new social housing over the next three years. The Welsh government has an aim to build 20,000 low-carbon social homes by the end of this parliament. £310 million was allocated for the Social Housing Grant in 2022/23, up from £250 million in 2021/22. The Budget also confirmed plans to spend £330 million on Social Housing Grant in 2023/24 and £325 million in 2024/25.

Overall, public housing output is expected to fall by 15.0% in 2023, as rising build costs, higher interest rates and slower market-linked demand reduce activity. Output is forecast to fall a further 2.0% in 2024 as these factors continue and rising borrowing costs, below-inflation rent caps and elevated construction costs constrain the recovery of new build activity, despite high demand for new affordable and social homes. The slow recovery also reflects the lagged impact of delays to decision-making in 2022 and 2023 and for developments earlier in the planning pipeline awaiting clarification on new legislation on staircases for high-rise towers, as well as the need for housing associations to balance the increasing need to channel finance towards cladding remediation, fire safety measures, basic repairs and decarbonisation, which is likely to be at the expense of increases in new build.

Joint ventures and partnerships between housing associations and private sector house builders increased from 2019 and such partnerships would be expected to increase in the near-term, as an insurance against the uncertain outlook for the private market. However, given the crossovers between private and public provision, in particular partnerships of this nature and the acquisition of affordable units by housing associations from private developers during the building process, ONS statistical classification of private and public sector activity may also change across starts, output and completions. From April 2020, the methodology for the Department for Levelling Up, Housing and Communities (DLUHC), formerly the Ministry of Housing, Communities and Local Government (MHCLG), house building data was changed to source completions from affordable housing supply data, rather than building control. In April 2020, the ONS also began classifying housing association house building as private sector output. This implies a structural break in the ONS split of housing output data, but given that this also coincides with the sharp declines in output due to the impacts of the social distancing restrictions imposed following the pandemic, the impact of this change is currently unclear. As with all sectors, the CPA is forecasting activity on the ground rather than matching the ONS data.

Upper Scenario:

• Stamp duty changes support demand for market-linked products

• Activity to complete at the end of the SOAHP is increased

The change in stamp duty thresholds until the end of March 2025 and the higher relief for first-time buyers supports demand, despite the deterioration in household incomes and rise in mortgage rates, and buoys confidence to proceed with market-linked products, which underpins completions under the current SOAHP and starts under the 2021-2026 programme.

Lower Scenario:

• A significant weakening in the housing market undermines the focus on market-linked products

• Activity to complete at the end of the SOAHP is reduced

By contrast, a sharper rise in mortgage interest rates if the Bank of England tightens monetary policy by more than expected, and a prolonged period of house price falls, would reduce demand for market-linked products already under construction on the current SOAHP, as well as further reduce appetite for development of these tenures on the 2021-2026 programme.

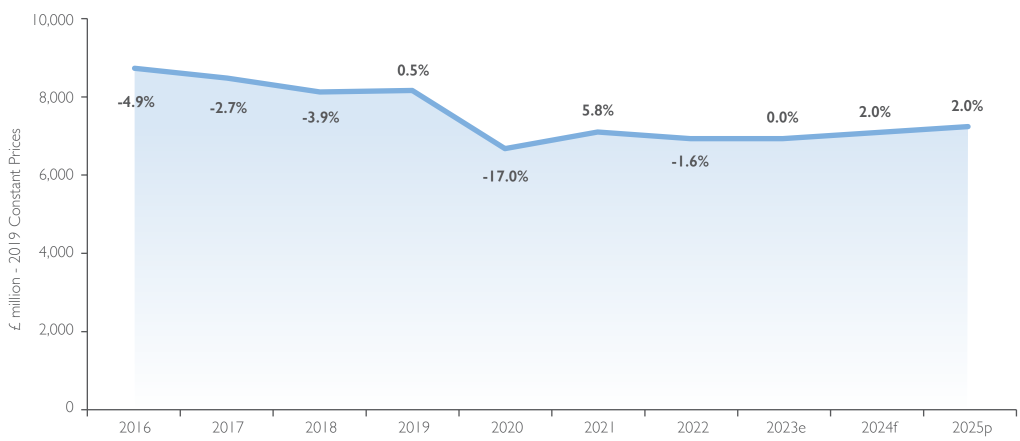
Public Housing RM&I

Social housing providers are increasing their focus on addressing legacy safety issues, decarbonisation and keeping up with general repair and maintenance on their existing stock, but growth rates will be limited by cost inflation and financially-constrained local authorities.

Despite the urgent need for cladding remediation, a drive for energy-efficient retrofit of existing social housing, and ongoing general maintenance and improvements this has not translated into double-digit growth rates that would have been expected for the sector. Instead, output in 2022 was 22.8% lower than in 2015. Output in the sector is dominated by three key areas: general maintenance of the social housing stock that provides the consistent levels of activity that tend to be stable on an ongoing basis, activity to address legacy issues related to fire safety and energy-efficiency retrofit of social housing, with the latter two tending to drive any significant growth in the sector. The weakness in the sector has been due, in part, to difficulties in government funding programmes and delivery. Despite the government's headline figure of £6.6 billion investment in energy efficiency improvements to publicly-owned buildings, the vast majority of finance has only just started to be allocated for specific remediation and decarbonisation projects. In addition, despite being prioritised by social landlords, cladding remediation and fire safety activity is not occurring at the pace expected due to capacity constraints of skilled labour and materials price inflation that has led to delays and repricing issues for future projects. In addition, housing associations indicate that the higher-priority and higher-value activity has been at the expense of other non-urgent general works on existing properties that can be delayed.

Post-Grenfell, the focus for social housing providers has understandably shifted and now covers a broad undertaking of fire safety improvements. Work to remove and replace ACM cladding, which was among the first fire safety work to be undertaken, is nearing completion. According to the Department for Levelling Up, Housing, Communities (DLUHC) Building Safety Programme statistics, there were 160 social housing buildings taller than 18 metres that

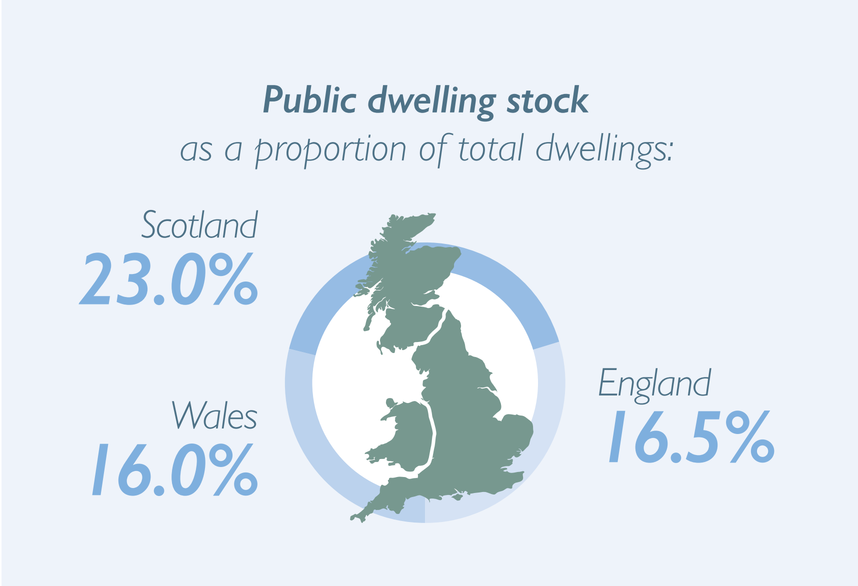
Public Housing RM&I Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

had ACM cladding unlikely to meet current Building Regulations. At the end of February, cladding had been removed from all of these towers, of which 18 were awaiting building control sign-off and 22 were at the replacement stage. The Building Safety Fund provided £400 million for the remediation of ACM cladding. However, other types of cladding are more prevalent and as the remit has shifted to wider cladding remediation, funding has been prioritised for the private sector, with social sector funding limited to social housing providers whose remediation costs are deemed unaffordable or a threat to financial viability. To date, £172 million has been allocated for non-ACM remediation of 168 social residential buildings in England, of which 70 have started and 15 have completed. In contrast, £1.6 billion has been allocated for 1,047 buildings in the private sector. In Scotland, there are 95 residential blocks that need high pressure laminate (HPL) cladding replacement. Combined with HPL cladding remediation required on 271 public sector buildings such as schools (see Public Non-housing R&M), the Scottish government calculates a £900 million shortfall in funding from central government for the work. In Wales, a total of £375 million in capital and £6.5 million in revenue has been allocated to building safety. This will pay for a second phase of the Welsh Building Safety Fund, alongside supporting delivery of the Building Safety Passport Scheme. The latter is part of a Welsh government initiative to fund fire safety surveys on all buildings taller than 11 metres in order to produce 'passports' that will set out any remediation work required.



Since the Grenfell Tower fire, there has been an increasing focus not just on fire safety, but the general quality of housing built and maintained by social landlords. Secretary of State, Michael Gove, has 'named and shamed' 14 social landlords so far who had failed to respond to complaints or rectify quality issues such as damp, boiler faults and general disrepair. Given that this is becoming as high-profile an issue as fire safety, it is likely that housing associations and local authorities will divert more spending to basic r&m.

The Regulator of Social Housing (RSH) quarterly surveys, which are based on responses from private registered providers of social housing that own or manage more than 1,000 homes, reported that expenditure on capitalised repairs and maintenance expenditure was £2.5 billion in 2022, although this was 21.8% lower than forecast. Expenditure is forecast to reach a high of £3.4 billion in 2023 but as previous surveys have highlighted, price increases are forcing some providers to consider alternative suppliers and retender contracts or outsource work to sub-contractors, resulting in delays for recruitment and price negotiations. Nevertheless, it is difficult to determine how much of the forecast increase in spend is linked to higher costs, and what proportion is related to new work or catch-up on delayed projects. In the Q4 survey, two-thirds of providers reported delays or changes to r&m programmes, as well as a shift towards damp and mould issues. In November 2022, social housing providers were asked to submit evidence to the RSH on the extent of damp and mould in their properties. According to the RSH, its best estimate is that 3%-4% of properties have 'notable problems' with damp and mould, 1%-2% have 'serious problems' and 0.2% have the 'most serious problems'. Addressing these issues is likely to come at the expense of non-essential r&m.

Decarbonisation and energy-efficient retrofit are also a key consideration for the publicly-owned housing stock. Following the failure of the Green Homes Grant (GHG) in providing energy-efficient retrofit in the private sector prior to its cancellation in its first year, the funding was shifted to the Social Housing Decarbonisation Fund. In the first wave of the fund, £179 million was allocated on the optimistic basis of retrofitting 38,000 homes. However, responses to the tender indicated that the cost of retrofitting was almost two times higher than the initial expected cost that the government was expecting and, consequently, it will only see 20,000 homes retrofitted in the first wave. Between March 2022 and November 2022, 1,430 measures had been installed in 920 properties. In addition, cost inflation is likely to have a considerable impact on the sector in the medium-term given that many local authorities are already financially-constrained, below-inflation social rent increases have been implemented in 2023/24 and providers are facing rising debt repayment costs as interest rates rise. As a result, despite funding being available for cladding remediation and decarbonisation on the local authority and housing association dwelling stock, this finance is not likely to go as far as initially expected so we may see the value of activity coming through but not the volume. In addition, housing associations are going to have to increasingly devote more finance towards fire safety issues, not just cladding remediation, particularly given that the more inspections are conducted on their stock, the more issues (such as fire stops and fire doors as well as other general issues) that they are likely to find. Given the higher capital cost of these types of works, housing associations and lenders are increasingly agreeing waivers to exclude the cost of decarbonisation, energy efficiency and building safety work from their loan covenants.

A further £778 million was allocated to 107 projects in the second wave of the Social Housing Decarbonisation Fund in March, to fund work between 2023/24 and 2024/25. The funding will be matched by housing associations and used to carry out energy efficiency upgrades on 100,000 properties with an EPC rating below C. However, as with the original Green Homes Grant, all registered installers must be registered with Trustmark and, where applicable, with the Microgeneration Certification Scheme (MCS). In addition, all projects must be compliant with PAS 2035:2019. As a consequence, the constraints on installers may mean that despite the finance available, the lack of eligible installers may hinder progress on projects. Alongside the Fund, following an initial phase that allocated £150 million, a further £630 million was allocated for the Home Upgrade Grant scheme, which will be used by local authorities to support low-income households to carry out energy-efficiency upgrades on 30,000 properties over the same timeframe to March 2025. The next iteration of the Energy Company Obligation (ECO4) will run concurrently, and for one year longer to 2025/26, and will provide funding of £1.0 billion per year for low-income and fuel-poor households. For social housing, eligibility will be limited to homes in EPC band E, F or G and limit eligible measures to insulation, first-time central heating, renewable heating systems and district heating. It has a target of 22,000 solid wall insulation retrofits per year. This is higher than under ECO3 (43,397 installations between October 2018 and March 2022), but lower than the 145,103 measures installed during the four years of ECO1 and 2. The ECO+ programme, which was announced in November 2022, allocates a further £1.0 billion to energy efficiency measures, distributed as £130 million in 2023/24 and £435 million each in 2024/25 and 2025/26. However, eligibility for social housing is even more constrained to avoid crossover with existing policies, and will cover insulation measures only, on properties with an EPC rating of E or below.

Analysis by the Greater London Authority (GLA) in December found that 43% of the social housing stock in London, around 343,000 homes, does not meet the Decent Homes Standard or achieve an EPC rating of C or above. In the longer-term, a key issue for housing associations is that they may not be financially viable to undertake energy-efficient retrofit, with Notting Hill Genesis highlighting that 15% of its 44,000 homes are currently Victorian terraces that are around 100 years old and have the lowest EPC rating. Getting such properties up to EPC C may be up to £100,000 per property. Instead, it may be that housing associations need to sell some older properties given the extensive retrofit cost. However, L&Q, one of the largest housing associations, which covers 105,000 homes announced in 2022 that it would be looking for contractors to carry out £2.7 billion of work over 15 years covering upgrades, fire safety and decarbonisation measures that are intended to start in April 2023. The primary areas of the work will be cladding and external wall system renewals, fire risk assessment works including fire door set upgrades, timber decking renewal, sprinkler installations and fire alarms. L&Q also announced in July that it had secured funding from Lloyds Bank to help its transition towards Net Zero by 2050. The deal will be subject to L&Q achieving an EPC rating of at least C on all homes by April 2024, and that half of the 8,000 homes L&Q plans to build by 2024 will be affordable tenures.

Across the other nations, the Welsh Government Budget will provide £580 million for the decarbonisation of social housing in Wales up to 2024/25. A total of £72 million in general capital will also be used to help accelerate the scale and pace of the decarbonisation of Welsh homes. Of this, £35 million will be used to test the use of new funding models.

In Scotland, the Energy Efficiency Standard for Social Housing 2 (EESSH2) in Scotland targets a minimum EPC rating of D for social housing to be let from 2025. Only 6.0% of the 597,000 social sector dwellings in Scotland had an EPC rating below D according to the house condition survey from 2019 (the latest available) so with sufficient finance this may be achievable. It also sets a deadline of December 2032 for all social housing meeting EPC rating B. As in Wales, this is considerably higher than in England, where the DBT (formerly BEIS) states that EPC rating C by 2035 is required to meet the Net Zero target. The Scottish Government's Budget for 2023/24 announced energy efficiency retrofit under its Home Energy Efficiency Programme (HEEPS) would have funding of £64.0 million for 2023/24, matching the amount allocated for the previous year. The programme provides funding for local authorities to develop and deliver energy efficiency programmes (mainly solid wall insulation) with the aim of reducing fuel poverty.

Looking forward, public housing rm&i output is still expected to be restricted by capacity constraints for both cladding remediation and energy-efficiency retrofit, with the cost inflation experienced in 2022 and further rises in 2023, and associated delays, adding to the headwinds. Despite assuming that remediation and decarbonisation work proceeds as a priority, even at the expense of new build, financial constraints due to rising interest costs now add to existing issues. As a result, public housing rm&i is forecast to remain flat in 2023 and rise by 2.0% in both 2024 and 2025.

Upper Scenario:

• Housing associations focus on remediation and fire safety measures

Addressing issues on the existing stock as a priority may mean that housing associations have to devote further finances towards urgent cladding remediation and fire safety work on their buildings to increase volumes of work, diverting more funding away from new build programmes, particularly as the housing market deteriorates for market-linked tenures.

Lower Scenario:

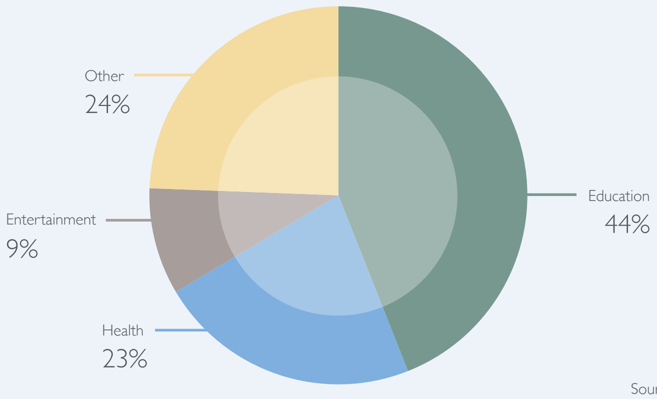
• Labour capacity constraints continue to hinder cladding remediation and decarbonisation

If costs skills shortages continue to be a greater issue, or if funding cannot be increased to cover higher costs then volumes of activity may fall, even as output values are maintained.

Public Non-housing

Projects on hospital and prison construction programmes are progressing through to produce a broadening pipeline of activity in the public non-housing sector, although the risk of delays remains given that no additional finance is available to cover rises in construction costs and day-to-day operational expenditure.

Public Non-housing Output by Sub-sector 2022 (%)

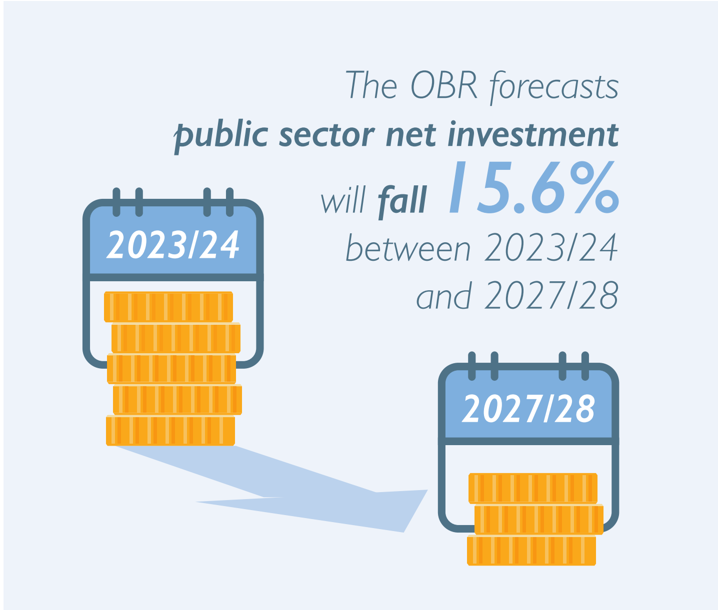


Source: ONS

Sector output is largely determined by capital funding allocated to departmental budgets by central government. Although in the past this has meant that activity is less affected by uncertainties than other sectors that depend on private sector business and investor confidence, publicly-funded projects are still subject to the strong inflationary pressures that span across construction. There are signs that this is already leading to delays, especially given departmental budgets have remained largely unchanged since they were set in the Spending Review in October 2021, and notably so for education, a sub-sector in which output has fallen since 2016. It is also a particular risk for larger planned hospital and prisons projects that have already experienced a near-doubling in cost estimates even before the current inflationary pressures. For fixed-price contracts, it may be the case that higher costs mean the value of work is maintained, but volumes decrease. Looking to projects that are earlier in the planning phase or awaiting final investment sign-off, additional downside risk stems from the lower levels of departmental capital funding in 2024/25, as well as the OBR's forecast that over the longer-term to 2027/28, public sector net investment will fall by 15.6%.

Work on the new School Rebuilding Programme in England has been particularly slow to progress and even more so since the end of 2021 due to supply chain constraints and cost inflation on existing projects, whilst decision-making has been delayed on new projects. Government has also confirmed there is no prospect of additional finance being made available, which raises concern over the nominal cut in capital funding for the Department for Education and Ministry of Justice in 2024/25. The public sector pipeline is currently at a point where work is completing on major hospitals and activity in the entertainment sub-sector is significantly lower post-Commonwealth Games in Birmingham and growth in the later years of the forecast is dependent on the growing pipeline progressing through to activity this year. Whilst new hospital schemes under the government's New Hospital Programme have begun to be approved and get underway in the case of Moorfields Eye Hospital, along with the prisons programmes in England, Scotland and Wales, a near-doubling in cost estimates for projects such as the Royal Cornwall Hospital in Truro or HMP Highland exemplify the financial strains facing the sector.

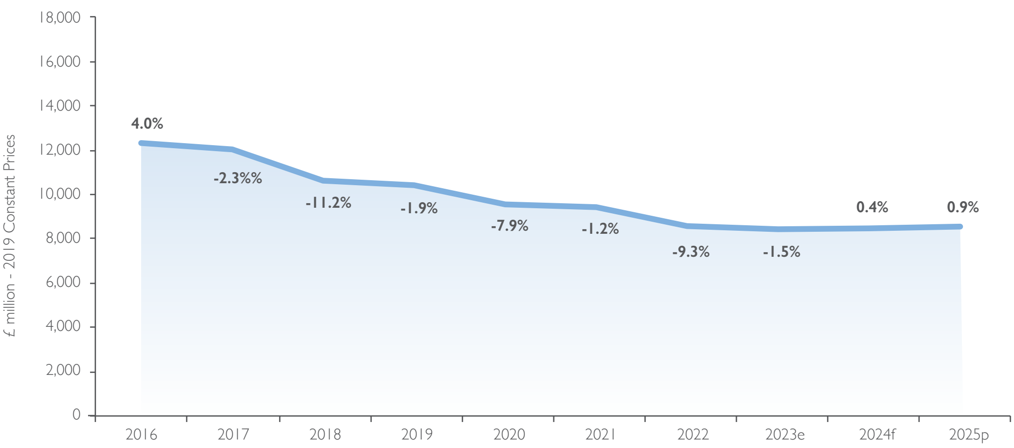
The publicly-funded **education** sub-sector should be supported by activity under the remainder of the Priority School Building Programme, the Free Schools Programme and the current ten-year School Rebuilding Programme, but output has been in decline since 2016. Delays to previous school building programmes have been commonplace since 2014, but since the end of 2021, strong rates of build cost inflation, as well as rising energy costs and associated cost of living and wage increases for staff have added an additional element of risk to projects and without the prospect of increases in funding, decision-making has been delayed.



The Spring Budget in March confirmed that the Department for Education's (DfE) capital expenditure limit was unchanged from that allocated in Spending Review 2021, at £7.0 billion in 2022/23 (an 18.6% increase from 2021/22), before falling to £6.1 billion in 2023/24. This runs alongside construction materials inflation of 19.2% in 2022 and total construction inflation of 10.4% over the same period. It is clear that additional capital funding will not be available to cover higher build costs and even as inflation moderates throughout 2023, education establishments and local authorities are still facing higher operational expenses that mean resources may be diverted from capital budgets or, more likely, that projects are paused or delayed. The DfE annual report for 2021/22 showed a £469 million underspend on its capital budget due to construction delays related to higher construction costs and labour and material supply issues. As a result, declines in output expected in both 2023 and 2024 as projects are paused for reappraisal.

In terms of government programmes, the School Rebuilding Programme began in 2020/21 and aims to deliver 500 rebuilding and refurbishment projects across England. So far, 400 establishments have been selected to receive funding across primary, secondary and special schools, as well as sixth form colleges in four phases between February 2021 and December 2022. A total of 300 schools were expected to have received their funding allocations in

Public Non-housing Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

2022/23, although projects are planned to enter delivery at a rate of 50 per year so will maintain levels of activity, rather than drive additional growth. Alongside this, the £1.5 billion Further Education Capital Transformation Programme aims to upgrade and refurbish further education colleges across England between 2020/21 and 2025/26. The first phase allocated £200 million in September 2020 for urgent remedial works at 180 colleges, and in April 2022, the second phase allocated £405 million for 78 upgrades at 62 colleges. Projects are scheduled to start in 2023 and complete by December 2024. For the third and final phase, 16 colleges across England have been earmarked for improvements, although funding allocations have still not been made. Despite these programmes appearing to create a pipeline of activity, sub-sector output has posted double-digit declines compared to a year earlier in each quarter since 2021 Q3.

In November 2022, further education colleges were reclassified as public sector bodies, which means they are now subject to restrictions on commercial loans that were previously a key source of finance for capital spending. Colleges will now be reliant on either direct funding from government or public borrowing at a time when capital budgets are under strain and set to decrease in both nominal and real terms for education in 2023/24. A £150 million capital loans scheme will be made available from Summer until March 2025 but will be restricted to projects – planned or underway – that have been delayed due to financial issues related to the reclassification.

Contracts activity within the sub-sector has highlighted that projects moving through the pipeline are those that are funded directly by local authorities. Work began in December 2022 on a £61 million new all-through school in Leamington Spa, for completion in time for the 2024/25 academic year, whilst contracts were awarded in February for a £57 million new build secondary school in Burgess Hill, West Sussex and a £31 million secondary school in Worcester.

As part of its energy relief support to non-domestic properties, the government allocated £500 million in grant funding to schools and colleges in England in December 2022 to undertake energy efficiency upgrades such as insulation, heating controls and energy-efficient lighting. The average grant is expected to be £16,000 for a primary school, £42,000 for a secondary school and £290,000 for a further education college. However, the funding was intended to be spent in the following three months before the end of the financial year and focuses demand onto insulation and energy efficiency where activity is already strong. Some of this work may be classified in public non-housing R&M, however.

In Scotland, the £2.0 billion Learning Estate Investment Programme plans to rebuild or refurbish schools from 2021 to 2026. The Scottish Government has committed funding of between £220 million and £275 million for 11 projects that include the replacement of 26 schools across the country, as part of the first phase of the programme. The projects in this phase are expected to be completed by Summer 2024. The 2022 School Estate Statistics showed that 54 schools were built or refurbished in 2021/22, up from 42 in 2020/21 and overall, 1,053 schools have been built or substantially refurbished since 2007/08. For the second phase, £800 million has been announced for the construction or refurbishment of 25 new schools and campuses. The majority of projects in this phase are expected to be completed by December 2025. Details on the third phase were expected in 2022 but have been delayed.

In Wales, the £2.3 billion Sustainable Communities for Learning programme (previously named the 21st Century Schools and Colleges programme) aims to support an estimated 200 projects to rebuild and refurbish schools and colleges, with funding covering April 2019 to March 2024. From January 2022, all new school and college buildings, major refurbishment and extension projects have been required to meet Net Zero targets. Around 60 projects have been approved, most recently a £25 million all-through school in Pontypridd, whilst a larger project of a joint education campus to relocate and expand three schools in Cardiff has selected a preferred bidder but is awaiting planning approval.

Upper Scenario:

- Activity accelerates under new school building programmes

The main forecast assumes that work on the new school building programmes across Great Britain is slow to progress due to cost rises that cannot be absorbed by fixed budgets. Additional government funding is not assumed to be assigned even in the upper scenario, but if fixed price contracts signed in the last 18 months keep project starts on schedule, this would result in higher activity and stronger growth over the forecast period.

Lower Scenario:

- Increased costs and a lack of contractor interest delays work under school building programmes

If clients and contractors are reluctant to agree contracts for new school projects out for tender in 2023 due to cost inflation and increased uncertainties, this may push back start dates of planned projects under school building programmes across Great Britain and hinder progress further on the already delayed PSBP2 and Free Schools programme in England.

Output in the **health** sub-sector, which covers publicly-funded work on hospitals, health centres and clinics, is forecast to increase by 2.0% in each year of the forecast as construction work begins on larger hospital schemes that are part of the government's New Hospital Programme (NHP). Delays due to rising construction cost inflation, a lack of additional capital funding and increases in operational spending remain the near-term risks to growth, however.

As existing projects complete, including the Midland Metropolitan Hospital, the redevelopment of the Springfield Hospital in south London, the Royal Sussex County 3Ts Hospital and the Baird Family Hospital and Anchor Centre in Aberdeen, the pipeline of new projects is bigger than in previous years. The government has pledged to deliver 40 new hospitals across the country by 2030 backed by initial funding of £3.7 billion, with a further eight schemes eligible for future funding. Out of the 40 new schemes, eight began before

*The **£300 million Moorfields Eye Hospital Oriel building** was awarded contracts in February and is the **largest new project underway in the New Hospitals Programme***

the programme and are now either underway or complete, whilst the £300 million Moorfields Eye Hospital Oriel development in King's Cross has an agreed construction programme and contracts were awarded in February. Main structural works are scheduled in 2024, with fit-out commencing from 2024 Q3 and an opening date of 2027. The remaining schemes in the programme are largely refurbishments or new wings to existing hospitals. In the last six months, plans have been approved for the redevelopment of the district hospital in Bury St Edmonds, contractors have been appointed for the £140 million urgent care centre at Derriford Hospital in Plymouth and the £77 million Dorchester Community Hospital. Plans were also approved for the new Shotley Bridge Community Hospital in County Durham and the new women and children's unit at the Royal Cornwall Hospital in is awaiting approval from HM Treasury after costs rose by £100 million. Construction of these projects is scheduled to run from 2023 to 2026.

Within the NHP there are plans for eight 'pathfinders' – schemes that are larger, more complex and whose plans are relatively advanced. Although the Department of Health and Social Care (DHSC) expects these schemes to be completed between 2026 and 2028, uncertainty remains over their delivery even now, given multi-year overruns on current projects and rapidly rising project costs. The estimated cost of the Watford General Hospital pathfinder project has now risen from an initial £400 million to £1.1 billion, partly due to inflation, and two others are estimated to cost around £600 million (Leeds General Infirmary) and £700 million (Whipps Cross University Hospital), which clearly raises questions over the adequacy of the funding to deliver the full pipeline of work. Given this, concerns remain as to whether some schemes will be scaled back, delivered at a lower cost, or abandoned in favour of smaller refurbishment projects, especially after previous board meeting papers and anecdotal evidence suggested that government funding for a few schemes has been capped at £400 million.

The National Audit Office has announced it will be undertaking a review of the NHP's value for money, with the findings published this year. In its annual report for 2020/21, the Infrastructure and Projects Authority (IPA) gave the programme an amber/red ranking, meaning its delivery "is in doubt with major risks or issues apparent in a number of key areas". This was downgraded to red in late 2021, meaning that it "appears to be unachievable". Allocated funding for the NHP is struggling against the inflationary backdrop, but funding may also need to be diverted away from new build projects towards the urgent remediation of reinforced autoclaved aerated concrete (RAAC) structures that have been discovered at 34 hospitals in England. Only two of the affected hospitals are currently in the NHP and although the government has separately allocated £685 million for RAAC remediation, half of the applications for funding cover just five NHS Trusts.

Outside of the NHP, a £220 million new children's hospital in Cambridge was approved in 2022. It will receive £100 million in government funding (committed in 2018), with the remainder provided through philanthropy and land sales. It is scheduled to open in 2025. As the Springfield

Hospital in south London completes, the second phase of the programme to redevelop Tolworth Hospital in Kingston will begin in the first half of 2023 and complete in 2025. Tendering has also begun on a new £500 million zero carbon hospital in Airdrie, Scotland for a scheduled opening in 2028, and contracts were awarded in April for a new £160 million hospital in Fort William. In Wales, the first contracts were awarded under the Welsh mutual investment model in 2022 H2, for the Velindre cancer hospital in Cardiff and an £85 million mental health unit was approved in Rhyl in October. As with all hospital projects, delays and funding difficulties cannot be ruled out, particularly given the current inflationary backdrop and limited increases to capital funding for 2023/24 and 202/25. The National Audit Office has previously highlighted that DHSC funding has frequently been transferred from its capital budget to its revenue budget as it prioritised day-to-day spending over longer-term investment in buildings and other assets. This is a pattern that is unlikely to change in the near-term and may also be exacerbated by the pandemic and rising operational costs. Illustrating this, the Scottish Government's emergency budget review in November led to £180 million being cut from the health capital expenditure budget for the current financial year.

The DHSC capital expenditure was estimated at £11.2 billion for 2022/23 in Spring Budget 2023, down from £12.0 billion planned in the Autumn Statement in November 2022. Although planned spending rises to £12.0 billion in 2023/24 and £12.6 billion in 2024/25, the total funding allocated over the three years from 2022/23 has been trimmed by £0.5 billion. In addition to the £3.7 billion for the NHP, £1.5 billion has been earmarked for new surgical hubs, increased bed capacity and equipment through to March 2025, whilst £150 million will be invested in NHS mental health facilities linked to A&E and to enhance safety in mental health units over the same period. Most projects on the £300 million scheme to replace all mental health dormitories with single en suite rooms are now near completion.

The new four-year Procure23 (P23) framework for NHS smaller works began in June 2022 and is worth £9.0 billion. This immediately follows the ProCure22 framework that began in October

2016 and continues to provide a stream of work near-term. Since its start date, 144 major works schemes and 37 small works packages have started under ProCure22, at a value of £5.0 billion. ProCure22 and the two previous iterations have provided a total of £10.0 billion in capital works, so the new P23 version accounts for a step-up in activity. Crown Commercial Services states that the New Hospital Programme will not be included the framework but it will cover works packages split into three lots, covering different values ranging from under £20.0 million to over £70.0 million. Meanwhile, the new framework for NHS Scotland, Frameworks Scotland 3 that is expected to deliver new build, refurbishment and backlog maintenance projects worth up to £650 million over a five-year period, was launched in March 2021. This is higher than the £630 million worth of projects that have been delivered or are in delivery in the previous framework, Frameworks Scotland 2.

Upper Scenario:

• Further detail and contracts for hospital projects

Funding detail for the remaining pathfinder projects in the government's New Hospital Programme, as well as final approval for the large-scale projects already in the pipeline and progress on planning approvals for other projects that allows activity to get off the ground quickly, would lead to stronger growth rates over the next three years. Cost inflation will continue in 2023 on top of large increases in cost in 2022 and pose the largest barrier, however.

Lower Scenario:

• Cost rises delay health projects

• Schemes under the New Hospital Programme delayed by public funding cuts or limits

Supply constraints and cost increases for products and on-site labour may lead to delays, particularly if rising costs lead to projects being paused to renegotiate contracts. If government funding for the remaining projects, notably pathfinders, in the New Hospital Programme is cut or diverted away to remediation priorities, projects are likely to be scaled back or paused for local trusts to review costs. In both instances, delays to publicly-funded schemes would lead to lower activity in the near-term.

Public non-housing **other** covers construction work on publicly-funded facilities such as prisons, defence projects and civil service offices and output growth is forecast over the next couple of years, driven by the start of new build, expansion and refurbishment work at prisons across England and Wales as part of the government's New Prison Programme, the start of work on Scotland's largest prison project and a vehicle storage facility for the Ministry of Defence (MoD) at Ashchurch. As with other public non-housing sub-sectors, cost inflation and fixed departmental and project budgets are assumed to constrain growth in the volumes of activity, however.

The £4.0 billion New Prisons Programme aims to deliver 18,000 prison places across England and Wales, targeted by 2026 according to the Ministry of Justice (MoJ) delivery plan, through a combination of building new prisons, as well as extending, refurbishing and maintaining existing prisons. In Spending Review 2021, the government assigned £3.5 billion of funding across three years from 2022/23 to deliver the programme, with spending set to peak in 2023/24. Following the completion of HMP Five Wells in Wellingborough and HMP Fosse Way (previously known as Glen Parva) in Leicestershire, there are four new prisons planned but so far, the 1,400-capacity prison HMP Millsike at Full Sutton in Yorkshire is the only one to progress. The £400 million contract was awarded in August 2022 and work began in November, with an opening scheduled for 2025. Planning applications for the three remaining new build prisons in Chorley, Market Harborough and Aylesbury were all rejected in the first half of 2022, with appeal decisions due in Q2. A public consultation on plans to build two more 1,715-capacity prisons at RAF Wethersfield in Braintree concluded in November 2021 but the local authority is still waiting for confirmation on whether the MoJ would progress to submitting a planning application. In January 2023 the £95 million contract for a new custodial facility at HMP Rye Hill was awarded. The project was initially announced in October 2020, when its completion was scheduled for the end of 2022.

***Work on the first of four new prisons is underway** at **HMP Millsike in Yorkshire**, for completion in 2025*

A total of 16 sites across the country are also being expanded and refurbished as part of the Accelerated Houseblock Development Programme. Of these, eight are due to receive new houseblocks, one a new workshop at High Down in Surrey (also previously announced in October 2020) and seven are to receive comprehensive refurbishments as part of wider £500 million investment in the estate, including renovations to every cell at HMP Birmingham and HMP Liverpool. Contracts began to be awarded from June 2022, with the latest contract for a £23 million refurbishment and new sports hall at HMP Norwich awarded in November.

In February, the main contractor was appointed for the £300 million Salisbury Square courthouse and police station redevelopment in the City of London, after preparatory works began in 2022 Q4. Completion is expected in 2026. In March, contractors were appointed to the MoJ's £2.5 billion five-year Constructor Services Framework that would be used to procure new build, refurbishment, maintenance and minor works in projects worth up to £30.0 million up to 2026. Thereafter, the government has suggested that the framework could be extended by another two years if an additional £1.0 billion is committed. However, current rates of cost inflation may erode this contingency.

In Scotland, activity will be supported by the Scottish Prison Service (SPS) Estate Development Programme, which includes the construction of a £74 million national women's prison at HMP Cornton Vale, scheduled for completion in Summer, and the delayed HMP Glasgow, the largest project in the SPS programme. The new £100 million prison will replace HMP Barlinnie and after the award of contracts for early works in July and the masterplan was approved in December, construction is scheduled to start at the end of 2023, for delivery in 2026. In November, the Scottish Prison Service revealed that the cost of the delayed HMP Highland redevelopment project has now increased to £140 million compared to £110 million in February and £66 million higher than when plans were submitted in 2017. Enabling works have begun but the operational date of 2024 looks increasingly unlikely.

There is little in terms of defence work at present, but work on a £259 million new vehicle storage facility at the Ashchurch military base in Tewkesbury began in 2022 Q3 and involves the demolition of 57 small buildings, to be replaced with 12 new buildings for storage and workshops, to complete in 2027. In October, plans were approved for a £55 million integrated care campus on Catterick Garrison, as a joint MoD and NHS project. Main construction is scheduled to begin in late 2023 and last for around 12 months. The Defence Infrastructure Organisation (DIO) is also beginning procurement for a £60 million single living accommodation block at RAF Marham, to begin in mid-2023 and last for two years and a similar £74 million block at RAF Brize Norton to start a year later.

In terms of public office buildings, the Government Hubs Programme aims to reorganise public sector offices into 50 regional hubs by 2030. So far, 17 office hubs have been announced, which are on the first phases of the programme that set out to provide 20 hubs by 2025. Work has completed on three in Birmingham, Wolverhampton and Peterborough and is currently underway on the Croydon Hub, which is at fit-out stage for opening in September 2023, the Bristol hub, for scheduled completion in 2024 Q3 and the Manchester Hub for completion in 2025. The Whitehall Campus consolidation has reached design and pre-construction phase, with a scheduled completion of 2025, whilst the £100 million Blackpool Hub reached contract award in February. It forms part of a wider £350 million council-led regeneration of the town centre that includes a hotel and new tram link.

Meanwhile, detailed restoration plans for the Northern Estate Programme, which involves refurbishing and redeveloping buildings on the northern part of the Parliamentary Estate are due to be put to Parliament for approval in Summer 2023, although there is a high risk of this date being pushed back further given new government priorities, and major works are expected to occur well beyond the forecast period. Despite the uncertainty, surveying work began last Summer and is expected to continue for up to 18 months. Tendering for the £70 million restoration of Parliament's Victoria Tower began in December, with work scheduled to last five years from 2024.

The Public Sector Decarbonisation Scheme, which aims to reduce emissions from public sector buildings by 75% by 2037, compared to a 2017 baseline, has £2.5 billion set aside. £1.1 billion was allocated in the first two phases, for works at 381 public buildings and in the third phase, £553 million has been allocated for works at 160 buildings and £409 million for 171 projects at 144 organisations, to be spent in 2023/24 and 2024/25. Given the nature of energy-efficiency upgrades, some of these projects may be captured in public non-housing r&m, however.

Upper Scenario:

• Further detail and contracts for new prisons

Further detail and Secretary of State planning approval for the remaining new prisons that are part of the New Prisons Programme would increase certainty for the sub-sector and, in turn, ensure a pipeline of activity that would improve growth prospects over the next three years.

Lower Scenario:

• Prison and defence projects delayed

Rising costs and a lack of availability of labour slows progress on current new build and/or redevelopment projects under prison building programmes and large defence projects in England, Wales and Scotland, whilst plans for future prison projects are delayed further in the planning system.

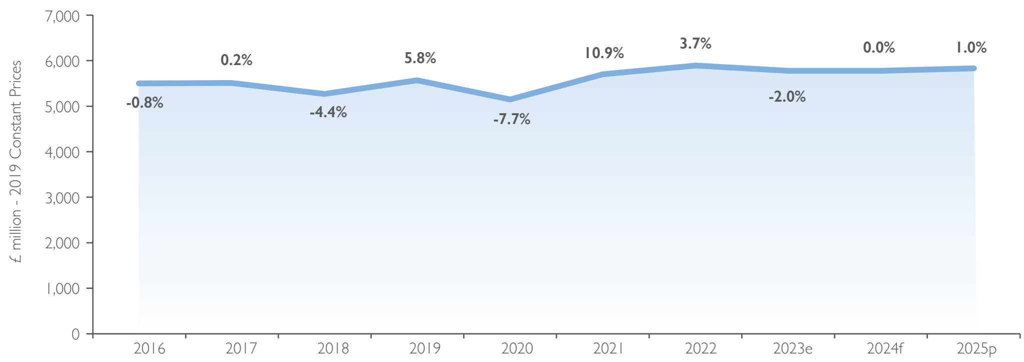
Public Non-housing R&M

Public non-housing repair and maintenance (r&m) activity is expected to be limited by the focus shifting to maintaining progress on new build programmes across the UK, and financially-constrained local authorities being unable to allocate funding for non-essential schemes, particularly given ongoing cost inflation concerns.

Output in the public non-housing r&m sector consists of basic repairs and maintenance carried out on schools, hospitals, prisons, as well as other government and local authority buildings. Whilst basic repairs and maintenance cannot be cancelled or postponed significantly, non-essential activity in 2023 is likely to be held back as resource is focused on maintaining activity on new build projects under major hospital, school and prison building programmes underway, particularly at a time of strong build cost inflation that restricts additional resource being committed to r&m schemes. In addition, projects allocated funding on the Public Sector Decarbonisation Scheme and, in particular, the large-scale reinforced autoclaved aerated concrete (RAAC) remediation projects that involve demolition and rebuild, are likely to be classed as public non-housing new build rather than r&m.

The Public Sector Decarbonisation Scheme offers grants to public sector bodies in England, including schools and hospitals to fund low carbon heating and energy efficiency measures. The scheme is currently split into three phases. The first phase of £1.0 billion covered 461 projects that were to be delivered by the end of 2022 Q2, followed by a second phase, which has a greater focus on heat decarbonisation, and allocated £75 million of funding for 54 projects. Phase 3 will receive £1.4 billion of funding over the period 2022/23 to 2024/25 and will prioritise projects where the heating systems are at the end of their working lives and there is an imminent need for replacement. £553 million was allocated in May 2022 for upgrades that were intended to be completed in Q1. It covers 217 measures at 160 public sector organisations. Bids for £635 million of the remainder of the phase 3 funding were allocated in March, with £409 million of the funding assigned to 171 projects at 144 organisations. On a regional basis, the South East received the largest total of £108 million and Scotland the lowest, at £1.2 million. Delivery of the projects will be in 2023/24 and 2024/25. This phase will also be a pilot for sector caps, which allocate funding by sector according to the distribution of carbon emissions, which according to DBT (formerly BEIS) calculations, is weighted towards hospitals, schools and

Public Non-housing R&M Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

offices. Given the nature of energy efficiency upgrades, some of these projects may be classified as public non-housing new work, however.

Following an estimated £1.8 billion of funding allocated to maintain and improve the condition of schools buildings in England in 2022/23, allocations for 2023/24 are scheduled to be announced in May, but like the Public Sector Decarbonisation Scheme, will prioritise projects that replace expired oil and coal boilers with low carbon alternatives. The current Condition of School Buildings Survey, which ran between 2017 and 2019 and covered 22,031 schools across England, revealed that the total cost to repair or replace defective elements in the school estate was £11.4 billion, almost double the £6.7 billion previously estimated by the DfE in 2017. Schools in the South East and West Midlands have the highest condition need, with both regions requiring £1.7 billion, whilst schools in the North East have the lowest total condition, estimated at below £600 million. Data from the survey also showed that electrical services had the highest condition need, with an estimated £2.5 billion required to fully repair or replace elements such as main switch panels, lighting and IT infrastructure across the whole estate, followed by mechanical services (£2.1 billion) and external walls, windows & doors (£1.8 billion), roofs and site area & externals (both estimated to cost £1.6 billion). The next condition survey is due in 2026.

In contrast to England, the proportion of schools in Scotland reported as being in good or satisfactory condition rose to 90.4% in 2021/22, from 90.2% in 2020/21 and 81.7% ten years earlier, according to the 2022 School Estate Statistics. The statistics also showed that 54 schools were built or refurbished in 2021/22, up from 42 in 2020/21. Overall, 1,053 schools have been built or substantially refurbished since 2007/08 and further upgrades are set to take place through the Scottish government's £2.0 billion Learning Estate Investment Programme (see Public Non-Housing).

NHS Digital estimates that the cost to eradicate the NHS estate maintenance backlog rose to £10.2 billion in 2021/22, from £9.2 billion in 2020/21. A breakdown of the total cost showed that £1.8 billion was classed as high risk and requires immediate attention, which is 14.4% higher than in 2020/21, whilst £3.5 billion has been classified as a significant risk that should be addressed in the short-term, an increase of 15.7% from the previous year. NHS Trusts spent £1.4 billion to reduce the maintenance backlog in 2021/22, a 57.1% increase compared to 2020/21, which is likely to reflect higher costs as well as volumes of work.

The Ministry of Justice's capital budget is set to increase from £1.5 billion in 2022/23 to £2.3 billion in 2023/24, before falling to £1.8 billion in 2024/25 and is largely expected to be driven towards new build, expansion and refurbishment projects on the government's £4.0 billion New Prisons Programme that aims to deliver 18,000 new prison places in England and Wales by the mid-2020s. It is, therefore, unlikely to fully address the backlog of maintenance work within the prison estate, which is estimated to cost £916 million according to the HM Prison & Probation Service (HMPPS).

For the Ministry of Defence estate, the Future Defence Infrastructure Services provides £3.0 billion worth of facilities management contracts over seven years, with the first £1.6 billion allocated in 2021. The contracts cover 31,000 units and will maintain facilities at more than 400 defence sites across the UK.

The Department for Levelling Up, Housing and Communities (DLUHC) has identified eight high-rise publicly owned buildings (over 18 metres) with unsafe Aluminium Composite Material (ACM), and at the end of February, remediation work had completed on seven of these and has started on the remaining one, unchanged since July 2021. In Scotland, the government collected data in 2021 that showed high pressure laminate cladding had been used on 244 schools, 27 colleges and universities, five hospitals and one prison. It also warned that the £97.1 million it received for remediation from central government through the Barnett formula leaves a £900 million shortfall for the full assessment and remediation required. Outside of cladding, 34 hospitals in England have been identified as having structural concerns with roofing that contains RAAC, with schools also asked to survey and report on the use of RAAC in buildings. The government has allocated £685 million in ring-fenced funding for remediation covering 2022/23 to 2024/25. However, in November 2022 the government extended its guidance to local authorities for the identification and remediation of RAAC in all public sector buildings, whilst the large scale of projects emerging at hospitals suggests funding will need to be increased or reallocated from new build programmes. So far, half of the applications for funding covers remediation projects at just five NHS Trusts.

The Government Hubs Programme aims to reduce the government estate from around 800 buildings to 200 by 2030 by creating shared regional hubs across government departments. Since 2010, the disposal of public sector office space has accounted for the majority of reductions in the government estate. In central London, the Whitehall office estate has been reduced from 181 in 2010 to 63 in 2018, 36 in 2022, with an aim for 16 to remain at the end of the programme. Further reductions in the size of the government estate, with £1.5 billion in property expected to be sold over the next three years, are expected to exert a downward impact on r&m activity in the sector over the longer-term.

Upper Scenario:

• Local authorities shift priorities to focus on r&m work

If new build schemes by local authorities are delayed or cancelled due to cost inflation, local authorities are likely to revise their priorities to refocusing on routine and scheduled non-essential maintenance of existing buildings.

Lower Scenario:

• Funding and spending of local authorities is reduced

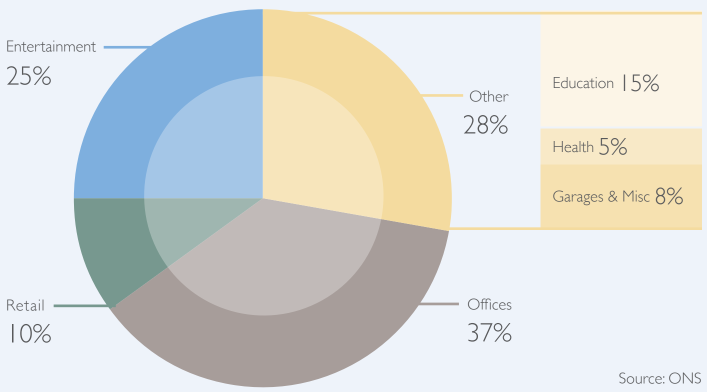
• New build projects overshadow routine r&m

A reduction in local authorities' spending power due to budget tightening by councils, cuts in central government funding, and cost inflation reducing volumes of work would result in lower public non-housing r&m output over the forecast period. Routine and scheduled maintenance of existing buildings is also expected to be displaced by increased focus on new build projects coming through the pipeline.

Commercial

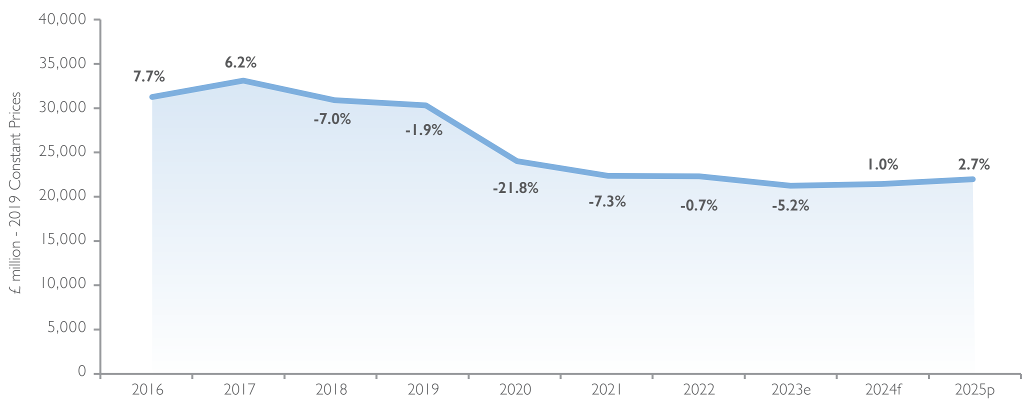
Commercial sector activity is forecast to decline in 2023 as higher interest rates and rise in the cost of living worsens confidence for consumer-focused sub-sectors such as retail and entertainment, whilst decision-making is delayed for investment in larger offices and universities projects.

Commercial Output by Sub-sector 2022 (%)



Commercial construction output is strongly linked to macroeconomic performance, through investment in office space, university and health facilities, and retail and leisure premises that, in turn, is dependent on broader business and consumer confidence and spending. The large up-front investment required for commercial projects means that during times of economic weakness or uncertainty, decision-making takes longer and delays to project starts are common. It is not just economic uncertainty that has hampered the sector's recovery as there are also questions over when the new post-pandemic pattern of demand will settle for office space, particularly for large towers and the growing stock of vacant space, as well as the strength of demand for in-store retail, travel and leisure facilities. In particular, this has been the case as office working moves towards remote working or hybrid models, and as retail contends with lower footfall, an accelerated shift to online shopping and household disposable incomes

Commercial Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

being eroded by accelerating inflation. With inflation expected to have peaked in 2022 Q4, the impact on consumers and businesses is likely to be unfolding in the first half of this year, when GDP growth is also expected to be at its weakest. Therefore, investor uneasiness is expected to continue, meaning that projects such as offices towers, which require the largest up-front investments, are unlikely to begin until the end of 2023 at the earliest. Similarly, projects that had been delayed by contractors contending with a rapidly rising cost base across fuel, energy, materials and labour are also expected to be in 'wait and see' mode until clear signs of improving conditions emerge.

Refurbishment and work to repurpose existing space has driven activity post-pandemic, either to appeal to new tenants taking over vacant units in offices and retail, to adapt workspaces given fewer workers on site simultaneously as working from home continues, or to improve office amenities to encourage workers back to the office. Energy efficiency improvements and Net Zero considerations are also now a key driver for offices refurbishment, with energy-efficient grade 'A' space reported to be attracting a notable rental premium. Even as new build returns to the pipeline in 2024, demand for refurbishment is expected to remain, although the higher cost of energy-efficient retrofit relative to a 'standard' refurbishment will be a limiting factor for some existing buildings, particularly in lower-rent areas. Another key trend in the commercial sector is the conversion of previously retail-led developments, even in prime locations such as Oxford Street, into residential, leisure and warehouses/logistics. However, an environment of higher interest rates, increased development costs and reduced returns on investment may also slow activity or, at least lengthen decision-making processes.

Leisure and entertainment, the second largest commercial sub-sector, has benefited from a move towards hotel or leisure-led redevelopments of existing shopping centres or store premises, particularly empty department stores in town and city centres. The redevelopments of retail districts in Leeds and Bolton are set to be led by hotel and leisure facilities, whilst plans for mixed-use developments in Salford's Middlewood Locks, Chamberlain Square, Digbeth cultural quarter and the Central Methodist Hall in Birmingham as well as London King's Cross also incorporate a hotel. Most recently, two multi-storey hotel blocks totalling 900 rooms were approved for the Albert Embankment in London, on a site that previously had been approved for residential and smaller hotel schemes. However, developers are still balancing the slow recovery in international travel with longer-term expectations of higher tourist numbers, as well as the impact of inflation on domestic discretionary consumer spending. Knight Frank research highlights that only 30% of new build hotel projects opened to schedule in 2020 and 2021, with 15% of projects postponed and 15% cancelled, suggesting backlogs and delays to projects yet to start.

Within commercial there exists niche areas of growth, however. One of these is film and television studios, with main construction work underway on the £300 million expansion of Shepperton Studios, the £600 million Hollywood Sunset Studios in Hertfordshire and the £174 million Eastbrook studios in east London both reaching contract award in November, and the redevelopment and expansion of the Ealing Studios in west London receiving approval in the same month. A £450 million film studio is planned in Sunderland but is dependent on both planning approval and financial support from government.

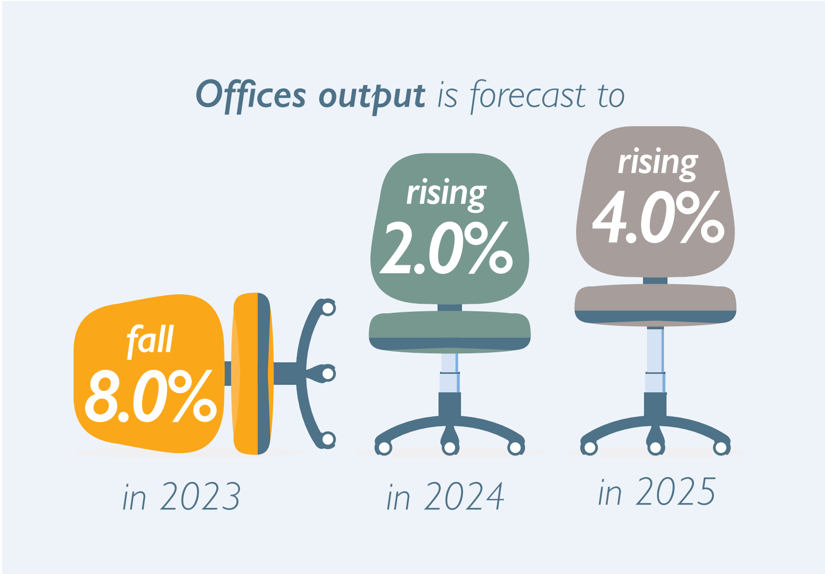
Similarly, large arena and sports stadia projects have also begun to progress through the pipeline, including the £350 million Manchester arena project which is set to complete this year, work on the £260 million Gateshead Arena is underway, and received £20 million in top-up funding from the Levelling Up Fund to cover a rise in construction costs, whilst the £150 million Cardiff Arena plan was approved in early 2022. Elsewhere, the £505 million stadium for Everton Football Club and groundworks for the expansion of Old Trafford cricket ground are underway, an expansion of Leicester City's football stadium and a new £100 million stand for Crystal Palace were approved in 2022, whilst Aston Villa's £100 million stadium expansion was approved in January and Manchester City published proposals for its stadium expansion in March.

In terms of large leisure schemes, a £300 million leisure scheme in Blackpool received £40 million from the Levelling Up Fund to relocate the existing courts buildings from the proposed site, whilst demolition and preparatory works for a £250 million spa resort in Manchester began in 2022 Q4, with main works following over the next two years. The £1.3 billion Olympia regeneration project in West London is also on site and the £200 million expansion of the Excel Centre was awarded contracts in December. Given that these larger new build projects only started entering the pipeline in 2022 and have a strong reliance on consumer confidence and spending, delays on projects yet to start cannot be ruled out as the economic backdrop remains weak in 2023.

Similarly, this will be the case in the offices sub-sector, particularly as employers, investors and developers are also continuing to reassess workplace and space requirements. Against the overall weak prospects for retail, grocery convenience stores, larger stores in retail parks and multi-use redevelopments of town centres will provide core activity and the £3.8 billion that has been allocated from the £4.8 billion Levelling Up Fund, will also provide a stream of smaller regeneration projects. However, these will provide limited support to the sector, particularly as confidence and new major investment may still be hindered by persistent inflationary pressures for consumers, businesses and contractors. A survey by the District Councils Network in September 2022 found that 40% of respondents said the effects of inflation would force them to delay proposals, or make them unviable in their current form. This is also likely to be the case for universities. Institutions across the country are in the midst of multi-year investments in new buildings for teaching and research, as well as university and privately-financed student accommodation projects, balancing favourable demographic trends with rising borrowing and financing costs.

Across the commercial sector, confidence to proceed with projects and financial viability may suffer as construction costs remain elevated and higher borrowing costs are factored into investment decisions. Both of these combine with the ongoing costs and delays after progress on capital spending programmes has already been slowed by the pandemic. Commercial new orders rose 1.9% in 2022 and were 16.0% higher than in 2019, which reflects the return of large projects such as the £1.3 billion Olympia regeneration project in West London and the return of contract awards for central London office towers and large leisure schemes. As above, delays relating to risk and issues around rising construction costs, and uncertainty over the impact of inflation and recession on consumer and business demand, are assumed to lengthen the typical 12-18 month lag between contract award and construction start. As a result, output is forecast to contract 5.2% in 2023, followed by an expansion of 1.0% projected for 2024 as confidence begins to return, followed by 2.7% growth in 2025.

Offices is the largest commercial sub-sector and accounts for over one-third of total sector output. Business and investor confidence were weakened considerably by financial turmoil at the end of 2022 and although it improved in 2023 Q1, it is likely to remain subdued, owing to the slowdown in the UK economic growth, as well as higher borrowing costs for new developments and the need for higher-cost and 'back to frame' energy efficient refurbishments to meet requirements for an EPC rating of B by 2030 and corporate Net Zero and Environmental, Social, and Governance (ESG) targets. Business investment and decision-making have already been complicated in recent years by increased home or hybrid working models post-pandemic meaning that large projects in particular have seen investment decisions paused until final demand for office space requirements, amenities and usage patterns throughout the working week becomes clearer. There is a pipeline of office towers projects at an advanced planning stage and the key question remains when economic conditions will firm up for them to progress to construction and raise growth rates in the sub-sector. In addition to economic uncertainty, delays have also been caused by rapid inflation in labour costs and key materials. However, even with the fundamental drivers of activity weakened, the increasing importance of energy efficiency continues to underpin current levels of activity in refurbishment and fit-out to upgrade existing space, as well as improving the quality of space and amenities to encourage workers back to the office and attract new tenants moving from lower-quality vacated space.



Energy efficiency is expected to be a key consideration for offices activity, both for new build and refurbishment across the forecast period. All commercial estate agencies have noted a widening rental premium and investor preference for grade 'A' space across the country, as well as a growing availability and increasing void periods for lower-quality vacated space as major companies in the professional services and tech sectors consolidate space in response to lower and variable occupancy. Savills estimated the occupancy rate of London offices at 48% in the City and 50% in the West End in early 2023, compared to 60%-70% pre-pandemic, whilst CoStar estimates that there is 31 million sq. ft. of office space available in central London currently, up from 20 million sq. ft. at the end of 2019, pre-pandemic. As well as floor space that may be surplus to new occupancy requirements, Net Zero, energy efficiency and ESG considerations are likely to increase the role of office refurbishment projects. New commercial property leases, or renewals of existing ones, must currently be above an EPC rating of 'E', but it is proposed that all non-domestic rented buildings should achieve a minimum 'B' rating by 2030. An analysis by Savills estimated that 1.3% of the existing offices stock in London and 4.9% of the stock in the rest of the UK can no longer be let due to its EPC rating. A further 67.5% of the existing London office stock and 71.8% in the rest of the UK has an EPC rating of C-E. Savills also estimates that the cost of upgrading office space is around £40 per sq. ft. higher than typical refurbishment costs, which may be difficult for landlords and building owners in lower rent locations. Land Securities calculates that the cost of achieving an EPC rating of B or above represents 1.0% of its offices portfolio value, with the Crown Estate estimating a cost of 13.0% of its offices value. Similarly, Deloitte has calculated that for London alone, 15 million sq. ft. of the office stock will need to be upgraded each year to meet the EPC grade B target.

High-value refurbishment schemes have begun entering the pipeline, including the £110 million refurbishment of Space House in Covent Garden, the £300 million refurbishment of the Citi Tower in Canary Wharf, a £130 million refurbishment of the vacant Woolgate Exchange in the City of London and the £120 million refurbishment of the former Goldman Sachs HQ, an 11-storey building on Fleet Street. In January, the £120 million refurbishment of the offices on the first to the eighth floors in Barkers of Kensington building was also approved.

Lingering uncertainty over demand for office space and the combination of stalled economic growth and interest rates at the highest since 2008 are expected to lengthen decision-making on all offices projects. In central London, commercial estate agents have reported that offices transactions are taking longer to progress and there were already delays in 2022 as developers and investors questioned the viability of schemes yet to begin given the strong inflationary backdrop and rising interest rates. After the financial market disruption following the Mini Budget in September 2022, offices transactions in Q4 fell to the lowest quarterly level since 2012 and although transactions improved in 2023 Q1, they remain significantly below the long-term average and the investment backdrop remains constrained by rising interest rates and falling capital values. According to CBRE, offices capital values fell 12.1% in 2022 and according to its monthly index, the largest falls have been outside of London since the second half of 2022.

As in previous Forecasts, it is assumed that commercial investors and developers continue to delay start dates until returns on investment become more certain, and for this to be the case particularly for large offices towers. Already, low rates of occupation were affecting confidence in Canary Wharf, where construction is on hold on the 214,000 sq. ft Frameworks development and the 119,000 sq. ft. Market Building pending a significant pre-let or a decision to proceed speculatively. In December, Land Securities announced that it was lengthening its decision-making for two large central London schemes by six to nine months. It will begin £55 million in early works for Timber Square and Portland House but delay the remaining £400 million investment until mid-2023. According to Savills, the number of pre-lets in the West End reached a record high in 2022, but 46% of the pipeline due for completion between 2023 and 2026 is yet to begin construction, leaving it susceptible to delays. In other UK cities, commercial estate agencies note that supply of space has narrowed considerably, with less than two years' supply of grade 'A' space in the 'Big Six' and reduced development pipelines over the next two to three years. In Scotland, for example, there are no notable offices developments scheduled to complete in 2023.

The shift to hybrid working patterns and fluctuations in office attendance across the working week appears to have increased the role of flexible offices providers. As measured by commercial landlords and estate agents, office occupancy peaks Tuesday to Thursday and dips to a low on Friday. Furthermore, those working from home but without the appropriate space and facilities, or firms opting for a hybrid pattern of combining home and office working may also increasingly take advantage of flexible office space. In comparison to overall office occupancy, a survey by Knight Frank in December found that 86% of the 30 largest flexible office providers reported occupancy back to pre-pandemic levels of 60% or above. Furthermore, 88% reported plans to increase their number of sites in 2023. Canary Wharf Group and infinitSpace both launched flexible offerings in high-profile London locations in 2022, whilst Land Securities plans to increase flexible space through its Myo brand from 72,000 sq. ft. currently to 500,000 sq. ft. in five years. The government's deal with IWG in 2021 to provide flexible office space for civil servants in ten cities outside London, as well as plans for a further £1.5 billion sell-off of civil service offices suggests demand for flexible offices space may also increase among large employers.

Since the Winter Forecasts, large new build offices schemes have entered the pipeline, including the award of contracts for a 10-storey over-station development at 1 Liverpool Street in London (completion in early 2026), main contractor selection for an £86 million 12-storey scheme at 100 Fetter Lane, London (completion 2024 Q4) and planning approval for a £200 million offices and hotel scheme at Haymarket Yards in Edinburgh (main works to begin in 2024). In addition, in February Transport for London (TfL) selected a development partner for three of its over-station sites at Bank, Southwark and Paddington, with starts scheduled between 2024 and 2026.

New orders rose 28.8% in 2021 and 6.8% in 2022 and for the large refurbishment projects and the new build towers and large projects entering this pipeline the expected rate of return is over a longer and, consequently, riskier, period meaning that the lag between orders and output is longest. A CPA analysis of new orders and output indicates a lag of around 12-18 months on average for commercial new build. However, it is likely that large projects will now much take longer than 18 months to filter through to starts in activity given the low economic growth expected in 2023, as well as strong cost inflation on projects currently underway or reaching tender and build contract negotiations. Starts on large office towers projects that were due in 2023 and 2024 are expected to be pushed back, leading to offices output contracting 8.0% in 2023, followed by increases of 2.0% in 2024 and 4.0% in 2025 as the next recovery phase begins.

Upper Scenario:

- A widespread return to offices

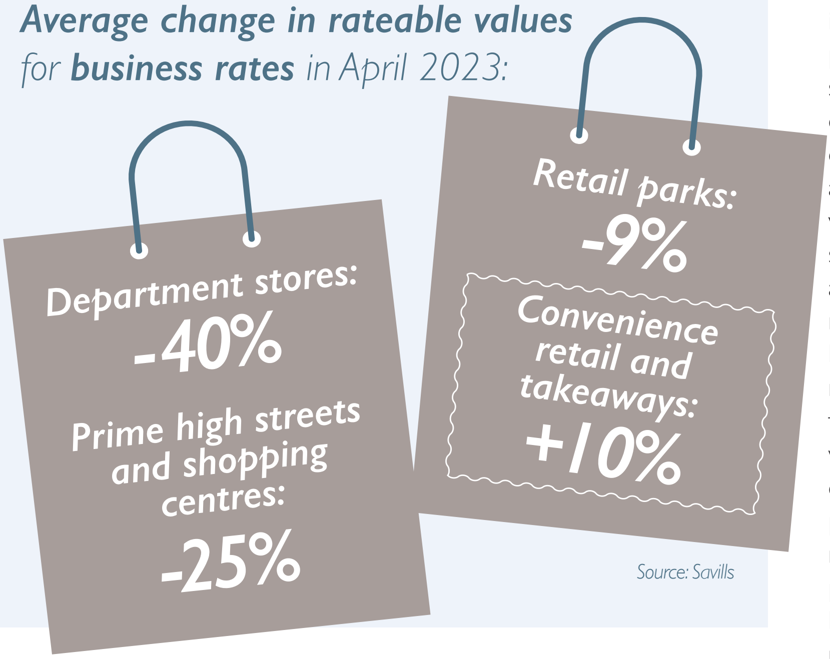
The CPA assumes in the forecast that office workers work from home two to three days a week, on average. However, if office workers end up in offices more frequently than this on a consistent basis, it would lead to a higher degree of business confidence in the near-term, with firms more open to committing to existing space or moving to new premises with larger floor space. The weaker economic backdrop would limit the uplift, however.

Lower Scenario:

- Longer downturn the UK economy prolongs the period of uncertainty and constrained business investment
- Lack of developer interest

A longer or deeper recession, or interest rates remaining at their peak throughout 2023 and 2024, stall decision-making for longer than in the main forecast. Along with potential occupiers holding off, increased borrowing costs and falling capital values could also cause developers to abandon projects, rather than delay them.

The drivers of activity in the **retail** sub-sector remain downbeat as in the Winter Forecast due to the near-term impacts of a fall in household disposable incomes, weak consumer confidence and, as the CPA has been highlighting over the past decade, the larger role for e-commerce, *Average change in rateable values* *for **business rates** in April 2023:*



Source: Savills

which continues to drive a longer-term structural shift in demand away from retail premises towards industrial space for storage, logistics and distribution. In addition, falling capital values have increased the appeal of shopping centres and vacant units and department stores in city and town centres as investor bargains, but redevelopment has been led by offices, leisure and, more recently, residential, rather than being replaced like-for-like with retail. Store closures and chain administrations since the pandemic also means that for retailers that do have expansion plans, new stores are likely to be refits of existing, vacant units, rather than new build. Given these factors, output is forecast to decline 8.0% in 2023, marking the ninth year that activity has declined.

Retail sales volumes are one of the primary indicators that reflect the impact of high inflation and falling real incomes on consumer confidence and spending. With CPI inflation above 10.0% since 2022 Q3, retail sales volumes have also declined in each quarter over the same period according to the ONS, with the steepest declines recorded in the household goods and non-store retail categories, which tend to represent more discretionary spending. Online retail sales increased sharply during the periods of lockdown in 2020 and 2021, with the proportion of retail sales spent online peaking at 37.5% in February 2021. This has steadily declined over the subsequent two years, to 25.4% in February 2023 but online sales still account for a much higher proportion of total retail than in 2019 (19.2% on average), which will keep driving the ongoing structural trend that shifts demand for retail premises towards distribution and logistics space, albeit with speculative types of investment now more constrained by a sharp rise in borrowing costs (see Industrial).

Over the past decade, shopping centres have been the worst performing retail asset, and were more severely hit by the lockdowns and restrictions in 2020 and 2021. The recovery has also been slower, with the vacancy rate higher than for retail parks and high streets and footfall lower than other shopping locations. As a result, lenders, landlords and private equity firms were initially trying to reduce their exposure to the shopping centre category but commercial estate agents have reported that the volume of shopping centre investment improved in 2021 and 2022 to the highest since 2014, as well as a more recent preference for larger-sized assets. It appears that local authorities, developers and private investors are attempting to capitalise on counter-cycle buying opportunities as capital values fall, largely for repurposing and regeneration that move away from solely retail to mixed-use offices, leisure and residential. Rising borrowing or refinancing costs resulting from higher interest rates may weaken momentum in purchases going forward, however. One of the few shopping centre extensions in the pipeline, Meadowhall in Sheffield, saw its £300 million plans scaled back in 2020 and again in September 2022. Project value and floor space are now around 50% lower and the project is not expected to complete until 2029.

In contrast to shopping centres, retail parks fared well over the last few years due to the presence of supermarkets and larger stores such as homewares and DIY that can facilitate click-and-collect or click-and-deliver operations. Vacancy rates and footfall have also outperformed other retail settings. The drive-to convenience, and larger stores and storage space that can aid the fulfilment of online orders are expected to continue this trend, although performance will be subject to any decrease in demand that occurs within wider retail due to rising inflation eroding household disposable incomes. Knight Frank has noted that capital values at retail parks have been falling since August 2022, with the CBRE monthly index showing falls in retail capital values were largest for retail parks and high street shops from 2022 Q3.

Retail expansion plans and new build activity in recent years have been led by discount supermarket chains such as Aldi and Lidl, that are likely to have benefited from the fall in real household incomes. Both chains have maintained a focus on physical stores with no, or very limited, online presence for groceries. In February, however, Lidl, the sixth largest supermarket retailer, announced that it would be slowing its store opening programme from 50 per year to 25 per year in order to focus investment on expanding its warehouse capacity. Other retailers have also shifted a focus to grocery, with Marks & Spencer announcing the closure of one-quarter of its clothing and homeware stores and plans to open 104 new food stores, on an accelerated three-year timeframe, from five years previously. This is in addition to their earlier plans to relocate their clothing stores from high street to out-of-town locations. Asda announced in December that its expansion over the next three years will focus on grocery convenience stores rather than its large out-of-town premises, with an aim to open 300 by the end of 2026, concentrated in the south of England, whilst Sainsbury's and Waitrose have also announced a focus on convenience stores. However, Amazon's plans to open 260 cashierless grocery convenience stores by the end of 2024 are reported to have been scrapped amidst a wider plan of 18,000 job cuts globally and focusing on core operations, only a year after it had previously changed strategy from goods stores to grocery stores. It had a target of 60 Amazon Fresh openings this year and 100 each in 2023 and 2024, but currently has only 19 in operation and in September 2022 it paused UK openings completely.

The revaluation of business rates that occurred in April is based on rateable values (the open market annual rental value of a property) as at 1 April 2021. For retail, which has experienced a longer-term fall in rental values since the last revaluation, rateable values have decreased by 10% on average, with further analysis from Savills suggesting a 25% fall for prime high street and shopping centres and a 40% fall for department stores. The consequent reduction in business rates may help lower costs for retailers during a period of high inflation that has increased input costs and, in turn, increase appetite for expansion, although this will continue to be balanced by weak consumer confidence and falling real incomes.

Town and city centre regeneration schemes will also provide retail work over the forecast period, with the £4.8 billion Levelling Up Fund supporting smaller council-led town centre projects. However, such projects are following the trend for mixed-use, rather than solely retail developments. £3.8 billion has now been allocated in two rounds in October 2021 and January 2023, with £460 million allocated to town centre regeneration projects, including new market halls in Bury (£20 million), Barrow-in-Furness (£16 million) and Ellesmere Port (£13 million). Nevertheless, local authorities have warned that by the time funding is actually received, cost inflation may mean projects are now financially unviable and so may not be able to even get started despite central government finance. Larger regeneration projects will be equally susceptible to delays or scaling back, particularly for those that are moving towards mixed-use led by residential and offices, that are two of the sectors forecast to be most affected by the weak economic outlook. However, the demolition of the Wigan Galleries centre began in December 2022, for redevelopment into residential, a hotel and a market hall building. The latter will be the first phase to be begin construction this year, for completion in 2024.

The forecasts for retail construction output remain unchanged from Winter but as in previous CPA forecasts, the UK retail sector continues to face headwinds due to longer-term structural changes, which had already been worsened by rising costs for high street retailers, and new and redevelopment work focused towards refits or mixed-use led by offices, residential or leisure. These effects have been exacerbated in recent years by lockdowns and changes to working patterns, volatility in consumer confidence and the current environment of high inflation reducing consumer spending and squeezing retailer margins.

Upper Scenario:

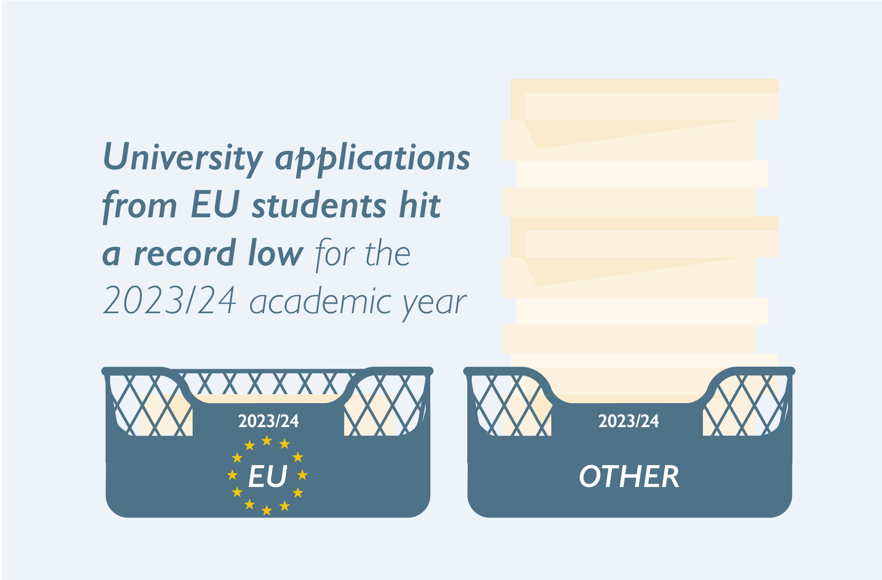
• Consumer confidence and spending improve quickly in 2023

• Favourable business rates revaluation firms up confidence for retailer expansions

Measures of consumer confidence have improved in the last six months, but remain low historically. If confidence improves quickly in the first half of 2023 due to a quicker-than-expected economic recovery, retailer and investor confidence for expansion would also be expected to improve. This is likely to be compounded if a reduction in business rates quickly filters through to decisions to expand.

Lower Scenario:

- Falling disposable incomes continues to restrict household spending throughout 2023
- Rising construction costs lead to delays or cancellations



A slow recovery on top of falling real incomes would keep household spending muted in 2023, in turn meaning that investor and developer confidence is likely to worsen, particularly if it affects rental revenues from existing outlets struggling to pay. Elevated construction and borrowing costs also pose a risk to viability and could delay projects or see them cancelled if existing contracts cannot be renegotiated or rising debt repayments won't be covered by lower rents or capital values.

In the **commercial education** sub-sector, domestic demographics and a longer-term trend in rising non-EU student numbers underpin capital investment plans at UK universities but how this translates into an increase in construction activity over the forecast period will be dependent on how institutions and contractors can deal with high rates of build cost inflation and economic uncertainty. A record 44.1% of UK-based 18-year olds applied to UK universities for the 2022/23 academic year and according to the ONS's population projections, the number of 18 year-olds will increase by 24.5% over the next decade. University applications and enrolments increased strongly in 2020 and 2021 from both domestic and non-EU students, the latter of which has been on a long-term growth trend. Over the last 10 years, non-EU applications have risen 65.8% and acceptances have risen 52.6%, and UK universities have embarked on large capital spending programmes to build and upgrade teaching and research facilities to attract overseas students and the higher tuition fees they pay.

Among the major projects currently underway are the £100 million School of Public Health building at Imperial College London's White City campus and the £82.0 million science and engineering building for Manchester Metropolitan University, which are both expected to be completed this year, and the £280 million UCL Institute of Neurology and UK Dementia Research Institute in central London, which began in May 2021, for completion in 2024. Also scheduled to complete in 2024 are the University of Hertfordshire's 165,000 sq. ft. physics, engineering and computer science building, and the University of Oxford's £200 million life sciences building. The latter also had plans approved in January to redevelop its existing Begbroke building as part of a wider £4.0 billion development partnership with Legal & General. Other large-scale projects return in the longer-term pipeline, including phased work on the University of Birmingham's £500 million ten-year investment framework, the University of Bristol's new £300 million campus and Sheffield Hallam University's satellite campus in Brent, north London, which will open for the 2025/26 academic year, with further expansion planned by 2030. The University of Portsmouth's £135 million 12-storey faculty building, which was expected to see main construction work start on site in 2022, has been delayed due to difficulties in sourcing contractors. This highlights the risk that other projects moving from planning approval to contract award and start of works may be stalled by rising construction costs or the weak economic outlook. Projects at these earlier stages include the University of

Manchester's £1.5 billion, 15-year science and innovation quarter, which includes both university and commercial, mixed-use facilities, Aston University's plans for a ten-storey landmark building, three new buildings on Sheffield Hallam's £220 million existing campus and Exeter University's £185 million accommodation redevelopment. This is also likely to be the case for smaller projects, such as the University of Cumbria's £25 million new campus in Barrow, which was approved in October 2022.

Alongside major capital investment in education facilities to help compete at a global level, universities and private providers are also investing heavily in purpose-built student accommodation, particularly given the strong growth in international (non-EU) students in recent years. Student accommodation developer Unite has four committed developments scheduled for completion between 2023 and 2026 worth £339 million: a 300-bed scheme in Edinburgh, a 1,000-bed scheme in Stratford, east London, and 700-bed and 271-bed developments in Nottingham. Completion dates are now targeted from 2025, which provides some insulation from near-term volatility and high build cost inflation. Going forward, its strategy will focus on partnerships with high and mid-ranked universities, where demand is viewed to be strongest. Empiric has also announced a focus on higher-ranked universities where continued growth in international student numbers is expected, as well as a £44 million refurbishment programme. £2.8 million was expected to be spent in 2022/23, covering two communal areas and 47 rooms, but spend is anticipated to increase sharply in subsequent years. However, the developer has warned that rising costs are threatening viability on its projects and this may keep its Canterbury new build scheme, which was paused post-pandemic, on hold for longer. In some cities, there are signs that student accommodation development may have peaked. In 2022 H2, a developer in Newcastle went into administration as an oversupply of accommodation decreased rents and drove losses, whilst a small developer in Stoke-on-Trent applied for a change of use on one of its existing blocks to residential due to a local increase in supply driving a fall in demand for its units.

Nevertheless, the longer-term pipeline for private sector student accommodation, and particularly large projects, remains buoyant. Schemes of 500+ beds continue to enter the pipeline, which already includes towers in Nottingham, Leeds and London. Plans for a 37-storey tower in Manchester were submitted in December as part of a £250 million redevelopment of Medlock Street, whilst a 1,700-room development for Exeter University reached preferred contractor stage, a £75 million scheme was approved for the Olympic Park in east London and plans were submitted for a 326-apartment project in Glasgow. In 2023 Q1 a £35 million 468-bed scheme was approved in Edinburgh and a £130 million 21-storey block that will also include exhibition space was approved in the City of London. In addition, two housing schemes in London from different developers, at Old Kent Road and Borough High Street, were switched from residential to planning applications for student accommodation towers.

Outside of universities, a £65 million new primary and secondary school campus in Flintshire was awarded contracts in December. This will be the first project funded through the Welsh mutual investment model of public-private partnership. However, rising build costs have led to questions over the long-term value-for-money of resulting annual payments that will be required to be paid by the local authority. The mutual investment model framework is planned to provide up to £500 million of capital funding for education projects in Wales.

New orders in commercial education returned to pre-pandemic levels in 2021 but fell 10.7% in 2022. Construction output volumes in 2023 will be dependent on how institutions, student accommodation developers and contractors can deal with high rates of build cost inflation and an economic slowdown for projects in the near-term pipeline. Based on the recent weakness in new orders and continued, albeit slower, cost inflation in 2023, output is forecast to fall 1.0% this year and remain flat in 2024.

Upper Scenario:

• A rise in student numbers and higher international fee income improves confidence

Record-high student numbers, a full return to campus and higher fee income from international students that increase revenues shore up confidence to progress student accommodation schemes and university capital expenditure programmes, despite the inflationary and economic backdrop. Fewer travel and visa restrictions may also maintain the increase applications from international (non-EU) students in future years.

Lower Scenario:

• Deterioration in university finances and cost rises hinder the viability of university projects

In recent years, universities have had an increasing reliance on private sector borrowing such as private and public bond issuance to finance work. Appetite for bond issuance will be limited if economic recovery remains weak in the second half of 2023, which worsens investor risk aversion, with higher interest rates representing another cost for institutions to consider. Questions also remain over the impact of EU student numbers falling to a record-low post-Brexit. In the lower scenario, higher build costs also delay delivery timelines of projects in the pipeline.

In the **commercial health** sub-sector, since PFI has been abandoned by government, the sole driver of activity in recent years has been the construction of new facilities by private healthcare providers or privately-funded redevelopments of NHS hospitals. Prior to the pandemic, private healthcare providers' appetite for expansion had been reduced, due to a long-term trend of falling revenue, reduced referrals from the NHS and lower numbers of overseas patients coming to the UK for private treatment. However, the pandemic has also resulted in rising NHS waiting lists and lengthening referral times, which, in turn, have resulted in private healthcare providers reporting a rise in self-pay and privately-insured patients. According to the Private Healthcare Information Network, the number of self-funding private patients peaked at 71,000 in 2021 Q2 and although this had fallen to 66,000 in 2022 Q3, it remains one-third higher than in 2019 pre-pandemic. According to the British Medical Association (BMA), a record 7.21 million people were waiting for treatment in January 2023, and 379,245 patients had been waiting over one year for treatment, compared to 1,537 people waiting over a year pre-pandemic in October 2019. However, the signals that demand for private healthcare remains strong will need to be balanced with reductions in disposable incomes, although higher-income households who would be more likely to use self-pay are less likely to need to cut discretionary spending.

Rising demand has not yet translated into expansion plans or new hospitals, with initial increases in investment focused on staff and expanding services at existing facilities. Reflecting the longer-running existing demand dynamics, there are only a handful of private healthcare projects currently underway, including the £70 million Royal Marsden Oak Cancer Centre in south London, which is at fit-out stage. All funding has been raised from private donations. The first large project on the £500 million Private Investment Construction Framework for healthcare began in April 2019, a £100 million acute care hospital in Harborne, Birmingham, but completion has been delayed from 2022 to this year. Only two other projects under £10 million each have been procured under the framework. Healthcare developer, Assura, currently has 13 developments on site in the UK, totalling £154 million, including a £25 million training academy in Northumberland, to complete in 2023 Q4, and a £31 million cancer diagnostic and treatment centre in Guildford that is scheduled to complete in Autumn 2023. A further 10 schemes are expected to start on site within the next 12 months and there are 30 schemes with start dates beyond 12 months. Similarly, Private Health Properties has a pipeline of 21 properties, at a value of £163 million. It completed four developments in 2021.

As the HCA Birmingham Hospital nears completion, there are several large projects now at an early stage to replace activity. The £190 million phase 4 of Great Ormond Street's expansion to include the redevelopment of the main entrance and a new cancer centre received planning approval in January, with construction set to run to 2026. Alongside this, a £376 million extension to the Evelina London Children's Hospital was approved in October 2021, although the construction contract was re-tendered during 2022. Construction is set to run from 2023 until 2027. It will be funded through a combination of public funding and private donations. There are also plans for a new £40 million UK Animal Vaccine Manufacturing and Innovation Centre at the existing Pirbright Institute campus in Surrey. The UK government is set to commit £18.5 million of funding to the project, whilst the Bill & Melinda Gates Foundation will provide £14.5 million. The tender notice has construction occurring from late 2022 until 2025. However, work on the £120 million Vaccine Manufacturing and Innovation Centre in Harwell, Oxford has been suspended by the new investors to reduce capital expenditure. Further out, a 22-storey life sciences wet lab is planned for Canary Wharf, for expected completion in 2026, 600,000 sq. ft. of purpose-built laboratory space was approved in Cambridge in December 2022 and a £150 million life sciences centre in Euston, London reached contract award in January. Moderna has confirmed the Harwell campus as the location for its Innovation and Technology Centre and appointed a contractor in April, but it is yet to receive planning approval.

Since 2010, annual new orders have averaged only £581 million, but were £710 million in 2021, and rose 7.8% in 2022 to the highest level since 2010. Nevertheless, the construction activity would be spread over two or three years and so would lead to smaller rises in output. As existing projects reach completion and activity is offset by a new work entering the pipeline, growth over the forecast period is expected to be muted. Following the strong recovery in 2022, the start of the two major projects in London will maintain output levels in 2023 and drive growth of 2.0% in 2024 and 1.0% in 2025.

Upper Scenario:

• Rising demand for private healthcare translates into new facilities

Hospital backlogs since 2020 have already increased demand for private healthcare and in the upper scenario, this leads to private healthcare providers planning new investments in facilities that open towards the end of the forecast period when it is assumed economic uncertainty has lifted. The easing of travel restrictions is also expected to increase demand from overseas health tourists. Work on the ground would take longer to filter through to activity from 2023, however.

Lower Scenario:

• Rising construction costs lead to delays

Rising construction costs which cannot be absorbed by contractors or capital budgets funded by private donations are the key risk for delaying projects underway or investment decisions stalling.

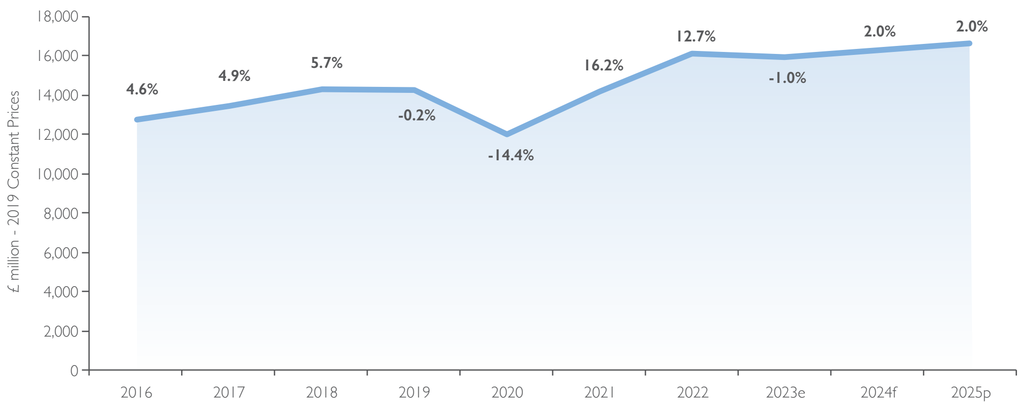
Private Non-housing R&M

Lingering uncertainty over demand for new offices and retail space that increases the focus on maintenance is likely to be offset by continued high build cost inflation and labour shortages that stall private non-housing repair and maintenance (r&m) activity in the near-term.

Output in the private non-housing r&m sector includes basic repairs and maintenance of offices, retail premises, warehouses, factories and other privately-owned non-residential properties and is dominated by work on offices and retail units. Typically, sector output tends to be less volatile than new build, given the reliance on long-term facilities management contracts, but in recent years, the discretionary, non-essential element that is dependent on macroeconomic fundamentals related to business investment and consumer spending has been more affected by heightened macroeconomic uncertainty. This has been exacerbated by changes to working patterns and office space usage, as well as the increase in lower-quality vacant space, high inflation and the slower UK economy.

Investment in new build retail premises is forecast to remain weak in 2023 (see Commercial) but, conversely, building owners may shift their focus to r&m of existing buildings, particularly to appeal to new tenants. This is particularly pertinent in the offices sub-sector, as businesses determine their post-pandemic requirements for office space in light of increased remote and hybrid working and lower, but variable, occupancy rates throughout the working week. With a growing stock of vacant office space that is unlikely to be grade 'A' standard, building owners may also be more likely to opt for a larger, higher-cost refurbishment, particularly as demand for higher-quality space with amenities and energy-efficient credentials is generating a significant rental premium. This would be classified as new build commercial work, however, and divert activity away from the r&m sector. Furthermore, a prolonged period of construction cost inflation, associated delays in contracts for new build, and lingering economic weakness heading into 2023 make it more likely that the sector will experience a deterioration in business confidence, a reduction in new investment and potential delays to some non-essential maintenance.

Private Non-housing R&M Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

Remediation of Aluminium Composite Material (ACM) cladding on private non-residential buildings above 18 metres is almost complete, with the Department for Levelling Up, Housing and Communities (DLUHC) monthly statistics from the end of February confirming that works have completed on 54 out of 58 student accommodation towers and 26 out of 31 high-rise hotels. Data on the extent of remediation required outside of ACM cladding is yet to be collected, but the student accommodation provider, Unite, owns 37 buildings with high-pressure laminate (HPL) cladding, with remediation completed on ten of these. Capital spending on fire safety was £50.5 million in 2022, with a £71.8 million provision for the next two years.

Outside of routine or urgent r&m that cannot be delayed, discretionary r&m is likely to benefit from any reticence or delays on new build projects that sees building owners focus on maintaining existing properties. However, in the near-term, at least in the first half of 2023, this will be outweighed by lower volumes of work due to sharp rises in the cost of materials and labour, as well as larger-scale refurbishment and improvements that are classified as new build rather than r&m. Output volumes are expected to fall 1.0% in 2023, before returning to growth of 2.0% in both 2024 and 2025.

Upper Scenario:

• Stronger focus on r&m

Rising inflation and lingering uncertainty into 2023 are likely to lengthen the lag between new orders already confirmed and project starts for new build and lengthen the decision-making process for investment in projects slightly earlier in the pipeline. This would make maintenance of existing assets and facilities a greater focus for building owners and landlords. However, current and planned remediation works on larger-scale r&m projects may be delayed or delayed by rising costs.

Lower Scenario:

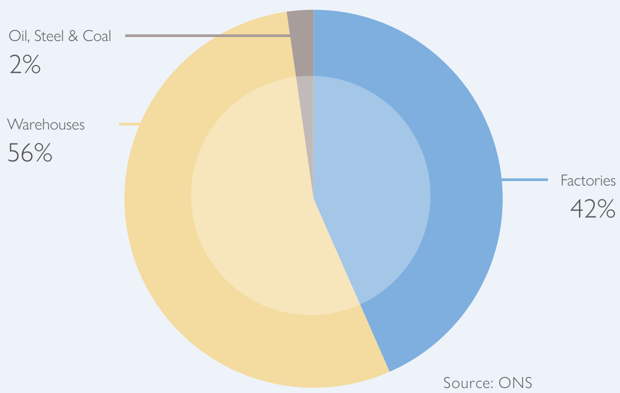
• Priority shifts to new build

Commercial and industrial new orders rose to multi-year highs in 2021 and if developers, contractors and investors continue to progress them through to starts on site given completion dates scheduled for beyond the slowdown in 2023, new build could be prioritised over r&m. Building owners choosing to refurbish rather than maintain the large stock of vacant office space also becomes commonplace in the lower scenario.

Industrial

Output growth in the industrial sector is set to moderate in 2023 and fall in 2024 as warehouses demand peaks and a deterioration in business confidence reduces investment in new factories and logistics space.

Industrial Output by Sub-sector 2021 (%)

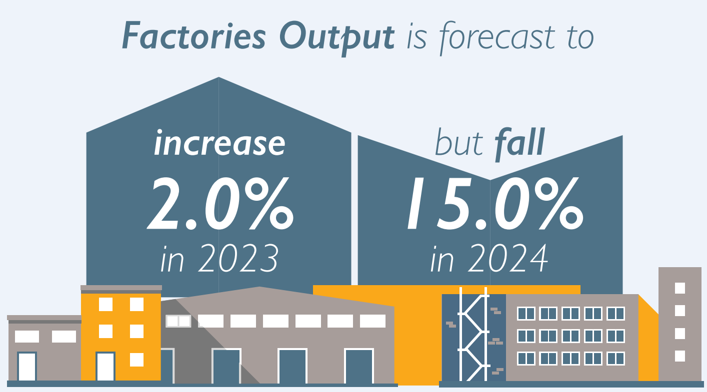


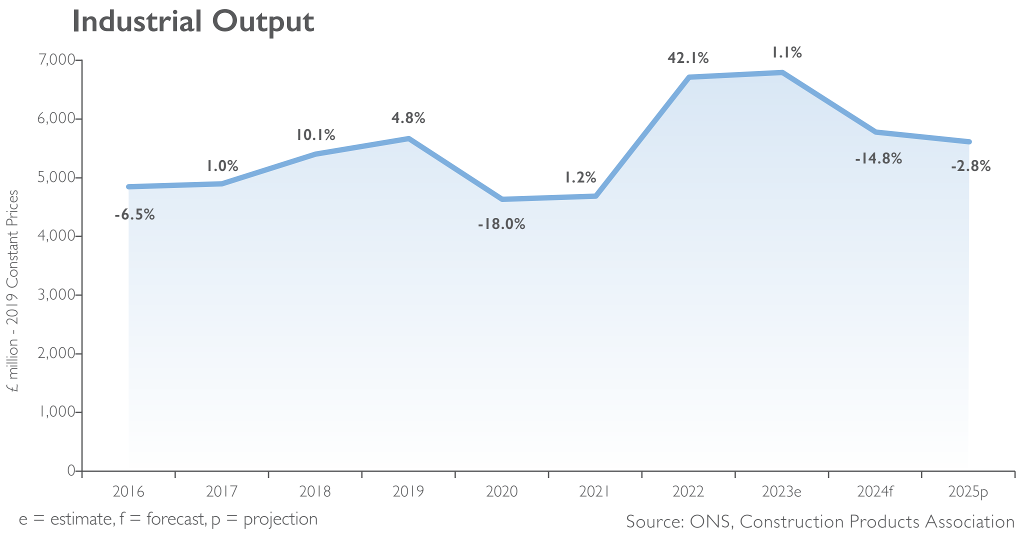
Source: ONS

The factories and warehouses sub-sectors dominate industrial output and both displayed the fastest growth rates in construction output in 2022, but the pipeline for new industrial projects has also been affected by the slowdown in the economy, rising inflation reducing consumer spending, an increase in interest rates for new project finance and renewed uncertainty affecting business confidence for new investments since the second half of 2022. Once work completes on current projects, a noticeable slowdown in activity is expected from the second half of 2023. Demand for warehouses, and particularly the larger 'big sheds' projects, is expected to be at its peak, whilst continued uncertainty for manufacturers and particularly over the Britishvolt gigafactory in Northumberland, despite its takeover by new investors in February, represent the factors behind the sharp slowing in growth over the forecast period.

In oil, steel and coal, which historically has accounted for less than 3.0% of total sector output, the proposed new £165 million coal mine in Cumbria, which was approved by the Secretary of State in December 2022 is not included in the forecasts as it is expected to be subject to legal challenges. It would be the first deep coal mine in the UK for more than 30 years. The coal will be used as coking coal for steel production in the UK and Europe, rather than for power generation.

In the **factories** sub-sector, output in 2022 rose 34.6%, which stands in contrast to three years of decline in 2018, 2019 and 2020, when confidence, investment and activity were held back by uncertainty related first to Brexit and then to the pandemic. Some of the recovery in activity from 2021 may have partly been due to the government's two-year 'super-deduction' scheme, which ran between 1 April 2021 and 31 March 2023 but will primarily have been boosted by investment decisions to ease post-pandemic capacity constraints.





However, sustained demand is now the key issue for many firms given lingering uncertainty over the outlook for the wider economy and rising costs, which point to a weakening in investment in new projects going into 2023 as firms hold off on large spending commitments. Nevertheless, growth is expected in 2023 that reflects work resuming or continuing on projects that were previously committed but were subject to delays in decision-making and spending in 2022, but growth is limited to 2.0% by the hiatus in manufacturing investment decisions that means new projects begin to slow in the second half of the year, leading to a 15.0% decline in output forecast for 2024.

Activity in factories is primarily driven by manufacturing output, which in 2022 Q4 fell in both quarterly and annual terms and was the lowest level since 2020 Q2, although it remained 1.4% above its pre-pandemic level in 2019 Q4. Survey data from S&P Global/Markit CIPS for March showed that manufacturing output has been contracting for eight months due to declines in demand domestically and from overseas, as well as moves to reduce inventory holdings to reduce costs and improve cashflow. Given that the survey is, to a certain extent, reflecting sentiment, the run of weakness in the index seen since the start of the year does not come as a surprise given the deterioration in macroeconomic conditions. Nevertheless, forecasts for manufacturing output in 2023 point to continued weakness. In HM Treasury's monthly comparison of independent forecasts from March, the median forecast for manufacturing output in 2023 is a 1.9% contraction, revised down from a 1.0% fall forecast in December and growth of 0.3% forecast in September, despite an improvement in GDP and inflation forecasts over the same period. Make UK forecasts a 3.2% decline in manufacturing output this year and in the Make UK/BDO manufacturing survey for 2022 Q4, a net balance of 5% of respondents reported a fall in investment intentions over the next 12 months, marking the first negative balance since the height of the pandemic.

Work is now nearing completion on the bulk of the larger projects in the pipeline, including Aston Martin's £200 million Formula 1 factory in Northamptonshire, Forterra's £95 million Desford brick factory, Ibstock's Atlas and Aldridge factories, the first phase of the Siemens Mobility £200 million rail factory in Goole and the Siemens Gamesa £186 million expansion to its offshore wind turbine blade factory in Hull. There are still some projects further back in the pipeline, however, such as Aston Martin's wind tunnel and test facility at Silverstone that was awarded contracts in December and will start upon completion of its other factory. Alongside this, Brompton's £100 million headquarters and bicycle factory on a 100-acre wetland site in Kent was submitted for planning approval in December, and SeAH Wind's £300 million monopile manufacturing plant in Teesside began in July 2022. It consists of 1.13 million sq. ft. of space, with completion anticipated in 2024. The £600 million redevelopment of the Shotton Paper Mill in North Wales was approved in 2022 Q4 and the £400 million, ten-year project to expand the Sheffield Forgemasters steelworks will see main works on the forging line throughout 2024 and 2025. In addition, Rolls Royce is planning three off-site assembly factories for the manufacture of key components for small nuclear reactor (SMR) power stations. The shortlist for the site of its first has been narrowed down to three from six but a funding deal with government for the reactors is not expected until 2024 when the technology gains approval from the Office for Nuclear Regulation.

The development of gigafactories, which would support the transition away from petrol and diesel cars and vans by 2030 through producing batteries for electric vehicles, has the potential to be a driver of sub-sector activity over the medium to long-term. The Faraday Institution estimates that ten gigafactories that would each produce 20GWh per annum will be needed in the UK by 2040, up from its estimate of seven factories in its 2020 report. Plans for the UK's first gigafactory, a £2.6 billion factory by Britishvolt in Northumberland have been stalled by viability issues and, despite a takeover by new investors in February, the project is still mired in uncertainty and so it is not factored into the CPA forecast, although this presents a large upside risk if clear signs emerge of the project progressing. Construction on Nissan and Envision AESC's £450 million gigafactory in Sunderland started in December with a planned opening in 2025, whilst plans to develop a third gigafactory at Coventry Airport by 2025 have been given outline planning approval but they have not yet progressed.

Upper Scenario:

• Domestic and global demand recovers quickly

• Britishvolt gigafactory resumes

The upper scenario assumes that domestic and foreign demand recovers quickly from the second half of 2023, ending the hiatus in UK investment decisions on new manufacturing capacity. Clear signs of the new investors resuming construction on the Britishvolt gigafactory factory and further detail and full planning permission for the development of new gigafactories across the UK, notably the one announced at the Coventry Airport site, would also provide considerable uplift to growth prospects for the sub-sector over the forecast period, although a slowdown from the growth rates of 2021 and 2022 would be unavoidable.

Lower Scenario:

• Manufacturers delay or cancel investment plans again

Recession in 2023, combined with input prices rising faster than output prices and any further policy uncertainty would make new investments look less appealing, and in the lower scenario leads to a prolonged hiatus or cancellations of major long-term investment plans.

Output from the **warehouses** sub-sector reached a record-high level in 2022 as strong occupier demand for industrial and logistics space has been underpinned by the ongoing, long-term structural shift towards e-commerce that has been further accelerated by a change in both home/office working patterns and shopping patterns in recent years. New investment in 'big sheds' is now expected to have passed its peak, however. Build-out of new orders placed in 2021 and 2022 will occur over the next 6-12 months, but as a consumer-driven slowdown reduces demand from retailers, this is unlikely to be fully offset by demand from other occupiers such as third-party logistics and manufacturers and output is projected to contract in 2024 and 2025.

Take-up of new build industrial space has been strong in recent years, with speculative development accounting for the majority of new floorspace and ESG considerations for occupiers and investors favouring build-to-suit warehouses. This trend is now losing momentum with falls in take-up and development pipelines, and rises in vacancy rates registered across most regions of the UK in 2022, notably during the second half of the year as economic growth weakened and the Bank of England's base rate was raised to a 14-year high of 4.25% in March 2023. Between 2009 and 2022, interest rates did not move above 0.75%, so investors are now facing much higher financing costs than they have been accustomed to. Savills noted that in 2022, take-up from online retailers was the lowest since 2017 (6.6 million sq. ft.), whilst take-up from traditional retailers, including grocery stockpiling activity, was the highest since 2016 (9.3 million sq. ft.) and there was a record-high take-up from third-party logistics providers (14.8 million sq.ft.).

Looking at the macroeconomic backdrop, data from the ONS shows that retail sales volumes fell 0.3% the three months to February 2023 compared to the previous three months, whilst the GfK measure of consumer confidence was -36 in March, continuing to improve from its record low of -49 in September 2022, but with all sub-indices still weaker than a year earlier (see Economy). Online retail sales have also been on a downward trend during 2021 and 2022 and the proportion of retail sales online was 25.4% in February compared to a peak of 37.5% two years earlier in February 2021. The current proportion is now the lowest since pre-pandemic but it remains higher than the 19.2% average for 2019. Retailers that made decisions to expand capacity as demand and online operations rose sharply during the pandemic are now being forced to reverse warehouse expansions as demand settles at a lower level. This extends beyond retail to sectors such as manufacturing, which saw demand for storage facilities surge after capacity and production were rapidly increased in 2020. Plans for Ocado's two new automated distribution centres that would have opened in 2024 and 2025 have been paused as it now has surplus capacity, whilst Amazon will close three of its existing fulfilment warehouses. In addition, CBRE's monthly commercial property capital values index has shown the largest falls in capital values continue to be in the industrial sector, as they were throughout 2022 H2, and notably in the South East. Knight Frank has also reported take-up in London and the South East shifting towards smaller units (less than 250,000 sq. ft.).

Nevertheless, the rise in e-commerce remains a long-term trend, which also creates demand for last-mile warehousing and logistics space. Knight Frank expects growth in this segment will be partly driven by the grocery sector, including 'dark stores' for rapid delivery grocers, provided they remain profitable. In addition, the development of gigafactories across the UK that would produce lithium-ion batteries, primarily for electric vehicles (EVs), will generate an additional 50 million sq. ft. of demand for industrial and warehouses space by 2040, according to Savills, whilst JLL highlights rising demand from film and TV studios and producers.

There are still large projects in the pipeline, however, including a £100 million, 48-acre logistics complex in Leicestershire (completion expected in 2024), 1.1 million sq. ft. of speculative space at Knottingley in Yorkshire (first phase scheduled to complete 2023 H2), 660,000 sq. ft. of logistics warehousing in West Yorkshire (completion due in 2023 Q4) and a £100 million warehouse complex in County Durham, which was approved in November 2022. A six-storey, 135,000 sq. ft. warehouse in Brent, London was awarded contracts

New build *accounted for*
78% *of* ***warehouses take-up*** *in 2022,* ***a record high***

in 2022 Q2. It is among the first multi-storey facilities in the UK and aligns with the Greater London Authority's plan to intensify development on industrial land. In addition, Tritax Big Box has pre-let 1.0 million sq. ft. across four build-to-suit (BTS) buildings at Symmetry Park in Rugby. Completions will be phased throughout 2023. Similarly, Segro has reported a large rise in its pre-let development pipeline, which stood at 916,000 sq. m. under construction or in advanced negotiations in December 2022, with the £226 million contract for its warehouse at the Northampton logistics park being awarded in January. More recently, a planning application was submitted for a 1.3 million sq. ft. logistics park in Crewe in March.

Given the high levels of activity and strong growth in the sub-sector, there has also been a long-term decrease in industrial land space, with the Centre for London reporting a 24.0% reduction in London in the last 20 years, and a 20.0% reduction in Manchester, due to competition with residential developers.

New orders reached a record high of £4.1 billion in 2021 and fell 7.7% in 2022, which highlights that the peak in activity is likely to have been reached. The lag between contract award and start of works is shorter than in comparison to other sectors such as commercial and infrastructure and the £3.8 billion in new orders in 2022 would be expected to keep activity elevated in the first half of 2023. But, as projects complete, output is forecast to slow sharply in the second half of 2023 as the worsening investor sentiment and business confidence that is occurring now leads to reduced occupier demand and rising yields, in addition to higher borrowing costs. Growth of 2.0% is forecast for 2023, followed by a 15.0% fall in 2024 and further 5.0% fall in 2025.

Upper Scenario:

- Consumer spending sustained by savings
- Warehousing and storage requirements related to Brexit and freeports

The accumulation of savings during 2020 and 2021 helps households limit the impact of high inflation on real wages and may sustain consumer spending, with the proportion spent online expected to remain significantly higher than pre-pandemic levels as many office-based workers continue to work from home for the two or three days assumed in the forecast. Although post-Brexit import checks have been delayed for a fourth time to the end of 2023, this raises requirements for storage space close to all UK exit and entry points, whilst any progress on the freeports programme would also boost associated warehousing requirements.

Lower Scenario:

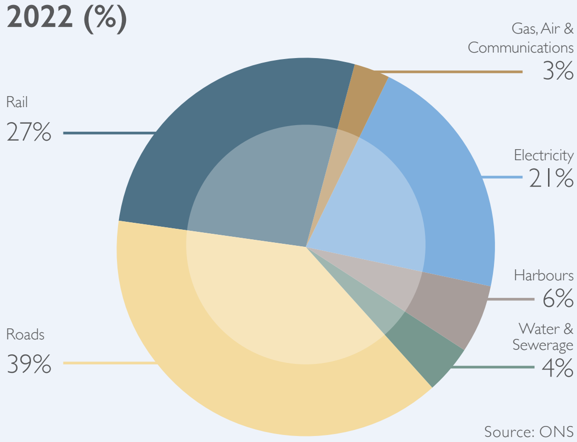
- Costlier development finance holds back new projects
- Speculative developments delayed or paused as supply chains are significantly impacted by price rises and economic uncertainties

A lengthy period of low interest rates that supported warehouses development ended in 2022 and if borrowing costs rise higher than assumed in the main forecast, margins, yields and viability will also deteriorate further and lead to lower investment in new projects, both speculative and build-to-suit. Economic recession and lingering inflation will also impact confidence more sharply on the speculative side.

Infrastructure

Infrastructure output is still forecast to rise over the forecast period but growth has been revised down significantly in the light of recent government announcements of substantial delays to major infrastructure projects in addition to government financial constraints that will push even projects from the latter years of regulated sector spending plans into subsequent spending periods.

Infrastructure Output by Sub-sector 2022 (%)



Source: ONS

Please note that the Office for National Statistics (ONS) has issues with its measurement of the sub-sectors in infrastructure. Firstly, the ONS's methodology means that although total infrastructure overall may be fine, sub-sector output is determined by the average time between new orders and output in the medium-term, often determined by projects within five-year spending plans in regulated sectors. However, if a new order for a major project in the sub-sector is placed, this may underestimate the time taken for it to provide activity on the ground and overestimate the amount of activity earlier on. An example of this may potentially be the extent of recent growth in water & sewerage due to the Thames Tideway project. Secondly, the ONS only surveys firms that are officially classified as contractors so if the activity is done by an engineering firm then it will not be covered. This applies to all construction sectors and firms that do construction work but are not technically contractors. However, this issue impacts most upon infrastructure. Therefore, given concerns regarding the ONS's data on infrastructure output, especially at sub-sector level, the forecasts are not purely based on the ONS output data but take into account recent industry surveys and pipeline evidence. This is particularly the case for the roads, rail and electricity sub-sectors. Please refer to the relevant sub-sectors for a more detailed explanation and specific examples.

In the space of the last six months, the UK government has gone from announcing it would bring forward 138 infrastructure projects to start by the end of this year to cancelling this

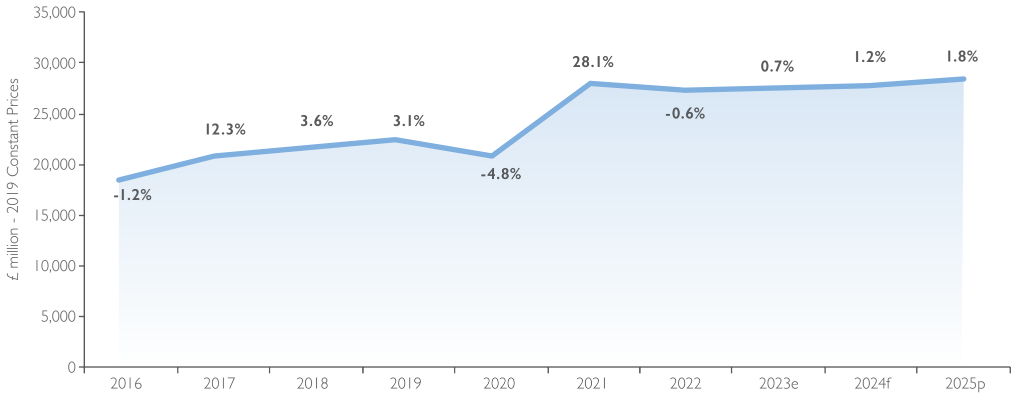
Infrastructure activity

set to rise by

0.7% *in 2023 and* **1.2%** *in 2024*

a downward revision from the previous 2.4% and 2.5% *forecast respectively*

Infrastructure Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

and then delaying some of the largest infrastructure projects, such as HS2 Phase 2a and Euston station, the Lower Thames Crossing and other roads projects, by two years in an attempt to reduce government spending near-term and buy time to value engineer the projects.

Unsurprisingly, the Chancellor's Spring Budget did not focus on infrastructure after the Autumn Statement had already confirmed that government departments and local authorities would not be given further finance for capital expenditure and that total departmental capital spending in 2024/25 will be maintained in cash terms until 2027/28. This was already in line with CPA assumptions and discussions with government prior to the Autumn Statement and, as a consequence, has had an impact on the CPA's infrastructure forecasts since Autumn 2022. Overall, near-term activity remains strong on projects already signed up and/or started in previous years although double-digit cost inflation has meant that many of these projects are going over budget and potentially over time as clients try to get contractors and consortia to find cost savings. It also means that local authorities are shifting resource away from new work, where the greatest risk over cost overruns occurs, towards ensuring there is sufficient funding for essential repairs, maintenance and renewals. However, it also means that clients have been more hesitant on signing up to new projects given persistent concerns regarding costs spiralling out of control. Furthermore, main contractors and consultants have also highlighted in infrastructure that on many schemes across the UK that the time taken over bidding and the resource involved in bids has increased considerably. Timetables for projects appear to be getting extended and with revisions and rescoping meaning that it is more costly for project bids even where clients are looking to save costs on projects. Furthermore, the delays for revisions and rescoping often leads to substantial delays that, in turn, lead to additional costs on the projects due to inflation over time and due to the additional risk of further delays, revisions and potential cost inflation that needs to factored in. All of this suggests that the CPA's assumption in previous forecasts is that the sector is likely to see the value of infrastructure previously forecast but not the volume as budgets get eaten into by rising costs. In the medium-term, fixed budgets and strong cost inflation

The Chancellor confirmed ***capital expenditure*** *will be* ***maintained in cash terms*** *so it will* ***fall in real terms***

mean that for central government, projects towards the end of the Spending Review will be pushed into the next Review. Furthermore, in regulated sectors such as water, roads and rail companies, infrastructure projects towards the end of five-year spending plans were assumed to be pushed back into the next spending periods due to constrained finances in the CPA's two previous forecasts. For roads in particular, this was confirmed by the Secretary of State for Transport in March 2023.

Infrastructure output in the two years 2021 and 2022 was at its highest level of any two years on record. The focus has tended to be on the major projects of HS2 Phase One, Hinkley Point C and the Thames Tideway, which will continue to provide significant activity near-term but long-term frameworks and some of the smaller projects down on the ground already continue to provide the bulk of the activity in the sector. The risks remain to the downside in infrastructure, given persistent cost inflation, which is slowing but still double-digit, as well as uncertainty from government as it constantly changes tack on infrastructure policy and seeks cost savings on projects that have already been initiated.

The volume of output in the sector is forecast to rise by 0.7% in 2023 and 1.2% in 2024 although it is worth noting that this is a significant revision down from the 2.4% in 2023 and 2.5% in 2024 forecast just three months ago. This reflects that activity down on the ground remains strong currently but takes account of recently announced delays and further cost overruns, even beyond those previously assumed by the CPA.

The **rail** sub-sector is expected to rise by 4.0% in 2023 and before falling by 2.0% in 2024, a substantial revision down from the Winter rail forecast of 8.0% in 2023 and flat activity but at a high level in 2024.

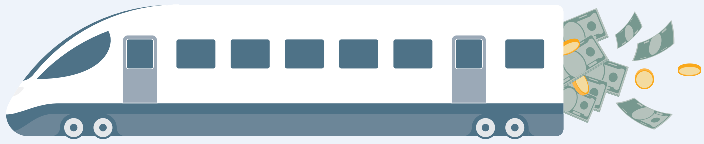
The main drivers of activity in the rail sub-sector remain Network Rail's five-year spending plan, which provides the main levels of workloads in the sub-sector with HS2 providing the main growth above general levels of activity.

Network Rail's five-year Control Period 6 (CP6) ends in March 2024 and CP7, covering April 2024 to March 2029, was published in December 2022. Network Rail committed to a budget of £44.0 billion over the five-year period in England and Wales with £27.5bn coming from a Network Grant. A direct comparison with CP6 cannot be made because of differences in the way objectives have been included but it broadly points towards similar finance overall and it appears to include a small increase in expenditure on Operations, Maintenance and Renewals (OMR) in real terms. Projects currently in the pipeline towards the end of CP6 are likely to cross over into CP7 but with the CP7 settlement in place, it is unlikely to lead to a hiatus in activity between the control periods.

In previous forecasts the CPA highlighted two key risks. Firstly, the cumulative cost of national strikes to Network Rail since Summer

2022. However, the Rail, Maritime, and Transport union (RMT), the main union currently involved in rail worker strikes signed a pay deal in March 2023 and, as a result, the majority of strike action in the sector appears to have come to an end even though another union, the Associated Society of Locomotive Engineers and Firemen (ASLEF) has still not accepted the pay offer to its members. Secondly, the CPA highlighted persistent double-digit cost inflation, which is increasingly leading to cost overruns on current projects with larger projects suffering the greater cost overruns. The ONS estimates that construction cost inflation in the year to February 2023 was 14.2%, which would not have been assumed when budgets were signed-off for the majority of projects currently on site and although construction cost inflation is likely to slow considerably over the next 12-18 months, it is unlikely to return to the long-term average of 2.7% anytime soon. Furthermore, even with the inflation rate slowing, it still means that cost are rising from an already high base.

Government announced in December that ***CP7*** *(2024-29) would be* ***£44 billion***



compared with ***£47 billion*** *in the previous* ***CP6*** *(2019-24)*

HS2 remains the main driver of growth in the sub-sector near-term but the problems for HS2 near-term and long-term continue to increase. In the long-term, the Secretary of State for Transport announced in March that there would be a two-year delay to Phase 2a between Birmingham and Crewe. However, this is well beyond the scope of the forecasts. The greater concern near-term regards government announcing that it would be pushing back work at Euston station. The National Audit Office (NAO) reported in March that the cost of the HS2 Euston station in 2020 needs to be reassessed once again given that, following the review in 2020 and the revised plan in Autumn 2021, work at Euston was now £2.2 billion over the budget with an expected cost of £4.4 billion. Preparatory work started in April with a tunnel boring machine in London, used to create a tunnel between Old Oak Common station and a logistics hub at Atlas Road in North Acton. HS2 confirmed later in April, however, that work on the Euston Tunnel, which had been due to begin in 2024, has been delayed following the government's recent decision to prioritise delivery of the project between Old Oak Common and Birmingham Curzon Street. HS2 has not provided a new expected start date. The CPA had previously assumed delays and cost overruns on HS2 Phase One consistent with previous HS2 delays and major infrastructure projects, although this pause on work at Euston will adversely affect sub-sector activity.

Increasing cost inflation *means clients are extending bid timetables and revising projects, with* ***increased hesitancy signing off on contracts due to cost concerns***

Please note that the ONS historic output figures for rail should be treated with caution given the ONS's mismeasurement of infrastructure sub-sector level data that have been further exacerbated by methodological improvements made in 2018. For *example, output in the rail sub-sector increased sharply in 2017 and 2018, even though main works on Europe's largest infrastructure project, HS2, were yet to begin. The main civil engineering contracts for the first phase of the project, worth £6.6 billion were awarded in July 2017 and, as a result, new orders rose 315.2% to a record high of £9.0 billion in 2017. Rail output rose 50.4% in that year and 22.2% in 2018. The divergence between new orders and output has meant that the levels of output appear inflated in 2017 and 2018, despite CP5 ending. More recently, large falls in output were recorded in 2019 and 2020 even though enabling works on HS2 continued during the pandemic and the formal start of main construction works was announced in September. Given these inconsistencies, the CPA is forecasting growth rates for actual activity on the ground.*

Upper Scenario:

• Cost inflation eases

• HS2 uses its time delays smartly and reduces costs and delays

If materials inflation eases, particularly for energy-intensive, heavy side products that would help civils contractors that are delivering on fixed-price contracts. In addition, better management of larger projects would also ensure that government and regulated sector firms get greater volumes for the same capital expenditure.

Lower Scenario:

• Rail projects, including HS2, subject to further delays

• Decision-making pauses on new rail projects due to uncertainty on costs

HS2 has already been subject to significant delays so far and further delays would hinder infrastructure growth rates. In addition, further cost inflation and hits to revenue from low passenger numbers and strikes may mean that rail spending is reduced in the medium-term as well as the longer-term, hitting spending in 2024.

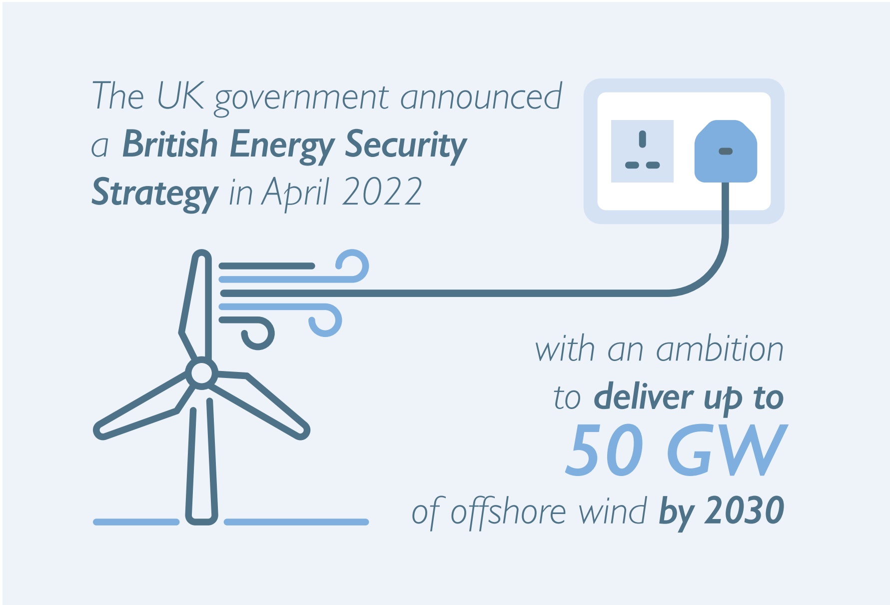
Electricity output has grown significantly over recent years and it is likely to continue to grow over the forecast period by 4.0% in 2023 and 7.0% in 2024 despite the unreliability of the ONS sub-sector historic output data to reflect recent growth. However, in one of the key areas of growth in the sector, wind farms, energy companies looking to invest have highlighted that the electricity generator levy, announced in November 2022, may exacerbate issues of rising financing costs in the light of interest rate rises and rising construction costs, making new projects financial unviable. The electricity generator levy was announced by government to curb excess profits being made by energy generators after prices rose sharply following Russia's invasion of Ukraine and it charges a 45% tax on any market revenues over £75 per megawatt-hour (MWh) and is due to remain in place until 2028.

Furthermore, investment in new wind farm projects may be hindered by the maximum price on offer for offshore

EDF reported in February 2023 that the **estimated cost of completing Hinkley Point C** could **rise** to

£32.7 billion

farms this year, which has been capped at £44 per MWh, in 2012 prices and is indexed to inflation. Contract prices for offshore wind farms had fallen from £150 per MWh in 2014 to £37.35 (in 2012 prices) awarded in 2022 due to falling costs and economies of scale but multiple energy firms have stated publicly that recent construction cost inflation means that the contract prices currently offered are insufficient to attract investment.



Despite this, work on current projects is likely to drive activity in the sub-sector. This growth is primarily due to the offshore the rapid expansion of wind farm projects but ongoing work on Hinkley Point C also contributes to growth.

With Hornsea 2, the world's largest offshore windfarm, fully operational since September 2022, the focus turns to Hornsea 3. The 2.8GW project was awarded a contract price of £37.85 per MWh for 15 years by the UK government in 2022. However, the developer Ørsted, warned prior to the Spring Budget that plans to build Hornsea 3 were at risk unless the UK government offered additional tax incentives to offset the sharp rise in cost inflation. However, post-Spring Budget, it stated publicly that it was disappointed that the Chancellor did not announce further financial incentives and that it would be taking time to analyse the impact on future projects although it also stated that it remained committed to reach a Final Investment Decision on Hornsea 3, which would be worth £8.0 billion.

Otherwise, construction continues to progress on other wind farms. Just under 1.4GW of the offshore capacity lies in Scotland across two major projects; 1,080MW of capacity at the Inch Cape wind farm off the Angus Coast with up to 72 turbines that would make it Scotland's largest single source of renewable power and is expected to start operation in three phases between 2025 and 2026 whilst the first steel cutting of the J-tube frames for the 882 MW Moray West Offshore Wind Farm took place at the Port of Nigg by Global Energy Group's (GEG) North Fabrication division in April 2023 and Moray West in the outer Moray Firth is expected to complete in 2024. Construction is currently underway on the 443MW Viking onshore wind farm project in Shetland for a completion in 2024 with the installation of the project's first wind turbine in April 2023.

Dogger Bank Wind Farm comprises a group of offshore wind farms being constructed 125 to 290 kilometres off the east coast of Yorkshire. Dogger Bank A and B commenced in 2020 with two offshore wind farms with power up to 1.2GW and a total installed capacity of around 2.4GW. Dogger Bank Teesside A & B (Dogger Bank C and Sofia Offshore Wind Farm) comprises two wind farms, each creating up to 1.2GW of electricity Offshore construction started in 2022 and the overall scheme is set to complete in 2026.

The CPA Winter Forecasts highlighted that EDF had announced it would review whether it could keep Hartlepool and Heysham 1 nuclear power stations open beyond their current expected closure date in 2024. In March 2023, it announced that it would extend the operating life of both by two years to March 2026 and that there was potential for extending this by an additional 12 months if required. It had stated during the review that the total spend between

2023 and 2025 would be £1.0 billion, with around 40% of the spending as construction expenditure, the majority of which would be expected in 2024.

National Grid laid out plans in July 2022 for a £54.0 billion upgrade to the UK's electricity network with the total cost of onshore infrastructure to 2030 at £21.7 billion across 94 projects. In addition, offshore network infrastructure required to connect the extra 23GW needed to meet the Government's target will cost an additional £32.0 billion. In the near-term, activity will additionally be supported by ongoing work around the National Grid power connections, which includes the £1.0 billion second phase of the London Power Tunnels (LPT2) project to construct a new 32.5km cable tunnel over three sections below the streets of South London between Wimbledon and Crayford. It reached breakthrough in June 2022 and completed the project's first of five drives, which is between two South East London sites. National Grid reported in June 2022 that LPT2 is currently under-budget and on time. It is due to be completed and fully operational in 2027.

In the Electric Vehicle Infrastructure Strategy published in March 2022, the government pledged to create 300,000 public electric vehicle (EV) charge points by 2030, backed by £1.6 billion of funding. This includes the £950 million Rapid Charging Fund to support the rollout of 6,000 high powered charge points across motorways and major A roads in England by 2035, and the £450 million Local EV Infrastructure (LEVI) Fund to help local authorities install EV hubs and on-street charge points from 2022 to 2025. However, whether the government target is likely to be met is highly questionable given a lack of capacity and skills combined with data from the government reporting that only 8,680 new charging devices were installed last year, increasing the total by 31% to 37,055 public electric vehicle charging devices installed in the UK as of 1 January 2023 and that one-third of these were in London.

It is worth noting that, according to the ONS, EV charging points in the historic construction output data are classified in infrastructure electricity for existing buildings and structures but when they are a part of new buildings and structures then the EV charging points activity will be a part of whichever sub-sector the building or structure is in. For instance, if the EV charging points are a part of a new housing development then they will classified in housing.

The largest project driving growth in the sub-sector continues to be Hinkley Point C. Previous forecasts highlighted delays and cost overruns published in EDF's review in May 2022. Electricity generation for unit 1 is now only expected in June 2027 and the project completion costs are now estimated in the range of £25.0 billion to £26.0 billion (in 2015 prices) but in March 2023 EDF stated that costs may rise as high as £32.7 billion in its annual report. EDF announced in December 2022 that the nuclear reactor for Hinkley Point C is now complete and ready for delivery. Beyond this, there have been no further updates as progress continues despite speculation regarding delays further down the line on the project.

Overall, the electricity sub-sector continues to benefit from a pipeline of renewable energy projects and Hinkley Point C. As a result, forecast growth for 2023 is 4.0% and 7.0% in 2024 as new offshore wind projects were already set to drive growth and additional nuclear activity from keeping open nuclear power stations that were originally due to close. However, clearly the risks are on the downside in the medium-term if new investment in wind farms dries up as a result of the windfall tax and financing and construction cost rises making projects financially unviable.

Output in the electricity sub-sector declined 7.2% in 2019 even though main civil engineering works above ground on Hinkley Point C started in September 2019. That fall was followed by growth of 15.3% in 2020 despite the impact of the first national lockdown on workforce numbers and activity on site at Hinkley Point C during the first half of the year and according to the ONS output fell by 22.6% in 2021 despite it comparing with a pandemic-impacted year before. This suggests that the ONS construction output data is not accurately reflecting activity on the ground, and as a result, the CPA is forecasting actual activity growth in the sub-sector rather than distortions in the ONS data.

Upper Scenario:

• Investor confidence improves allowing new energy projects to get off the ground

If investor confidence improves amid a reduction in economic uncertainty, this would allow large-scale projects to get off the ground, particularly offshore wind farms. The new National Infrastructure Bank, which was officially launched in June 2021 to essentially replace the role of the European Investment Bank could also underpin investor appetite for new energy infrastructure projects if it can lend at similar volumes and terms. Taken together, these factors would point to stronger growth rates over the next three years.

Lower Scenario:

• Investment in key energy projects stalls amid slower economic recovery and uncertainty

• Activity at Hinkley Point C is delayed by supply constraints

A fall in investment or reduced investor confidence amid slower economic recovery and uncertainty relating to the new National Infrastructure Bank following its launch in June 2021, is likely to hinder decision-making on key energy infrastructure projects in the near-term. If Hinkley Point C is affected acutely by skills shortages in the surrounding area and availability of key construction products, then there may be significant further delays as a consequence, spreading the work out over a longer period and hindering growth rates near-term.

Down on the ground, little has changed **water & sewerage** since the last forecasts with the focus on the Thames Tideway Tunnel and activity under regulated frameworks. However, work is likely to be boosted next year by activity as water companies ramp up work to meet targets under AMP7 and as they increasingly come under pressure to address claims of persistent under-investment in efficiency and sewage treatment at the expense of profit maximisation. In 2025, activity is likely to slow due to a hiatus in activity as work completes on AMP7 and before activity on AMP8 ramps up.

Progress continues to be made on the largest project in the sub-sector, the 25km Thames Tideway Tunnel built under the Thames. The half-year report from Bazalgette Holdings Limited, which was set up to deliver the Thames Tideway Tunnel for Thames Water, stated that at the end of September, the project was 83% complete and remained on track for completion and handover in 2025. All tunnel primary lining was complete (30.7km) and 66% (20.2km) of tunnel secondary lining works was complete with 83% of shaft secondary lining also complete. The updated estimate for completion in November was £4.384 billion which was an increase of £96 million in the previous six months.

Outside of the Thames Tideway Tunnel sewer, the new £400 million pipeline from Bury St Edmunds to Colchester pipeline over 68km is the largest project in the pipeline. Anglian Water submitted its plans in January and subject to planning consent, it expects pipelaying work to begin later this year.

Sub-sector activity will also be supported by work under the five-year Asset Management Plan (AMP7), which began in April 2020 and runs until March

***Ofwat** has warned water companies **not to backend their AMP7 investment** after highlighting that **some firms have not spent enhancement allowances** for the 2020-25 period*

***Thames Tideway** was*
83% complete
at the end of September

*remains **on track for completion** in **2025***

2025. AMP7 was slow to get started following the slowdown in activity towards the end of AMP6. However, the indications from water companies are that activity continues to ramp up and is likely to remain strong with just over two years left. Furthermore, the pressure on water companies is clearly rising. The regulator Ofwat, which sets allowances for how much companies can invest over the price control period, to maintain and improve its water network reported in December that water and wastewater companies have been falling behind on their investment plans, as 14 water companies underspent on their budget on improving their water network and eight companies underspent on their budget for improving their wastewater network. Affinity Water and Northumbrian Water had only spent 47% and 48% of their water enhancement allowance respectively by December whilst Yorkshire Water and South West Water spent just 20% and 39% of their wastewater enhancement allowance respectively. The main areas of underspend across both categories included drought resilience, improvements to sewage treatment works, improvements to storm tank capacity and reducing spill frequency. Ofwat stated in November that Thames Water would have to return over £50 million to customers and Southern Water would have to return £30 million after they missed key performance targets.

On the positive side, in April 2023, Ofwat proposed the approval of accelerating delivery on 31 investment schemes between 2023 and 2025 worth £376 million within a total investment of around £1.6 billion between 2025 and 2030. This follows on from the invitation from Ofwat and Defra in October for water companies to propose schemes to accelerate investment in water resilience and cover £1.1 billion to improve over 250 storm overflows, including work to improve water quality at the bathing water site at Ilkley on the River Wharfe and reduce spills into Lake Windermere, £400 million for water resilience schemes including the installation of 462,000 smart meters plus £160 million to help reduce nutrient pollution and support nutrient neutrality at 14 locations. There are, however, questions whether the capacity is there to ramp up as quickly as Ofwat would like for the projects in between 2023 and 2025 and, as a result, it is more likely to positively impact activity in 2024 and 2025 rather than this year.

Thames Water
announced in February 2023 that it would spend
***£1.6bn** in the next two years*
improving** its **sewage infrastructure
*with the aim of **halving its discharges** by 2030*

Thames Water announced in February that it would spend £1.6 billion in the next two years to improve its sewage infrastructure within a broader aim of halving discharges by 2030. This is more than double the amount that it spent in the previous two years. It stated it would spend £1.12 billion on improving its sewage treatment plants, with £650 million specifically going towards upgrading 135 existing sites to increase resilience and capacity. In the same period, it also stated that £470 million would be spent on the wider sewer network.

***AMP8** from April 2025 will focus on **efficiency and reducing waste** rather than new work*

Output in the water & sewerage sub-sector is forecast to rise by 2.0% this year, in line with the CPA's Winter forecasts, driven by remaining tunnelling works on the Thames Tideway Tunnel. Water companies are also expected to increase AMP7 capital investment programmes this year, which will provide further support to output and activity is forecast to rise a further 2.0% in 2024 before a fall in output in 2025 as AMP7 comes to an end and before AMP8 sees significant increases in workloads.

Please note that the ONS historic construction output figures for water & sewerage should be treated with caution given the ONS's mismeasurement of sub-sector level data. For example, in 2018, output in the water & sewerage sub-sector fell by 4.8%, despite main construction works occurring on the Thames Tideway Tunnel. Contracts for the project were awarded in February 2015 and, as a result new orders increased 428.4% in that year. Output rose 59.2% in 2016 (albeit from a low base), followed by a further 59.6% to a five-year high of £2.4 billion in 2017, even though main tunnelling works on the project were yet to begin. This suggests that the ONS's construction output data is not accurately reflecting activity on the ground and is likely to have been incorporated too early in the data. As a result, the CPA's forecasts for the sub-sector focus on growth rates that are more illustrative of activity on the ground.

Upper Scenario:

- The focus shifts to new build under AMP7

If work accelerates and the focus shifts more towards new build under the five-year AMP7 programme, alongside works on the Thames Tideway Tunnel, this would lead to stronger growth rates over the forecast period.

Lower Scenario:

- Work on the Thames Tideway Tunnel and AMP7 is delayed further due to extended lead times on key construction products as well as labour availability issues

If the supply of key construction products used on the Thames Tideway Tunnel and AMP7 is affected by availability issues and cost inflation then this could have a knock-on impact on the project, constraining growth near-term, although boosting growth in later years, whilst also leading to cost overruns.

The forecast for **roads** construction output remains the same as in the Winter forecast for 2023, with a 4.0% fall expected following on from largely flat activity during 2022. Activity is forecast to remain flat in 2024, which is a downward revision due to confirmation that projects from RIS2 will be pushed back into RIS3, which was a significant risk that was highlighted in previous CPA forecasts and has now been realised. Furthermore, medium-term prospects in the roads sub-sector are also less bright with government announcing that major projects would be delayed and government stating that there would be no more new smart motorways.

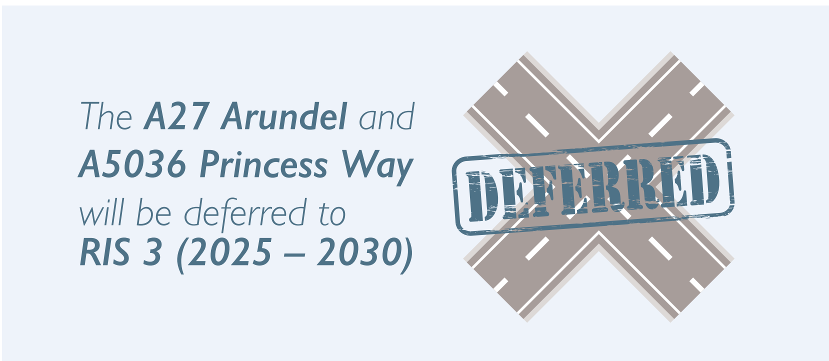
The majority of activity in the sub-sector near-term is still being driven by National Highways' Road Investment Strategy 2 (RIS2). The Department for Transport (DfT) and National Highways, however, stated in February that £11.5 billion of projects will be rolled over into RIS3,

starting in 2025, due to substantial cost overruns in RIS2 following a review by the National Audit Office into RIS2 at the end of last year. As a result, this suggests that there are likely to be few additional major projects and enhancements in RIS3 and that the focus will be on renewals and maintenance. This is particularly the case given that over 70% of the National Highways roads and bridges network will be over 45 years old. Although RIS3 nominally starts in 2025, it is likely, however, that the majority of work in 2025 is based on delayed projects from RIS2. As a result, the effects of a fall in activity and changes in the type of roads work from RIS are likely to occur beyond the scope of the forecasts.

Within the major projects affected by the delays, the Secretary of State for Transport stated in March that the £9.0 billion Lower Thames Crossing has been delayed by two years so construction work only starts in 2026 at the earliest but more likely 2027. Despite construction work not starting as yet, £800 million has already been spent on planning the Lower Thames Crossing and its planning application was the longest submission in history, totalling 63,000 pages across 584 separate documents. Other significant delayed road projects include the £320 million A27 Arundel Bypass and the £335 million A5036 Port of Liverpool Access, which were both in RIS2 originally. For the A27 Arundel Bypass, a consortium of Bam Nuttall, Aecom and Mace was awarded the main works contract in April 2021 and work was expected to commence in 2024. Regarding the A5036 Port of Liverpool access road, previous forecasts had highlighted that it was controversial given that it would see a new dual carriageway built through the middle of the Rimrose Valley country park and with persistent calls for more sustainable alternatives, it had not been included in previous forecasts.

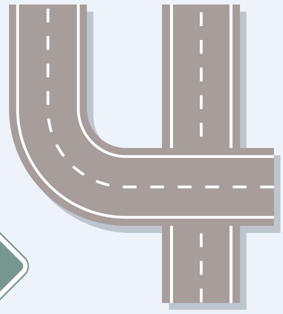
Outside of RIS2, construction work is underway on the £1.2 billion Silvertown Tunnel project in London on which tunnelling work began in August last year. Transport for London (TfL) reported in February that whilst progress has been made on the 1.4km Thames tunnel, its capital costs on the project are £13.0 million over budget, which is an additional £1.0 million above its update in December. It stated that the estimated final cost was revised up to £186 million compared to the original £173 million figure prior to construction work. It also stated that the opening date has been pushed back to June 2025, from May in the previous update, which was already delayed from the original May completion date. TfL stated that cost inflation and shortages in skilled labour and the supply of construction materials have led to the cost overruns and delays respectively. Given the persistence of these issues, the CPA anticipates that there will be further cost overruns and delays with the project only likely to be finished in the second half of 2025.

The most recent developments in roads are the Chancellor's announcement in the Spring Budget in March 2023 of a £200 million potholes fund and the DfT announcement in April 2023 that it



would scrap all new smart motorways. The potholes fund will be for local authorities in England to fix potholes, complete resurfacing and invest in major repairs and renewals, such as keeping bridges and major structures open during this financial year. The government stated that this increase is expected to fix the equivalent of up to 4 million additional potholes across the country. Where this finance is allocated to pothole repairs, the activity will be in infrastructure repair and maintenance (see Infrastructure R&M) whilst the remainder of the work would be classified by the Office for National Statistics (ONS) in the roads sub-sector. However, the previous experience of additional local authority one-off 'pothole funds' is that there is seldom a significant uplift in roads and infrastructure r&m activity. Although this additional finance is spent on roads, financially-constrained local authorities' previously allocated finance for roads is often reallocated to high priority areas. Furthermore, in March 2023, the Parliamentary Under Secretary of State for Roads and Local Transport stated that the 'potholes fund' was not ring-fenced, increasingly the likelihood that the sub-sector will not see a rise in activity despite the government's announcement.

*In the medium-term, schemes earmarked for **RIS 3** will continue to be developed but only for* ***inclusion in RIS 4, beyond 2030***



The DfT's announcement of no new smart motorways includes 11 that had been already paused from RIS2 and the three more that had been earmarked for RIS3. Government stated that the cancellation of smart motorways was due to financial pressures and the current lack of public confidence in smart motorways. It also stated its initial estimations that the cancelled projects would have cost over £1.0 billion. Whilst there will be no new smart motorways, the M56 J6-8 and M6 J21a-26 will be completed as they are more than 75% complete already. Given that the existing smart motorway programme was already on pause pending a review, the CPA had not assumed that projects would go ahead during the forecast period, particularly as there were no indications from conversations with the DfT that there were any incentives to go forward with new projects given the cost and public relations concerns. As a result, this does not affect the CPA's forecast.

Please note that in a similar vein to the water & sewerage and rail sub-sectors, the ONS's mismeasurement of sub-sector level data has meant that historical figures for roads output appear inflated, contradicting other pipeline evidence and industry surveys. For example, in 2020, roads output fell by 2.2% to £5.8 billion and although National Highways and local authorities took advantage of quieter roads to carry out more work during the lockdown periods, the growth rate contrasts other indicators of activity that indicate a slightly sharper fall. Data from the Mineral Products Association (MPA) showed that sales volumes of asphalt sales declined 8.6% in 2020, before rising by 12.5% in 2021. The pace of recovery in 2021 is in stark contrast to the growth reported in the official data of 86.7% that took output to a record high of £10.9 billion even though the delivery of major road projects has been impacted by planning delays. Overall, this suggests that the ONS's construction output data is not accurately reflecting activity on the ground, and as a result, the CPA is forecasting actual activity growth in the sub-sector rather than distortions in the ONS data. The data may also be reflecting an increase in technology-driven smart motorway schemes.

Upper Scenario:

- Road schemes receive go-ahead
- National Highways brings forward road schemes

If contracts and development consents for the remaining major road projects outlined in the National Infrastructure and Construction Pipeline 2021 are awarded and obtained respectively, this would lead to higher activity over the next three years. Activity in the pipeline would also increase if National Highways brings forward road schemes from later years of the second road period.

Lower Scenario:

- Existing road schemes delayed due to supply issues
- Road contracts delayed to assess the impact of the rising labour and products costs
- Delivery of road schemes impacted by planning delays, environmental concerns and safety risks in the case of smart motorways

If availability and cost issues for products and labour escalate then work on existing and new road schemes may be delayed plus delays in obtaining development consent orders would hinder the delivery of National Highways' second Road Investment Strategy with further projects delayed until RIS3.

The **gas, air and communications** sub-sector is forecast to rise by 5.0% in both 2023 and 2024 as the expansion of full-fibre and gigabit infrastructure continues. This is unchanged since the last forecast, and major refurbishments and renewals at the largest airports as well as expansion plans at other airports around the country are likely to return over the forecast period.

New construction work at airports across Great Britain appears to have picked up markedly, albeit from a low base, in recent months as expansion and renovation programmes get underway. Plans for significant extensions are progressing at Southampton and London City airports whilst the all-clear was given for a major expansion at Bristol Airport in January.

The CPA has been highlighting over the past year the need to update passenger terminals at UK airports after a lack of work during the pandemic and work is likely to increase from this year. At Manchester Airport, work on a £440 million terminal modernisation programme is due to start later this year. It is expected to run for three years and double the size of the departure lounge plus create additional retail space.

Airport renovation work is providing a useful source of new work. Contractor Lagan started work on a contract in January to resurface 3km of runway at London Stansted, which is expected to last five months. The work involves laying over 50,000 tonnes of asphalt plus upgrading the runway and taxiway lighting.

London Stansted could also provide a more significant source of activity when work starts on its £480 million expansion involving a terminal extension, a new arrivals building and two new taxiway links. The Planning Inspectorate has approved the plans, which involve increasing the airport's capacity to 43 million passengers.

At London City Airport, detailed plans have been submitted for a £31.3 million extension and, contingent on tenders, work is estimated to start in Autumn and run for eight months. The airport also has a small project worth £1.6 million to build a pontoon bridge and rescue boat berth at the riverside airfield at London City with work set to start in Summer and last for five months.

One project that has stalled is the £500 million project to reopen Manston Airport on a former RAF base near Ramsgate in Kent, which was looking to start construction towards the end of this year. It has been closed since 2014 and the scheme, which the government had granted permission last year, had looked to create a dedicated air freight facility with around 10,000 air cargo movements annually alongside business travel and aircraft engineering facilities. However, in March 2023 a judicial was granted that will inevitably delay plans significantly.

At Southampton Airport, plans for a significant runway extension have been approved to accommodate larger aircraft and attract more passengers as a key step in ensuring the facility's long-term viability. Tenders were returned on a £50 million project which involves a 164 metre extension to the runway and the creation of 600 extra car parking spaces. VolkerFitzpatrick broke ground on the £17 million extension of the runway in April and the project is expected to complete in August.

Plans for the £22 million expansion of Bristol Airport, increasing passenger numbers from 10 million to 12 million, were given the go-ahead by the High Court at the end of January. The scheme includes two extensions to the terminal building and a new walkway and pier. Work could start at the end of this year and run for 24 months.

Towards the end of the forecast, in 2025, work may start on a £1.4 billion plan for an expansion at London Luton Airport. The planning application for the expansion was submitted at the end of February. Consent is being sought for the expansion from its current permitted cap of 18 million passengers per year to 32 million. The plan would include new terminal capacity, earthworks to create an extension to the current airfield platform, new airside and landside facilities, enhancement of the surface access network, an extension of the recently completed £295 million Luton Dart shuttle service, landscaping and ecological improvements and further infrastructure enhancements and initiatives to support the target of achieving zero-emission ground operations by 2040.

Unlike airport expansion programmes, plans to expand full-fibre broadband across the UK have continued throughout the pandemic and within all the key areas of infrastructure, digital broadband is the only one in which the National Infrastructure Commission reported in March 2023 that all targets are so far being met.

This includes the Openreach (BT) £15.0 billion investment programme, which aims to extend its full-fibre network to 25 million premises by December 2026. It reported in March 2023 that rollout of gigabit-capable Fibre-to-the-Premises (FTTP) based broadband ISP technology reached 10 million premises. Virgin Media O2 (VMO2) continues with its £10.0 billion investment in fibre broadband and 5G infrastructure that it announced in 2021 and will continue to 2026. It is also continuing with its plans to upgrade its entire fixed network to full fibre-to-the-premises (FTTP) by 2028, alongside the existing Project Lightning programme that reached 3.2 million premises by the end of 2022 and continues this year.

Other major investments in full-fibre networks include Hyperoptic's £500 million project to extend its fibre network by 2024 and CityFibre's £4.0 billion Gigabit City Investment Programme that aims to roll out full-fibre to eight million premises by 2025. In terms of the latter, full-fibre has been deployed to more than 2.0 million by the end of 2023 Q1.

Upper Scenario:

- UK airports bring forward planned capital expenditure amid an improvement in passenger demand

If both business and holiday passenger numbers return to, and surpass, pre-pandemic levels then airports may return to delayed, pre-existing plans of major refurbishments and expansions quickly.

Lower Scenario:

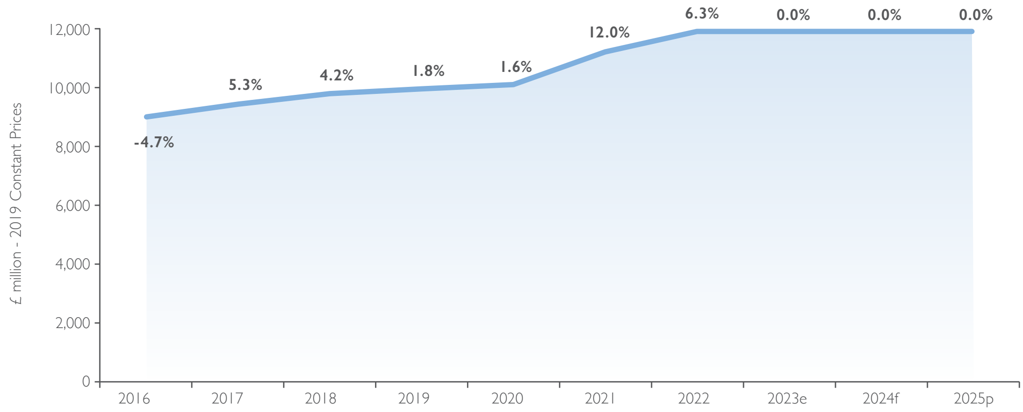
- UK airports focus on enhancements to existing facilities throughout the forecast period rather than long-term expansions or major refurbishments

If passenger numbers do not continue to recover and surpass pre-pandemic levels even in the medium-term then long-term plans will not merely be paused but be cancelled.

Infrastructure R&M

The key drivers of infrastructure r&m mostly remain unchanged since the previous forecast but whilst new construction sectors will suffer considerably from cost inflation eating into volume of activity whilst the value is maintained, the likelihood is that r&m will be prioritised given that it is largely essential and cannot be delayed indefinitely. As a result, finance is likely to be diverted from new work to fund r&m.

Infrastructure R&M Output



e = estimate, f = forecast, p = projection

Source: ONS, Construction Products Association

Infrastructure repair and maintenance (r&m) includes work on assets owned by utility companies, airports and energy-generating facilities, and publicly-owned assets such as roads and rail, which will help sustain a high level of activity over the next three years.

Whilst the majority of sectors suffered during the pandemic, roads repairs and maintenance was a key area that benefitted as local authorities were able to take advantage of less traffic to get on with repairs and maintenance activity. Going forward, however, output is set to remain broadly flat in 2023 and 2024 as basic repairs work in current five-year regulatory periods for water & sewerage, rail and roads continues and whilst financially-constrained local authorities suffer from a lack of finance for local infrastructure, this is expected to have less of an effect on basic repairs and maintenance, which users notice more than new roads.

***Infrastructure r&m** expected to only **fall marginally** despite tight council budgets as funding is focused on basic repairs and maintenance rather than new projects*

In the rail sub-sector, the focus of Network Rail's Control Period, CP6, running from 2019/20 to 2023/24 will largely be on maintenance and renewals, with fewer new enhancements. Network Rail's five-year Control Period 6 (CP6) ends in March 2024 and CP7, covering April

2024 to March 2029, was published in December 2022. A direct comparison with CP6 cannot be made because of differences in the way objectives have been included but it points towards similar finance overall and it appears to include a small increase in expenditure on Operations, Maintenance and Renewals (OMR) in real terms, which suggests that activity will be marginally higher.

Within water & sewerage, activity will be supported by the five-year Asset Management Plan (AMP7), running from 2020/21 to 2024/25, with the majority of activity occurring during 2023 and 2024. However, simultaneously, the pressure is on water companies to both meet their targets under AMP7 and investment in efficiency and sewage treatment, both of which suggest that the focus is likely to be on new work rather than just basic repairs and maintenance given how far some of the water companies are behind on their investment plans (see Infrastructure – Water & Sewerage).

The key driver of activity in the sector is roads spending, both from National Highways and also local authorities, in which the latter accounts for 97% of local roads. The most recent development is the Chancellor's announcement in the Spring Budget in March 2023 of a £200 million potholes fund. The potholes fund will be for local authorities in England to fix potholes, complete resurfacing and invest in major repairs and renewals, such as keeping bridges and major structures open during this financial year. The government stated that this increase is expected to fix the equivalent of up to 4 million additional potholes across the country. Where this finance is allocated to pothole repairs, the activity will be in this sector but the rest of the activity will be in new work (see Infrastructure Roads). It is worth noting, however, that the previous experience of additional local authority one-off 'pothole funds' is that there often is not a significant uplift in roads and infrastructure r&m activity or asphalt sales as a result. Although this additional finance does appear to be spent on roads, financially-constrained local authorities' previously allocated finance for roads is often reallocated to high priority areas so there is a substitution effect. Furthermore, in March 2023, the Parliamentary Under Secretary of State for Roads and Local Transport stated that the 'potholes fund' was not ring-fenced, increasingly the likelihood that the sub-sector will not see a rise in activity despite the government's announcement.

Upper Scenario:

• Central government increases infrastructure r&m spending

If government is looking for a quick fiscal stimulus given an anticipated UK economy and construction recession then a large increase in ring-fenced funding to local authorities for transport projects that allows work to get off the ground would provide a boost to infrastructure r&m output in the near-term.

Lower Scenario:

• Financial constraints for local authorities restrict non-essential repairs and maintenance

• Planned r&m work impacted by rising costs

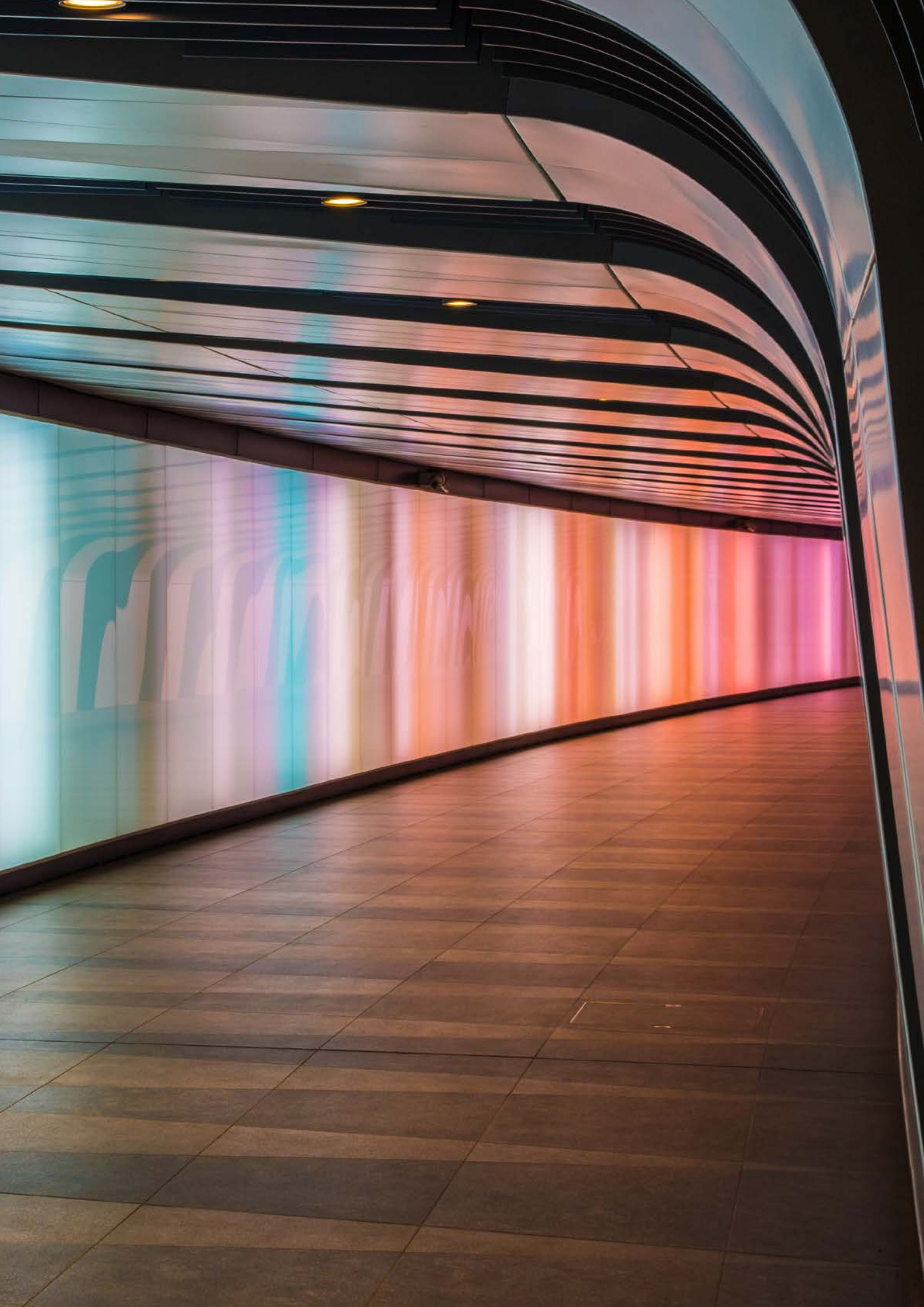
• Infrastructure r&m is likely to be overshadowed by new build activity rather than basic maintenance

Local authorities are likely to prioritise the essential repair and maintenance of critical infrastructure over routine r&m if their finances deteriorate due to spending on local health and social care needs. Faced with renewed cost pressures and supply chain disruption, local authorities are also likely to scale back or cancel planned r&m works in the near-term. In this scenario, government's focus on infrastructure spending and delivering large new build projects to stimulate economic recovery would also shift the focus further away from r&m activity, hindering growth prospects for the sub-sector.

The Construction Products Association is the leading organisation that represents and champions construction product manufacturers and suppliers. This vital UK industry defines our built environment, providing the products and materials needed for homes, offices, shops, road, railways, schools and hospitals. Our industry directly provides jobs for 382,500 people across 24,000 companies and has an annual turnover of £62.5 billion.

The CPA produces a range of economic reports that provide its members, policy-makers, and wider industry with a detailed understanding of the construction market to facilitate planning and business development. Members of the Association are entitled to receive these insights at no additional cost. Non-members can make one off purchases or subscribe for a full information package.

To learn more, please contact our Economics team at **020 7323 3770**, visit **www.constructionproducts.org.uk** or follow us on Twitter **@CPA_Tweets**.






ISBN: 978-1-909415-49-2

April 2023

Construction Products Association
26 Store Street
London
WC1E 7BT
Tel: 020 7323 3770
www.constructionproducts.org.uk