

# GLOBAL CONSTRUCTION FUTURES

A global forecast for the  
construction industry to 2037



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## Foreword



Although construction is currently thought of as one of the least digitalised industries in the world, at the leading edge it is transforming rapidly to become a modern digital industry. This new digital future is expected to drive the greater use of advanced industrialised construction that will help governments around the world decarbonise economies, while at the same time improving the productivity and image of construction, and its attractiveness to new talent.

The global green economy is both a huge driver of growth for construction and a massive global opportunity as the wider built environment currently accounts for almost 40% of all global greenhouse gas emissions.

With many construction markets currently experiencing flat or declining real construction volumes, this report shows that global construction work done is forecast to grow by US\$4.2 trillion over the next 15 years, to US\$13.9 trillion.

Growth is expected to be concentrated within the global construction superpowers of China, US, and India, with growth in real construction work done in India outstripping the US over the next 15 years.

The sharp fall in real residential construction volumes in the US last year, taking account of high inflation, is currently continuing this year as inflation remains elevated. However, growth in strategic inward investment into the US, manufacturing, and mega infrastructure projects—aimed at decarbonising the US economy and supported by the Inflation Reduction Act and other large spending programmes—is helping drive growth from next year in the US construction market, the second largest in the world.

Relaxation of China's strict Zero-Covid policy will help drive recovery for the world's largest construction market. As this report shows, overall growth in Chinese construction is expected to recover more steeply in 2025, after recovery from real estate challenges. Structural challenges,

such as a declining population and slower urbanisation, will mean more subdued longer-term growth. However, the sheer size of the Chinese market means this will translate into almost US\$1.5 trillion of construction work done over the next 15 years.

Four key ASEAN countries—Philippines, Vietnam, Malaysia, and Indonesia—will be the fastest construction markets over the next 15 years.

There is expected to be heightened growth in Eastern Europe over the next 15 years, as an estimated US\$1 trillion reconstruction effort will need to start when the Russia-Ukraine conflict ends, as will rebuilding after the devastating earthquakes in Turkey.

Finally, the UK is expected to be the fastest growing of the major Western European construction markets over the next 15 years, driven by large mega infrastructure projects.

Aon is the leading provider of insurance and risk management consultancy services to the construction industry throughout the world, whether that be contractor, developers, or investors and the full range of service organisations that support this industry. We have expertise in all aspects of construction, and we continue to develop products and services such as ESG benchmarking that helps our clients manage their risks optimally and reduce their overall cost of risk. Aon is proud to support the publication of this prestigious and valuable report. The opportunity in the construction sector as set out in this report is simply enormous and we stand ready to support our clients, through the current uncertain times, wherever in the world they are active.

**James MacNeal**

Global Head of Construction and Infrastructure

**AON**



**MAD Architects:** Hainan Science and Technology Museum in Haikou City, China. 'Where Nature and Technology Meet' includes permanent exhibition space, a planetarium, a giant screen theatre, and a flying theatre.

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[www.rlb.com](http://www.rlb.com)



**Zaha Hadid Architects:** Zhuhai Jinwan Civic Arts Centre, Guangdong Province, China. Located at the heart of Jinwan district's Western Ecological New Town and designed as a hub of contemporary creativity within one of the world's most dynamic regions.



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## Oxford Economics Global Construction Service

Global Construction Futures is a major study of the global construction and engineering industry published by the renowned team of construction economists at Oxford Economics.

The main study—separately available to Oxford clients as a part of our **Global Construction Service**—comprises an almost 600-page report and detailed examination of all major construction markets globally with forecasts over the next 15 years to 2037.

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# Global Construction Futures—Executive Summary

Global Construction Futures is a major study of the global construction and engineering industry published by the renowned team of construction economists at Oxford Economics.

Global Construction Futures is sponsored by the leadership team at Aon Global Construction and Infrastructure and prominent global business leaders in the construction and engineering industry with the purpose of understanding the global market and the forces shaping future demand. These sponsors combined employ over half a million people across the sector and all have a significant role and position in their markets.

Global Construction Futures is aimed at business leaders, policymakers, and others with a special interest in the global construction and engineering industry. Financial institutions and aspiring leaders of the future will find much of interest in Global Construction Futures.

In Global Construction Futures we give an overview of the health of the global economy and explain how key drivers—including growth in economic output as well as rising populations and urbanisation in emerging markets—are expected to impact growth in key construction markets.

This Executive Summary distils key trends while the main report of almost 600 pages looks in detail and gives forecasts for all major construction and engineering markets globally. Forecasts are given for construction work done in each country as well as for the residential, non-residential, and civil engineering sectors over the next 15-year period to 2037.

Oxford Economics also separately provides a detailed dataset and forecasts of construction work done with annual data over more than a 25-year period from 2010 to 2037 with forecasts for 10 detailed subsectors. This dataset gives the size and growth of construction work done and gross output across some 80 countries globally representing over 95% of world output.

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## *Rising populations and urbanisation in emerging markets to drive global construction.*

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Key thought leadership boxes are included as a part of Global Construction Futures and are written by leading industry experts and economists. We examine far-ranging global themes that we believe will have a major impact on the future direction of the industry. These topics include how climate change is impacting construction and how the world's infrastructure must be adapted to become more resilient to the effects of those changes. We also examine construction inflation and give a longer-term outlook and forecast of price inflation for building materials in key construction markets making up over 50% of world output.

We also look at how digitalisation and modern methods of construction can be combined into industrialised construction to deliver the benefits of helping to drive the wider decarbonisation of built assets and improve productivity across the construction and engineering industry.

The decarbonisation of construction supply chains is therefore a key issue covered in Global Construction Futures with the wider built environment accounting for almost 40% of global greenhouse gas emissions.

We ourselves look at the normalisation of monetary policies by central banks and how this will impact construction markets. Other leading industry experts provide an interesting survey of expected construction tender price inflation across 20 different countries globally.

Throughout Global Construction Futures and in this Executive Summary we use the value of work done (also known as the value Put-in-Place) in fixed 2022 prices in US dollars at fixed 2022 exchange rates to measure construction activity. This measures the volume of work done rather than including the effects of the value of construction work done, which is driven by movements in prices. The value of work done is the value of payments made for construction work undertaken. It includes the cost of labour and materials fixed in place but excludes the value of land and the value of installed machinery and equipment not integral to the built asset.

## Global Construction Futures

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We also split construction activity into three broad sectors—residential building, non-residential buildings, and civil engineering construction for infrastructure. We do not include the construction of mines. We measure both new construction activity and renovations or improvements of existing built assets. We do not include the repair and maintenance of existing built assets, which we define as work that does not change the original design standard or significantly improve the life of the asset.

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*Digitalisation and modern methods of construction will support the decarbonisation of infrastructure and built assets.*

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*Zaha Hadid Architects: Tower C, Shenzhen Bay Super Headquarters Base, China will be an important business and financial centre in Shenzhen serving Greater Bay Area of Guangdong.*

## China, US, and India—Global construction superpowers drive growth with Emerging Asia and sub-Saharan Africa highest growing regional markets

Global construction work done will grow over US\$4.2 trillion over the next 15 years—from US\$9.7 trillion in 2022 to US\$13.9 trillion by 2037.

China, the US, and India will account for 51% of all work done in the global construction and engineering market by 2037—underpinning the future economic development of the three countries that account for over a third of the world’s population and economic output.

The top three countries will add almost US\$2.4 trillion to global growth in construction work done over the next 15 years.

*ASEAN tiger economies as well as India and Bangladesh will be the world’s fastest growing construction markets.*

The top 10 global construction markets will account for 70% of all construction work done by 2037 and represent a market worth over US\$9.7 trillion in 2037—the same size as all global construction work done today.

Countries including ASEAN tiger economies as well as India and Bangladesh will deliver super-high growth over the period to 2037. Rising populations as well as rapid urbanisation and low average earnings per head of population in these markets will help drive outstanding growth in construction work done. The combined growth of the fastest ASEAN economies plus India and Bangladesh is expected to be US\$800 billion over the next 15 years—twice the growth of construction work done in the US over the same period.

Growth over the next 15 years in India alone is expected to be higher than the US as India becomes a near US\$1 trillion global construction powerhouse. India is expected to witness a significant urbanisation of its population and has the lowest urban density of the largest economies in the world today. The population of India is expected to outsize that of China. Both are at around 1.4 billion people each today.

We expect growth in construction work done in China to slow over the next 15 years as population in China starts to fall. It was announced earlier this year that the population of China shrank for the first time in 60 years. A significant ageing profile in China will mean fewer workers in the economy and a greater strain on savings to support later living and a greater dependency on those in the labour force. Even given these negative drivers we still expect growth in residential construction work done to exceed US\$500 billion in China over the next 15-year period.

Elsewhere we expect growth in the UK to be the highest in Western Europe as mega infrastructure projects continue to drive growth and the green transition drives sustained and large-scale growth in energy generation and transmission infrastructure.

Sub-Saharan Africa remains a sleeping giant with growth in construction work done rivalling Emerging Asia as the fastest growth region globally. The cumulative spending on construction work done across sub-Saharan Africa is set to reach US\$3.9 trillion over the next 15 years—with Kenya in East Africa and Nigeria in West Africa being fast-growth markets.

Behind our global growth forecasts are the other key trends which we set out within the main Global Construction Futures report. The report provides comprehensive analysis using our Global Construction Service which gives forecasts of construction work done or gross output for 80 construction markets globally to 2037. We also include detailed forecasts for construction repairs and maintenance across 19 European countries within our European Construction Service.

Despite a projected slowing of growth in construction work done in China we still expect growth in China to exceed the US by a significant margin over the next 15 years and we expect India to grow at over three times that of the US.

**Bjarke Ingels Group:** Google Headquarters, the Bay View Campus, California, is a 1.1 million square feet campus containing three structures with loosely domed profiles that taper towards ground level. The solar skin will generate around 40% of its energy needs.





**Zaha Hadid Architects:** The Henderson is in the heart of Hong Kong's central business district. The 36-storey tower for Henderson Land is within a short distance of both Central and Admiralty MTR metro stations.

## Global Construction Futures

A global forecast for the construction industry to 2037

# Residential housing— Worries mount over repeat of global financial crisis bust

Within the global residential housing market, worries are mounting of a repeat of the price crash seen during the global financial crisis 15 years ago that would deal a blow to the construction sector.

Residential house prices have fallen rapidly in several economies over recent months and more pain looks likely in 2023. The speed of these declines is comparable to the worst period during the global financial crisis, begging the question of whether we are heading for a similar nasty global housing bust. The historic evidence on housing boom-bust cycles is not encouraging. Since 2012, world house prices have risen by around 40% in real terms—faster even than the rises before the global financial crisis.

But in the past three cycles around 50% of global real house price gains were reversed in the subsequent slumps. Several factors are thought likely to prevent a steep dive in house prices this time, such as better lending standards during the upturn, a lower level of transactions near the market peak, low inventory of homes for sale, and stronger labour markets.

*Foster + Partners: Shenzhen DJI Sky City, Shenzhen. The new headquarters for Dajiang Innovation HG, the world's leader in civilian drones and creative camera technology is located in the Nanshan District in southwest Shenzhen, China.*



## China—Short-term growth to drive recovery but longer-term structural challenges lead to weaker growth

Over the past couple of decades, the Chinese government has used infrastructure investment to offset weakness in other parts of the economy. This approach was repeated in recent years, both in response to Covid-19, and then to help offset the real estate downturn. Declining returns on investment, however, are reducing the effectiveness of this strategy. The challenge for China over the coming years is to manage the transition from an investment-led growth model to a consumption-led one. This transition will take years—or more likely decades—to achieve.

*The challenge for China over the coming years is to manage the transition from an investment-led growth model to a consumption-led economy.*

The residential building market continues to fall following the introduction of tighter regulations to curb speculation in the real estate market and the 2021 default of Evergrande. A lack of confidence in the sector and high debt levels among large developers and local governments will continue to weigh on activity. However, we think a housing crash remains unlikely and expect real estate commencements to gradually improve over 2023—although this will not be enough to reverse the falls over the first half of 2022—with the rebound in actual construction activity coming in 2024. The ongoing trend towards urbanisation, the centralised land-sale programme, and government-backed rental housing construction will all support residential construction activity for the duration of the forecast period.

China also faces the challenge of a falling population, with official data showing its population declined in 2022 for the first time in 60 years. Household formation patterns and continued urbanisation will reduce the impact on residential construction activity. A shrinking and ageing population will diminish the labour supply, which will see a widening of the pension safety gap and therefore keep the savings rate elevated. This therefore hinders the government's efforts to rebalance the economy to a consumption-led growth model. The weakening demographic outlook, combined with falling returns on investment, point to a weaker growth outlook for China over the coming years.

Construction activity will continue to be supported by government infrastructure investment. The government plans to expand China's transport infrastructure by building 200,000 kilometres of railways, 460,000 kilometres of highways, and 25,000 kilometres of high-level sea lanes by 2035. Significant investment in renewable energy solutions, with a key focus on wind and solar power, is also needed for China to achieve its 2060 carbon neutrality target. While these investments will ensure construction activity continues to grow, slower economic growth and diminishing returns on investment—particularly in traditional infrastructure and real estate—are expected to see Chinese construction activity grow much slower than the 5.5% annual compound rate experienced over the last 15 years. Even with this slowing rate of growth, China will add almost US\$1.5 trillion to global construction work done over the next 15 years.

*Weakening demographic outlook, combined with falling returns on investment, point to a weaker growth outlook over the coming years.*



**Skidmore, Owings & Merrill:** Alibaba Headquarters, located in Xuhui, one of Shanghai's premiere arts and innovation districts, is a new workplace for Alibaba's Shanghai campus and turns the typical headquarters inside out to showcase the multinational company's talent, collaboration, and creativity. The building has an ambitious sustainability programme, exceeding the requirements for LEED v4 and China Green Star certifications. The new headquarters is designed to reduce both embodied and operational carbon.



## United States—Slump in residential construction driven by higher interest rates

We expect the value of residential construction work done in the United States to undergo a significant slump. The global correction in house prices that we have already highlighted is expected to lead to a blow out and a reduction of US\$150 billion in residential construction work done over 2022 and 2023 before growth resumes in 2024.

We do not expect construction work done in the US residential market to return to the same levels seen in 2021 until the early 2030s.

*We expect a US\$150 billion blow out in US residential work done, before growth resumes in 2024.*

This means that the North American construction market will cede its position to Western Europe to become the third largest regional construction market and will not recover its position as the second largest regional market during the 15-year period of our forecasts.

The construction sector will then see a period of more sustainable growth after the whipsaw in output and subsequent overheating seen over the last couple of years during Covid-19. We forecast that US construction work done will grow by almost 30% over the next 15 years to reach over US\$1.8 trillion by 2037—up by almost US\$400 billion.

Construction work done in the residential sector grew by an average 7.3% a year over the last decade to 2022. This growth was fuelled by overheating as residential construction work done during the recovery from Covid-19 boomed by 25.6% in 2021 alone.

Rising interest rates plus a slowdown in population growth will weigh on US residential construction work done. We expect weaker growth going forward compared to the last decade, but total residential construction will still account for around 40% of the total US construction market in 2037. Growth in single-family residential construction work done is forecast to be significantly higher than growth in multi-family construction. We expect single-family construction work done to be a US\$600 billion market by 2037.

Construction work done in the US non-residential market is expected to remain relatively robust, with strong growth in manufacturing and industrial production construction.

The CHIPS and Science Act signed into law in August 2022 will provide around US\$280 billion in new funding to boost domestic research and onshoring of semiconductor manufacturing in the US. This has led to significant new factory building supported by new battery plants as well as semiconductor manufacturing facilities. The pandemic has also spurred the development of healthcare infrastructure in the US with many new projects breaking ground in 2022.

The Inflation Reduction Act (IRA) looks to spend US\$430 billion over 10 years to reduce carbon emissions and extend health insurance subsidies related to the Affordable Care Act. IRA will also see around US\$370 billion of financing associated with cleaner energy and climate related policies. It would raise US\$750 in revenues over the same period. The IRA will benefit sectors dealing with climate change mitigation efforts, such as electric carmakers and renewable energy.

*The US Inflation Reduction Act and other spending programmes will support US construction work done.*



**Foster + Partners:** 270 Park Avenue will be New York City's largest all-electric skyscraper with net zero operational emissions and will be 100% powered by renewable energy sourced from a New York State hydroelectric plant. It will be JPMorgan Chase's new Global Headquarters, New York City.

Policymakers have targeted infrastructure to drive growth post-Covid-19. With rising interest rates likely to weigh heavily on demand for new housing, the pattern of recent years in US construction will reverse in the short term with infrastructure construction becoming the strongest performing of the three major construction sub-sectors.

The US has committed to a carbon neutral economy by 2050 including the production of carbon-free electricity by 2035 and the doubling of offshore wind capacity by 2050.

The Bipartisan Infrastructure Bill signed into law in November 2021 was a US\$1.2 trillion package of spending with US\$550 billion being newly authorised spending on US infrastructure. This will continue to boost infrastructure construction work done with higher growth expected in the power and utilities sector as well as road and highway construction.

Ultra large projects have also made a resurgence in the US and are expected to drive growth with sizeable investments in both energy and power and with manufacturing supported by IRA. The tax credit for domestic electric vehicle production has seen strong foreign investment inflows from global automotive and electronics businesses.

There are also regional differences with states such as Texas expected to be a hotspot in construction activity—Austin and San Antonio are expected to be high growth in construction work done over the next five years.

We expect Texas, California, New York, Florida, and Illinois to be the five highest growing states for construction work done over the next five years.

Despite additional public funding over the medium- and longer-term, the expected levels of US debt will constrain the ability of the US to fund infrastructure. This will fuel a growing need for public-private partnerships (PPPs) or other infrastructure funding models to evolve further.

**Foster + Partners:**  
270 Park Avenue,  
New York City



## India—Population growth to drive global construction superpower

India is expected to surpass China and become the most populated country in the world this year. Unlike China, India's population is forecast to continue growing, and is set to pass 1.5 billion by 2030. While economic development and urbanisation are slowing population growth, the increasing size of the working age population will support economic growth over the next two decades. However, low labour force participation and poor access to education will limit upside potential of this demographic tailwind.

Strong demographics will see India surpass Germany and become the third largest global construction market before the end of the decade. Civil engineering will be the fastest growing sector, as the government continues to invest heavily following the coronavirus lockdowns. Utility construction will be supported by ambitious programmes such as the Jal Jeevan Mission, which aims to ensure access of piped water for every Indian household by 2024, and the Revamped Distribution Sector Scheme, which aims to improve the power supply to the Punjab region. Programmes such as these will not only support the construction sector but will drive significant quality of life improvements across the country.

However, there are risks to the outlook. Greater funding is required for projects already under construction, as higher input costs are straining budgets and capacity constraints are causing project delays. The INR 5.4 trillion Bharatmala Program to build 34,800 kilometres of roads from 2017 to 2026 is only 25% complete. The role of the public sector in driving construction growth means that the outlook is heavily influenced by the government's ability and willingness to finance this work. The challenge for India is to find a way to encourage more private sector investment. Incentivising private investment was a key theme in the most recent budget and is the key challenge facing the Indian construction market over the coming years.

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*The challenge for India is to find a way to encourage more private sector investment.*

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**Adrian Smith + Gordon Gill Architecture:** *The Imperial 3, shown as a concept design, is a 400m (1,312 ft.) 116-storey supertall residential skyscraper located in South Mumbai. The Imperial 3 would be one of India's first supertall skyscrapers to achieve a LEED Platinum rating for environmental sustainability from Green Building Council.*

**Bjarke Ingels Group:** Google King's Cross centrally located near the railway complex formed by King's Cross and St. Pancras stations, Google's future London base will be the company's first wholly owned and designed building outside the US. The new 11-story building will be part of a large campus that will include Google's current base at 6 Pancras Square and a third construction.



## UK—Fastest growing construction market in Western Europe supported by infrastructure mega projects

We expect the UK to be the fastest growing construction market in Western Europe over the next 15 years, supported by a range of infrastructure mega projects following decades of underfunding.

The UK has suffered from long-term underinvestment in its infrastructure and housing which means that large deficits have built up and the UK government has been determined to see through several game-changing infrastructure mega projects that will support growth in the medium- to longer-term.

The High Speed 2 (HS2) rail project from London to Birmingham and on to Manchester and Leeds is currently the largest infrastructure project in Europe but drawdown of project contingency funding caused by rising costs may lead to some rescoping of the project to contain costs. The construction of nuclear power plants in Hinckley and Sizewell will also support the transition to renewable power by 2035 while investment in large offshore wind power and Carbon Capture, Utilisation, and Storage (CCUS) technology will support carbon neutral generation. The development of Small Modular Reactors (SMRs) could support greater investment in nuclear energy but will take time to realise.

The Road Investment Strategy 2 (RIS2) to 2025 has suffered setbacks from planning delays and project implementation. The next Road Investment Strategy 3 (RIS3) is expected to focus on lowering embodied carbon in the construction of new roads in the UK and a greater emphasis expected on the maintenance and upgrade of existing roads rather than large complex new construction. The condition of the existing roads network in the UK needs to be improved although the GBP2.5 billion Pothole Fund announced during Covid-19, to repair the equivalent of 10 million potholes in Britain's roads, has had some effect as seen in the latest road condition surveys.

*Several game-changing infrastructure mega projects will support growth in the medium-term, but growth looks set to slow.*

The UK needs to continue to look at more innovative funding models to support further private capital investment in infrastructure and has set up the UK Infrastructure Bank to support investment in UK infrastructure.

Tax rises to pay for the burgeoning cost of healthcare and the National Health Service in the UK as well as significant government expenditure to support Britain's economy during Covid-19 mean that household finances are significantly squeezed. With rising interest rates weighing heavily on the residential market, we expect much slower growth in residential work done going forward compared with the last decade.

The non-residential construction market has been supported by the super deduction tax incentive, which allows deduction of up to 130% of allowable capital expenditure before profits, is due to end in March 2023. This has effectively brought forward high growth in expenditure on industrial construction work done over the last two years. Investment in commercial construction in the UK has been supported by growth in the tech and media sectors with significant investment in both London and the rest of the UK by the large tech players. The new Google headquarters building for Europe in Kings Cross, London, is an example and with investment in film studios by Netflix and others.

*Fender Katsalidis Architects: Queens Place, Melbourne, aims to re-engage the site at 350 Queen Street into the Queen Victoria Market Precinct. The site will include two 80 storey residential buildings and 5 podium levels of basement supermarket and parking.*



## Australia—A giant resources market that also benefits from services growth

Australia is rich in mineral and energy resources, and so the mining sector creates significant demand for construction activity. While we do not capture the construction of actual mines, we do measure work on associated infrastructure such as railways and harbours used to transport commodities. Indeed, Australia's most recent mining investment boom drove transportation construction activity to what was then a record level as mining companies invested heavily in railway and harbour infrastructure. A weaker economic outlook for China is expected to weigh on mining investment.

The move towards Net Zero will also create several challenges and opportunities, as high carbon energy exports are replaced by new minerals needed to support the renewable energy transition.

Australia is typically seen as a resource-based economy, which is somewhat misleading as services account for 75% of GDP. We expect relatively strong population growth, supported by the continuing trend of highly skilled migrants moving to the Anglosphere, will continue to drive economic growth, and support both residential construction activity and demand for non-residential buildings. This is reflected in our forecasts, where building construction activity is set to outpace investment in civil engineering work over the remainder of the decade.



**Herzog & de Meuron Basel Architekten:**  
*1200 Bay Street is a proposed 87-storey mixed-use super-skinny building rising to a height of 326.5m (1,071 ft) and is expected to be Toronto's tallest building—apart from the CN Tower which rises 553.3m (1,815 ft).*



## ASEAN Tigers—Fastest growing construction markets globally in Indonesia, Philippines, and Vietnam, supported by strong fundamentals

The Philippines, Vietnam, Malaysia, and Indonesia will be the four fastest growing construction markets over the next 15 years. While the Philippines, Vietnam, and Indonesia are supported by strong fundamentals, Malaysia's construction growth will be driven by the rebound from the coronavirus pandemic.

Labour shortages during the pandemic saw Malaysian construction activity fall over 24% in 2020, and a further 10% in 2021. A recovery in building construction activity and a large pipeline of megaprojects will support the rebound in construction activity which should return to pre-Covid-19 levels in 2024. Thereafter Malaysian construction growth is forecast to slow back towards a more sustainable rate.

*The Philippines, Vietnam, Malaysia, and Indonesia will be the four fastest growing construction markets over the next 15 years.*

The Philippines is set to be the fastest growing construction market over the next 15 years, averaging over 6% growth per annum. Economic growth will be supported by a strong demographic outlook, with the working age population growing by 1.5% per annum over the next decade. The government's public-private partnership initiative and improved long-term investor confidence are set to support investment—and therefore construction activity—over the forecast period. Civil infrastructure will be the fastest growing sector, with significant government support.

Vietnam is set to be the second fastest growing construction market over the next 15 years. Activity will be supported by strong demographic trends, but also robust foreign investment. The government has made clear its strategic intention to promote foreign investment, which in turn will support construction activity. Government projects continue to support the outlook: Hanoi plans to build 44 million sqm of housing by 2025, while Ho Chi Minh City looks to build 108 million sqm by 2030. The government is also accelerating major transportation infrastructure projects to improve connectivity, which in turn will encourage the development of commercial and industrial precincts along these new routes.

Indonesia is forecast to be the fourth fastest growing construction market over the next 15 years. Economic growth will be supported by a rapidly expanding middle class, who will support consumer spending, and a relatively young labour force. The government is investing in education—as the working-age population's average years of education lags those of its regional peers—which in turn will support growth over the longer term. Tax and labour market reforms will support private sector investment over the medium to long term. However, the Constitutional Court's ruling on the defective process of the law creates uncertainty around the success of these reforms. Construction activity will continue to be supported by the creation of Indonesia's new capital city. However, there are financing risks, as foreign investors remain apathetic to the building of the city.

**Skidmore, Owings & Merrill:** 8 Shenton Way, Singapore.  
This mixed-use downtown development will redefine  
Singapore's skyline as the city's tallest building and will  
be among Asia's most sustainable skyscrapers.



## Western Europe—Regains position as second-largest construction market, but growth prospects to dim later

After a decade of lacklustre growth, Western European construction markets were resilient during the pandemic and have avoided the sharp downdraft in the housing market witnessed in North America. As a result, Western Europe this year reclaimed its historical position as the second-largest construction market after Emerging Asia, accounting for just under a fifth of total construction work done globally.

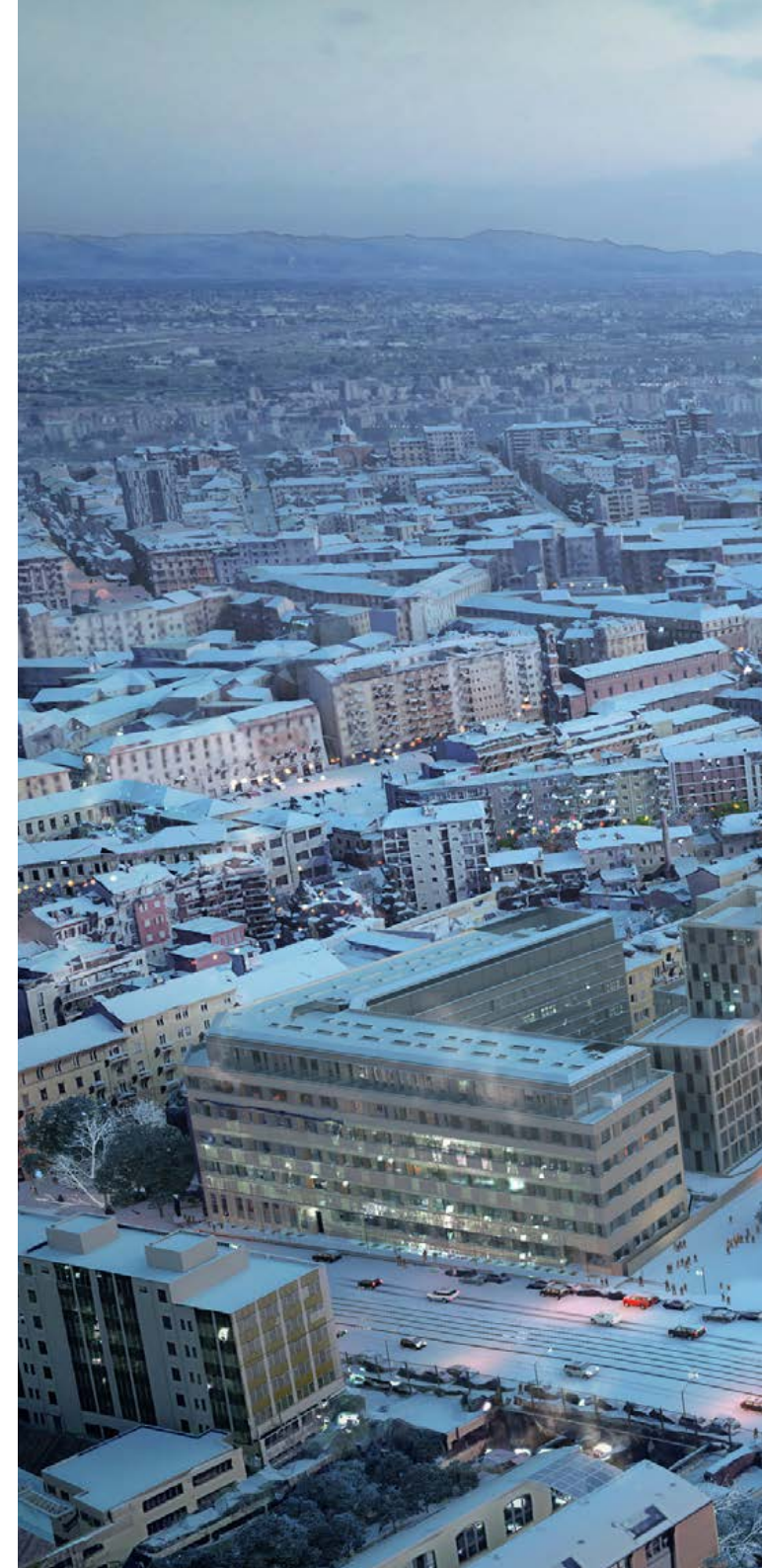
The next five years will be buoyed relative to the recent past by large infrastructure programmes designed to push the region to Net Zero carbon emissions (which will of course benefit Eastern Europe as well). Funds from the €800 billion EU Next Generation fund have already begun flowing, with Spain and Italy being key beneficiaries. The Spanish market is set to lead the major Western European economies at more than 3% per annum, but challenges in project implementation in Italy will present significant headwinds.

The EU Renovation Wave is a second important programme that will impact construction activity, as it aims to double the renovation rate of both residential and non-residential buildings with a target of reducing their greenhouse gas emissions 60% by 2030.

These large programmes will help construction work done to expand nearly 1 percentage point faster than GDP for the next five years. This growth would be faster were it not for the labour market pressures in European construction. We conservatively estimate that the Renovation Wave alone will require an additional 700,000 workers by 2030, equivalent to 6% of total current construction employment.

With working-age populations shrinking and many taking early retirement in the wake of the pandemic, supply-side pressures in construction will be an impediment to growth for some time.

Once these programmes have run their course, the weaker fundamental drivers of construction demand will pull down the outlook in the 2030s. The working-age population has already begun declining in Germany and Italy, soon to be joined by France and Spain. We expect annual growth in construction work done to decelerate to 1.5% by the early 2030s—slightly above the dismal growth seen in the past decade but enough to maintain its number two spot in the global league tables.





*Skidmore, Owings & Merrill: Milano-Cortina 2026 Winter Olympics. The Milano-Cortina Olympic Village leverages a singular opportunity to create a sustainable, intergenerational, and green community in the heart of Milan's dynamic Porta Romana district.*

## Ukraine, Turkey, and Eastern Europe—Heightened growth expected from reconstruction of Ukraine, and post-earthquake rebuilding in Turkey

The past 10 years can be fairly considered a lost decade of construction for Eastern Europe, with the volume of work done in 2022 no greater than it was in 2012. But the push for more nearshoring amid geopolitical uncertainties and pandemic-fuelled trends toward more supply chain resilience have already started to revive its fortunes. We expect the Eastern European construction market to grow more than US\$180 billion by 2037, a 40% increase from 2022.

The non-residential segment is set to be the fastest-growing, especially industrial and commercial. Despite shrinking populations and no significant acceleration of already-high urbanisation rates, residential work done is set to expand modestly over the next 15 years due to replacement of lower-quality housing, particularly in the multi-family segment.

**Ukraine—Funding for reconstruction of devastated infrastructure will underpin growth.** One year on from Russia’s invasion, Ukraine’s economy has shrunk by about 30%, severely hurt by the direct and indirect consequences of war and loss of territory. The liberation of half of the initially captured territory, Western financial and military support, and prompt policy response has prevented an even larger contraction.

Russia’s invasion has resulted in massive and widespread destruction of buildings and infrastructure across Ukraine. Estimates vary, but the Kyiv School of Economics estimated that Ukraine had suffered losses of over US\$127 billion between 24 February

and September 2022. Residential buildings bore the brunt of this damage with US\$50.5 billion of damage—equivalent to almost 40% of the total.

These estimates pre-date the targeted attacks on civilian infrastructure and we estimate that around half of infrastructure has been damaged. This includes many thousands of kilometres of roads as well as bridges and critical energy infrastructure while a very significant number of residential buildings have been damaged. In Mariupol, it is estimated that over 90% of residential buildings have been destroyed or badly damaged. There is not a single hospital building or medical institution in Luhansk region that has not been destroyed or severely damaged. In Bakhmut, in eastern Ukraine—a city where 75,000 once lived and which has seen particularly fierce fighting—hardly a single building remains standing, and infrastructure has been destroyed.

In November 2022, EU Commission President Ursula von der Leyen stated that physical damage caused because of the invasion was estimated at EUR600 billion. Prime Minister Denys Shmyhal has also stated that the required funds to repair infrastructure would be around EUR750 billion. Reconstruction efforts in Ukraine will be extensive, and we expect growth in total construction work done to average 8.6% per annum over the next five years with residential construction work done growing faster than other sectors. Growth is expected to be high over the longer-term and with shorter periods of double-digit growth. Indeed, we expect that the continuing war will mean a US\$1 trillion reconstruction effort over decades.

Multilateral financial organisations have stepped up to the challenge, with major commitments of resources for Ukraine. The European Investment Bank has set up a EUR100 billion fund to help with reconstruction efforts. The European Bank for Reconstruction and Development has committed EUR3 billion over 2022 to 2023. Interestingly, it is proposed that a digital twin of infrastructure and buildings be created for the areas of new reconstruction in Ukraine, and we expect low carbon solutions combined with rapid industrialised construction solutions to be used.

External financial support will remain crucial for preserving a fragile macroeconomic stability in Ukraine. We are encouraged by joint efforts by the US, the EU, and the rest of the G7 to provide a regular inflow of around US\$3 billion per month—which is the minimum Ukraine needs to finance its fiscal deficit. A potential full-fledged IMF programme would provide a further boost to recovery.

**Turkey—Rebuilding post-earthquakes.** The tragic earthquakes in Turkey will require rebuilding. The affected areas account for nearly 10% of Turkey’s GDP, and we estimate that the quakes will shave at least 0.4% from Turkey’s GDP this year. But reconstruction typically more than offsets these disaster-induced economic losses and are heavily concentrated in construction activity. While the timing and magnitude of this work is highly uncertain, it is a material upside risk to the outlook for Turkey.

**Foster + Partners Architects:**  
CPK Airport, Poland, will initially serve up to 40 million passengers and then expand to meet a 65 million passenger target in 2060. This pivotal project will act as a symbolic gateway to Poland.



## LATAM—Catch-up from lost decade of recession and IMF driven austerity

Latin American also endured a lost decade through 2022, as Brazil endured its deepest recession in the years prior to the pandemic, and Argentina suffered through an IMF austerity programme in exchange for emergency loans to cover spiralling public debt. The result was a sharp contraction in work done across the LATAM region even before the pandemic-driven collapse. Total construction work done in the region is currently only 4% higher than it was a decade ago.


But political change and more sustainable fiscal and monetary policy will lead to a regional turnaround, with total Latin American construction work done expected to expand nearly 50% by 2037. Brazil and Argentina, which collectively account for just under 45% of the total LATAM market, will trail broader growth despite this, mainly driven by the impact of decelerating growth in working-age population and urbanisation—two key determinants of longer-term construction demand.

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*Latin America endured a lost decade of growth in construction work done in the period up to 2022, but political change and a more sustainable fiscal and monetary policy will lead to a regional turnaround.*

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Peru is set to outpace growth for the region by a considerable margin, with construction work done expected to more than double by 2037 relative to pre-pandemic levels. A key driver is the increasing importance of electricity in the global power mix. Peru is the third-largest producer of copper globally, and robust demand in the medium term will drive infrastructure growth of well above 4% annually, heavily concentrated in road transport.



**Bjarke Ingels Group:** IQON Tower in Quito. The 32-storey building is the tallest in the Ecuadorian capital, comprising 220 apartments. A façade of cascading balconies defines IQON near La Carolina Park.



**Bjarke Ingels Group:** IQON Tower in Quito. The 32-storey building is the tallest in the Ecuadorian capital, comprising 220 apartments. A façade of cascading balconies defines IQON near La Carolina Park.



## Saudi Arabia and MENA—Supersized Giga Projects drive growth and diversification

Saudi Arabia is the largest economy in the MENA region and 17th largest in the world with GDP of over US\$1 trillion in 2022.

We expect growth in construction work done in Saudi Arabia to be the higher than the overall MENA region over the next 15 years and higher than growth in UAE.

*Saudi Arabia has ambitious climate goals—to ensure 50% of its energy will be generated from renewables by 2030.*

Population growth in Saudi Arabia is also higher than many other countries and its urban population is also expected to growth at an average of 2.1% each year over the next decade. In particular, Riyadh is expected to be the fastest growing city in Saudi Arabia with growth of 2.3% in population over the next decade and we expect it to become one of the world’s global mega cities by 2037.

Government debt as a percentage of GDP is low in Saudi Arabia compared to other countries and is expected to fall over the medium term. We expect healthy public finances with oil prices remaining above US\$80 a barrel over the period of our forecast to 2037.

Saudi Arabia plans to become carbon neutral by 2060. Despite this being 10 years later than the UN Paris Agreement, Saudi Arabia has ambitious climate goals—the Saudi Green Initiative is a nation-wide strategy to ensure 50% of Saudi Arabia’s energy will be generated from renewables by 2030.

Total construction work done volumes in Saudi Arabia are expected to exceed that in the UAE by 65% by 2037 as construction of Saudi Arabia’s Giga Projects drive growth.

As a means of achieving Saudi Arabia’s “Vision 2030” and diversification away from reliance on petro-carbons, the current pipeline of supersized Giga Projects that are planned or under construction is worth US\$1 trillion.

The largest project under construction is the NEOM City Project. This multi-sector project looks to see the construction of a cross-border city at a total cost of US\$500 billion. The main component of NEOM is a 170km long and 200m wide development that will house up to 9 million people and will be a carbon-neutral structure.

The residential construction work done sector will be the fastest growth sector over the next 15-year period with average growth over 5% per annum.

The population across the wider MENA region is set to grow by almost 120 million people and total construction work done will exceed US\$1.1 trillion by 2037.

*Across the wider MENA region, total construction work done will exceed US\$1.1 trillion annually by 2037.*

Cairo is the largest city in the region and is one of the world’s largest. It is expected to grow to reach an overall population of 32.9 million by 2037 and is currently so congested that a new administrative capital was planned to help alleviate the severe congestion.

Construction of the US\$60 billion new administrative capital 45km east of Cairo on a desert area the size of Singapore is in its seventh year of construction and will include the construction of Africa’s tallest skyscraper.

**NEOM:** NEOM is a Smart City under development in Tabuk Province in north-western Saudi Arabia. The total area of NEOM is 33 times the size of New York City. NEOM's diverse climate offers both sun-soaked beaches and snow-capped mountains. Its unique location will provide residents with enhanced liveability while protecting the surrounding natural landscape.



## Monetary Policy— Normalisation of rates brings inevitable near-term headwinds for construction markets globally

Clearly many factors, ranging from demographics to broader economic growth to government spending priorities, have large impacts on construction activity. But one dependable pattern lurking under these crosscurrents is that large changes in interest rates signal eventual turning points in construction activity.

With interest rates at historically low levels across the developed world for most of the past decade and inflation remaining comfortably benign, policymakers and businesses alike may have forgotten the importance of this fundamental relationship. Moving to a more normalised policy stance means inevitable near-term headwinds for construction. Depending on the trajectory of inflation and monetary tightening, the market may be in for a rude awakening. Construction activity has already weakened in both the US and Europe as the Fed and ECB slammed the brakes on low-cost debt financing.

Monetary policy errors or de-anchoring of inflation expectations could mean stickier, more entrenched inflation, which would force higher borrowing costs for longer and damage construction growth prospects into the medium-term.



**Adrian Smith + Gordon Gill Architects:** 160 Front Street, Toronto, Canada, has floor-to-ceiling glass and energy saving high-performance curtain walling with spectacular views of Toronto.

## Green construction and climate change—Arguably the construction industry’s greatest challenge globally

Climate change is arguably the greatest challenge facing the construction industry over the next decades as the effects of climate change are evident in more frequent and severe weather events.

Planet Earth is about 1.1 degrees warmer than it was during the pre-industrial era in the late 1800s. Limiting global temperature rise to no more than 1.5 degrees is broadly accepted as the limit that would help us avoid the worst climate impacts. Based on current national climate policies, global warming is projected to rise around 2.8 degrees from pre-industrial temperatures by the end of this century.

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*The cost of infrastructure adaptation is expected to be huge and in practice this means examining which infrastructure should be adapted.*

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A key issue is adapting and increasing the resilience of infrastructure and using nature-based solutions—examples of the latter include forest regeneration as well as coastal wetland restoration and restorative agriculture.

The cost of infrastructure adaptation and resilience is expected to be huge and in practice this means examining which infrastructure should be adapted—examples include sea walls and the repurposing of existing energy infrastructure to support decarbonisation.

The effects of climate catastrophes on infrastructure can be felt much further than the evident damage to infrastructure. Damaged infrastructure has the potential to paralyse communities from operating without the means of communication and without electricity or safe drinking water.

**Fender Katsalidis Architects:** Merdeka PNB118, Kuala Lumpur, Malaysia is a crystalline tower, more than 600 metres in height. The building’s 118 storeys will house purpose-built offices and a six-star hotel, topped by a dual-level observation deck and restaurant.



## Digitalisation—Transformative for construction productivity as well as driving mass decarbonisation

Construction in many countries suffers from chronically low or negative productivity growth—recent work undertaken by Oxford Economics for the UK Construction Productivity Taskforce shows that over the period between 1997 and 2019 the productivity of construction in the UK fell by an average of -0.6% each year. This compares to a growth in productivity of 2.8% each year over the same period for the whole economy and an increase of 3.9% for manufacturing and 8.2% for communications.

Construction is one of the least digitalised industries in the world. The take-up and adoption of new technology has been incredibly slow—even below that of the agricultural sector.

At its leading edge, construction has been transforming to become digital but supply chains for construction remain highly fragmented and lack transparency while the industry lacks a diverse workforce. As a result of these barriers to innovation the construction industry still remains largely analogue.

Events such as the 2016 Grenfell Towers tragedy and the 2023 earthquake in Turkey and Syria will lead to much better records of what products and materials were installed in built assets and who supplied and installed them.

A digital record and a “golden thread” of asset information and data during design and construction helps all parties to a construction project understand exactly what products and materials will go into

constructing the asset. This also means that the carbon and environmental footprint of assets can be disclosed more accurately ahead of actual construction, providing the opportunity for alternative decisions to be considered.

The use of data and technology to drive greater transparency and productivity is a significant opportunity for the construction industry.

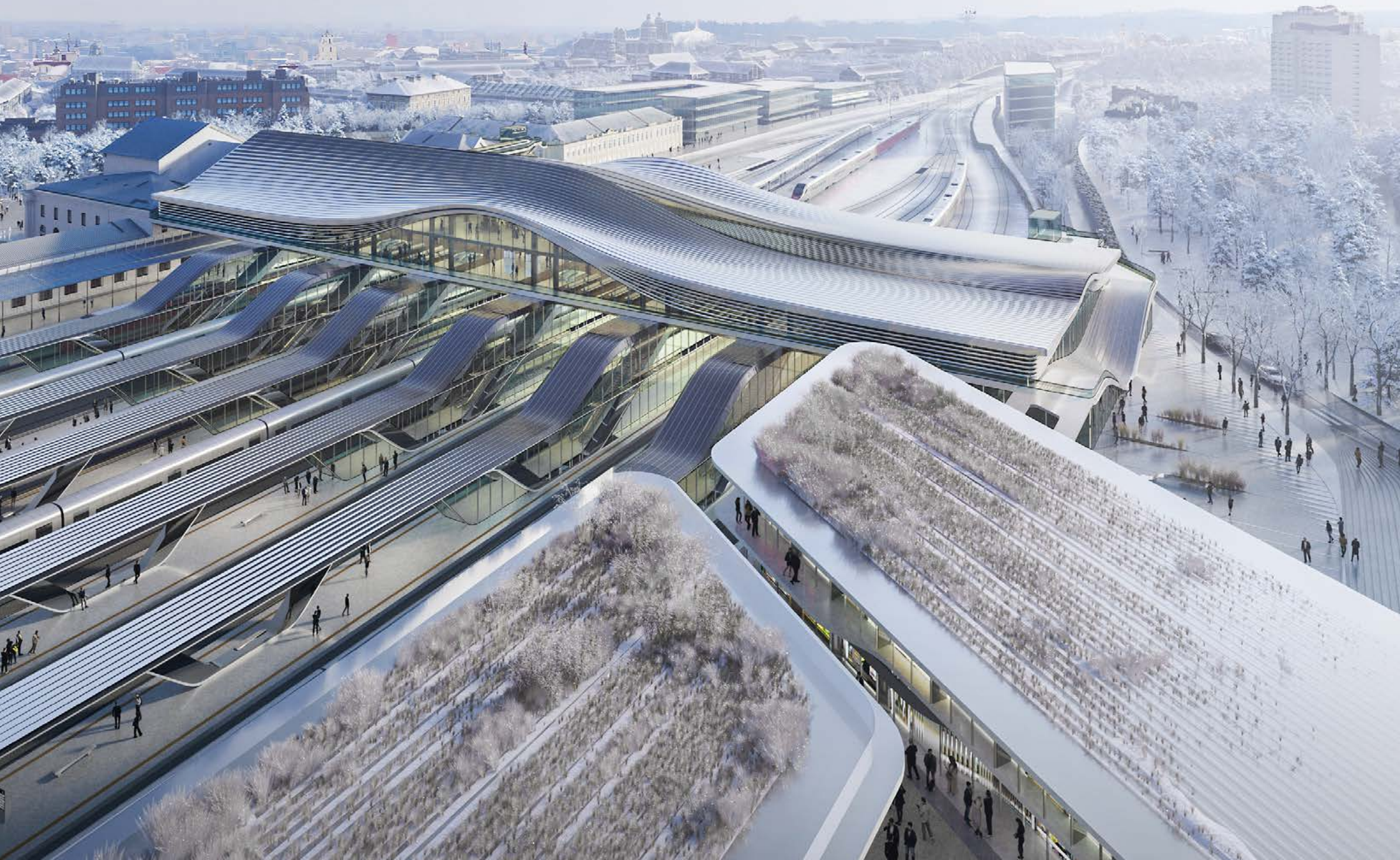
The development of digital twins of real infrastructure and other built assets before construction enables asset owners to simulate how the infrastructure or building will operate in real life and allows construction companies and suppliers to simulate construction of the asset in a virtual world.

The offsite manufacturing of components and assemblies for infrastructure and buildings is still in its relative infancy but the take-up and greater use of Modern Methods of Construction is growing at around twice the pace of construction generally.

Combining the use of greater digitalisation and offsite manufacturing into a more advanced approach called “industrialised construction” is set to improve the productivity of construction whilst helping to decarbonise the construction of new assets and the employment of a greater pool of global talent into construction. According to research by Pinsent Masons, countries such as UK, Australia, Singapore, and Hong Kong are market leaders in industrialised construction.



**Zaha Hadid Architects:** Vilnius Railway Station, Lithuania, creates a Green Connect integrated transportation hub with new civic spaces. The renovation and upgrade of the original station incorporates a new public bridge over the railway tracks that connects the Naujininkai district to Vilnius old town.




## Higher materials prices— Impact construction volumes globally

Despite easing construction supply chain pressures and cooling energy prices, our forecasts suggest that building materials costs could settle at a new normal of at least 15% higher than pre-pandemic prices.

We have analysed five key construction markets representing over 50% of global construction work done with projections for building material cost inflation over the next decade, included within Global Construction Futures.

Construction materials have accelerated alarmingly since the start of the Covid-19 pandemic with a combination of supply side and demand side factors coming together to create the perfect storm for the construction sector.

We anticipate easing prices for construction materials across major economies through 2023 and 2024. European markets are expected to see the fastest declines—partly because energy prices have furthest to fall in these markets. Construction material prices are also forecast to fall in some Asian countries and in the US where there have already been large falls in the prices of some materials as the acceleration in the prices for construction materials began a year or so earlier than in Europe and was much more demand driven. But there is likely to be a new normal, which is at least 15% higher than pre-pandemic, as several key cost drivers for materials settle permanently higher.



**Foster + Partners:** 270 Park Avenue will be New York City's largest all-electric skyscraper with net zero operational emissions and will be 100% powered by renewable energy sourced from a New York State hydroelectric plant and will be JPMorgan Chase new Global Headquarters, New York City.



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## About Global Construction Futures

Global Construction Futures is a major study of the global construction and engineering industry published by the renowned team of construction economists at Oxford Economics.

Global Construction Futures is sponsored by the leadership team at Aon Global Construction and Infrastructure and prominent global business leaders in the construction and engineering industry with the purpose of understanding the global market and the forces shaping future demand. These sponsors combined employ over half a million people across the sector and all have a significant role and position in their markets.

Global Construction Futures is aimed at business leaders, policymakers, and others with a special interest in the global construction and engineering industry. Financial institutions and aspiring leaders of the future will find much of interest in Global Construction Futures.

Oxford Economics separately provides a detailed dataset and forecasts of construction work done and gross construction output across 80 countries covering 10 key construction and engineering sub-sectors.

Visit [www.oxfordeconomics.com](http://www.oxfordeconomics.com) for further information about how to subscribe to the Global Construction Service at Oxford Economics.

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## About Oxford Economics

Oxford Economics was founded in 1981 as a commercial venture with Oxford University's business college to provide economic forecasting and modelling to UK companies and financial institutions expanding abroad. Since then, we have become one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on more than 200 countries, 250 industrial sectors, and 7,000 cities and regions. Our best-in-class global economic and industry models and analytical tools give us an unparalleled ability to forecast external market trends and assess their economic, social and business impact.

Headquartered in Oxford, England, with regional centres in New York, London, Frankfurt, and Singapore, Oxford Economics has offices across the globe in Belfast, Boston, Cape Town, Chicago, Dubai, Dublin, Hong Kong, Los Angeles, Melbourne, Mexico City, Milan, Paris, Philadelphia, Stockholm, Sydney, Tokyo, and Toronto. We employ more than 400 full-time staff, including more than 250 professional economists, industry experts, and business editors— one of the largest teams of macroeconomists and thought leadership specialists. Our global team is highly skilled in a full range of research techniques and thought leadership capabilities from econometric modelling, scenario framing, and economic impact analysis to market surveys, case studies, expert panels, and web analytics.

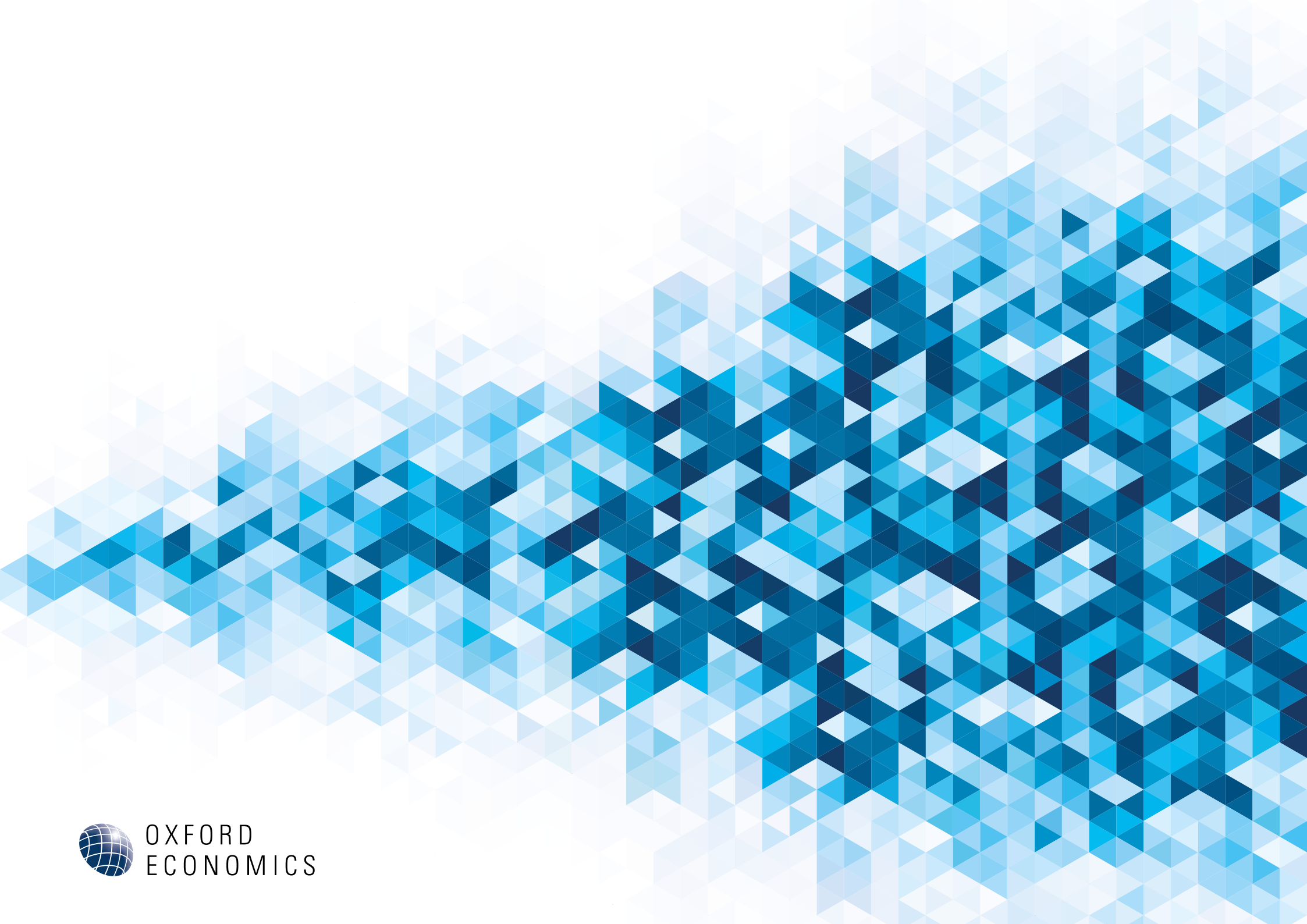
Oxford Economics is a key adviser to corporate, financial and government decision-makers and thought leaders. Our worldwide client base now comprises over 1,500 international organisations, including leading multinational companies and financial institutions; key government bodies and trade associations; and top universities, consultancies, and think tanks.

## About Aon

Aon plc (NYSE: AON) exists to shape decisions for the better — to protect and enrich the lives of people around the world. Our colleagues provide our clients in over 120 countries and sovereignties with advice and solutions that give them the clarity and confidence to make better decisions to protect and grow their business.



**MAD Architects:** Hainan Science and Technology Museum in Haikou City, China 'Where Nature and Technology Meet' includes permanent exhibition space, a planetarium, a giant screen theatre and a flying theatre.



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