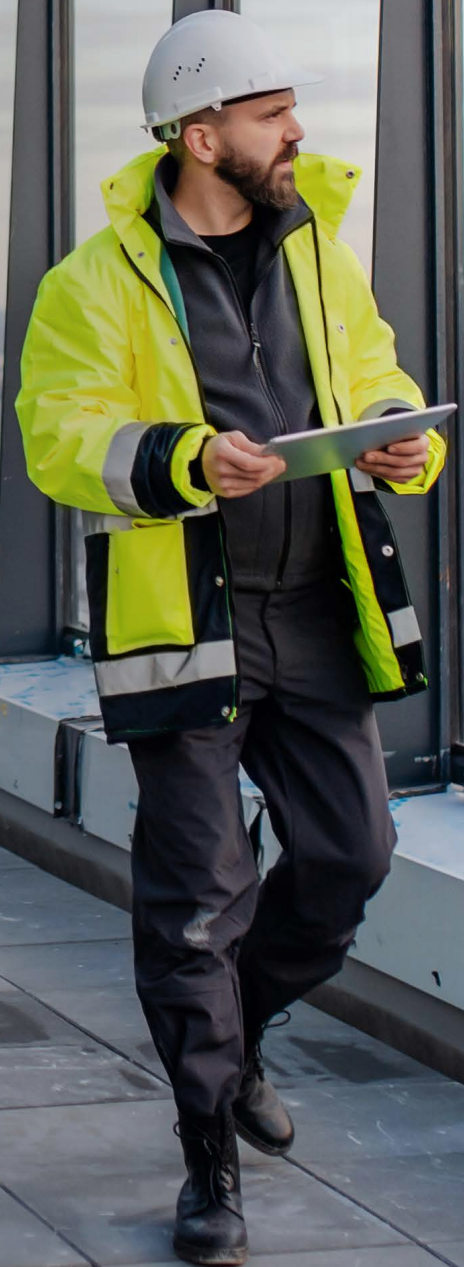


Window of Opportunity

Australia Construction
Winter Market View

July 2021



Introduction

As the construction sector recovery gains momentum, the window of opportunity for clients is likely to close faster than expected.

- Despite the lockdowns recently enforced in Melbourne, Sydney, South East Queensland, and Perth, Australia's economy is officially back-on-track. Recent data from the Australian Bureau of Statistics (ABS) confirms Australia's GDP rose 1.8% in the March 2021 quarter.
- The decrease in GDP last year is now estimated to have been around 1.1%, much less than the global decrease of -3.5%, and the expectation is for GDP to grow by at least 4.75% in 2021 (RBA Economic Outlook), returning to pre-pandemic levels by the end of the Q2 2021. This is predicated on more people being employed in March than before the pandemic. Overall, the unemployment rate declined quickly, to 5.5% in April, a little above the pre-pandemic rate. It is anticipated that the unemployment rate will continue falling, to and will be around 5% by the end of the year. This forecast assumes the roll-out of COVID-19 vaccines accelerates in the second half of this year, enabling economic expansion by reopening international borders, possibly in early 2022. This scenario also assumes there will be no further large outbreaks and associated hard lockdowns and that restrictions, when imposed are brief. This has largely been the case until quite recently, ensuring that an element of uncertainty will remain until a larger proportion of the population has been vaccinated.



- The cost of COVID-19 related interventions by the Federal Government has so far amounted to circa \$311Bn, leading to record levels of public debt. Historically low costs of servicing debt have led the Treasurer to continue increasing public investment with confidence. As such, capital spending is anticipated to grow further in the next few years, despite some programs such as JobKeeper ending in March this year.
- Construction activity in the March 2021 quarter was 2.4% higher than the previous quarter, in seasonally adjusted terms. This was the first reading above \$51Bn since September last year and provides further reasons for optimism about the pace of recovery. This rise was driven by an increase in building construction, which rose 2.5% in the quarter but is still 1.8% lower than at the same time last year. Engineering construction also increased by 2.2% but was 0.3% lower than at the same time last year, according to the latest ABS data. It will be important to see if this increase will be sustained in the coming months.
- Business and consumer optimism also continue to rise. The Westpac Consumer Sentiment Index, published in April 2021, indicated an increase of 6.2% since March. The Index is now at its highest level since August 2012, when Australia's post-GFC rebound and resources boom were in full swing. However, the recent 'circuit-breaker' lockdowns across several States and regions may impact the current level of optimism. Regardless, the latest statistics are underpinned by a positive outlook in most of the construction categories measured, including house building, commercial, and infrastructure.
- A strengthening new orders pipeline, driven by public spending and increasing demand, signals that the transition from recovery to 'business as usual' has finally begun. While this is a welcome development, the sector must keep a close eye on materials and workforce availability, especially in specialist trades in high-growth sectors such as rail and water.
- We are also only beginning to see the impact of the pandemic on the financial health and capacity of the supply chain. Material availability and supply issues are becoming commonplace, and the closure of international borders is having an increasing impact on the availability of skilled labour and growing the construction workforce. Combined with a buoyant new orders pipeline, these factors indicate less spare capacity across the supply chain than previously thought – bringing forward the end of a window of opportunity.



Basis of the Arcadis Forecast

The recovery is well underway bringing with it a brighter outlook as well as capacity challenges. This has led us to modify our 2021-2023 forecast.

Against all lockdowns

Our Autumn 2021 analysis highlighted that we were still ‘walking on eggshells’ as the pace of recovery took shape. Now, equipped with new insights, the path to recovery is clearer. We seem to be moving faster than expected. As exciting as this is, it also creates challenges for the construction sector as well as more inflationary factors. These are reflected in our upgraded forecast.

Construction output held steady in the first quarter of this year, driven largely by growing market confidence, a slow but steady resurgence in the private sector, and increased public investment. The latest data from ABS indicates we are close to returning to pre-COVID levels, with completed construction work equating to \$17.3Bn per month in the first quarter of this year. By comparison, construction work completed in 2019 equated to a monthly average of \$17.6Bn. You would have to go as far back as 2012 and 2013 to see the last real ‘spike’, when completed construction work peaked at \$20.9Bn per month.

According to the Arcadis Sentiment Index, order books are beginning to fill and 80% of our experts see growth in activity across several sectors. Confidence seems to be returning to clients as well, with our internal survey indicating 75% of projects are now progressing without significant delays. These confidence levels appear to be underpinned by significant public spending and projects announced by both Federal and State Governments. However, many of these projects are either still being procured or have not yet moved beyond the initial announcement; we have not yet seen their impact on the industry’s capacity and wider supply chain. Growing evidence of an acceleration in recovery is welcome after a period of uncertainty, but we need to watch out for emerging challenges.



You didn't think it was going to be that easy, did you?

The faster than expected recovery in demand coincided with increasing pressure on the availability of construction materials. This issue, flagged in our Autumn Forecast, has intensified. What started in late 2020 as a combination of constrained manufacturing capacity and increasing logistics costs has escalated to significant shortages, lead times extended by several weeks, and spikes in the prices of steel, timber, and concrete. Logistics costs remain historically high and material prices continue increasing, and incidents like the recent blockade of the Suez Canal do not help.

The situation we reported in April has been compounded by increasing construction activity and a corresponding growth in demand. Further disruption to supply chains – including snowstorms in Texas impacting the global production of PVC, the limited capacity of Brazilian iron ore mines, and a third wave of COVID-19 – have intensified materials shortages. Our research shows fabricated steel costs increased by 28% since last year, largely due to substantial increases in iron ore commodity prices, while lead times have increased from weeks to months. In many cases, additional costs are unlikely to be absorbed by the supply chain, leading to price increases. We have taken this into account in the current forecast, but the situation is evolving. Some commentators are heralding the arrival of the next commodities super-cycle, fuelled by short-term capacity recovery issues at the beginning of the year. Should that be the case, we will need to further adjust anticipated inflation levels.

Better than expected reports on new orders also seem to be taking pressure off contractors and reducing competition in some sectors and States. But we are yet to see the full impact of the pandemic on the financial health and capacity of the supply chain. Latest data paints a mixed picture. Some contractors are reporting losses and are looking to secure new work – which may require a more competitive approach and lead to price decreases. On the other hand, there is growing evidence of financial stress. Therefore, we cannot exclude the possibility of a capacity crunch, which adds to inflationary pressures, especially when access to overseas labour is limited.

Deflationary factors are still at play but weakening. The main factor is the workload pipeline; it has been slow to recover to pre-COVID-19 levels, with many major projects slated as part of the wider economic recovery yet to hit the market. With many contractors actively seeking work, clients can afford to be selective – at least in the short term. Interestingly, mid-sized contractors with a direct labour force are doing well in this market, trading up to larger and more complex schemes while keeping costs competitive. We believe, however, these combined trends are unable to offset previously discussed inflationary pressures. For this reason, we have modified our predictions for 2021 and 2023..

Narrowing window of opportunity

The major adjustment in our updated forecast is the acceleration of infrastructure price rises in 2021. These will become visible in the latter part of the year. Reported pressures on material availability are especially relevant to this sector, which is anticipated to expand rapidly as on-site work increases. Infrastructure will also be faced with a shortage of specialist skills.

Basis of the Arcadis Forecast



In the building sector, we still believe activity growth will be highest in Sydney and Melbourne. However, projects are taking more time to get to the 'shovel ready' stage so we have largely maintained our forecast for 2021. These delays will likely translate to steeper growth beyond 2021 as the market recovers further; we have upgraded our forecast for 2022 and 2023 to reflect this. There will, of course, be differences between sector performances, with a downward trend in retail and increasing confidence in the residential sector but, overall, the outlook points to modest expansion.

Inflationary

- Materials – availability and logistics costs
- Continued expansion in social and economic infrastructure
- Recovery in private sector demand, less pressure to secure 'must-win' projects
- Capacity and constraints affecting specialist skills, particularly in infrastructure

Deflationary

- Continuing need to fill the 2021/2 order books
- Competitive bidding triggered by contractors 'trading up' to more complex projects
- Wage inflation is low. Levels of furlough in 2020 indicate availability of workforce.
- Potential adoption of some digital practices and post-COVID-19 productivity increase

The Arcadis Forecast

Arcadis Buildings Tender Price Forecast

	Adelaide	Brisbane	Canberra	Darwin	Melbourne	Perth	Sydney
2021	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	0.0% (0.0%)	1.0% (1.5%)	0.0% (0.0%)	1.0% (0.5%)
2022	2.5% (2.0%)	2.5% (2.5%)	2.5% (2.5%)	0.0% (0.0%)	3.0% (2.5%)	0.5% (0.5%)	2.5% (2.5%)
2023	2.0% (1.5%)	3.0% (2.0%)	2.5% (2.5%)	0.0% (0.0%)	3.0% (2.5%)	0.5% (0.5%)	3.0% (2.5%)
2024	2.0% (2.0%)	3.0% (2.0%)	2.0% (2.0%)	2.5% (2.5%)	3.0% (2.5%)	0.5% (0.5%)	2.5% (2.5%)
2025	1.5% (1.5%)	2.0% (2.0%)	2.0% (2.0%)	2.0% (2.0%)	2.5% (2.5%)	0.5% (0.5%)	2.5% (2.5%)
Total	8.0% (7.0%)	10.5% (8.5%)	9.0% (9.0%)	4.5% (4.5%)	12.5% (11.5%)	2.0% (2.0%)	11.0% (10.5%)

Arcadis Infrastructure Tender Price Forecast

	Queensland	Victoria	New South Wales
2021	3.0% (2.5%)	4.5% (4.0%)	5.0% (4.5%)
2022	4.5% (4.0%)	5.5% (5.0%)	6.0% (5.5%)
2023	5.0% (4.0%)	5.5% (5.0%)	6.0% (6.0%)
2024	4.0% (3.0%)	5.0% (4.5%)	5.0% (6.0%)
2025	3.0% (3.0%)	4.0% (3.5%)	5.0% (5.0%)
Total	19.5% (16.5%)	24.5% (22.0%)	27.0% (27.0%)



Spotlight on: Unpicking the productivity puzzle

The Australian construction market is well on the road to recovery, but poor productivity remains a longstanding issue. While some improvements were made during the pandemic, were they enough to turn the dial? With demand forecast to grow, poor productivity could have a bearing on industry capacity and close the window of opportunity available to the sector.

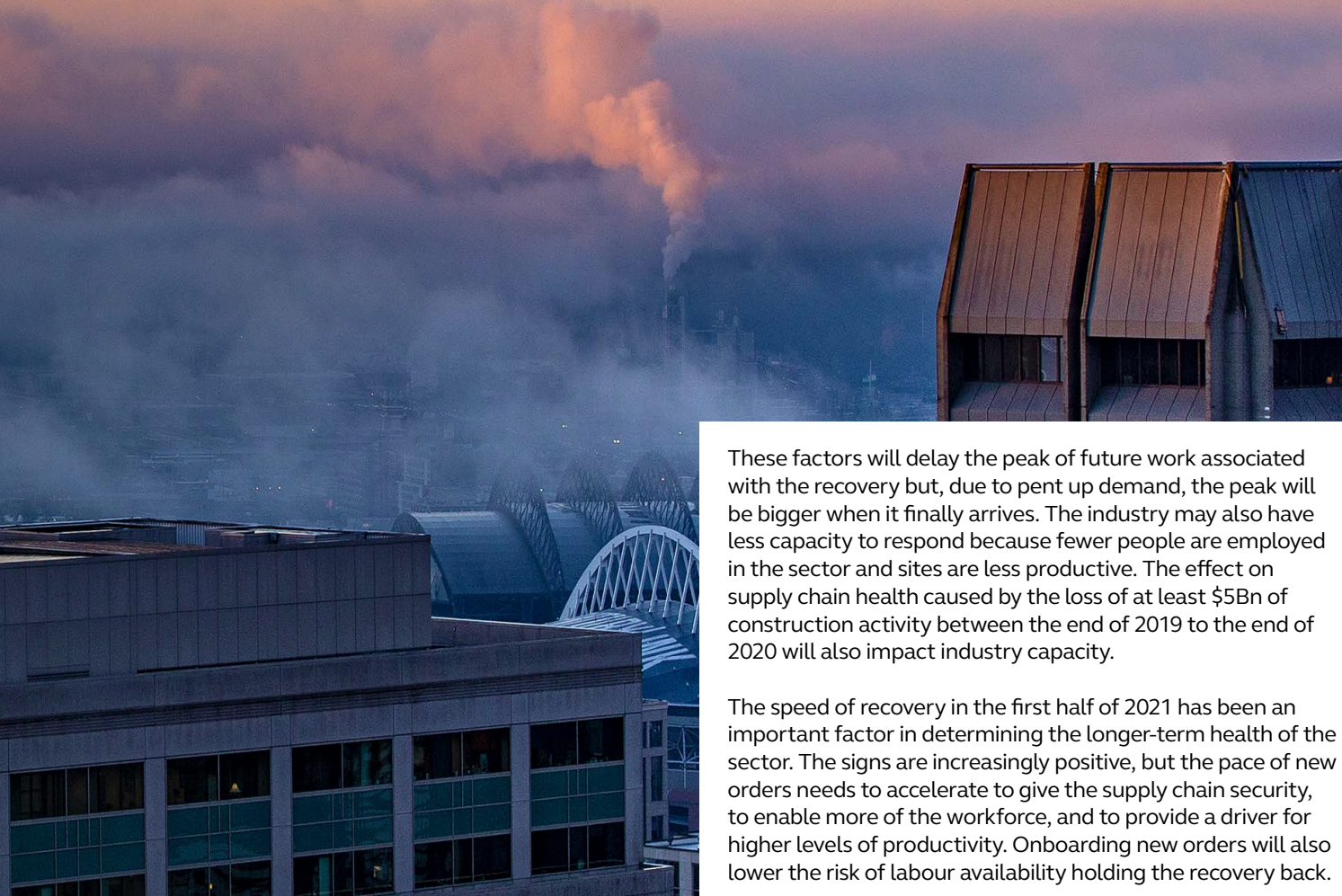
Recent data indicates construction activity is close to returning to pre-pandemic levels. This is a breakthrough, underpinned by high levels of confidence and more encouraging orders data. However the improved outlook is likely to increase demand for labour and create conditions for wage-led inflation, unless it can be offset by increased productivity.

The industry widely accepts construction productivity is at its lowest level since records began, with a twofold impact:

1. We are essentially building less for more money, leading to a considerable loss in value; and
2. It takes far more effort (and often time) to build something.

This view was supported by the Productivity Commission in its 2014 inquiry into public infrastructure provision.

“As in all industries, improved productivity (when this also encompasses quality improvements) is the key method for reducing the costs of output to customers, improving business returns in the shorter run, and providing more infrastructure for a given spend.”



These factors will delay the peak of future work associated with the recovery but, due to pent up demand, the peak will be bigger when it finally arrives. The industry may also have less capacity to respond because fewer people are employed in the sector and sites are less productive. The effect on supply chain health caused by the loss of at least \$5Bn of construction activity between the end of 2019 to the end of 2020 will also impact industry capacity.

The speed of recovery in the first half of 2021 has been an important factor in determining the longer-term health of the sector. The signs are increasingly positive, but the pace of new orders needs to accelerate to give the supply chain security, to enable more of the workforce, and to provide a driver for higher levels of productivity. Onboarding new orders will also lower the risk of labour availability holding the recovery back.

What would such acceleration mean for the window of opportunity and the prospects for longer-term inflation?

Latest data suggests there is still slack in the market, but that the pace of recovery is strengthening. Contractors are looking for opportunities and there is value to be found. However, our inflation upgrade is driven by data pointing to tighter market conditions in the future.

Australia is not alone in this challenge. International studies indicate poor productivity performance in the construction industry is a global issue. McKinsey recently estimated closing the 'productivity gap', could increase global construction by \$1.6Tn and boost global GDP by 2% per annum. In Australia, BIS Oxford

Economics, in partnership with the Australian Constructors Association, has similarly suggested that the lost opportunity cost due to poor productivity performance equates to \$35Bn in 2019/20 alone. This lost opportunity cost will likely increase year-on-year. Unless we break the current cycle and invest in ways to close the productivity gap, the outlook for long-term inflation will likely worsen. Increasing productivity will not only stabilise costs, but will enable the industry to make better use of skilled labour, its scarcest resource. Without all project participants in the construction industry driving the change that is needed, we are some way off unpicking the productivity puzzle.

Since the peak of the resources boom in 2014, productivity across the construction industry has declined by 17.4%, according to ABS data. This decline is far more significant than that experienced in other industries, and has taken the construction industry back to productivity levels last witnessed in the 1990s. National ABS data shows construction productivity growth continues to lag behind other 'selected industries', such as manufacturing, agriculture, and transport. This gap has grown to the extent that 'selected industries' have achieved productivity growth of 31% since 1990, while the construction industry has achieved only 6% growth. If the construction industry starts to reduce this gap through standardisation and digitalisation, forecast inflation pressures may reduce and reflect the industry's greater capacity.

Despite some improved productivity, it took until March 2021 for output to return to pre-COVID-19 levels. This is likely because:

- Total output on sites remains constrained due to social distancing restrictions.
- Recent procurement activity caused, in some cases, by protracted contract negotiations, has been slow to convert to site activity.
- Design and procurement of projects in the pipeline, particularly in the public sector, is taking longer than expected.



Zoom into: Constructing Decarbonized Infrastructure

While we have some way to go, Australia's appetite to reduce carbon emissions is increasing. But so is our investment in new infrastructure. Is it simply a case of wanting to “have our cake and eat it” or is it feasible to build more, while emitting less?

The decline in economic activity due to the pandemic resulted in lower greenhouse gas projections to 2030, although Australia has not implemented an effective climate policy. The Australian government has initiated a resources-led recovery rather than a green-led recovery, signalling further reliance on the coal industry. Australia originally had what was considered an ambitious target for reducing carbon emissions, but is now falling swiftly behind its peers including New Zealand, the US, and the UK. The level of infrastructure investment currently being delivered and planned will further challenge these targets. Our attention needs to turn towards the significant embodied carbon footprint resulting from construction processes. Hard-to-abate industries, such as cement and steel production, contribute 15% to global CO₂ emissions. Their decarbonisation is essential to achieving net zero goals. There are many ways to address this challenge, from economic incentives to research.

1. Carbon Pricing and Emission Trading Schemes

The cost of carbon has increased by more than 10% since January, to \$18 per tonne of CO₂ at the end of March. It is expected to more than double to between \$20 and \$45 per tonne by 2030, according to carbon consultancy RepuTex. The Prime Minister's recent endorsement of a net zero emissions target “preferably by 2050” has seen several Australian companies beginning to set their own net zero emissions targets, driven also by stakeholder pressures and the threat of domestic regulation. The private sector needs certainty on long term policy and targets if it is to have the confidence to invest in emission reducing technology.



2. Recycling and Replacement Materials

The steel industry can recycle and reuse scrap indefinitely, although some addition of raw material – direct reduced iron (DRI) – is required for a high-quality product. A combination of reuse, recycling, and reduced demand is forecast to help reduce the emissions associated with steel production by around 15%. For concrete, the calcination reaction required to obtain binder-cement is a major source of CO₂ emissions. Until recently, it seemed the application of any alternative to cement would inevitably lead to concrete with different characteristics and limited application. Recently, however, new products using an alternative binder have been introduced to the market, allowing for concrete to retain its traditional characteristics while reducing its carbon footprint by 70%. This, however, comes at a price premium of approximately 20-30% for ready-mix concrete which, for some clients, may prove prohibitive.

3. Reduced Demand

Our efforts to reduce end-user consumption of new resources and improve efficiency must continue. Modifications to the design, or even designing out, of some assets can minimise the raw material needed and limit the carbon footprint of some projects by up to 40%, as achieved by Arcadis in designs for the EKFB JV on the UK's High-Speed Rail 2 project. Savings will also come from the reduced demand for plant machinery and fuel arising from using fewer materials. In a more distant future, more precise delivery methods, such as 3D printers and robotics, could further minimize our carbon footprint.

4. Electrification and Transition to Renewables and Hydrogen in Materials Production

Both cement and steel production require extremely high temperatures, currently reached through the burning of fossil fuels. The transition to electrification, combined with the application of renewables, has the potential to reduce CO₂ emissions from construction and manufacturing industries by approximately 18%. According to the Climate Change Committee, the UK's independent adviser on tackling climate change, a further 18% could be abated through the application of green hydrogen (hydrogen obtained through water electrolysis). The use of green hydrogen as an alternative to natural gas in the direct reduced iron production process will make the steel process carbon neutral.

5. Carbon Capture and Storage

Carbon capture, usage, and storage (CCUS), one of the priority technologies in Australia's Technology Investment Roadmap, has a big role in driving energy transition and could help reduce emissions in the construction industry. The possibility of capturing CO₂ (and utilizing it as a raw material) could be seen as an intermediate step for industries facing a more challenging path to total decarbonization, such as cement production. CCUS technology has been identified by the International Energy Agency (IEA) as the only large-scale mitigation option available to deliver the additional CO₂ emissions reductions necessary to meet our 2050 climate goals. A much bigger impact is likely to come from the transition from fossil fuels to hydrogen. To make that happen, CCUS facilities will be essential.

According to United Nations and Energy Information Administration projections, the contribution of embodied carbon will become more pronounced as other sources of carbon emissions are addressed, with the potential to comprise almost 50% of greenhouse gas emissions of new construction, globally, from 2020 to 2050. As carbon prices rise, failure to decarbonize will increasingly drive construction costs up and threaten the economic viability of construction projects. 2030 may seem far away, but we must not underestimate the size of the challenge. Embodied carbon will not be eliminated by a single incentive. It requires a combination of all the above-mentioned approaches and cooperation between design, delivery, and asset operation teams. The sooner we act, the better.

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Our world is under threat - from climate change and rising sea levels to rapid urbanisation and pressure on natural resource. We're here to answer these challenges at Arcadis, whether it's clean water in Sao Paolo or flood defences in New York; rail systems in Doha or community homes in Nepal. We're a team of 27,000 and each of us is playing a part.

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