constructsteel

Monthly update for the construction industry
April 2022

Construction market trends

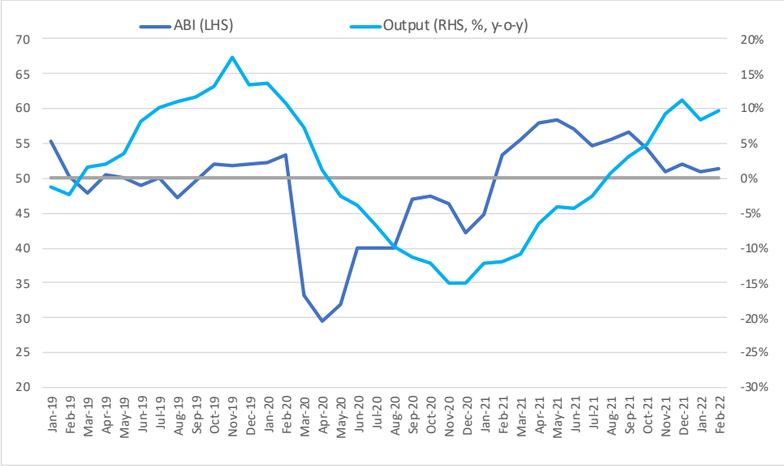
United States

Housing shortage to continue underpinning residential construction despite rising mortgage rates.

Private residential output up 1.1% m-o-m (16.6% y-o-y) in February; building permits down -1.6% m-o-m (8.1% y-o-y). Private non-residential output up 0.2% m-o-m (9.7% y-o-y) in February. Architecture Billings Index (ABI) increased to 51.3 in February from 51.0 in January (>50, expansion).

Private non-residential output vs Architecture Billings Index (ABI)

Source: US Census, American Institute of Architects



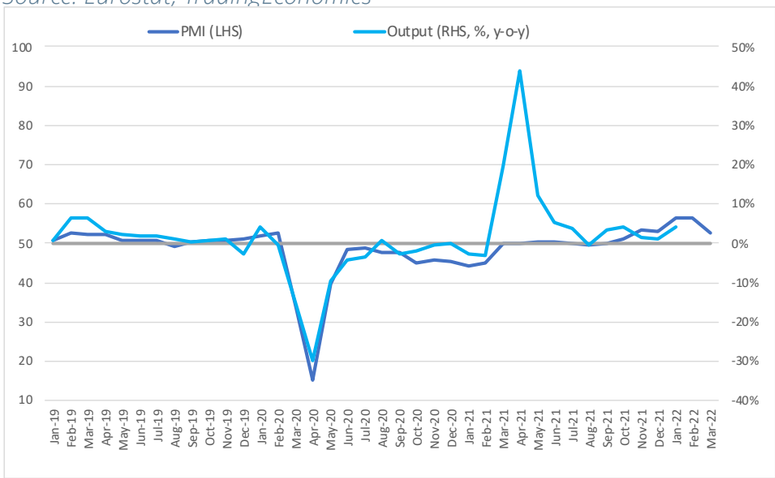
Europe

Strong performance beginning of year but soaring energy and materials costs main risk to outlook.

Eurozone construction up 3.9% m-o-m (4.1% y-o-y) in February; buildings up 4.2% m-o-m (3.8% y-o-y); civil works up 1.4% m-o-m (5.8% y-o-y). The IHS Markit Eurozone Construction PMI fell to 52.8 in March (> 50, expansion) from 56.3 in February.

Eurozone construction output vs PMI

Source: Eurostat, TradingEconomics



Knowledge partner:
McKinsey & Company

China

Construction shows signs of stabilisation on improving bank lending measures.

The 3 month moving average y-o-y growth in floor space started fell -23% in February; floor space sold fell -13% y-o-y.

Floor space started (3 month moving average, %, y-o-y)

Source: National Bureau of Statistics of China

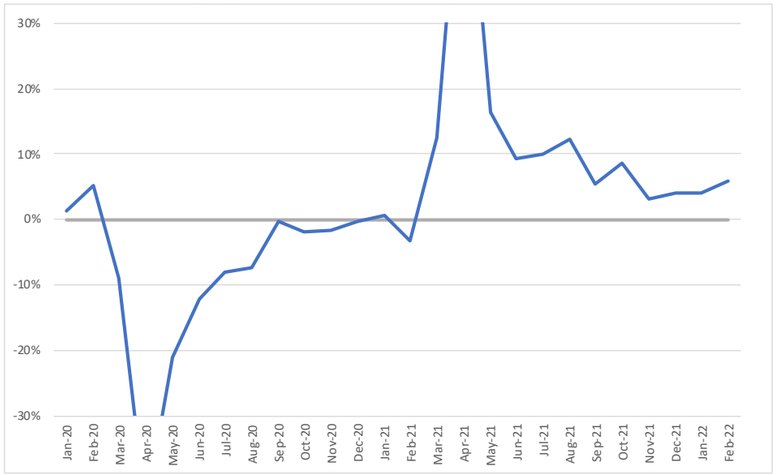
India

Core sector output shows signs of gradual pickup.

Weighted average of eight core industries output up 5.8% y-o-y in February; production of steel up 5.7%; cement up 5.0% y-o-y..

Weighted average of eight core industries industrial production (%, y-o-y)

Source: Ministry of Commerce & Industy, India



Special topic:
Steel has always been a sustainable material. Steel is part of the future.

Dr. Olivier Vassart
Chief Executive Officer Steligence

ArcelorMittal

In 2015, the Paris agreement was a turning point to tackle climate change. It set ambitious targets to substantially reduce global greenhouse gas emissions and limit the global temperature increase in this century. This agreement set the tone and since then countries and even industries have started to do their homework. In the construction business, steel has been used for centuries, it will remain a key material and has great credentials in terms of sustainability.

Steel is by nature a sustainable material. There is no need to recall the simple fact about the total recyclability of steel without any loss of its properties, and this indefinitely. This makes it the perfect material to respond to the new circularity criteria for our construction projects. But the sustainability benefits of steel do not stop here. There are plenty of other advantages of steel as an important player in the circular economy that should be talked about more. Let's take a quick look at three of them.

First, a simple way to reduce the impact of steel is by using less quantity but better quality material. Designing a building can be improved with a good knowledge of the specifications of the material and the different options there are on offer. High strength steel is a good example. Using S460 or Grade 70 and above, instead of S235, S355 or Grade 60 can drastically reduce the weight of the steel needed to achieve the same result. And there is nothing better for the environment than material that is not used. A key point in this matter is the interaction between the engineering offices and the steel producer. We have a key role to play in helping them think about their projects and share our knowledge.

The second option to reduce the impact of a building is to look at the design itself and to propose options that will make it more flexible during its lifespan without an additional cost that must be paid today. Long spans with steel can meet this requirement and can make building more "reusable", increasing their lifespan. After their first use, the steel can be easily refurbished and won't need to be destroyed. This could be called a holistic approach to the full life cycle of the building, keeping in mind the future use of the building without compromising further options. In addition to this, with the rise of digitalisation and BIM objects, a building can be designed with the aim of easily dismantling it and to have pieces that will be re-usable after minimum refurbishment.

Third, steel companies have clear strategies to decarbonise their production to meet the 2030 and 2050 objectives. Today's innovations already allow some producers to put steel products on the market with a carbon footprint that is significantly lower than average steel products. Combining these possibilities with the use of the high strength steel mentioned before, means that solutions exist for construction that uses steel with an embodied carbon which meets today's strongest environmental requirements.

When looking at the trends in today's regulation, for example in Europe, the increase of greener requirements in the construction market is a positive sign and will support the developments of a better use of the material (less material, more re-use, refurbishment and recycling) but also in the development of more sustainable steel. At ArcelorMittal, we already have the product portfolio today that can help real estate owners to deliver low carbon buildings, and we can also provide the necessary expertise and support to architects and designers to create high value built assets with the lowest carbon footprint.

Technical trends:
Bridging the labor mismatch in US construction
McKinsey & Co., Operations – March 28, 2022

US construction projects are short-staffed today, and the problem is set to get worse. Here's what the sector can do to close the gap.

The US construction sector seems set for a jobs boom. The US Bipartisan Infrastructure Law projects $550 billion of new infrastructure investment over the next decade, which McKinsey's modelling suggests could create 3.2 million new jobs across the nonresidential construction value chain. That's approximately a 30 percent increase in the overall US nonresidential construction workforce, which would mean 300,000 to 600,000 new workers entering the sector—every year.

This is a big ask for an industry that is already struggling to find the people it needs. In October 2021, 402,000 construction positions[1] remained unfilled at the end of the month, the second-highest level recorded since data collection began in December 2000.

In this environment, wages have already increased significantly since the onset of the COVID-19 pandemic, reflecting intense competition for employees, with employers offering higher pay or other non-wage benefits. Between December 2019 and 2021, construction wages grew by 7.9 percent[2]. Competition from other sectors for the same pool of labor is heating up, too. For example, over the same period, transportation and warehousing wages grew by 12.6 percent. The prospect of higher pay and better working conditions is already tempting experienced workers away from construction and into these and other sectors.

No end in sight

Today's mismatches are likely to persist because of structural shifts in the labor market. The relationship between job openings and unemployment has departed from historical trends. In January 2022—two years from the start of the pandemic—the US unemployment rate stood at 4.0 percent, close to its pre-pandemic level of 3.5 percent. Job openings remained exceptionally high, however, with 10.9 million unfilled positions as of the end of December 2021, compared with 5.9 million in December 2019.

This labor supply imbalance has multiple root causes, some shorter term and cyclical while others are more structural in nature. For example, the pandemic brought forward the retirements of many in the baby-boomer generation, with an estimated 3.2 million leaving the workforce in 2020—over a million more than in any year before 2016. According to the American Opportunity Survey, among those who are unemployed, concerns about physical health, mental health, and lack of childcare remain the dominant impediments preventing reentry into the workforce. Research on the "Great Attrition/ Great Attraction" also highlights the importance of non-wage components of the employee value proposition. Record job openings and quit rates highlight employees' growing emphasis on feeling valued by their organisation, supportive management, and flexibility and autonomy at work.

Additionally, the pipeline of new construction workers is not flowing as freely as it once did. Training programs have been slow to restart operations after pandemic-driven safety concerns led to their suspension the spring of 2020. The industry is finding it more difficult to attract the international workforce that has been an important source of talent for engineering, design, and contracting activities. Net migration has been falling since 2016, a trend accelerated by COVID-19 travel restrictions[3]. Between 2016 and 2021, net migration declined steadily from 1.06 million to 244,000.

Impact on projects

The interconnected nature of the construction value chain means that the labor mismatch generates knock-on effects across the project life cycle and supply chain. By late 2021, project owners were reporting that up to 25 percent of material deliveries to sites were either late or incomplete. In project execution, the combination of higher hourly rates, premiums and incentives, and overtime payments was resulting in overall labor costs as much as double pre-pandemic levels. Meanwhile, difficulty accessing skilled and experienced people was leading some owners to report project delays related to issues around the quality and productivity of on-site work.

In some US cities and their suburbs, wage growth has surpassed the level seen in core Gulf Coast counties at the height of the shale oil boom. Labor shortages in the shale sector drove wages up by 5 to 10 percent and were correlated with steep drops in productivity. The productivity of some tasks fell by 40 percent or more during shale construction peaks (exhibit), and overall productivity declined by about 40 percent per year when labor was in short supply. This forced owners to extend project timelines by 20 to 25 percent. The impact of a long-term, nationwide labor mismatch might be even more severe than the shale industry's experience, given that oil companies were able to attract new workers from around the country. (Exhibit)

Getting back into balance

The labor mismatch in the construction sector is bad today, and set to get worse. To avoid a decade or more of rising costs, falling productivity, and ever-increasing project delays, companies in the industry should consider thoughtful actions now.
Those actions could address three components of the challenge. First, companies could do everything possible to maximise productivity through measures aimed at improving efficiency across the value chain. Second, they could expand the pool of available labor by doubling down on accessing diverse talent and working harder to retain the employees already in their organisation. Finally, they could consider making labor a strategic priority, with senior leadership attention within companies.

Improving construction productivity

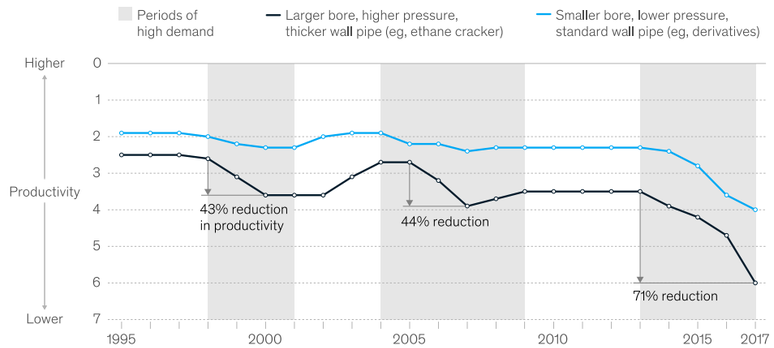
Companies could access a range of levers to reduce the labor content required per job and drive to improve productivity in project development and delivery. Those levers involve changes to project designs and fresh thinking about when, where, and how work is done. Improvements in productivity occur long before work starts on the ground. They include rigorous control of project scope, design simplification, and standardisation. Increasing the use of off-site and modular construction, for example, could allow projects to capture multiple benefits, including accelerated design cycles; the greater productivity associated with industrialised, factory floor manufacturing techniques; automation; and less time spent on site.

Smarter execution management, enabled by digital technologies and analytics techniques could drive better, faster decision making during project delivery. Real-time data collection, for example, gives project managers earlier, more detailed insights about progress, allowing them to intervene more effectively to maintain productivity and keep projects on track. Intelligent simulation software allows teams to evaluate hundreds of thousands of possible critical paths, identifying approaches that could be more efficient or less risky than the conventional wisdom.

Lean construction is another proven way to drive significant and sustainable productivity improvements. Establishing a centralised, continuous improvement engine could enhance on-site execution through integrated planning, performance management, and waste elimination. Key stakeholders across the project work with a common, agreed set of key performance indicators. That allows them to address issues in real time and facilitates collaboration to reduce waste and variability work. Capability building across the planning and construction teams could help team

During the shale-oil boom, tight labor market conditions correlated with steep productivity declines.

US Gulf Coast piping productivity for major process-industry projects, work hours per linear foot of pipe



Source: Westney Capital Analytics Construction Insider

[1] *Included both nonresidential and residential construction openings. Further granularity is not available from the US Bureau of Labor Statistics.*

[2] *Quarterly Census of Employment and Wages, US Bureau of Labor Statistics.*

[3] *Population estimates, US Census Bureau.*

members understand and adopt lean construction practices.

Reimagining talent
To ensure access to the skills they need, construction sector companies can accelerate the onboarding of recruits, boost retention by revisiting what employees want beyond wages, and invest more in developing their pipelines of future workers.

In the near term, employers could prioritise review of job applications and reduce the number of steps in both the interview and onboarding process. In the medium term, both the public and private sectors could look to reduce hiring timelines and shift to a skills-based approach when hiring.

In the medium term, retaining current staff and attracting new talent will both turn on understanding of what employees value beyond wages. Competitive wages are now table stakes, so employees are thinking about a broader set of benefits and workplace characteristics when making decisions about where to work. Research on attrition in the post-pandemic workplace has shown that they are placing more emphasis on autonomy, flexibility, support, and upward mobility.

In the longer term, the construction industry can consider a new approach to talent attraction, development, and retention. Talent acquisition could begin early, through partnerships with educational institutions including universities, colleges, and high schools. These partnerships could boost awareness of the possibilities of a career in the sector and ensure future employees have appropriate skills prior to onboarding.

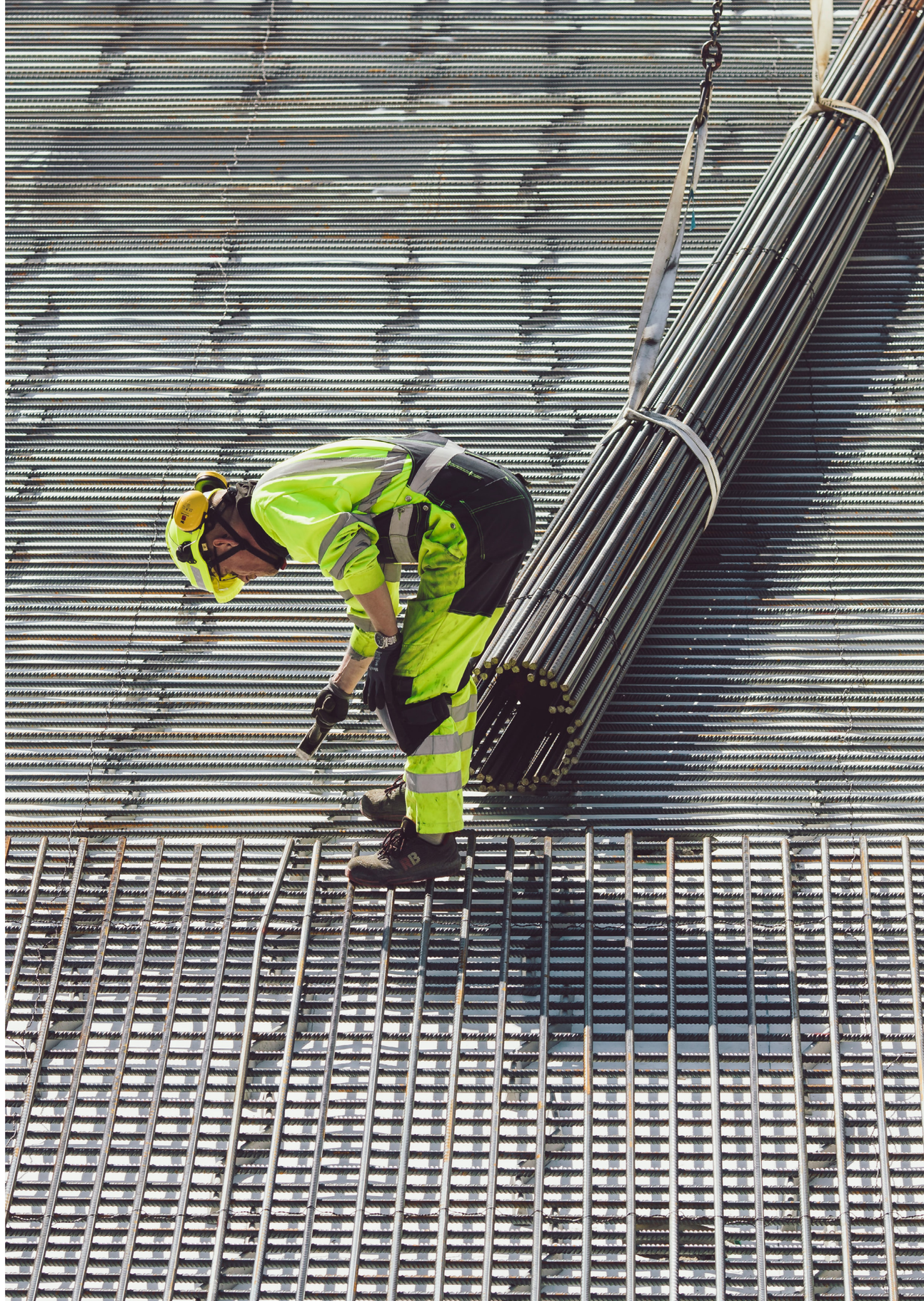
Companies could also look more widely for potential recruits, considering individuals who have taken alternative educational paths, such as technical degrees or hands-on experience. The Rework America Alliance, a Markle-led coalition in which McKinsey is a partner, illustrates the importance of skills-based, rather than credential-based, hiring. A skills-based perspective is key to tapping into the talents of the 106 million workers who have built capabilities through experience but whose talents are often unrecognised because they don't have a four-year college degree. A skills-based approach could be complemented by reimagining apprenticeships to bring younger students and vocational talent into the industry at an earlier stage in their careers. Employers could consider working with a range of nontraditional sources of talent, including veteran-transition programs, formerly incarcerated individuals, and others. Homeboy Industries provides an example of the local impact, effectiveness, and potential of working with often overlooked population segments. Moreover, identifying and attracting talent from outside the traditional paths used by the construction industry could also help it to increase the diversity of its workforce. Today, 88 percent of the sector's workforce is White and 89 percent is male[4].

Looking at labor through a strategic lens

Labor and skills shortages have the potential to slow growth and erode profitability across the construction value chain. For C-suites, there's no other single issue that could protect against significant cost erosion. Companies could consider establishing a systematic talent acquisition and retention program, led by a C-level executive and a core part of the CEO agenda. That program could first be tasked with building a robust fact base on current and emerging labor needs and availability gaps. It could then identify a bold set of initiatives that address labor-related issues across the value chain. This exercise starts in the boardroom, but it doesn't stop there. Leadership will likely need to be increasingly present in the field and on the job site too, celebrating and recognising top talent throughout the organisation.

The labor challenge extends well beyond corporate boundaries. Since the successful delivery of a project could be jeopardised by labor shortages in a single value-chain participant, project owners and contractors may want to adapt the structure of project relationships and contracts. Moving away from traditional contracting methods to collaborative contracts, for example, allows participants to share market risks and opportunities as a project evolves, rather than baking in worst-case estimates at the outset of negotiations.

The US construction sector is poised to revitalise, replace, and expand the country's infrastructure. Done right, that will power inclusive growth and set up the economy for success in the 21st century. To do so, the sector will need to address its labor challenges. That calls for the application of a diverse set of tools and approaches to create better jobs, get the most out of its people, and optimise agility and collaboration across the value chain.



[4] *Labor Force Statistics from the Current Population Survey Database, US Bureau of Labor Statistics, accessed March 10, 2022.*

Construction steel news headlines

construction market and regulations

Europe: Europe is facing shortages of building materials as companies have stopped production due to surging energy costs and "chaotic" EU policies. The warning came after the invasion of Ukraine by Russia triggered further volatility in natural gas markets, pushing European wholesale prices for next day delivery up 38 per cent on Friday to €205 per megawatt hour, a ninefold increase compared with a year ago. Link

USA: Associated General Contractors of America called for the US government to end tariffs on key materials, as well as broaden training and education opportunities for construction careers. Association officials said the industry will need to obtain materials on a more timely basis and hire hundreds of thousands of additional workers in order to execute projects that will soon be funded by the US$1.2 trillion Bipartisan Infrastructure law, on top of the continuing demand for homebuilding and private nonresidential structures. Link

Europe: The UK government is planning a significant expansion of its nuclear energy capacity, with up to seven new nuclear plants potentially being commissioned by 2050, increasing energy output to more than three times the current 24GW. This would see up to a quarter of the country's energy mix being provided by nuclear plants. Link

Europe: UK's R&D spending in the construction sector surged 18% in 2021 to £471m up from £399m in 2020 and £350m in 2019. The construction sector's performance was significantly better than the performance of UK industry as a whole. Total R&D spending by UK businesses rose 5.6% to £42bn last year. Link

Global: The United States reached a deal with the United Kingdom to partially lift tariffs on steel and aluminium exports from the U.K. beginning June 1. The U.K. will be able to export a certain amount of steel and aluminium into the U.S. duty-free before tariffs take effect. In return, the U.K. will lift approximately $500 million worth of tariffs on U.S. products such as whiskey and blue jeans. Link

Asia: With post-pandemic flex leasing at an all-time high, India's combined office net absorption across seven cities ends Q1 at 11.55 mn sq-ft. According to an analysis published in JLL's Office Market Update-Q1, 2022, office net absorption was up by a significant 113% year-on-year, clearly indicating the momentum that is now visible in the market. Net absorption was similar to the last quarter due to lingering uncertainties surrounding the Covid-19 pandemic. Link

Building materials & construction technologies

Europe: Atkins, a member of the SNC-Lavalin Group, has become the first global engineering consultancy to achieve certification from BSI (British Standards Institution) for building information modelling (BIM) compliance, across its operations in Europe, the Middle East, and Asia Pacific. Achieving BSI BIM certification internationally is a significant milestone for the organisation as they drive the global adoption of consistent digital practices which are transforming the way infrastructure is designed, built, operated and maintained through the use of secure data which reduces risk and increases certainty. Link

Europe: To boost renovation, EU wants to reset single market for construction materials. The overhaul of the EU's Construction Product Regulation is the latest in series of legislative recasts aimed at bringing the EU's laws in line with its climate ambitions. The Commission's stated aim is twofold: achieving a well-functioning single market for construction products while contributing to the objectives of the green and digital transition. Market's potential is massive: construction ecosystem means five million firms and more than 25 million jobs. When it comes to building materials alone, it's about 430,000 companies, €800 billion turnover and 10,000 jobs. Link

USA: 3D home construction company seeks investors as new home technology business expands. Apis Cor has developed 3D printing technology for the construction industry, which will cut the time and cost of building housing. It can take about seven months to build a finished wood-stick house, but with 3D printing technology, houses can be built within two to three months. These cost savings can help support the development of more affordable housing options. SmarTech Analysis predicts 3D printing in construction will be a $40 billion market by 2027. Link

ME: FBR Australia, a construction robotic technology company to partner with UAE - it has signed a Memorandum of Understanding (MoU) with the UAE's Ministry of Energy and Infrastructure. Together they will identify opportunities for the introduction and adoption of FBR's robotic construction technology, and further solutions and services to serve the construction sector in the UAE. FBR will exchange information and collaborate in relation to the application of modern building methods, smart support systems, and other construction technologies. Link

construction sector players

Australia: A consortium that includes Italy's Webuild Group, South Korea's GS Engineering and Construction and Australia's Plenary Group, Clough Group and Service Stream, has been selected as preferred bidder by the Australian Rail Track Corporation for a €3.3bn design-and-build contract, that also includes a 25-year maintenance phase following completion. Link

Europe: Caledonian Modular, the UK's largest modular construction company that fell into administration last month, has been rescued by JRL Group. Link

USA: Meta, parent company of Facebook, has launched two new data centre projects in Texas and Missouri, pushing its total investment in U.S. data centre construction and operations past $16 billion. Meta's two newest data centre projects come on the heels of a third $800 million data centre announced in February in Kuna, Idaho, bringing the company's footprint to more than 20 facilities worldwide. Link

Asia: South Korea and China are competing to build $10bn metro in Chattogram, Bangladesh's second city. The project, the second in its kind in the country, is to be procured on a public–private partnership (PPP) basis. Link

Canada: WSP ends year with better-than-expected profits, record-high backlog. The company earned $98.8 million in the fourth quarter last year, up 75% over the year-ago quarter as the company invests in green building, technology and its own staff. In the fourth quarter company booked revenue of $2.25 billion, up almost 29% from the fourth quarter 2020. WSP told investors it expects net revenues this year of between $6.44 billion to $6.83 billion, and net capital expenditures of between $124.8 million and $140.4 million. Link

Europe: Balfour Beatty profits rise, revenue dips as company focuses on future of infrastructure. The company reported profits of $183 million for 2021, up markedly from $39.5 million in 2020. That's 28 cents a share versus about 6 cents. Revenue totalled $10.88 billion, down 3.8% from 2020. Profits from operations, however, rose 54% to $127.7 million. Link

China: Evergrande, the world's most indebted property developer, with over $300 billion in liabilities resumed construction at 95 per cent of China projects, as of March 27. The company will "continue to maintain the normal construction of the projects in order to deliver the buildings to the owners with guaranteed quality and quantity at all costs," according to the post. Link

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