

# constructsteel

Monthly update for the construction industry

October 2020

A low-angle, upward-looking photograph of several modern skyscrapers. The buildings are covered in dark glass windows that reflect the sky and clouds. The sky is a vibrant blue with scattered white clouds. The perspective makes the buildings appear to converge towards the top of the frame.

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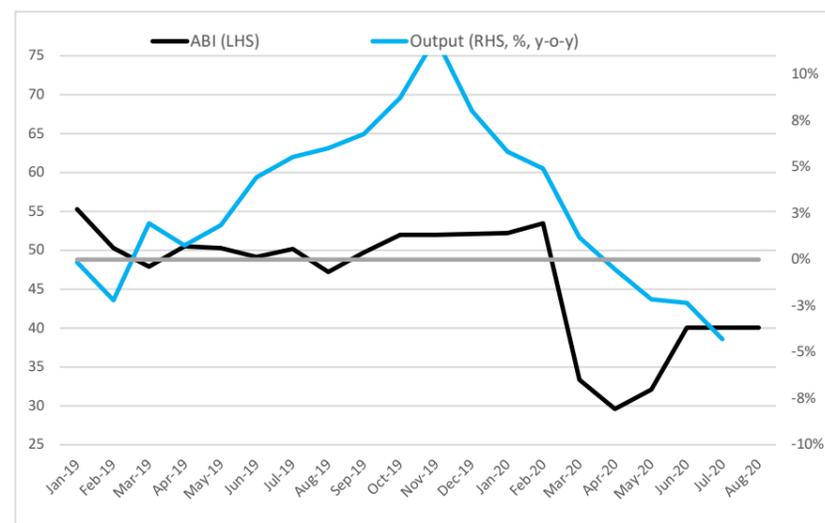
## Construction market trends

**United States** Residential output supported by low interest rates & demand but prospects for private non-residential output remain weak.

After increasing 0.1% m-o-m in June, the downward trend in private non residential output continued in July and by -1% m-o-m (-4.3% y-o-y). The Architectural Billings Index (ABI) remained at 40 (<50= contraction) for the third month in August.

Non residential output vs. ABI

Source: US Census, McKinsey & Company

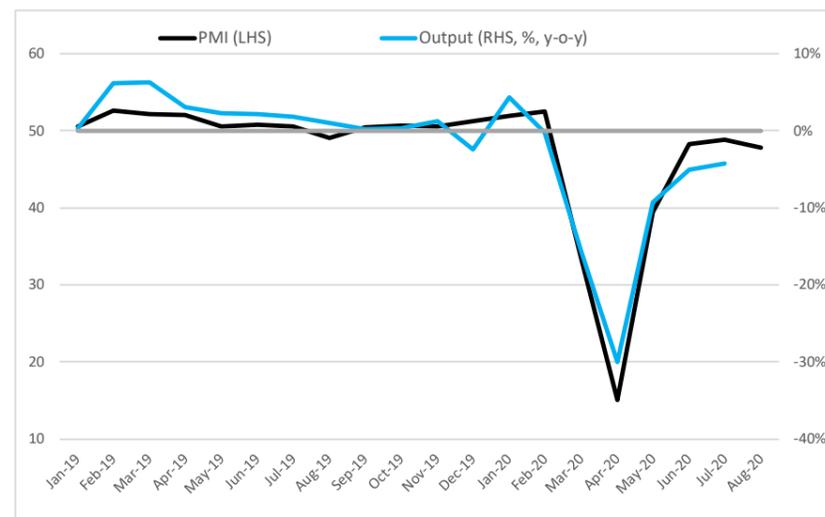


**Europe** Leading indicators point to continued weak activity in coming months.

Construction output in EU27 remained at June levels in July but -4% below July 2019 levels. The IHS Markit Eurozone Construction PMI dropped to 47.8 in August from 48.9 in July (<50=contraction), indicating weak prospects in coming months.

EU27 construction vs. PMI

Source: Eurostat, IHS Markit, McKinsey & Company



**China** Construction activity remains buoyant.

Newly started floor space remained supportive in July, with the 3 month moving average y-o-y growth up 7.7% . At the same time, floor space sold was up 7.5%.

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

Source: National Bureau Statistics of China, McKinsey & Company



**India** Favourable monsoon supports agriculture but rains temporarily arrest construction. Gradual pickup of activity expected.

The pickup of eight core industries was temporarily halted in August. The y-o-y pickup in coal and fertilisers was offset by declines in crude oil, refinery and cement. The weighted average decline widened to -8.5% y-o-y from -8% in July.

Weighted average of eight core industries industrial production (2017=100)

Source: INSDAG



## Disruptions across the construction/building materials value chain can reduce emissions, reduce waste, and drive process efficiency

Opportunities	Description	Example innovators in construction & building materials
<b>1 Material innovation</b>	<b>Portfolio of next gen materials</b> <ul style="list-style-type: none"> <li>Scale innovative material sourcing including:                             <ul style="list-style-type: none"> <li>Refined cement manufacturing which reduces greenhouse gas emissions</li> <li>Switchable glass technologies which improve heat retention and energy saving abilities</li> </ul> </li> </ul>	
<b>2 Waste reduction or logistics</b>	<b>Software solutions</b> <p>Develop or scale techniques for streamlined on-site project management, reducing costs and material waste and improving timeliness overall</p>	
<b>3 Sorting and treatment / recycling</b>	<b>Tech-enablement</b> <p>Leverage innovative technologies (e.g. 360 video, drones) to expedite quality data collection, save time, and reduce waste</p>	
<b>4 Business model innovation</b>	<b>Disrupt build-in-place model</b> <p>Invest in repurposing landfill-destined building materials including timber, roof materials, and even glass / concrete</p> <p>Control building process end-to-end or optimize day-to-day construction process through modular construction, 3D printing, and robotics</p>	

Source: McKinsey analysis

## Technical trends: Sustainable innovations in construction

According to the UN 2019 Global Status Report for Buildings and Construction Sector, the buildings and construction sector accounted for 36% of final energy use and 39% of energy and process-related CO<sub>2</sub> emissions in 2018 – 11% of which resulted from manufacturing building materials and products such as steel, cement and glass. In 2018, global emissions from buildings increased 2% for the second consecutive year to 9.7 GtCO<sub>2</sub>, driven by strong floor space and population expansions.

The construction ecosystem also has a significant impact on other environmental aspects – construction and demolition waste, water consumption etc. For example, 570 million tonnes of construction waste was generated in the US during 2017, comprising steel, wood products, drywall and plaster, brick and clay tile, asphalt shingles and concrete, which is more than twice the amount of the residential waste generated. About 200 litres of water are required for production of each m<sup>3</sup> of concrete, leading to an annual consumption of approximately 17 km<sup>3</sup> of water for global concrete production – equivalent to meeting the domestic water consumption of Russia.

Tackling this represents both challenges as well as substantial opportunities for construction sector stakeholders, from owners to developers to engineering and construction companies as well as building materials and components manufacturers and software providers.

The sector has recently seen multiple examples of moves across company types and processes from building materials production to construction site operations across the following areas: material innovation, waste reduction/logistics, recycling, business model innovations. On the next page are some interesting company and initiatives references across the opportunities.



## 1. Construction material innovations to address macro-trends of environmental sustainability and labour optimisation

As part of its partnership with Solidia Technologies, LafargeHolcim has developed a reduced CO<sub>2</sub> cement that together with a proprietary concrete mix design, and a specialised curing process utilising CO<sub>2</sub> creates a concrete with up to 70% lower carbon footprint than traditional Ordinary Portland Cement systems. US-based Carbon Cure developed technology that introduces recycled CO<sub>2</sub> into fresh concrete, reducing carbon footprint and driving process efficiency.

The glass sector has seen a number of innovations e.g. switchable glass technologies: electrochromic glass, which switches based on changes in optical properties in response to electrical voltage (provided, for example, by US-based View and iGlass), and thermochromic glass, which switches based on change in optical properties in response to heat, provided by Pleotint.

Grohe, a leading global brand for complete bathroom solutions and kitchen fittings based in Germany, has developed a line of smart water-saving technologies that use less water. The company has several times made it into the top rankings as one of Germany's most sustainable large brands in the past couple of years.

## 2. Software solutions to construction challenges leverage analytics to optimise work scheduling / streamline materials management

ALICE is a construction planning software platform built on artificial intelligence. It uses artificial intelligence and known inputs to find optimal construction plans, reducing costs, material, and time waste along the construction process.

Pype offers a suite of construction software solutions that leverage machine-learning algorithms to improve project management on the construction site, reducing costs and improving timeliness overall.

## 3. National, state, and local efforts have built platforms that connect buyers and sellers of landfill-destined building materials

The Materials Marketplace software solution was developed by the US Business Council for Sustainable Development to provide an online platform for businesses and other organisations to reuse and recycle waste/by-product materials. The effort is intended to drive traffic for industrial waste reuse and recycling to a common platform that can match customer needs with available product supply to enable the shift to a circular, closed-loop economy. Simultaneously, the Marketplace encourages cost savings, energy savings, and job creation.

PlantReuse is an online platform that connects buyers of used building materials to sellers with the intent to reuse those materials. Contractors can also request specific materials and be contacted when they become available.

## 4. Enhanced techniques are revolutionising construction by harnessing the end-to-end building process to reduce inefficiencies

US-based off-site construction company Katerra has raised \$1.2 billion to integrate and control activities across the construction value chain (primarily design and engineering, component supply, and off-site manufacturing). A Katerra-designed and -developed, end-to-end integrated digital platform serves as the backbone from project initiation to delivery – as a result, Katerra's modular component factories can work in tandem with the company's automated precast-concrete factories.

Autodesk and hsbSOFT have developed integrated solution that covers the whole design process from planning to manufacture of the prefab structures that helps dramatically reduce material waste and the labor required to construct new buildings.

Several companies like CBot, TyBot have introduced robots for repetitive and labor intensive tasks (e.g., tying steel reinforcement bars, applying insulation, electrical, studding, plumbing, automated tiling).



## Construction steel news headlines

### construction market and regulations

The French government has announced a €100 billion 'France Reboot' stimulus package to bolster its ailing economy in the face of a spike in coronavirus numbers. Approximately €30 billion of the package will be spent on environmentally friendly energy policies, with €2 billion in additional funding set for the continued development of a hydrogen infrastructure, including hydrogen-powered rolling stock for the country's rail network. [Link](#).

South Africa's construction sector contracted by 33.4% in the second quarter of 2020 as a result of the Covid-19 pandemic. This is a decline of 76% on an annualised basis for construction. [Link](#).

Construction industry analyst Barbour ABI has reported a 21.2% increase in the value of contract awards in the UK in August 2020, based on a three-month rolling average with the total value of construction contract awards for the month totalling £4.4 billion. [Link](#). However, the IHS Markit/ CIPS construction purchasing managers' index hit a reading of 54.6 last month, compared to 58.1 in July and 58.3 expected. [Link](#).

Ahead of the Construction Products Regulation (CPR) revision Technical Stakeholders' Conference, the European Builders Confederation, the European Construction Industry Federation, Construction Products Europe and Small Business Standards are publishing a joint discussion paper on the role of the standardisation system in the current CPR to contribute to the ongoing discussions on its

potential revision. [Link](#).

India has successfully achieved 7.17 billion square feet of 'Green Building Footprint', according to the recent data by the Indian Green Building Council (IGBC). To date, there are almost 6,000 green projects and over 5.77 lakh acres of large development projects in the country, which have helped to achieve 75% of the green building footprint target two years earlier than the actual target. [Link](#).

The COVID-19 pandemic will see sales of construction equipment fall in almost every country of the world this year, with global sales of construction equipment expected to be down 16%. The only exception is China – stimulus spending in the country will lift the market by an expected 14% to take sales in China to their highest since the previous stimulus boom in 2010-2011. [Link](#).

UK HS2 has launched a search for digital innovations to speed up the delivery of the rail-infrastructure megaproject, and will help to commercialise the most promising ideas from entrepreneurs and smaller providers. [Link](#).

India's National High Speed Rail Corporation has opened the technical bids for construction of a section of the Mumbai-Ahmedabad High-Speed Rail corridor. A total of three bidders involving two consortiums and Larsen & Toubro have reportedly expressed interest in the high-speed rail project. [Link](#).

The European Investment Bank (EIB) has agreed its largest-ever loan to fund a new high-speed rail link between Naples and Bari in southern Italy. The organisation

will invest approximately €2 billion into the project, part of the Trans-European Transport Network programme. [Link](#).

US commercial construction could be showing signs of a rebound. The US Chamber of Commerce Commercial Construction index for the third quarter rose slightly to 57 from 56 in the second quarter. At the same time, 82% of commercial contractors have "moderate to high confidence" that the US market will provide adequate new business opportunities over the next 12 months. [Link](#).

The latest Corona Study by Europe's engineering consultants association, EFCA, concluded that there are signs of stabilisation in the construction industry, with fewer projects lost and a smaller drop in new orders, due to the COVID-19 pandemic. On average, 11% of respondents said they were still being affected "to a large extent" by project losses, compared with 22% in the previous survey. [Link](#).

### Construction materials

The market of construction materials in Egypt has been facing recession over the past few months due to the government's decision to suspend construction, which coincided with a general downturn over the outbreak of COVID-19. The sales of factories and retailers of construction materials, including steel, cement and bricks, have declined by more than 70% and they are

not operating at full capacity. [Link](#).

Tera Novel, Israeli-based innovative technological & scientific decontamination solutions startup, has signed an exclusive strategic cooperation agreement with Tambour, one of Israel's leading paint and construction material manufacturers, to produce and market products containing Tera Novel's patented antibacterial additive that neutralises viral compounds such as the coronavirus. The companies intend to market the antibacterial products to hospitals, clinics and health centers for wall painting and treatment. [Link](#).

BidBird® has launched its new high-tech construction materials bidding application. Using an advanced internet bidding system, guided by auction theory, buyers place online orders and receive multiple blind bids preventing collusion and protecting institutional privacy. The bid deadlines are set by the participating buyer on weekly intervals. [Link](#).

Iron ore, nickel, copper and other metal prices are rising as China (which consumes roughly half of the world's industrial metals) restarts construction following the coronavirus pandemic. Since late March, prices of iron ore — the key ingredient in steel — have risen more than 40%. Nickel, needed for stainless steel, and zinc, used to galvanise metal, are up more than 25%. [Link](#).

Stronger-than-expected demand for Brazilian steel following the peak of the coronavirus pandemic, along with a slower-than-expected supply response in the domestic market has prompted steel price hikes totalling about 20% since June. Even though the automotive sector remains in slow motion,

the quick reactivation of other industries – construction, wind and solar energy, white goods, road and agricultural equipment – has boosted demand for steel. [Link](#).

Russian demand for steel is gradually returning as COVID-19-related restrictions ease and construction activity picks up; a series of interest rate cuts by Russia's central bank and consequently falling mortgage rates have benefitted the local real estate sector. Overall, worldsteel forecasts a 10% decline in steel consumption in Russia this year. Severstal sees it at 6%, if recovery continues at its current pace, while a 10% drop would represent the worst-case scenario. [Link](#).

Canadian PCL Construction has announced its partnership with the industry leader in smart testing technologies and real-time data collection for concrete, Giatec Scientific, which will enhance concrete testing technologies and IoT connected construction sites, further advancing PCL's industry leading Jobsite Insights™ smart construction risk management platform. [Link](#).

### construction sector players

A contract to build a new US\$2.3 billion airport terminal at San Diego International Airport in the US has been awarded to a joint venture of Turner and Flatiron. Construction on the 1.2 million-square-foot building with 30 gates, which will replace the existing 1960s era terminal, is scheduled to begin in late 2021 once all environmental permits are issued. [Link](#).

HD Supply Holdings announced that it has entered into a definitive agreement to sell its Construction & Industrial –

White Cap business, a leading distributor of specialty concrete and construction products and services in North America serving professional contractors, to an affiliate of Clayton, Dubilier & Rice for a purchase price of \$2.9 billion in cash. The transaction is expected to close in October 2020, subject to customary regulatory approvals. [Link](#).

According to multiple press reports, Hyundai Heavy Industries Holdings has submitted a non-binding bid for a controlling stake in Doosan Infracore. Earlier this year, Doosan group was looking to sell its stake in construction equipment manufacturer Doosan Infracore to raise funds to repay loans. [Link](#).

A remote part of Lincolnshire in the UK is hosting the world's first hydrogen fuel cell-powered construction site, according to Siemens Energy, lead contractor on the National Grid's Viking Link interconnector project. Siemens says the site will not have access to a grid connection for six to eight months, so it has moved ahead with the installation of a hydrogen fuel cell system, which will provide heat and power to the entire construction village in the interim period, negating the need for any diesel generators. [Link](#).

Brussels-based construction company BESIX has reported a standalone backlog of \$5.4bn in H1 2020, and solid liquidity position, while it posted a net loss of \$18.5m in H1 2020. According to the company, majority of the contract award in Q2 2020 were secured for projects in Europe. [Link](#).

Canadian Aecon Group recorded a record high work backlog of \$6.4 billion at the end of its second quarter this year. The engineering firm says the backlog is \$2 billion higher than

at the end of the same quarter  
the previous year. [Link](#).

LafargeHolcim has now joined  
forces with IBM to further  
develop its building material  
platform ORIS which optimizes  
road construction through  
intelligent planning and helps  
cut costs and reduce the carbon  
footprint. [Link](#).

Steel is the most  
recycled material  
in the world, easy  
and affordable  
to recover from  
almost any waste  
stream

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