

## **Construction Robots Market - Growth, Trends, Covid-19 Impact, and Forecasts (2023 - 2028)**

Market Report | 2023-01-23 | 120 pages | Mordor Intelligence

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### **Report description:**

The Construction Robot Market is expected to register a CAGR of approximately 12.9% during the forecast period. The growing urbanization, industrialization penetration, and advanced construction & demolition operation factors are driving market revenue growth.

#### Key Highlights

The increasing focus of construction organizations on reducing building materials' resources and material waste during construction will drive the adoption of the construction robot market. Further, Autodesk identifies that while it is difficult to get exact figures of the waste produced on a typical construction site, several construction organizations have thought that nearly 30% of the total weight of building materials transported to a building site gets wasted.

Further, reducing the construction time of the projects is aiding the growth of construction robots. Printstones, an Austria-based manufacturer of mobile 3D printing robots for construction, has launched its latest manufacturing robot. A modular design indicates the Baubot, which easily allows third-party customer modifications. Described as a 'multi-functional construction robot,' the rover-Esque device goes beyond concrete 3D printing. It qualifies for many flexible manufacturing processes such as material transportation, welding, milling, screwdriver, cutting, painting, and even bricklaying.

Further, in May 2022, Dusty Robotics raised USD 45 million to announce the Industry's First Hardware, Software, and Services Solution to Destroy Construction Errors Through Advanced Robotics. FieldPrinter automates digital floor techniques on construction sites by printing them full-size on the floor through a mixture of hardware, software, and services.

With the growing need for new infrastructure, automated construction solutions are expected to gain momentum over the coming years and impact the market positively. According to Redshift, the industry must build 13,000 buildings daily from now to 2050 to support an expected population of seven billion living in urban areas.

Furthermore, high costs associated with acquiring and maintaining the technologies are one of the challenges in implementing

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construction robotics. The purchase, along with the implementation of the technologies, is costly. Therefore, only firms with a good turnover and market competition can afford these technologies. In addition to this, automation technologies need to be updated and maintained, and most of them are expensive to do it. The maintenance cost for the new robotics equipment is higher because of the exceptional technician's needs.

The past outbreak of COVID-19 adversely affected the construction industry, with construction work coming to a standstill in the initial months of the lockdown. However, the product demand witnessed an increased interest in adoption from the industry owing to the safety benefits offered by the technology.

## Construction Robots Market Trends

### 3D Printing Type is Expected to Hold Significant Share

The studied market is expected to witness higher investments from venture capitalists in the coming years, with 3D printing technology at the forefront. 3D printing robots in the industry will see prominent growth over the forecast period due to the growing interest in adopting the technology and rising investments. For instance, Mighty Buildings recently raised USD 40 million in its series B funding to create homes that it says are beautiful, sustainable, and affordable using 3D printing.

Moreover, companies use a robotic arm in the contour crafting method of construction. It involves the material being deposited and manipulated to create a massive 3D structure that's smooth to the touch. Rails to support the robotic arm are deployed around the construction site so the arm can move exactly where it requires.

For instance, the tech building company ICON 3D-printed an entire house in 24 hours at just USD 10,000. ICON's automated construction robot, Vulcan, can 3D-print exclusive homes with almost zero waste and little water. With a focus on disaster relief work, the company signed a 100-home project in El Salvador. Such instances are poised to influence the growth of 3D robots for construction purposes.

Further, the countries like the US, China, and the United Arab Emirates are taking significant steps toward constructing buildings utilizing 3D printing. Dubai has the world's most ambitious policy to promote automated construction, an official 3D Printing Strategy. Sheikh Mohammed bin Rashid Al Maktoum calls for 25% of buildings to be 3D-printed by 2030. A significant step forward for this initiative was the 3D printing of the Dubai Office of the Future.

Also, in March 2022, Metal 3D printing technology designer Meltio announced Admasys International Group as its new official sales member in the Czech Republic, Hungary, and Slovakia. Admasys International choice works to build an extensive distribution network for Meltio's wire-based DED 3D printing technology throughout the European region.

### North America is Expected to Hold Major Share

The increased unemployment and deficiency of skilled labor in The US have proven to be critical in developing the construction robotics market in the North American region. According to the Bureau of Labor Statistics, the nation's unemployment rate increased by 3.7% in August 2022 compared to the previous month.

However, according to PIAAC data, it is calculated 38% of jobs in the US are at significant risk of being automated during the next decade. According to a report by the Associated General Contractors of America, 70% of contractors in the US struggle to hire skilled craft workers. It comes as hiring needs in the industry are expected to grow 12% by 2026 with the demand for construction robots.

Furthermore, in March 2022, Rugged Robotics, a Houston-based innovator of construction technology, introduced USD 9.4 million in Series A funding. Similar to Dusty Robotics, Rugged offers a robot to automate construction layout. Rugged's Mark I marks architectural and engineering designs straight onto concrete floors, so workers know where to build. The robot is available for

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commercial use, which the firm delivers via layout as a service.

Several robotics startups in the United States have started inventing robots focused on the construction industry to resolve the challenges faced by manual labor and make the enterprise more efficient.

Further, in July 2022, Intelligent City Inc. announced an investment of USD 22 million as part of a proposal to expand into new markets and grow its factory operations. The company is best known for deploying robotics to assemble mass timber buildings geared toward mid-to-high-rise homes and offices.

## Construction Robots Market Competitor Analysis

The competitive landscape of the construction robot market is relatively concentrated due to the presence of significant players. The construction industry is one of the least automated sectors, and the robot's adoption rate is nascent. Hence, the market players are looking for lucrative possibilities to launch their products and gain the maximum market share. Also, the vendors are looking for opportunities to raise investments from various stakeholders to enhance their exhibition of robots for the construction industry.

March 2022 - Israeli startup Largix launched an automated and robotic 3D design and production platform for the industrial manufacturing of large, custom-made end products. An autonomous deposition technology called 'Cold 3D Printing' powers it. The 3D printer can create big industrial storage tanks and other products using ordinary recycled polymers as input.

March 2022 - Pudu Robotics, the global leader in commercial service robots, held its spring new product launch in Shenzhen. With the theme of "3+X", the company released four latest robots, including three delivery robots, SwiftBot, PUDU A1, PUDU D1, and one cleaning robot, and PUDU SH1 for commercial use.

### Additional Benefits:

The market estimate (ME) sheet in Excel format  
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