

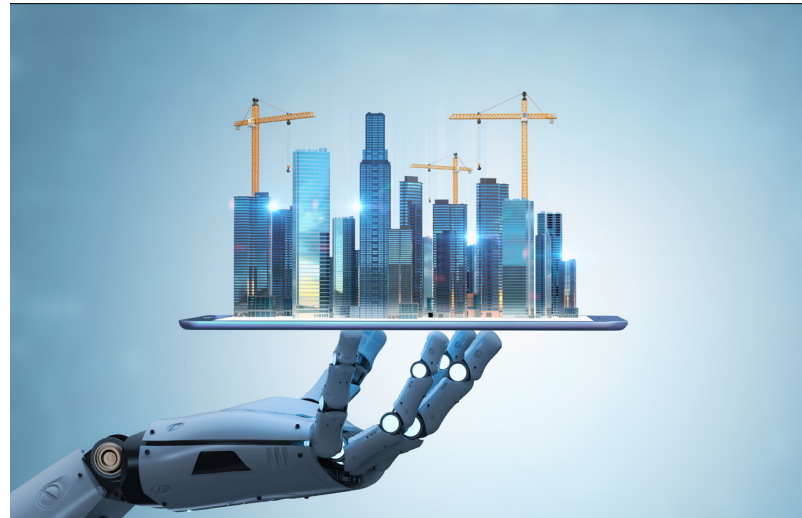
# The Construction Industry's Labor Crisis: Can AI Bridge the Workforce Gap?

Written by: Francesco Iorio, CEO and Cofounder, Augmenta

The construction industry is facing a severe labor shortage. The workforce is aging as projects become increasingly complex and economic pressures demand greater efficiency. Part of this problem stems from the 2008 financial crisis, when a generation of workers was forced to avoid the construction industry, with new builds not being as in demand. Now, 17 years later, 25% of the construction industry is over 55 years old, with a wave of retirement around the corner and a lack of new professionals joining the workforce.

This shortage coincides with a surge in construction demand, driven by the Infrastructure Investment and Jobs Act and the rise of complex projects like data centers and semiconductor facilities. The industry struggles to keep pace, highlighting the urgent need for solutions that enhance productivity and attract new talent. The Associated Builders and Contractors estimates that the U.S. must attract 454,000 additional workers on top of the normal hiring pace in 2025 to meet demand.

Fortunately, AI provides a way forward. AI isn't here to replace construction workers; instead, it's here to elevate them, to empower them with tools and technologies that enhance their skills and make their jobs easier, safer, and more productive. AI has the potential to attract a new generation of tech-savvy talent to the industry, ensuring its continued growth and innovation.



## MINIMIZING WASTED TIME AND IMPROVING PRODUCTIVITY

Traditionally, construction has been plagued by inefficiencies. Design errors, rework, and miscommunication often lead to wasted time, cost overruns, and project delays. Studies show that up to 20% of AEC professionals' time is spent fixing design errors, and a staggering 30% of building materials end up wasted due to overdesigning and other mishaps.

AI offers a solution by automating tasks such as design and error correction. AI algorithms can analyze building codes, site conditions, and design requirements to generate optimized and error-free designs in a fraction of the time it takes humans. This frees up valuable time for understaffed teams

for other projects while reducing waste and improving overall productivity.

### ATTRACTING TECH-SAVVY TALENT

As the construction industry is seen as traditional and lacking in innovation, the field has struggled to attract young talent. With 79% of early career workers excited about the opportunities to use AI and advanced technology, the industry must adapt and incorporate the tools in exciting and innovative ways that bring bright, tech-savvy minds to the construction field.

Imagine a construction site where robots work alongside humans, drones capture real-time data, and AI algorithms optimize every aspect of the building process. This is the future with AI, and that future could inspire more young people to consider a career in construction.

### LOWERING THE BARRIER TO ENTRY

Construction trades often require years of training and experience to master. AI can lower the barrier to entry by providing tools and technologies that make it easier to learn and perform complex tasks. For example, it takes around five years of training to become a NECA-certified commercial electrician, but with AI-powered programs that provide personalized guidance and feedback and AR tools that allow education to be more hands-on, the training period could be compressed into a shorter program.

AI can lower the barrier to entry and significantly reduce the time it takes to become proficient in construction trades, making them more accessible to a wider range of people.

### HOW AI IS IMPROVING THE CONSTRUCTION INDUSTRY ONE TRADE AT A TIME

In electrical contracting, AI is already taking off and becoming a valuable resource for constrained teams.

Electrical systems are generally the last step in a design sequence because electrical circuits are the least constrained. This makes the job of the electrical designer much more complex as their work is restricted by the designs of other trades, and they must frequently adjust their plans last minute. At the same time, electrical systems are becoming increasingly complex, with the rise of smart buildings and renewable

energy sources.


Fortunately, AI is already helping electrical contractors do more with less by:

- » **Automating Design and Modeling:** AI algorithms can generate optimized electrical designs, taking into account building codes, energy efficiency requirements, and spatial constraints. This not only saves time but also ensures compliance and reduces errors.
- » **Improving Prefabrication:** AI can optimize the design and fabrication of electrical components off-site, leading to greater efficiency and reduced waste.
- » **Enhancing Collaboration:** AI-powered platforms can facilitate communication and coordination between electrical contractors, other trades, and project stakeholders, ensuring everyone is on the same page.
- » **Predictive Maintenance:** AI can analyze data from electrical systems to predict potential failures and maintenance needs, preventing costly downtime and ensuring safety.

### SHAPING THE FUTURE OF CONSTRUCTION

It's time to harness the power of AI to transform the construction industry. AI is not just a technology but a catalyst for change. It's a tool that can help the industry address the labor shortage, improve productivity, and meet the growing demand for the built environment. But most importantly, it's a tool that can empower the next generation of construction workers, equipping them with the skills and knowledge they need to build a better future for all.

And for companies that have already used AI, the value has been proven quickly. 55% of AEC companies that have used AI say the technology has become 'highly important', and 84% of these companies plan to increase their investment in AI by 2030.

Let's embrace AI, not fear it. Let's use it to build a future where construction is efficient, sustainable, and accessible to everyone. The future of construction is here, and it's powered by AI. 



---

### About the Author

---

Francesco Iorio is the CEO and cofounder of [Augmenta](#), leading a team focused on AI, computational science, and user-centered design to revolutionize construction.

---

### About the Article

---

This article is republished from [For Construction Pros](#). [For Construction Pros.com](#) is one of the largest construction networks in North America, providing the insights, trends, and best practices for those in the construction industry. A contractor's whole-business resource, For Construction Pros analyzes today's news, reviews new construction equipment and methods, and offers business management advice with one goal: to help construction contractors turn better profits.

Any views and opinions expressed in this article may or may not reflect the views and opinions of the Construction Management Association of America (CMAA). By publishing this piece, CMAA is not expressing endorsement of the individual, the article, or their association, organization, or company.