

THE
FUTURE
IS NOW

SHEET METAL | AIR | RAIL | TRANSPORTATION
SMART



Clark Ellis

Principal and Co-Founder
Continuum Advisory Group



Future Markets and Workforce Needs



What we will talk about

- Current and emerging trends in construction
- How these trends are likely to impact the workforce
- What leaders should consider now to position their organizations for success

Construction Market Trend 1: Growth

- Manufacturing Construction increased from \$80BN to nearly \$200BN from 2022 to late 2023.
 - These projects will continue through the mid to late 2020s.
 - The auto assembly plants, chip plants, battery plants, and other production facilities will create economic multiplier effects in their communities, increasing construction demand across the board.
- Infrastructure construction is beginning to increase following the 2021 Federal Infrastructure Bill.
- The Healthcare market continues to look robust as networks focus on renovating/adding on to existing hospitals and the industry pushes healthcare out into its communities via more complex “medical office buildings.”

Construction Market Trend 2: Technology

- Info Tech

- Project Management software continues to grow; \$8BN in 2023 and forecast to grow at 18% annually through 2035 to \$35BN
- Business process automation will be a major driver of software adoption
- Estimating and cost analysis are poised for huge change as companies focus on data analytics and AI begins to play a role

- Production/Building Automation Tech

- Fabrication equipment continues to become more productive and safer and is more driven by information technology than direct human input. Huge productivity gains in fabrication are likely in the next 10 years.
- Building Automation Tech is in the process of becoming “sensorized” using the Internet of Things (IoT) to deliver granular, real-time data on building system performance and data analytics that drive system optimization decisions.

- Planning and Design Tech

- Parametric planning and design tools are already on the market but will go through multiple generations of upgrades in the next 10 years that will transform real estate value analysis, project planning, and design.
- BIM will also proceed through additional generations of technology, with schedule, budget, and facility management integration becoming more and more sophisticated.



Construction Market Trend 3: Business Process

- Collaborative and Integrated Project Delivery Methods
 - Integrated Project Delivery is still a relatively small share of total projects delivered but has proven its value in the Healthcare space and is migrating into other vertical markets such as Manufacturing, Life Science and High Tech.
 - Collaboration is growing as a project value and culture across most major construction projects.
- Lean Construction
 - We still experience high waste and inefficiency in construction leading to low productivity which has been declining over the last 30 years. As much as 35% of labor time is wasted. Material waste on non-residential construction projects is 25% – so for every 3 buildings we build, we throw another in the landfill.
 - Target Value Design (TVD), Big Room, Last Planner System, Takt, Virtual Design and Construction (VDC) are all powerful Lean Construction tools that are increasingly being applied on jobsites.
- Offsite Construction
 - Merck announced an initiative in 2020 to push 80% of its construction labor hours offsite by 2025.
 - MEP has led the way in modular and componentized construction. Structural systems are lagging but catching up.
 - In general, workers prefer to work in a consistent location rather than going from jobsite to jobsite.
 - As it matures, offsite construction can save up to 50% on schedule and 20% on cost. Like the technology, offsite will go through several generations in the next 10 years.

Construction Market Trend 4: Workforce Shortage

- Demographic Shifts
 - Generation Z is not as large as the Baby Boom Generation or the Millennial Generation.
 - The next generation of entry-level workers is smaller than it's been in over a decade.
- Under-Represented Groups
 - Women are the least represented large demographic group in the construction industry. 11% overall and much lower in the field.
 - Non-white racial groups are under-represented overall, but the biggest gaps are in Field Leadership positions, Project Management, and Leadership and Management.

Implications for our Current and Future Members



FLEXIBILITY



LIFELONG LEARNING



“SOFT SKILLS”
DEVELOPMENT

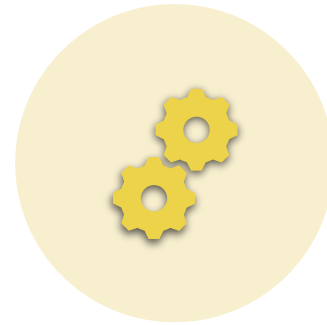
Flexibility



CORE FOUNDATION OF
TECHNICAL SKILLS



LEARNING TO LEARN

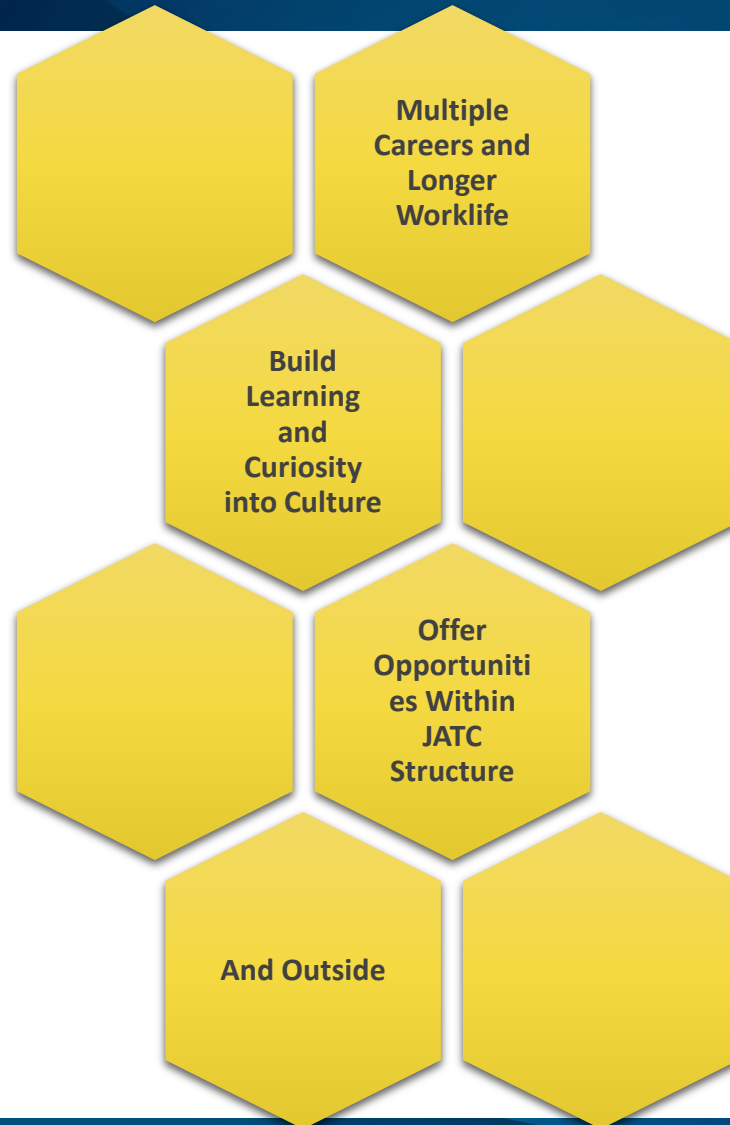


ADAPTABILITY AS
TECHNOLOGY EVOLVES



OPTIONS BUILT INTO
TRAINING CONTENT,
DELIVERY METHODS, AND
SCHEDULES

Lifelong Learning



“Soft Skills” Development

Leadership

Management

Collaboration

Team
Building

How to Move Forward

Communication

Collaboration

Leverage Your Resources

Measure Results and Adjust

Workshop

- Using your sticky notes, write at least one thing that you think should be done in your area to prepare for the future.
- Discuss it with your small group.
- We'll debrief by group.
- Record your takeaways so that you can head home and develop a collaborative plan!



Clark Ellis

Principal

919.345.0873

CEllis@ContinuumAG.com

 [linkedin.com/in/clarkellis](https://www.linkedin.com/in/clarkellis)

As Principal and founding partner with Continuum Advisory Group, Clark Ellis provides consulting services to homebuilders, engineering and construction service providers, real estate developers, manufacturers of building products, tools, and equipment, channel participants, and installing contractors. He has served these clients in North and South America, Asia, Europe, the Middle East, and Africa.

During the course of his consulting career, Clark has contributed his expertise to projects involving enterprise strategy, planning, change management, market research, training and development, business process improvement, and technology deployment. These projects have spanned construction vertical markets such as homebuilding, multifamily residential, industrial, oil and gas, infrastructure, general building, and utility.

In addition to these specific responsibilities, Clark's research priorities are focused on the application of new technology throughout the design, engineering, and construction value chain, the development of the new processes and collaborative business relationships necessary for the industry to leverage these transformative technologies, and the evolution of the North American homebuilding market. These skills, abilities, and interests make him particularly effective in helping clients prepare their strategic and operating plans for success. He is also a sought-after speaker for conferences of all types.

Clark holds a Master of Business Administration in marketing and general management from the Babcock Graduate School of Management at Wake Forest University and a Bachelor of Arts in political science from the University of North Carolina at Chapel Hill.



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