



# **The State of Training and Development**

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**ARCHITECTURE, ENGINEERING & CONSTRUCTION**

**2020-2021 Edition**

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PART I

# INTRODUCTION

# INTRODUCTION

Architecture, engineering and construction (AEC) firms face constant change in the form of technological advancements, evolving codes and safety standards, and much more. In 2020, COVID-19 presented AEC businesses and professionals with additional, unexpected territory to navigate, creating both opportunities and challenges.

As a leading provider of eLearning and performance support tools for learning management and license renewal, Vector Solutions' RedVector brand continually evolves its training content and technology solutions to meet the ever-changing needs of AEC professionals and firms.

To understand those needs, we've surveyed AEC and Learning & Development leaders to gauge their top priorities and obstacles. Below, you'll find insights from our peers, colleagues and customers.



PART II

# ABOUT VECTOR SOLUTIONS & REDVECTOR

# VECTOR SOLUTIONS

## ■ Safer. Smarter. Better.

Vector Solutions offers online learning, performance improvement tools, incident management solutions and other workplace resources for organizations like yours all over the world.

- Learning management systems (LMS)
- Online continuing education courses
- Mobile learning apps
- Risk intelligence & communication platform
- EHS management software
- More

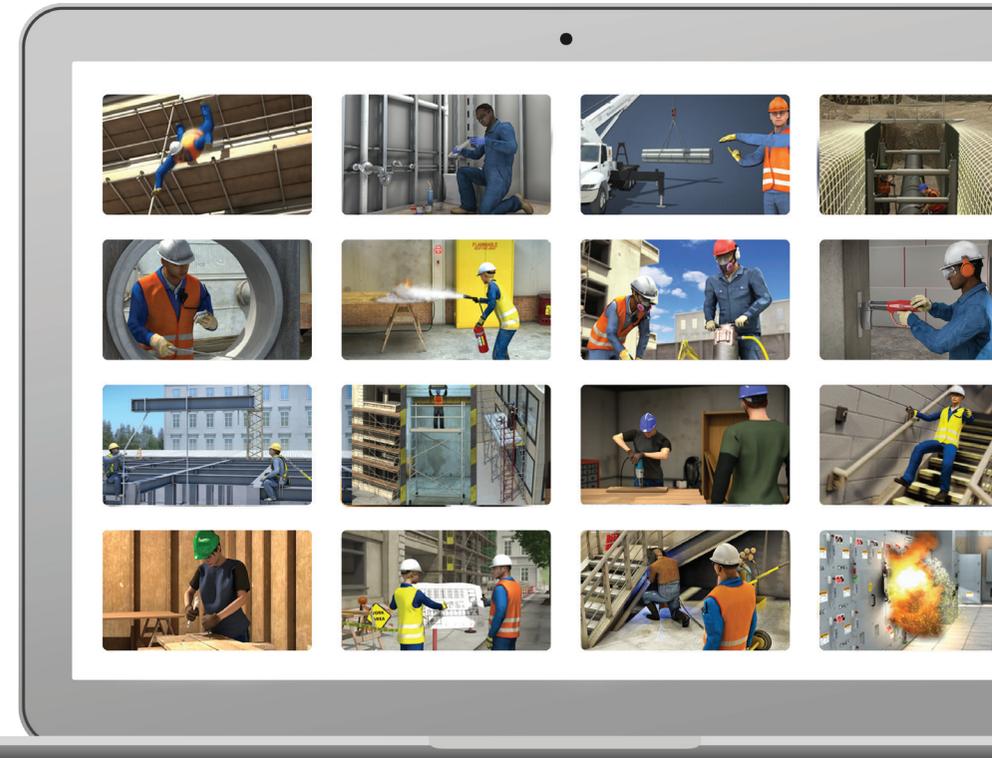


# ONLINE TRAINING FOR YOUR DESIGN/ CONSTRUCTION WORKFORCE

Busy professionals trust RedVector, a Vector Solutions brand, for accredited online training content, including live webinars, and rely on its license search tool to quickly find and enroll in courses most relevant to their projects and license requirements.

Our continuing education courses cover many topics, including:

- Health, Safety and Welfare
- Ethics
- Laws and Rules
- Construction Project Management
- LEED / Sustainable Design
- Building Codes and Standards
- Accessible Design / ADA Guidelines
- Software – BIM, AutoCAD, Revit, Navisworks, Inventor, Civil 3D
- Fire Protection
- Emergency Power
- Personal Protective Equipment



**ARCHITECT**

**QUICK COURSE SEARCH BY LICENSE**

**ENGINEER**

**QUICK COURSE SEARCH BY LICENSE**

**CONTRACTOR**

**QUICK COURSE SEARCH BY LICENSE**

PART III

# TOP TRAINING CHALLENGES FACING AEC FIRMS

# TOP TRAINING CHALLENGES FACING AEC FIRMS

In recent years, a number of trends have emerged through survey responses. Those trends, along with the expected impact of COVID-19 on training processes, are summarized here.

## Recruitment And Retention of Qualified Employees

Pre-pandemic, AEC professionals consistently cited recruitment and retention of qualified employees as a top area of concern.

In the post-pandemic era, hiring gaps are expected to grow as companies adjust their working environments and adopt new business models. As the crisis endures, the shortage of qualified employees that the industry has already experienced may become even more acute with the prospect of more physical-distancing measures and restrictions on cross-border labor movement.

For example, as firms shift to remote ways of working, employees will need to increase their familiarity with remote collaboration and productivity tools, such as building information modeling (BIM), 4D simulation, digital workflow management, real-time progress tracking, and advanced schedule optimization.

*“What we need to do going forward is... make the organization more resilient by redesigning practices to be better aligned with how we think, work, and learn ...”*

– Dr. Clark Quinn, Ph.D.,  
Executive Director,  
Quinnovation

**51%** of learning professionals plan to **launch skills training** programs in the future<sup>1</sup>

## Advancements In Technology

Utilizing new technology has often stood out for AEC professionals. Last year, more than one-third of respondents placed technology in their top three training challenges—and COVID-19 has likely accelerated the need for companies to kickstart their digital transformations.

In the AEC sector, there has been increased adoption of solutions that are digital building blocks for the construction industry, such as BIM and integrated project management platforms. In the future, firms can expect to see even more augmentation, automation, and other technologies that enhance the work of their architects and engineers. Firms that adopt these new technologies will be leading change in the industry.

## Compliance And Regulations

In recent years, a number of firms ranked compliance and regulations as training challenges. COVID-19 has put a new spin on safety, and companies are rethinking training as a result.

This includes instituting new sanitation rules and investing in education for front-line employees who need to work on-site so that they know how to minimize the spread of COVID-19 and what to do if they experience symptoms.

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**54%** of companies report offering additional, pandemic-related education or training for employees<sup>2</sup>

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Companies are also assessing policies to encourage remote work and as a result, they're placing heightened priority on system resiliency and cybersecurity training.

<sup>2</sup> Source: Society for Human Resource Management (SHRM), [Navigating COVID-19: A Toolbox to Build a New World of Work](#)

PART IV

# PRIORITIZING TRAINING IN THE AEC SECTOR

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## Time And Budget Devoted To Training

In recent years, AEC professionals have reported on their budget allocations and time devoted to training. In 2019, nearly one-third of respondents indicated they planned to increase their spending on training and more than half of respondents reported they provided employees with up to 40 hours of training each year. These plans may have been interrupted in 2020.

Digital and virtual learning programs were already on the rise, and since the pandemic, there has been a marked increase in this type of training.

**In 2020, our study of the industrial manufacturing and AEC sectors revealed that the average training and development spend per employee was more than \$1,200.**

*“One of the persistent practical challenges in moving from classroom to online is managing distraction. I think one of the reasons we’ve continued to do in-person training as much as we have in the past is that taking people out of their normal workspace minimizes distraction... it’s something where we need to think about creative solutions to help people focus.”*

*– Julie Dirksen, Learning Strategy Consultant,  
Usable Learning*

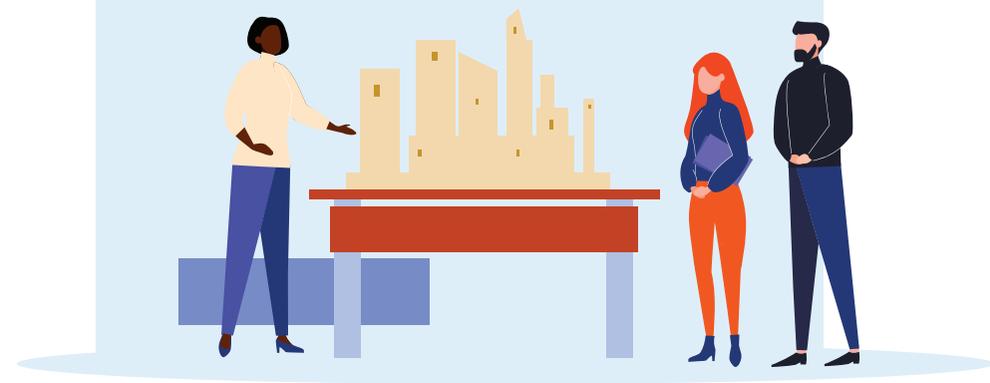
## Training Processes

In the past, we asked AEC professionals what types of formal training processes were in place at their organizations. Most often, they cited activities like new employee orientation, progression training, competency assessments, and development plans. A smaller number of respondents also pointed to individual development plans, mentoring, and coaching.

Post-pandemic, organizations' approach to training is likely to shift. Across industries, companies are increasing their adoption of digitized and virtual training, making it possible to scale learning in a cost-effective way. In fact, industry analysts suggest that by 2025, there will be nearly 60 million users of Augmented Reality training applications across verticals such as manufacturing and AEC. Such training can help companies reach, assess, and support workers with improved training and collaboration.<sup>5</sup>

*“COVID accelerated existing focus points which were related to aligning work to business value, empowering people to adapt and learn at speed, and supporting digital transformation.”*

– Arun Pradhan, Co-Founder,  
[ModelThinkers.com](https://ModelThinkers.com)



<sup>3</sup>Source: [LinkedIn 2019 Workplace Learning Report](#)

<sup>4</sup>Source: [LinkedIn 2019 Workplace Learning Report](#)

<sup>5</sup>Source: [ABI Research, AR Remote Expertise and Training Applications to have Almost 60 Million Active Users by 2025](#)

## Knowledge For The Future

Across industries, professionals are taking a critical look at the knowledge and skills needed for the future.

Looking ahead, analysts predict an increasing demand for soft skills such as leadership, agility, and resilience, in addition to an intensifying demand for technological skills. In the rapidly evolving AEC sector, new technology plays an especially important role and is one of the greatest factors influencing in-demand skills in the industry.

Emerging from the pandemic, AEC firms are being forced to reimagine their operations, which calls for building new skills and capabilities in their workforce. Going forward, we're likely to see:

- Designers and engineers relying more on digital collaboration tools.
- Engineers and contractors using 4D and 5D simulation to replan projects and schedules.
- Firms integrating digital-twin solutions for end-to-end use, from project concept to commissioning.

- Businesses increasing their adoption of technology to enable digital, remote sales.
- Companies investing in automating on-site and back-office processes, such as new standardized building systems to speed up elements of design and construction.

COVID-19 has also allowed many companies to see for the first time what it's like to lead a remote team—and uncover opportunities to do it better. As noted earlier, more and more companies are adopting remote working policies, increasing the need for employees to become proficient in online collaboration and communication tools such as Slack, Zoom, and Microsoft Teams. In the future, greater use of these tools may help more employees to contribute ideas, aid in knowledge transfer, and enhance peer learning.

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***“As our workforce becomes more diverse, mobile, and distributed, L&D needs to find ways to facilitate the connection, collaboration, knowledge transfer, and informal learning opportunities.”***

– Dr. Stella Lee, Ph.D., Learning Consultant,  
Owner, Paradox Learning

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71% of companies report adjusting to remote work as one of their top challenges stemming from COVID-19<sup>6</sup>

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41% of professionals report effects on the workforce/ reduction in productivity as one of their greatest challenges stemming from COVID-19<sup>7</sup>

<sup>6</sup>Source: Society for Human Resource Management (SHRM), [Navigating COVID-19: A Toolbox to Build a New World of Work](#)

<sup>7</sup>Source: PricewaterhouseCoopers, COVID-19: [What it Means for Engineering and Construction](#)

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59% of learning professionals report spending more of their training budgets on online learning<sup>5</sup>

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39% of learning professionals report spending less on instructor-led classroom training<sup>6</sup>

Learn more about [live online learning](#), a skill that became increasingly important as a result of COVID.



PART V

# A NEW YEAR, A NEW OUTLOOK

# A NEW YEAR, A NEW OUTLOOK

Moving forward, it's clear that organizations will need to provide more diverse training to remain competitive in the marketplace. In 2020, COVID-19 created new challenges for AEC firms—on top of the challenges already emerging from advances in technology, evolving codes and standards, safety regulations, and more. As leaders continue to assess the impact of the pandemic on their businesses, they will need to consider the new knowledge and skills needed across the workforce and envision new training processes for the future.





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