



ENGINEERS RISING LLC

IMPACT COVID-19:

LESSONS LEARNED AND THE FUTURE OF
STRUCTURAL ENGINEERING PRACTICE

In the next 10 years

Presented by Stephanie Slocum, P.E.

I'm Stephanie Slocum

- SEAoP/NCSEA member
- SEI BOG member & SEI Business Practices Committee Chair
- Structural Engineer (PE), Author, and Career + Business Strategist
- Founder of Engineers Rising LLC
- 15 Yrs. Experience in Low & Midrise Commercial Building Structures

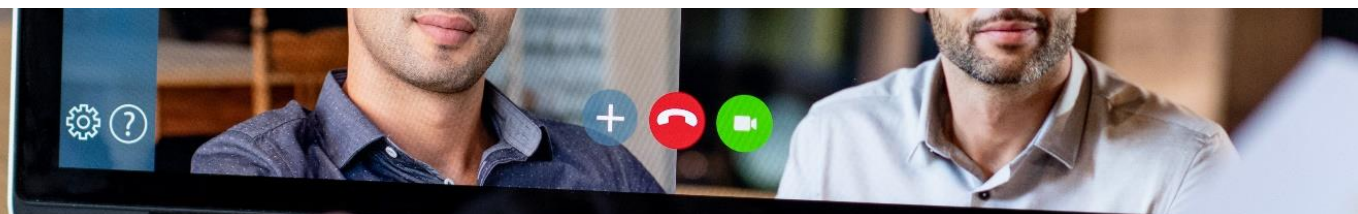


Learning Outcomes

1. Understand how COVID-19 has impacted the structural engineering industry to date on a national scale.
2. Explore 6 key emerging industry trends that have been accelerated as a result of COVID-19 and actions firms can take to address them.
3. Discuss 3 workforce trends structural engineers need to address to retain the best and brightest at their firms.
4. Facilitate open discussion on the future of the profession.



1 year ago, everyone working remotely full-time “wasn’t possible” for many organizations.



Pre-COVID Structural Engineering World: Remote Work Perceptions

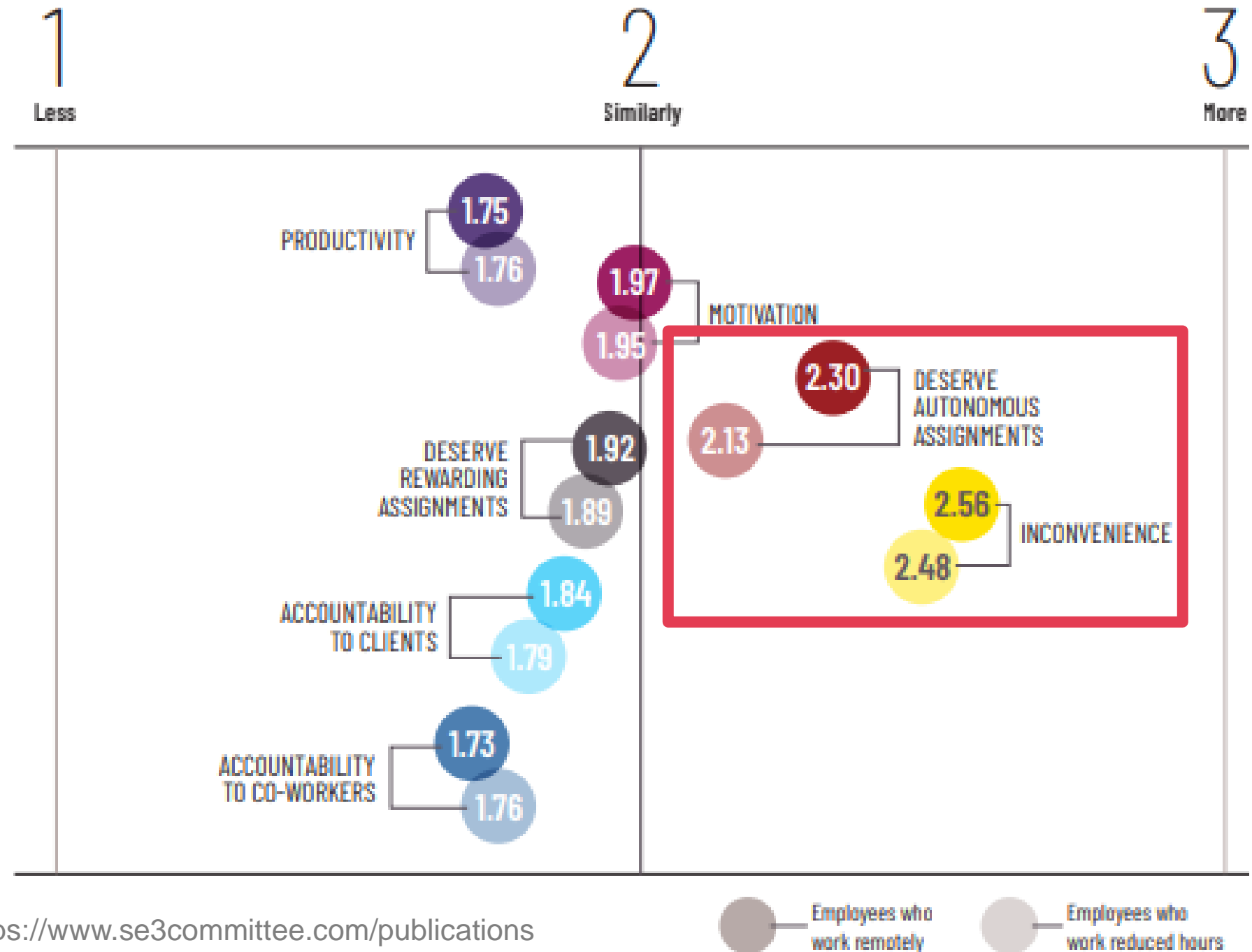
5



70%

Structural engineers
wanted the ability to
work remotely

But there was a pervasive stigma against employees who did



What's possible has changed...

...And created a new set of challenges.

What has been the biggest challenge for YOU at work due to COVID-19?

Link is below and also in the chat to vote! (Live session attendees only)

<https://www.menti.com/tvt55661u8>

What has been the biggest challenge for YOU at work due to COVID-19?

See the poll results:

<https://bit.ly/3tYfqIe>

A 3D rendering of two elephant tusks protruding from a grey wall. The tusks are light beige and curved. They are positioned symmetrically, with their bases embedded in the wall, creating jagged, star-shaped holes. A white rectangular sign is suspended from the lower ends of the tusks by thin grey wires. The sign features the text "What elephant in the room?" in a bold, red, sans-serif font. The background is a solid grey wall, and the foreground shows a wooden floor with scattered small, light-colored debris.

What elephant in the room?



BLOCKBUSTER

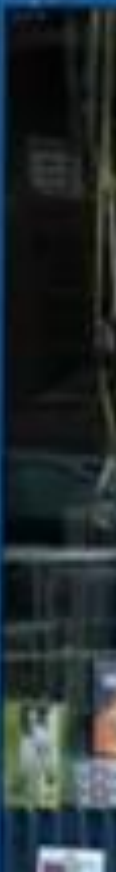


YWOOD
DA!
BLOCKBUSTER
VIDEO



THE HOME OF
ENTERTAINMENT
BLOCKBUSTER
VIDEO

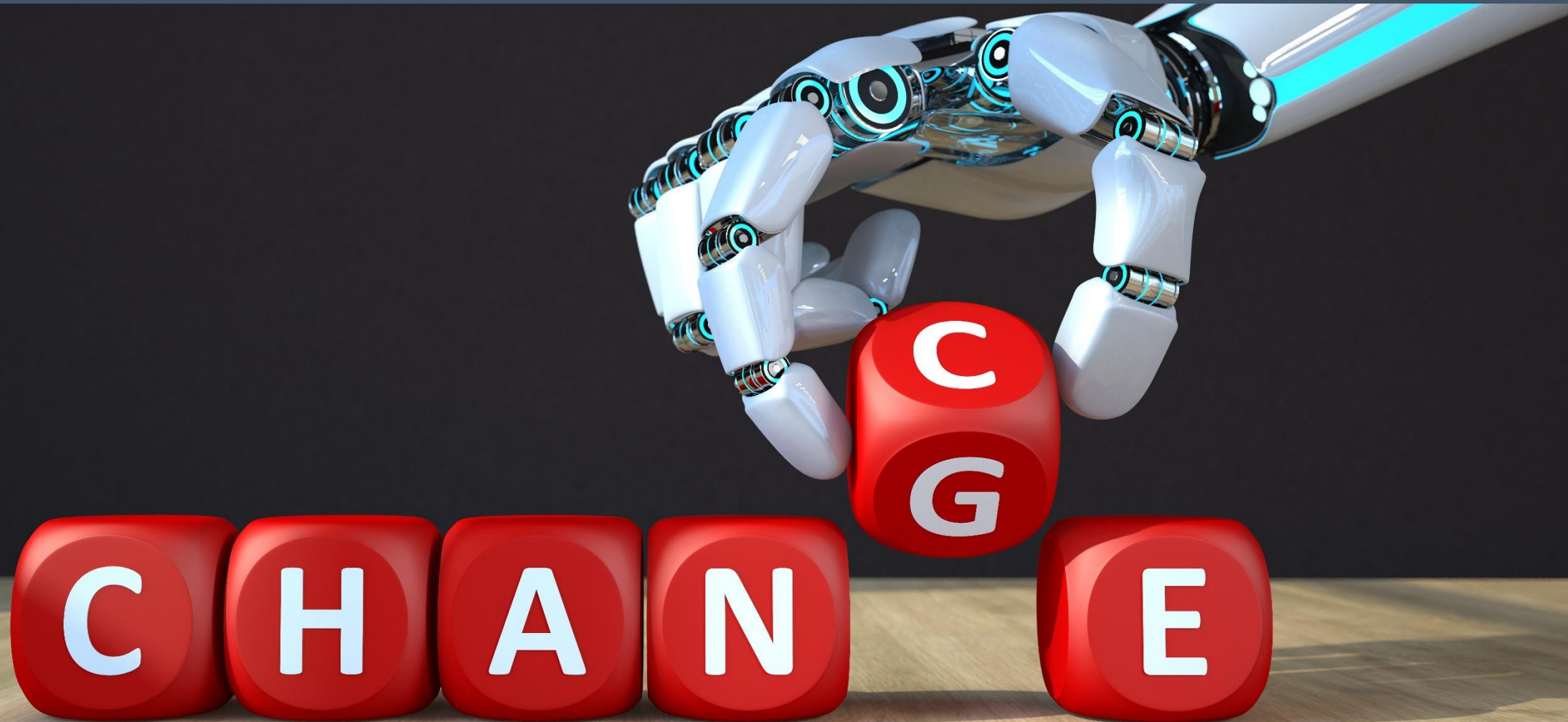
YWOOD
DA!
BLOCKBUSTER
VIDEO



Blockbuster's decline was both foreseeable and preventable.

What happened?

Blockbuster failed because when the whirlwinds of change swept through their industry, they didn't adapt.



Some of the most top-of-mind questions...

- What is the outlook moving forward for my work?
- Is work-from-home here to stay?
- How is COVID-19 going to impact the industry in the near and long-terms?
- How do you nurture existing client relationships or find new ones in this environment?
- Everyone is stressed...what can I do about this?
- How do you motivate and measure productivity of your employees?

How can we do this?

~~How can we do this?~~

WRONG
QUESTION!

What are we solving for?



**We are solving for no less than the longevity of
our careers, businesses, and industry.**

Activities that don't do that:

- Focus on reactive “work from home” and “reopening policies”, especially when the root cause of the problem is lack of trust
- Putting all sorts of tools in place to measure productivity of remote workers
- Rehashing when team members were in Zoom meetings and their kids popped in, as if that had any bearing on their structural engineering expertise
- Lamenting about when work is going to get “back to normal”
- Staying stuck in logistics of what tools and methods do you need to do something remotely, while neglecting the time, effort, and energy needed to build high-performing teams and offices
- Ignoring the stress and burnout epidemic

Things that move us forward:

- **An open discussion** about the real challenges – which are mostly being driven by world events and market shifts that we cannot change - and the root cause of those challenges.
- **Letting go of pre-conceived notions** of what it means to be a structural engineering professional, including how our businesses are run and our business models.
- Solving for how to **best spend your energy adapting** to the present instead of wasting energy trying to return to the past.....Asking “How might we?” instead of “This is why this won’t work/won’t happen.”
- **Demonstrating empathy and compassion** for ourselves, teams, and clients.



The good news is that there's lots of data already available to guide us as we navigate our changing world in the context of being a structural engineering professional.

Learning Outcomes

1. Understand how COVID-19 has impacted the structural engineering industry to date on a national scale.

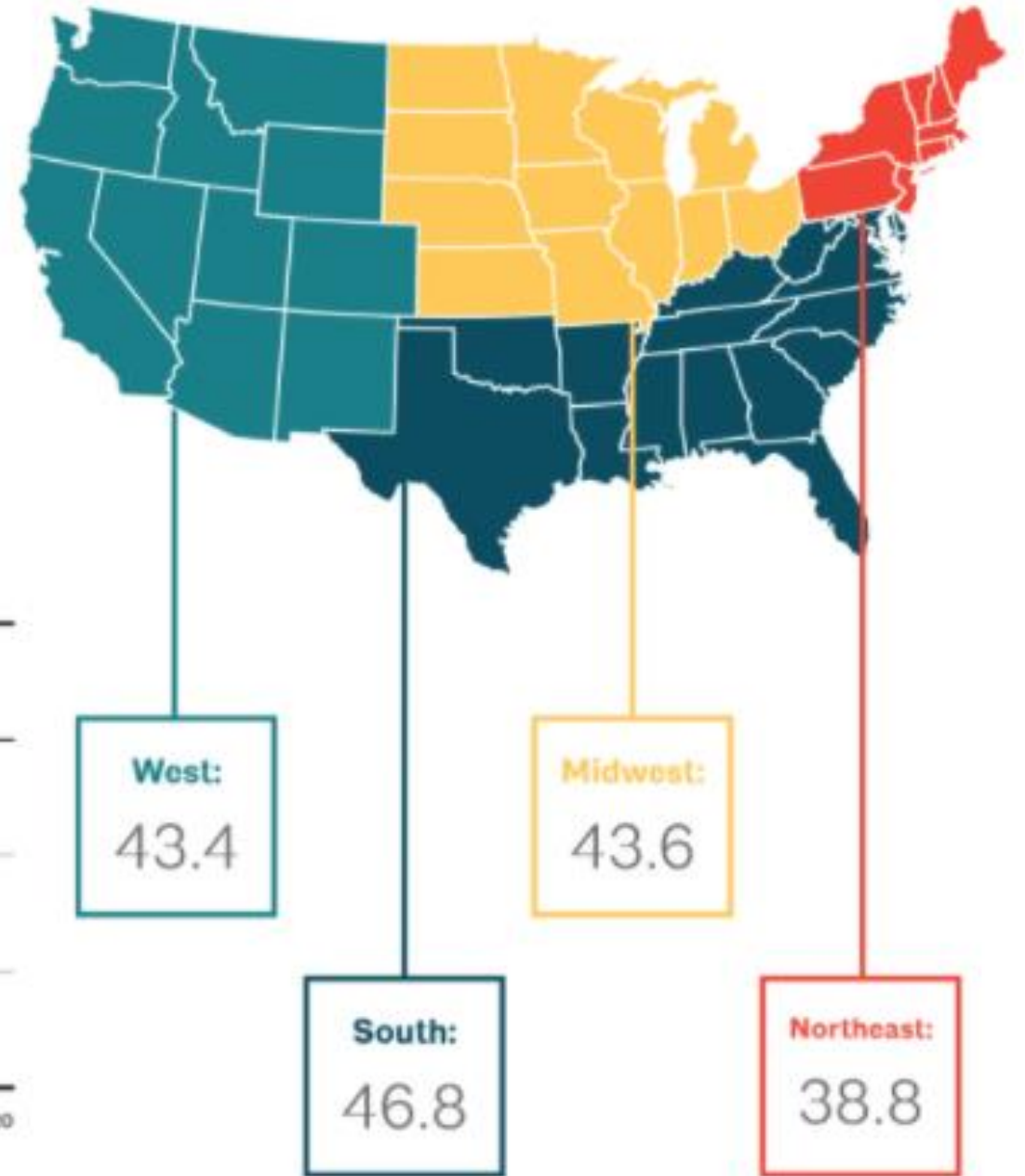
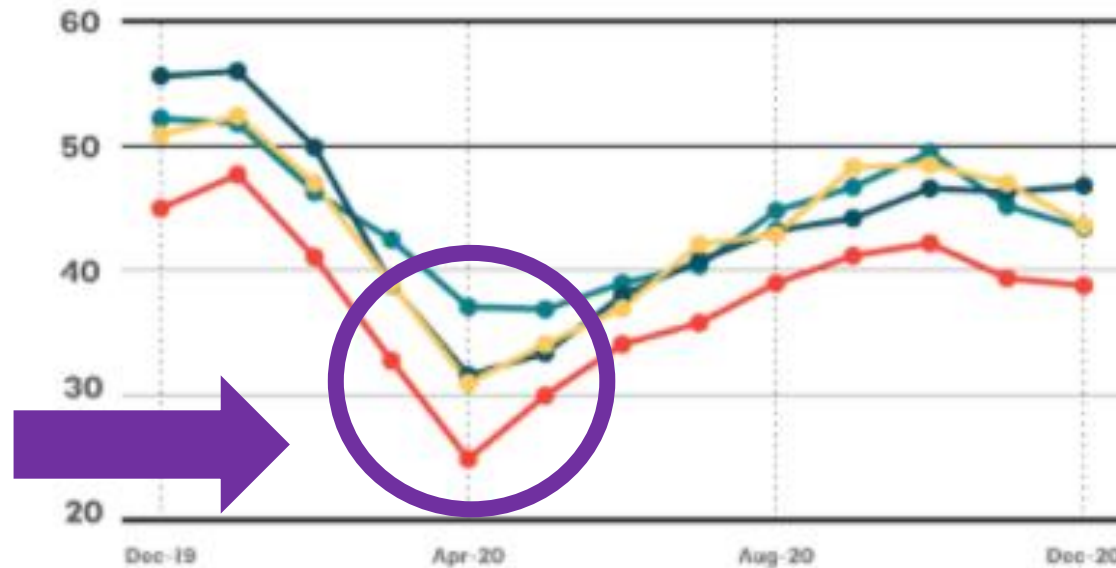
Some
interesting
numbers...



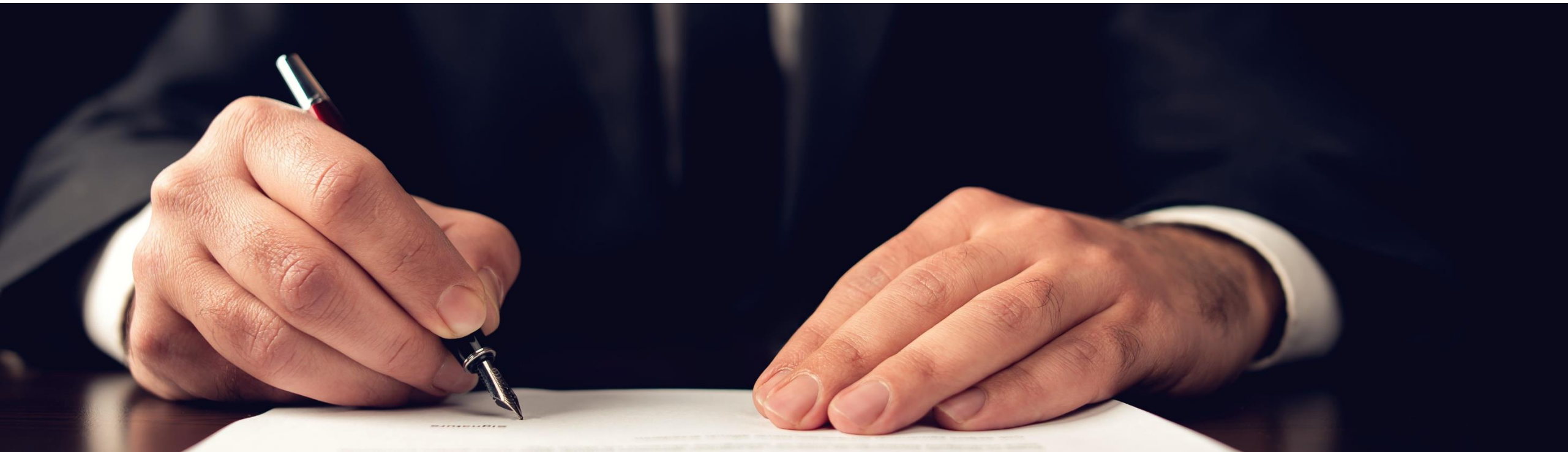
Regional

Business conditions soften across most of the country

Graphs represent data from December 2019–December 2020 across the four regions. 50 represents the diffusion center. A score of 50 equals no change from the previous month. Above 50 shows increase; Below 50 shows decrease. 3-month moving average.

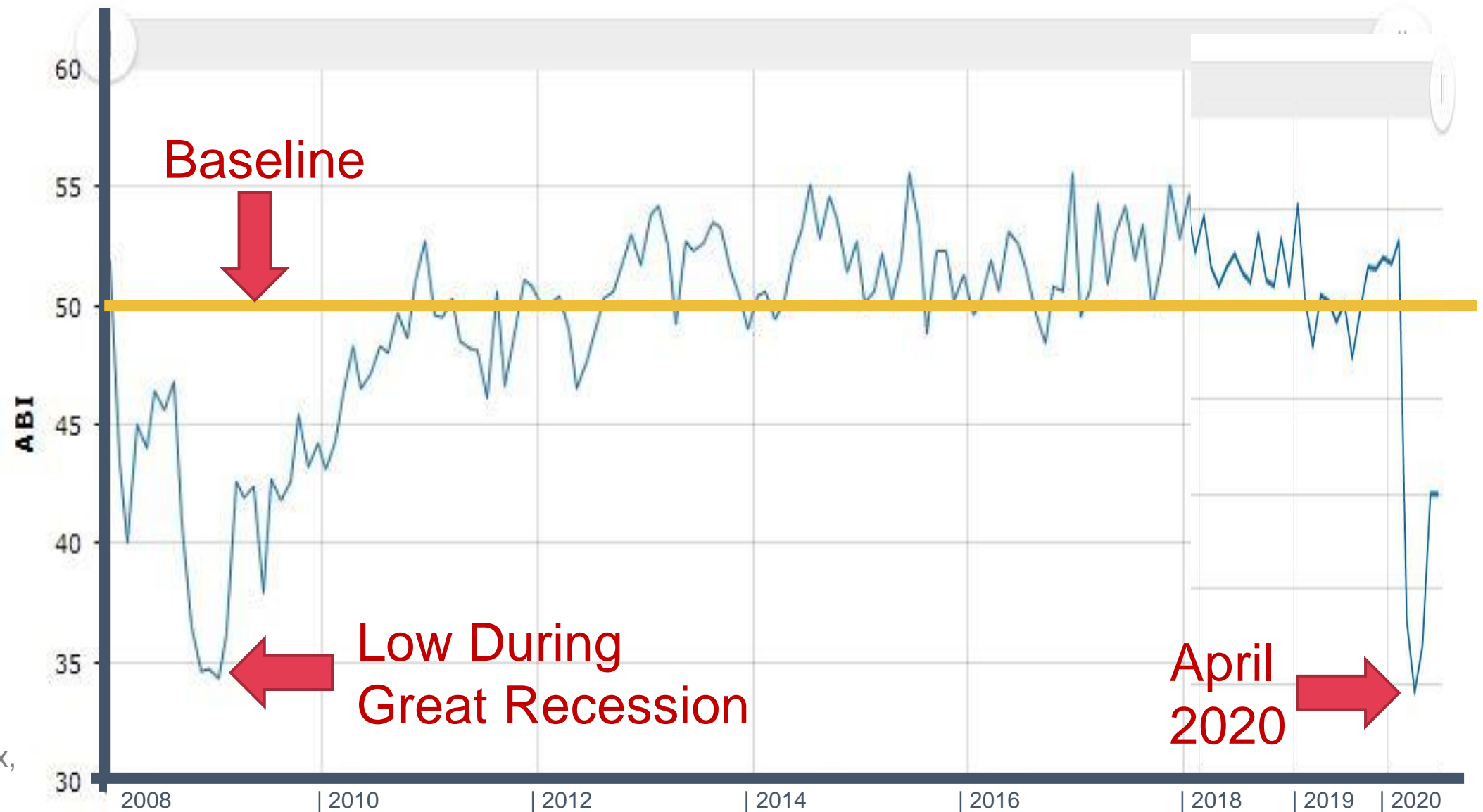


“While clients expressed interest in exploring new projects, many are hesitant to sign onto new contracts with the exception of the multifamily residential sector...”
– AIA Chief Economist Kermit Baker



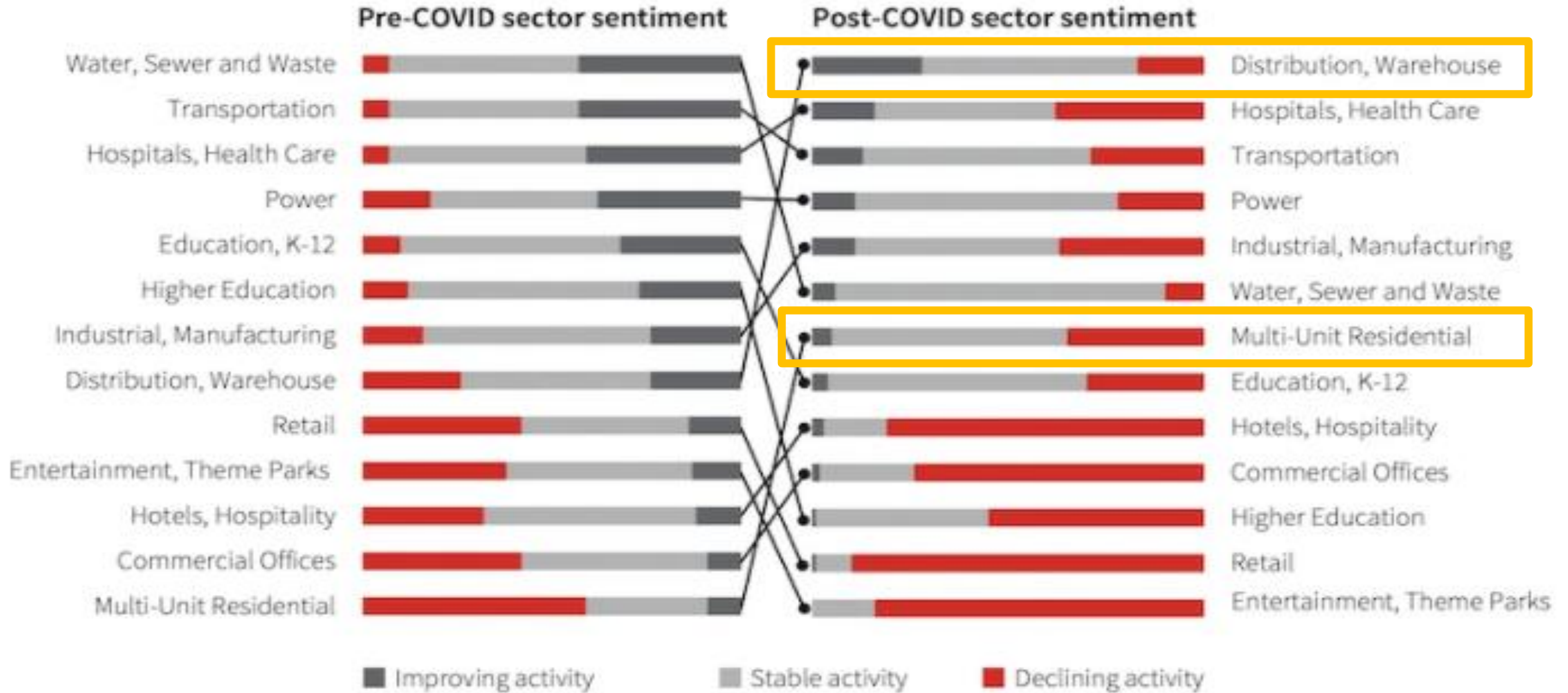
Architectural Billings Index (ABI) Historical Data 2008-2019

27



Source:
Historical
Architectural
Billings Index,
aia.org

Construction sectors ranked by sentiment, pre- and post-pandemic



Sources: JLL Research, Associated General Contractors

Source: Building Design and Construction. August 18, 2020. <https://www.bdcnetwork.com/nonresidential-construction-industry-won%E2%80%99t-start-growing-again-until-next-year%E2%80%99s-third-quarter>

Which project sectors are you working in right now?

Link is below and also in the chat to vote! (Live session attendees only)

<https://www.menti.com/khn24ojw4p>

Which project sectors are you working in right now?

See the poll results:

<https://bit.ly/3pvpsgs>

Learning Outcomes

1. Understand how COVID-19 has impacted the structural engineering industry to date on a national scale.
2. **Explore 6 key emerging industry trends that have been accelerated as a result of COVID-19 and actions firms can take to address them.**

The 6 Emerging Industry Trends

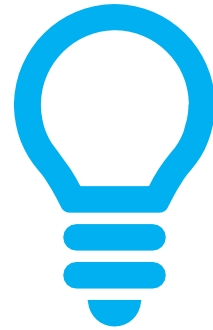
- 1 Market shifts due to work-from-home
- 2 Go online or fall behind
- 3 Thought leadership and value contracting
- 4 More small design firms and M&A activity
- 5 Accelerated technology adoption
- 6 Gig economy



Trend 1: Market shifts due to work from home



Trend 2: Go online or fall behind.



Trend 3: Thought leadership and value contracting.

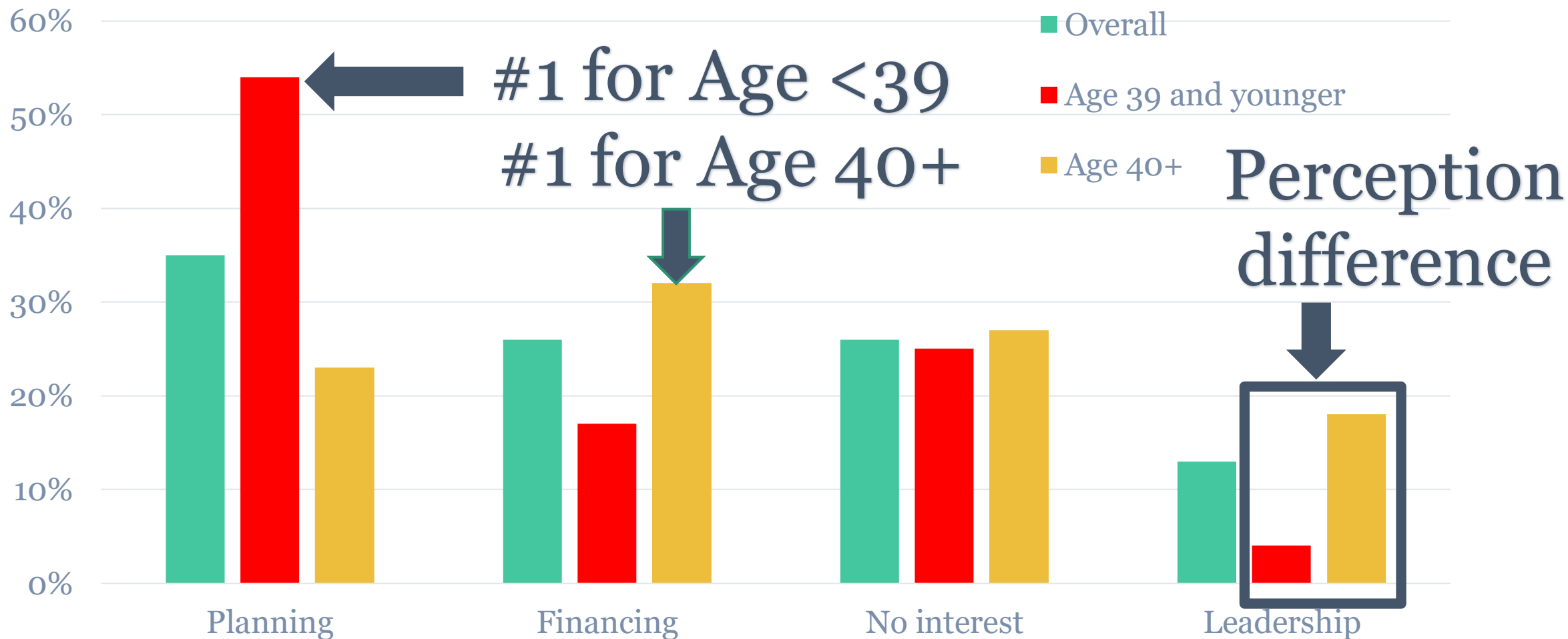
The fundamental question:

Are you a partner or are you “just the engineer”?



Trend 4: More small firms and M&A activity

Barriers to Ownership




Source: 2016 SEI Business Practices Committee Survey, presented at Structures Congress "Succession Planning" session 2017.



60%

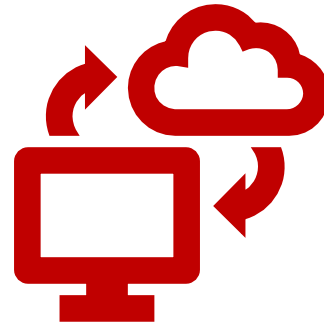
Agreed **it's easier to sell a 1st generation firm** than plan internally for succession

Even in 2020, the number of M&A deals announced **remained the same** compared to the first three quarters of 2019.



“...for most of the coming decade, external sales will continue to be the best ‘out’ for a large percentage of aging firm owners.” – Frank Stasiowski





Trend 5: Accelerated Technology Adoption

Technology-related thoughts to consider:

43

- Email and text as a primary communication tool: how are you tracking those communications?
- Are you using coding to accelerate delivery of services? What about AI, machine learning, and drones?
- Have you upgraded your communication platforms to facilitate virtual communication between team members?
- What are your cyber-security protocols?
- Are you still reviewing shop drawings on paper?
- Embracing technology before competitors can lead to expanded markets/more profits.



Trend 6: Gig Economy

The 6 Emerging Industry Trends

- 1 Market shifts due to work-from-home
- 2 Go online or fall behind
- 3 Thought leadership and value contracting
- 4 More small design firms and M&A activity
- 5 Accelerated technology adoption
- 6 Gig economy

A few questions to ponder:

1. Do you really need that expensive office space?
2. How will drones (and AI and machine learning) affect what we do?
3. How might you use technology to increase project delivery efficiency and deliver higher value to clients?
4. Why do you need hard copies?
5. Can a potential (or existing) client tell from your website your value proposition when compared to your competitors? Is your site mobile-responsive? Is your social media feed demonstrating thought leadership?
6. How can you provide value in creative ways to existing and new clients in the virtual environment?
7. What's your firm's ownership transition plan?

Successful Firms Will Adopt New Business Models

Old Model

Sell more work



Hire more people



Bill more hours

New Model

Find out what your clients really want



Add more value



Leverage value not hours

Which trend do you think will have the biggest impact on your work in the next 10 years?

Link is below and also in the chat to vote! (Live session attendees only)

<https://www.menti.com/5fcigr1u14>

Which trend do you think will have the biggest impact on your work in the next 10 years?

See the poll results:

<https://bit.ly/3qwpc23>

Learning Outcomes

1. Understand how COVID-19 has impacted the structural engineering industry to date on a national scale.
2. Explore 6 key emerging industry trends that have been accelerated as a result of COVID-19 and actions firms can take to address them.
3. **Discuss 3 workforce trends structural engineers need to address to retain the best and brightest at their firms.**

“Success in business is all about people, people, people. Whatever industry a company is in, its employees are its biggest competitive advantage.”

- Richard Branson

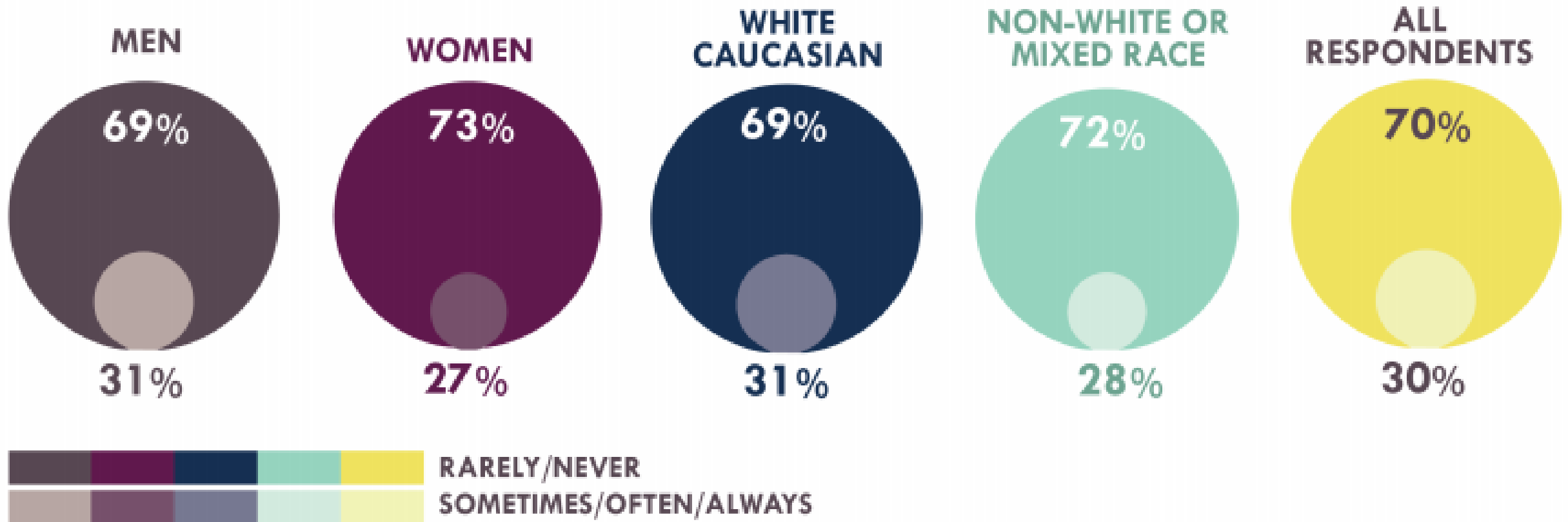


70%

Structural engineers surveyed
wanted more remote work
options pre-Covid.

Percentage of Structural Engineers Working from Home Pre-COVID

53





85%

Percentage of employees
are not engaged or actively
disengaged at work

At the same time, of the below choices, which do you think is the #1 business challenge self-reported by AEC industry principals and owners?

1. Bringing in
New Work

2. Avoiding
Commoditization

3. Recruiting &
Retention

4. Ownership
Transition

Please type the one you think is correct into the chat

An overhead view of three business professionals (two men and one woman) sitting around a large conference table in an office. They are looking at documents and a laptop. A blue hard hat is on the table. The image is semi-transparent with a dark blue overlay.

THE #1 CHALLENGE: RECRUITING AND RETENTION

Source: 2019 ZweigGroup Survey Data

And then came COVID-19....

Workforce Retention Trends

58

- 1 **Expectation of Work Flexibility**
- 2 **Retention challenges driven by compensation and stress/burnout**
- 3 **Growth Paths & the Entrepreneurial Spirit**

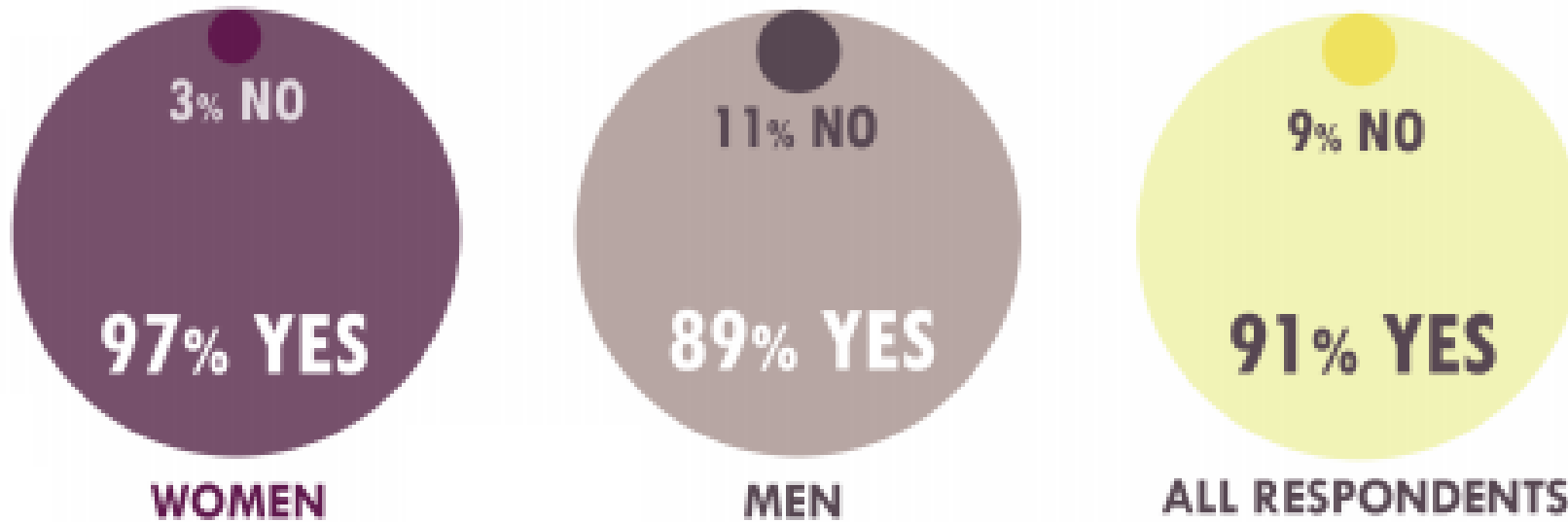
Workforce Retention Trends

59

1 Expectation of Work Flexibility

Percentage of Structural Engineers Working Remotely During COVID

60





80%

Structural engineers have the **same or better view of remote work** as compared to before COVID-19.

Workforce Retention Trends

62

- 1 Expectation of Work Flexibility
- 2 Retention challenges driven by compensation and stress/burnout**

A 2020 survey of structural engineers found that respondents felt the top two challenges the profession faces are:

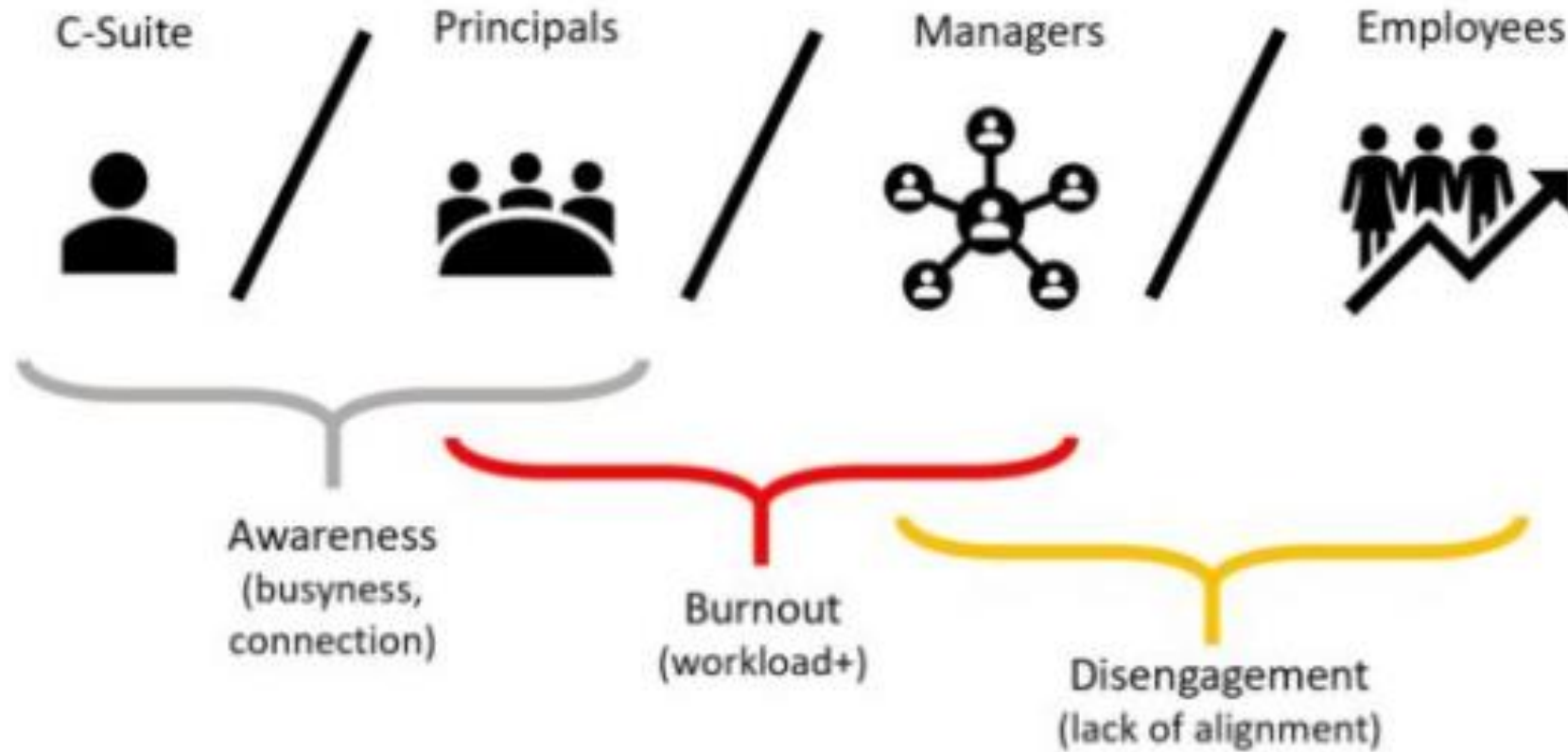
69%
Compensation

53%
Stress or
Burnout

Stress and burnout was a problem
before the pandemic...

...ignoring it doesn't make it go away.

How Burnout Thrives in Organizations



Source of graphic and resource for burnout prevention: actionsprove.com. Peter Atherton is a former engineering executive turned expert in reversing burnout in engineering organizations.

Workforce Retention Trends

66

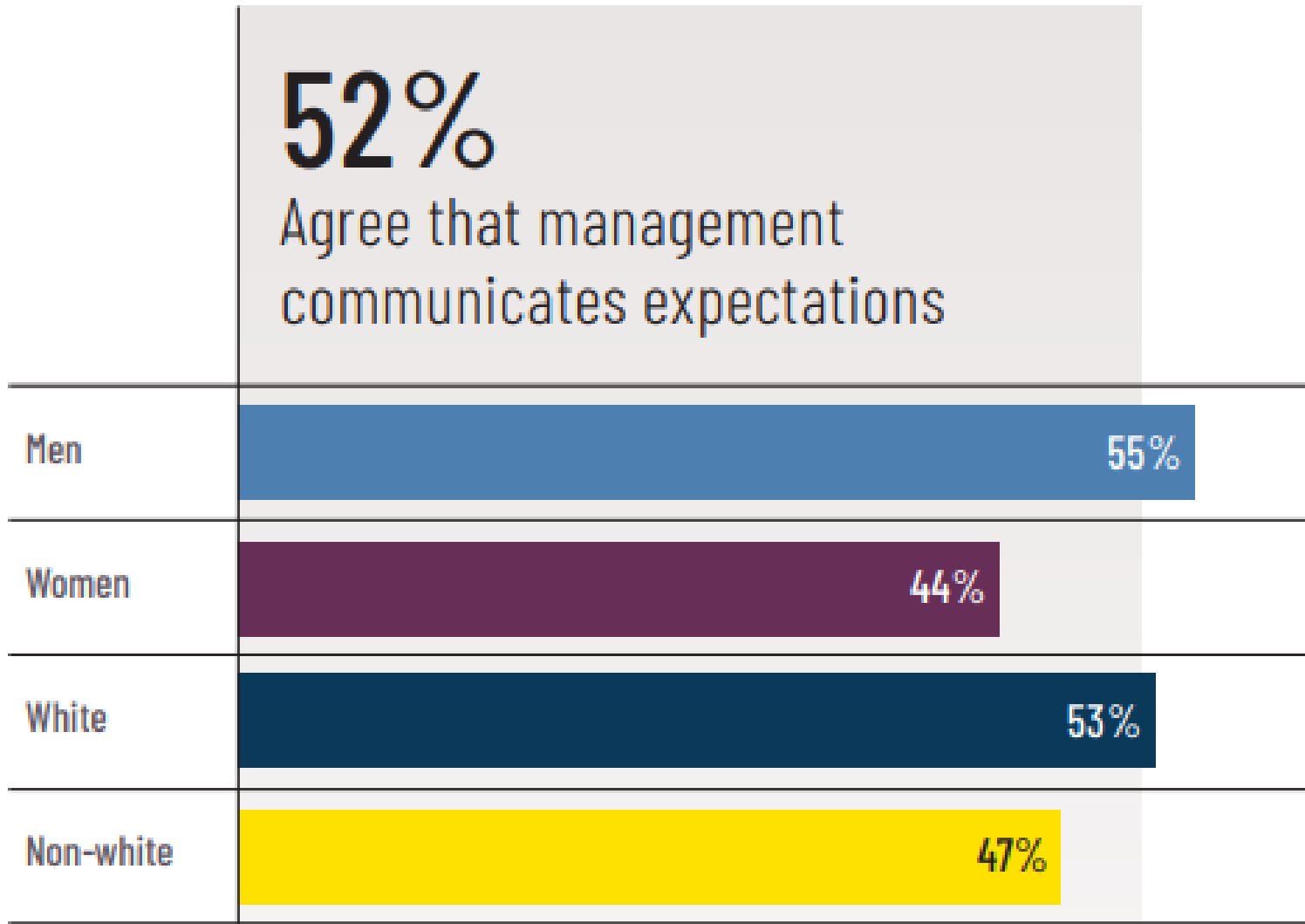
- 1 Expectation of Work Flexibility
- 2 Retention challenges driven by compensation and stress/burnout
- 3 Growth Paths & the Entrepreneurial Spirit**



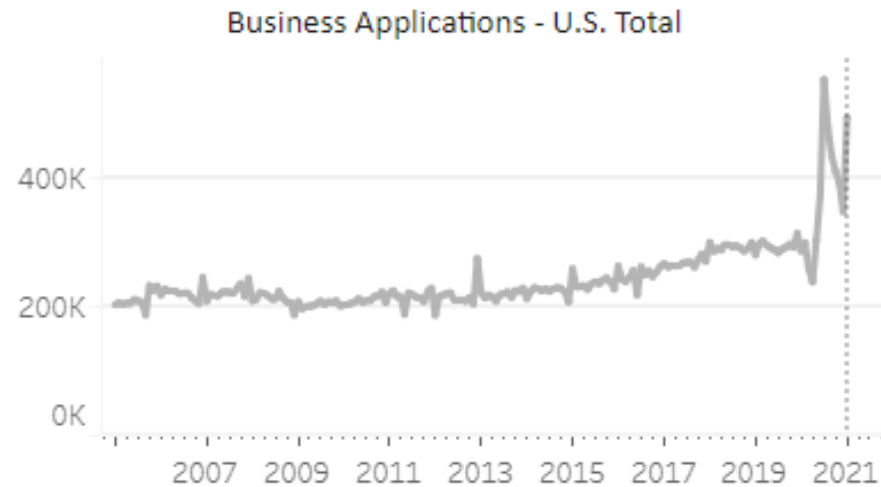
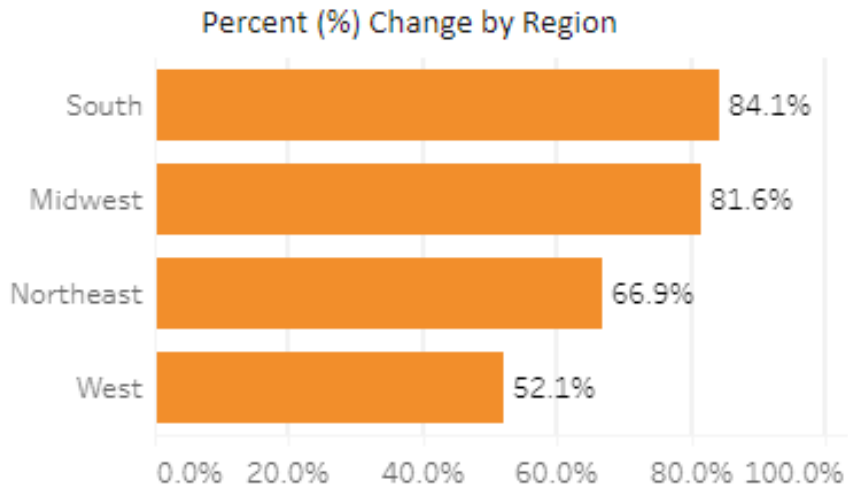
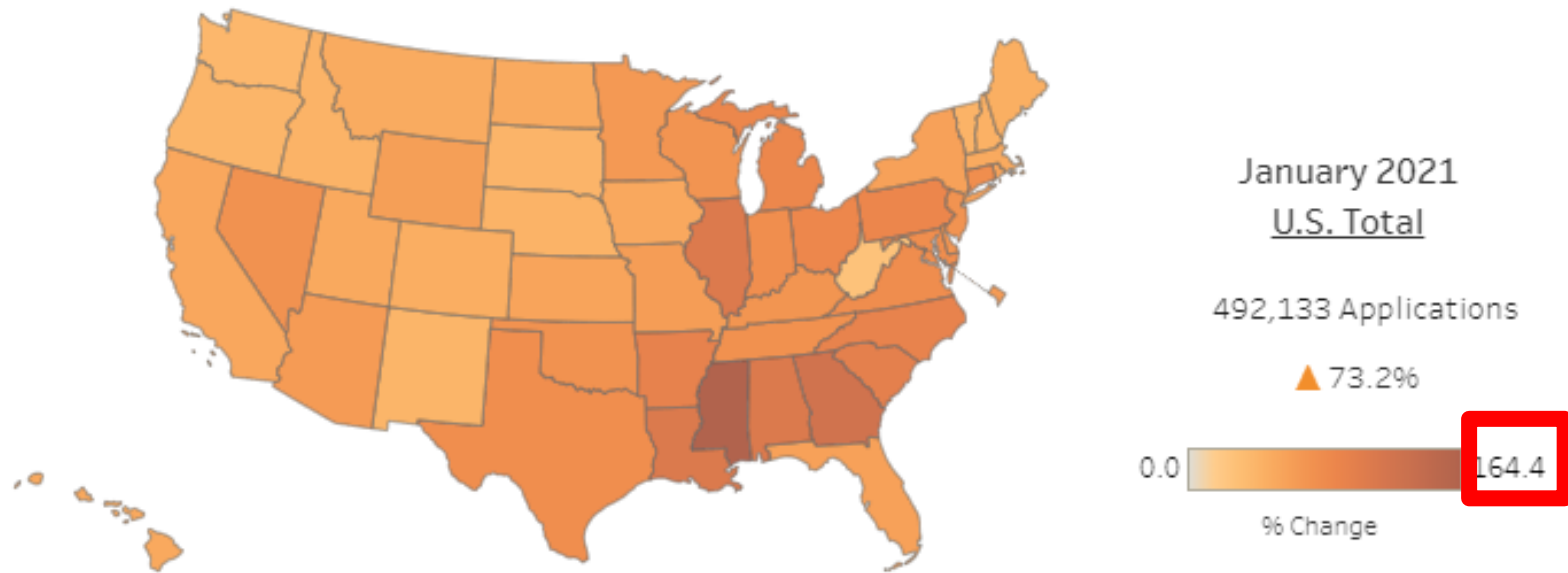
52%

Structural engineers aspire
to become Principals

Source: SE3 2018 Survey Report: <https://bit.ly/3px6ZQT>



Source: SE3 2018 Survey Report: <https://bit.ly/3px6ZQT>



164.4%
increase in
business
applications
since this time
last year.

The profession is facing recruiting and retention challenges that have been accelerating for years...

A few questions to ponder:

1. What are you doing to keep morale and team synergies high?
2. Are you ignoring stress and burnout until it's too late?
 - Example: Are their work-hour boundaries when no one is expected to respond to emails?
3. How might you provide better training to those setting fees and better value to clients so you can raise fees and alleviate the compensation issue?
4. How can growth and promotion paths be made more transparent and clear to everyone in your firm?
5. Are you creating your own competition by not providing mentorship and paths to ownership?

Where do we go from here?

What are we solving for?

Takeaways for Action:

- Help your work culture embrace current trends
- Embrace new technology before competitors
- Reconsider your business model
- Share your intellectual capital so you can be seen as a thought leader
- Provide clear and transparent growth paths and mentorship
- Manage – don't ignore or shame – stress and burnout indicators
- Think creatively about how to provide more value to clients so you aren't a commodity.

Growth and comfort do not coexist.



How might we think creatively about these trends and make them work for us?

Learning Outcomes

1. Understand how COVID-19 has impacted the structural engineering industry to date on a national scale.
2. Explore 6 key emerging industry trends that have been accelerated as a result of COVID-19 and actions firms can take to address them.
3. Discuss 3 workforce trends structural engineers need to address to retain the best and brightest at their firms.
4. **Facilitate open discussion on the future of the profession.**

**What impacts do YOU think
COVID-19 will have on the
profession?**

Link is below

<https://bit.ly/37keLHx>

Questions?

Presenter's Contact Information:

Stephanie Slocum, P.E.

Email: stephanie@engineersrising.com

Connect on LinkedIn: [stephanieslocumpe](https://www.linkedin.com/in/stephanieslocumpe)

Website: engineersrising.com

