Design Risk in a Hybrid Practice

WTW A&E Commissioned Research
June 16, 2023

CAMERON MacALLISTER | GROUP

NEW REALITIES

In March 2020, the COVID pandemic forced the entire A&E industry to shift to remote work – something few firms had contemplated, and none preferred.

Most firms survived and performed better than they expected – in fact, many had some of their busiest and most profitable years during this period. Most firms have adopted "hybrid" work practices for good.

Many leaders are concerned, however, about the effects of these new realities on the quality of their work.

INTRODUCTION

WTW A&E commissioned Cameron MacAllister Group, consultants and advisors to leading design firms, to conduct research on design quality and risks in today's hybrid work environment.

We invited leaders of 300-400 architecture and engineering firms to complete a 28-question survey and received almost 200 responses. The survey was administered in March and April 2023, and the results were presented at the annual WTW A&E Large Firm Convocation on June 1.

INTRODUCTION

WTW A&E is the specialty division of WTW that is exclusively dedicated to providing insurance and risk management solutions to architects and engineers across North America. For more information about WTW A&E and access to a wide range of risk management programs and services, visit *www.wtwAE.com*.

Cameron MacAllister Group is a trusted advisor to leading AEC firms across the U.S. and Canada, including 17 recipients of the National AIA Firm Award. The group offers a variety of planning, management consulting, research, and other services. To learn more, visit *www.cameronmacallister.com*.
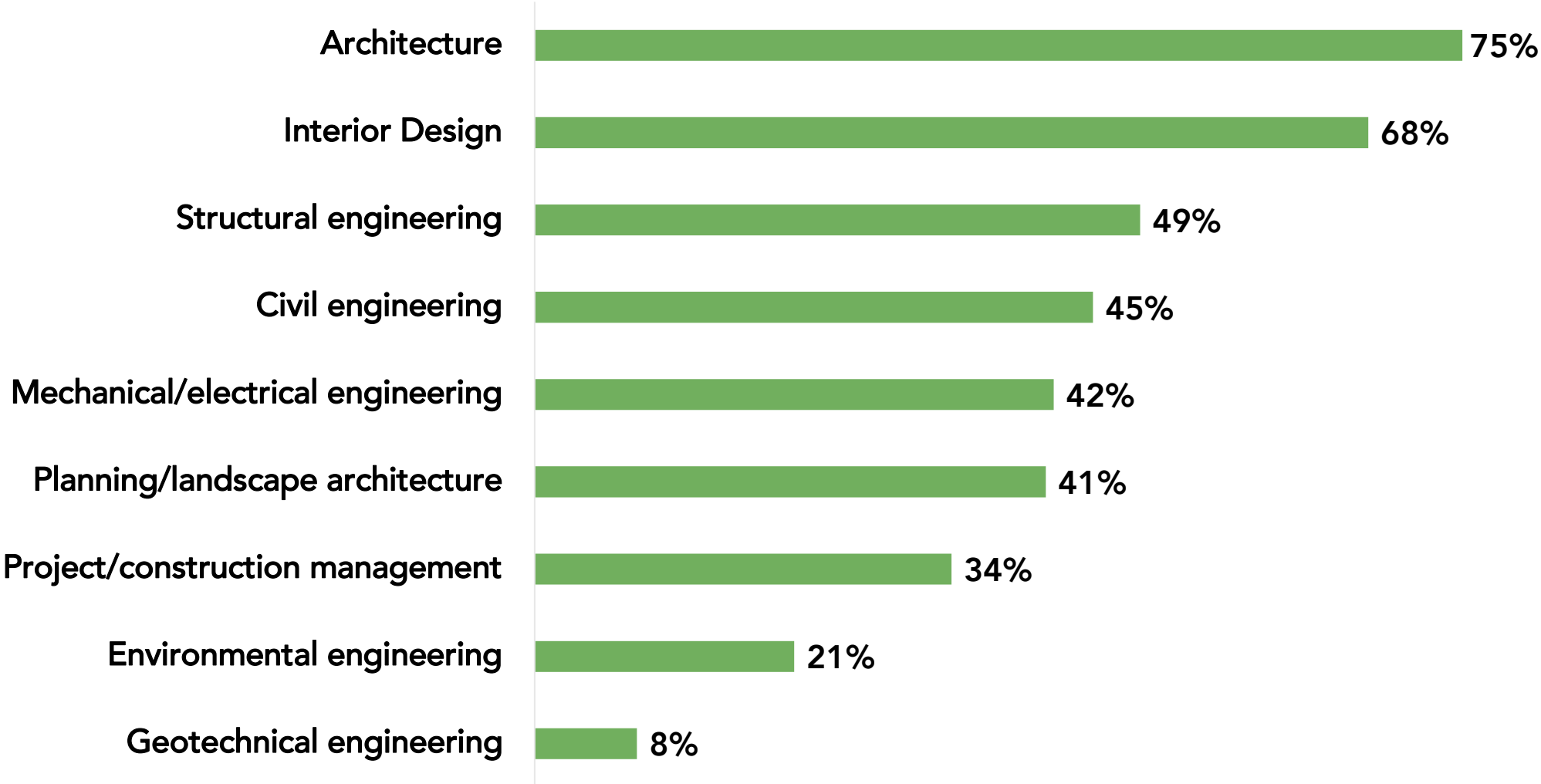
STUDY PARTICIPANTS

As shown on the next few pages, a large majority of participating firms provide architectural and interior design services; about half provide engineering services in several disciplines.
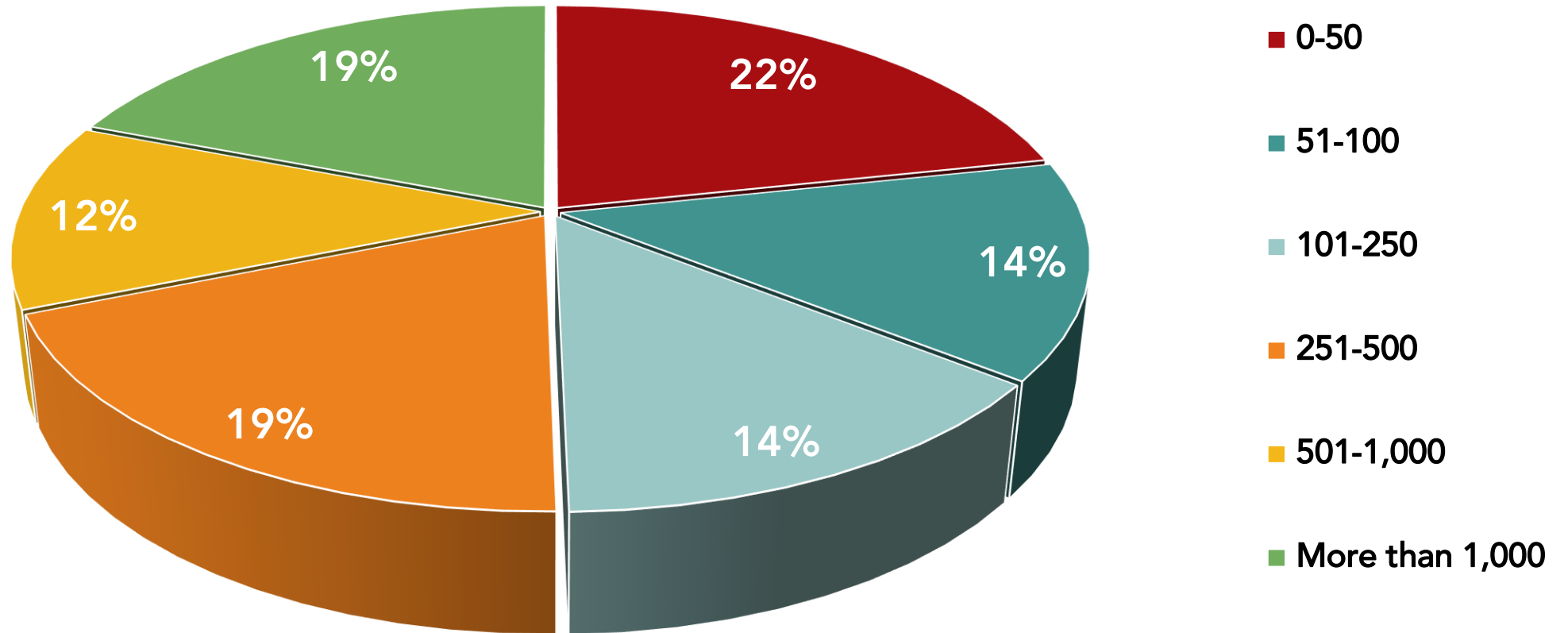
The study represents a balanced mix of firm sizes, from less than 50 people to more than 1,000.

Most firms have principal offices in the U.S., with others based in Europe, Asia, or the Middle East.

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DEMOGRAPHICS: FIRM SERVICES

Service	Percentage
Architecture	75%
Interior Design	68%
Structural engineering	49%
Civil engineering	45%
Mechanical/electrical engineering	42%
Planning/landscape architecture	41%
Project/construction management	34%
Environmental engineering	21%
Geotechnical engineering	8%

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DEMOGRAPHICS: FIRM STAFF SIZES

- 0-50 — 22%
- 51-100 — 14%
- 101-250 — 14%
- 251-500 — 19%
- 501-1,000 — 12%
- More than 1,000 — 19%

DEMOGRAPHICS: PRIMARY OFFICE LOCATIONS

Asia
Canada
Europe
Mexico
Middle East
Midwest U.S.
North Central U.S.
Northeast U.S.
Northwest U.S.
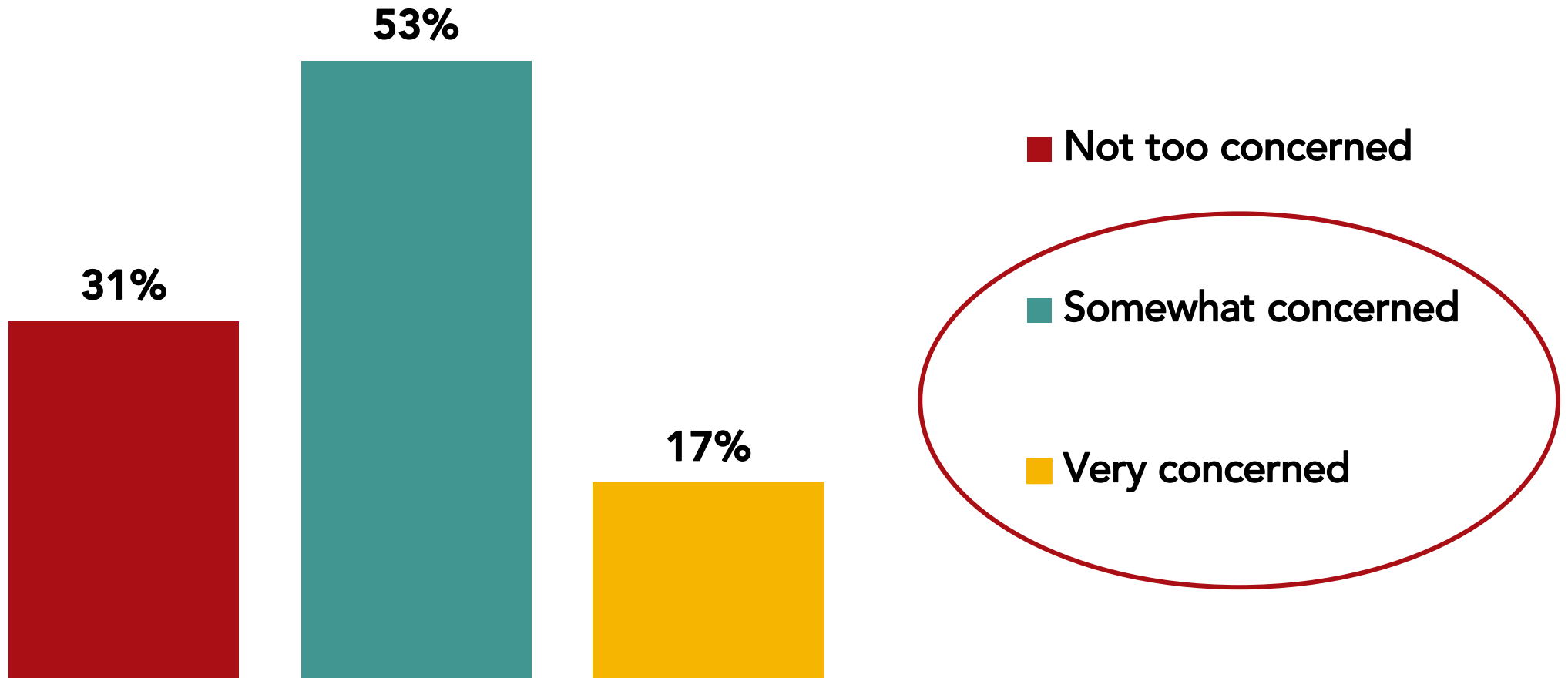South Central U.S.
Southeast U.S.
Southwest U.S.

INCREASED CONCERN ABOUT QUALITY AND RISK

70% of firm leaders contributing to this research are concerned or "very concerned" about increased design and technical risk related to their hybrid work practices.
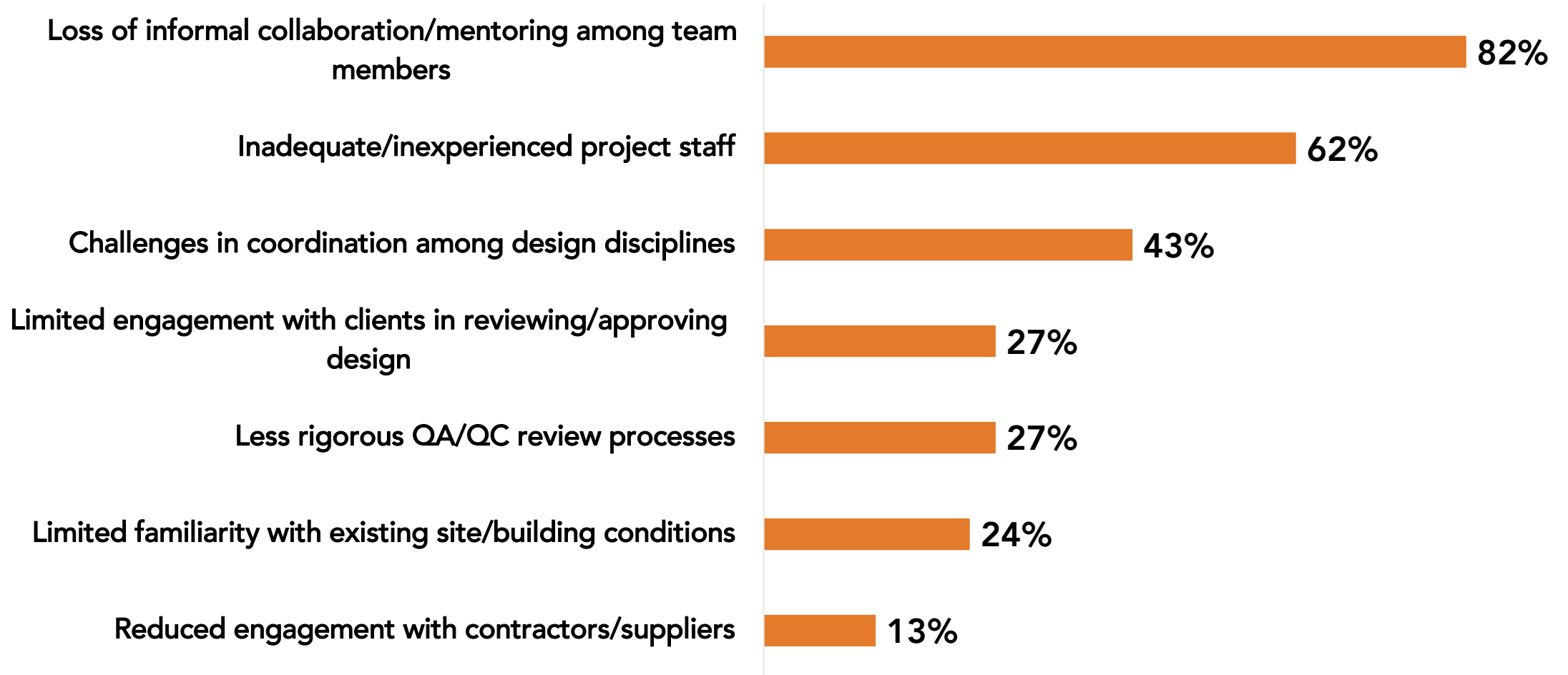
The major factor, not surprisingly, is the loss of face-to-face interaction in the workplace. This limits design collaboration, oversight, and mentoring of young staff.

In addition, remote work limits engagement with clients and familiarity with site and building conditions.

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HOW CONCERNED ARE YOU ABOUT INCREASED DESIGN & TECHNICAL RISK FROM REMOTE WORK PRACTICES?

31% · **53%** · **17%**

Legend:
- Not too concerned
- Somewhat concerned
- Very concerned

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WHAT FACTORS CONTRIBUTE TO YOUR CONCERN?

Factor	Percentage
Loss of informal collaboration/mentoring among team members	82%
Inadequate/inexperienced project staff	62%
Challenges in coordination among design disciplines	43%
Limited engagement with clients in reviewing/approving design	27%
Less rigorous QA/QC review processes	27%
Limited familiarity with existing site/building conditions	24%
Reduced engagement with contractors/suppliers	13%

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REPRESENTATIVE COMMENTS

"The general lack of daily face-to-face interaction has been problematic…one of the best things pre-pandemic was simply overhearing conversations which headed off trouble."

"Finding qualified people is a bigger issue…"

"Extra efforts need to be made to keep communication open and all team members need to be deliberate about it…"

"Haven't seen any significant "misses" yet, but now the potential is there when collaboration is more difficult."

"I am seeing a decline in quality and efficacy of our construction documents, which I attribute to team members not getting proper first-hand direction…"

HYBRID WORK POLICIES AND PRACTICES

More than 85% of our research participants have permanently adopted some form of hybrid work, allowing staff to work remotely at least some of the time.

The most common practice is requiring staff to be in the office three days a week, often on the same "core" days. Even with this flexibility, however, some firms are having difficulty getting their people back to the office.

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HYBRID WORK POLICIES AND PRACTICES

Previous Cameron MacAllister Group studies have identified other challenges, like staff members who relocated far from their office locations during the pandemic. This is a particular problem for firms in high-cost cities, and it presents legal and tax complications for firms that support long-distance employees.

In addition, these transitions have occurred in a period of intense competition for talent – leading firms to accept unprecedented remote working relationships.

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HAS YOUR FIRM ADOPTED PERMANENT HYBRID WORK PRACTICES, ALLOWING STAFF TO WORK REMOTELY PART- OR FULL-TIME?

No 14%

Yes 86%

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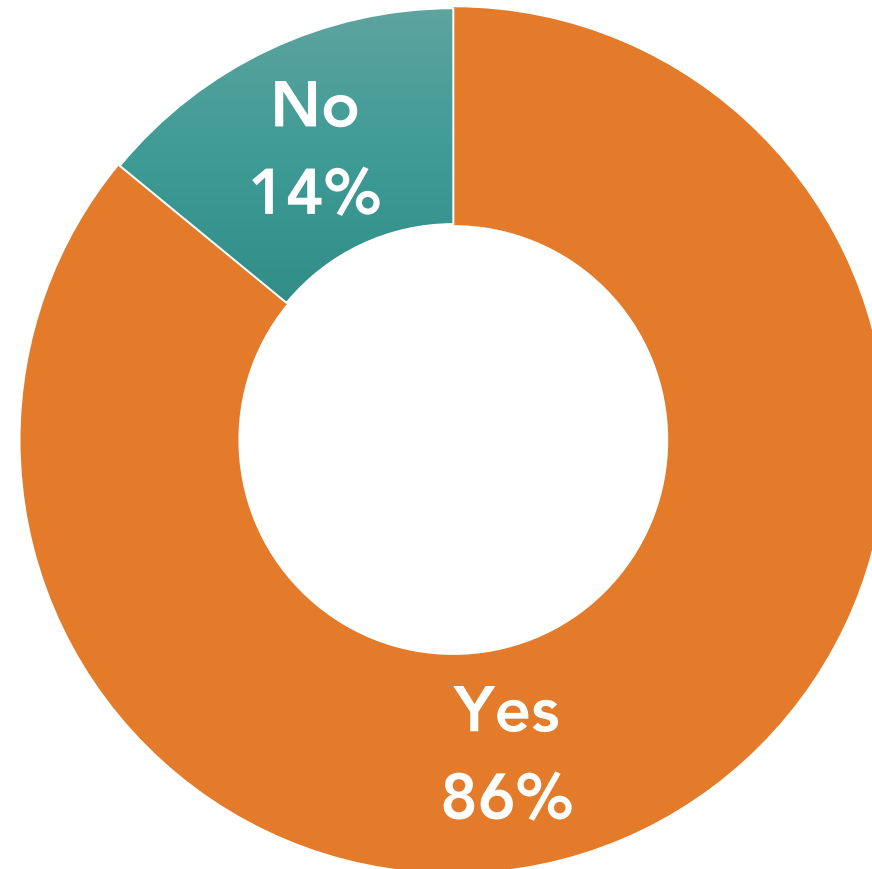
IF YOU HAVE ADOPTED PERMANENT HYBRID WORK PRACTICES, HOW MANY DAYS PER WEEK CAN STAFF WORK FROM HOME?

Category	Percentage
2 Days	35%
3 Days	20%
5 Days	19%
1 Day	6%
4 Days	3%

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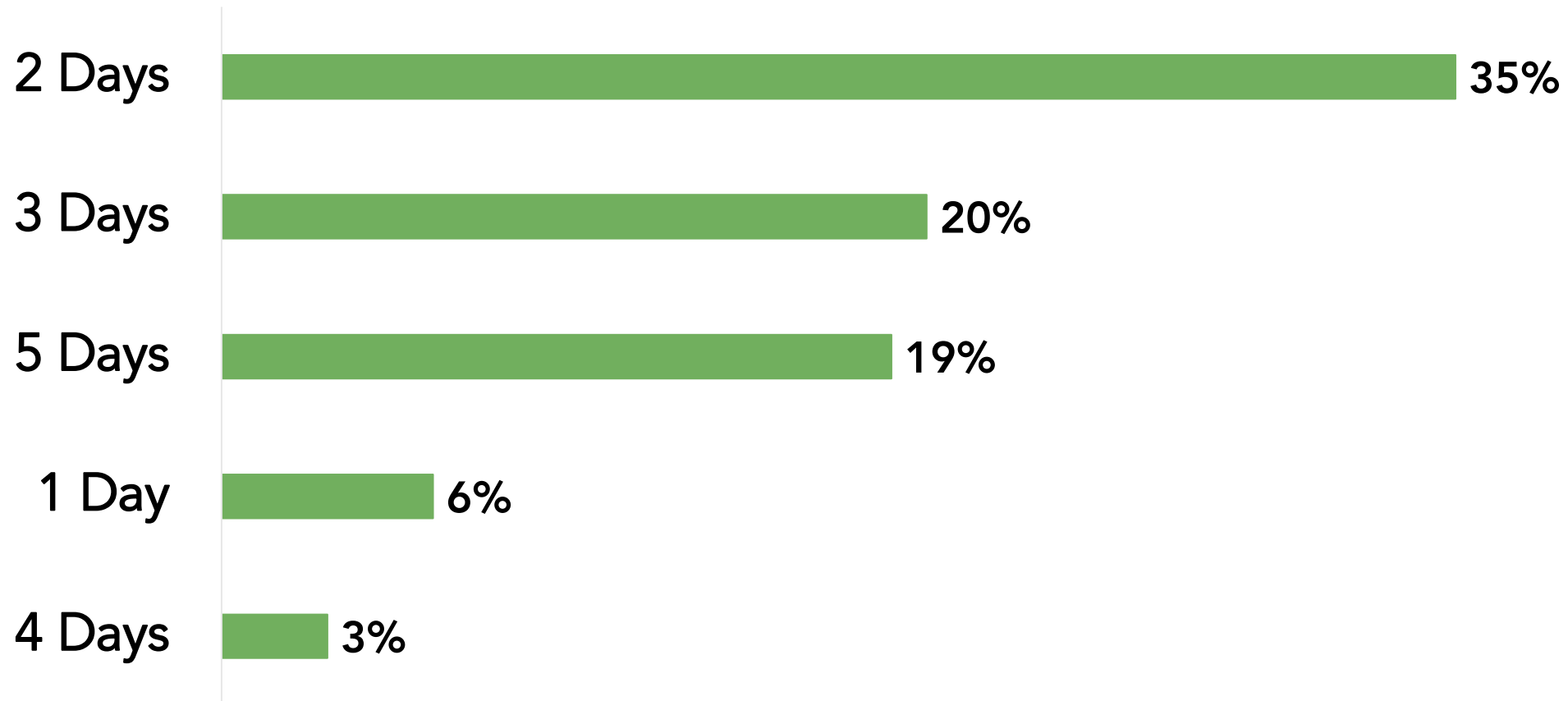
REPRESENTATIVE COMMENTS

"All staff were given three primary options, and one was assigned based on meetings with supervisors and senior discipline leadership…"

"Goal is three days per week in the office. Some design teams or disciplines have identified specific days."

"Individually-negotiated arrangements – significant flexibility on where and when work gets done."

"Target is 2-3 days per week in the office. We also have more full-time remote employees due to challenges finding local candidates to hire."
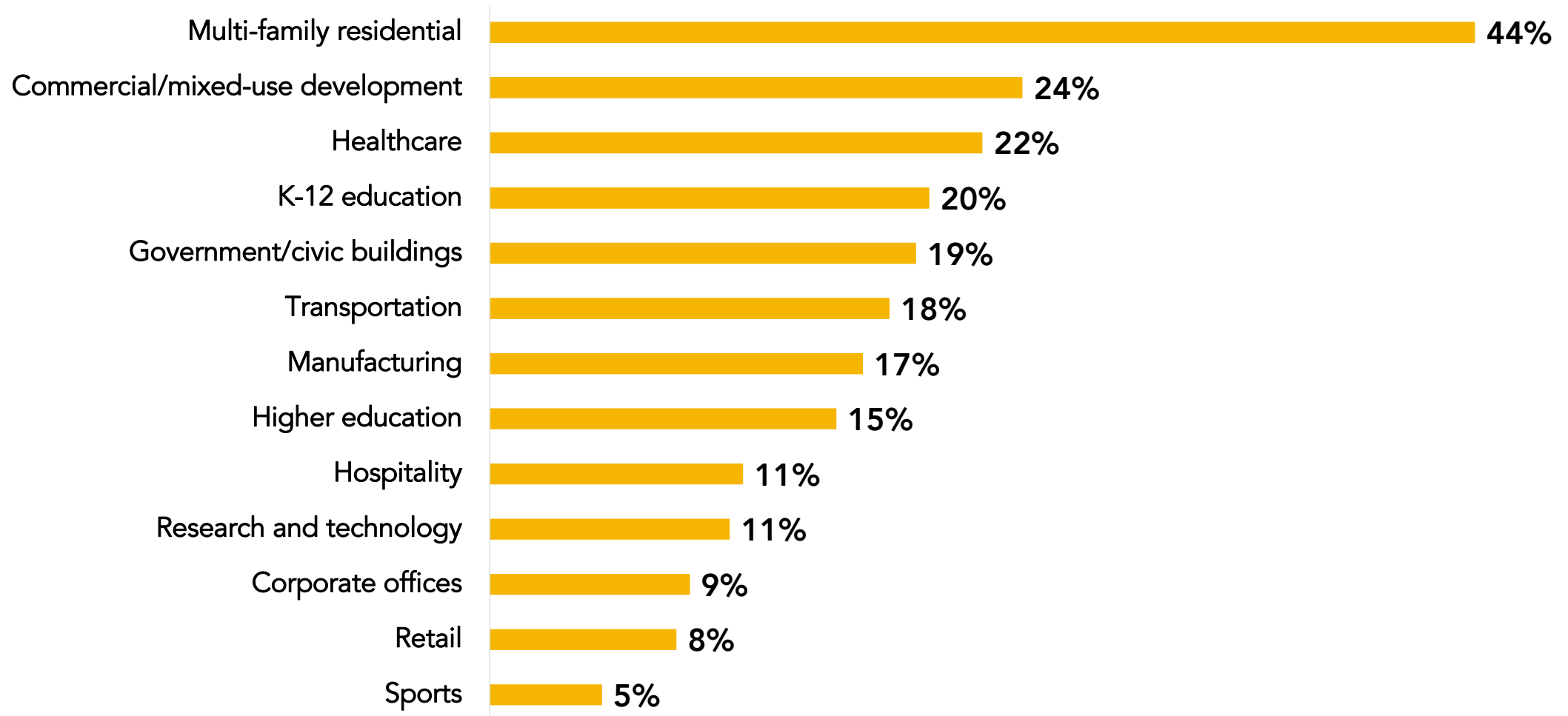
"Two days a week required in the office just implemented, but not yet complied with!"

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LIABILITY RISK AND CLAIMS EXPERIENCE

As shown on the next page, multi-family housing continues to present the greatest design risk for firms participating in this study. Some leaders commented on the challenges of changing code and regulatory requirements and slower decision-making among clients who themselves may be working remotely.

Most respondents have not experienced major increases in formal claims, but projects designed during the 100% remote work period may not yet be complete.

WHAT PROJECT TYPES PRESENT THE GREATEST LIABILITY RISKS FOR YOUR FIRM?

Project Type	Percentage
Multi-family residential	44%
Commercial/mixed-use development	24%
Healthcare	22%
K-12 education	20%
Government/civic buildings	19%
Transportation	18%
Manufacturing	17%
Higher education	15%
Hospitality	11%
Research and technology	11%
Corporate offices	9%
Retail	8%
Sports	5%

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REPRESENTATIVE COMMENTS

"Condominiums!"

"Healthcare is riskier for us…mostly because of regulators and their shifting expectations during the project delivery process."

"We have experienced a wave of unusually aggressive building inspectors and building departments."

"Public agencies can rarely make timely decisions."

"Infrastructure in general, including energy infrastructure…"

"Many projects incorporating EV initiatives – still catching up with what that means for manufacturing facility design."

"We have seen more third-party claims than from our clients…"

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WHAT HAS BEEN YOUR FIRM'S EXPERIENCE WITH FORMAL CLAIMS FROM CLIENTS OR THIRD PARTIES IN 2020, 2021 & 2022?

No change ████████████████████████████████ 81%

Increased ██████ 14%

Decreased ██ 5%
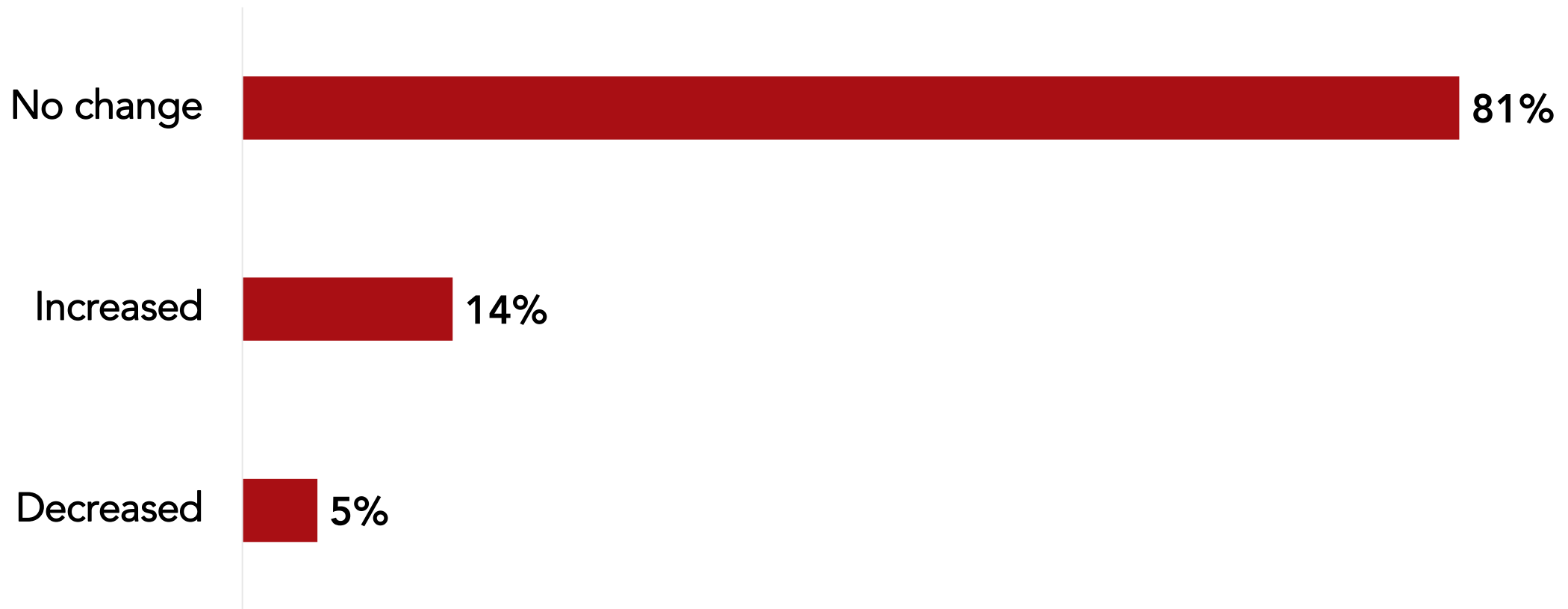
REPRESENTATIVE COMMENTS

"Increase is probably due to commensurate increase in the number, size, and complexity of projects."

"Most occurred on projects completed prior to 2020."

"We are fortunate to have on-site staff that can address construction or installation issues…we respond to requests for interpretation and shop-drawing submittals in 48-72 hours."

"Claims as a % of revenue are about the same. Our firm is doing more turnkey/design-build delivery…that method has the potential to minimize design risk."

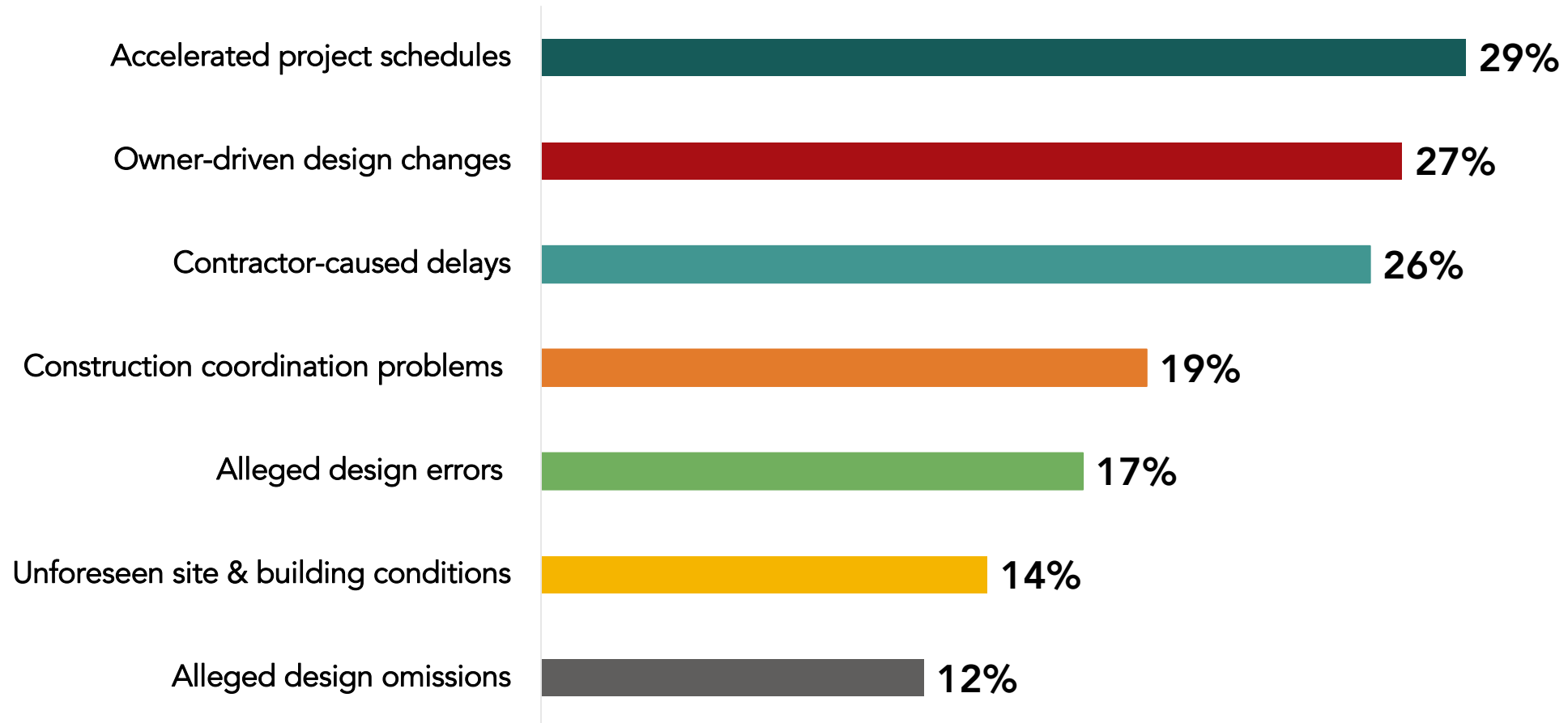*"More than half our claims are from subconsultants' work."*

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SPECIFIC PROJECT RISK FACTORS

Our survey asked how seven common risk factors may have increased since the beginning of remote or hybrid work. These are the same factors identified in *Managing Uncertainty and Expectations in Building Design and Construction,* presented at previous WTW programs.

Owner-driven design changes continue to be near the top of the list, but accelerated schedules have been the most significant challenge in recent months. Construction coordination and delays are also major concerns.

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HOW HAVE THESE COMMON RISK FACTORS INCREASED SINCE REMOTE/HYBRID WORK PRACTICES BEGAN?

Risk Factor	Percentage
Accelerated project schedules	29%
Owner-driven design changes	27%
Contractor-caused delays	26%
Construction coordination problems	19%
Alleged design errors	17%
Unforeseen site & building conditions	14%
Alleged design omissions	12%

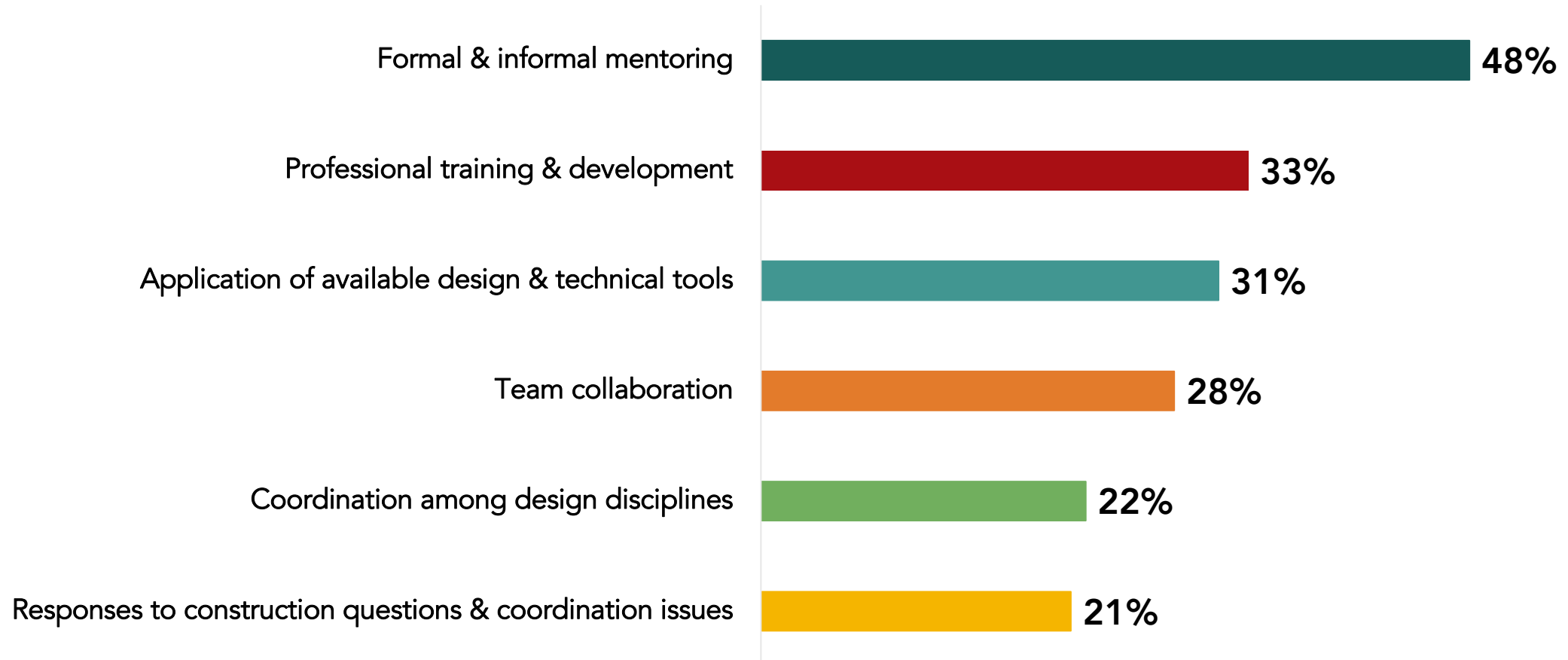WTW A&E   CAMERON MacALLISTER GROUP

PRACTICE CHALLENGES

Almost half of our survey contributors identified the loss of formal and informal mentoring as the greatest internal challenge affecting design and technical quality – followed by concern about more formal training and development.

Most participants have found ways to apply their design standards and QA/QC procedures to the work of remote teams, supported by today's available technology.

HOW CONCERNED ARE YOU ABOUT YOUR FIRM'S PRACTICES IN THESE AREAS AFTER THE SHIFT TO REMOTE/HYBRID WORK?

Category	Percentage
Formal & informal mentoring	48%
Professional training & development	33%
Application of available design & technical tools	31%
Team collaboration	28%
Coordination among design disciplines	22%
Responses to construction questions & coordination issues	21%

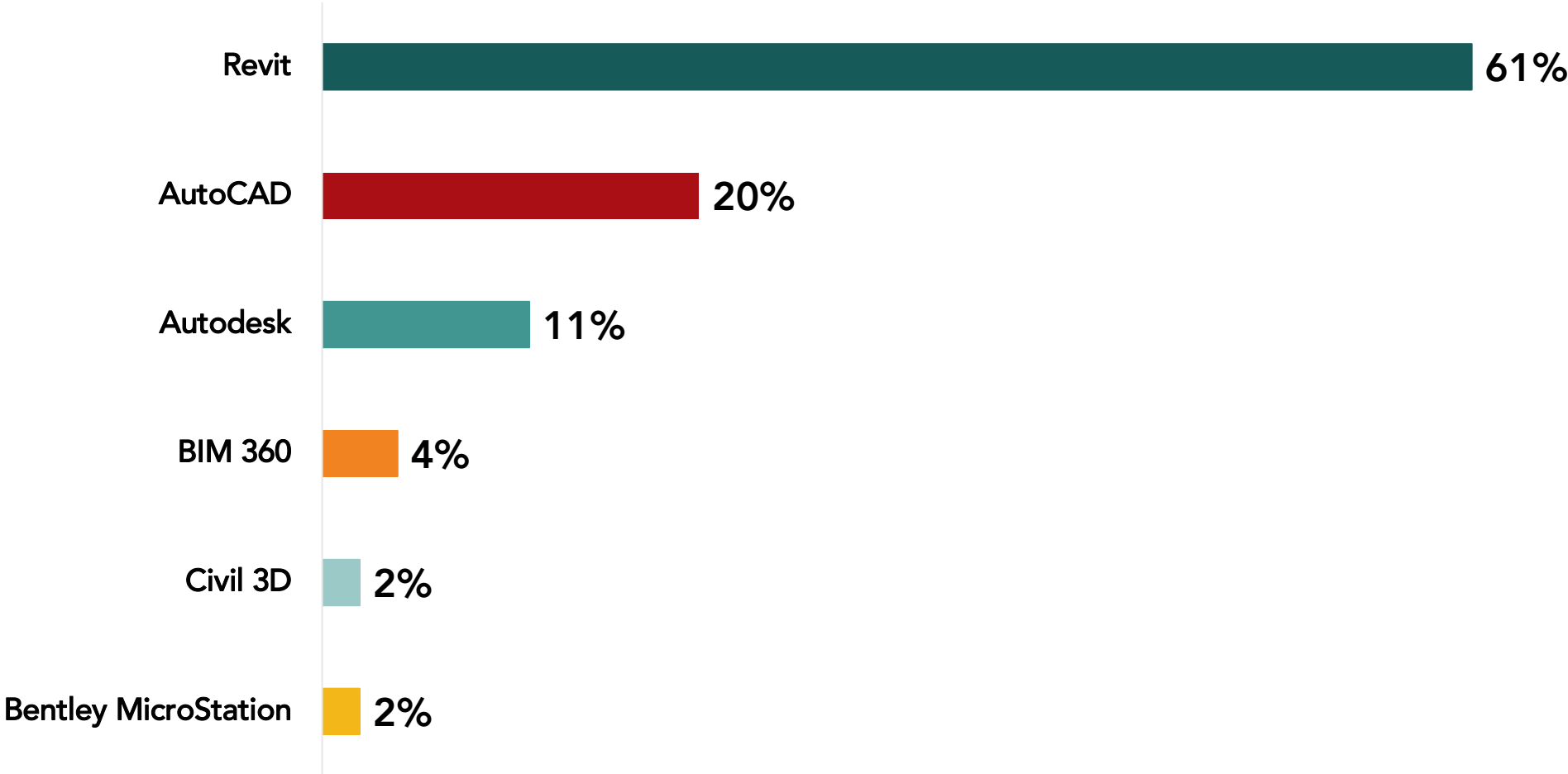WTW A&E   CAMERON MacALLISTER GROUP
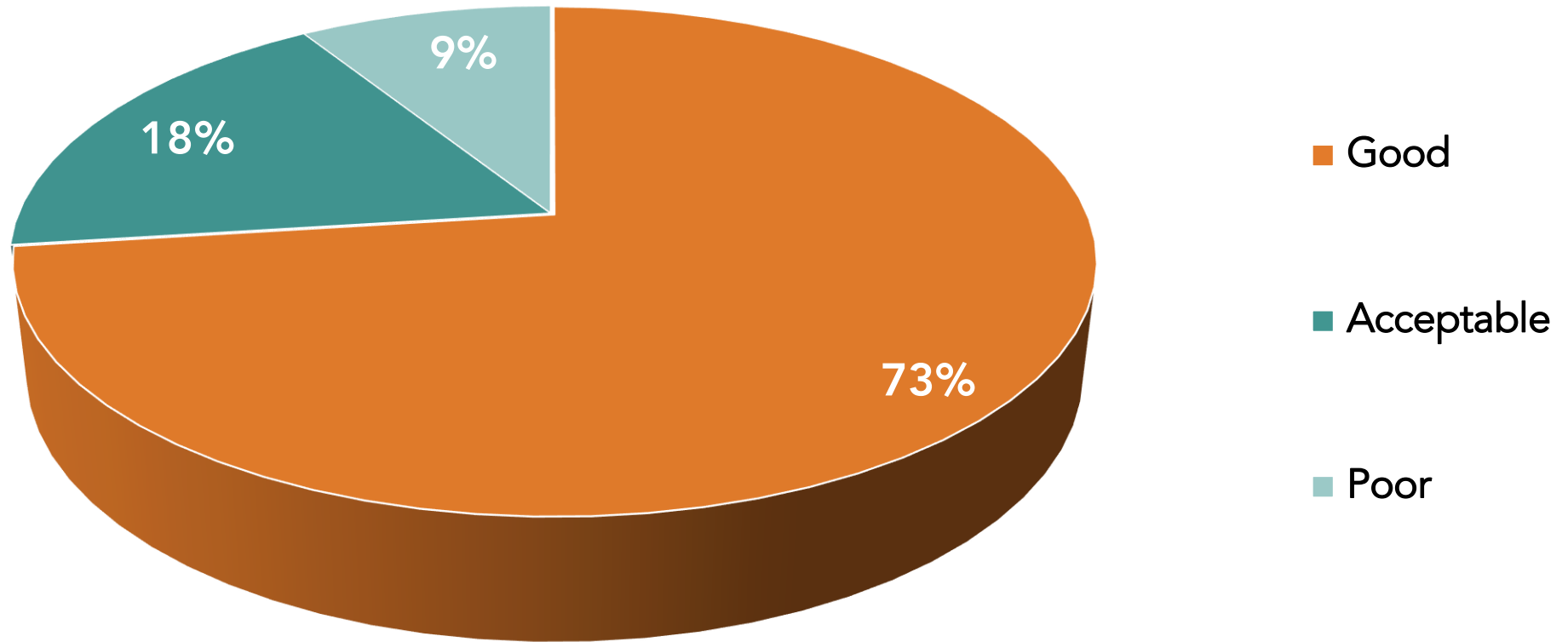
SUPPORT FROM TECHNOLOGY PLATFORMS

We asked leaders to identify their firms' primary design software platforms and indicate how well those tools have supported remote/hybrid work. 60% use Revit as their major platform, and 75% are satisfied with the way in which their design software has performed for remote project teams.

There were no discernable differences in satisfaction with the software brands named in the survey.

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WHAT IS YOUR FIRM'S PRIMARY BIM/CAD SOFTWARE PLATFORM?

Platform	Percentage
Revit	61%
AutoCAD	20%
Autodesk	11%
BIM 360	4%
Civil 3D	2%
Bentley MicroStation	2%

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HOW WELL HAS THAT SOFTWARE SUPPORTED YOUR REMOTE/HYBRID WORK PRACTICES?

- Good
- Acceptable
- Poor

9%

18%

73%

MOST IMPORTANT STEPS TO SUPPORT QUALITY

Leaders were invited to describe the most important steps their firms had taken to support design and technical quality since the beginning of the pandemic and remote/hybrid work. Representative comments are presented here.

These measures fell generally into three categories: technology applications, improved communications, and work to maintain collaboration and firm culture.

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REPRESENTATIVE COMMENTS: TECHNOLOGY FOCUS

"We began implementing a Digital Practice Roadmap prior to the pandemic which became the centerpiece for our success moving to a fully-remote workforce."

"Develop of an internal database platform to help guide and manage the design process."

"Investing in technology and BIM staff, investing in design process and delivery oversight."

"Adopted new collaboration software or increased use of existing tools like Teams, Miro, and Bluebeam."

"To improve technical quality, we have an open issues and questions log in the cloud..."

REPRESENTATIVE COMMENTS: COMMUNICATION FOCUS

"Arrange for regular town-hall and in-person events to keep people engaged."

"Trying to get people into the office; in-person meetings whenever possible. QA/QC for every project at every deliverable phase."

"We implemented a company-wide quality initiative to standardize best practice across disciplines…"

"Peer review by different teams in the office."

"Instituted daily project-based standups – leveraged messaging and video-based meetings."

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REPRESENTATIVE COMMENTS: COLLABORATION & CULTURE FOCUS

"In-person training classes with lunches to get people into the office – pushing managers to get their staffs together three days per week."

"Collaboration meetings with design teams, ongoing model checking for clashes, more meetings with owners and builders…"

"Increased focus on building relationships, communication, collaboration, quality assurance, metrics and project reviews."

"Specific platoon days for teams to be in the office for coordination, both inter- and intra-team."

"Mandatory in-person office hours…"

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FIVE CONCLUSIONS FOR FIRM LEADERS

Based on the quantitative responses to this survey and narrative comments from the participants, we believe there are five basic lessons for firm leaders related to design quality and risk in today's new practice environment.

These lessons aren't technical in nature – they are primarily related to the people and firm cultures that drive our performance.

1.

The COVID pandemic created a permanent, fundamental shift from our traditional way of working as architects and engineers, which has been a collaborative studio or office setting.

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2.

Our industry survived and actually thrived through the pandemic because of our investments in technology during the past decade.

3.

Our clients are experiencing the same transitions in their own work patterns, but their expectations of AEC firms may have become higher – assuming that more can be done, faster, without any loss of quality.

4.

Remote and hybrid work patterns have forced A/E firms to be more rigorous about communications and quality review at every stage of the project delivery process.

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5.

In this changed environment, A/E liability will depend substantially on intangible "people issues" – firm culture, recruiting and retention of the best talent, training, mentoring, and support.

FOR MORE INFORMATION

Please contact us with questions or ideas for future research:

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