2022 Business Value of BIM in Infrastructure Update

Overview

The following infographic illustrates the findings of a survey of ***Informed Infrastructure*** readers focusing on BIM adoption in AEC projects. The survey was completed and administered via Survey Monkey, and included more than 200 civil and structural engineers from the United States who are involved in or have worked on the design of construction projects in the last 12 months.

To better understand how the industry has progressed in the last five years, this suvey is a follow-up to a similar **SmartMarket** Report that appeared in the May/June 2017 issue of ***Informed Infrastructure***, which can be accessed by visiting *bit.ly/3reRLU8* or scanning the QR code at the bottom of this page. Where relevant and statistically viable, the current survey is compared with data from the 2017 report for insight into five-year trends and differences.

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Adoption of BIM Workflows

Adoption of BIM workflows provides a significant benefit to companies through error reduction, cost predictability and improved scheduling. Since 2017, BIM adoption in the United States has increased from 33 percent to nearly 40 percent.

39%

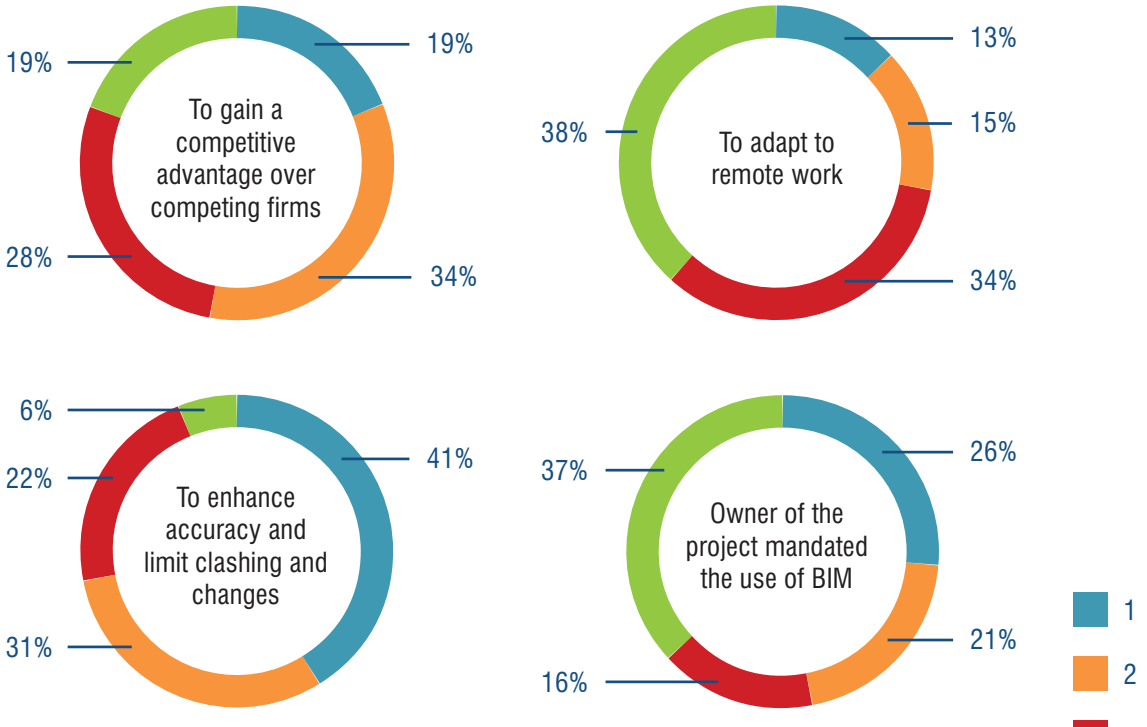
of Respondents adopted BIM Workflows

In the last 12 months, has your firm adopted BIM workflows in a project?

Answered - 220; Skipped - 0

Reasons for BIM Workflow Adoption

"Accuracy of BIM data (to limit clashing and changes)" spurred the largest increase in adoption since 2017. It was ranked the No. 1 reason for adoption by 41 percent of the respondents, compared to just 34 percent five years earlier.



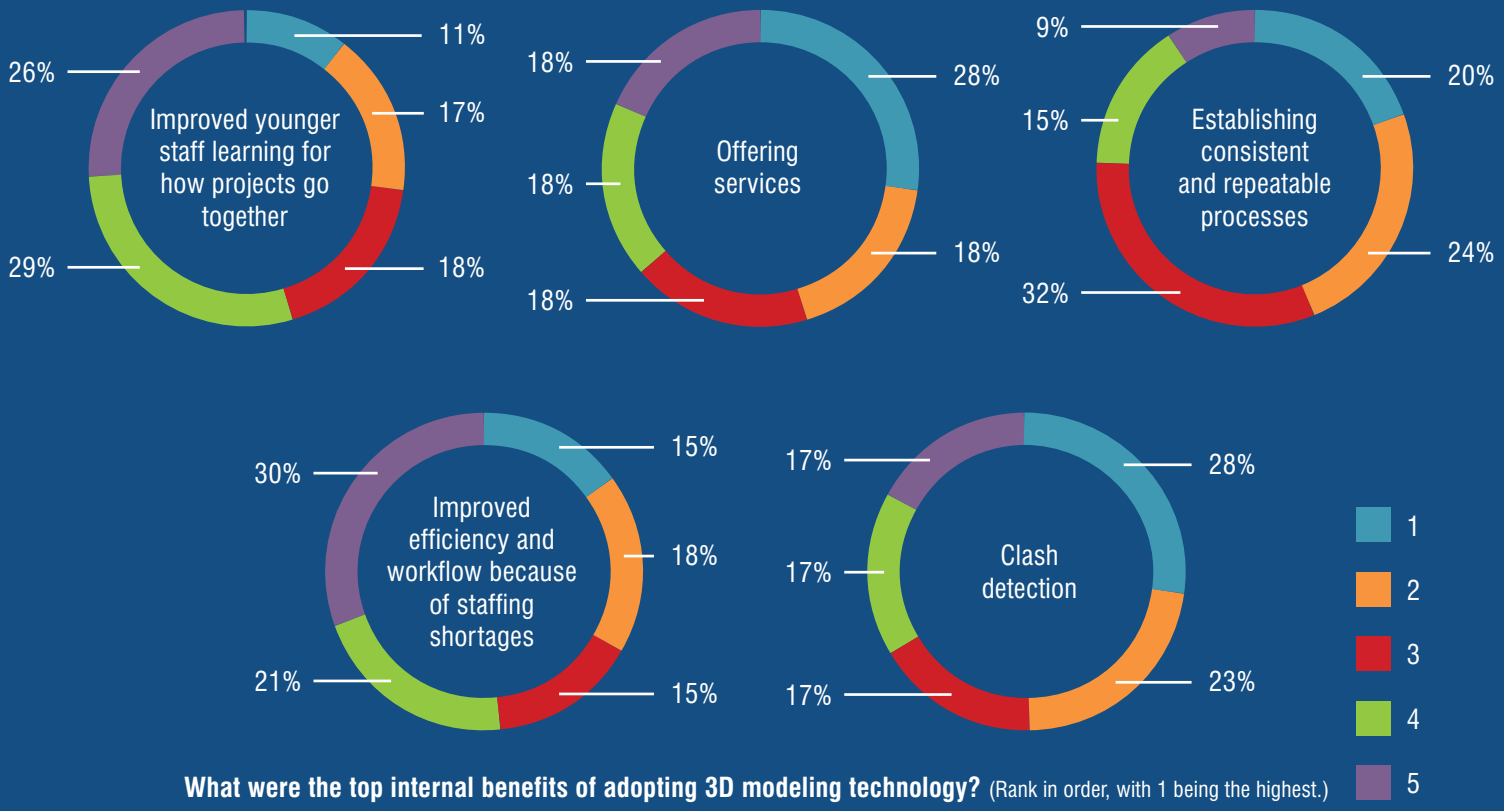
What were the reasons your firm adopted BIM workflows in a project?

(Rank in order, with 1 being the highest reason for BIM adoption and 4 being the lowest reason for BIM adoption.)

Answered - 68; Skipped - 152

Additional Benefits of 3D Modeling

Technology adoption and skill seems to be increasing among the younger generation of workers. In 2017, 50 percent of respondents included "improved younger staff learning" as a top-three benefit, while only 46 percent deemed the same benefit a top-three choice in 2022. "Offering services" and "consistent processes" experienced the largest increases as a top selection since 2017, moving from 46 percent to 64 percent, and 23 percent to 76 percent, respectively.



What were the top internal benefits of adopting 3D modeling technology? (Rank in order, with 1 being the highest.)

Answered - 66; Skipped - 154

In-house CAD Management

An in-house CAD manager directs key decisions on the applications, workflows and standards a company will use. This position is playing a more-important role in architecture and design firms, as 59 percent of respondents are utilizing this position.

59%

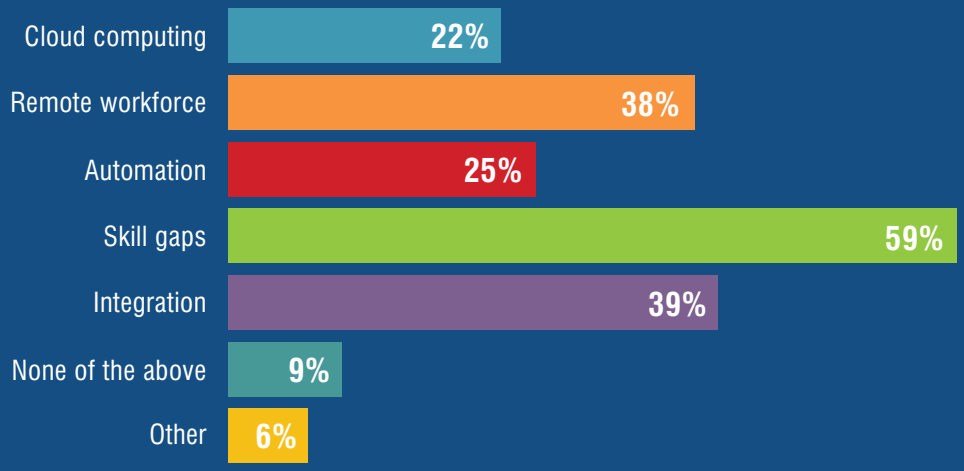
of Respondents adopted Utilize an In-house CAD Manager

Do you have an in-house CAD manager?

Answered - 197; Skipped - 23

Technology Challenges

Technology within the industry continues to change and improve, leading to a variety of challenges. The most-selected challenge in the survey was the "gap in skills," which was felt by 59 percent of respondents. The growing trend toward a "remote work environment" was felt by 38 percent of respondents. In the "other" category, challenges in training and staffing issues were dominant.

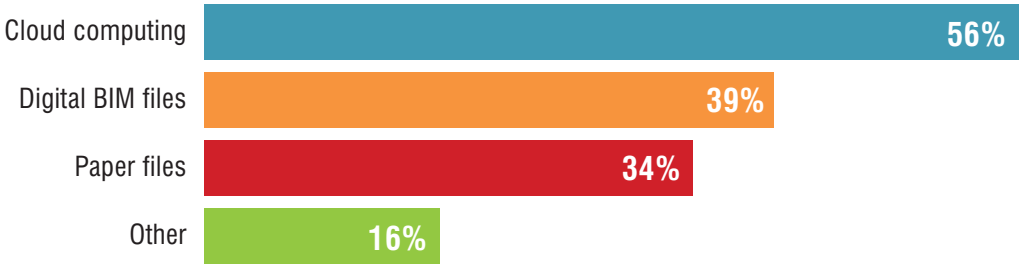


What are the main challenges your organization is facing with technology today? (select all that apply)

Answered - 109; Skipped - 111

File Management

As technology continues to advance, so do file sizes, making file management more important than ever. This need is being fulfilled by cloud computing in an increasing number of companies, with 56 percent of respondents using this method. Most "other" category answers referenced the use of internal servers.



How are you managing your files? (select all that apply)

Answered - 179; Skipped - 41

Use of Consultants

Half of respondents leveraged the talents of consultants in their BIM projects, while 41 percent never use them. Only 9 percent rely on consultants for all of their projects.

Use of Project Management Software

A majority of respondents leverage the benefits of project management software to keep projects on time and budget. Many of the 44 percent who do not rely on such software use complicated spreadsheets to track project information.

56%

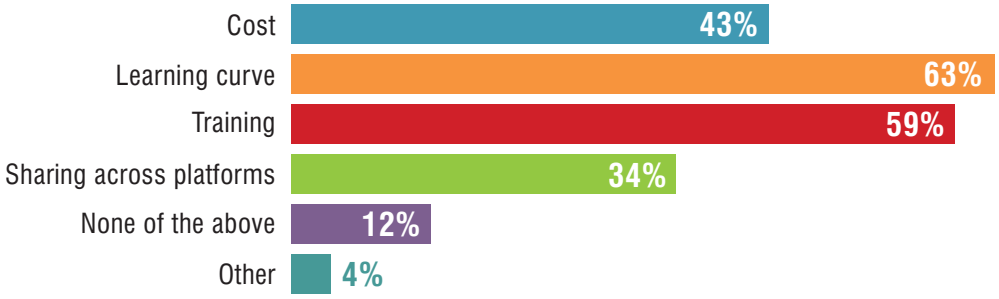
of Respondents Use Project Management Software

Do you utilize project management software in-house?

Answered - 172; Skipped - 48

Pain Points of Producing Models

Modelling with BIM helps improve communication and collaboration while reducing project risks and cost. The two greatest impediments to leveraging these benefits are the "learning curve" and "training" required.

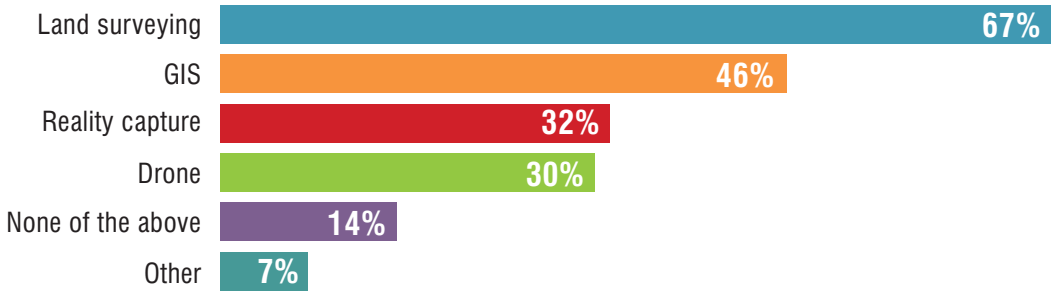


What are your pain points in producing models? (select all that apply)

Answered - 169; Skipped - 51

Data Collection Methods

Land surveying remains the primary method to acquire data, selected by 67 percent of respondents. Also of note, GIS and reality capture are gaining traction as forms of data collection, with 46 percent and 32 percent, respectively.

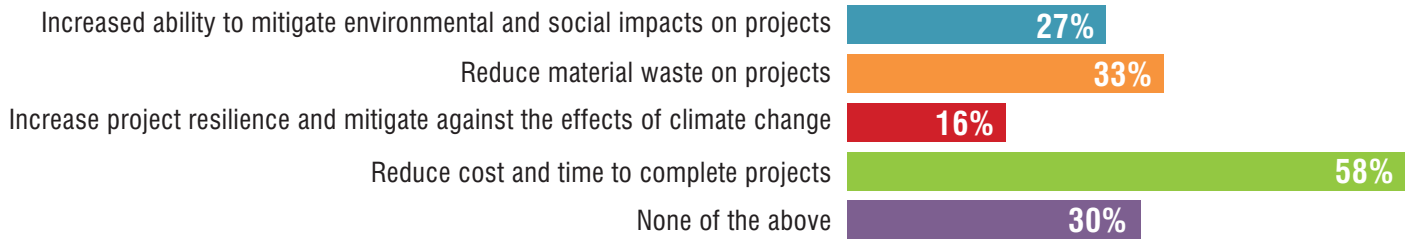


How are you collecting data?

Answered - 168; Skipped - 52

Sustainability Benefits from BIM Adoption

Adopting sustainability into BIM practices is not only a positive societal decision, but also provides project benefits. The leading choice in this category was "reducing cost and time to complete projects," selected by 58 percent of respondents, up from 16 percent in 2017.



What are the sustainability benefits of BIM adoption by your firm on projects? (select all that apply)

Answered - 165; Skipped - 55

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