

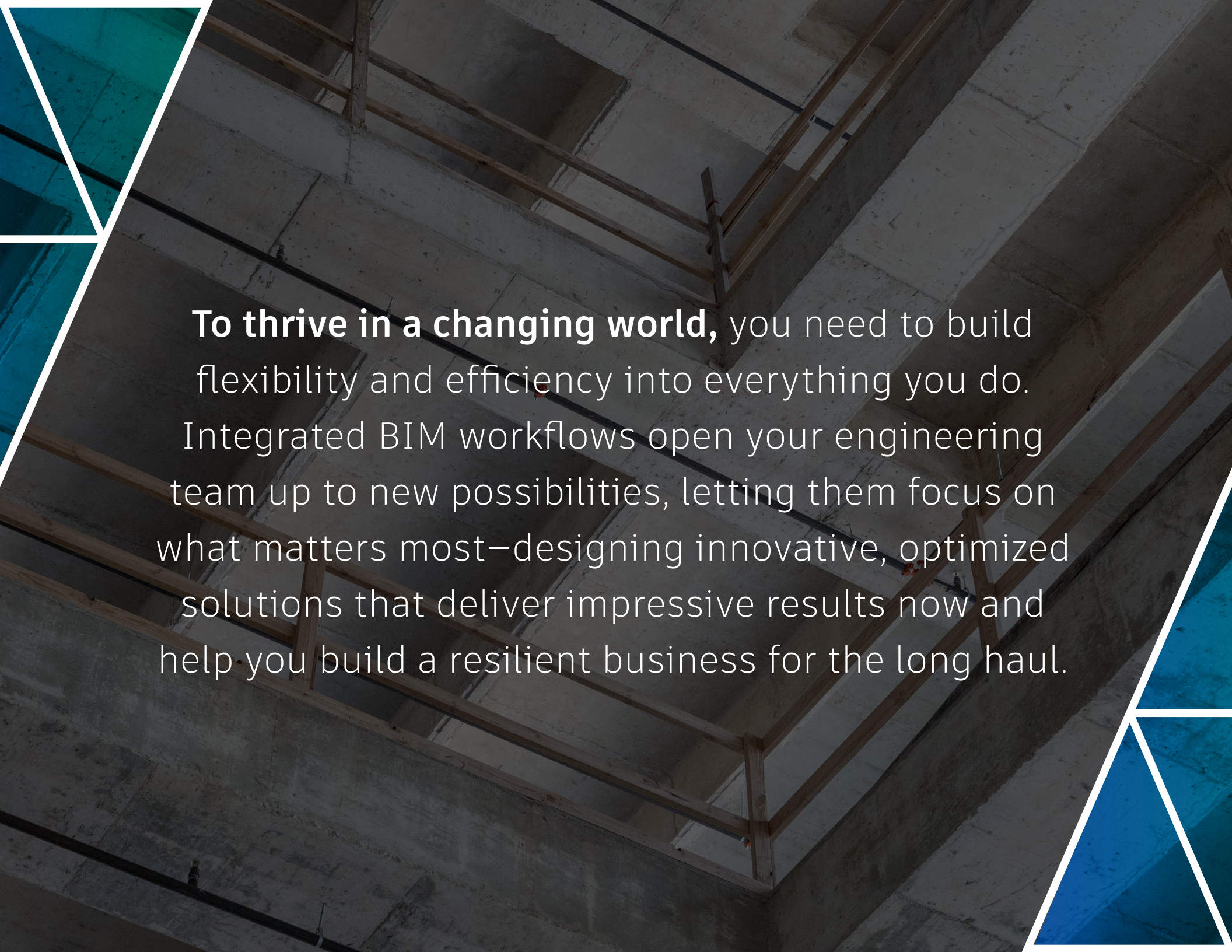


# ENGINEERING A RESILIENT FUTURE

How industry leaders  
keep their edge







**To thrive in a changing world,** you need to build flexibility and efficiency into everything you do. Integrated BIM workflows open your engineering team up to new possibilities, letting them focus on what matters most—designing innovative, optimized solutions that deliver impressive results now and help you build a resilient business for the long haul.



# THE INDUSTRY IS CHANGING FAST IT'S TIME TO CHANGE WITH IT

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## Today's clients want:

- more complex buildings and structures
- higher-quality designs
- projects delivered faster, at a lower cost
- more sustainable methods and resources

All of this is happening in an increasingly competitive landscape where firms vie with one another to recruit top talent and operate with razor-thin margins for error.

More and more, successful engineering firms are leaning into digital engineering capabilities to stand out from the pack.

The benefits are real. According to the NBS National BIM Report 2019, 86% of projects with BIM reported cost savings from labor, collaboration, and/or materials, and 75% realized higher quality in the design and/or construction.





# A BETTER WAY TO WORK

**Integrated BIM workflows are making new levels of innovation and problem solving possible—and they're making projects more profitable.**

That's what leading firms are experiencing as they go beyond contractual requirements and find new ways to benefit from BIM. They're taking advantage of more integrated BIM workflows enabled by data-rich models and benefiting from better collaboration

across the entire project lifecycle. These new insights and improved communications are helping them improve overall project delivery and win more work.

Autodesk® Revit® models are a big part of the solutions. They provide a launching point for more integrated analysis and calculations, designing for constructability, and design automation.

## SMARTER WORKFLOWS. BETTER OUTCOMES.

Real competitive advantage is no longer about working faster or harder. It's about working smarter—and BIM technology has a big role to play in making that possible.

By innovating and automating engineering workflows, you can deliver better results for your business and better project outcomes for your clients.







# THE BENEFITS ARE CLEAR

Here are four ways firms are benefiting by adopting an integrated BIM workflow:

- 01 | Seamless collaboration  
*Deliver better projects, faster*
- 02 | Design optioneering  
*Optimize designs & win more work*
- 03 | Integrated analysis  
*More efficient processes & reduced risk*
- 04 | Design automation  
*Accelerate productivity & retain top talent*

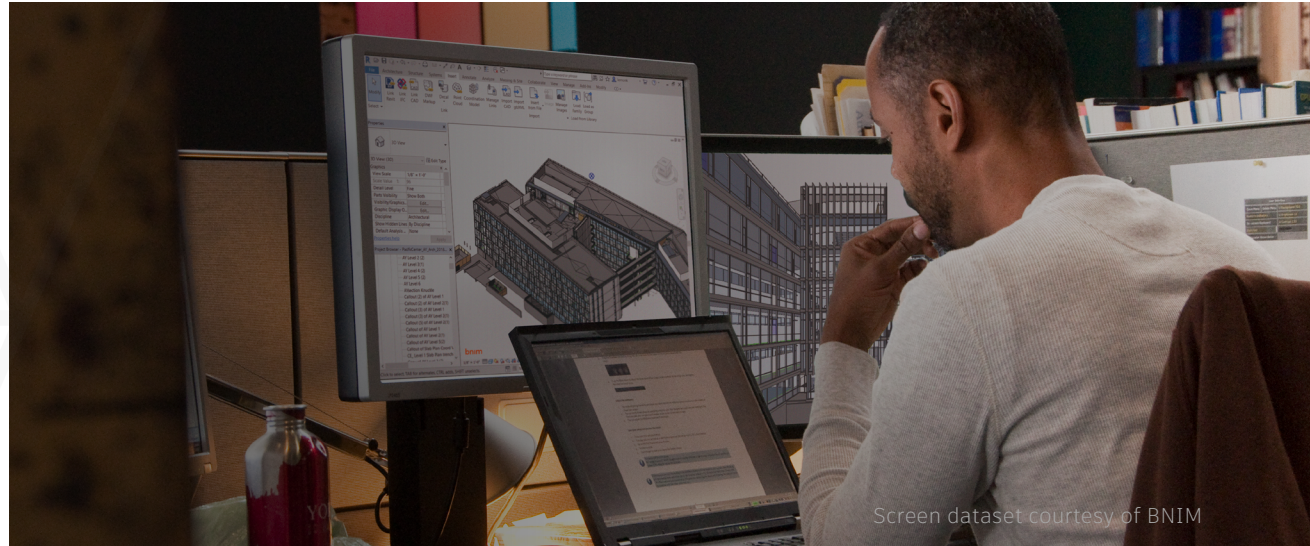


# 01

## SEAMLESS COLLABORATION

### The Benefit:

Deliver better projects, faster



Screen dataset courtesy of BNIM

In an integrated BIM environment, multiple design disciplines work closely to better coordinate their work. They link their models together to better visualize and identify clashes to coordinate. They can also connect their Revit models through the cloud using BIM 360, giving all stakeholders visibility and access to accurate information whenever they need it—always synchronized, always up to date.

This allows engineers and architects to stay on the same page throughout the

design process, find better solutions to design challenges, and **deliver projects faster**. Teams can now anticipate and mitigate the potential impact of changes earlier on. And model sharing with fabricators and contractors ensures a more seamless handoff for construction.

In short, effective collaboration is key to success. According to the NBS National BIM Report 2019, 87% agreed that firms that can effectively collaborate will be the most successful.



# 01

## SEAMLESS COLLABORATION

### The Benefit:

Deliver better projects, faster

*“We used to have 30 site issues a week and up to 300 things to fix at the end of the project. Recently, we had about 30 site issues on the entire project. That’s a huge reduction in the amount of work we have to do to fix problems.”*

Dominick Paradis  
Design Engineer, Canam Group

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# 02

## DESIGN OPTIONEERING

### The Benefit:

Optimize designs &  
win more work

Design optioneering involves using computational design and analysis tools to rapidly explore design options and find the best engineering solution.

By eliminating repetitive tasks and rework, engineers can fast-track load analysis and system design strategies to reach optimized design solutions faster.

This delivers designs that are more constructible to build and more sustainable to operate.

Once your team can achieve this on every project, you'll be able to accelerate the design phase, exceed client expectations, & ultimately **deliver optimized designs faster & win more work.**





# 02

## DESIGN OPTIONEERING

### The Benefit:

Optimize designs &  
win more work

*“We’re not just looking at one answer and then taking that forward. We are actually trying to optimize our design early on. Instead of just providing a solution, now we try to provide an optimal solution.”*

Nidhi Sekhar

Senior Computational Designer, LERA

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# 03

## INTEGRATED ANALYSIS

### **The Benefit:**

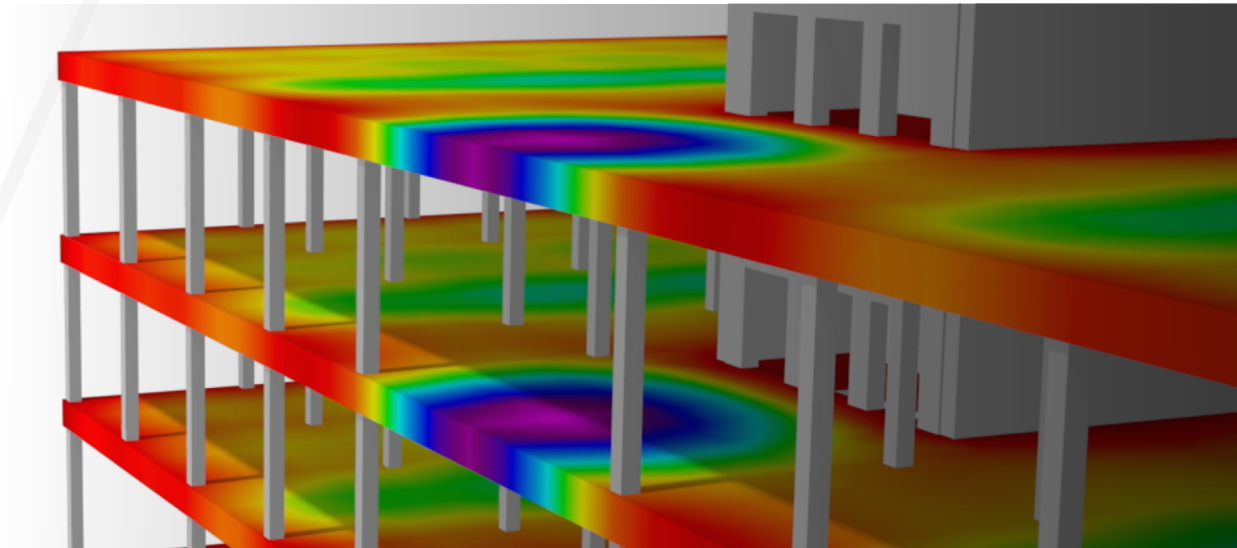
More efficient processes & reduced risk

With new features and functionality, Revit can now perform accurate MEP analysis calculations that are integrated with industry-leading analysis tools, like EnergyPlus.

Structural engineers can centralize their decision-making in Revit through its integration with Robot Structural Analysis, custom spreadsheets, and other third-party analysis tools.

Engineering teams no longer need to manually manage design information in multiple applications or create separate analytical models that need to be built and updated in parallel as designs change.

By integrating engineering workflows into your Revit model, with all engineering data calculated and stored in one centralized, data-rich model, the process is far more efficient, cutting out redundant work, avoiding errors, and automating downstream detailing.





# 03

## INTEGRATED ANALYSIS

### The Benefit:

More efficient processes  
& reduced risk

*“Using Revit, we can do better calculations. Having that interactive data solidified early on with the Revit model means clients wouldn’t have changes down the road.”*

Bimal Patwari,  
Founder & CEO, Pinnacle Infotech

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# 04

## DESIGN AUTOMATION

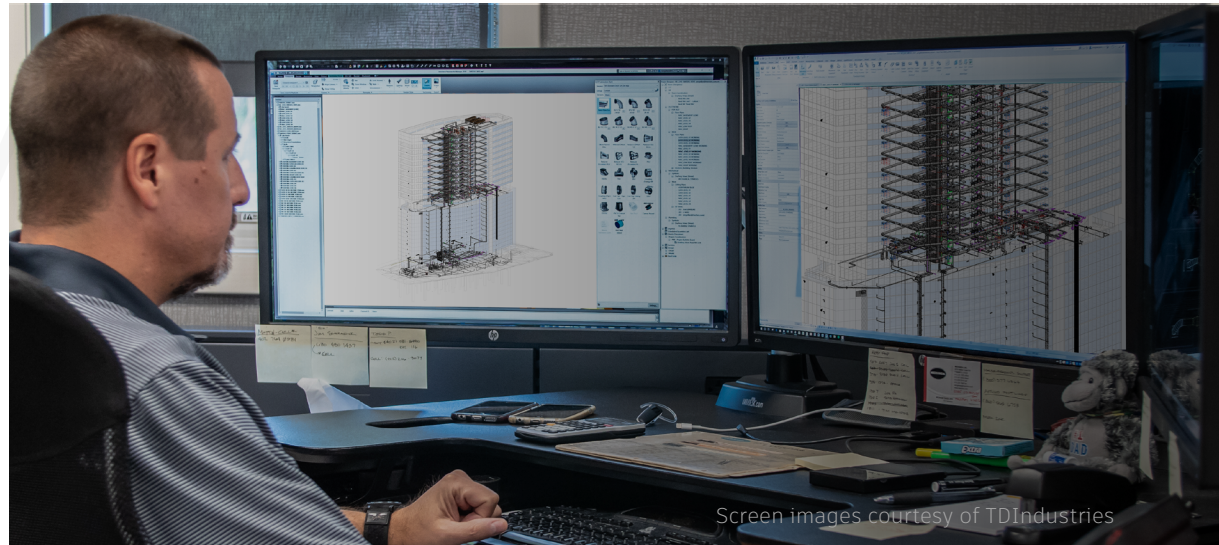
### The Benefit:

Accelerate productivity & retain top talent

Automated modeling and documentation are better than ever now with Revit. Tools like Dynamo Player in Revit make automation accessible to any engineer or designer—no coding required. Hours of tedious work spent on documentation, code checking, and interoperability can be reduced down to minutes.

Automation also allows contractors to automate estimating, detailing, and fabrication tasks leveraging the engineer's design model.

By leveraging these design automation tools, engineers can eliminate repetitive, time-consuming tasks to work smarter and **accelerate their productivity**. The result: more time spent on engaging, high-value work.



Screen images courtesy of TDIndustries



# 04

## DESIGN AUTOMATION

### The Benefit:

Accelerate productivity &  
retain top talent

*“Customers and owners are looking for their building to be built faster and everything to be seamless.”*

Ken Luong,  
Project Manager, TDIndustries

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By adopting an integrated BIM approach, you can extract more value from the technology you already have to reduce rework and automate lower-value repetitive tasks.

Explore the Autodesk AEC Collection to see how you can start making the most of integrated BIM workflows today.





