

# Integrated engineering for better business outcomes.

Real competitive advantage isn't achieved by working faster or harder. It's about working smarter. Up your technology game to gain a competitive edge and free up more time for your engineering team to focus on what matters most - designing innovative, optimized solutions for your clients.

Read on to find out how.

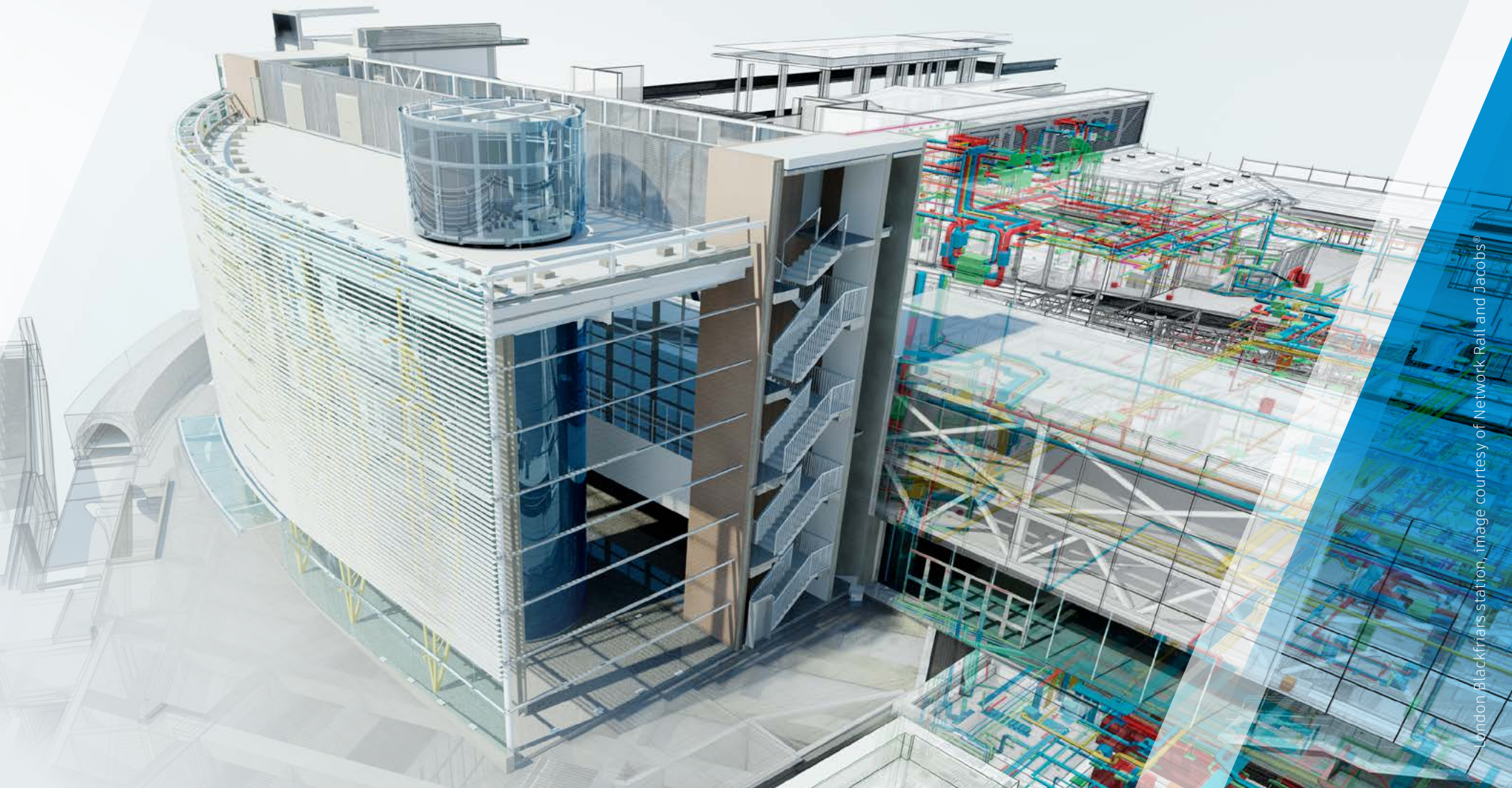




# The engineering practice is changing

This is a rapidly changing world.  
Today's clients are increasingly demanding:

- more complex buildings and structures
- higher quality designs
- delivered faster
- using more sustainable methods and resources





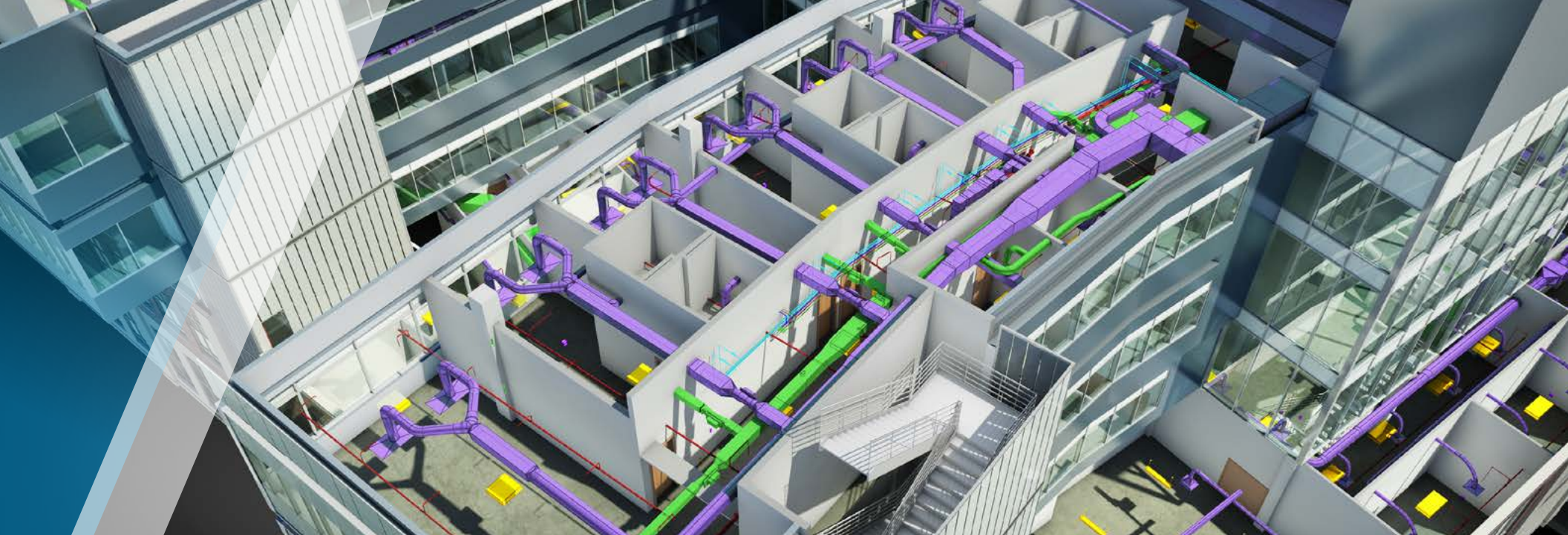
# You know you need to change with it

In this highly competitive marketplace, businesses that can meet these challenges will go on to build the future.

Firms who cannot meet these demands risk falling behind.

With today's sophisticated clients demanding more value across the entire lifecycle of a building and demonstrable project outcome, ambitious engineering firms are building a competitive advantage with digital engineering capabilities.





Leading  
engineering  
firms are  
pioneering  
a better way  
of working

BIM gives engineering firms a strong foundation to build on. With owner and government BIM mandates expanding globally, delivering projects with BIM is now 'the price of entry'.

BIM's benefits for coordination and construction documentation are well documented. Today, however, today's leading firms are using BIM technology in even smarter ways.

They're taking advantage of more integrated engineering processes, enabled by data-rich models, and benefiting from better collaboration, and communication across the entire

project life cycle. Autodesk® Revit® models also provide a launching point for more integrated analysis and calculations, designing for constructability, and design automation.

**Integrated engineering workflows are making new levels of innovation and problem-solving possible, and projects more profitable.**




# It's time to work smarter

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 outcomes for your business, and better project outcomes for your clients.







# Integrated engineering

Four ways firms are benefiting by adopting  
an integrated engineering approach

- 01 | Design Optioneering
- 02 | Integrated Analysis
- 03 | Design Automation
- 04 | Seamless Collaboration





# 01

## Design Optioneering

### **The Benefit:**

Optimized designs

Design optioneering involves using computational design and analysis tools to rapidly explore design options and to 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 sustainable to operate.

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



# 01

## Design Optioneering

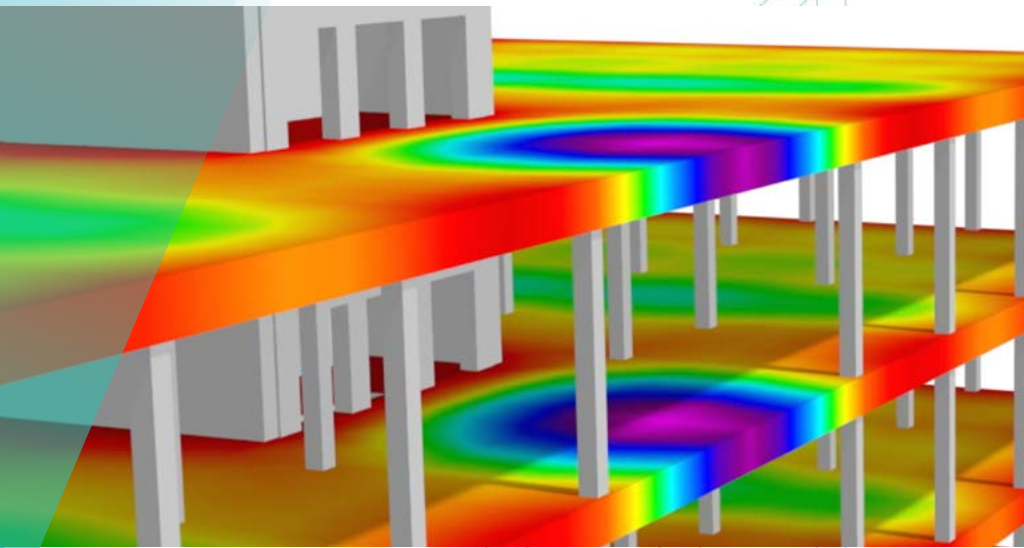
**The Benefit:**  
Optimized designs

*“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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# 02

## Integrated Analysis

### **The Benefit:**

More efficient processes

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 3rd 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.



# 02

## Integrated Analysis

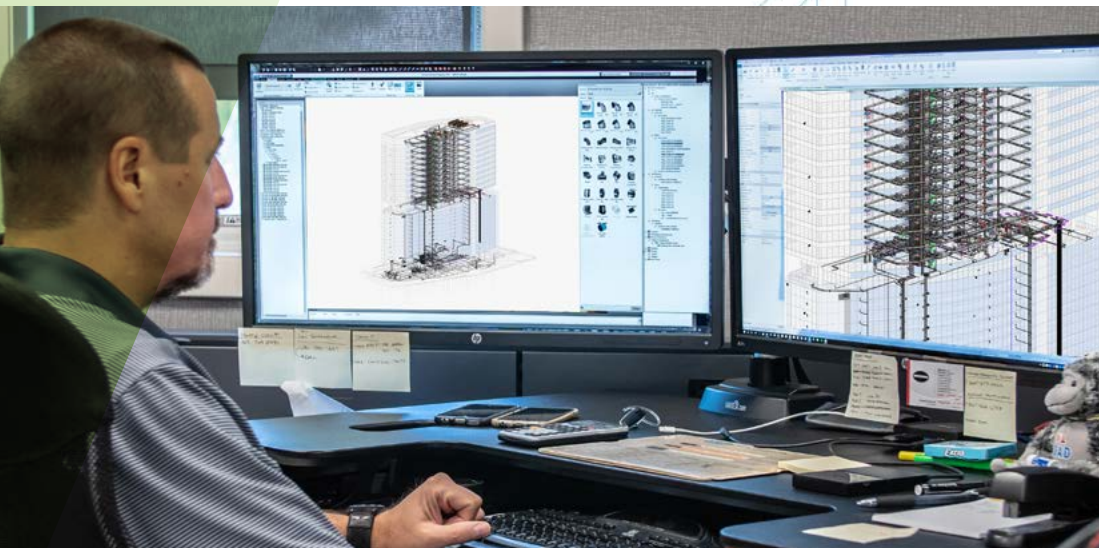
The Benefit:  
More efficient processes

*“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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# 03

## Design Automation

### The Benefit:

Accelerated productivity

Automated modeling and documentation is better than ever now with Revit. Tools like Dynamo Player in Autodesk Revit make automation accessible to any engineer or designer – no coding is required. Hours of tedious work spent on documentation, code checking, and interoperability can be reduced 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 is more time spent on engaging, high-value work.



# 03

## Design Automation

**The Benefit:**  
Accelerated productivity

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

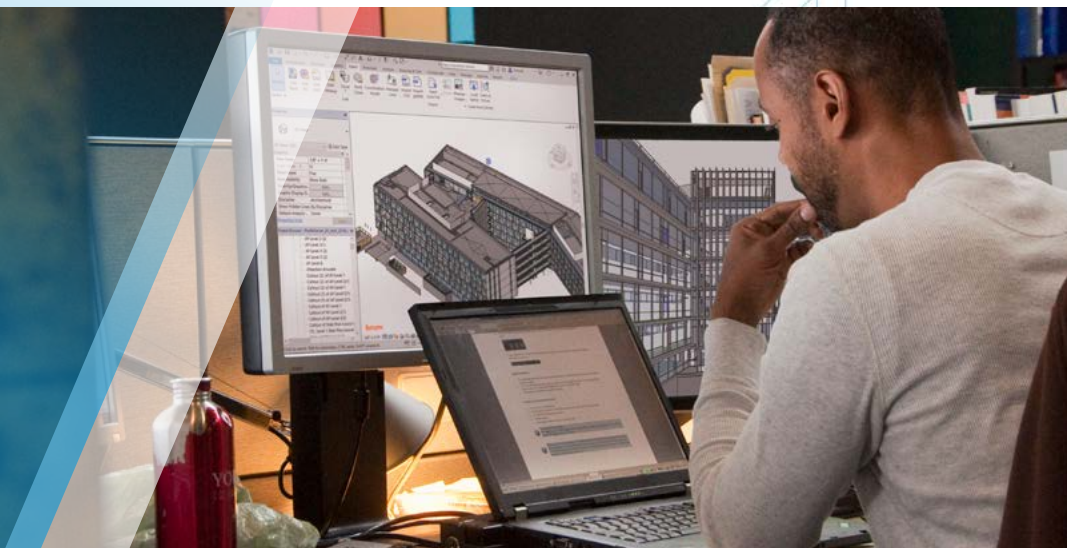
Ken Luong,  
Project Manager at TDIndustries

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01 Design Optioneering · 02 Integrated Analysis · **03 Design Automation** · 04 Seamless Collaboration







# 04

## Seamless Collaboration

### **The Benefit:**

Streamlined project delivery

In an integrated BIM environment, multiple design disciplines work closely together on shared Revit design model in the cloud, 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. Model sharing with fabricators and contractors can ensure a more seamless handoff for construction.

Teams can now anticipate and mitigate the potential impact of changes earlier on.



# 04

## Seamless Collaboration

### The Benefit:

Streamlined project delivery

*“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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# Conclusion

At Autodesk we're helping MEP and Structural Engineering firms like yours to streamline the way they work—and use technology in a more connected way.

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

This frees your teams to focus on engineering innovations. Solutions that will ultimately lead to shorter timeframes and more profitable projects.

Arrange a demonstration for you and your team to see how you can start making the most of integrated engineering.

DISCOVER NOW

