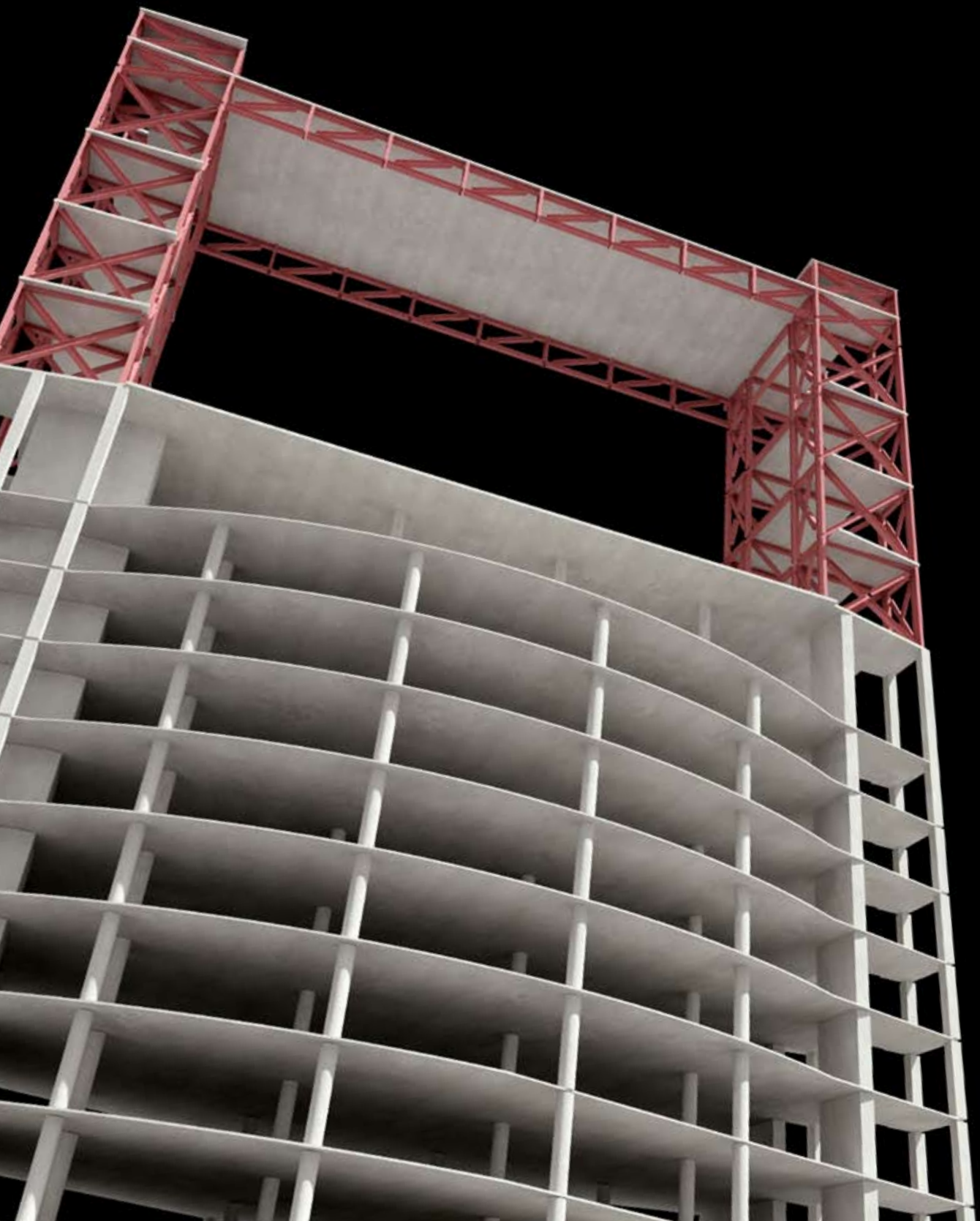
# Autodesk®
## Structural Engineering Solutions

## Anticipate. Integrate. Accelerate.



Autodesk®

# Get in Front, Stay in Front

## Structural engineers, designers, and drafters are discovering new ways to do their work and stay competitive.

Using Revit Structure, we have realized better coordination and quality within our drawings, which has translated to higher profitability and a competitive advantage for our firm. We believe that as we move forward with Revit Structure, we will be better positioned to exceed our clients' expectations.

—Gregg Kite
Director of Production
SCA Consulting Engineers
Houston, Texas

### Anticipate Industry Trends

BIM. Integrated practice. Globalization. Design to fabrication. Today's structural engineering professionals face sweeping changes, but what does it all mean for your firm? Structural engineers, designers, and drafters are creating ever-more productive ways of working, and they need tools to quickly coordinate design and documentation with multiple analyses.

Autodesk offers a broad suite of engineering, analysis, design, documentation, detailing, and collaboration software solutions to help you stay in front of your industry. Get all the benefits of building information modeling (BIM) for structural engineering, while protecting your investment in software, trained personnel, and design data.

### Accommodate Last-Minute Changes

Structural engineering teams today are spending too much time on repetitive tasks, such as entering the same information for various analysis models and again for construction documents. With continuous pressure to reduce costs and accommodate last-minute changes from clients and owners, engineering firms must reevaluate how they approach their work and what tools will get the job done most efficiently.

### Explore Design Alternatives

Autodesk® Structural Engineering Solutions range from advanced design tools to widely adopted general drafting and documentation software. Structural engineers can explore design alternatives and make necessary changes, while Autodesk® software helps you coordinate changes throughout the design and documentation processes.

### Expand Professional Services

In order to remain competitive in today's market, engineering firms need to provide the right combination of professional services that retain existing clients and attract new ones. Autodesk Structural Engineering Solutions provide the tools to help streamline existing processes and workflows, as well as tools to help expand your role in the design process all the way through fabrication and construction.

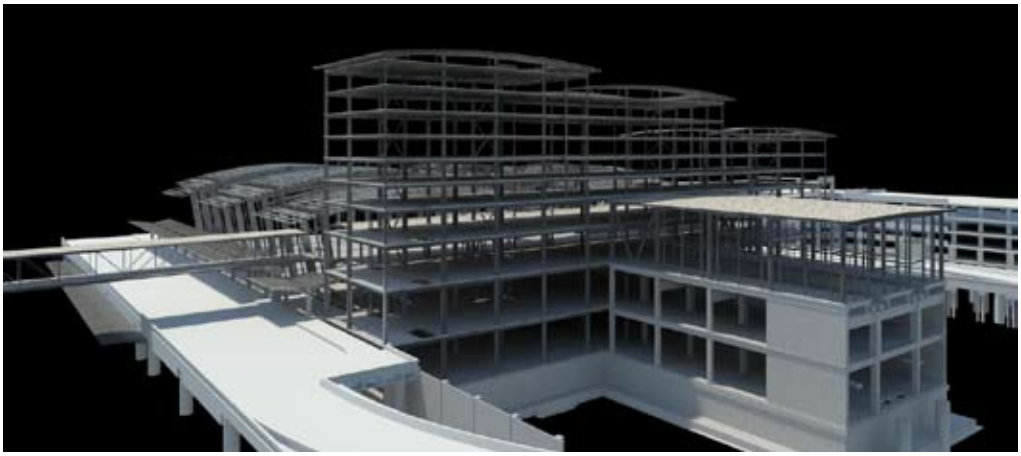


**Image courtesy of L.A. FUESS PARTNERS, INC**

# From Buildings to Infrastructure

## No matter the project or structure type, Autodesk Structural Engineering Solutions help support the workflow.

Autodesk Structural Engineering Solutions can assist structural engineering firms in two primary areas: building projects and infrastructure.

Each area presents the structural engineer with unique workflow challenges that Autodesk solutions can help support throughout the analysis, design, and construction phases.

### Buildings

Whether teams are using a 2D workflow or building information modeling, Autodesk Structural Engineering Solutions are designed to support and streamline the workflow throughout the project. From coordination with architects and MEP engineers, to analyzing and designing the structure, through construction documentation and fabrication, structural engineers can be sure their collaboration and communication are effectively supported every step of the way.

Autodesk Structural Engineering Solutions are used world-wide for a multitude of commercial, retail, educational, healthcare, sports stadiums and residential projects. These projects incorporate numerous construction materials including reinforced and pre-cast concrete, steel, wood, and concrete masonry. In fact, Autodesk Revit Structure was used by WSP Cantor Seinuk to model the 2.6 million square foot, 1,776-foot high Freedom Tower project in New York City.

### Infrastructure

In addition to buildings, Autodesk Structural Engineering Solutions support the BIM workflow for infrastructure projects including water/ wastewater, industrial, tunnels, retaining walls, towers and bridges. To support the growing need worldwide for new and improved infrastructure, specifically highway bridges, Bridge Engineers can leverage tools specifically designed to improve coordination and design of typical highway bridges including Steel-I, Precast, and Concrete Box girder bridges. GHD, an international professional services company, has used Autodesk Revit Structure to design the new Southern Utility Plot Support Structure (SUPSS) a large bridge structure for the Palm Jebel Ali, the second of Palm Islands off the coast of Dubai in the United Arab Emirates.

Autodesk has a deep portfolio of products and third-party partnerships that provide structural engineers, bridge engineers, designers, and drafters with the tools to make their communication more efficient and their efforts more productive.

# Choice of Tools

## Autodesk Structural Engineering Solutions enable you to adapt workflows for different project and staffing needs from design to fabrication.

### Autodesk Revit Structure

Autodesk® Revit® Structure software offers BIM to structural engineering firms, delivering a better coordinated and more reliable model for more efficient and more accurate design and documentation. Help improve multidiscipline coordination, and incorporate analysis through bidirectional linking to popular structural analysis software, including Autodesk® Robot™ Structural Analysis Professional software. Powerful parametric change management technology assists in coordinating modifications and updates across the model and documentation.

Autodesk Revit Structure helps you analyze and design all or part of a structure by integrating with a wide variety of powerful analysis and building code design products.

### Autodesk Robot Structural Analysis Professional

Autodesk Robot Structural Analysis Professional software is a collaborative application that extends BIM for structural engineering with analysis capabilities for buildings, bridges, and civil and specialty structures. More seamlessly analyze your complex domestic and international projects with a comprehensive library of design codes. Deliver results in minutes, not hours, to help compete and win in the global economy.

### AutoCAD Structural Detailing

AutoCAD® Structural Detailing software, built on the familiar AutoCAD® platform, enhances productivity with more precise detailing and creation of fabrication shop drawings for various types of steel and concrete structures. Extend design to fabrication with direct integration between Autodesk Revit Structure software and AutoCAD Structural Detailing.

### AutoCAD

Make efficiency a daily part of the job with AutoCAD software. Meticulously refined with the drafter in mind, AutoCAD propels day-to-day drafting with features that increase speed and accuracy while saving time. AutoCAD is interoperable with Autodesk Revit Structure.

### Collaboration

Meeting client expectations and helping to ensure that projects stay on track and on budget are priorities for every structural engineering firm. However, managing geographically dispersed teams and the hundreds of documents required to successfully deliver a project is a constant challenge. Autodesk helps you meet those challenges:

### Autodesk Buzzsaw

The Autodesk® Buzzsaw® web-based service, delivered on-demand, helps organizations simplify and centralize all project-related documents and information, enabling the successful execution of projects based on timely decisions and accurate information.

### Autodesk Design Review

Accelerate reviews with the free* Autodesk® Design Review software, the all-digital way to review, measure, mark up, and track changes to building models and complex drawing sets without the original design creation software.

### Autodesk Navisworks

Exploit the full benefit of 3D digital designs and BIM to streamline the workflow process across the organization and beyond with Autodesk® Navisworks® software. Reduce waste, increase efficiency, and help reduce change orders to improve quality through whole-project review of all types of models, in multiple file formats, regardless of file size.

Autodesk Navisworks products offer tools for effective design project visualization, construction simulation, and clash detection and are used by many of the world's leading construction companies, architects, and engineers.

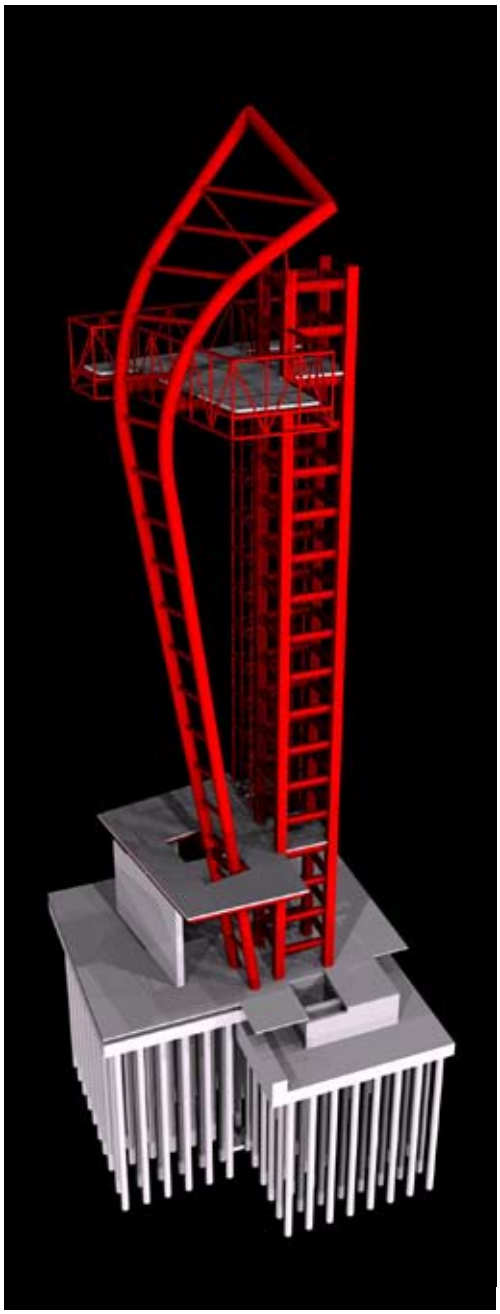
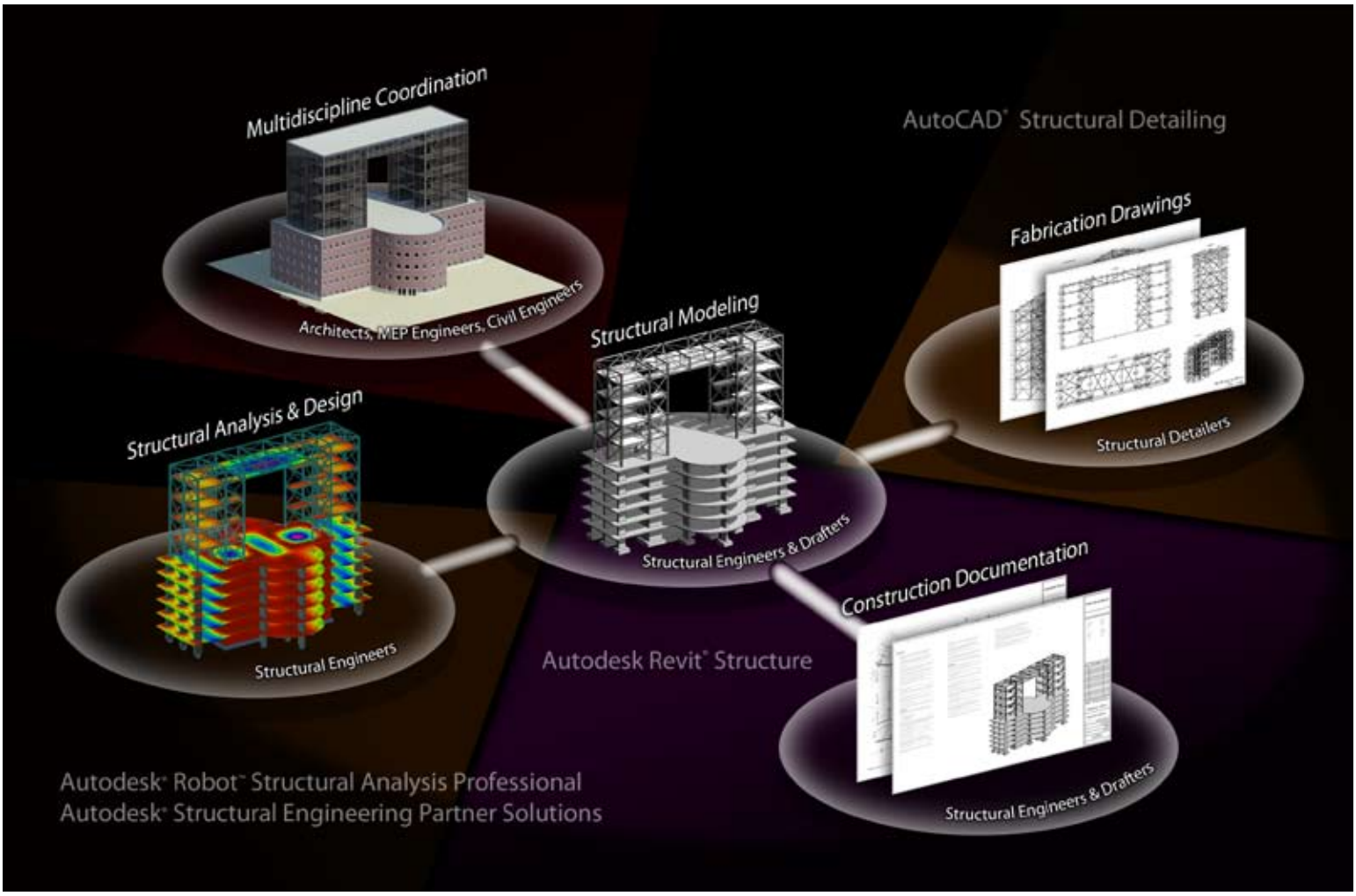


**Image courtesy of Rutherford & Chekene**

# Building Information Modeling for Structural Engineering

## Integrated tools for modeling, coordination, analysis, design documentation, as well as shop drawings and fabrication.




Building information modeling (BIM) is an integrated process built on coordinated, reliable information about a project from design through construction and into operations. By adopting BIM, architects, engineers, contractors, and owners can more easily create coordinated, digital design information and documentation; use that information to more accurately visualize, simulate, and analyze performance, appearance, and cost; and reliably deliver the project faster, more economically, and with reduced environmental impact.

BIM for structural engineers follows this same methodology for the entire structural engineering process, focusing on a digital model that can be used for coordination with architects mechanical, electrical, and plumbing engineers; and civil engineers that is integrated with analysis, design, and construction documentation, and extending that digital model from design through fabrication and construction.

Revit Structure has helped us dramatically improve project coordination. The Revit® platform absolutely provides us with a competitive business advantage. There is no doubt about it.

—Charles Guerrero
Vice President
WSP Cantor Seinuk
New York, New York

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To learn more about Autodesk Structural Engineering Solutions, visit **www.autodesk.com/building**.

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