



Exponent®



# Construction

SAFE CONSTRUCTION, SOUND PROJECTS





# Hard Questions. Tough Challenges. Bring It.

In an era of accelerating change, Exponent is the only premium engineering and scientific consulting firm with the depth and breadth of expertise to solve our clients' most profoundly unique, unprecedented, and urgent challenges.

Exponent's 950+ consultants help our clients navigate the increasing complexity of more than a dozen industries, connecting decades of pioneering work in failure analysis to develop solutions for a safer, healthier, more sustainable world.

## Exponent by The Numbers

90+

Technical  
Disciplines

30+

Offices Across North  
America, Europe & Asia

1967

50+ Years of  
Scientific Excellence

## HOW WE HELP CLIENTS

# The Art & Science of Building Your Future

From high-rises to highways, retail to reactors, a successful construction project requires expert choreography across dozens of teams to avoid delays, cost overruns, or catastrophes. Exponent's multidisciplinary teams provide solid engineering and smart management consulting to help projects succeed and head off trouble, offering trusted technical guidance when disputes arise.

## Construction Operations

Drawing from construction management, civil engineering, materials and corrosion engineering, mechanical engineering, data sciences, and dozens of other disciplines, our custom teams are assembled to tackle your specific challenge. Whether it's analyzing design issues or evaluating subcontractor invoicing processes, we get to the right answers by applying rigorous methods and creative solutions.

## Accident & Failure Investigation

Our 50+ years of experience across all types of catastrophes enable us to provide detailed, actionable insights on why an incident happened and what can be done to prevent it from happening in the future. Our team of experts applies sound science and engineering to identify root causes, determine the scope of repairs, estimate their costs, and analyze schedule delay and cost impacts.

## Risk & Regulatory

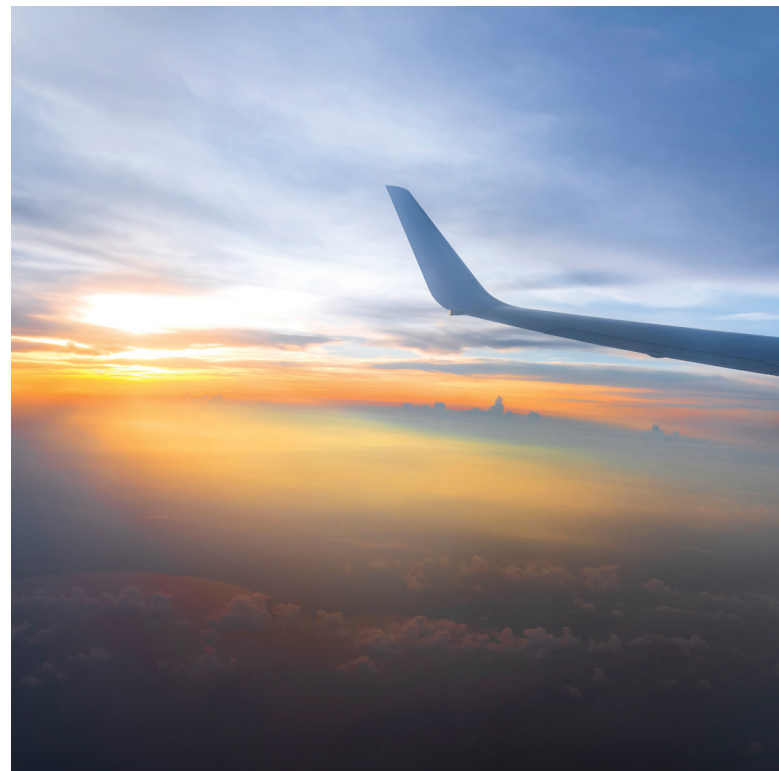
We work with clients to develop risk assessment methodologies to address issues ranging from jobsite accident prevention to environmental damage to schedule delays. We provide quantitative, actionable models — based on real numbers and grounded in science — to help you minimize risk across your operations and ensure compliance with building codes, worker safety regulations, and testing mandates.

## Environmental Impacts

Our multidisciplinary scientific and engineering teams can give you a clear understanding of how your construction activities may affect the air, soil, and groundwater within and near your sites. Across hundreds of construction projects, we've helped clients with environmental impact statements and other specialized studies.

## Specification & Design

We ensure your designs are sound and process is solid with expert review and analysis across the entire project lifecycle.





## Sustainability

We help you understand the impact of climate change on your business, now and in the future. How will your customers' needs change? How are building codes expected to evolve? How can your operations use less energy? Are your structures built to withstand extreme weather?

## Health Impacts

Our specialists in toxicology, mechanistic biology, and epidemiology have conducted detailed assessments on the health impacts of hundreds of substances including dust, paints, and plastics. Beyond assessing the substances themselves, our studies account for exposure amounts and situations that create a true picture of how hazards on the job site and in building materials may impact human health.

## Data Analysis & Insights

Our data sciences team can help you uncover the knowledge needed to make smart decisions and head off trouble before it becomes a liability by providing advanced data modeling to generate key insights and decision-making support.

## Disputes

From structural defects to schedule delays, Exponent scientists and engineers represent the science at dispute proceedings by bringing clarity, precision, and the ability to explain complicated topics in understandable ways to judges and juries. We assist clients across all phases of disputes including pre-litigation, fact-finding, litigation expert testimony, and arbitration.



## SOLUTIONS

# Understand Complex Scheduling, Cost & Technical Construction Challenges

Risk assessments. Forensic analyses. Site inspections. Exponent can assist at every point in the construction project lifecycle, including risk management, project planning and oversight, project advisory, management oversight, and dispute resolution. Our experience enables us to apply lessons from past failures and predict and prevent future problems.

### **Accident & Failure Investigation**

Evaluating building collapses, worker accidents, mechanical system failures, cracks, leaks, fires, and floods; assessing vibrational, seismic, and adjacent construction damage; investigating site incidents, operating conditions, and environmental exposure factors.

### **Environment & Sustainability**

Preventing earth structure erosion; promoting climate resilience; advising on green building engineering; improving sustainable building envelopes.

### **Regulatory & Compliance**

Building code compliance; fire safety analysis; seismic safety support.

### **Risk Assessment & Mitigation**

Getting in front of cost overruns and delays; improving worker safety; supporting wind-, fire-, and earthquake-resistant designs.

### **Technology, Data & Innovation**

Identifying causes of cost overruns; establishing integrated systems for subcontractor management and invoicing.

## CASE STUDY

# How Can Automation Capture Gains in Construction Management?

### THE CHALLENGE

With more than 2,000 unique construction contracts to manage, a major technology company needed a better method than their disconnected, manual systems to ensure accuracy and efficiency in their projects.

Seeking an approach that was integrated and error proof, the client engaged Exponent's multidisciplinary team to bring together construction expertise and data and computer science insights that could transform their current processes.

### EXPONENT'S MULTIDISCIPLINARY SOLUTION

Exponent deployed automations — driven by our deep expertise in construction management — to streamline bidding, simplify billing, and create better project tracking and accountability.

Specifically, we designed and developed an integrated data portal to automate the bidding and financial reporting process for our technology client. A business intelligence visualization layer provided high-level insights on project performance.

### OUR IMPACT

Our automated solution generated efficiencies and cost savings and reduced the frustration that came with our client's siloed, manual systems.

- The initiative has saved the client over 20% in construction costs.
- The client's productivity in financial reporting has increased by 20%, saving them 20% in resource hours a month.
- The client has been able to award 40% more construction contracts than in previous comparable timeframes, accelerating their ability to meet the industry's growing data capacity needs.

## CAPABILITIES

# Exacting Methods for Construction Issues

Exponent's team has extensive experience assisting clients through all phases of the complex construction process — from claims and dispute resolution, to staffing and scheduling preparation, to cost calculations and cost overrun prevention.

## Project Advisory Services

Managing large-scale construction projects and programs requires expertise in scheduling, cost analysis, and engineering, as well as a thorough understanding of the construction process. Exponent's construction project advisory services support the entire project lifecycle, from front-end planning and project initiation through design, procurement, construction, and closeout.

## Capital Planning & Advisory Services

Exponent's capital planning and consulting professionals provide program- and project-level support to help clients manage the complexities of high-value, high-risk capital projects.

## Risk Management Services

In construction, risks are classified as anything that may cause project delays or result in additional costs. Exponent's construction consultants conduct construction risk analyses on- and off-site to evaluate the possibility of project, safety, financial, environmental, and legal risks that may impede construction progress.

## Cost Analytics

Inflated material and labor costs are common when construction projects are delayed or extended. Exponent helps improve project deliverables with project cost estimates, contract assessments, forensic material, and cost analyses designed to account for cost changes.





## FEATURED CAPABILITY

# Evidence-Based Expertise in Construction Disputes & International Arbitration

For over 50 years, Exponent has provided independent expert advice to clients involved in disputes, arbitration, and mediation all over the world. Our experience in domestic courts of law and global arbitration forums offer clients valuable, rigorous analysis they can trust and rely on.

## Schedule Delay Analysis

Exponent's schedule-delay experts provide extensive experience in the preparation and analysis of as-planned and as-built schedules, as well as other court-accepted methodologies to analyze the extent and cause of critical path delay. We use the critical path method (CPM) to evaluate and resolve delay and acceleration claims, and we leverage contemporaneous project records to independently assess challenges that occurred during the project and effectively present the results in reports and demonstrative exhibits.

## Damage & Quantum Analysis

Our consultants are familiar with a broad spectrum of claim pricing methodologies and have analyzed every aspect of cost impact, including direct and indirect costs, delay costs, overhead applications, time value of money, and consequential damages.

## Claims Analysis, Preparation & Defense

We provide support throughout the entire litigation lifecycle, from research and analysis to expert testimony at negotiation, mediation, arbitration, or trial.

## Expert Testimony, Reports & Trial Assistance

Our teams have extensive construction litigation and expert testimony experience, including claims research, analysis and reporting, document preparation, and trial

assistance. We use a fact-based approach to claims analysis and preparation to provide independent, objective expert testimony. We also provide graphics, videos, and animations with interactive capabilities to assist with trials, arbitration, or mediation.

## Productivity Loss, Disruption & Inefficiency Analysis

Our cost professionals leverage the contemporaneous project records to evaluate issues that impact labor productivity.

## Contract Termination Claims

Whether the allegation is of nonpayment, nonperformance, insufficient staffing, code, rule or law violations, poor workmanship, or breach of contract, Exponent will review project records to determine the facts, prepare a rebuttal and assist in calculating costs associated with work performed, termination costs, overhead, and profit.

## Insurance Claims

Policyholders and insurance companies often retain Exponent to prepare expert reports for claims presentations or defense. We have served as testifying experts on many large insurance coverage litigation matters and assist our clients by analyzing business interruption impacts, and related costs, as well as performing maximum probable loss studies.

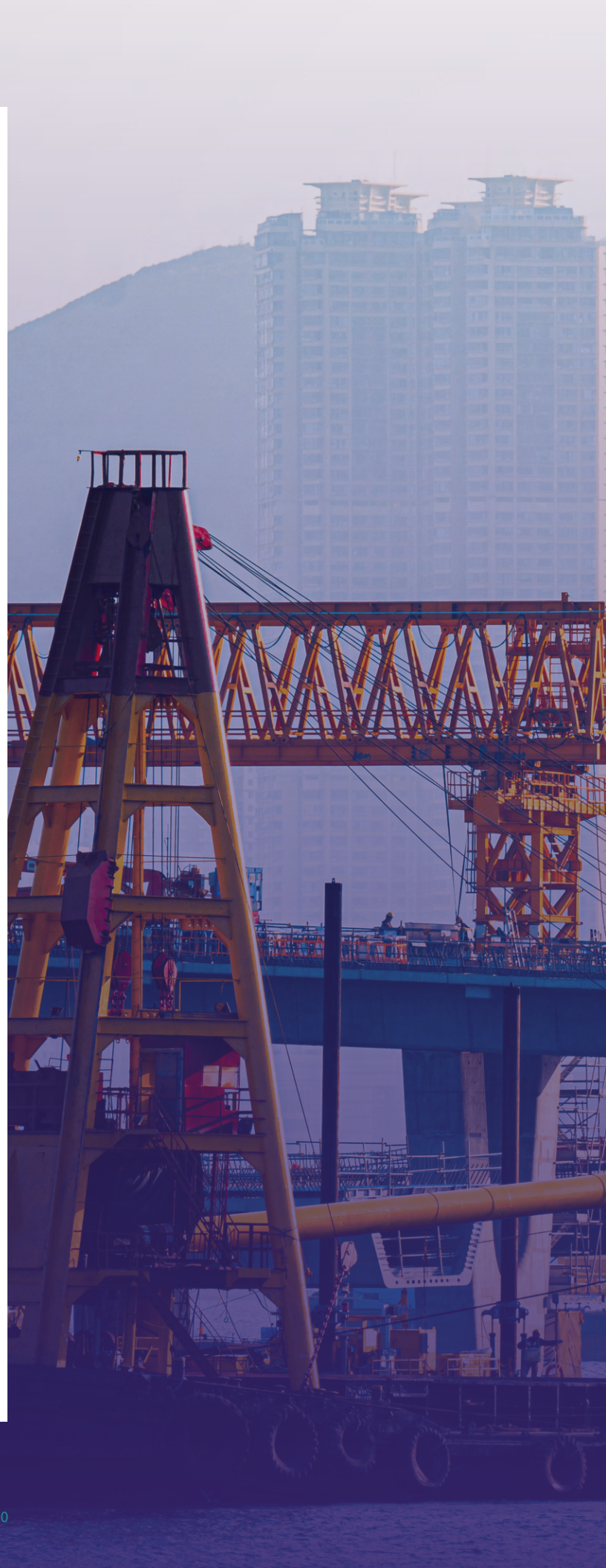
## Rigorous Technical Support for High-Stakes International Arbitration

When the science behind your projects is highly technical, how do you ensure critical international audiences understand the nuances of your arguments?

Our expertise and experience enable us to provide technical evidence and conclusions that help our clients make informed decisions when it comes to complex international arbitration matters.

Some of our services include:

- Assisting with determining whether a claim is worth pursuing
- Identifying the correct approaches or methodologies for quantifying damages
- Preparing and analyzing cost overruns and schedule delays
- Evaluating claims in the context of past and future damages incurred
- Identifying the type of expertise, evidence, and documentation required





# Outsmart Your Toughest Challenges.

When you're stuck, when you're facing a never-before-seen issue, when everything's on the line, turn to Exponent.

Our consultants thrive on solving unstructured problems, leveraging multidisciplinary expertise and state-of-the-art testing so you can move ahead with confidence. Bring us your tough, your complex, your impossible challenges — and reap the advantages of 50+ years of data-backed industry insights and failure analysis learnings.

We're with you all the way.

**GET IN TOUCH**  
[INFO@EXPONENT.COM](mailto:INFO@EXPONENT.COM) | [EXPONENT.COM](http://EXPONENT.COM)

What can we help you solve?

$x$



Exponent<sup>®</sup>

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