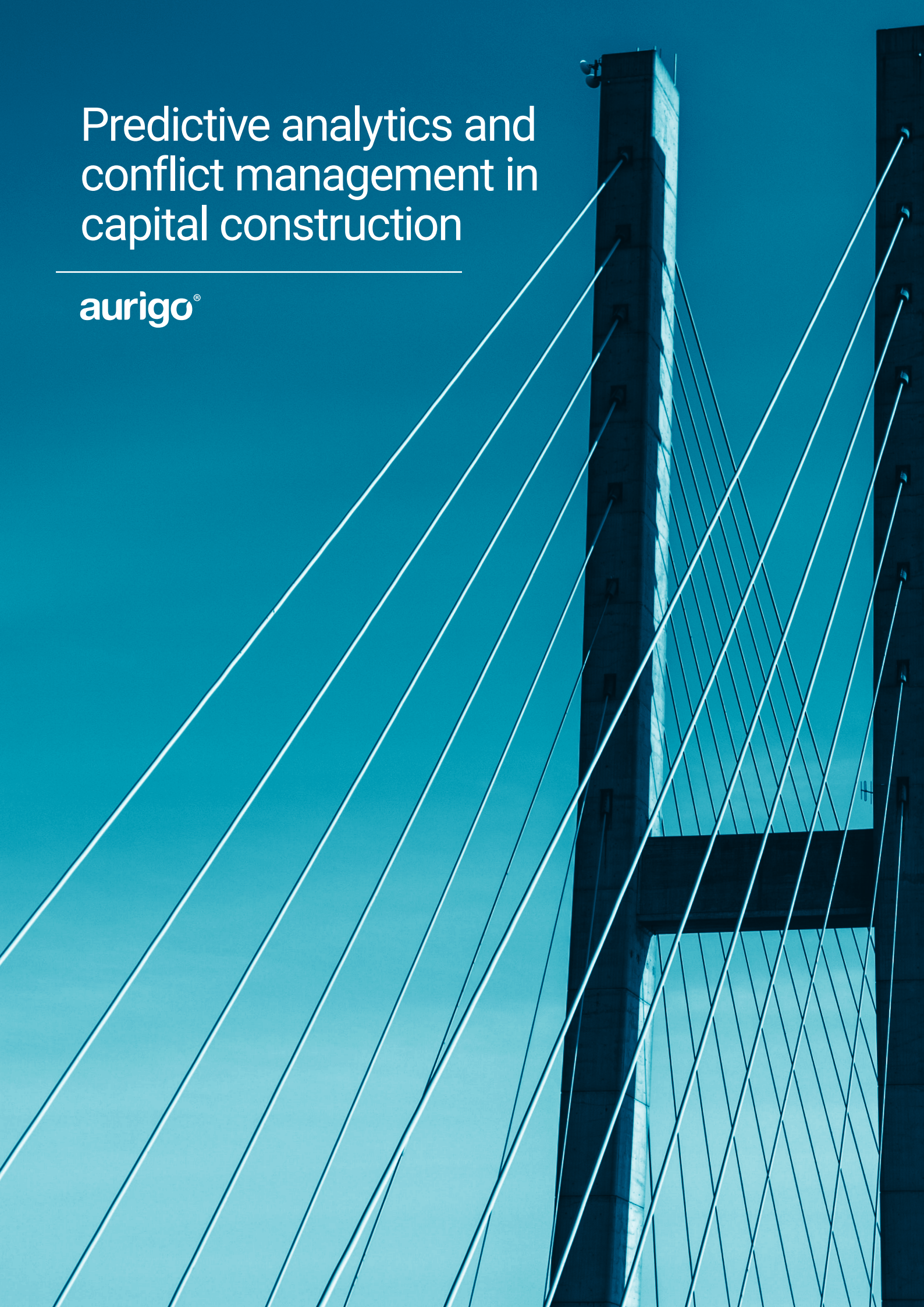


# Predictive analytics and conflict management in capital construction

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## Conflicts in construction are inevitable

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Construction conflicts happen. Building is a high-stakes game, and when things go awry, everybody searches for a person to blame.

By finding common themes in the causes of conflict in construction projects, it's possible to find workarounds that could mitigate, or even avoid, many disputes. This is even more possible now that artificial intelligence (AI) can offer better analysis through data to help you steer clear of many construction conflicts.

This could be especially important as construction activity booms in the coming years, spurred by pent-up demand and a desire to 'get back to normal,' now that much of the world is reopening after months of slower activity, thanks to the COVID-19 pandemic.

In the U.S., the recently passed Infrastructure

Investment and Jobs Act (IIJA) could lead to a fever pitch of construction activity, even as companies scramble to compete despite industry-wide labor and supply shortages.

Recent reports show both bad news and good news. While construction conflicts are getting pricier overall, their number remains relatively constant, and they aren't lasting as long. Still, no matter how small these conflicts are, they interfere with projects and waste significant amounts of time and energy, so it's better to avoid as many of them as much as you can.

This guide will discuss the causes and consequences of construction disputes, how they can be avoided, and how owners can get the information they need to make solid decisions for future projects.



## The negative fallout from construction conflicts

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The complexity of construction projects lends itself well to misunderstandings, false expectations, and confusion as to the exact chain of command. Throw in some personality conflicts and ego clashes, and it's no surprise that working relationships sometimes end in arguments.

*And those conflicts can be costly.*

The average value of disputes more than doubled between 2020 and 2021, from \$18.8 million to \$37.9 million. This number reflects a growing number of 'mega disputes' from large capital builds and private projects.

Some of the costs are not directly financial, either.

Conflicts can result in:

- **Long negotiations**
- **Broken or revised contracts**
- **Design changes**
- **Litigation**

These issues could cause your project to be delayed or increase project costs (especially when you add in any associated legal fees), and you may lose good professional relationships in the process.

If a dispute persists long enough without a resolution, the project could fall apart altogether.

So, how do these conflicts arise? And is there any way to prevent them?





## The main causes of conflict in construction

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**A**lthough the specific causes of conflicts vary as much as individual projects do, each stem from a real or perceived failure to abide by the boundaries of a contract. These complex agreements specify the scope of work, materials, timelines, and methods to be used to construct the assets in question. Often, conflicts result from one or more parties under contract not fully understanding or complying with their contractual obligations.

When missed obligations lead to finger-pointing, disputes arise. Disputes can result from:

- *Incomplete or unclear design details*
- *Errors or omissions in the build or build preparations that lead to delays and rework*
- *Budget over-extensions*
- *Missed deadlines*

Discord on a project can often be traced back to the very structure of a construction project. Contracts that make it through the preconstruction process, despite being incompatible with one another, will inevitably lead to conflict down the line. An excellent example of structural problems in contract documents can be seen when change orders arise. When it becomes necessary

to make changes to the original plan, all parties should agree in writing about who will be responsible for the extra costs that may occur. Any ambiguity can lead to conflict.

Deviation from the established communication protocols can lead to trouble, too. Severe misunderstandings can arise from the misuse or a breakdown of communication, as project changes aren't implemented through the proper chain of command, leading to confusion and lack of accountability. A consistent, repeatable approval process to manage change is essential to ensure the right stakeholders are involved in the decisions that affect them.

Finally, a lack of proper documentation can make it difficult to prove your case when discrepancies occur and lead to full-on disputes or even litigation.

While these conflicts are a natural outcome of multiple layers of responsibility all stacked together, it's still possible to avoid many of them with thorough preparation and proper administration of your construction agreements.





## How to minimize or avoid construction disputes

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**P**reparation can help immensely in avoiding conflicts on construction sites. Project teams should be trained on schedule management, documentation, cost tracking, and have full knowledge of the scope of work and contract terms before the project begins. Construction teams should also know how to handle changes when they arise.

Contracts should be worded to reflect the project's true nature and should be reviewed before its start to check for any errors or omissions in supplies or timelines to avoid fixes that could later lead to problems.

When it comes to arguments over who did what, nothing beats an accurate record of what actually happened on the project site. Thus, proper documentation

and project tracking can make a huge difference in either avoiding or resolving project disputes.

Project schedules, RFIs, submittals, pictures, punch lists, and daily activity logs, all properly cataloged for future reference, can offer irrefutable proof of what happened and put conflicts to rest. In these situations, timely documentation of field changes, project delays, and potential claim issues can save the day.

These things can help avert a crisis by avoiding any problems, resolving disputes early on if possible, or if worse comes to worst, acting as good evidence in a courtroom setting.



## How predictive analytics can help manage conflicts

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Luckily, these preparatory measures don't need to come down entirely to skill and foresight. Predictive analytics can help mine project information for clues into what to expect on similar projects in the future. By parsing out similarities and differences between various projects, it can play out scenarios that detect conflicts before they happen.

Further, predictive analytics can play out 'what-if scenarios' to allow owners to set contingency plans and ensure project teams are trained on possible outcomes, minimizing the likelihood of major disputes.

Predictive analytics can:

- **Break down costs to determine an accurate budget for a project rather than estimating costs based on memory or approximations.** These programs can use data from previous projects to pin down the required materials and time allotment, including running scenarios that determine the likelihood of the emergence of specific costs.
- **Catch omissions** so they can be corrected before contracts are signed by illuminating events likely to occur over the course of the project. Documentation can be maintained to encompass those eventualities, thereby avoiding confusion and conflict.

- **Find patterns in the equipment used to schedule maintenance before a disruptive breakdown is likely to occur by capturing data about the equipment's service history and mapping its expected performance.** Analytics can alert owners to any potential breakdown to be managed before the problem ever arises.

- **Determine alternate outcomes to best prepare for possible hiccups in the building process by pointing out likely pitfalls to a project's completion.** Analytics can help managers be proactive by avoiding problems before they occur, saving time and money.

These methods show how predictive analytics can help companies better prepare for project planning by assisting in the creation of contract documents that accurately reflect all aspects of a job, improving project designs, planning a safer jobsite, and allowing enough time and money for potential disruptions.

Using these predictions, construction companies and project owners can essentially see around corners to execute better projects that are less vulnerable to the possibility of construction disputes. In short, the use of data analysis coupled with predictive analytics can empower construction leaders to make better-informed decisions.





## What you need to access predictive analytics

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**M**aking decisions about upcoming projects relies on past project data. In the past, assessing the risks and rewards of new projects was a question of the construction leaders' basic recall skills, but data modeling can now do the heavy lifting, comparing similarities and differences between past and future project details.

Predictive analytics is a natural outcrop of data analytics. As such, it uses historical and current data to make predictions about future events via predictive modeling and machine learning. The process relies on accurate information as a solid basis for future insights, and that's where complete, accurate, and accessible

project data comes into play to improve the accuracy of future projects.

Information from your accounting, estimates, contracts, drawings, specs, and submittals can provide clues about how future endeavors may unfold. To harness these powerful insights, your team will need a process in place to systematize data collection on past and current projects.

A construction management software like Aurigo Masterworks provides owners a platform to consistently collect data and organize information for later analysis. Aurigo's AI-driven insights can empower you to make better decisions on your future projects.



## Solid data for now and for the future

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Construction management software helps build a strong base for business decisions. Aurigo provides owners with all the tools they need to keep abreast of project updates. Communication tools gather and organize instructions and updates according to project needs. Document updates appear in real time to give all stakeholders a single source of truth. Stronger collaboration between you and your building teams forges stronger relationships and greater trust in your project's progress.

When these benefits are combined with predictive analytics that leads to better decision-making, you can build better projects now and in the future.



## About Aurigo Software

Aurigo builds software that helps build the world. Aurigo is an AI-native company that helps capital owners connect planning, construction, and operations in a single environment, improving decision-making and execution. Trusted by over 300 organizations across infrastructure and facilities, Aurigo manages more than \$450 billion in capital programs, with over 40,000 projects throughout North America. Aurigo is a privately held U.S. corporation headquartered in Austin, Texas, with global offices in Canada, South Africa, and India.

Learn more at [www.aurigo.com](http://www.aurigo.com)

## Schedule a Demo

Schedule your demo today to learn how Aurigo Masterworks Capital Planning Solution can help your organization streamline information, accurately track and forecast, prioritize projects, and help you save time and money.



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