



Prediction and Analytics



Introduction

At its core, BIM 360 is built to help construction teams better visualize and take daily action to minimize project risk. Whether it is risk associated with safety, quality, or project controls, BIM 360 allows teams to streamline workflows to improve project outcomes.

The prediction and analytics ecosystem enhances the BIM 360 platform with a deeper understanding of project performance, prioritized daily activities, and instant visibility into project risk, giving teams the information they need to avoid costly mistakes and further improve risk mitigation.

Autodesk BIM 360

BIM 360 improves the process of construction by supporting informed decision making throughout the project lifecycle. It does this by centralizing all project data in a single data repository and connecting project stakeholders and workflows—from design to construction to operations, from the field to the office and back.

Visit BIM 360 Site 

Please note that the capabilities outlined in this guide are reflective as of December 2019 and will continue to undergo improvements. Additionally, some capabilities are only available in certain countries. For more information on product updates and capabilities please visit the [BIM 360 Product Release Notes](#).



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“By automatically identifying high risk items through machine learning and assisted by human experience, BAM achieved a **20% reduction in Quality and safety issues** on site as a result of better decision making supported by Construction IQ”

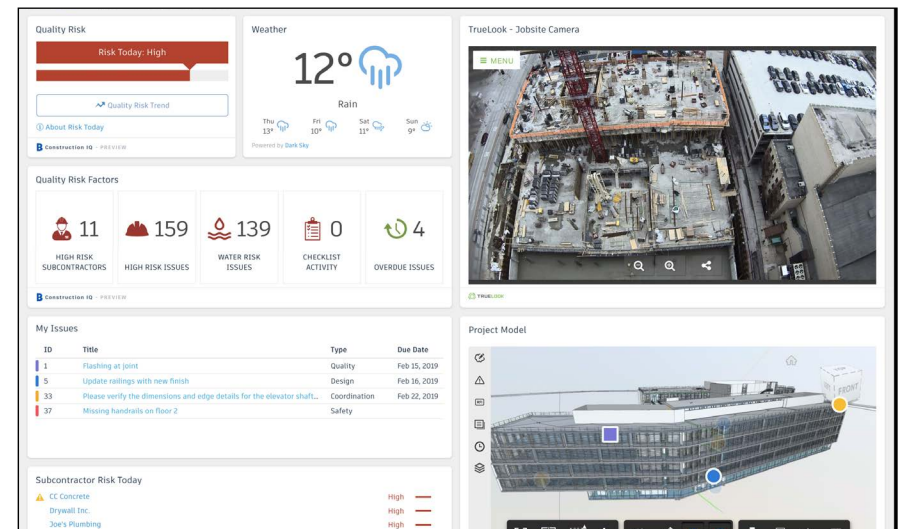
– Michael Murphy, Digital Construction
Operations Manager, BAM Ireland

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Project Home

- Project members can see a snapshot of a real-time “to do” list as well as leverage risk prediction assistance through the Project Home module.
- Dashboard cards can be personalized depending on your project role by selecting “Customize” on the top left and clicking on the “Card Library.”
- Click any of the links to drill down and get more information on a specific item and take immediate action.
- Use the expand arrows to open the card to full screen to see more information.

PRO TIP: Interact with your projects plans or models through the Project Design card. This card allows you to markup or create and view issues from directly inside the card view and it integrates back to the original file in Document Management.



Project Home Overview



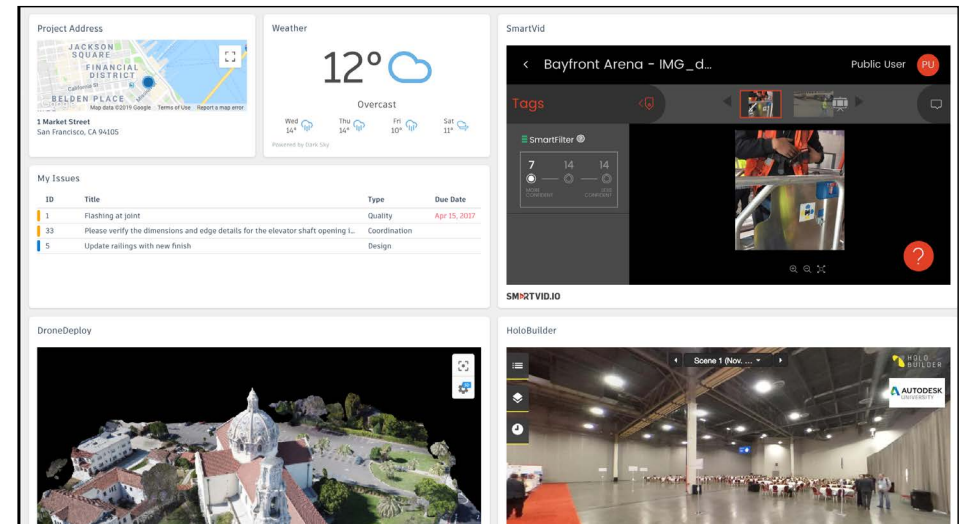
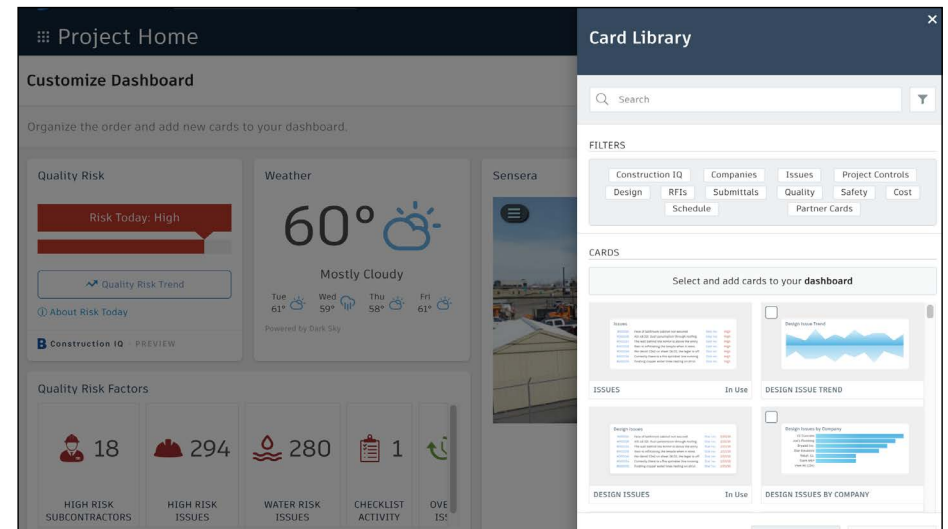
Project Home Blog Post



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2 Card Library & Partner Cards

- The Card Library gives users the ability to show information that is personalized for them.
- Click on the “Customize” icon on the top left to see a view of the Card Library.
- Filter, view, and select cards to be added to your dashboard.
 - Filter by Partner Cards to add data from any of the selected integration partners filter for a single view of all project information.
 - To view and add Construction IQ specific cards filter by Construction IQ.



Partner Cards



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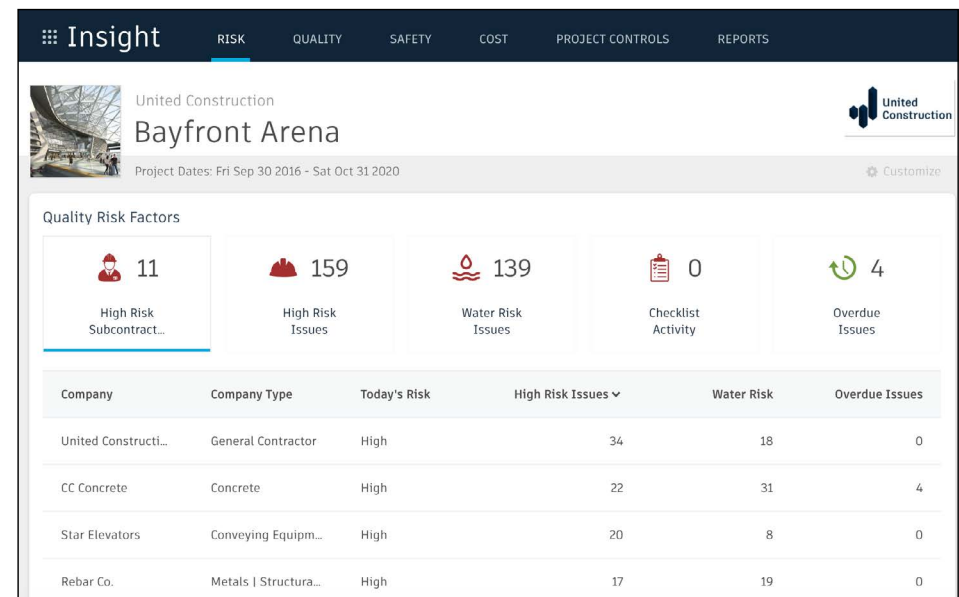
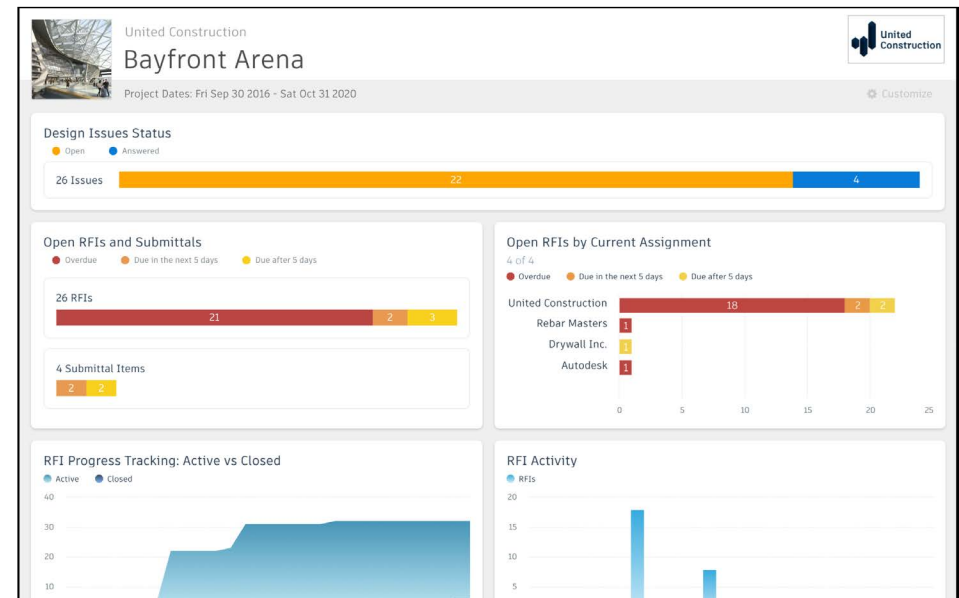
3 Quality Analytics

- BIM 360 helps predict quality related issues by visualizing high risk areas through Construction IQ and providing visibility to project data.
- Quality data is visualized on the Quality tab within the Insight module as well as through select cards in the Card Library in Project Home.
- The Risk Tab in the Insight module shows a summary of subcontractors who have the highest risk based on outstanding issues, a list of high risk issues, water related risk issues, checklist activity, and overdue Issues.
- Click on each of these quality risk factors to drill down and get more detail.

Insights Setup



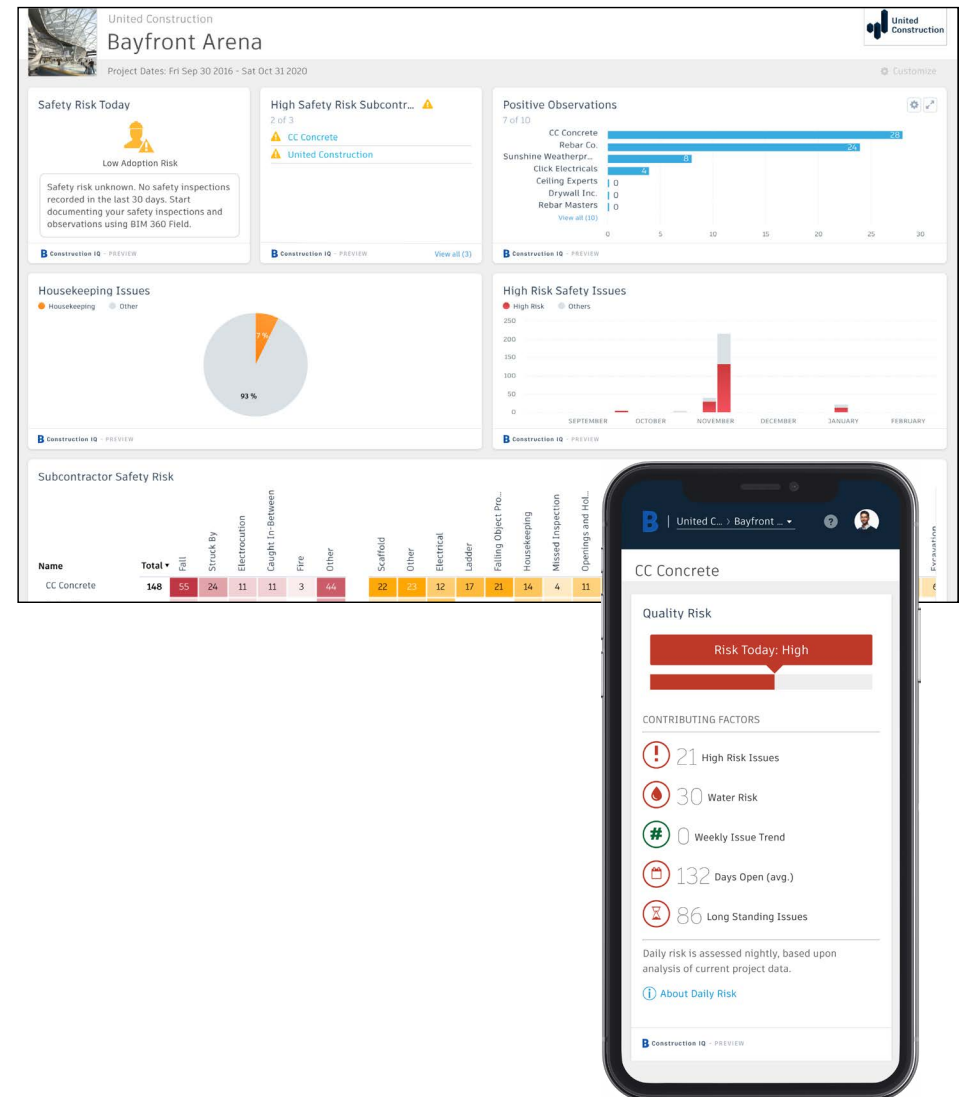
Insight Blog



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4 Safety Analytics

- BIM 360 tracks safety related data like near misses and at-risk behaviors through logged Issues, RFIs, Checklist items, etc.
- Construction IQ analyzes this data as leading indicators and helps predict safety issues before they become serious incidents.
- Data is visualized on the Safety tab within the Insight module as well as through select cards in the Card Library in Project Home.
- Integration Partner Cards also show safety related data insights through site cameras or their own AI based technology.
- **Highlighted Safety Cards:**
 - **Houskeeping Issues** - many safety incidents can be avoided by keeping a clean jobsite.
 - **Fatal Four Safety Issues** - 60% of all construction deaths are due to one of these four issues; fall, caught between, electrocution, struck by. See jobsite Issues that fall into these categories.
 - **Subcontractor Safety Risk** - highlights subcontractors that have issues relating to the “fatal four.”
 - **Subcontractor Risk Summary** - shows subcontractors with the highest risk and drill down to see what those Issues are.



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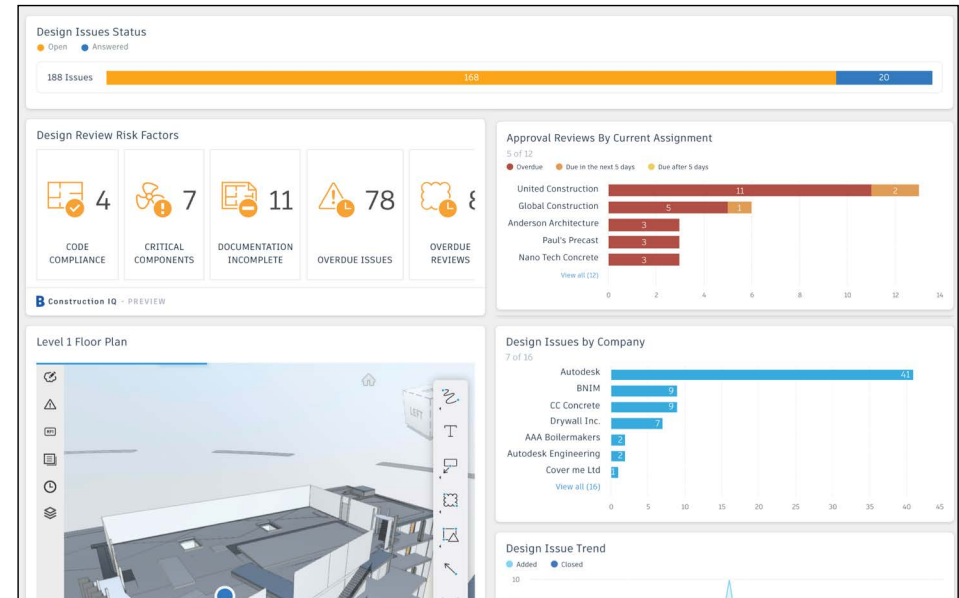
5 Design Analytics

- BIM 360 surfaces design issues through the Design tab in the Insight module
- Through this tab, users get visibility into key design issues and take immediate action to resolve.
- Design Review Risk Factor Card:
 - Powered by Construction IQ
 - Surfaces code compliance design issues
 - Identifies design issues that involve critical building components
 - Highlights documentation errors and omissions
 - Highlights overdue issues and reviews as well as who is responsible
- Approval Reviews by Current Assignment Card:
 - Highlights the status of design reviews by company

Design Risk Blog



Design Risk Demo Video



Issue #29

Need stair spec

spec not found for ext stair

Created by Neil Rosado on Apr 11, 2018

Assigned To: David Sanchez

Due Date: Oct 31, 2019

Type: Design

Location:

Building Components

Stairs X

Root Cause

☐ Design Coordination

☒ Code Compliance

☒ Constructability

☐ Documentation Incomplete

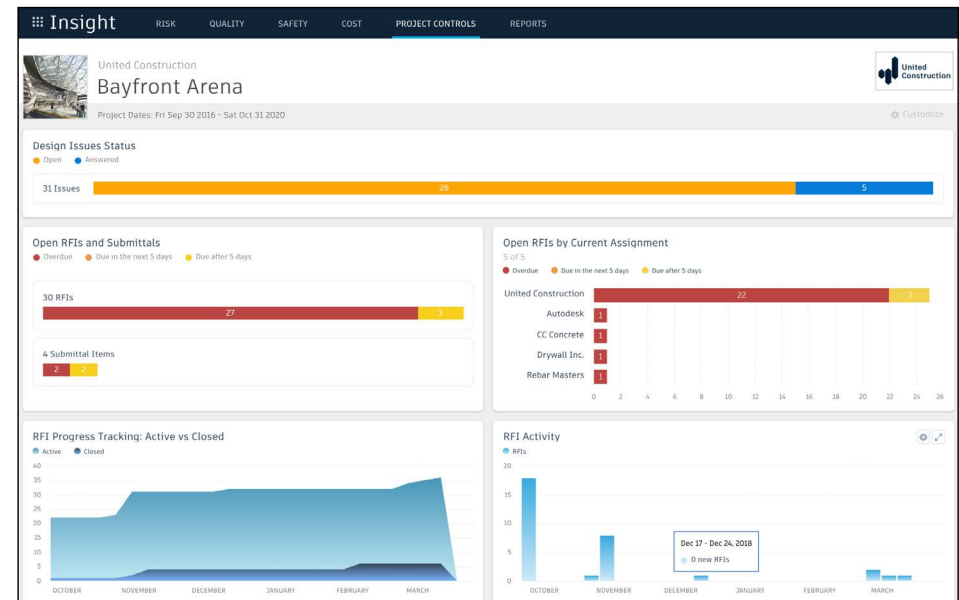
☐ Documentation Conflict

☐ Other

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6 Project Controls Analytics

- The Project Controls tab in the Insight module gives visibility into managing a projects RFIs and Submittals as well as oversight of any Design Issues.
- **Highlighted Project Control Cards:**
 - **Open RFIs and Submittals** - gives a summary of the number of overdue as well as upcoming RFIs and Submittals.
 - **Open RFIs by Current Assignment** - shows a list of subcontractors and how many overdue and upcoming RFIs they have.
 - **Design Issues** - shows a summary of open Issues that are design related as well as the number of answered Issues.
- Click on each of these cards to drill down and get more detail.



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7 Reporting

- The Report tab within the Insight module shows an aggregated list of generated reports related to Issues, Checklists, Documents, Submittals, and RFIs.
- Filter reports based on type, date, or creator.
- Download or share reports with other team members.
- Create and schedule reports based on your filter criteria.

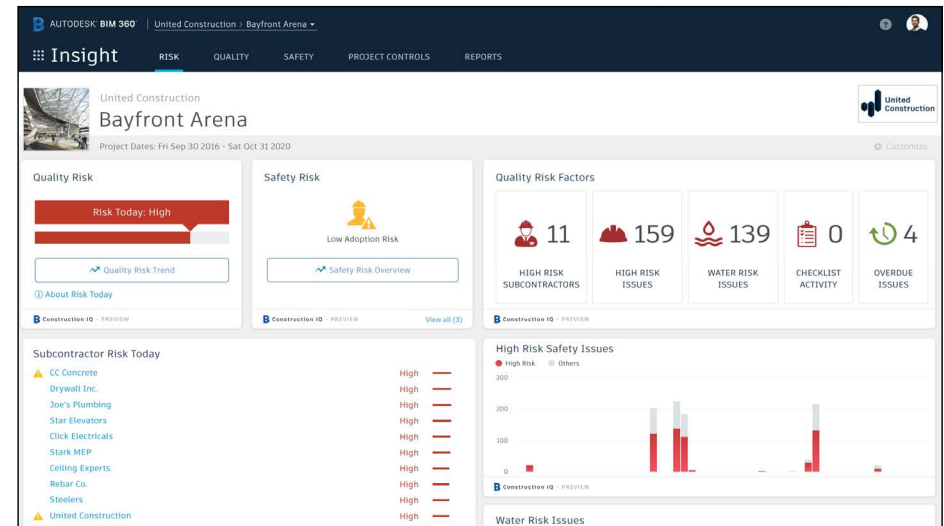
The screenshot displays the 'Insight' software interface, specifically the 'REPORTS' tab. A modal window is open, showing details for 'Issue #179 Insulation missing on hot water pipes' at the 'Pacific Center Campus'. The issue is categorized as 'Quality' and is currently 'OPEN'. It was created on 'Oct 24, 2018' and has a due date of 'Oct 31, 2018'. The description states 'Insulation missing on hot water pipes' and provides location details: 'Project > Level 3 > Area 2 > Sub Area 1'. It also lists the 'Root Cause' as 'Incomplete Work', the 'Reference Drawing' as 'A101.1 LEVEL 1 FLOOR PLAN - NORTH BAR (v4)', the 'Creator' as 'Krystian Macek Autodesk', the 'Issue Owner' as 'Krystian Macek Autodesk', and the 'Assignee' as 'Manu Venugopal'. Two photographs are included, showing the missing insulation on pipes. The interface also shows a list of other reports on the left and a 'Generated from' / 'Shared with' table on the right.

Generated from	Shared with
Issue Detail	***
Issue Detail	***
Issue Detail	***
Submittal Item Summary	***
Submittal Item Detail	***
Submittal Item Summary	***
Submittal Package Detail	***
Submittal Item Detail	***
Submittal Item Summary	***
Submittal Item Summary	***

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8 Construction IQ

- Construction IQ is a built-in machine learning and AI functionality that leverages data across the entire BIM 360 platform.
- Construction IQ sifts through millions of data points from your construction documents, issues, checklists, related meta-data and historical data, and analyzes it to identify and prioritize risks.
- Construction IQ automatically classifies items and flag issues as “High Risk.”
- “High Risk” issues are items that if left open, will likely lead to bigger more costly issues down the road.
 - EXAMPLE: if flashing was marked as missing on a window, the Issue would be flagged as “High Risk” to avoid bigger water leaking Issues.
- View Construction IQ data through the “Risk” tab within the Insight module as well as by selecting cards tagged as “Construction IQ” in the Card Library.



About Construction IQ



Prediction & Analytics Blog

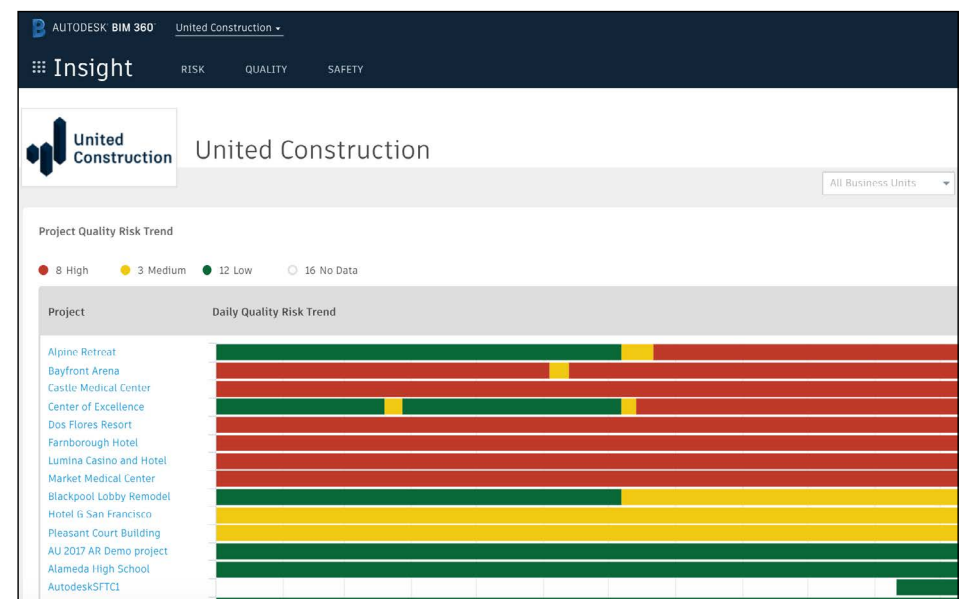
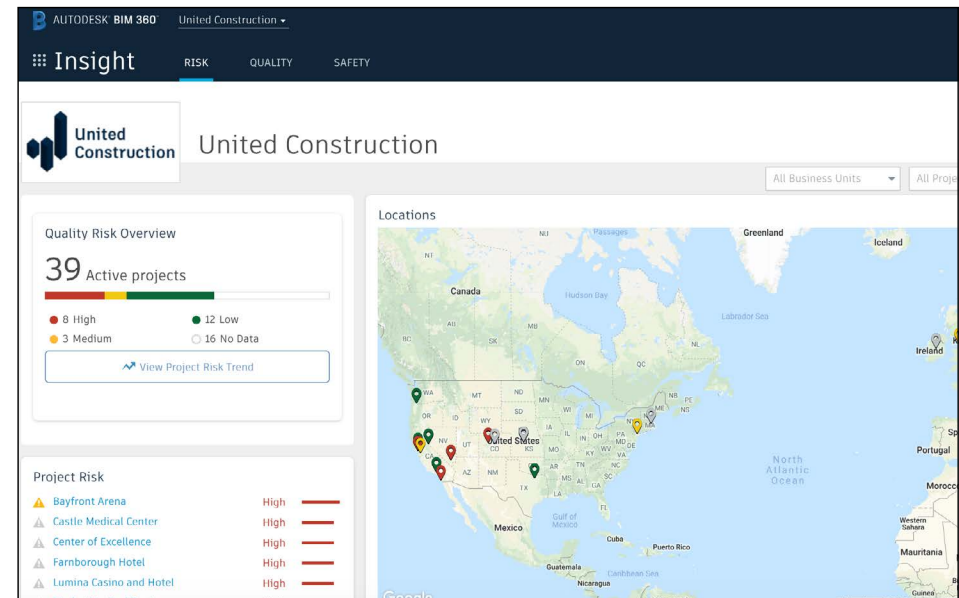


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9 Executive Insight

- With the ability to view company-wide performance data across multiple project, executives and cross-project leaders can make more informed business decisions and gain visibility into overall risk assessment for current as well as future projects.
- Invite users with “executive overview” permission to access this view. This is a separate Insight view geared towards Executives and cross project leaders only.
- **View cross project health across tabs:**
 - **Risk** - shows projects with higher risk scores based on project data and Construction IQ capabilities.
 - **Quality** - overview of quality related checklist activity and conformance.
 - **Safety** - overview by project of safety related issues.

PRO TIP: Through the Risk tab in the Insight module, executives can get instant visibility into which projects have the highest risk levels each day. Assess the project risk overtime to see which projects remained in a “high risk” category over longer periods to determine which projects need executive level support.





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