

# Was ist Autodesk Construction Cloud?

**Holger Klöcker**

Dipl. Ing. (FH) Architekt

Technical Solutions Executive

**Marvin Theissen**

Regional Sales Manager

Autodesk Construction Solutions

# Holger Klöcker

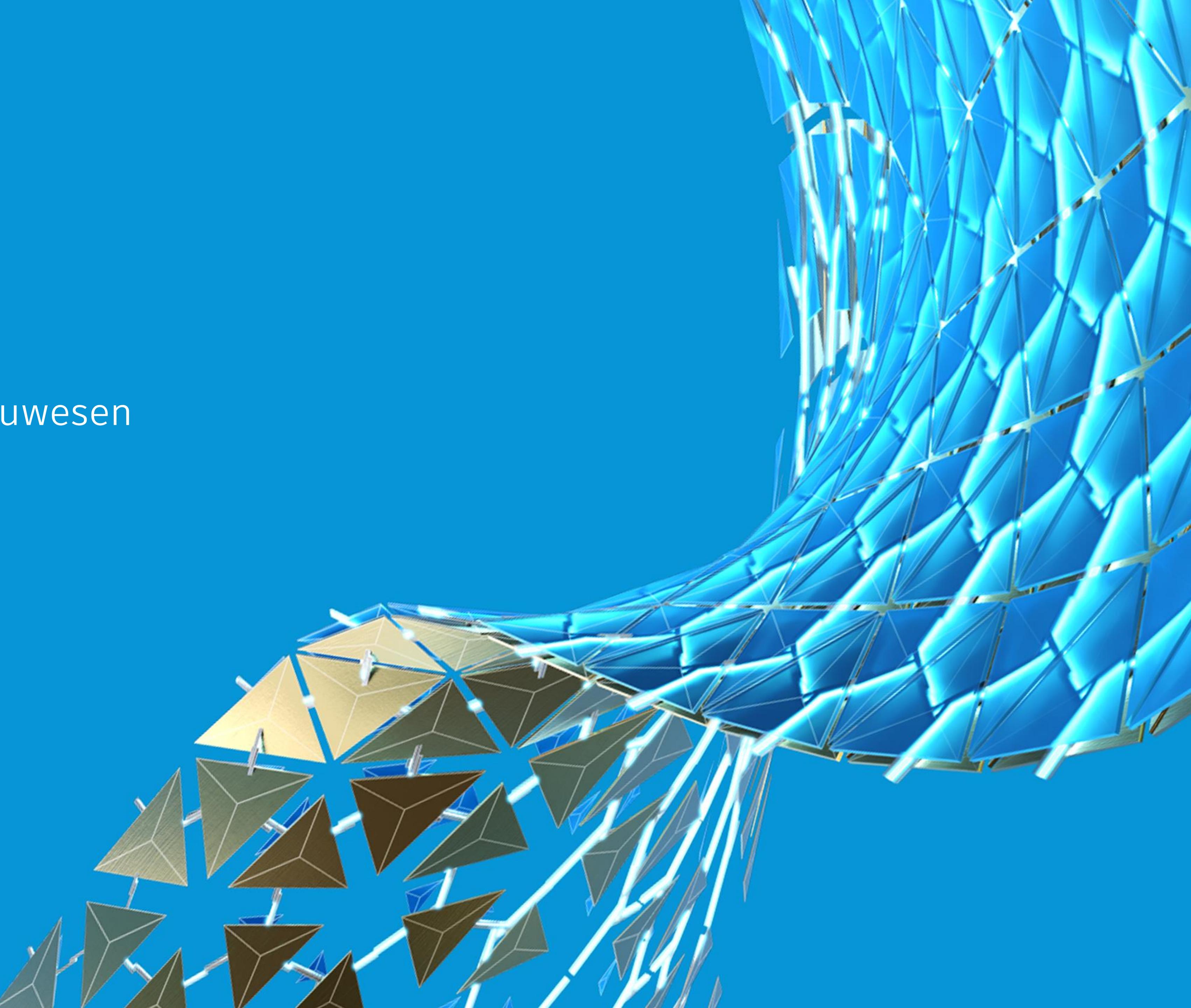


- Dipl. Ing. (FH) Architekt
- Mitglied der Architektenkammer NRW
- Autodesk Mitarbeiter seit 2006
- Autodesk UK, Schweiz, Deutschland
- Technical Specialist

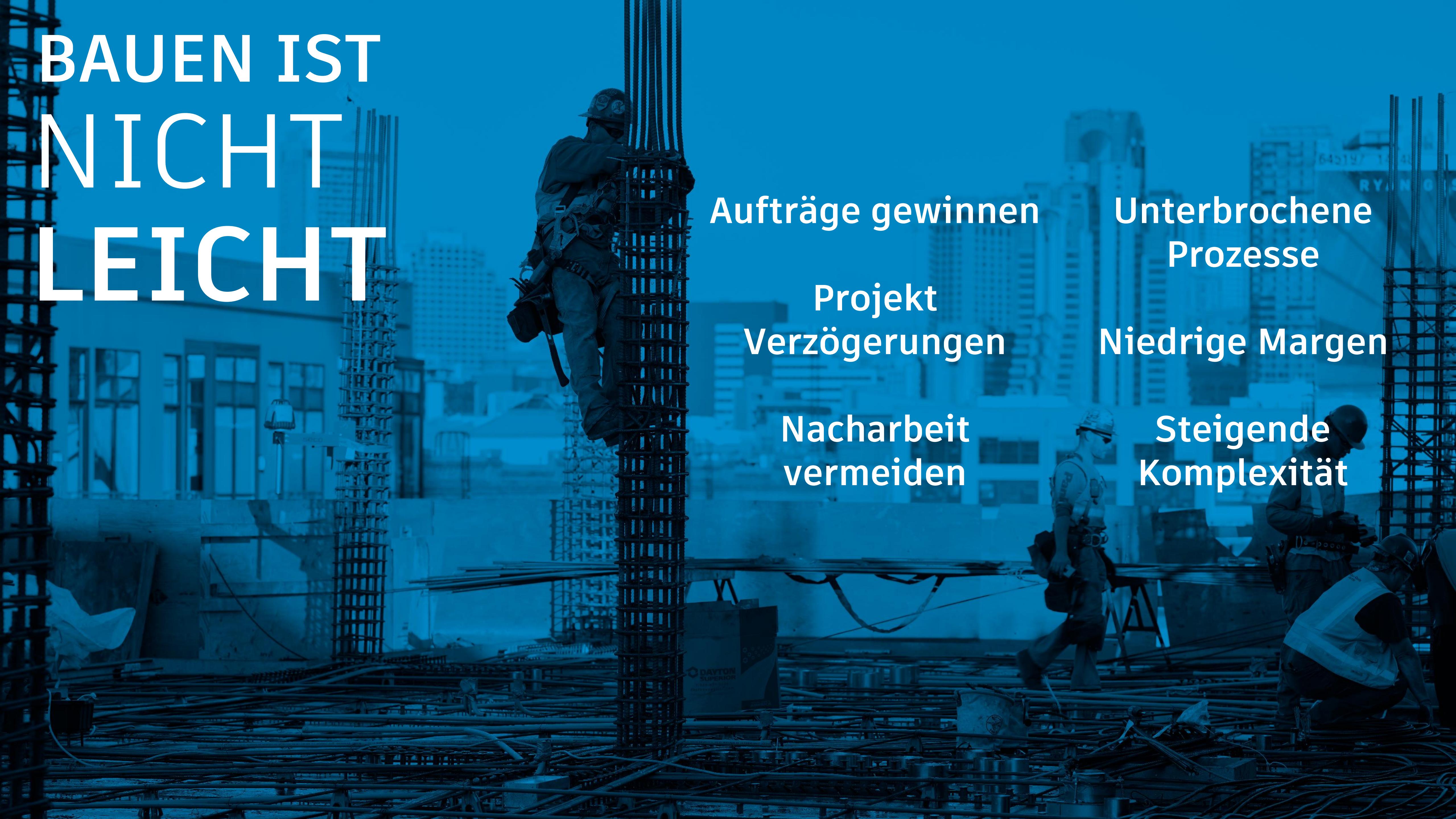
für den AEC und BIM Bereich

# Agenda

1. Autodesk's Reise im Bauwesen
2. Wohin wir gehen



# BAUEN IST NICHT LEICHT



Aufträge gewinnen

Projekt  
Verzögerungen

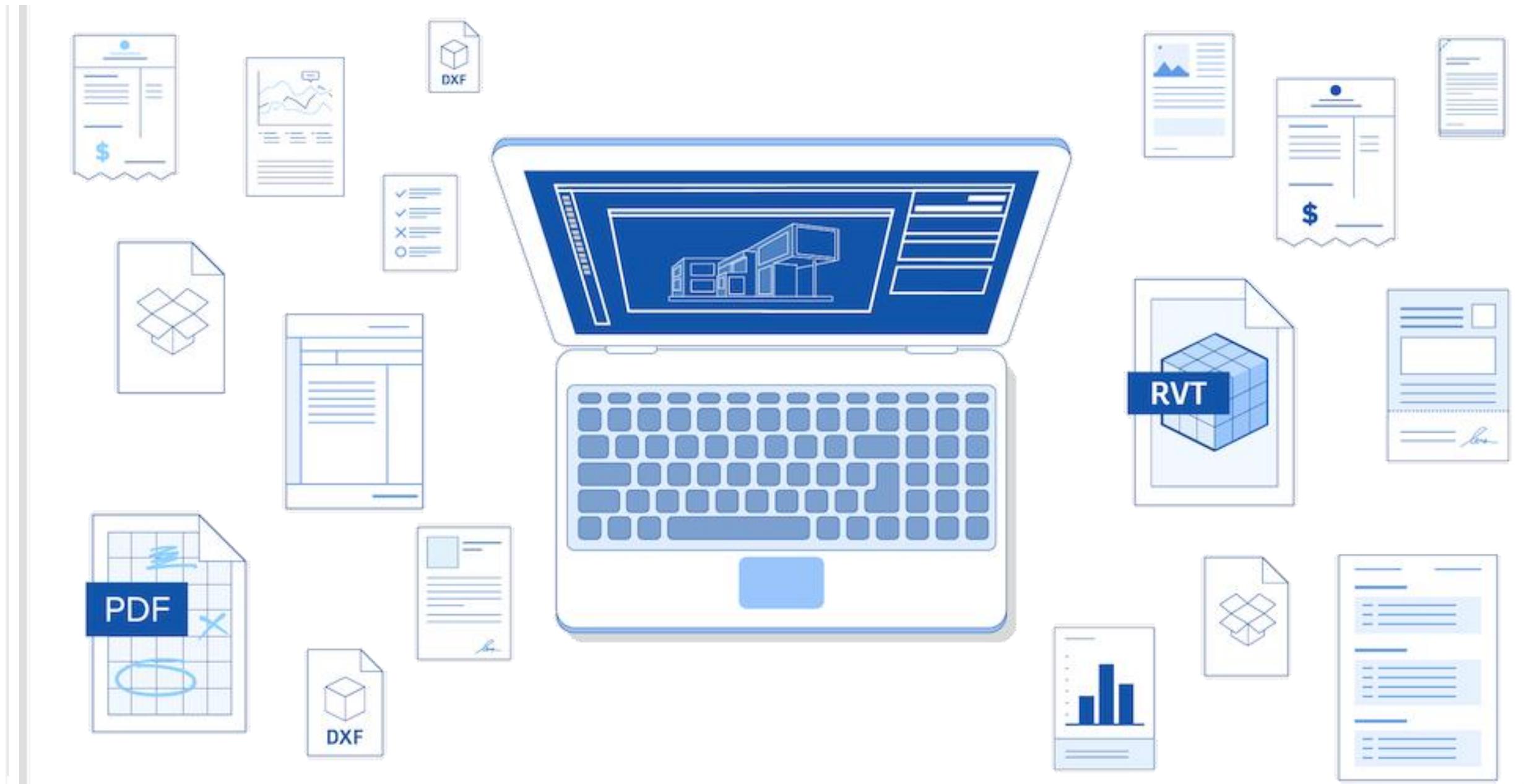
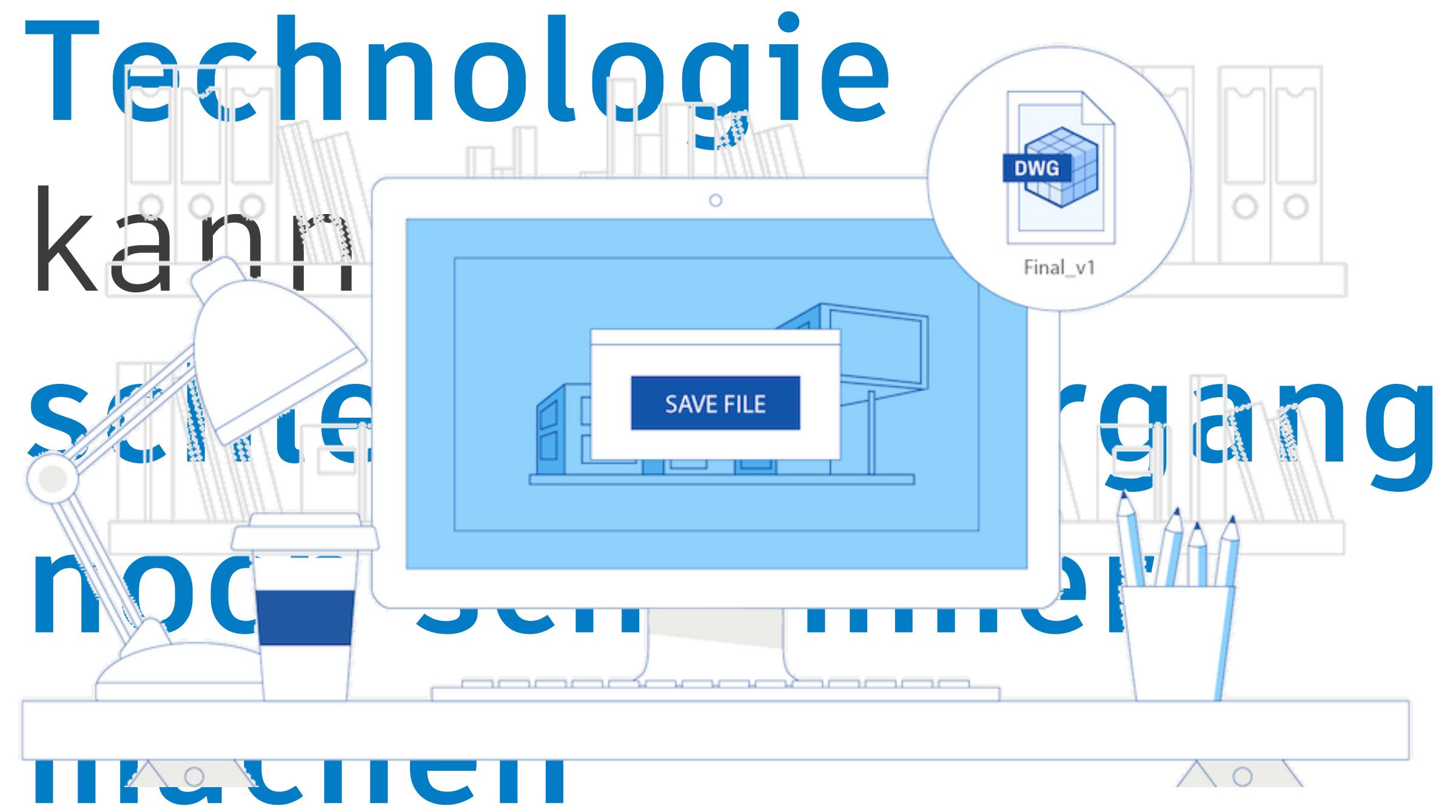
Nacharbeit  
vermeiden

Unterbrochene  
Prozesse

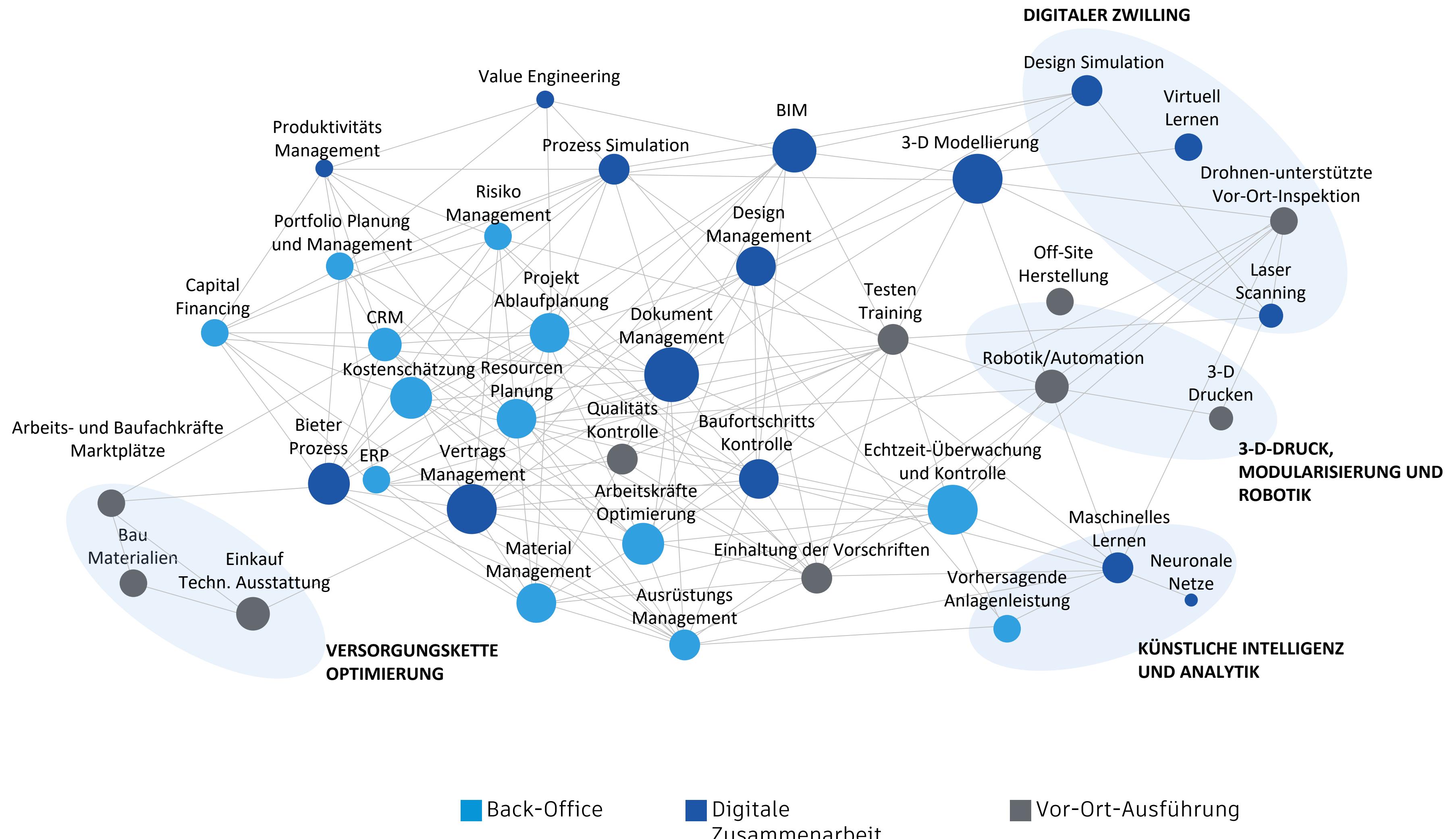
Niedrige Margen

Steigende  
Komplexität

Technologie  
kann  
seine  
nach  
machen



# Ökosystem der Technologie im Bauwesen



Quelle: McKinsey Analysis

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25%

der Baufirmen verwenden  
**5 oder mehr** verschiedene  
Applikationen

280 M RD

jährliche Kosten für  
Nacharbeiten

30%

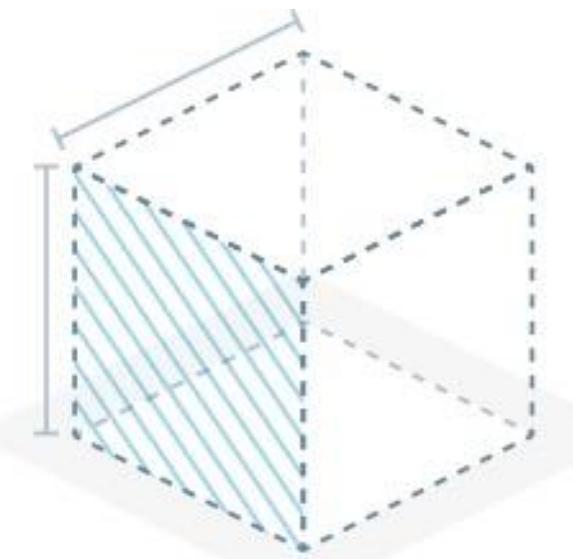
der erzeugten Projekt  
**Daten** gehen bei  
Projektabschluss  
**verloren.**



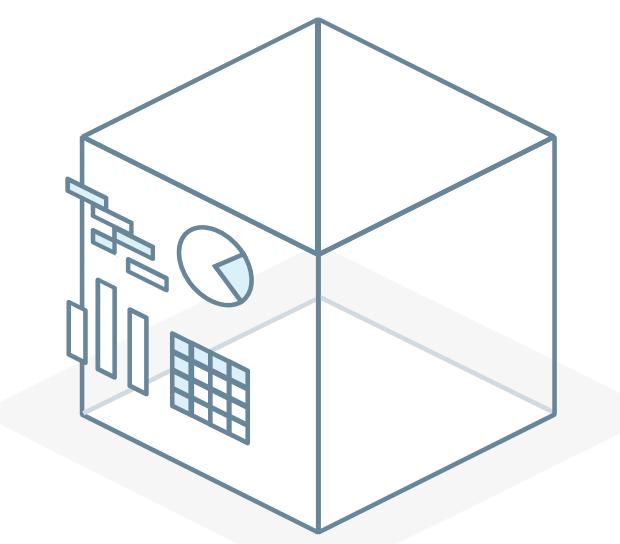
**AUTODESK CONSTRUCTION CLOUD™**



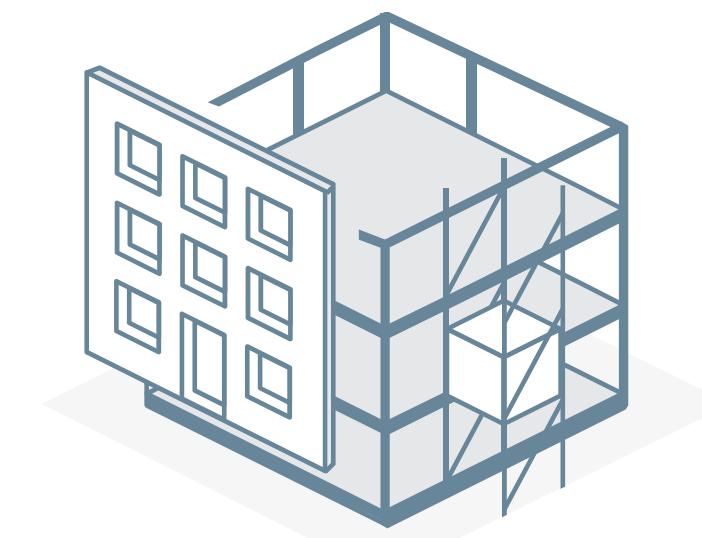
# AUTODESK CONSTRUCTION CLOUD™



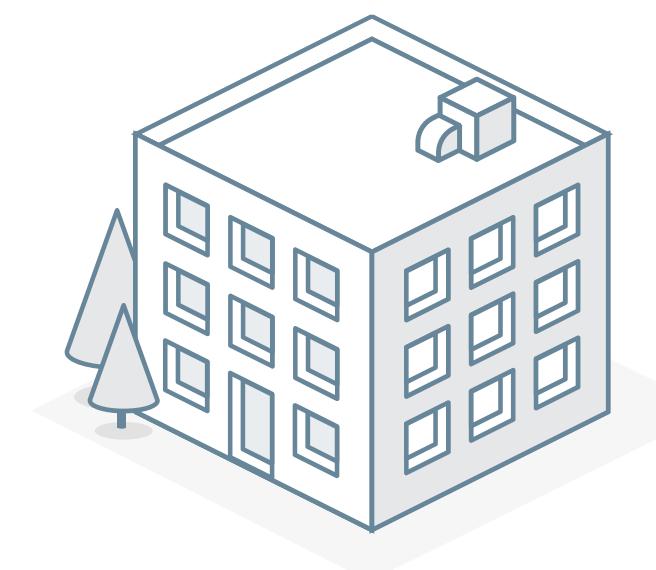
PLANUNG



VORBEREITUNG



AUSFÜHRUNG

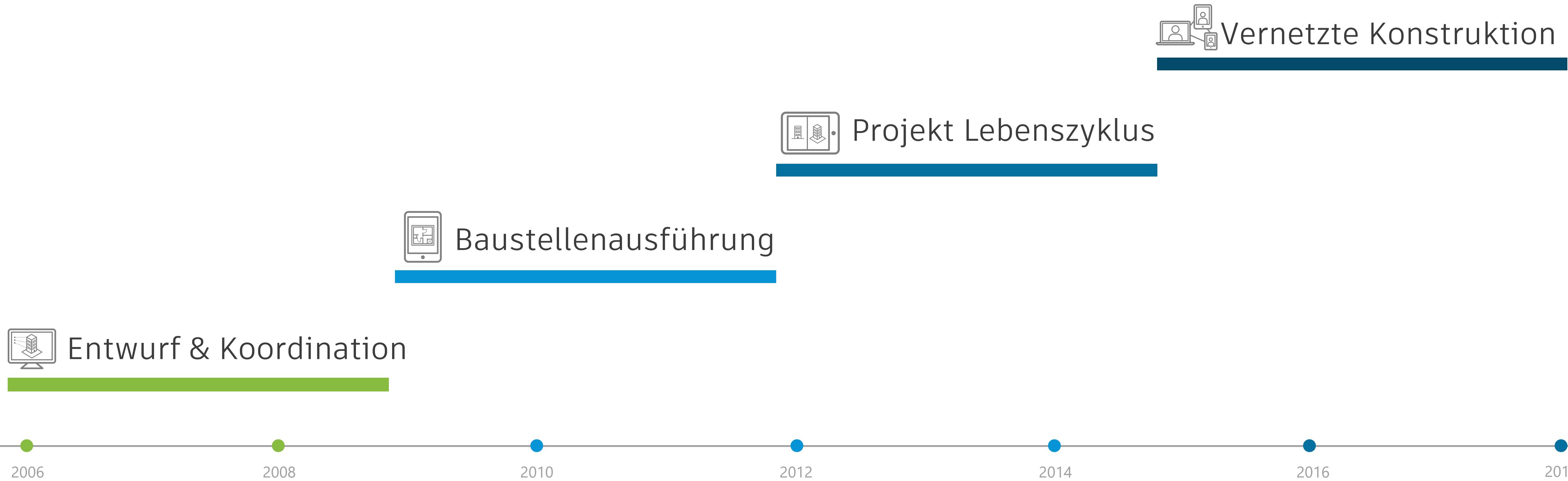


BETRIEB



# Autodesk's Reise im Bauwesen

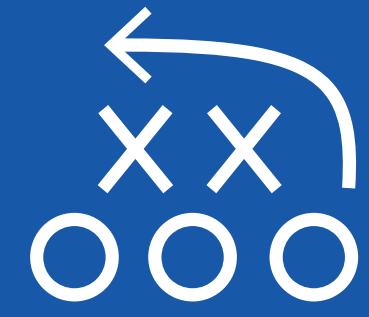
# Autodesk's Reise im Bauwesen



# Leitprinzipien entlang der Reise



Unseren Kunden zuhören

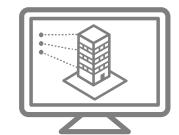


Suchen nach Lösungen  
für Ihre Schmerzpunkte

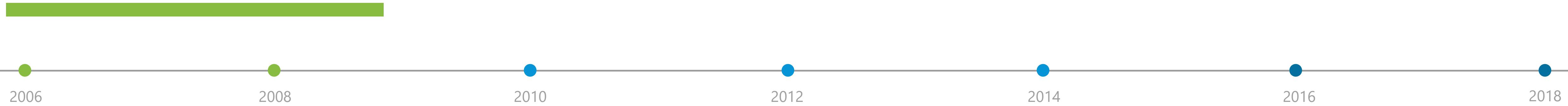


Die eigenen  
Grenzen kennen

# Autodesk's Reise im Bauwesen



## Entwurf & Koordination

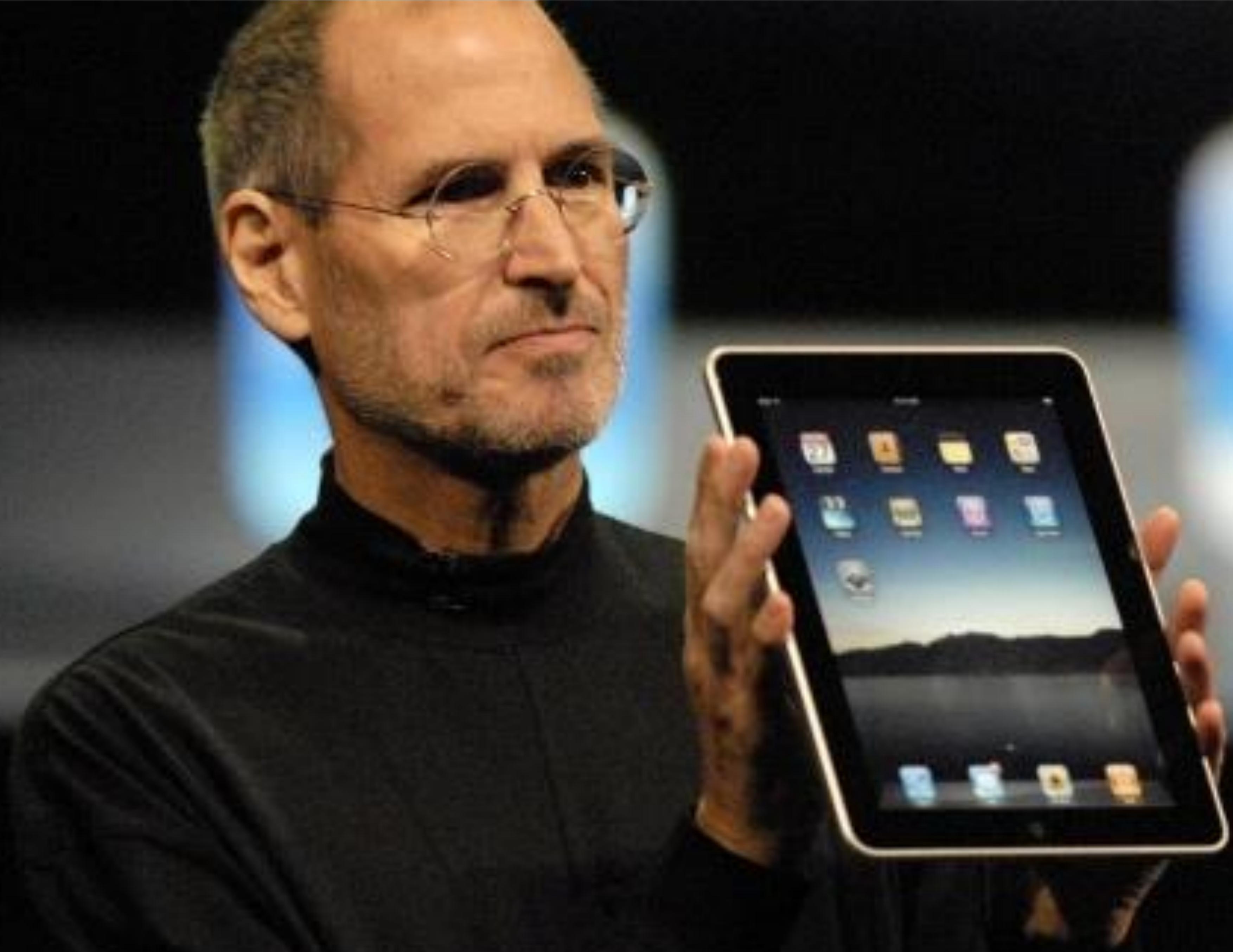


# SOCIALE MEDIEN KOMMEN...



# Autodesk's Reise im Bauwesen



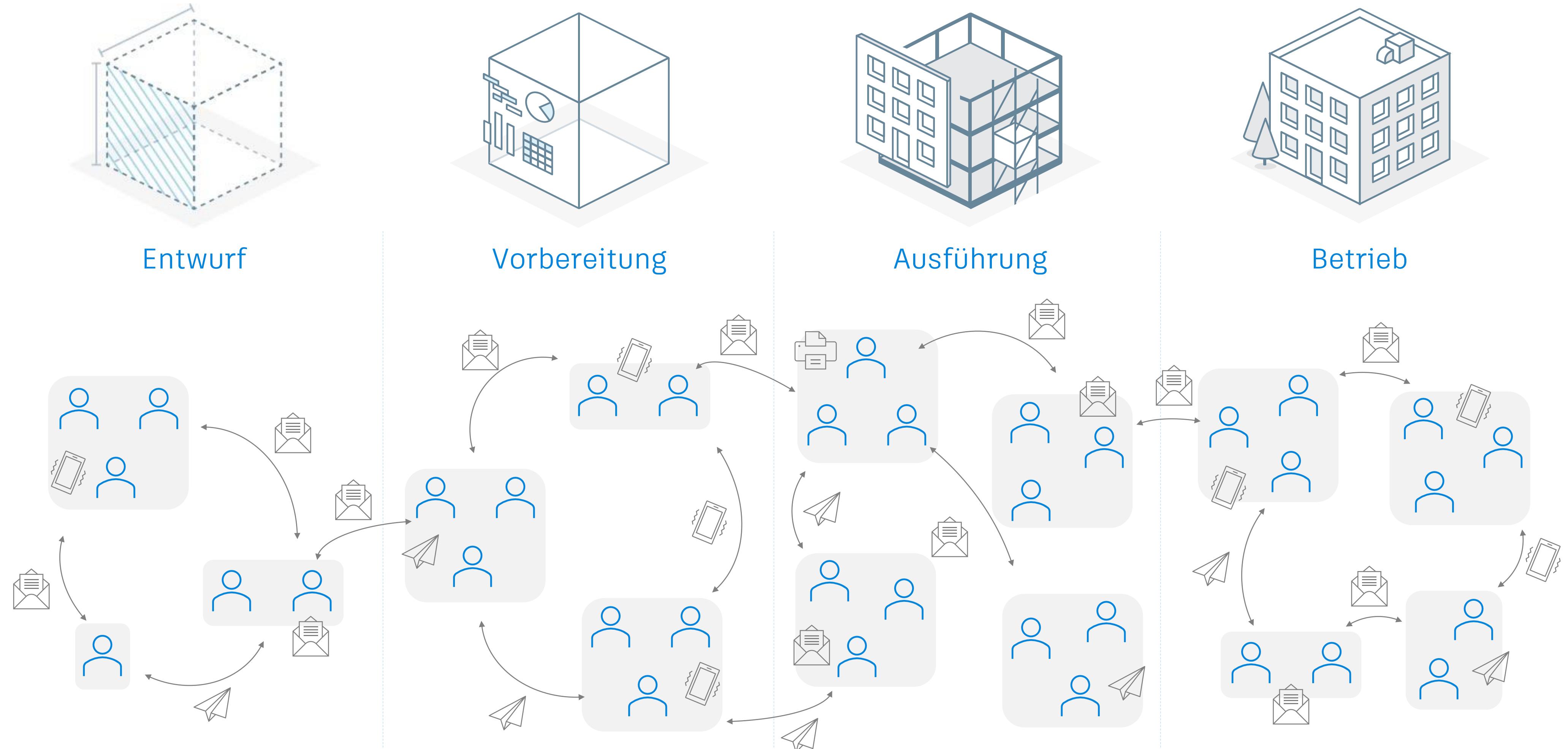


# Autodesk's Reise im Bauwesen



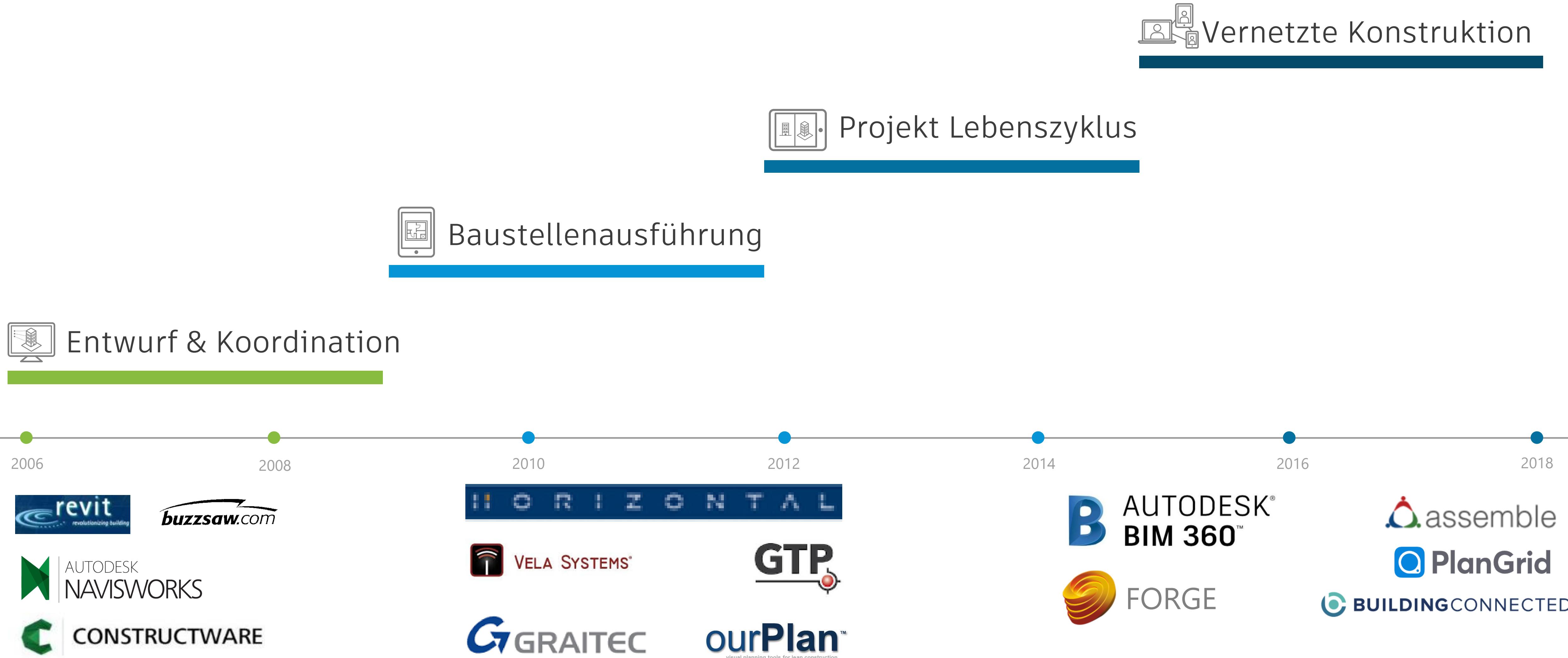


# Bauen ist **kooperativ**, aber **fragmentiert**



*> 70% der weltweiten Bauindustrie arbeitet immer noch mit traditionellen papierbasierten Prozessen*

# Autodesk's Reise im Bauwesen





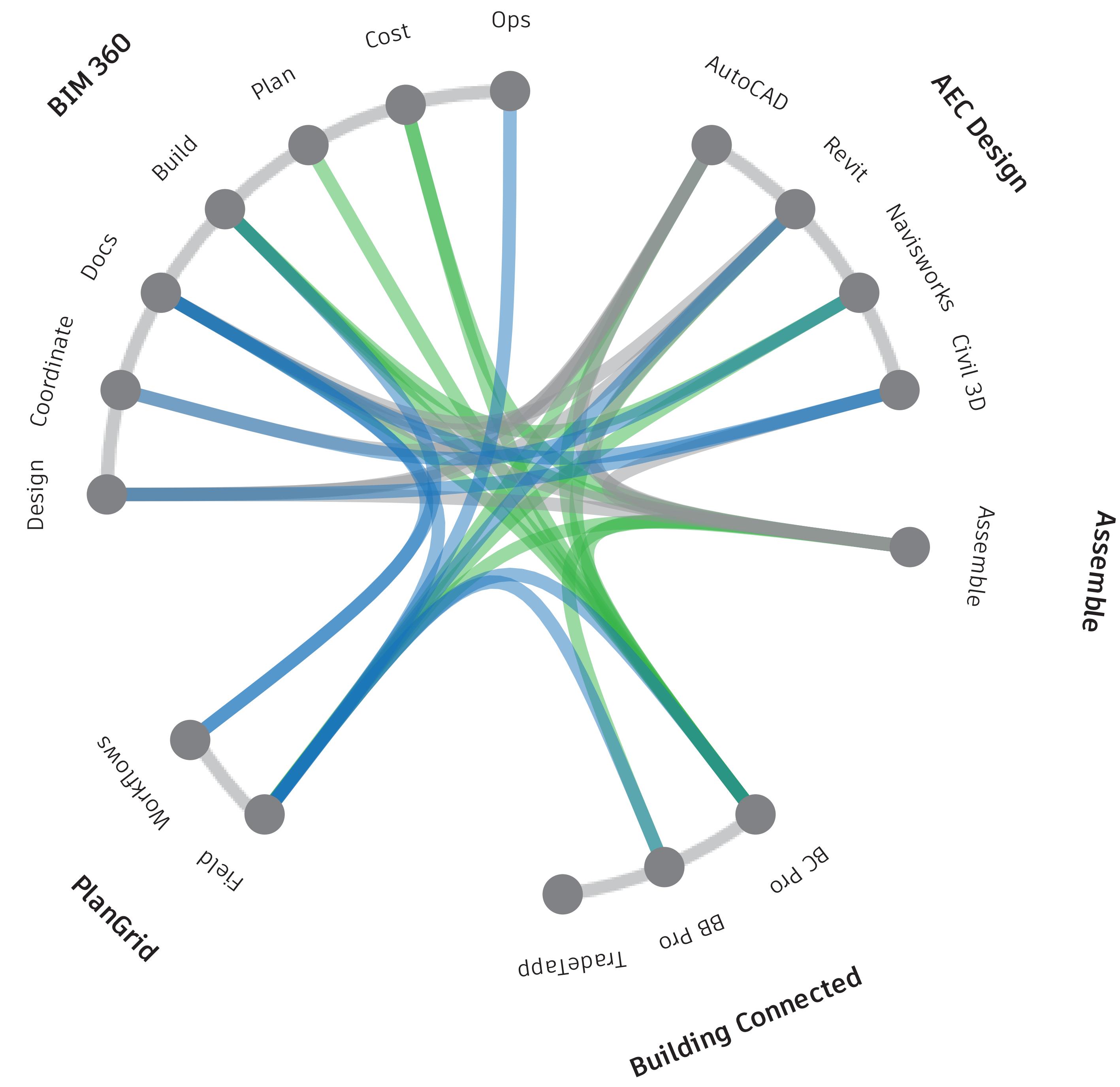
AN AUTODESK® COMPANY



AN AUTODESK® COMPANY



AN AUTODESK® COMPANY

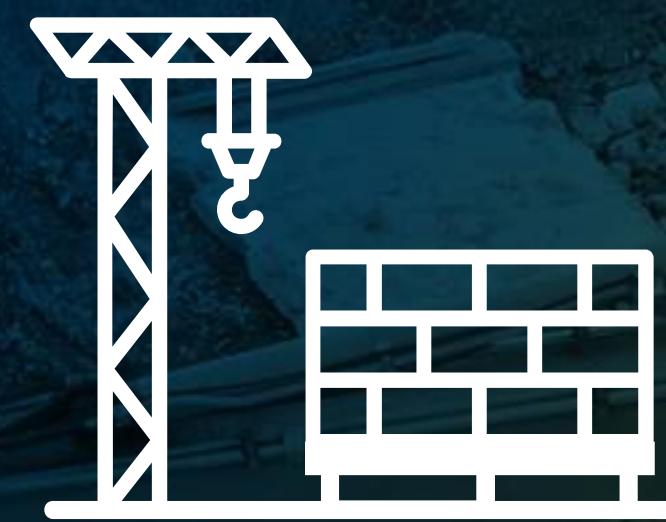




PLANUNG



REVIT®



VORBEREITUNG



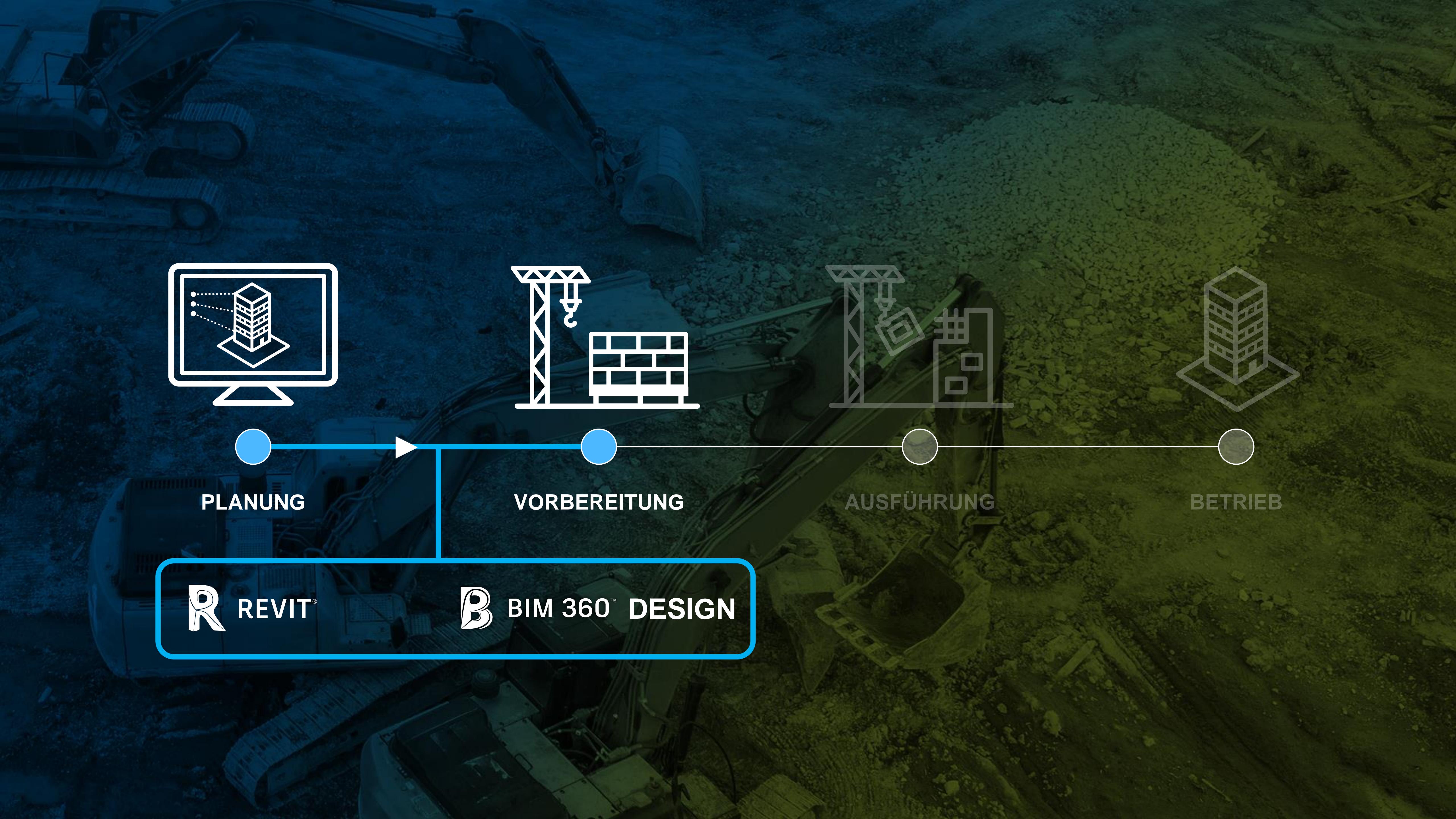
BIM 360™ DESIGN



AUSFÜHRUNG



BETRIEB

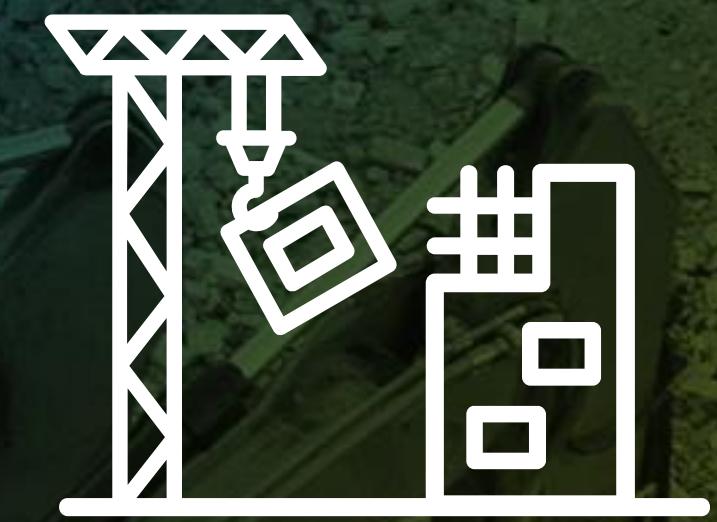




PLANUNG



VORBEREITUNG



AUSFÜHRUNG



BETRIEB



REVIT®



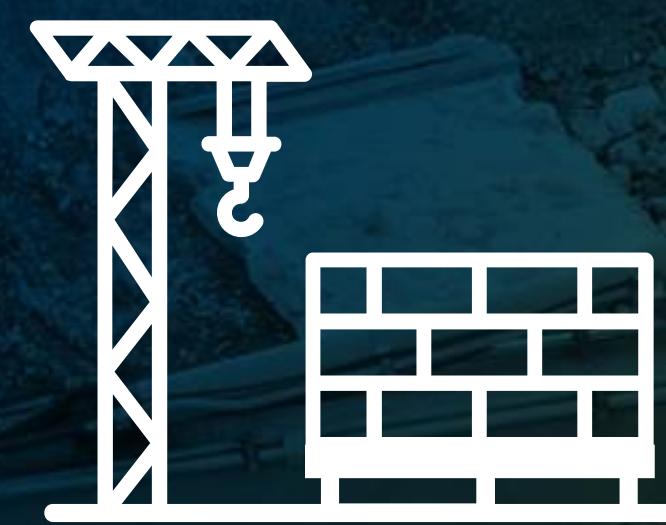
BIM 360™ DATA



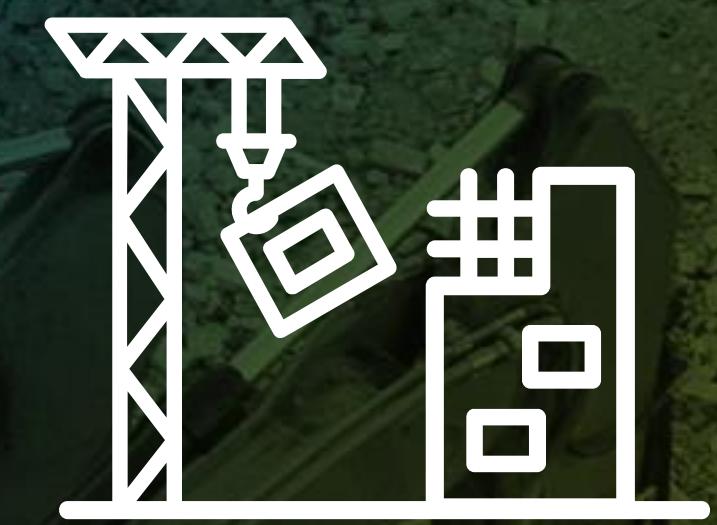
PlanGrid  
AN AUTODESK COMPANY



PLANUNG



VORBEREITUNG



AUSFÜHRUNG



BETRIEB



**BUILDINGCONNECTED**  
AN AUTODESK® COMPANY



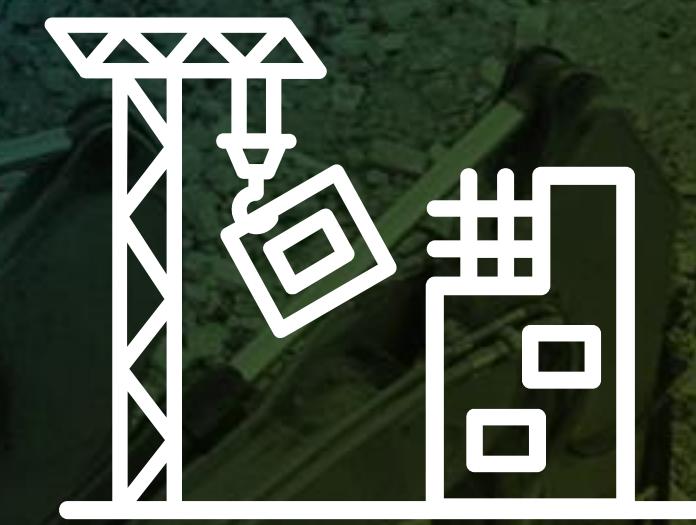
**PlanGrid**  
AN AUTODESK COMPANY



PLANUNG



VORBEREITUNG



AUSFÜHRUNG

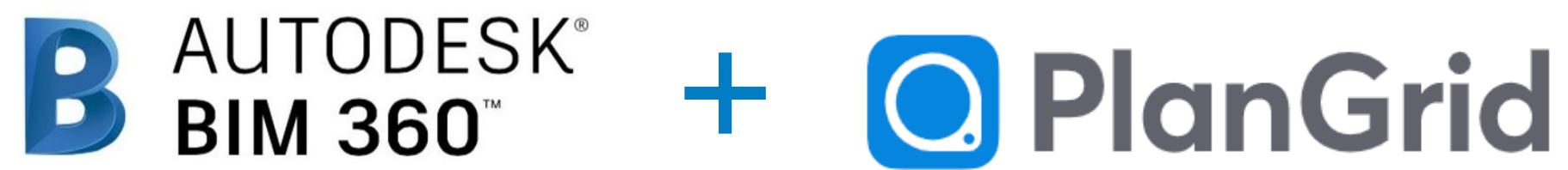


BETRIEB

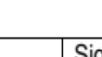
 **PlanGrid**  
AN AUTODESK COMPANY

 **BIM 360<sup>TM</sup> OPS**

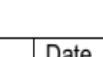
# Skanska GB verbindet Baustelle und Büro



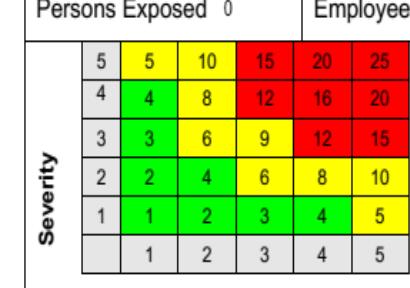
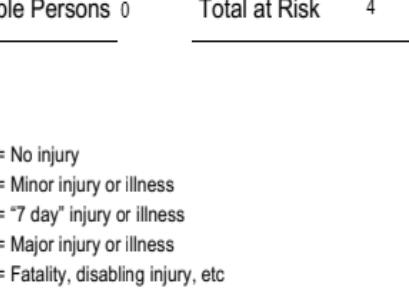
**SKANSKA**

Site Harpur Centre | Activity Scaffolding to side of building | Conducted by name Signature  Date 12/1/19

Risk Assessment No. 03 | Review Date 02/01/2020 | Revision No. 01 | Conducted by name Signature  Date Sign

Person Supervising Work Danny Board | Employer Access Scaffold | Approved by name Signature  Date Sign

Persons Exposed 0 | Employees 4 | Other Workers 0 | Public/Visitors 0 | Vulnerable Persons 0 | Total at Risk 4

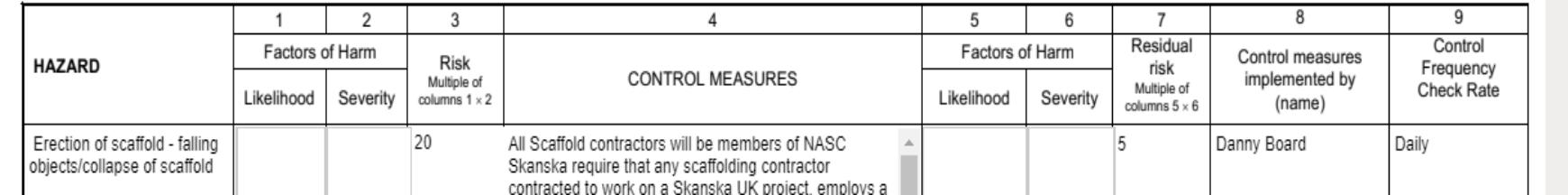
**Severity**  **Likelihood**  **Severity** 

Rating 1 = Very unlikely  
Rating 2 = Unlikely  
Rating 3 = Likely  
Rating 4 = Very likely  
Rating 5 = Almost certain

Rating 1 = No injury  
Rating 2 = Minor injury or illness  
Rating 3 = 7 day\* injury or illness  
Rating 4 = Major injury or illness  
Rating 5 = Fatality, disabling injury, etc

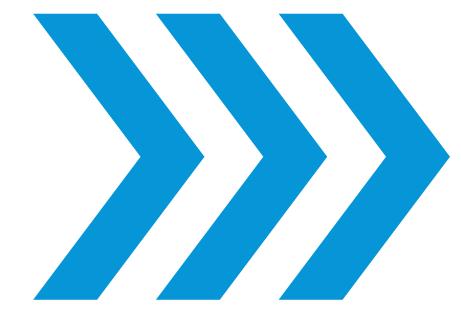
**Risk = Likelihood x Severity** 

All risks must be reduced to as low as is reasonably practicable, by applying control measures that reduce the likelihood of an incident, severity of an incident, or both. Risks that are defined as 'high' after control measures have been applied, must be re-reviewed and further control measures implemented to reduce the risk to low or medium

**HAZARD** 

Erection of scaffold - falling objects/collapse of scaffold | Factors of Harm 1, 2, 3 | Risk Multiple of columns 1 x 2 | Factors of Harm 4, 5, 6, 7, 8, 9 | Risk Multiple of columns 5 x 6 | Control measures implemented by (name) Danny Board | Control Frequency Check Rate Daily

All Scaffold contractors will be members of NASC  
Skanska require that any scaffolding contractor contracted to work on a Skanska UK project, employs a



**AUTODESK BIM 360** | United Construction > Corporate Headquarters

**Document Manager**

**Issue #161**

**DETAILS** **ATTACHMENTS** **ACTIVITY**

Dec 2, 10:52 AM

TD Tom Denby Attached a document from Document Library 04P\_002.pdf

Dec 2, 11:03 AM

TD Tom Denby Attached a document from Document Library 04P\_002.pdf

Dec 2, 11:10 AM

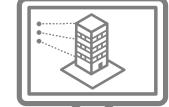
TD Tom Denby Attached a document from Document Library 04P\_002.pdf

Showing 1 - 16 of 16



# Autodesk's Reise im Bauwesen

# 2020

 Entwurf & Koordination

2006



 Baustellenausführung

2008



 Projekt Lebenszyklus

2012



 Vernetzte Konstruktion

2016





Digitalisierung

Fachkräfte Mangel

Vorfertigung

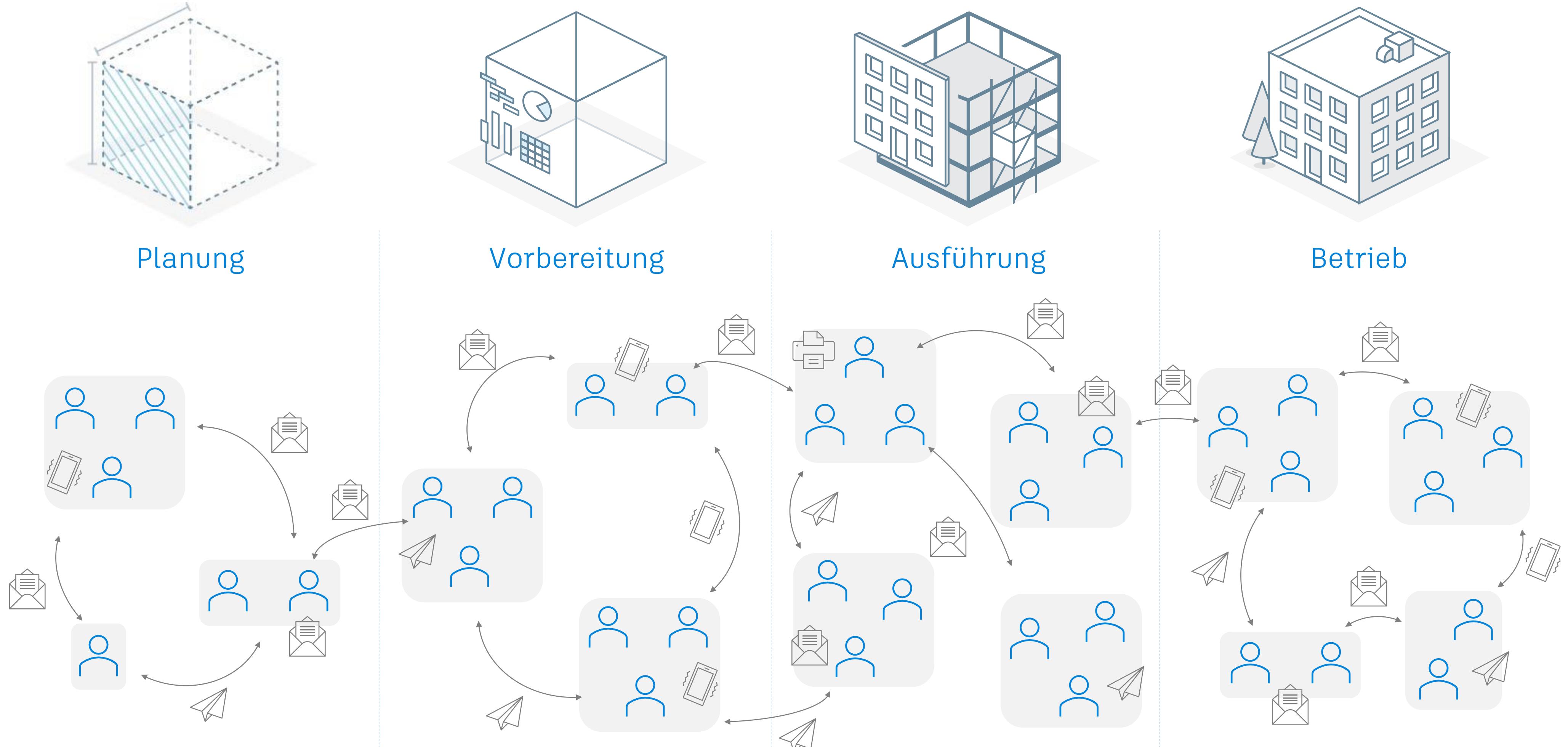
Grünes Bauen

COVID-19

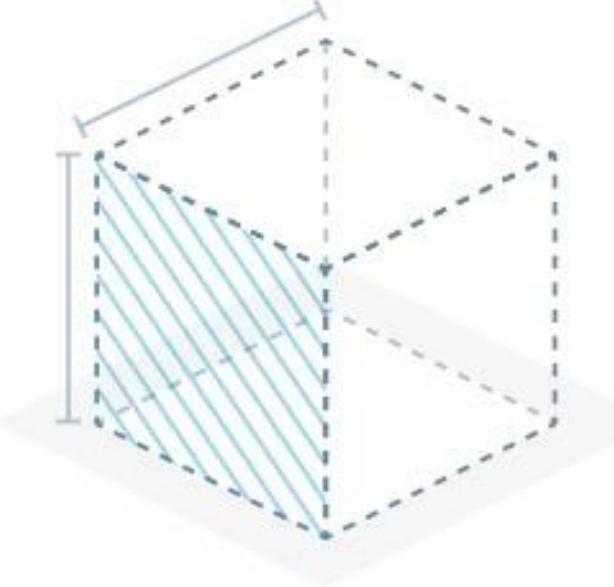
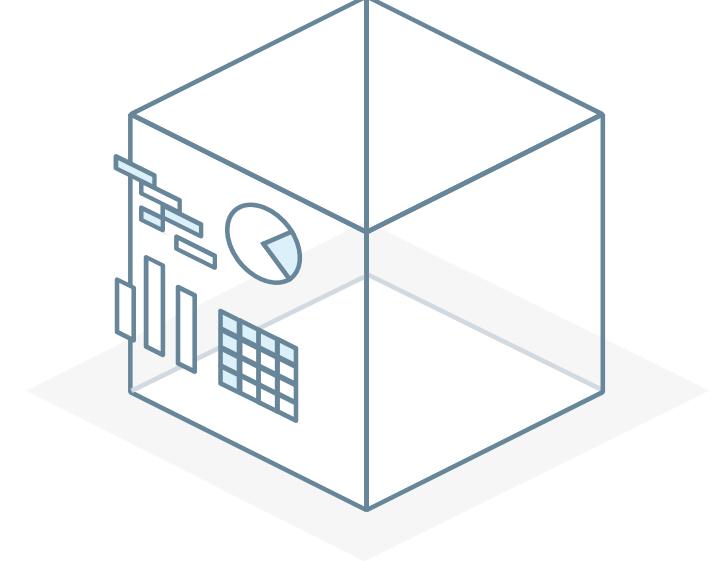
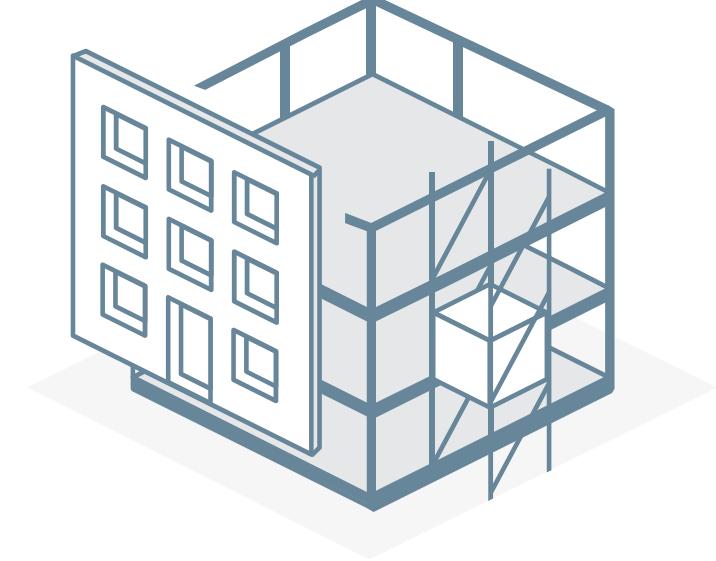
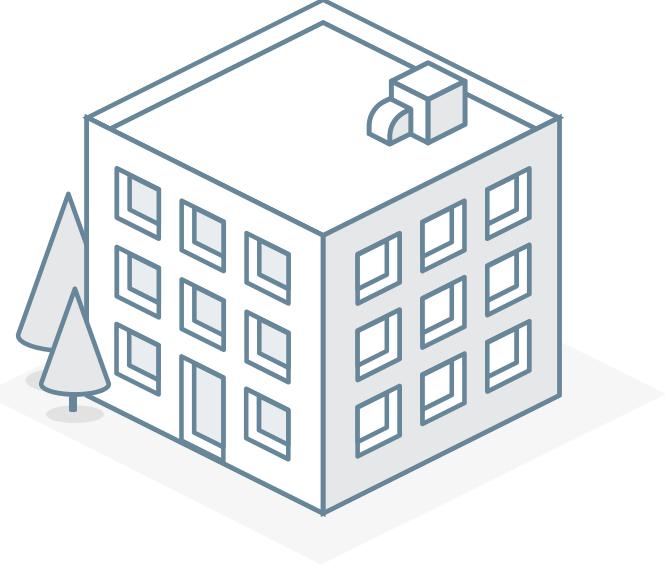
Augmented Reality



# Bauen ist **kooperativ**, aber **fragmentiert**



# Vernetzte Bautechnologie kann das Geschäft verändern

				
Planung	Vorbereitung	Ausführung	Betrieb	
Möglichkeiten	<ul style="list-style-type: none"><li>• Design-Entwicklung</li><li>• Entwurfs-Zusammenarbeit</li></ul>	<ul style="list-style-type: none"><li>• Modell Koordination</li><li>• Modell Konditionierung</li><li>• Quantifizierung</li><li>• Angebotsmanagement</li><li>• Qualifizierung</li></ul>	<ul style="list-style-type: none"><li>• Projekt Management</li><li>• Kostenkontrolle</li><li>• Baustellenbetrieb</li><li>• Qualität &amp; Sicherheit</li><li>• Abnahmen</li></ul>	<ul style="list-style-type: none"><li>• Facility Management</li><li>• Anlagen-Lebenszyklus</li></ul>
Gemeinsame Datenbasis	Modelle · Zeichnungen · Mängel · Spezifikationen · RFIs · Kosten · Objekte · As-Builts			
Auswertung	Vorausschauende Analysen · Leistungs Berichte · Schadensbegrenzungs Massnahmen			
Netzwerk		Netzwerk im Bauwesen		



# EINHEITLICHES SYSTEM





# AUTODESK CONSTRUCTION CLOUD™

## PLANUNG

AUTODESK  
BIM COLLABORATE

AEC COLLECTION

## VORBEREITUNG

AUTODESK  
QUANTIFY

AUTODESK  
COORDINATE

BUILDING  
CONNECTED

ASSEMBLE

## AUSFÜHRUNG

AUTODESK  
BUILD

PYPE

## BETRIEB

BUILDING  
OPS

## AUTODESK DOCS

Modelle · Zeichnungen · Mängel · Spezifikationen · RFIs · Kosten · Objekte · As-Builts · Fotos · Videos

## INSIGHTS

Dashboards · Berichte · Construction IQ · Data Connector

## ADMINISTRATION

User Management · Autodesk ID · Projekt Administration



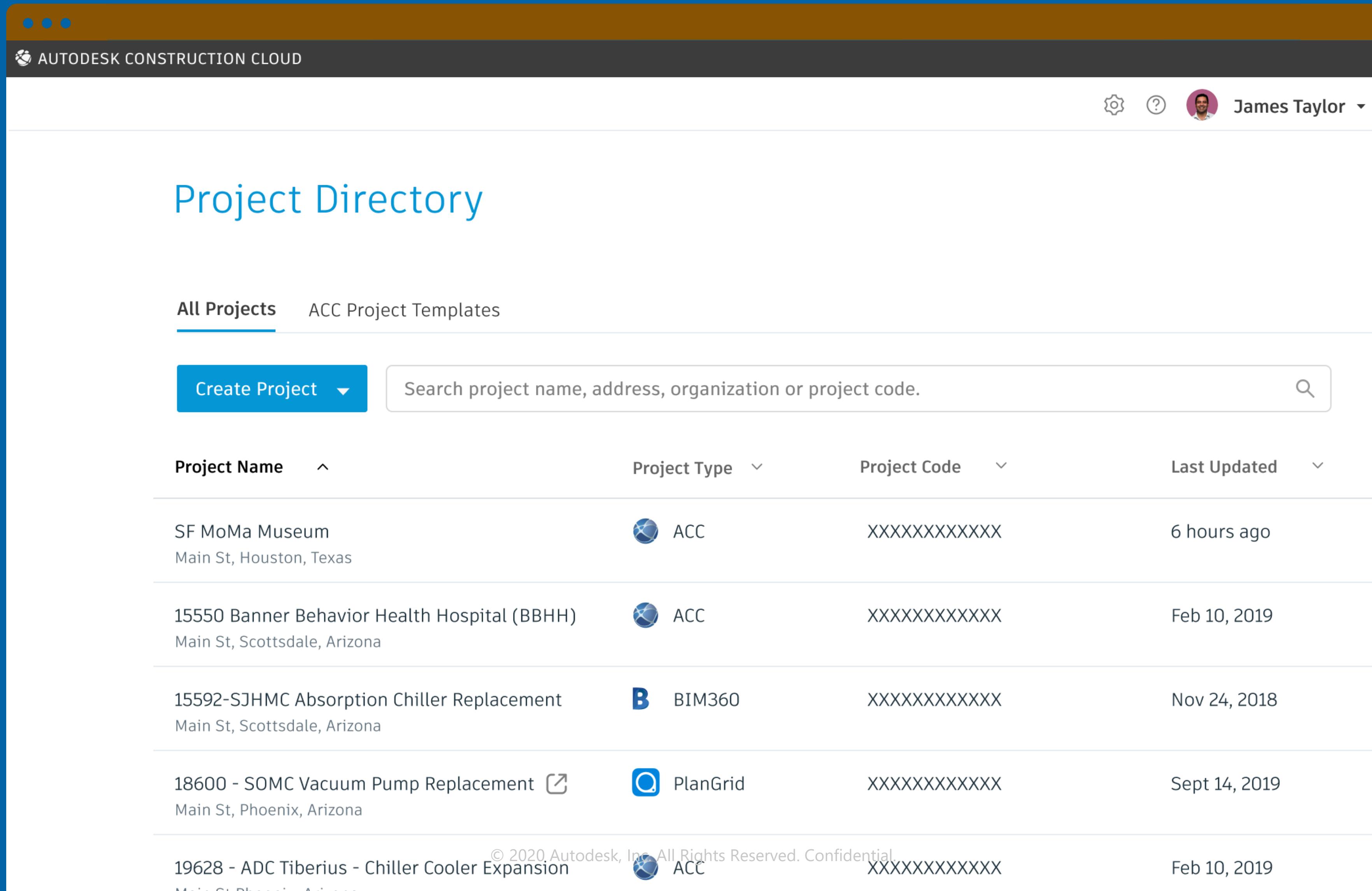


# AUTODESK CONSTRUCTION CLOUD™

	AUTODESK COORDINATE	AUTODESK QUANTIFY	AUTODESK BUILD				
Möglichkeiten	Koordination	Quantifizierung	Projekt Management	Kosten Management	Qualitäts Management	Sicherheits Management	Übergabe
Abläufe	<ul style="list-style-type: none"><li>• Modell Koordination</li><li>• Machbarkeits Studien</li><li>• Qualitäts Planung</li><li>• Mängel Management</li></ul>	<ul style="list-style-type: none"><li>• Analyse des Umfangs</li><li>• 2D/3D Mengen- ermittlung</li></ul>	<ul style="list-style-type: none"><li>• Projektzeitpläne</li><li>• RFIs</li><li>• Eingaben</li><li>• Besprechungs- protokolle</li><li>• Bautagesberichte</li><li>• Baufortschritt</li></ul>	<ul style="list-style-type: none"><li>• Vertragserstellung / Verwaltung</li><li>• Änderungsaufträge</li><li>• Zahlungsanträge</li><li>• Vorhersagen</li></ul>	<ul style="list-style-type: none"><li>• Qualitätsplanung</li><li>• Qualitätsprüfung</li><li>• Restarbeiten</li><li>• Mängel/Aufgaben Management</li></ul>	<ul style="list-style-type: none"><li>• Sicherheitsplanung</li><li>• Sicherheitstraining</li><li>• Anmerkungen zur Sicherheit</li><li>• Sicherheits Überprüfungen</li></ul>	<ul style="list-style-type: none"><li>• Inbetriebnahme</li><li>• Übergabe</li><li>• Dokumentation</li><li>• Gewährleistungs Management</li><li>• Fertigstellung</li><li>• As-Built Abgleich</li></ul>
Dokument Kontrolle · Dokument Versionierung · Dokument Freigaben							
Gemeinsame Datenbasis	Modelle · Zeichnungen · Dokumente · Kostenbestandteile · Objekte · As-Builts · Fotos · Videos						
Auswertungen	Dashboards · Berichte · Construction IQ · Data Connector						
Administration	Admin Konsole · Berechtigungen · Projekt Einrichtung · Vorlagen · Benachrichtigungen						



# Single Point of Entry



The screenshot shows the Autodesk Construction Cloud Project Directory interface. The top navigation bar includes the Autodesk Construction Cloud logo, a three-dot menu, and user profile for James Taylor. The main header is 'Project Directory'. Below the header, there are two tabs: 'All Projects' (selected) and 'ACC Project Templates'. A 'Create Project' button and a search bar are also present. The main content area displays a table of project data with columns for Project Name, Project Type, Project Code, and Last Updated. The table lists five projects:

Project Name	Project Type	Project Code	Last Updated
SF MoMa Museum Main St, Houston, Texas	ACC	XXXXXXXXXXXX	6 hours ago
15550 Banner Behavior Health Hospital (BBHH) Main St, Scottsdale, Arizona	ACC	XXXXXXXXXXXX	Feb 10, 2019
15592-SJHMC Absorption Chiller Replacement Main St, Scottsdale, Arizona	BIM360	XXXXXXXXXXXX	Nov 24, 2018
18600 - SOMC Vacuum Pump Replacement Main St, Phoenix, Arizona	PlanGrid	XXXXXXXXXXXX	Sept 14, 2019
19628 - ADC Tiberius - Chiller Cooler Expansion Main St, Phoenix, Arizona	ACC	XXXXXXXXXXXX	Feb 10, 2019

At the bottom, a footer bar contains the Autodesk logo and the text '© 2020 Autodesk, Inc. All Rights Reserved. Confidential'.

# Fortschrittskontrolle

AUTODESK CONSTRUCTION CLOUD

Build SF MoMa

A156.1 (90% Progress Set - Architecture)

Progress Tracking (4)

Hide progress markups

Ductwork - Phase A - Zone 1 Commissioned Aug 18, 2020 by Brandon Lacourciere

Ductwork - Phase A - Zone 1 Installed Aug 18, 2020 by Brandon Lacourciere

Ductwork - Phase A - Zone 1 Arrived on Site Aug 18, 2020 by Brandon Lacourciere

Ductwork - Phase A - Zone 1 N/A

Ductwork - Phase A - Zone 1

GENERAL NOTES:

- Provide direct cable suspension at perimeter suspension points and at ceiling type ACT-5 (085115), RE: 1/A52 to exterior plating (RE: 1/A500).
- Center sprinkler heads in 2x2 ceiling panels.
- Center panel and fixtures of equal spacing in rooms unless noted otherwise.
- Provide UL Assembly U415 (082116.23) in horizontal ceiling applications at termination of shafts at lower floor levels. Provide a minimum 2-in. gap between the ceiling and the suspended ceiling system. Provide a minimum 2-in. gap between the ceiling and the suspended ceiling system.
- RE: electrical drawings and luminaire schedule for location of emergency fixtures.
- RE: A560 for return air plenum detail at conference and privacy rooms.
- RE: A565 for ceiling bracing and suspension details.
- Not used.
- Install access doors (083113) at 12'-0" A.F.F. for access to fire/smoke dampers. Coordinate final size and horizontal location with mechanical contractor.
- The suspended ceiling lateral force bracing members shall be located a minimum of 6 inches from all horizontal piping or ductwork that are not provided with bracing restrains for horizontal forces. Cable trays and electrical conduits shall be supported independently of the ceiling.
- Except where right braces are used to limit lateral deflection, sprinkler heads and other penetrations through the ceiling tile require minimum 2-inch rings, sleeves, or adapters that will allow a minimum 1-inch ceiling movement in all horizontal directions. Alternatively, a swing joint can be provided at the top of the sprinkler head extension to accommodate the 1-inch movement per ASCE 7, Sec. 13.5.6.2.
- Provide seismic escutcheon at every instance where a condensate pipe penetrates the Acoustic ceiling enclosure.

Remove

Ordered

Arrived on Site

Installed

Commissioned

Complete

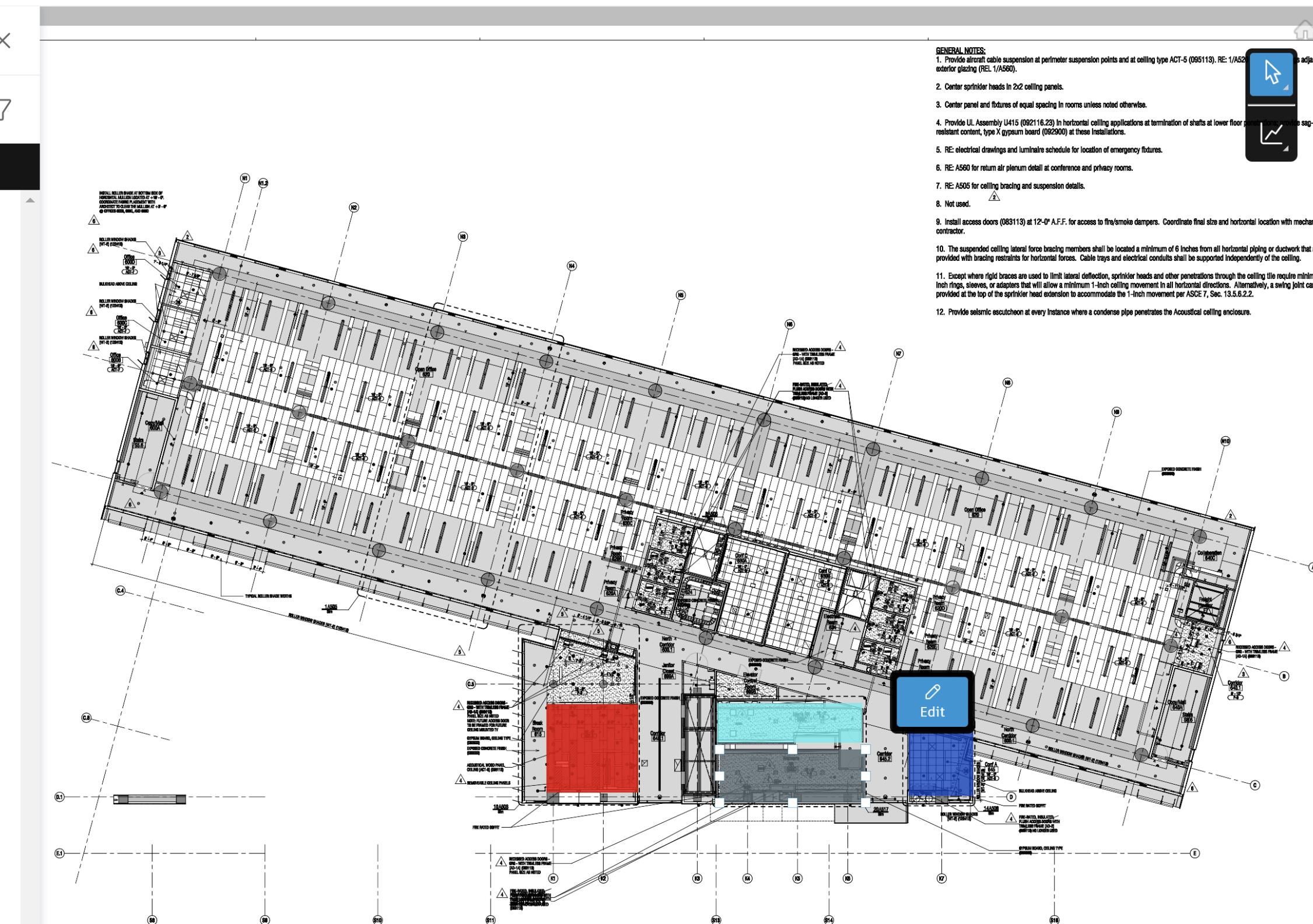
Object Type

Changing this object will reset previously tracked data

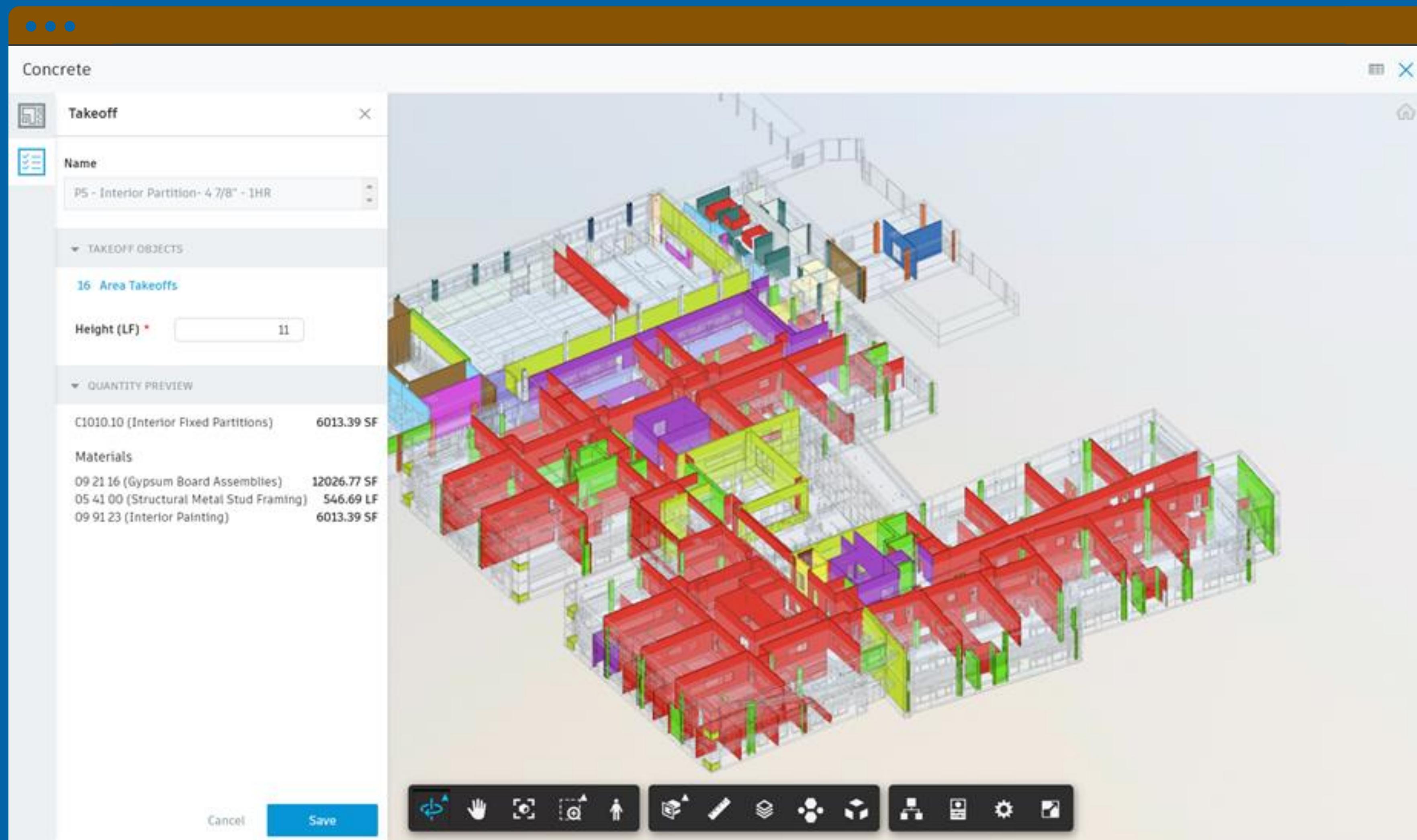
Ductwork - Phase A - Zone 1

Cancel

Submit



# Quantifizierung



# Projektübergreifende Auswertungen

The screenshot displays the Autodesk Construction Cloud Insight interface for the 'United Construction' organization. The left sidebar includes links for Project Overview, Quality Overview, Safety Overview, and Cost Overview. The main content area features a 'Quality Risk Overview' section showing 310 Active Projects with a distribution of 7 High, 4 Medium, and 25 Low risks, along with a 'View Project Risk Trend' button. Below this is a 'Project Risk' table listing various construction projects and their risk levels (High, Med, Low) across multiple categories. To the right is a 'Locations' map of the world with project locations marked in green, yellow, and red. A 'High Risk Quality Issues' chart tracks inspection counts from January to July, with a peak in February. The bottom of the interface includes a 'Construction IQ - PREVIEW' footer.





Der nächste Abschnitt  
der Reise



# Autodesk Acquires Pype



AUTODESK® + aurigo®



 **AUTODESK****bridgit**

Makenzie Thomas  
Site Superintendent ● Over allocated

June 1 - Aug 26 200%

Project Role %

Maplewood Mall Superintendent 100

Essex Assisted Living Superintendent 100

Project Name April July Today October

100 Victoria \* Active Apr 1 - July 31

Sr. Project Manager

Project Coordinator

Project Engineer

Status includes: Active Build type includes: High-rise residential





Unseren Kunden  
zuhören



Lösungen für Ihre  
Probleme suchen



Unsere eigenen  
Grenzen kennen

# BIG ROOM



# verbesserungen

ÜBER 120

- PlanGrid**
  - Sheets**
    - Revit Plug-In Fix
    - OCR for INTL Languages
    - Trim Sheet Numbering for ISO-19650
  - Forms**
    - Integrate in technical bootstrap
    - Template Types: set, edit, filter
    - Native Forms: Report Validation
    - Native Forms: Date & dropdown menu items
    - Export emails migration to Notifier
    - Customer API: Field Report Template
    - Custom Forms API
    - Draft Awareness for Reviewers
    - Sequential editing in Field Reports
  - RFIs on Mobile (Android)**
    - Step-Back
    - Create RFI from Sheet Viewer
  - Site Vision**
    - Media Thumbnails
    - Custom Photo Reports
    - Showing RFI & Field Report photos in gallery
  - Submittals**
    - Submittals to the Field - PG
    - Filter & Sort on Mobile
    - Default Watchers
  - API**
    - Public APIs & Adding Submittals Connector to ACC Connect
  - BIM 360 Docs**
    - Document Management**
      - Public URL / Share File
      - Permissions API
      - Vector PDF Improvements
    - Submittals**
      - Enhance Submittal List Experience
      - Contractual Date Tracking - Phase 1
      - Increased Status Visibility (web, iOS)
      - Submittals to the Field - BIM 360
      - XLSX Export
      - Enhancements
      - Tracking Contractual Dates - Phase 2

- BIM 360 Build**
  - Issues**
    - Issue Templates
    - Pin Issues to Locations
    - Enhancements
  - RFIs**
    - Edit closed RFIs
    - RFIs on Mobile (Android)
    - Modify RFI Pushpin
    - RFI & PCO Link
    - Permission Change
    - Improved Status Visibility
    - Submittal Workflow Enhancements
  - Cost Management**
    - Pay Applications
    - Public APIs
    - Email Integration
    - History/Milestone Visibility
    - Public APIs ACC Connect
    - Cost Budget PDF Report - Phase 1
    - Supplier & Owner Access
    - Tracking Actual Costs
    - Document Generator Creates PDF For
    - Cost Budget PDF Report - Phase 2
  - Assets**
    - Asset Module
    - Link from Issues
    - Checklists & Create Asset via Mobile
  - Submittals**
    - Enhance Submittal List Experience
    - Contractual Date Tracking - Phase 1
    - Increased Status Visibility (web, iOS)
    - Submittals to the Field - BIM 360
    - XLSX Export
    - Enhancements
    - Tracking Contractual Dates - Phase 2
  - Items**
    - Item-Based Submittals Workflow
    - Re-Open Closed Submittal
    - Reduce Email Spamming
  - Meeting Minutes**
    - Meeting Minutes LAUNCH
    - Attaching Existing Docs to a Meeting Item
    - Link Issue or RFI to Meeting Item
    - Rich Text Formatting
    - PDF Export Localization
    - Zoom Integration
    - Description & Summary Advanced Text Editing
  - API**
    - RFI
    - Submittal
    - Issues
    - Several Improvements
    - Archiving checklists & Feedback Applications\*
  - BIM 360 Coordination**
    - Issues**
      - Multi-modal Issues
    - Documents**
      - Import PDFs into Clash
    - Coordination**
      - Project Files
      - Model Coordination Forge API
      - Clash Matrix Enhancements (Grouping, Clash Issue Form Screenshots)
      - Clash Matrix Enhancements\*
      - Clash Matrix Enhancements\*
      - Clash Matrix Enhancements\*
  - BIM 360 Insights**
    - Construction IQ**
      - Design Risk for Executives
      - Safety Risk Factor Card
      - 2 New Reports
      - Card Library Enhancements
      - Issue Report Enhancements
      - Data Connector: Add RFI Workflow
      - Customized Executive Insights (Partner Card Additions)
      - Daily Logs Report Enhancements
      - Add Custom Attributes Data Download, Issue / Checklist Links & Email Notifications
      - Power BI Template for Project Controls
    - BIM 360 Admin**
      - Project Services Page
      - Scaling for Large Customers
      - Quantification & Automation
      - COVID Trial Enhancements
    - Bidboard Pro**
      - Suggested groups
      - New bid forwarding email
      - Office-level trades
      - BC Pro x BB Pro Integration

- Customize columns**
- Change opportunity request type**
- Faster import of bids**
- Enhanced search for opportunities\***
- Enhanced new opportunity creation\***
- Takeoff across sheets**
- Adding Color Picker**
- BIM 360 Plan**
  - Linked Activities
- TradeTapp**
  - User & Project Data
  - TradeTapp / BC Pro - Vendor Unification \*
  - Public Link to Share\*
  - Record 'Request for Corrections' Message\*
  - 'None' Qual Status Filter\*
  - Display 'Contacted By' BC User Name\*
  - New Prequalification Fields in BC\*
  - New 'Reviewers' Column\*
  - Qualification Status Timestamp\*
  - Enterprise Certification Expiration Date\*
- Assemble**
  - Reports**
    - Power BI Improvements
  - User & Project Data**
    - Revit Publishing Fix
- Aurigo**
  - Aurigo / PlanGrid Integration

\* Committed Roadmap



A large, modern industrial building under construction. The structure features a complex steel frame with multiple levels of windows. The interior is visible, showing various construction materials and equipment. The overall image has a blue-tinted, slightly overexposed look.

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