

# Was ist Autodesk Construction Cloud?

**Holger Klöcker**

Dipl. Ing. (FH) Architekt  
Technical Solutions Executive

**Marvin Theissen**

Regional Sales Manager

Autodesk Construction Solutions



# Holger Klöcker

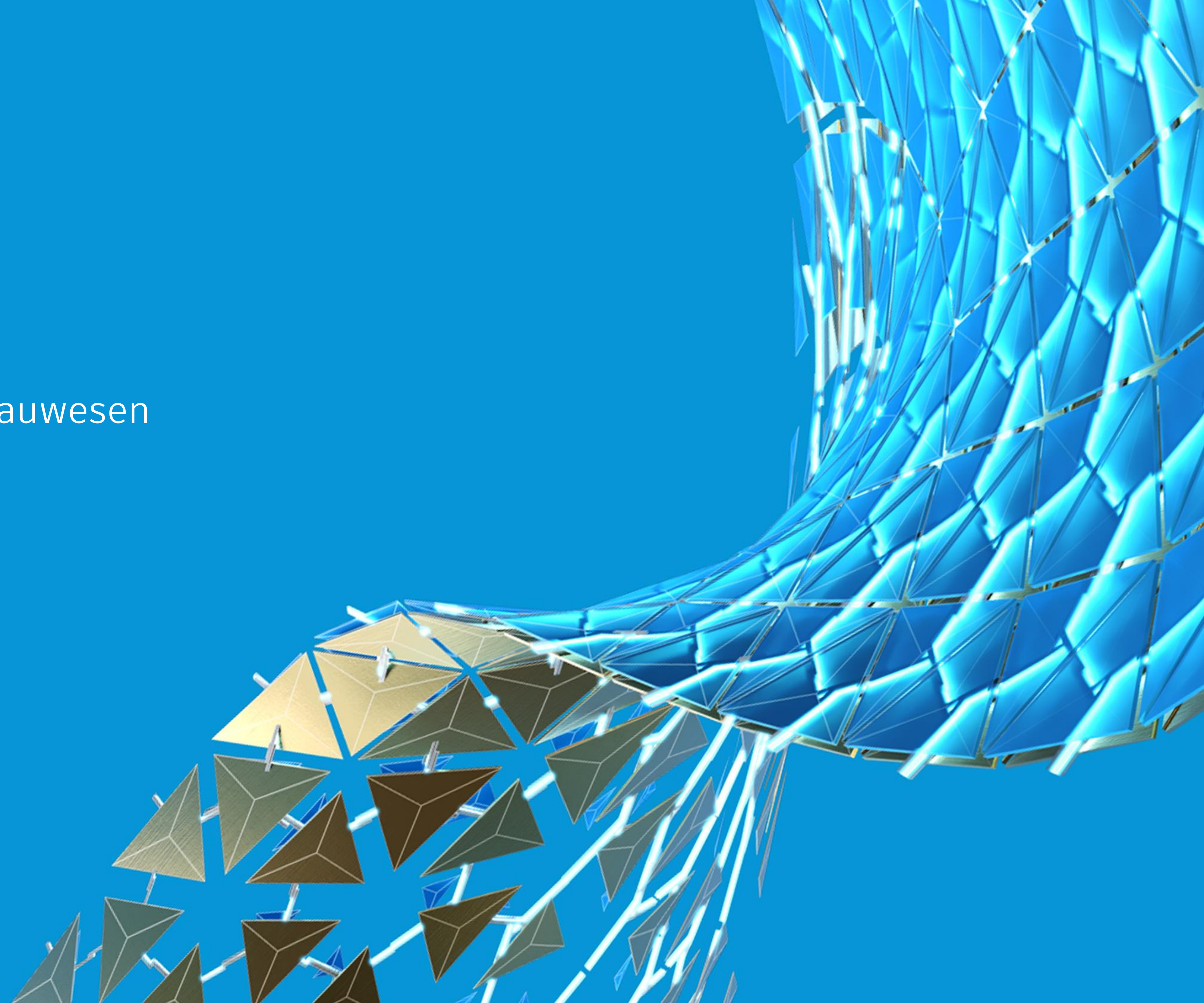


- Dipl. Ing. (FH) Architekt
  - Mitglied der Architektenkammer NRW
  - Autodesk Mitarbeiter seit 2006
  - Autodesk UK, Schweiz, Deutschland
  - Technical Specialist
- für den AEC und BIM Bereich

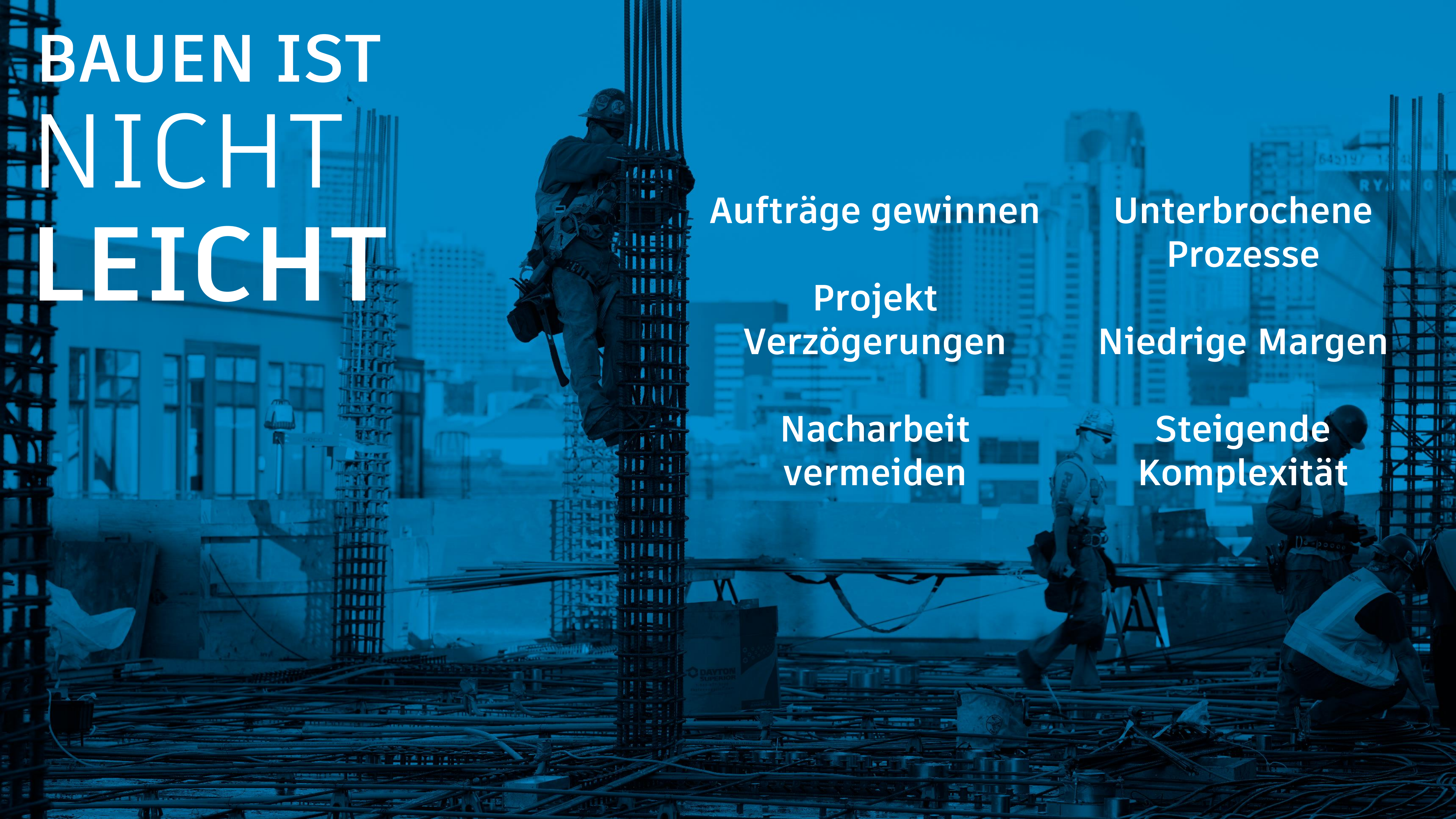


# Agenda

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







# BAUEN IST NICHT LEICHT

Aufträge gewinnen

Unterbrochene  
Prozesse

Projekt  
Verzögerungen

Niedrige Margen

Nacharbeit  
vermeiden

Steigende  
Komplexität



# Technologie

kann

schon

noch

machen

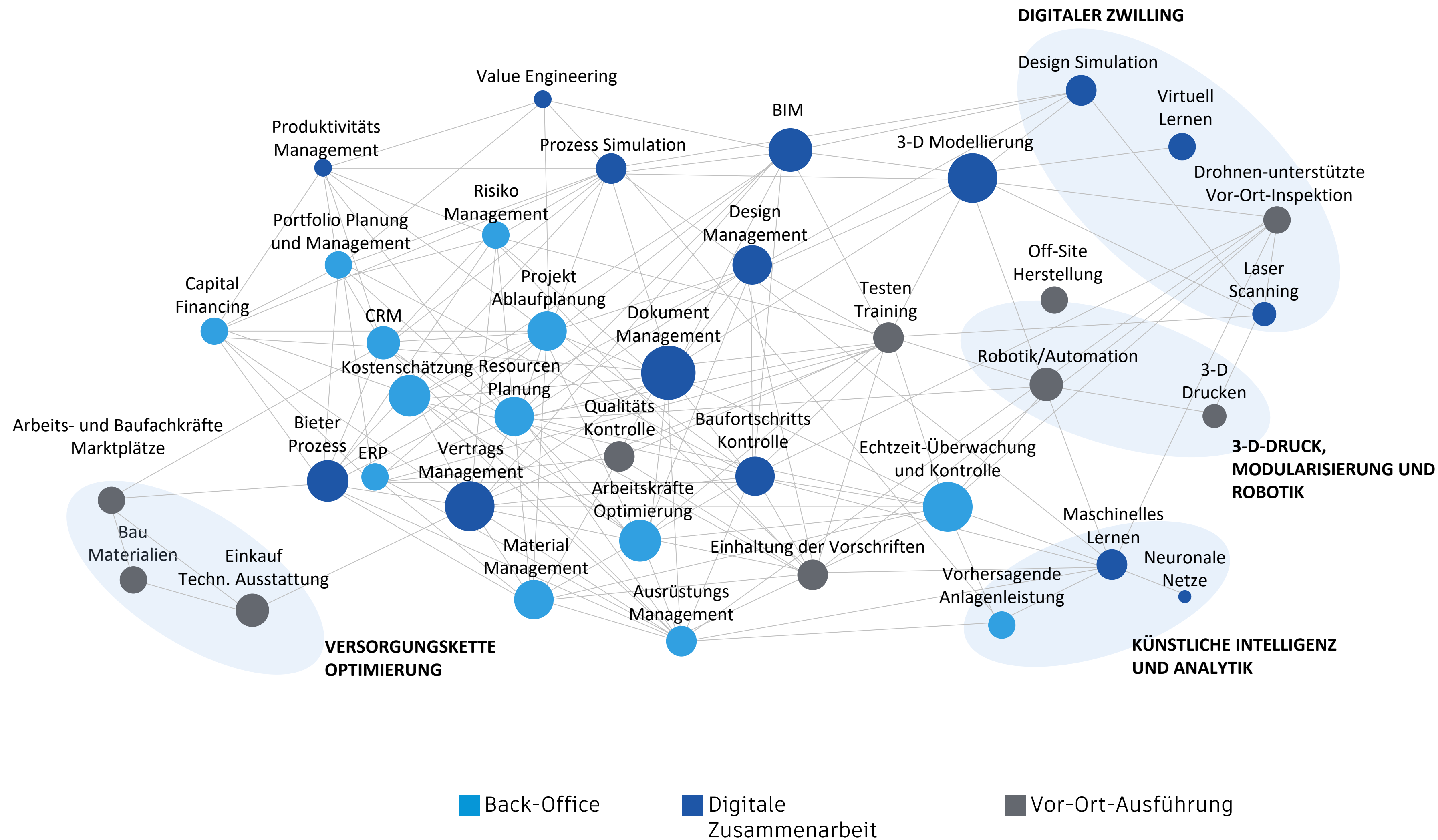


# gang





# Ökosystem der Technologie im Bauwesen



25%

der Baufirmen verwenden  
5 oder mehr verschiedene  
Applikationen

280MRD

jährliche Kosten für  
**Nacharbeiten**

30%

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



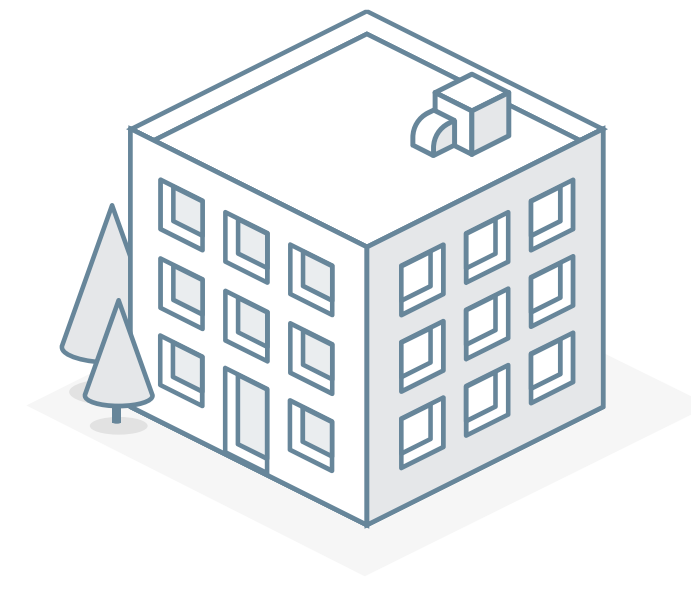
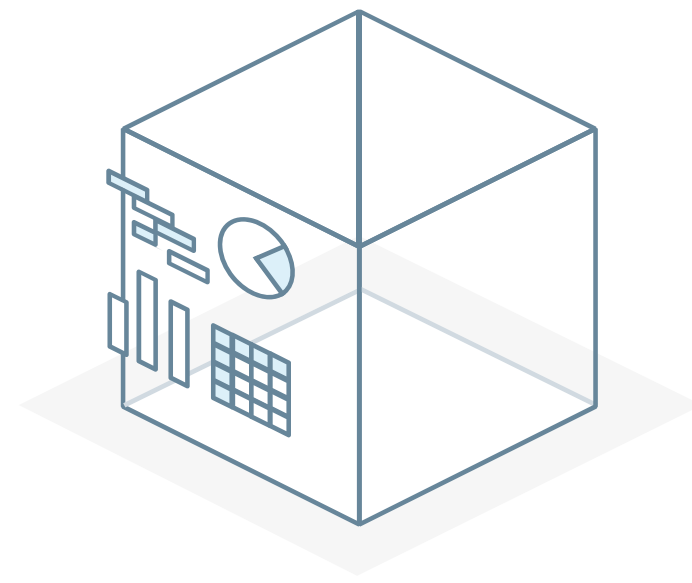
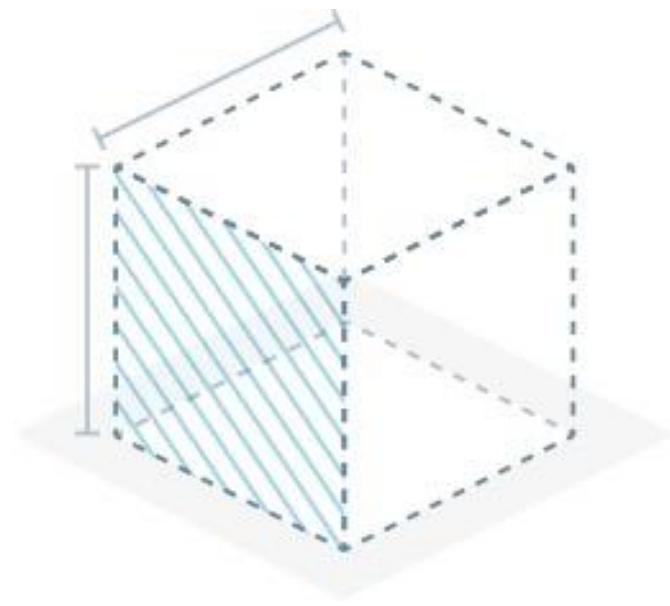


**AUTODESK CONSTRUCTION CLOUD™**





# AUTODESK CONSTRUCTION CLOUD™



**PLANUNG**

**VORBEREITUNG**

**AUSFÜHRUNG**

**BETRIEB**





# Autodesk's Reise im Bauwesen



# Autodesk's Reise im Bauwesen

 Vernetzte Konstruktion

 Projekt Lebenszyklus

 Baustellenausführung

 Entwurf & Koordination

2006

2008

2010

2012

2014

2016

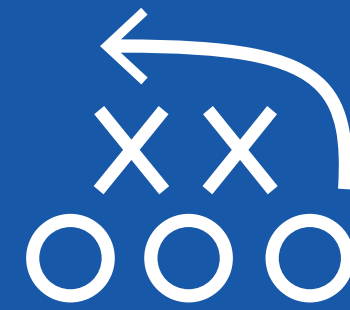
2018



# Leitprinzipien entlang der Reise



Unseren Kunden zuhören



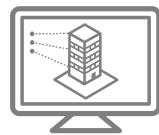
Suchen nach Lösungen  
für Ihre Schmerzpunkte



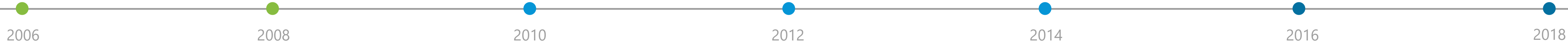
Die eigenen  
Grenzen kennen



# Autodesk's Reise im Bauwesen



Entwurf & Koordination





# SOCIALE MEDIEN KOMMEN...

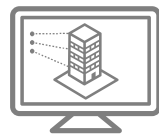




# Autodesk's Reise im Bauwesen



Baustellenausführung



Entwurf & Koordination



2006



2008



2010



2012



2014



2016



2018



VELA SYSTEMS®



AUTODESK  
NAVISWORKS



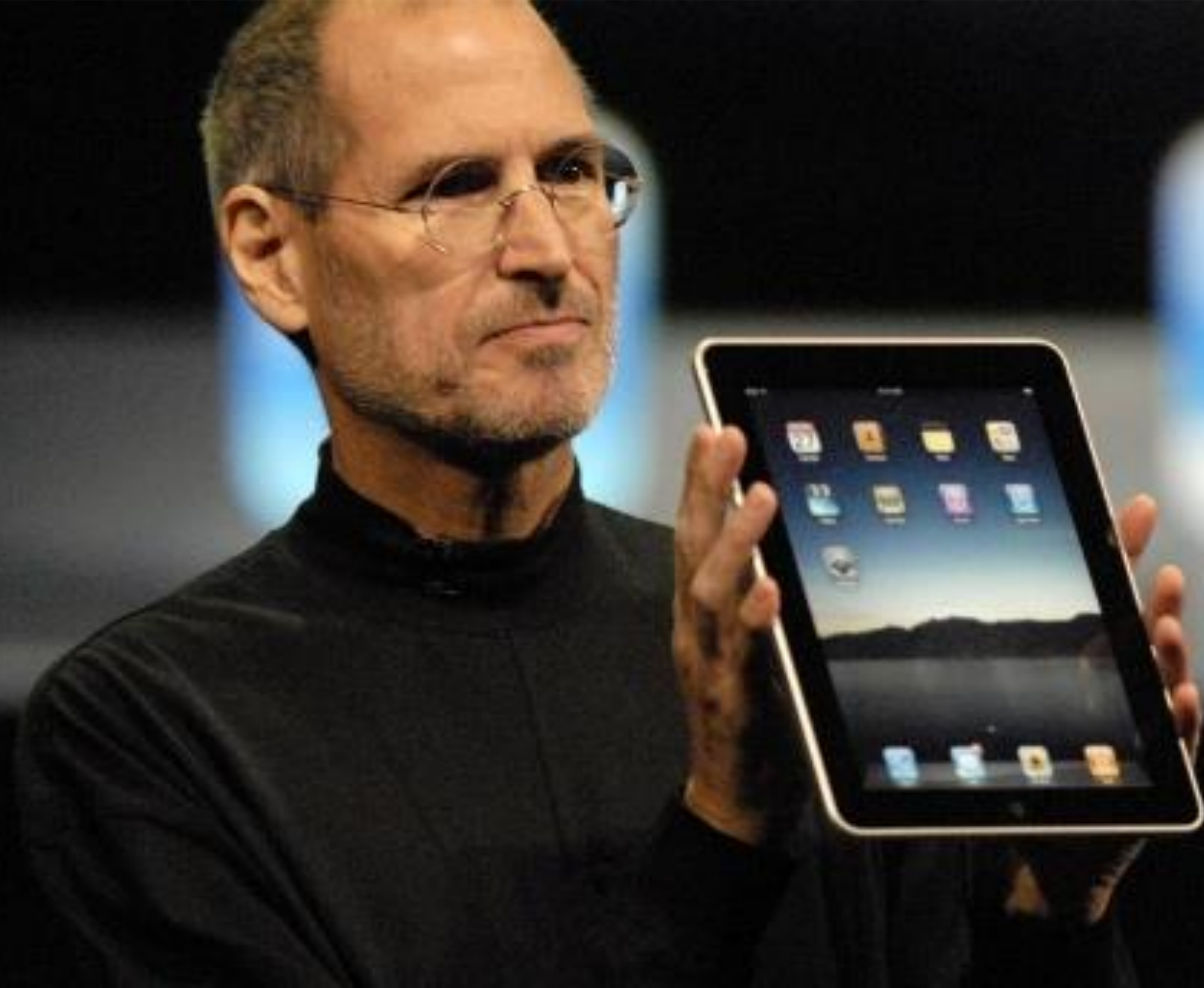
CONSTRUCTWARE



GRAITEC

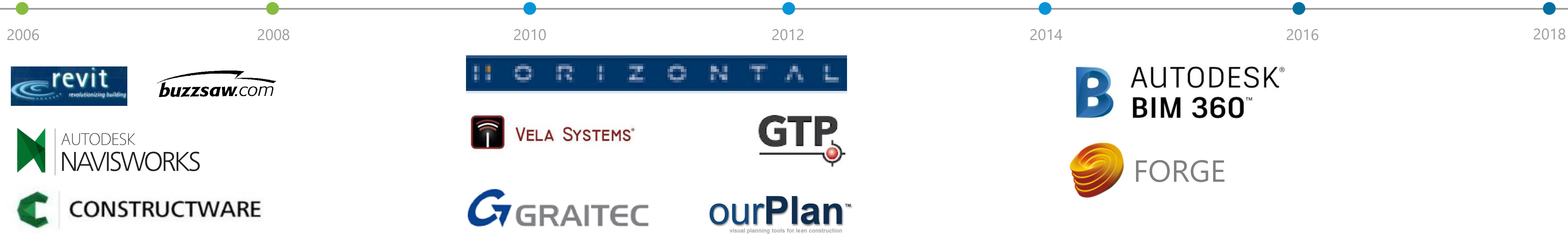








# Autodesk's Reise im Bauwesen

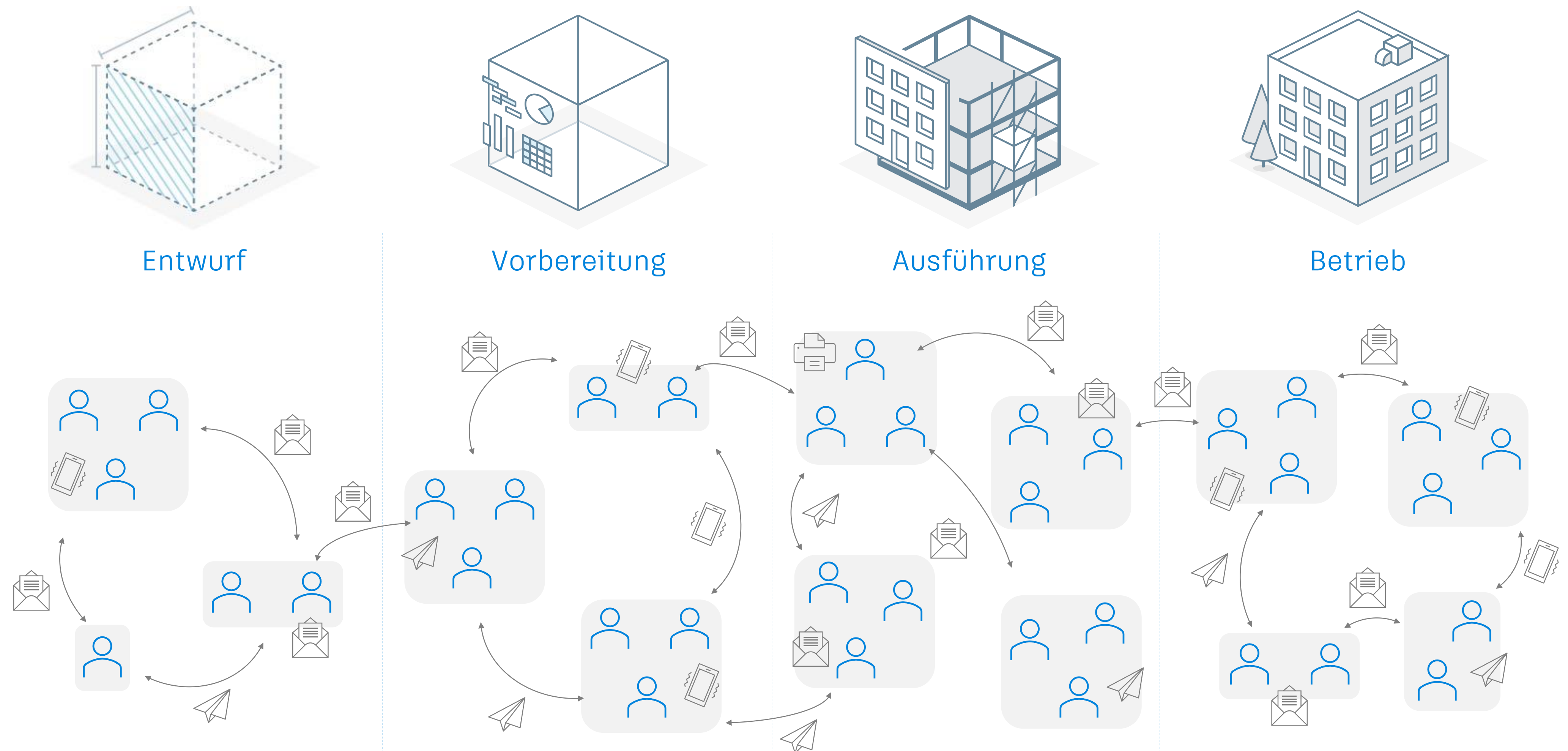








# Bauen ist **kooperativ**, aber **fragmentiert**



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





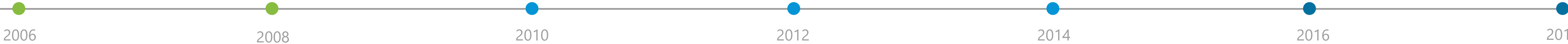
# Autodesk's Reise im Bauwesen

 Vernetzte Konstruktion

 Projekt Lebenszyklus

 Baustellenausführung

 Entwurf & Koordination







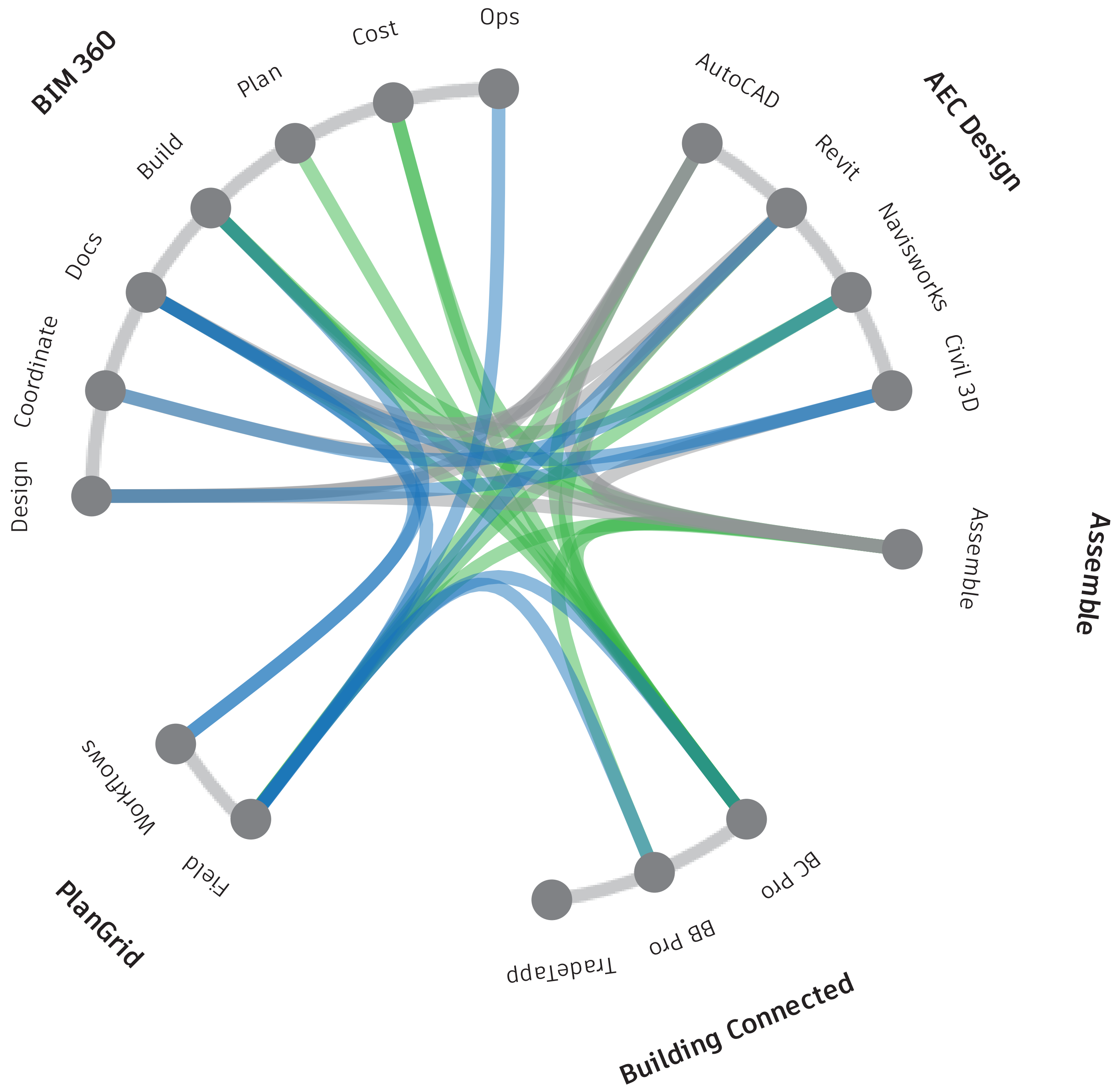
 assemble  
AN AUTODESK COMPANY

 BIM 360™

 BUILDINGCONNECTED  
AN AUTODESK COMPANY

 PlanGrid  
AN AUTODESK COMPANY

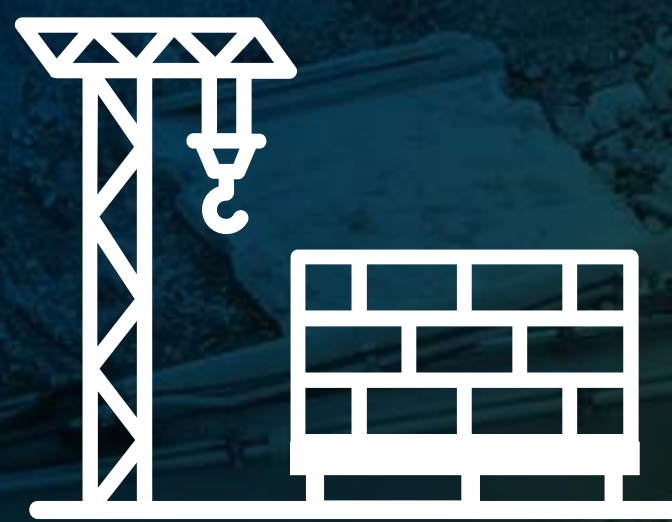








PLANUNG



VORBEREITUNG



AUSFÜHRUNG



BETRIEB



REVIT®



BIM 360™ DESIGN

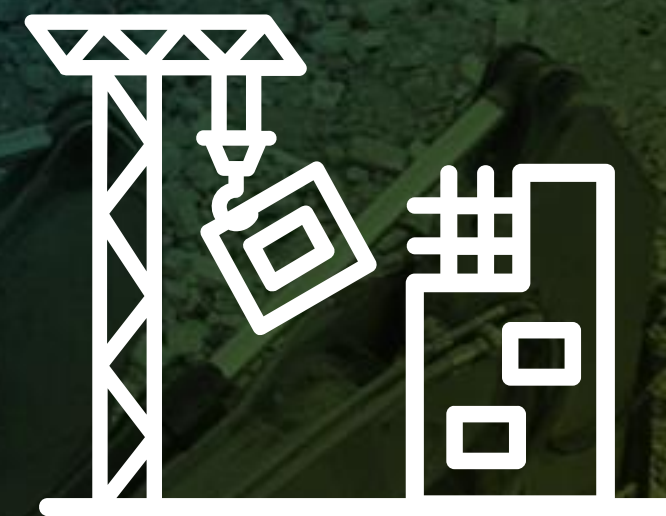




PLANUNG



VORBEREITUNG



AUSFÜHRUNG



BETRIEB



REVIT®



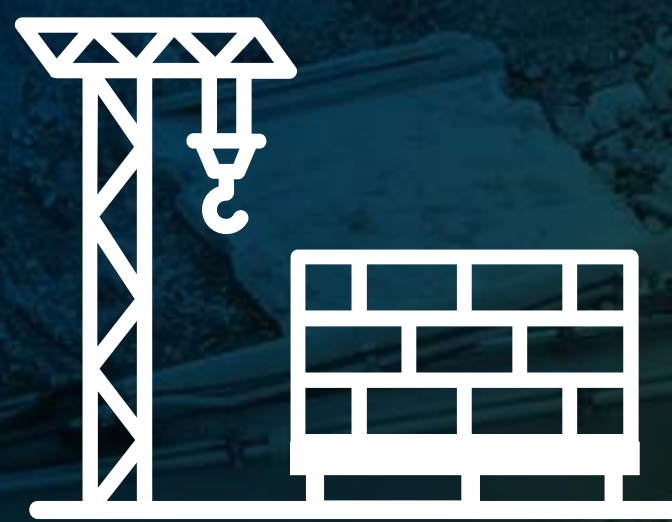
BIM 360™ DATA



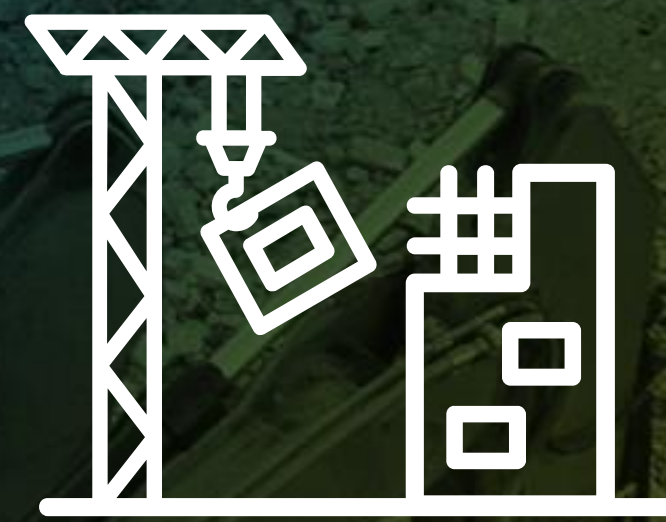




PLANUNG



VORBEREITUNG



AUSFÜHRUNG



BETRIEB

 **BUILDINGCONNECTED**  
AN AUTODESK COMPANY

 **PlanGrid**  
AN AUTODESK COMPANY

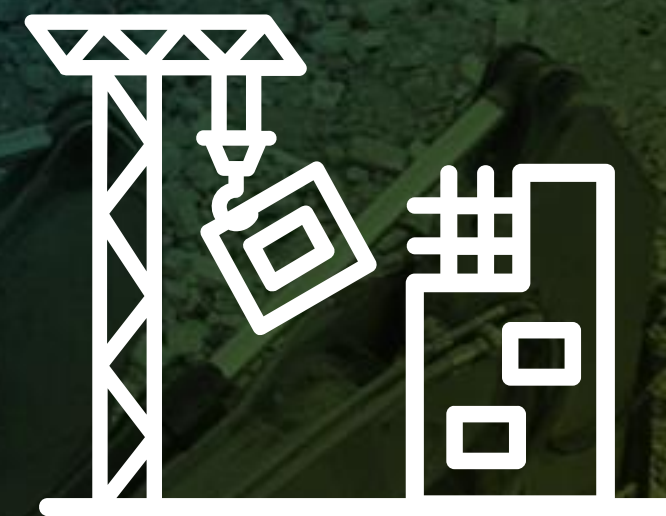




PLANUNG



VORBEREITUNG




AUSFÜHRUNG



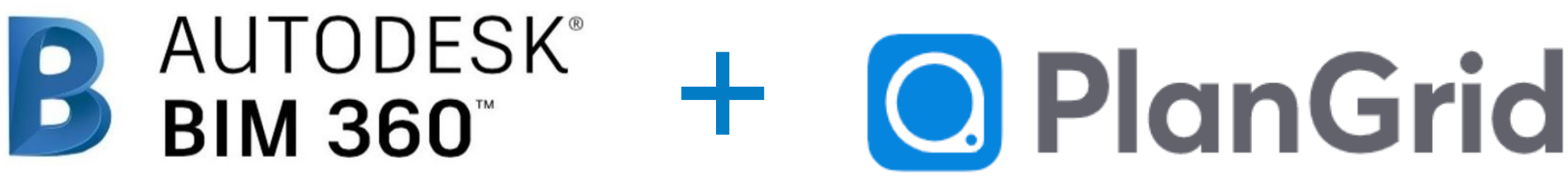
BETRIEB

 **PlanGrid**  
AN AUTODESK COMPANY

 **BIM 360™ OPS**



# Skanska GB verbindet Baustelle und Büro



SKANSKA

Site Harpur Centre		Activity Scaffolding to side of building		Conducted by name Billy Tube		Signature 		Date 12/1/19	
Risk Assessment No. 03		Review Date 02/01/2020		Revision No. 01		Conducted by name		Signature sign	
Person Supervising Work Danny Board		Employer Access Scaffold		Approved by name		Signature sign		Date	
Persons Exposed 0		Employees 4		Other Workers 0		Public/Visitors 0		Vulnerable Persons 0	
Total at Risk 4									

Severity

5	5	10	15	20	25
4	4	8	12	16	20
3	3	6	9	12	15
2	2	4	6	8	10
1	1	2	3	4	5
	1	2	3	4	5

Likelihood

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

Severity

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

Low

Medium

High

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	1 2		3	4	5 6		7	8	9
	Factors of Harm				Factors of Harm				
	Likelihood	Severity	Risk Multiple of columns 1 x 2	CONTROL MEASURES	Likelihood	Severity	Residual risk Multiple of columns 5 x 6	Control measures implemented by (name)	Control Frequency Check Rate
Erection of scaffold - falling objects/collapse of scaffold			20	All Scaffold contractors will be members of NASC Skanska require that any scaffolding contractor contracted to work on a Skanska UK project. emolvos a			5	Danny Board	Daily



AUTODESK BIM 360

United Construction > Corporate Headquarters

Document Manager

Issues

Templates

Search

ID

Type

Sub-type

33

Punch List

Work to

32

Commissioning

Commis

31

Commissioning

Commis

30

Quality

Quality

27

Coordination

Clash

26

Coordination

Clash

25

Coordination

Clash

23

Coordination

Clash

Issue #161

DETAILS

ATTACHMENTS

ACTIVITY

TD

Tom Denby

Dec 2, 10:52 AM

Attached a document from Document Library

04P\_002.pdf

TD

Tom Denby

Dec 2, 11:03 AM

Attached a document from Document Library

04P\_002.pdf

TD

Tom Denby

Dec 2, 11:10 AM

Attached a document from Document Library

04P\_002.pdf

Showing 1 - 16 of 16





# Autodesk's Reise im Bauwesen

2020





Digitalisierung

Vorfertigung

COVID-19

Fachkräfte Mangel

Grünes Bauen

Augmented Reality

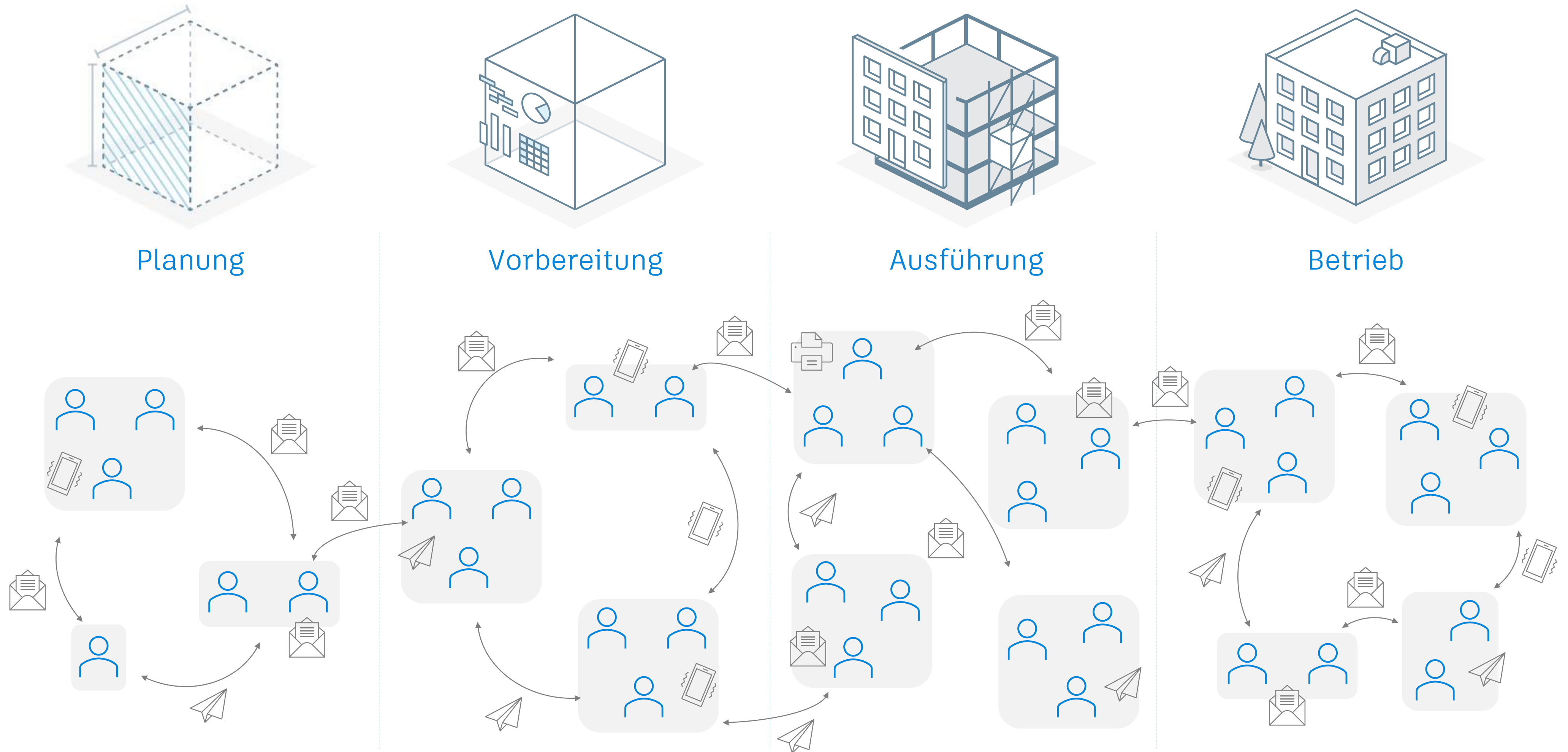






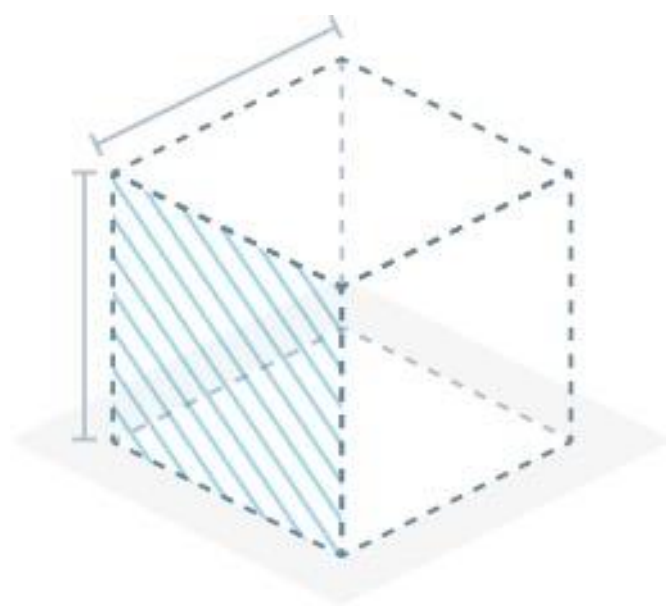


# Bauen ist **kooperativ**, aber **fragmentiert**

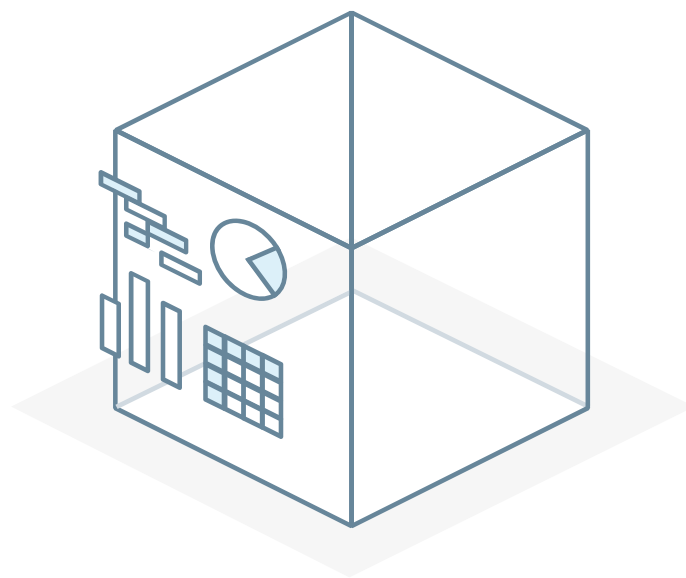




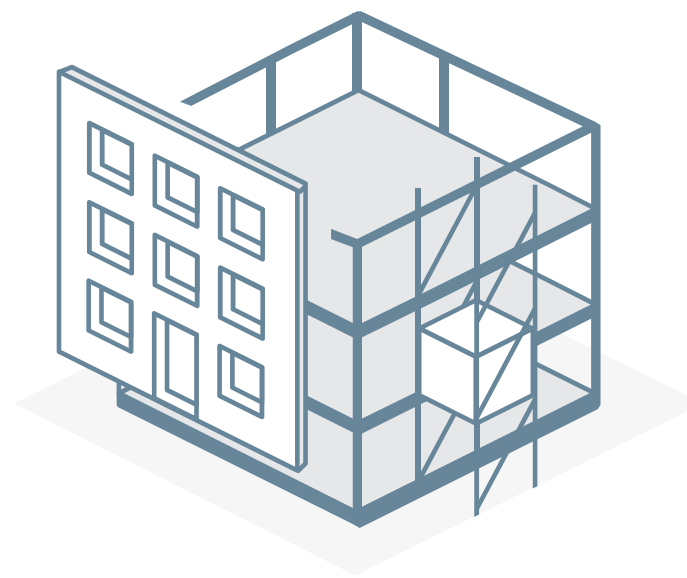
# Vernetzte Bautechnologie kann das Geschäft verändern



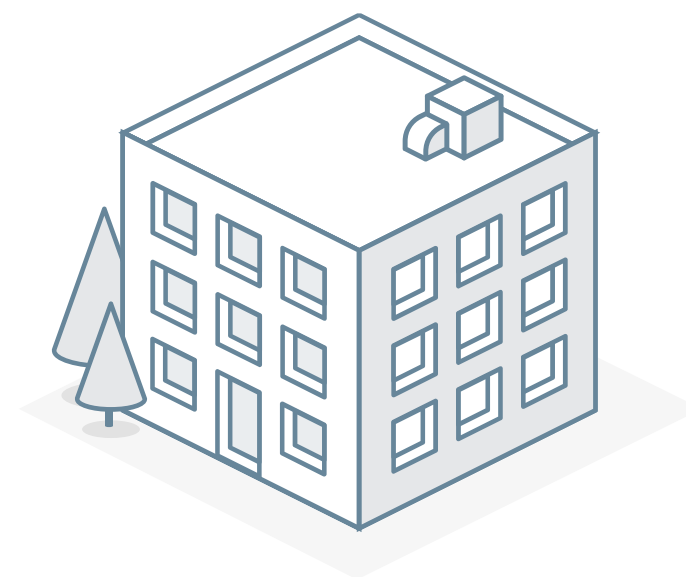
Planung



Vorbereitung



Ausführung



Betrieb

Möglichkeiten

- Design-Entwicklung
- Entwurfs-Zusammenarbeit

- Modell Koordination
- Modell Konditionierung
- Quantifizierung
- Angebotsmanagement
- Qualifizierung

- Projekt Management
- Kostenkontrolle
- Baustellenbetrieb
- Qualität & Sicherheit
- Abnahmen

- Facilitiy Management
- Anlagen-Lebenszyklus

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 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-Built's · Fotos · Videos						
Auswertungen	Dashboards · Berichte · Construction IQ · Data Connector						
Administration	Admin Konsole · Berechtigungen · Projekt Einrichtung · Vorlagen · Benachrichtigungen						





# Single Point of Entry

AUTODESK CONSTRUCTION CLOUD

James Taylor

Project Directory

All Projects

ACC Project Templates

Create Project

Search project name, address, organization or project code.

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

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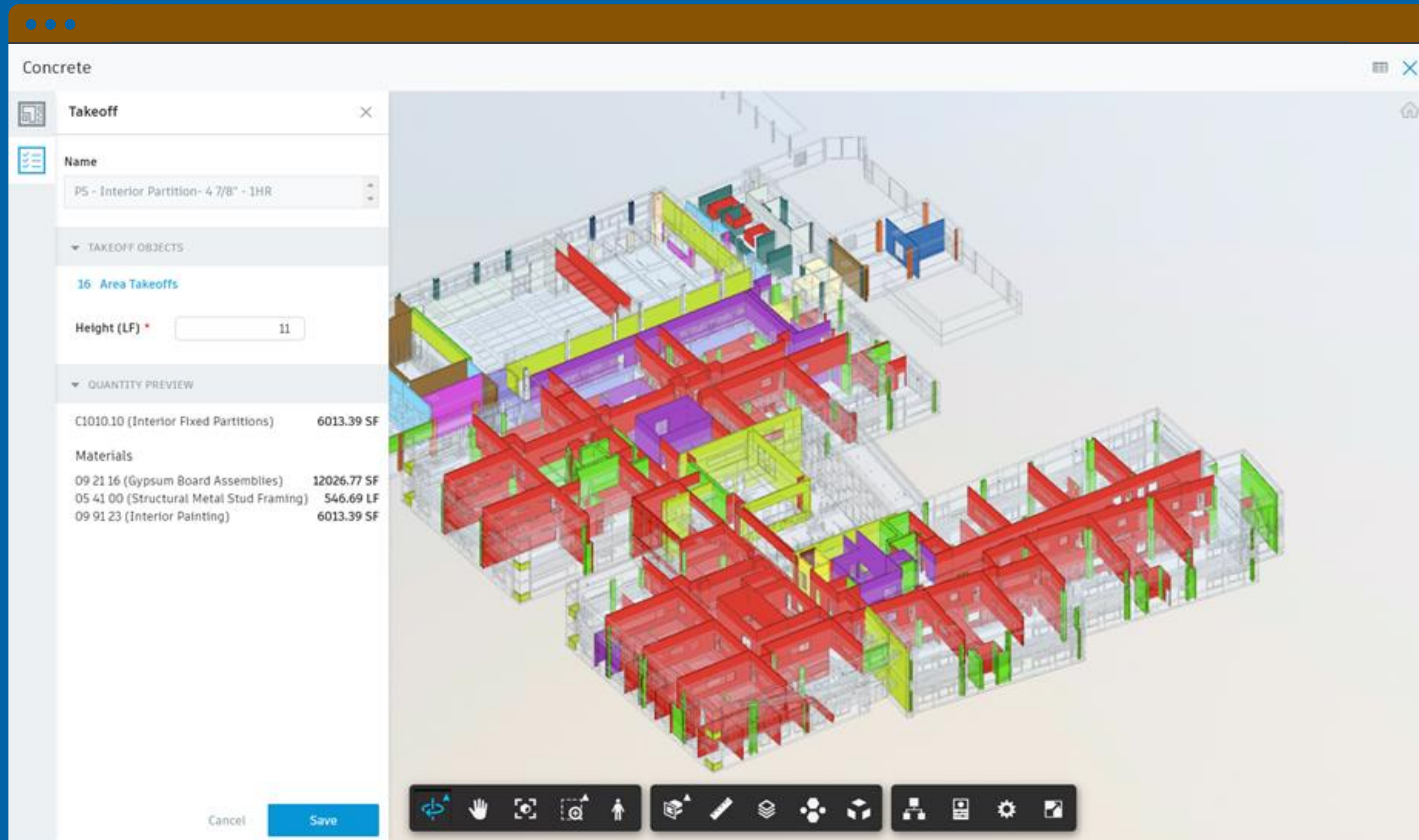


# Fortschrittskontrolle

[illegible]

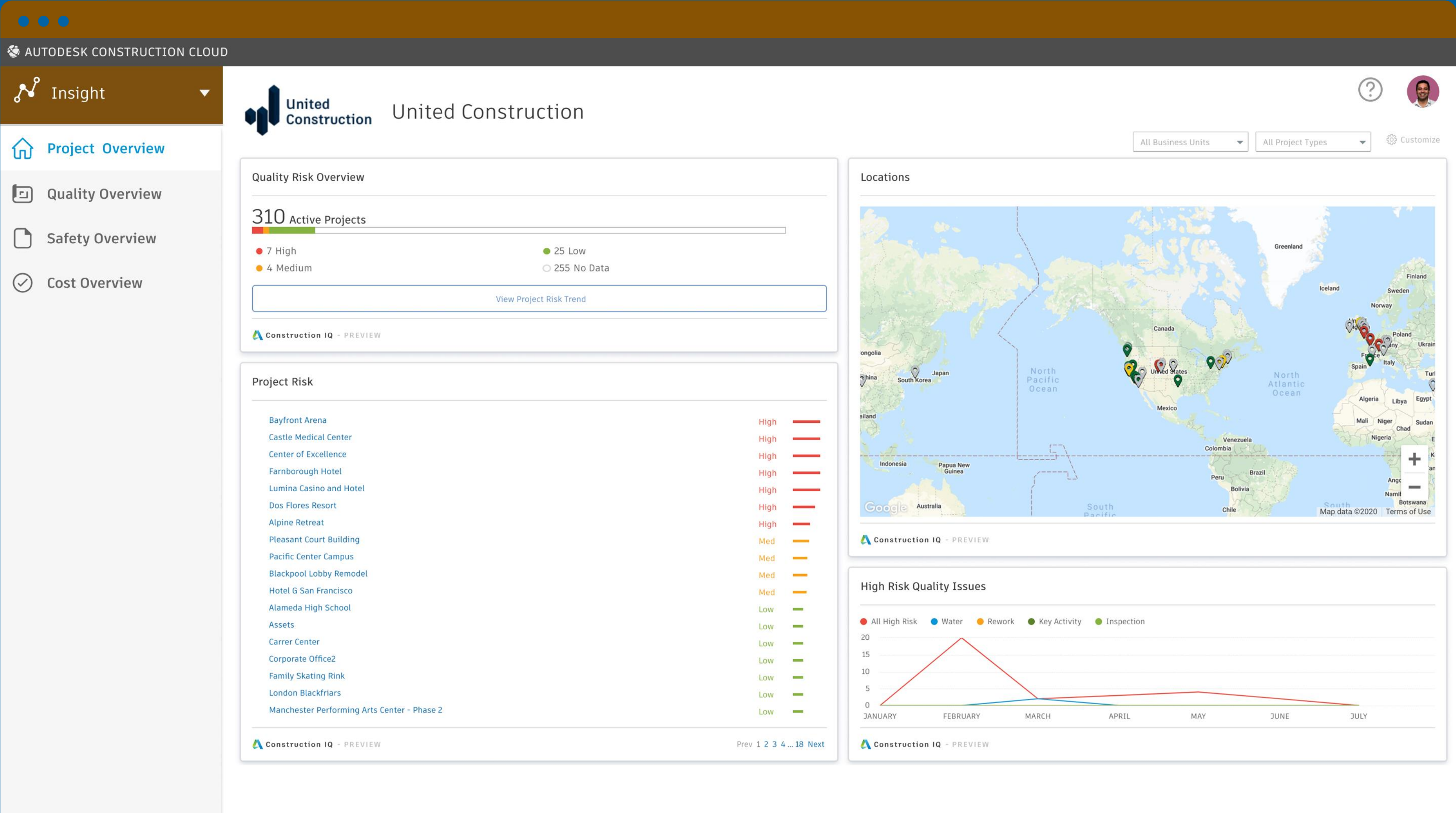


# Quantifizierung





# Projektübergreifende Auswertungen







# Der nächste Abschnitt der Reise





# Autodesk Acquires Pype



 AUTODESK<sup>®</sup> + aurigo<sup>®</sup>





# AUTODESK + | bridgit



Vermont Public House  
(Construction)

Arborview Tower  
Active

Essex Assisted Living  
(Pre-construction)



Makenzie Thomas  
Site Superintendent

Over allocated

June 1 - Aug 26		200%
Project	Role	%
Maplewood Mall	Superintendent	100
Essex Assisted Living	Superintendent	100



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

Project Name April July Today October

100 Victoria

Active

Sr. Project Manager



Project Coordinator



Project Engineer



Apr 1 - July 31

210 Olive St.

Aug 3 - November 31







**Unseren Kunden  
zuhören**



**Lösungen für Ihre  
Probleme suchen**



**Unsere eigenen  
Grenzen kennen**





# BIG ROOM





## 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

## 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 Forms
- Cost Budget PDF Report - Phase 2

### Assets

- Asset Module
- Link from Issues
- Checklists & Create Asset via Mobile

### Submittals

- Enhanced 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

## Issues

- Item Based Submittals Workflow
- Re-Open Closed Submittal
- Reduced Email Spamming

### Meeting Minutes

- Meeting Minutes LAUNCH
- Attaching Existing Docs to a Meeting / Meeting Item
- Link Issue or RFI to Meeting Item
- Rich Text Formatting
- PDF Export Localization
- Zoom Integration
- Description & Summary Advanced Text Editing

### API

- RFI

### Checklists

- bringing Android to parity with iOS (same also for iOS)
- (Issues)
- Several Improvements
- Archiving checklists & Field Locations\*

## BIM 360 Coord

### Issues

- Multi-model

### Docs

- Improved Documenting

### Coordination

- Project Files
- Model Coordination Forge API
- Clash Enhancements (Grouping, Clash Queue For Resolution)
- Clash Networks Issues & Login\*
- Clash Matrix Enhancements\*
- Model Viewer Enhancements\*

## BIM 360 Insights

## Construction IQ

- Defining Risk for Executives
- Safety Risk Factor Card
- 2 New Reports
- Card Library Enhancements
- Issue Report Enhancements
- Data Connector: Add RFI Workflow
- Customizing 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

### RFI Partner Cards

- Intelliwave Partner Cards
- Raken Partner Cards
- Project Level Document

## BIM 360 Admin

- Project Services Page
- Scaling for Large Companies
- Quantification & Analytics
- COVID Trial Enhancements

### Bidding Connect

- Bidder history in Reports
- Additional items section in Bid Leveling
- Performance improvements to viewing files
- Bidder cost
- Auto desk ID - Cloud

## 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

# Verbesserungen









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