The Future of Making Things Usesoft BIM Seminar Tallinn 8th Dec 2015 Joachim Dekker-AEC Territory Team Leader- Nordics



DISRUPTIONS

- Disturbances
- Big game changes
- Quantum leaps
- New trends megatrends

Disturbance or problems which interrupt an event, activity, or process









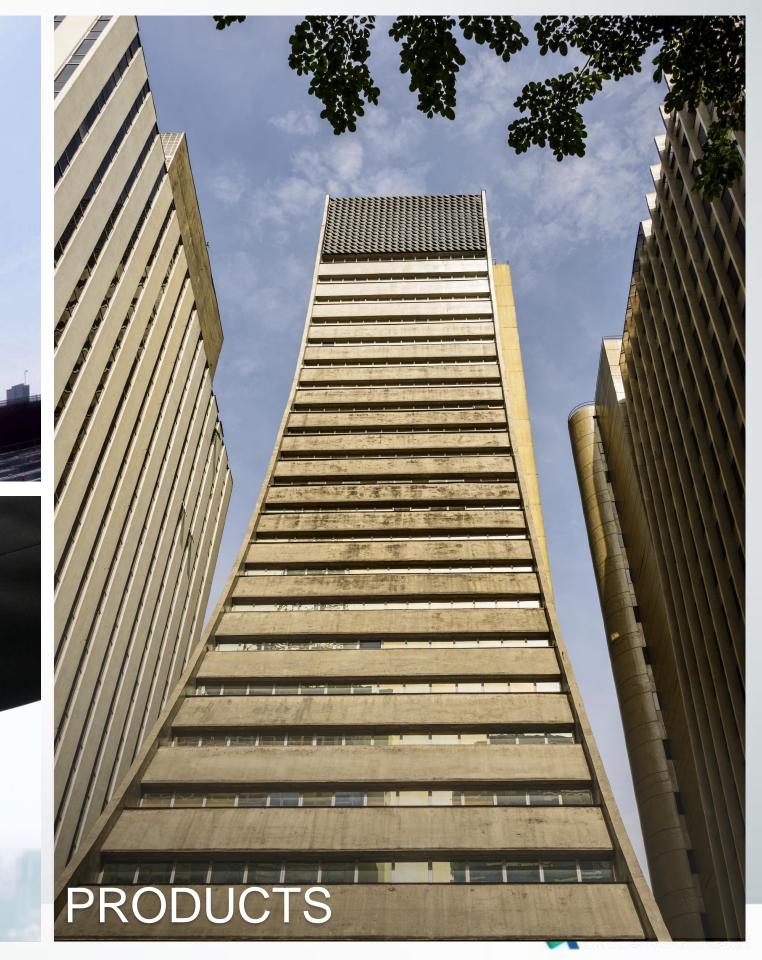






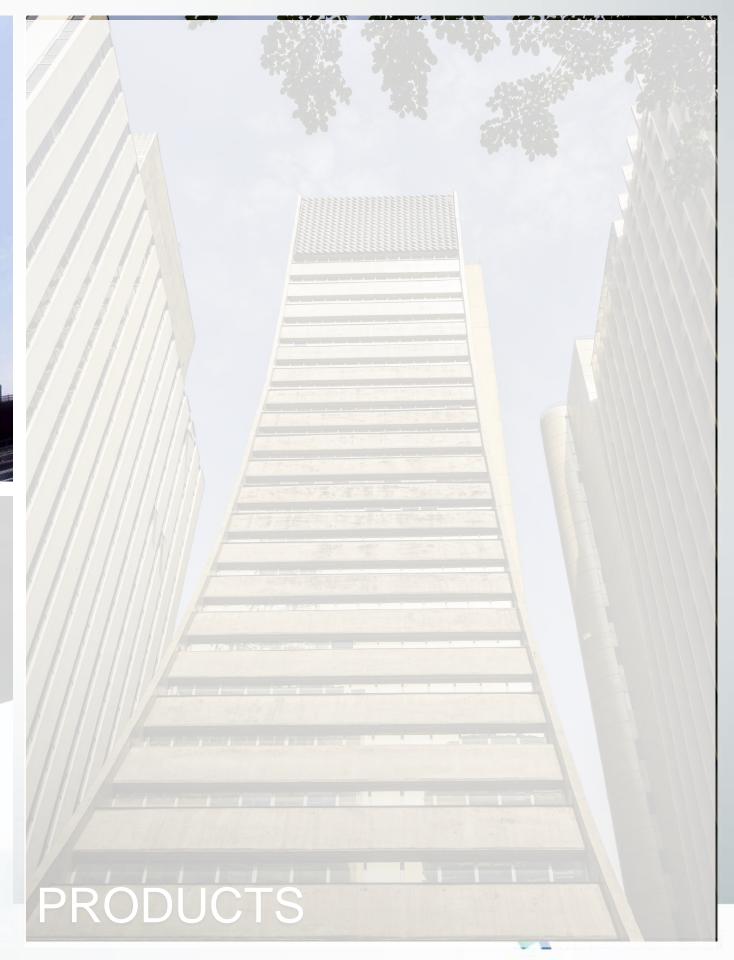
Image: Constrained state stat





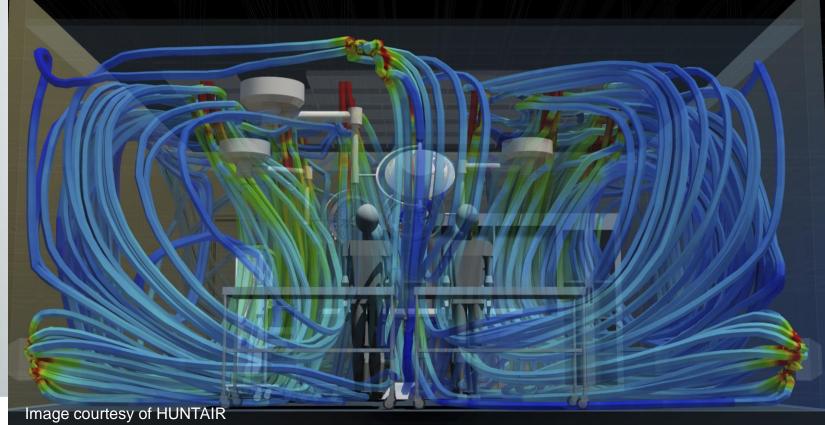
PRODUCTION

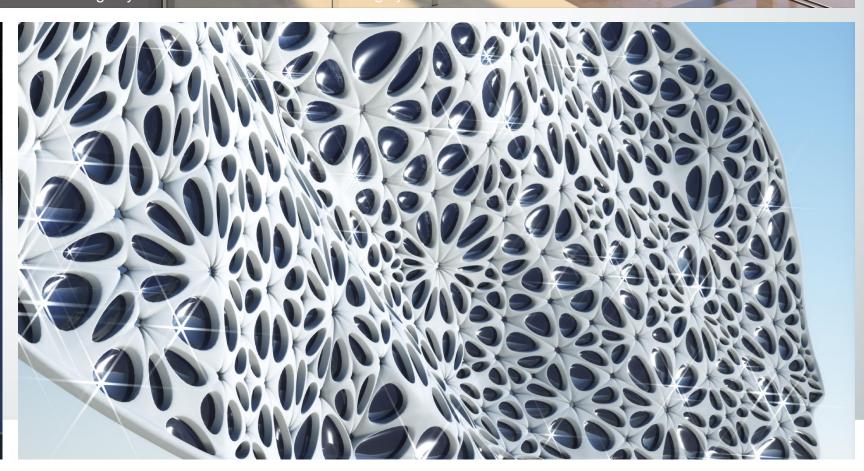
DEMAND

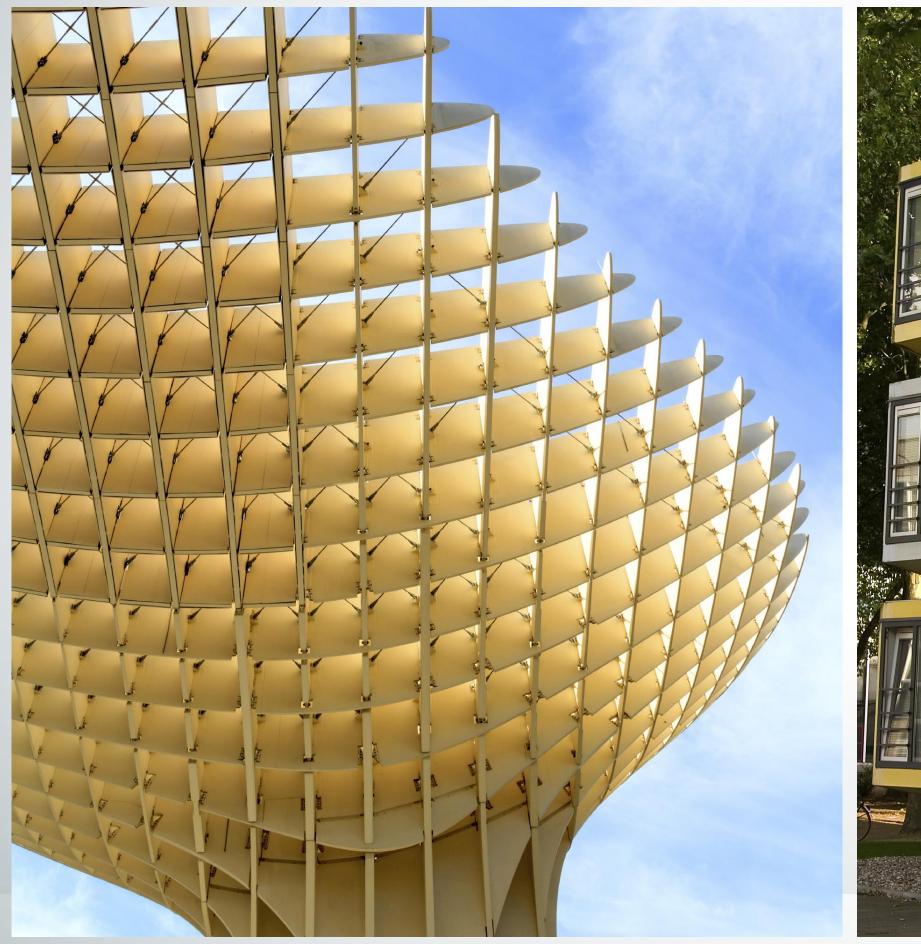








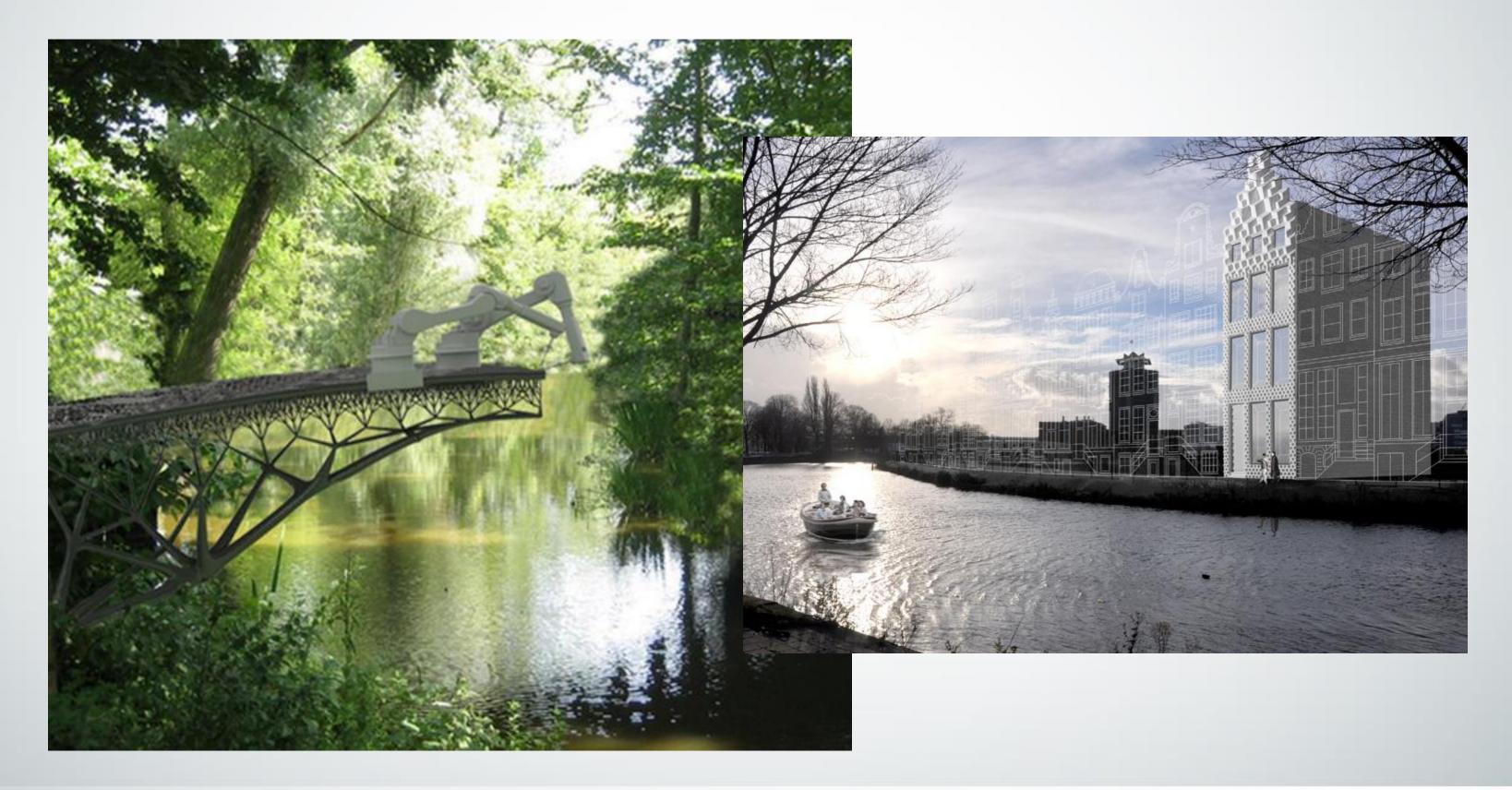




















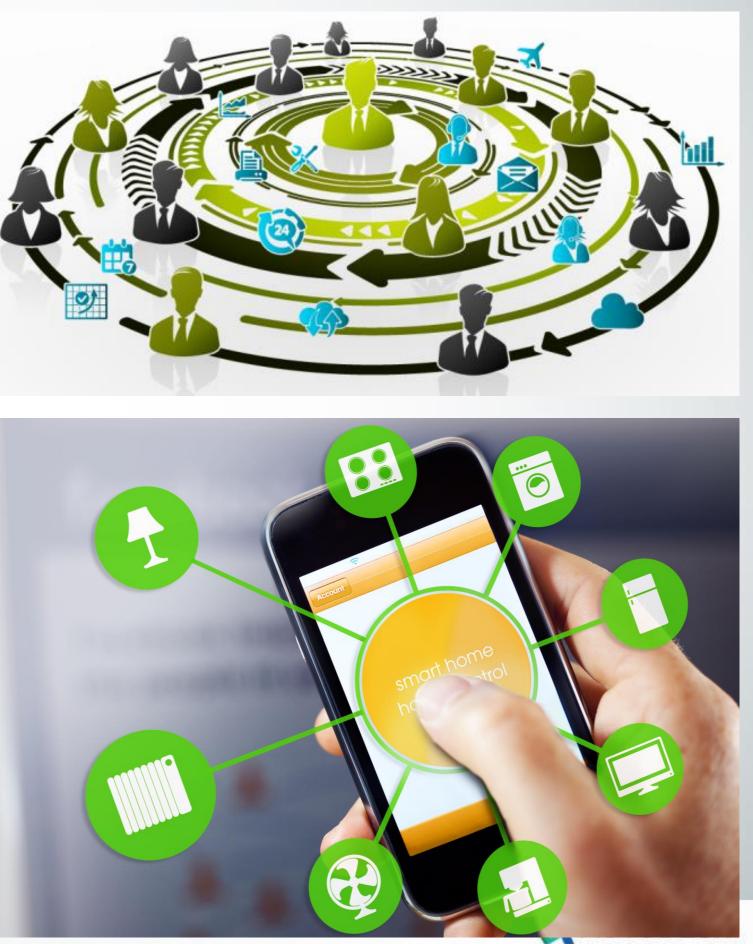


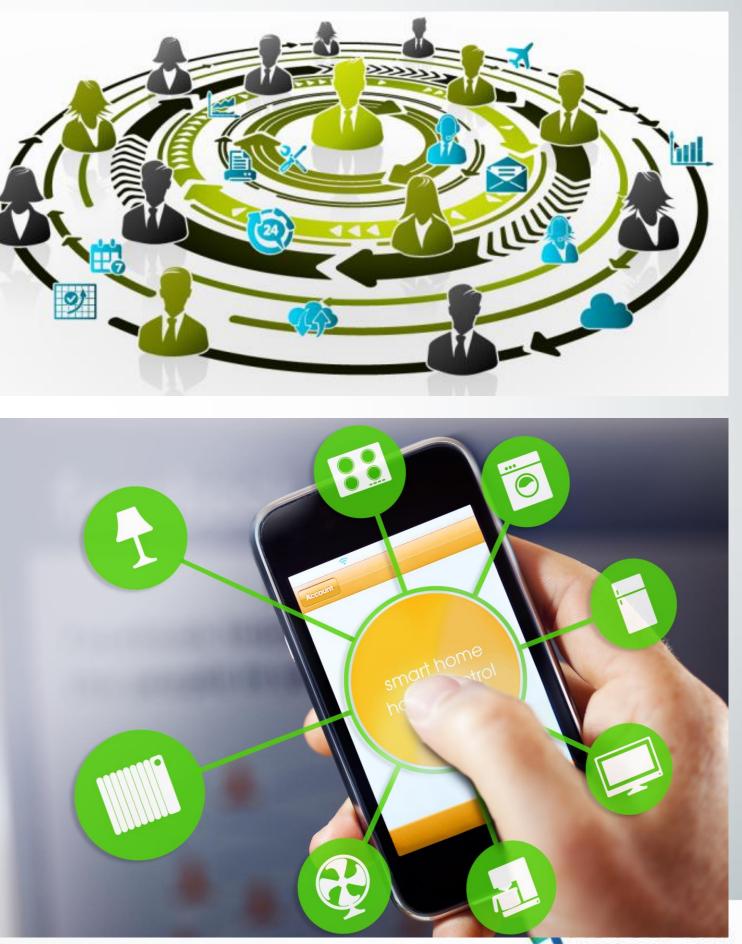
PRODUCTION

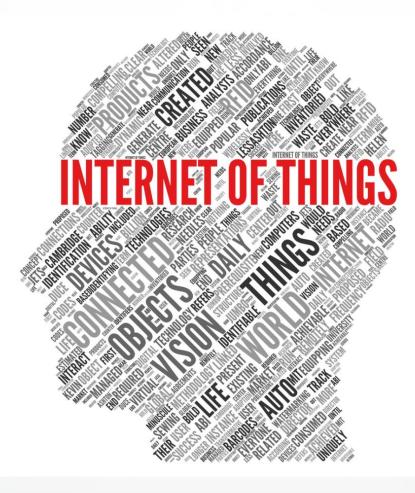
DEMAND







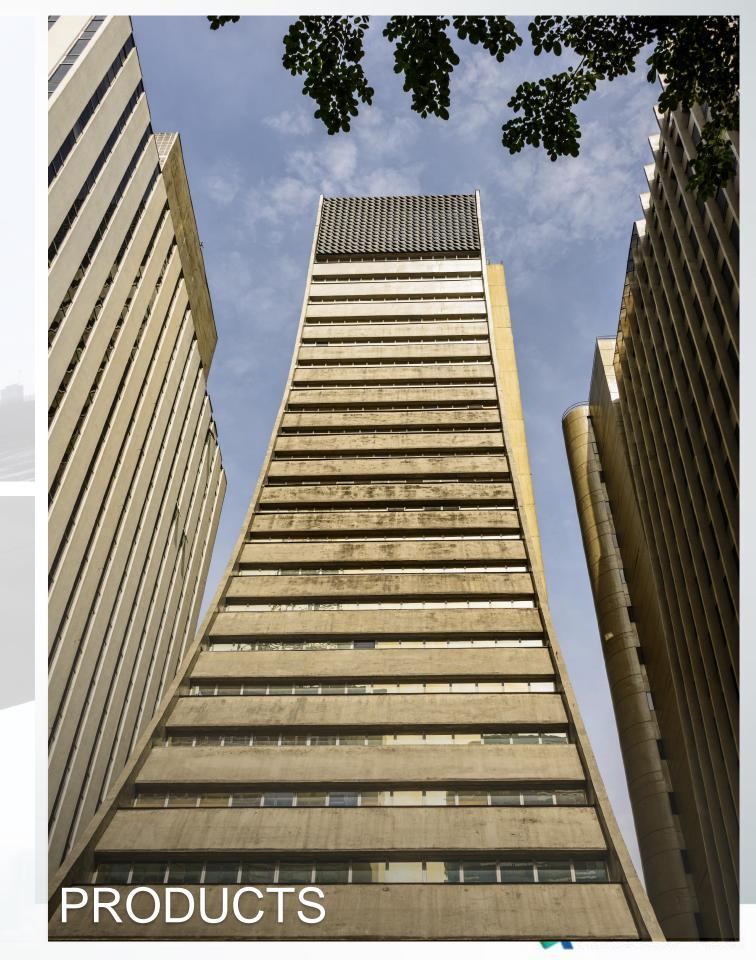


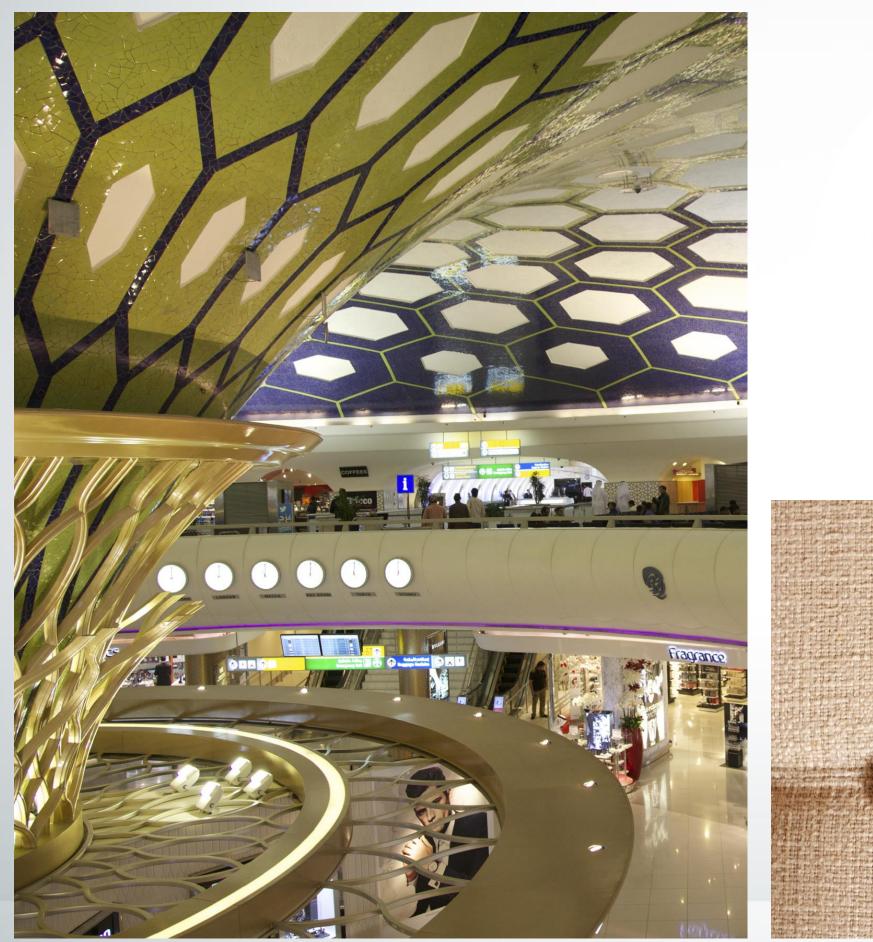




PRODUCTION

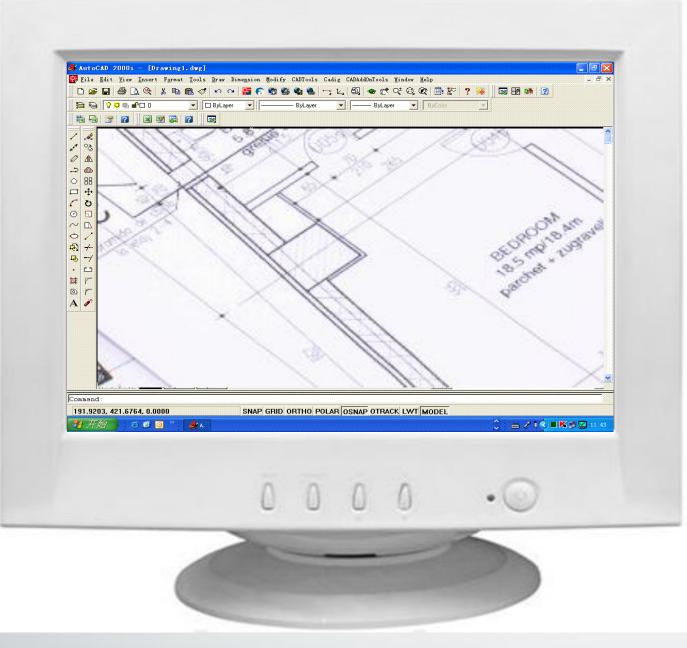
DEMAND

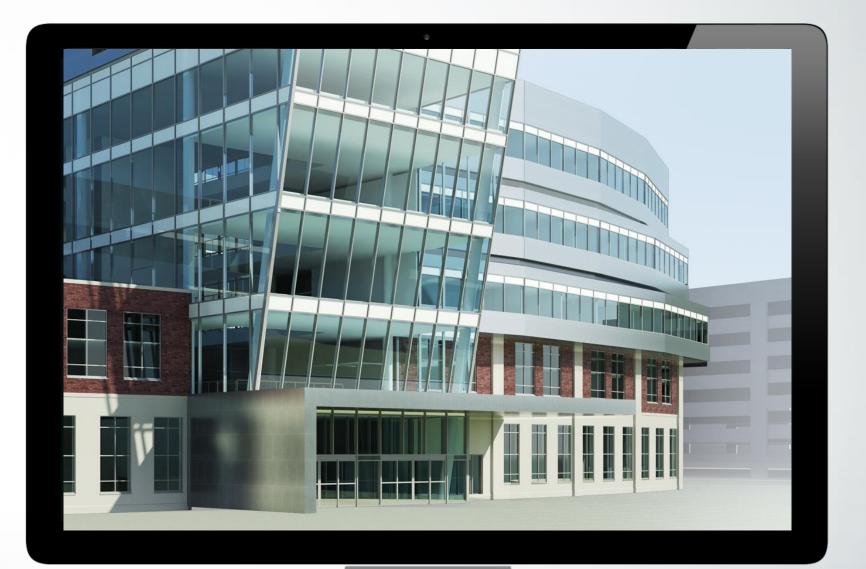










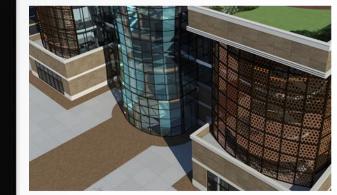


DOCUMENTATION



OPTIMIZATION



















CONNECTION













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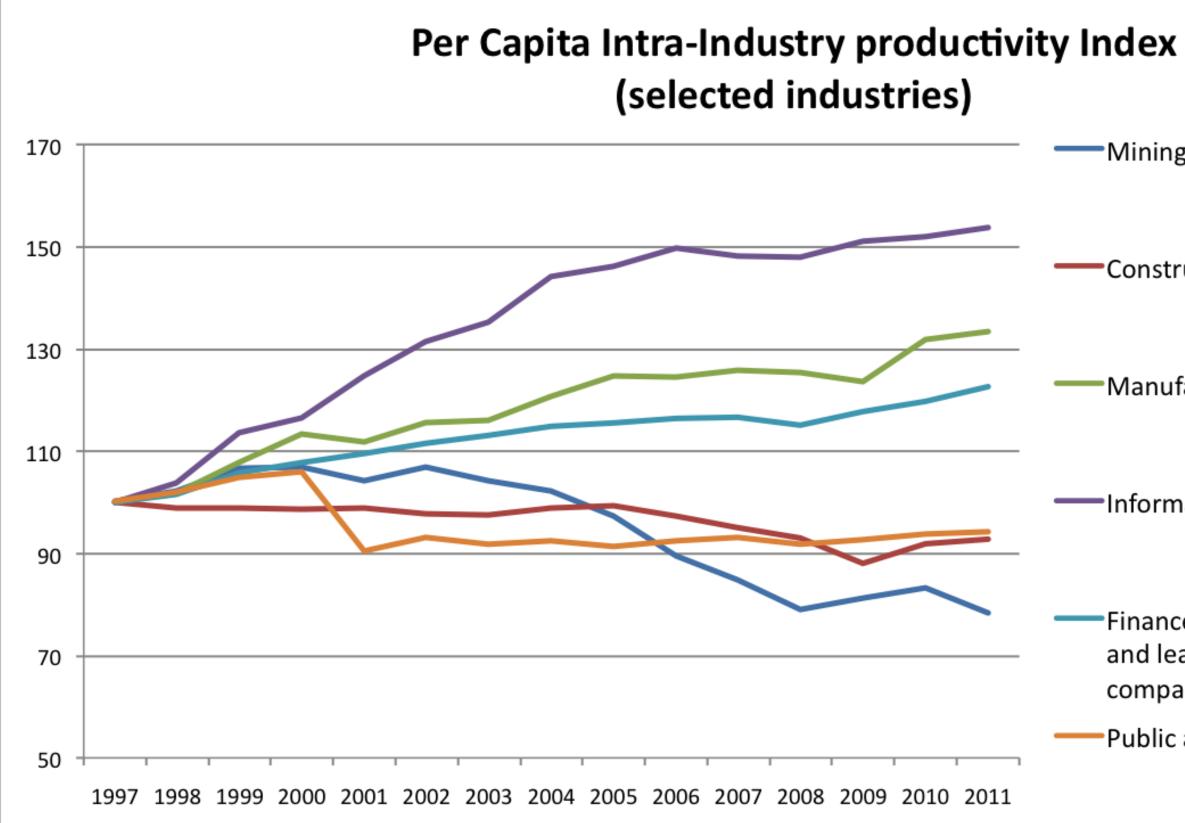
Usesoft BIM Seminar 8/12-2015 Autodesk Construction Overview

Joachim Dekker AEC Territory Sales Team Lead- Nordics & Baltics









Mining and oil and gas extraction [21]

Construction [23]

Manufacturing [31-33]

Information and cultural industries [51]

Finance, insurance, real⁺estate, rental and leasing and management of companies and enterprises [5A] (2)

Public administration [91]

Construction

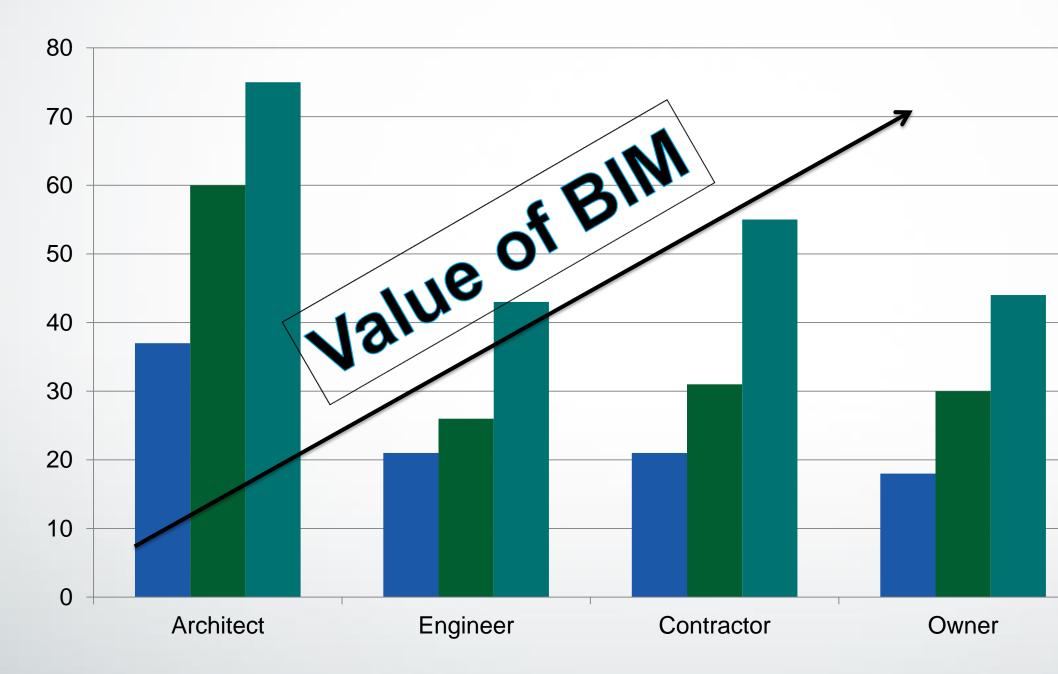
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BIM adoption level by discipline

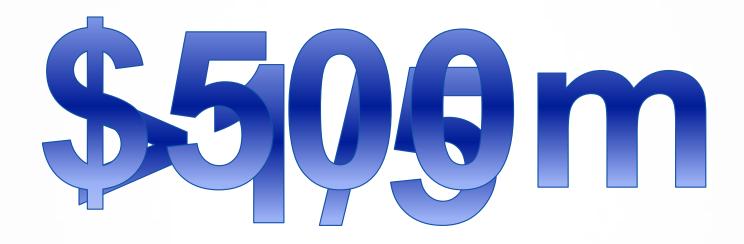
Percentage of professions using BIM on more than 60% of their projects



2009 2011 Projected 2014



Autodesk R&D









Estimating



Design

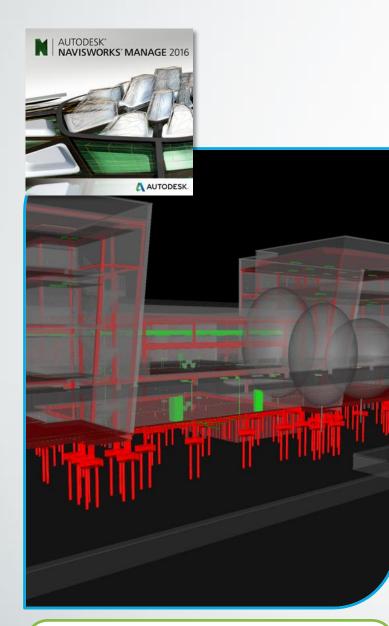
Fabrication

Scheduling





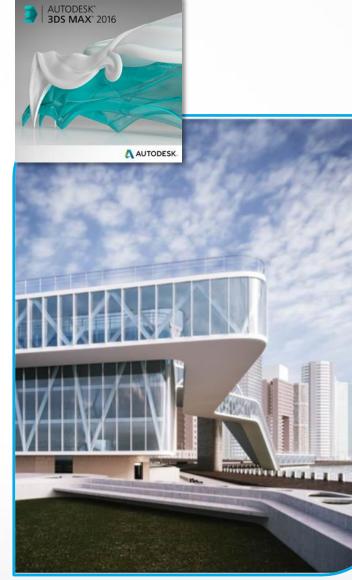
Winning Work with visualisations



Demonstrate understanding



Quick powerful renders in the cloud

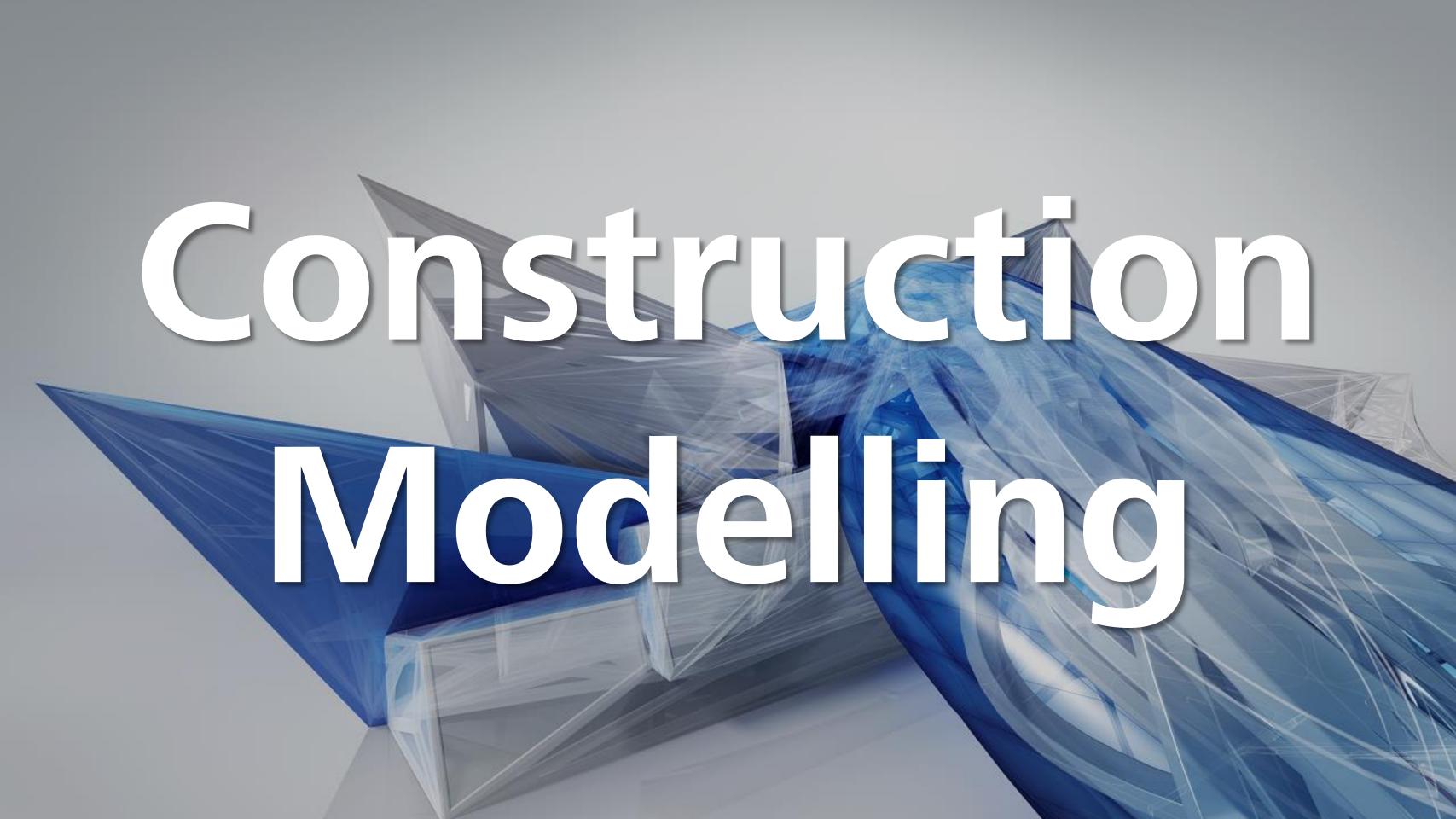


High end visualisations

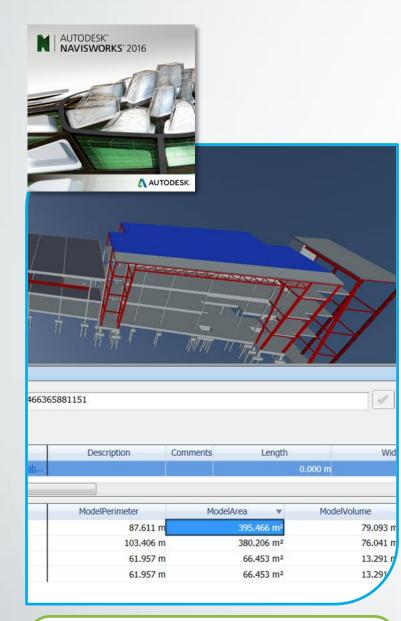




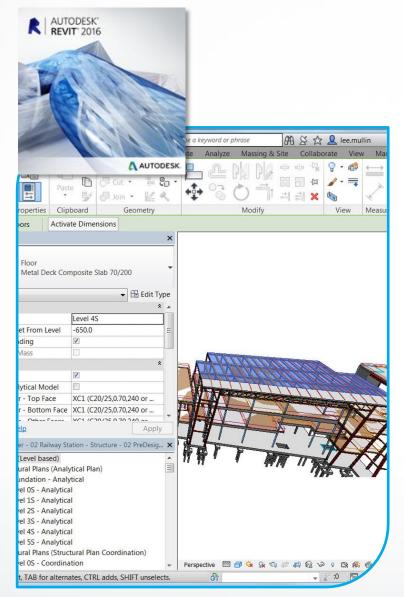




Construction modelling



Identify elements for splitting

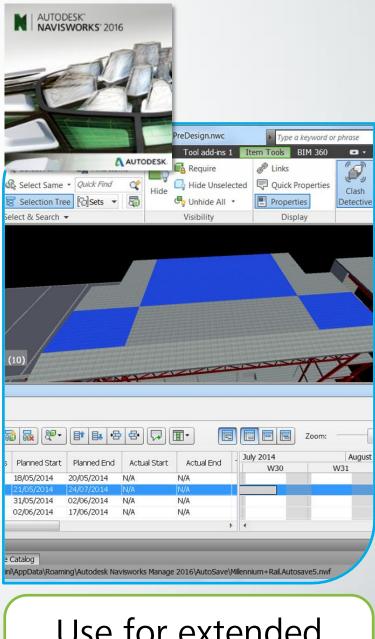


Switchback to element in Revit

Create Construction detailing

REVIT 2016

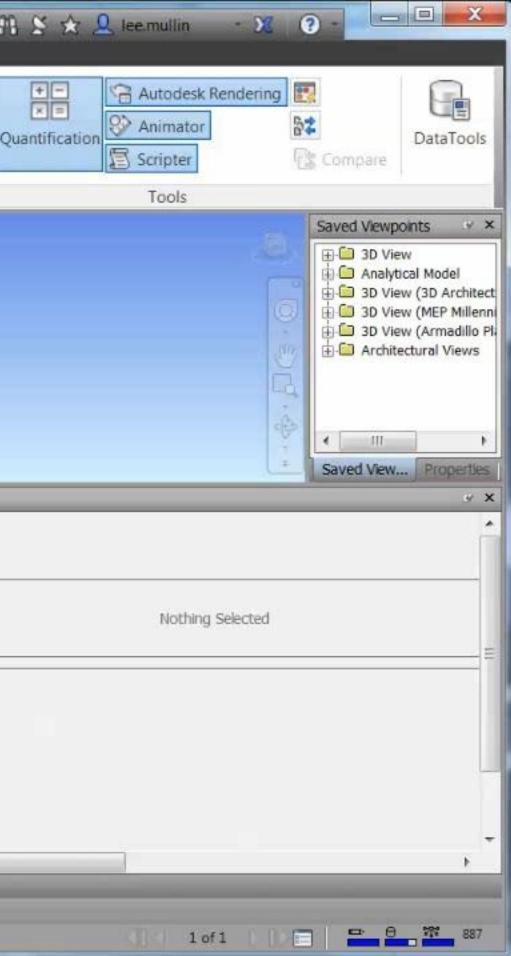
AUTODESK.



Use for extended workflows

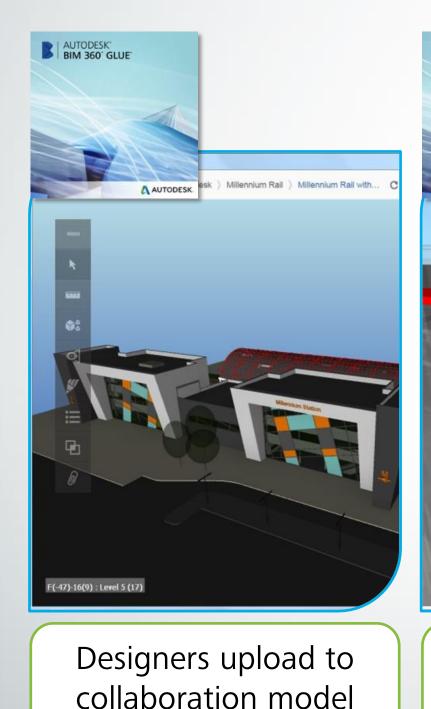


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Multidiscipline coordination

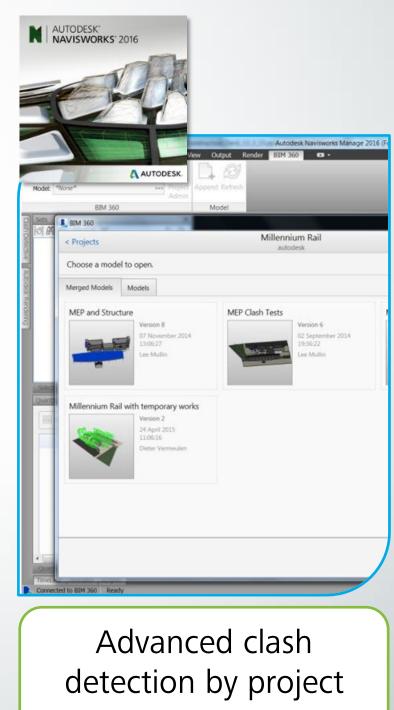


BIM 360' GLUE REVIT' 2016 C AUTODESK. m XML file Floor [215735] vs 2 Objects . . *×= 6 Status: ID: -Magnitude: 967.64 mm Floor [215735 2 Objects A Railway Station - MEP (2) A Railway Station - Structure ▲ Segment ▲ Segment # Ducts (122) # Floors (25) ▲ Round Duct (86) # Floor (25) Taps / Short Radius (7) # Concrete 300mm (15) Round Duct [709750] Floor (215735) Rectangular Duct (36) Mitered Elbows / Taps (10) Rectangular Duct 2.0 信司 Main

Designers find and resolve own clashes

SSA lee.mullin · 🕱 🗇 · CASE Autodesk Point Lavout Extensions Mor AUTODESK. Select clashes to view Red Model **Aagnitude** 63.27 mm Railway Statio 605 887 470.00 mm Railway Statio 140.00 mm Railway Static 760 19.81 mm Railway Static 309 37.03 mm Railway Statio 51.01 mm Railway Stat 603 63.27 mm Railway Stati 123.14 mm Railway Stati 741 758 133.09 mm Railway Statio 470.00 mm Railway Stati 607 63.27 mm Railway Static

> Clash locations opened in design software

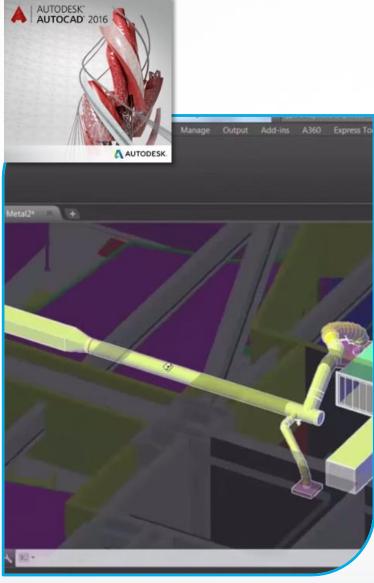


managers

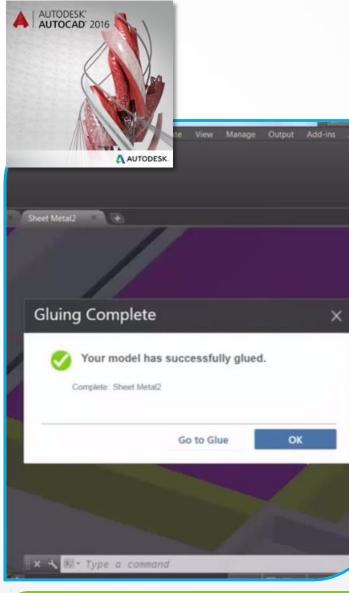


Clash Avoidance – AutoCAD and Cloud





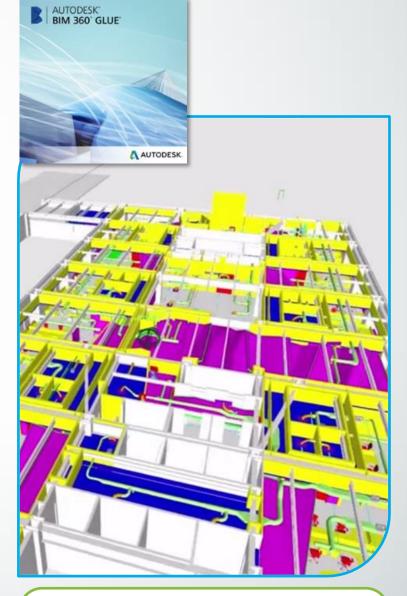
View and fix clash in context



Glue latest model back for collaboration



AUTODESK.



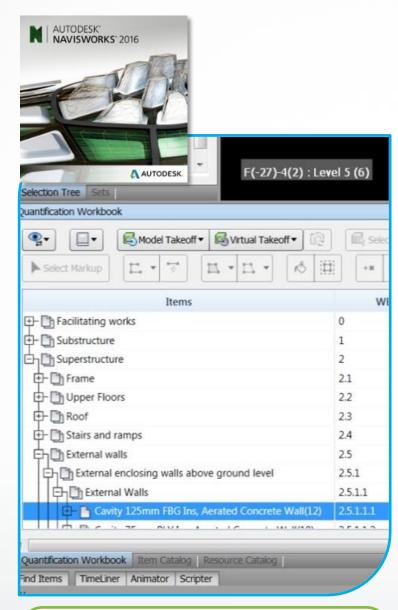
A36



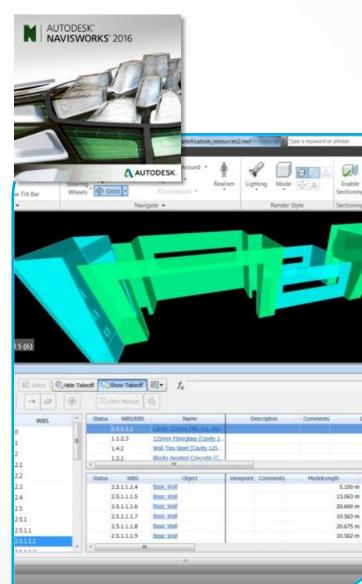
Quantification

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	Glazed	3.15 m ²	Reflective Low Emissivity Glass	
	Glazed	1.64 m ²	Reflective Low Emissivity Glass	-
	Glazed	3.85 m ²	Reflective Low Emissivity Glass	1
	Glazed	2.40 m ²	Reflective Low Emissivity Glass	1
=	Glazed	10.97 m ²	Reflective Low Emissivity Glass]
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i —	Glazed	6.24 m ²	Reflective Low Emissivity Glass	
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	Glazed	0.96 m ²	Reflective Low Emissivity Glass	
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	Glazed	1.82 m ²	Reflective Low Emissivity Glass	1
	Glazed	0.09 m ²	Reflective Low Emissivity Glass	
	Glazed	14.86 m ²	Reflective Low Emissivity Glass	
	Glazed	1.55 m ²	Reflective Low Emissivity Glass	
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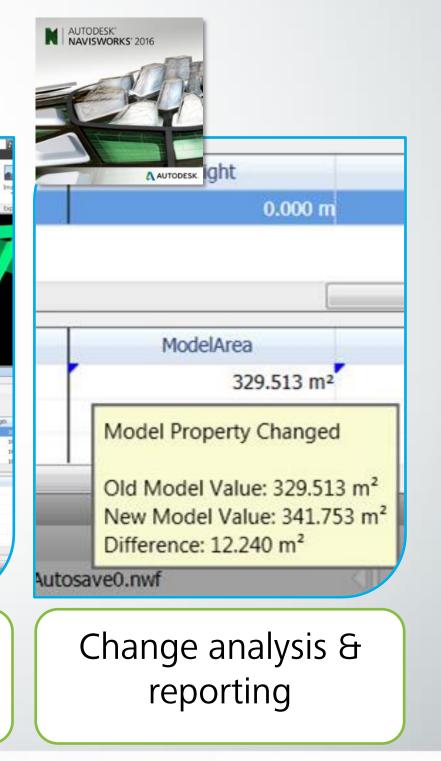
Detailed scheduling from design



Item & resource management



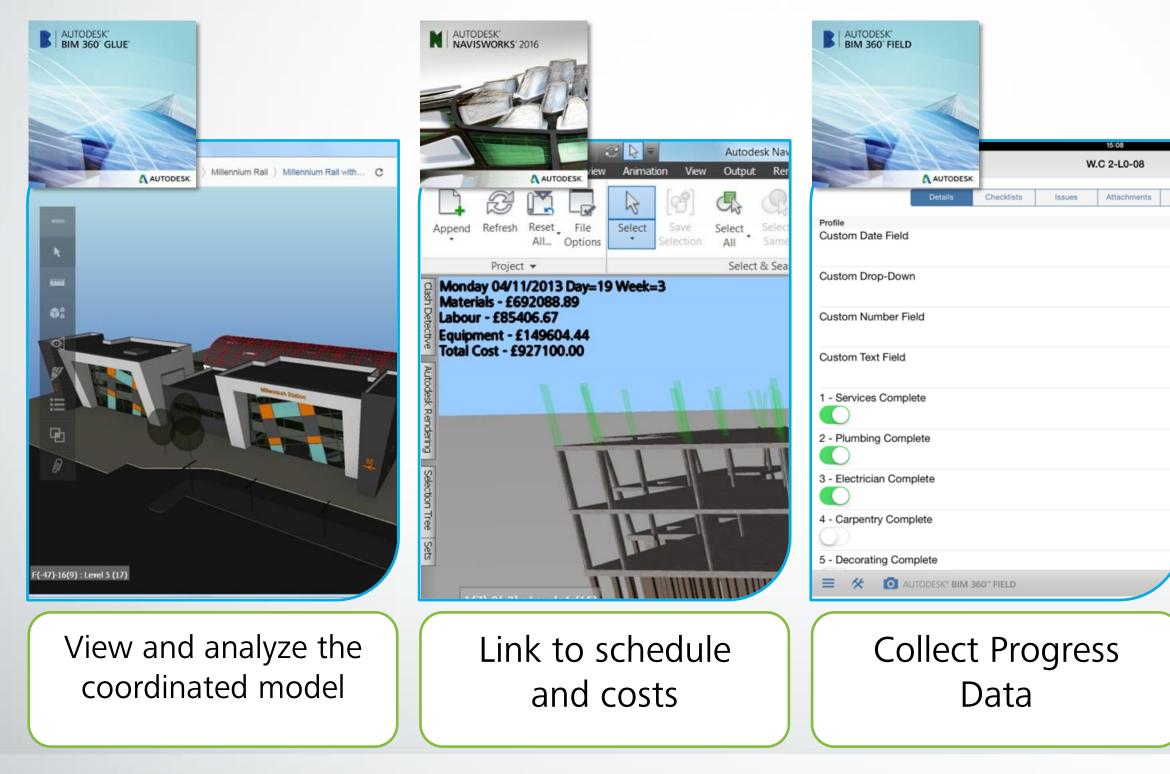
3D Model-based & 2D quantification

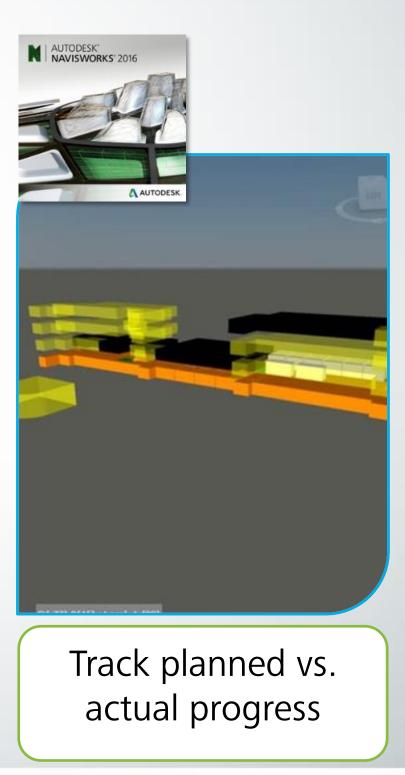






Planning and Logistics







Site planning



Build model of surrounding area



Create zones and add models



Refine detail



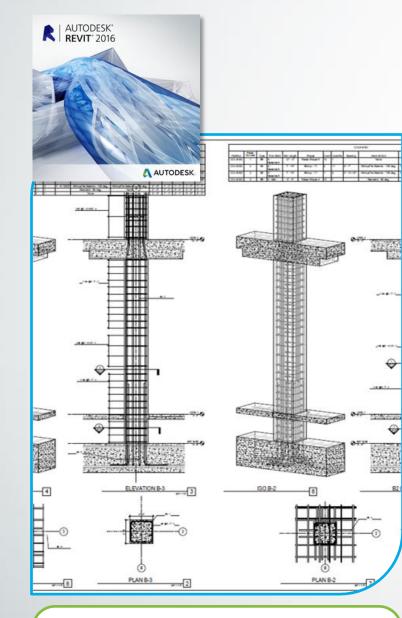
Use in construction simulation



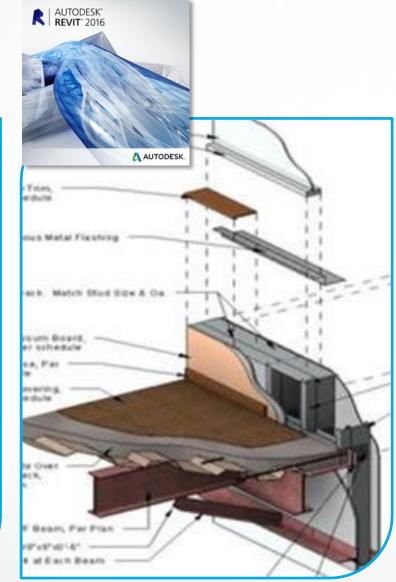
Detalle



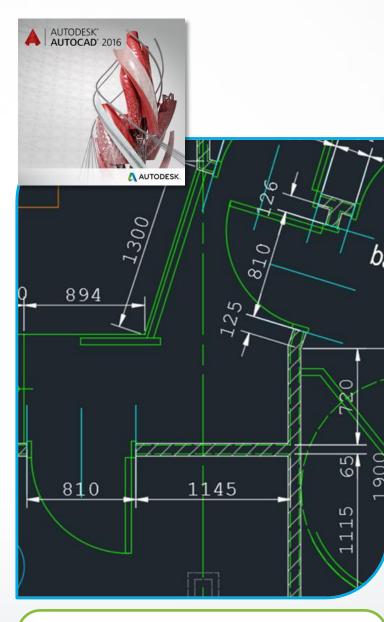
Construction Level Detailed Design



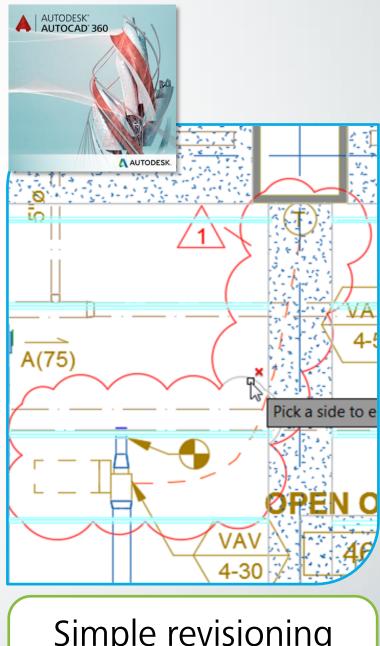
2D drawings & schedules



3D Exploded views and annotations



Advanced 2D drafting tools

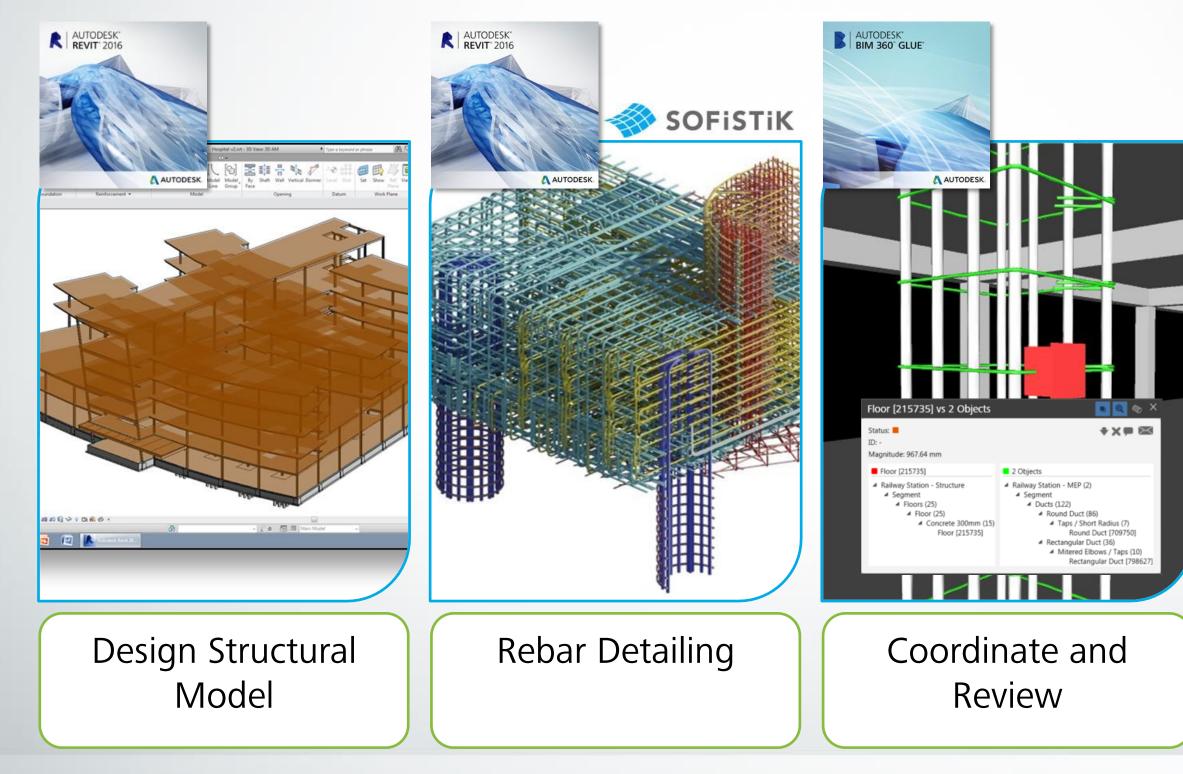


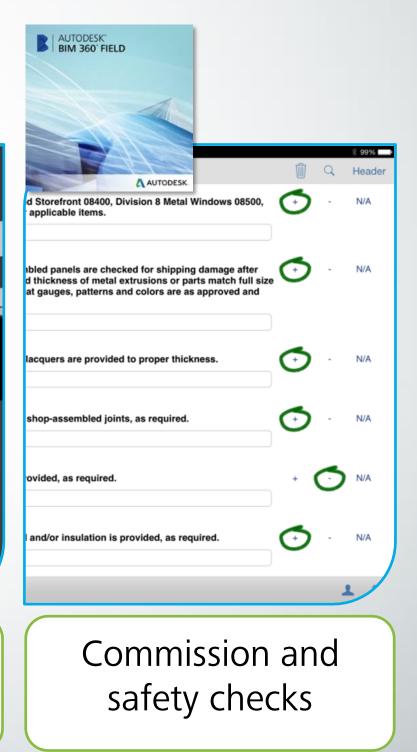
Simple revisioning and mark-up





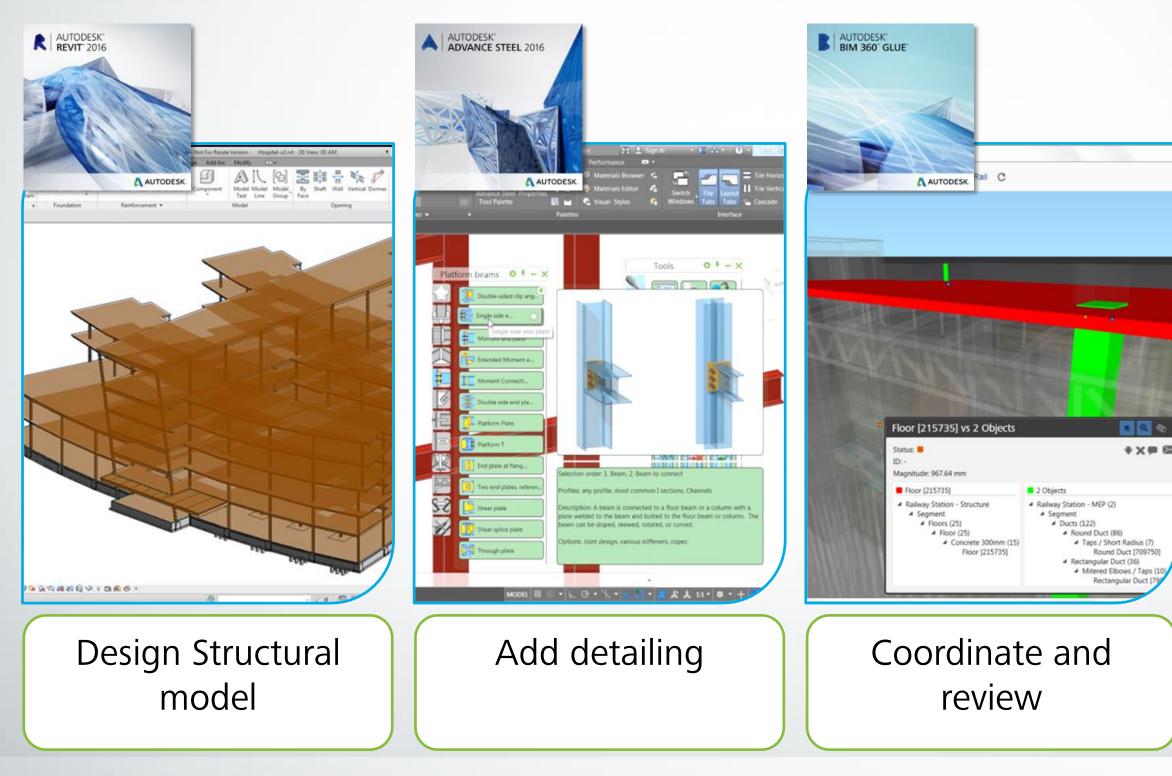
Design to Construction - Rebar



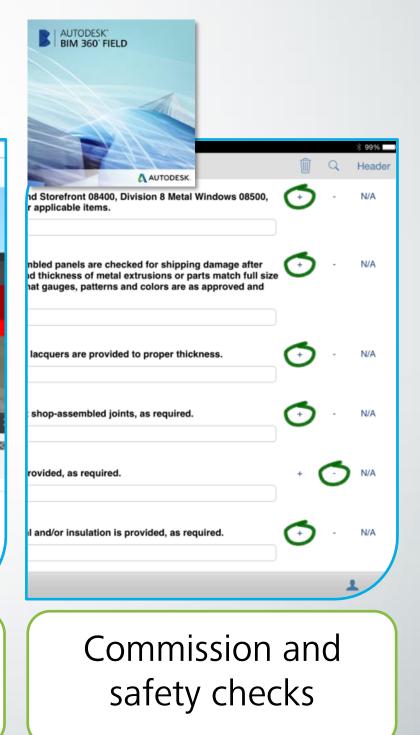




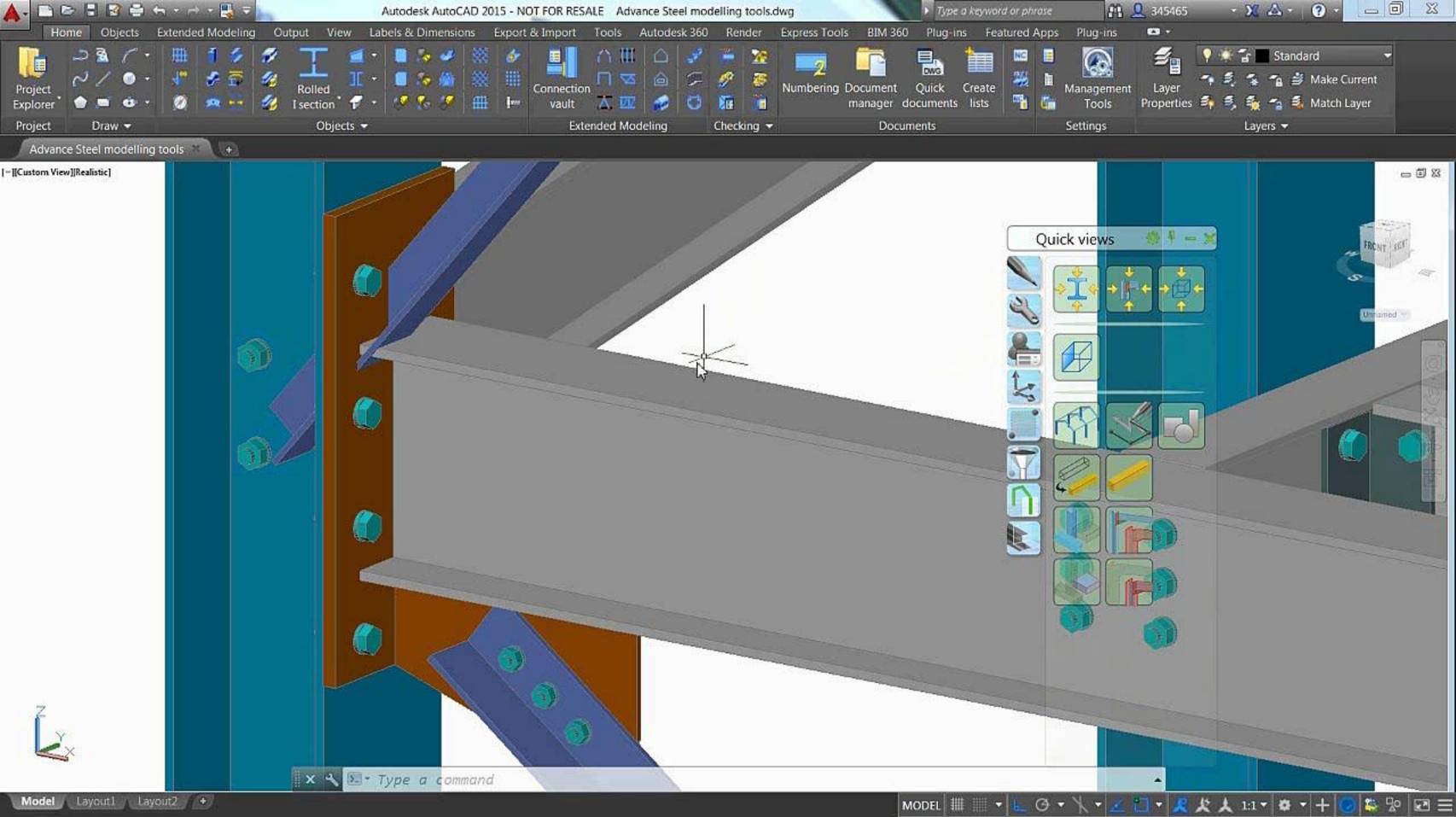
Design to Construction – Steel Fabrication



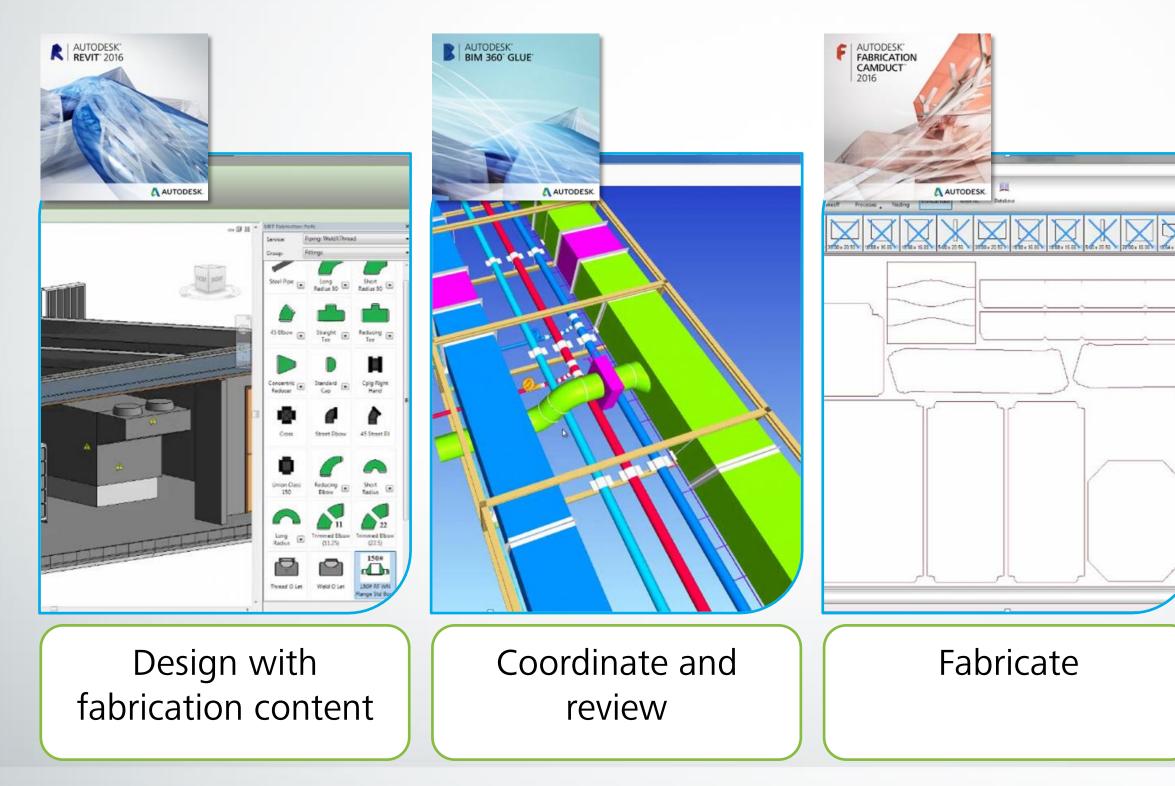








Design to Construction – MEP Fabrication





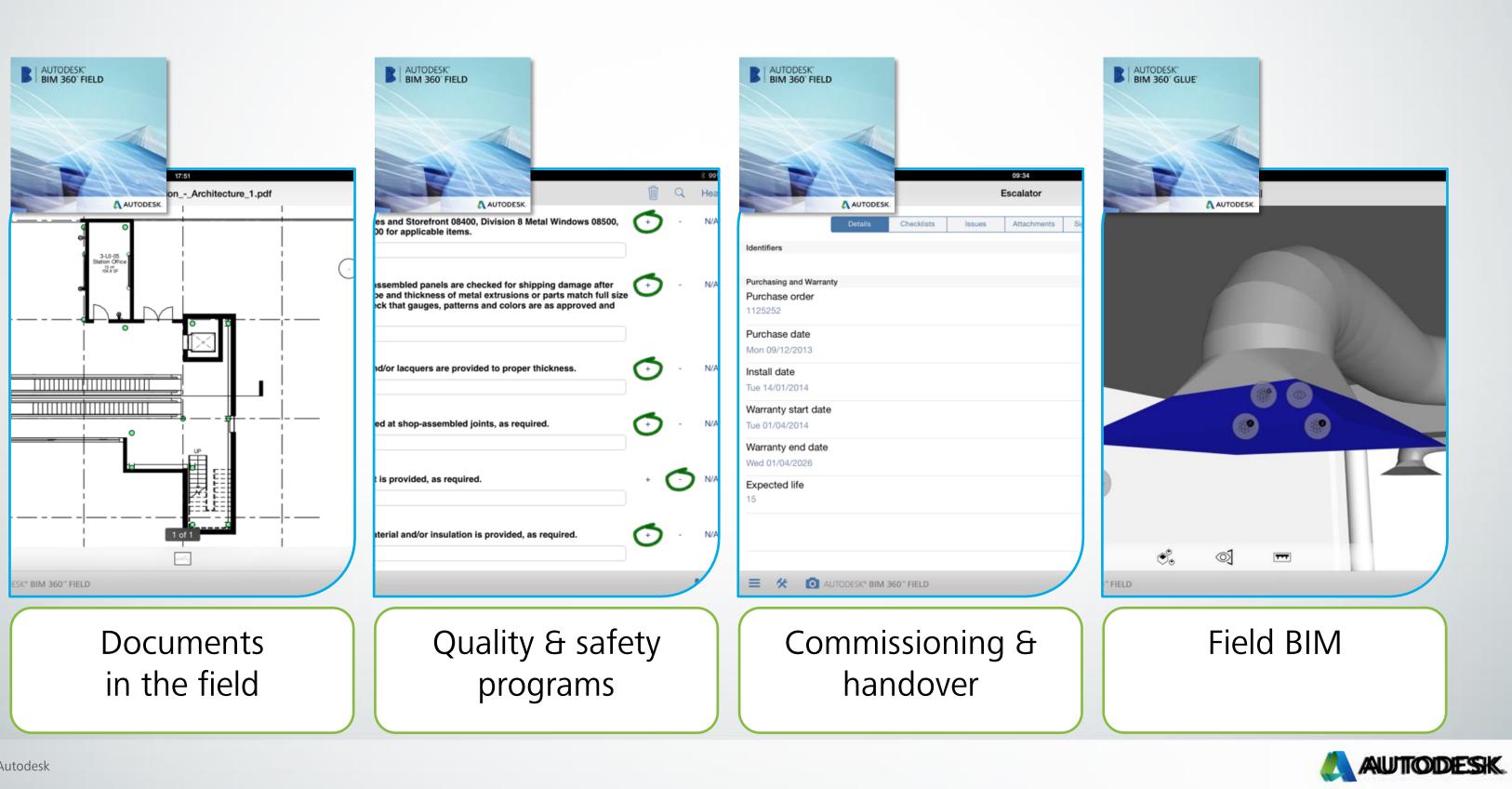


Commission and handover



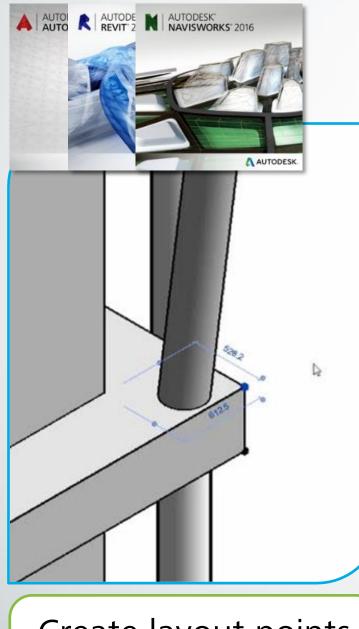


Field management





Construction Layout – Robotic Total Stations



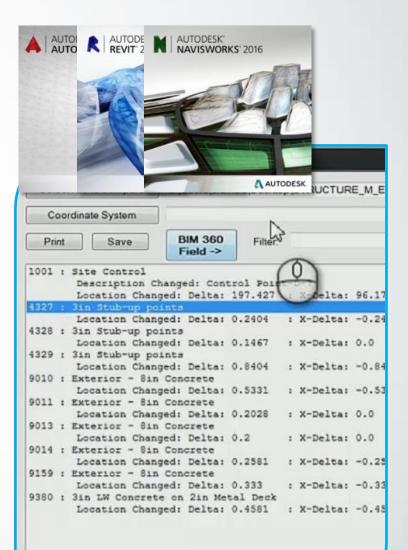
Create layout points

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BIM 360 Field C Create Issues Attachment	

Export to CSV / TXT



Layout points and collect as builts

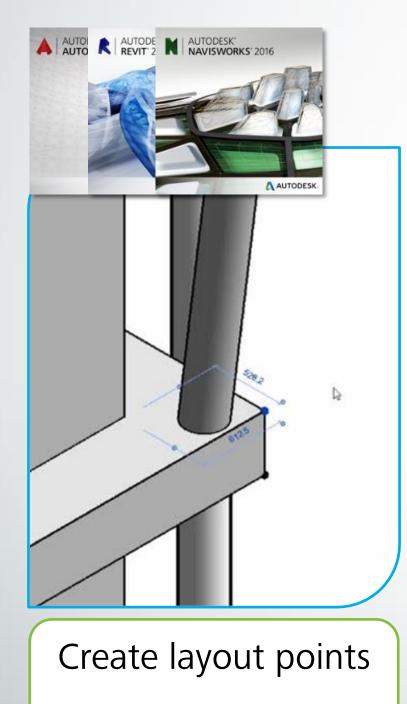


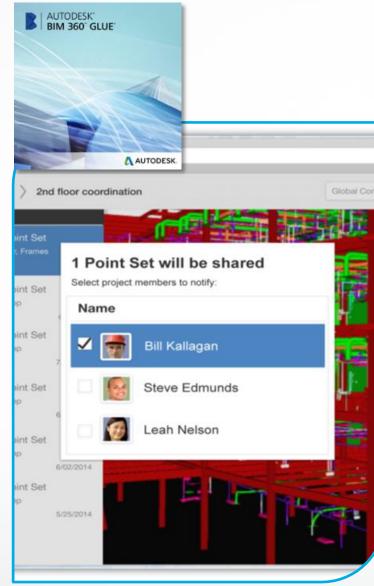
Select a location point above to Zoom to its location in drawing. Location comparison is to .001

Analyse against tolerances



Construction Layout – Model based workflow

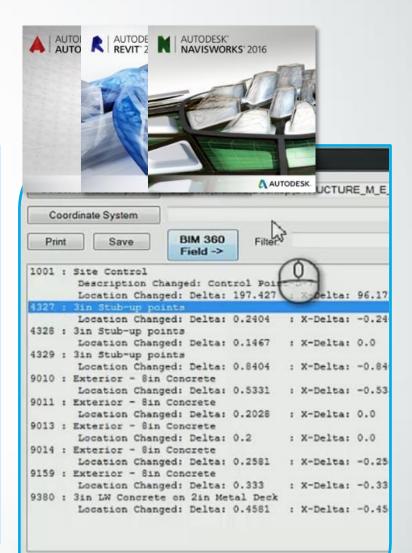




Assign points



Layout points and collect as builts



Select a location point above to Zoom to its location in drawing. Location comparison is to .001

Analyse against tolerances



As built verification

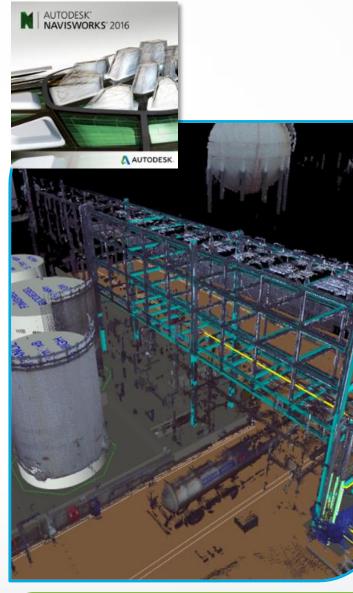


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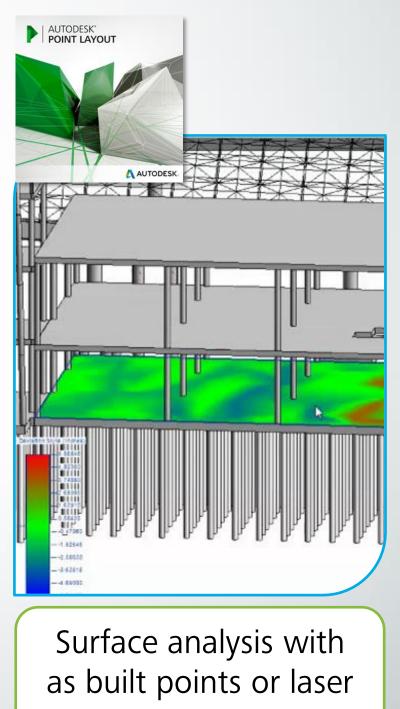
Compare layout to as built points



Visually verify laser scans

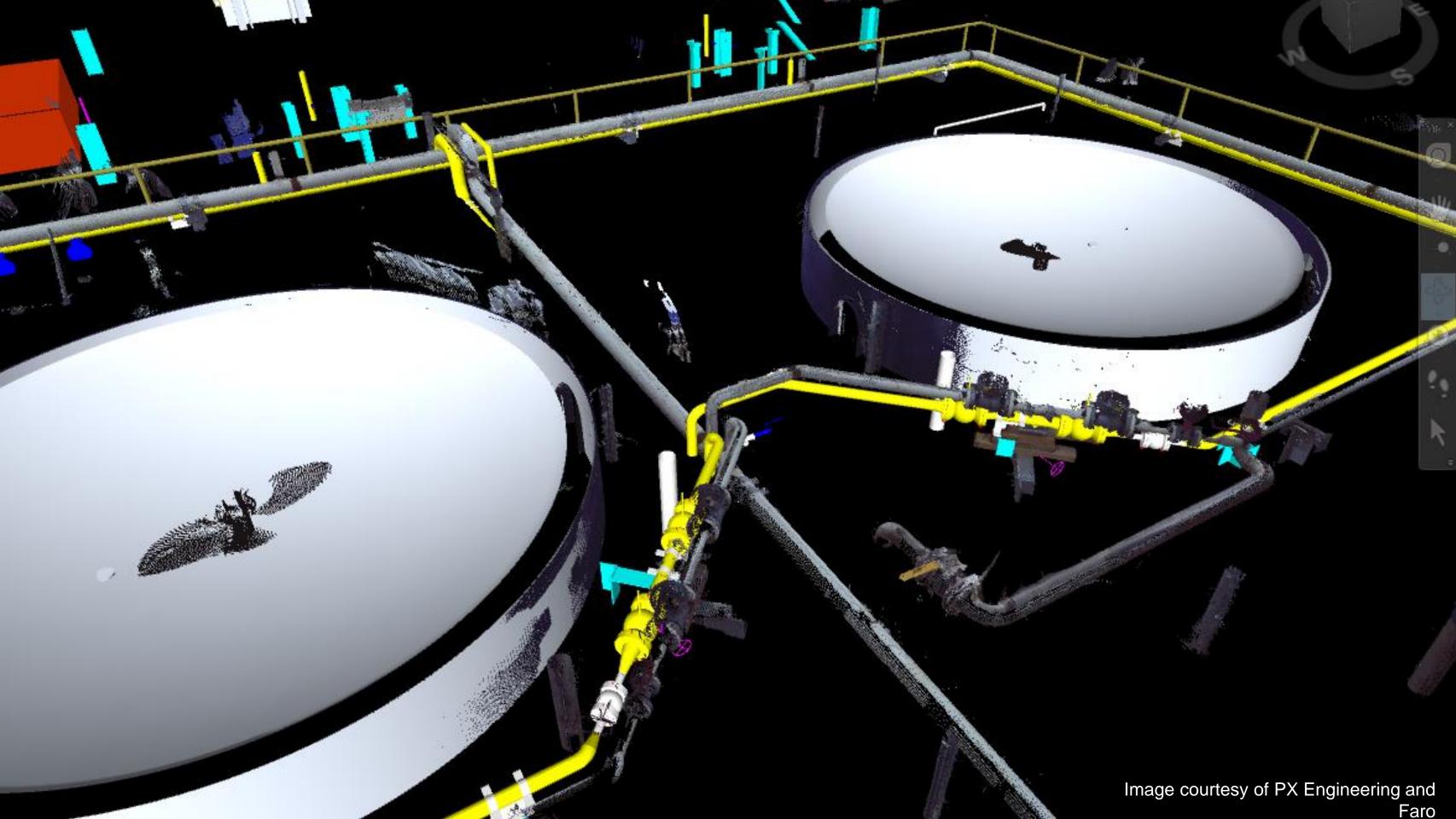


Compare laser scan to model data



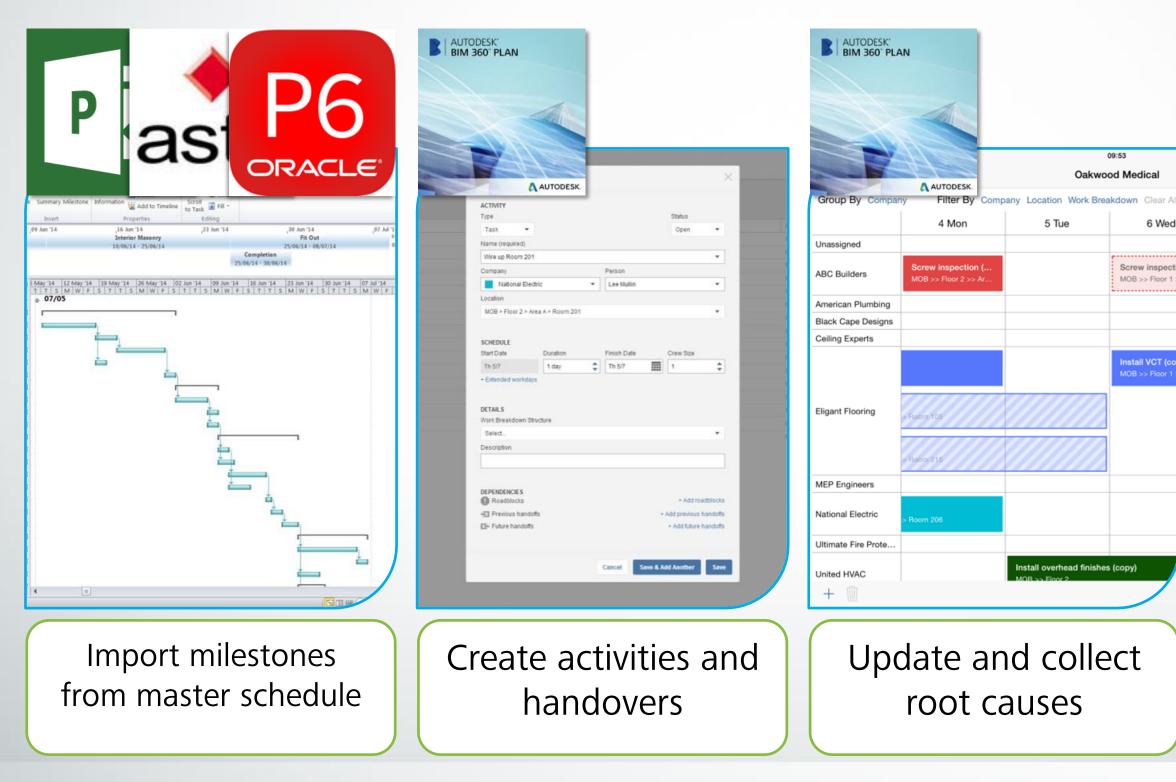
scans



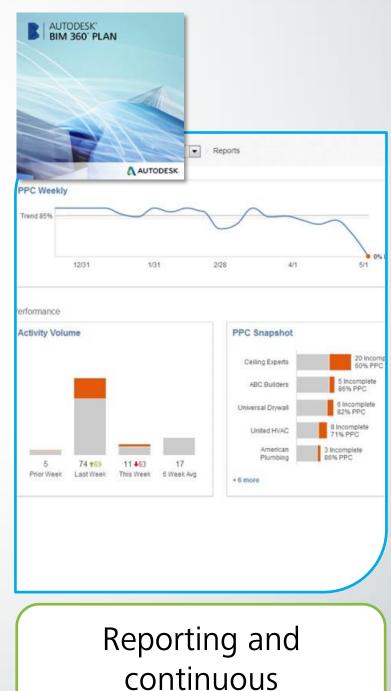




Production Planning – Lean Construction



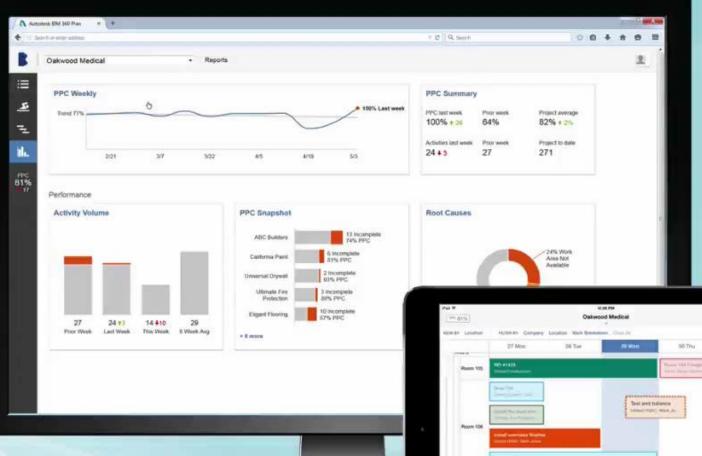




improvement



AUTODESK[®] BIM 360[™] PLAN



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Construction



Construction

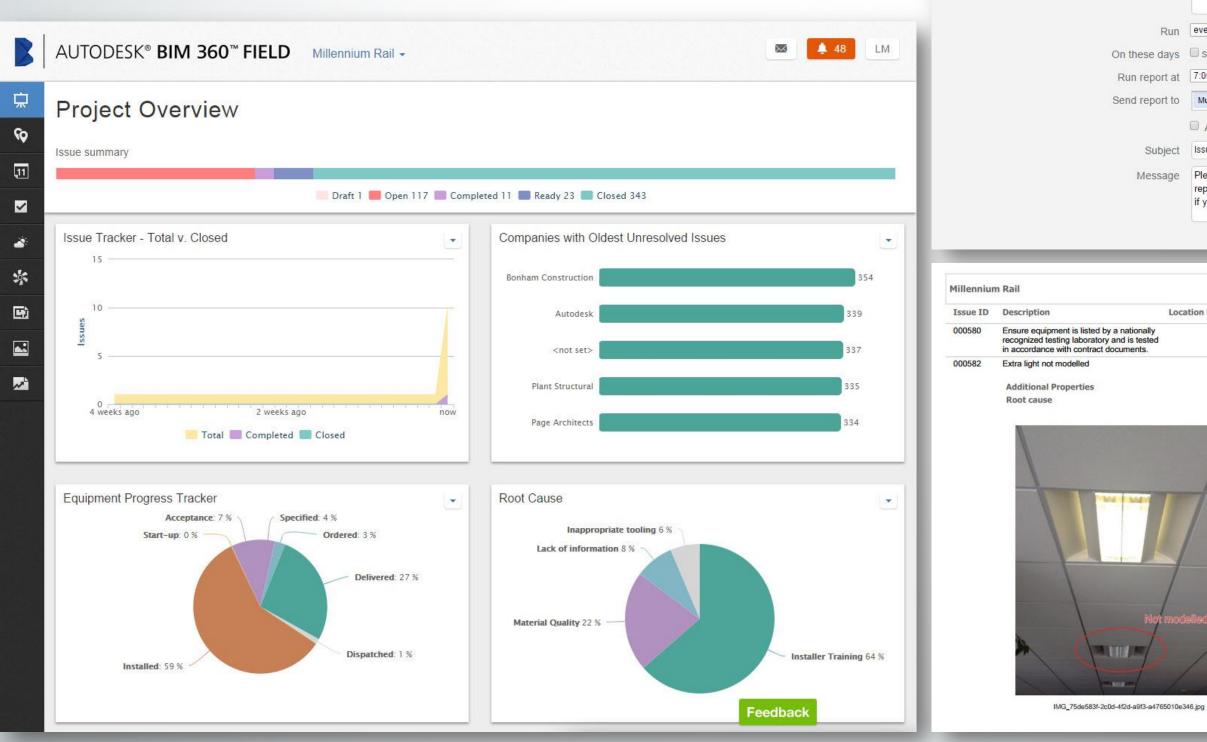


Daily Updates

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Weather Labor General Notes			Weather Labor General Note	25		
Weather Snapshot	Sheffi	field S1 2EL	Labor & Manpower		Edit List Copy from Prev	vious Update
Conditions Partly cloudy until evening.	High Low 18 °C & 10	°C	3 COMPANIES	13 WORKERS	96 Total Hours	
Visibility Humidity	at 4:00pm at 4:00am Wind Precipitation		COMPANY NAME Bonham Construction	WORKER: 7	s TOTAL HOURS	ACTIVITY
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E 🛠 💽 AUTODESK" BIM 360" FIELD		Calendar Daily Update for Thursday, Jul.23 Weather Labor General Notes General Notes Installed Level 3 ducting and Level 8 structural columns Storm 2-3pm stopped structural work	Save Draft Publish BIM 360° FIELD Copy from Previous Update	,		
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E X O AUTODESK® BIM 360° FIELD		Calendar Daily Update for Thursday, Jul.23 Weather Labor General Notes General Notes Installed Level 3 ducting and Level 8 structural columns Storm 2-3pm stopped structural work	Save Draft Publish BIM 360° FIELD Copy from Previous Update			
E X O AUTODESK® BIM 360° FIELD		Calendar Daily Update for Thursday, Jul.23 Weather Labor General Notes General Notes Installed Level 3 ducting and Level 8 structural columns Storm 2-3pm stopped structural work	▲ Save Draft Publish III BIM 360° FIELD Copy from Previous Update			
E X O AUTODESK BIM 360" FIELD		Calendar Daily Update for Thursday, Jul.23 Weather Labor General Notes General Notes Installed Level 3 ducting and Level 8 structural columns Storm 2-3pm stopped structural work	▲ Save Draft Publish III BIM 360° FIELD Copy from Previous Update			



Reporting



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Issue List	
every 2 weeks	
Sun 🗹 Mon 🗍 Tue 🗍 Wed 🗍 Thu 🗍 Fri 🗍	Sat
Sun 🗹 Mon 🗍 Tue 🗍 Wed 🗍 Thu 🗍 Fri 🗍	Sat
	Sat T
7:00am (GMT+00:00) London	•

Message Please take appropriate action based on the attached report. Contact me with any questions you might have or if you have issues opening the attached file.

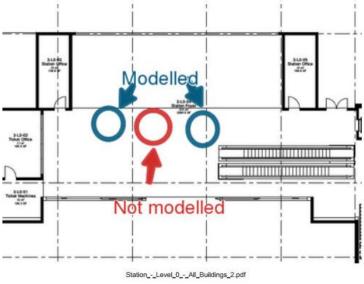
> **Issue List** Date Location Detail Location Status Company Туре Due Date Created <Top level> Open Jones MEP QAVQC 12 May 2015 13 May 2015 <Top level> 13 May 2015 14 May 2015 Open Jones MEP Issue





Schedule name

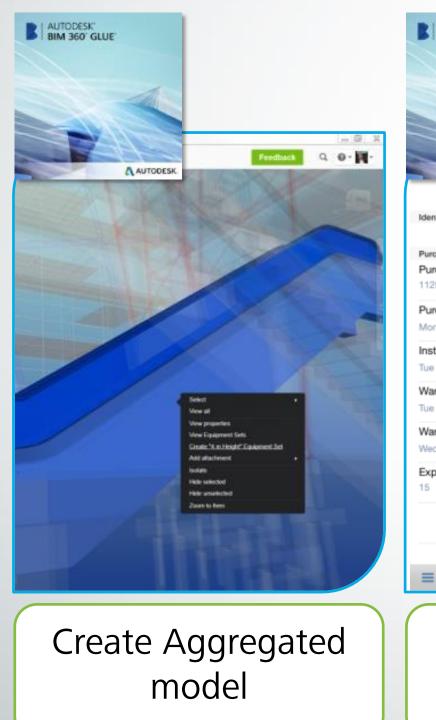
Description

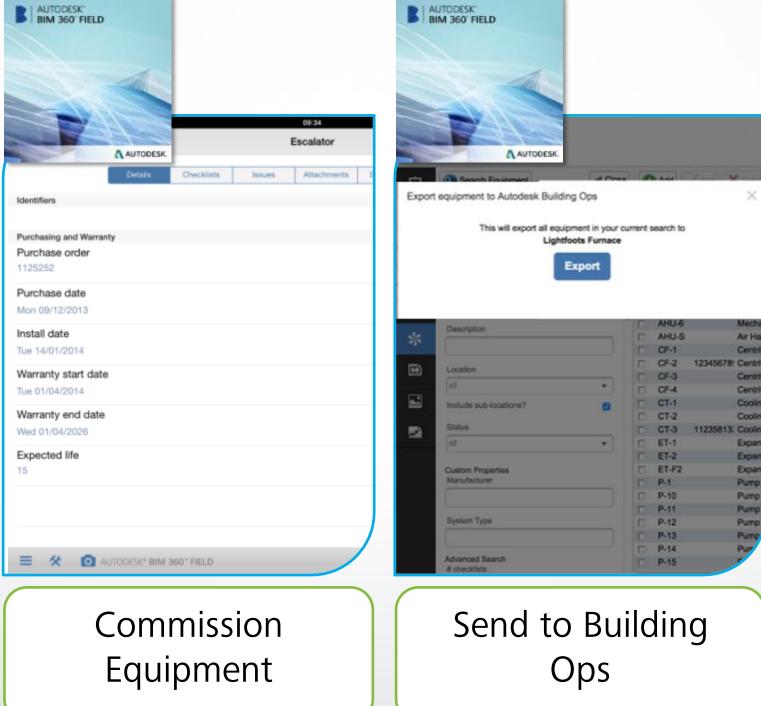






Construction to Operations - BIM

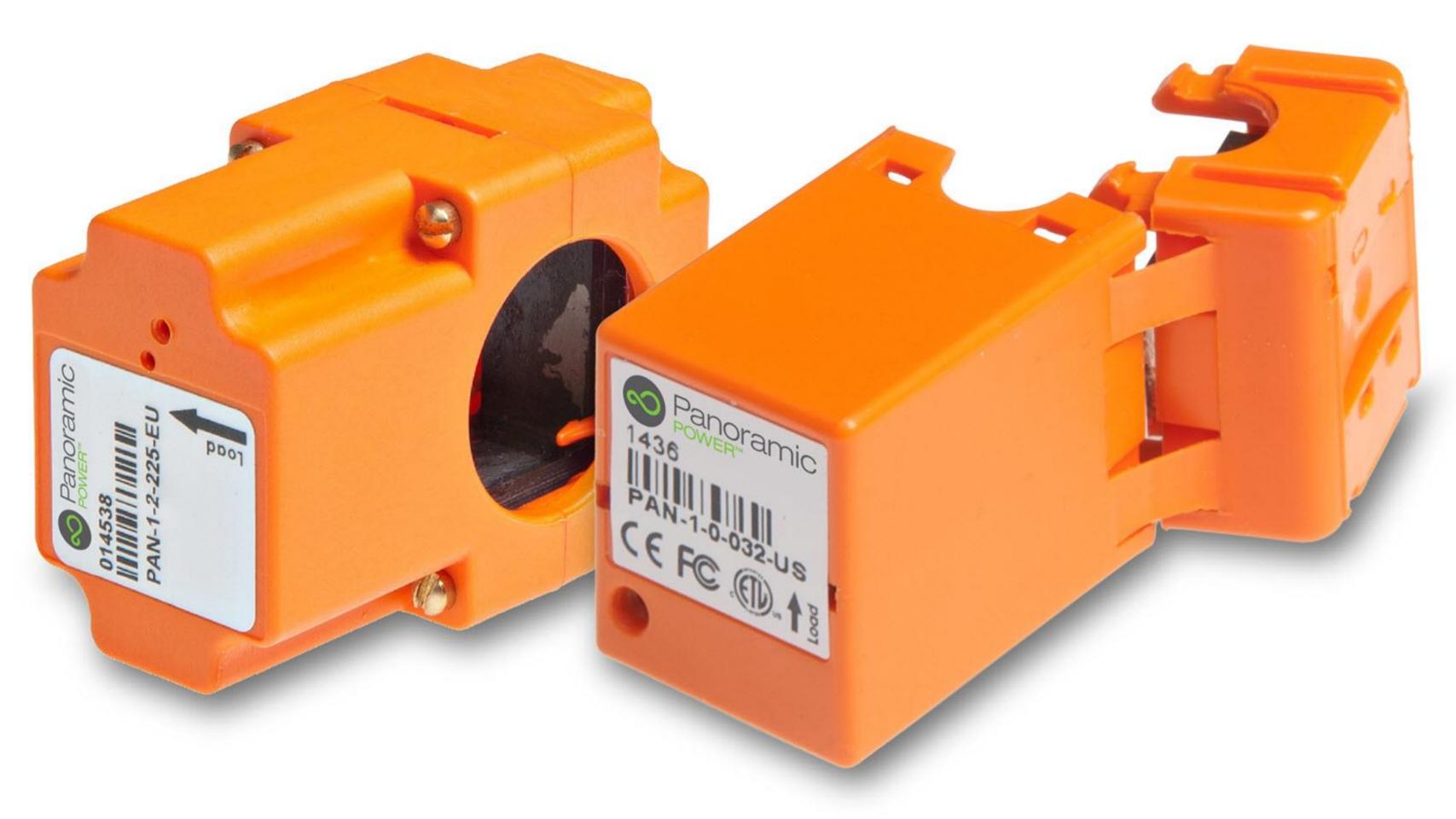






Run maintenance and access data





Construction

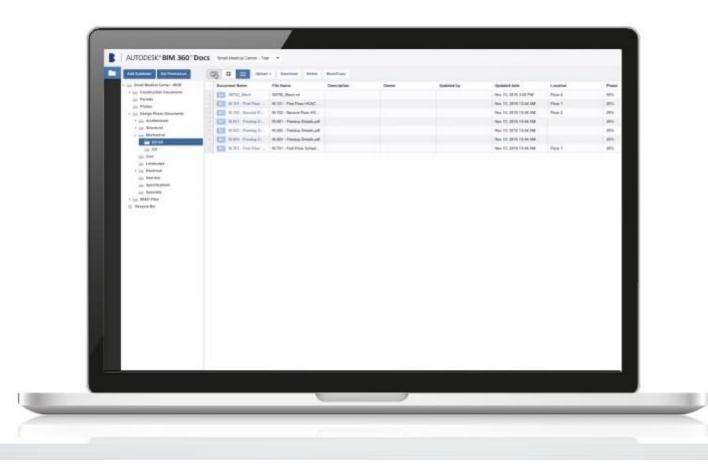
Nanagement



BIM 360 Docs

bim360.com/docs

AUTODESK" BIM 360" DOCS



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	Business Development	Construction Modelling	Coordination	Quantification	Planning and Logistics	Detailed Design	Fabrication	Field Execution	Layout & Verification	Production Planning	Construction Administration	Commissioning & Handover
							***			200		
A360					Х			Х		Х	Х	
3DS Max		Х	Х	Х	X	Х	Х	X	Х	X	X	Х
VRED		X	Х	Х	X	Х	X	Х	X	Х	Х	X
AutoCAD	Х							Х		Х	X	Х
Revit	X		Х		Х			Х		Х	Х	X
Advanced Steel	Х	Х	X	Х	X			X	Х	X	X	Х
MEP Fabrication	X	X	X	X	Х			Х	X	Х	Х	X
Civil 3D	Х	Х	Х		X	Х	Х	Х		X	X	Х
Inventor	X	X	Х	Х				Х	Х	Х	Х	X
Navisworks										X	X	Х
BIM 360 Glue										Х	Х	X
BIM 360 Field	Х	Х	Х	Х		Х	Х			Х		
Point Layout	X	X	X	X	Х	Х	X			X	Х	Х
BIM 360 Layout	Х	Х	Х	Х	X	Х	Х			Х	X	X
Recap		Х	Х	Х	Х	X	X	Х		X	Х	Х
Infraworks		Х	Х	Х		Х	Х	X	Х	Х	X	X
BIM 360 Plan	Х	Х	Х	Х	Х	Х	Х	Х	Х			Х
Building Ops	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	Х	
Vault												
Buzzsaw												

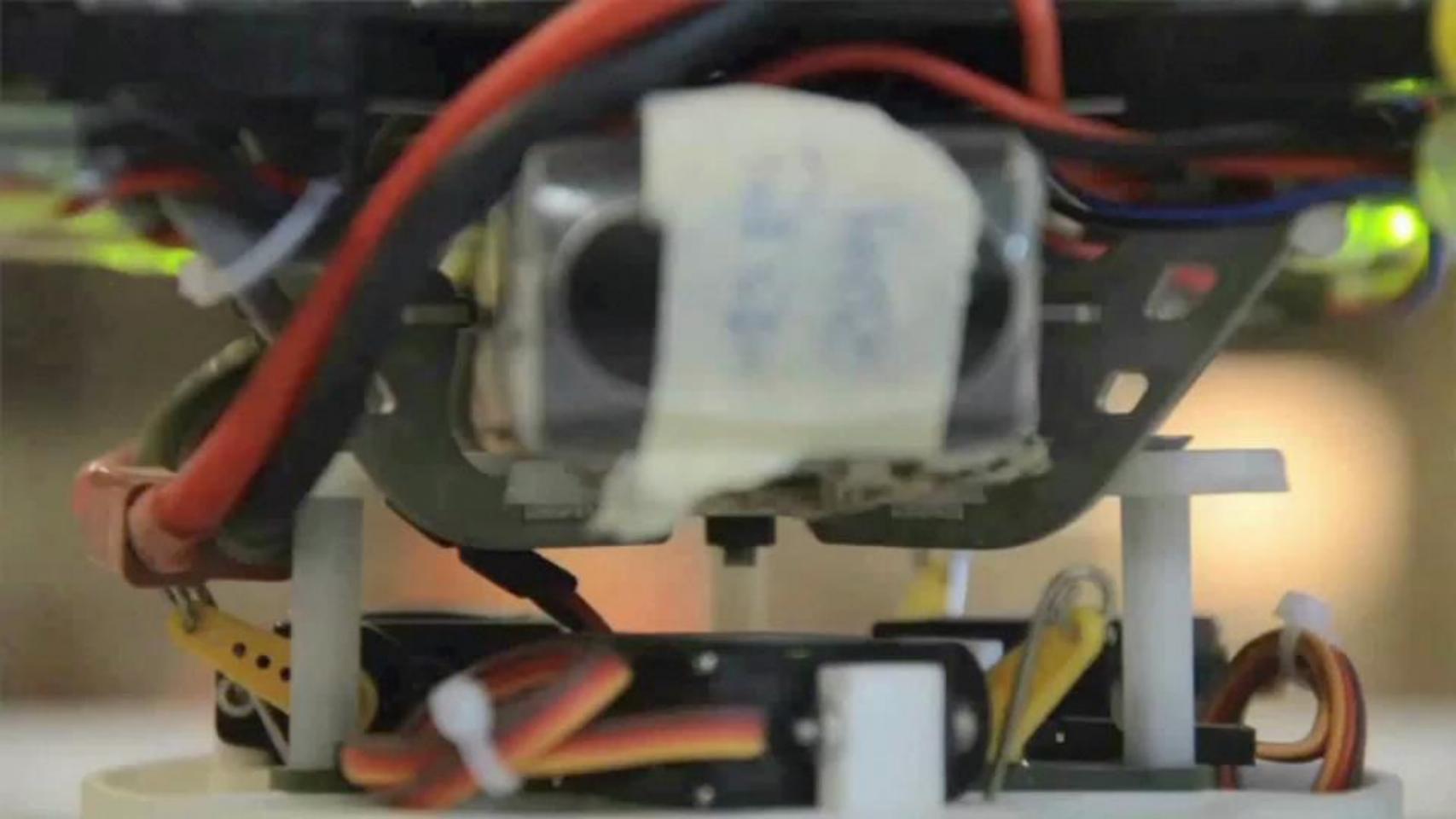


Tomorrow?

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