Class PF5291
1D - 4D Factory planning with Factory Design Suite

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Class summary

Class is setup to cover a complete workflow based on Autodesk technology, starting from process planning over 2D-3D layout, reality capture to 4D timeline and Virtual factory experience.

Key learning objectives

At the end of this class, you will be able to:

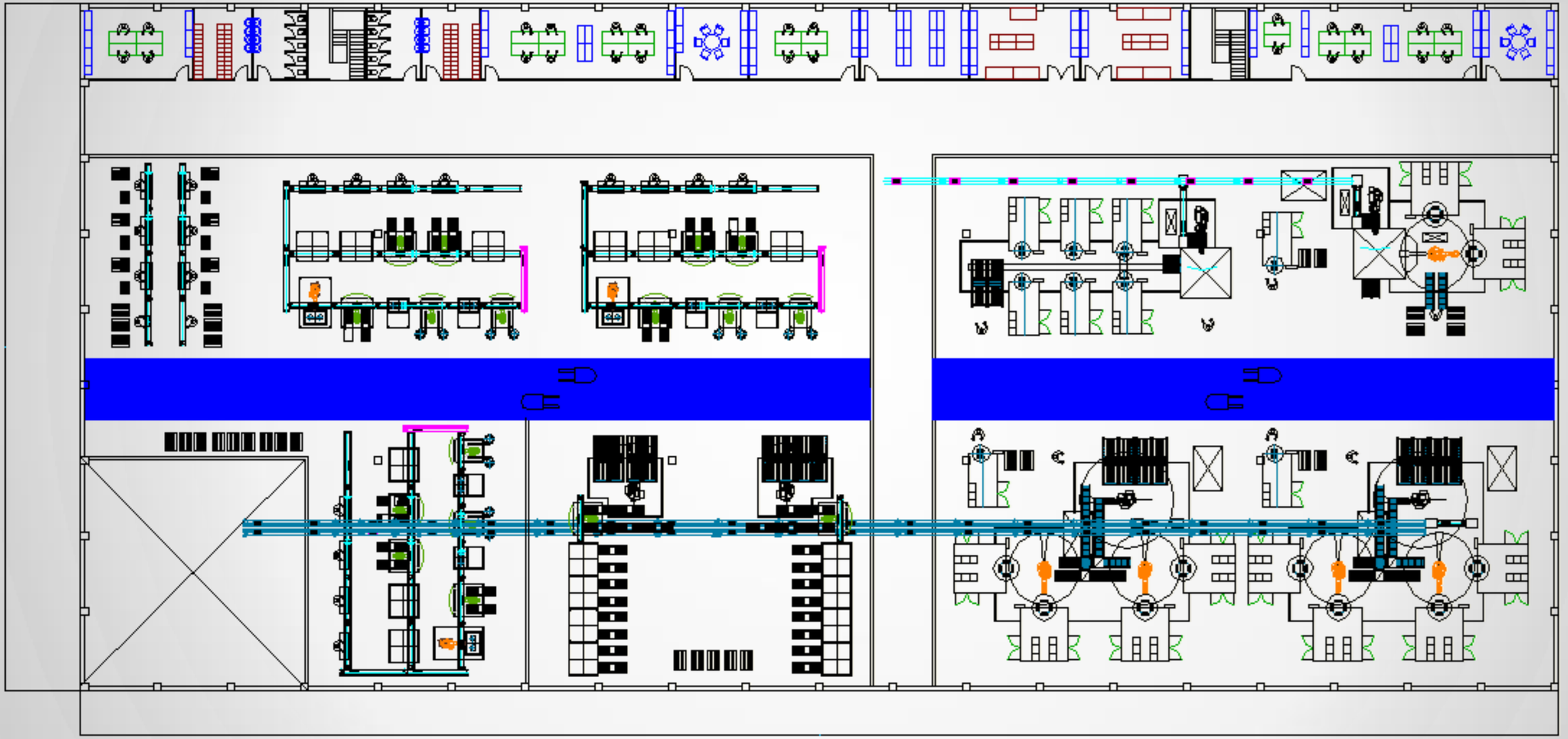
- Setup Integrated workflow for factory layouts
- Learn about importance of process planning as a starting point for factory layout
- Integration of “as build” situation in a factory layout workflow
- Factory layout communication between all stakeholders

Introduction

Handout dataset: http://a360.co/14PSluM

The Building – is the ‘container’

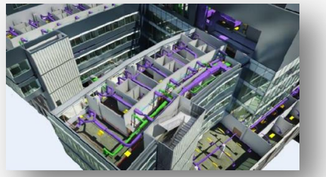
Today’s design process



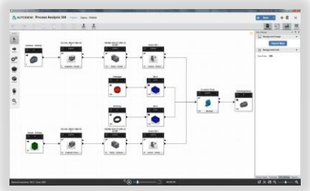
Most production system or machine-line layout is done in AutoCAD.

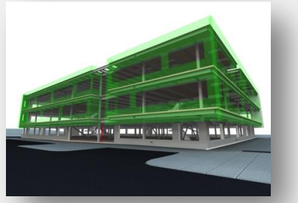
Autodesk digital factory solutions

Installation & Commissioning



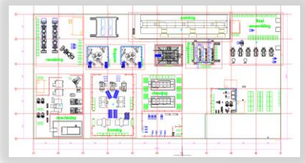
Process Simulation

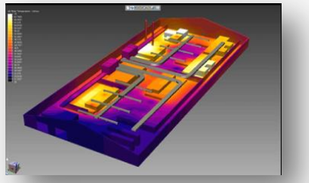




BIM – Building Information Modeling

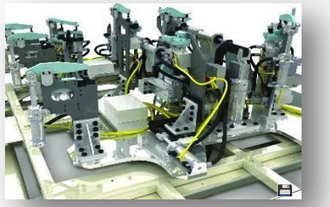
Factory layout





Ventilation / Emission / Energy efficiency CFD simulation

Work cell design



Tool & fixture design

Clash & clearance analysis

Multi-CAD / Point cloud review

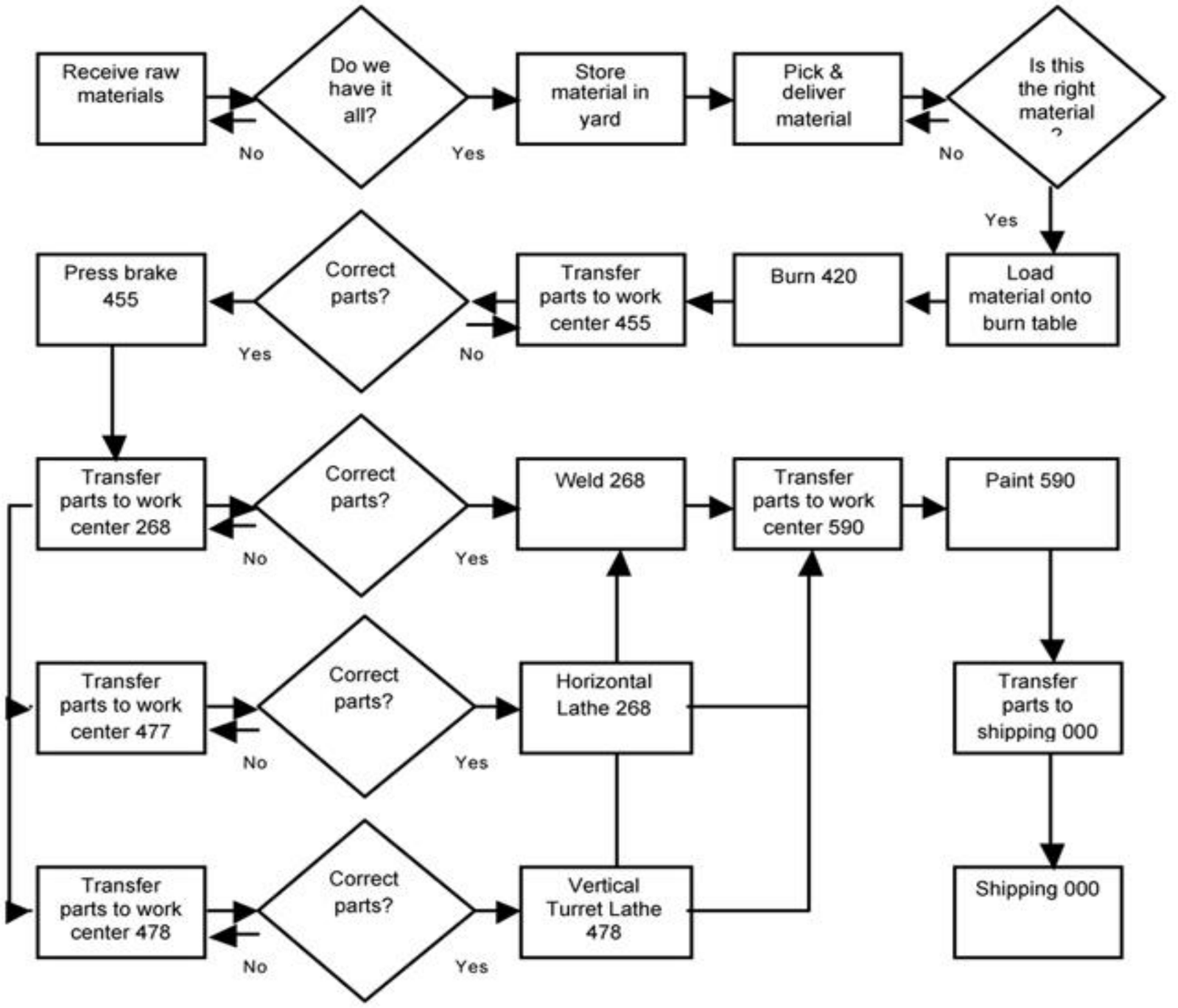
1D 4D

VIMEK

VIMEK

1D

	A	B	C	D	E	F	G	H	I	J	K
27											
28				Start	J1	J6	J2	J4	J3	J5	End
29			Sequence	1	2	7	3	5	4	6	8
30			Release Time	0	0	50	0	0	0	0	0
31											
32			Proc. Time 1	1	30	6	23	23	10	27	1
33			Setup Time 1	0	6	1	2	5	3	9	0
34			Start 1	0	7	50	58	86	112	131	158
35			End 1	1	37	56	81	109	122	158	159
36											
37			Proc. Time 2	1	19	14	26	3	16	19	1
38			Setup Time 2	0	2	9	6	2	5	9	0
39			Start 2	1	37	65	85	113	122	158	177
40			End 2	2	56	79	111	116	138	177	178
41											
42			Proc. Time 3	1	28	16	27	1	1	24	1
43			Setup Time 3	0	7	7	0	8	4	7	0
44			Start 3	2	56	91	111	146	151	177	201
45			End 3	3	84	107	138	147	152	201	202
46											
47			Early	0	0	0	0	0	0	0	0
48			Late	0	0	0	0	0	2	0	0
49											
50			Duration Cost	3	84	107	138	147	152	201	202
51			Early Cost	0	0	0	0	0	0	0	0
52			Late Cost	0	0	0	0	0	200	0	0
53											



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February 2008
March 2008
Wk8
Wk9
Wk10
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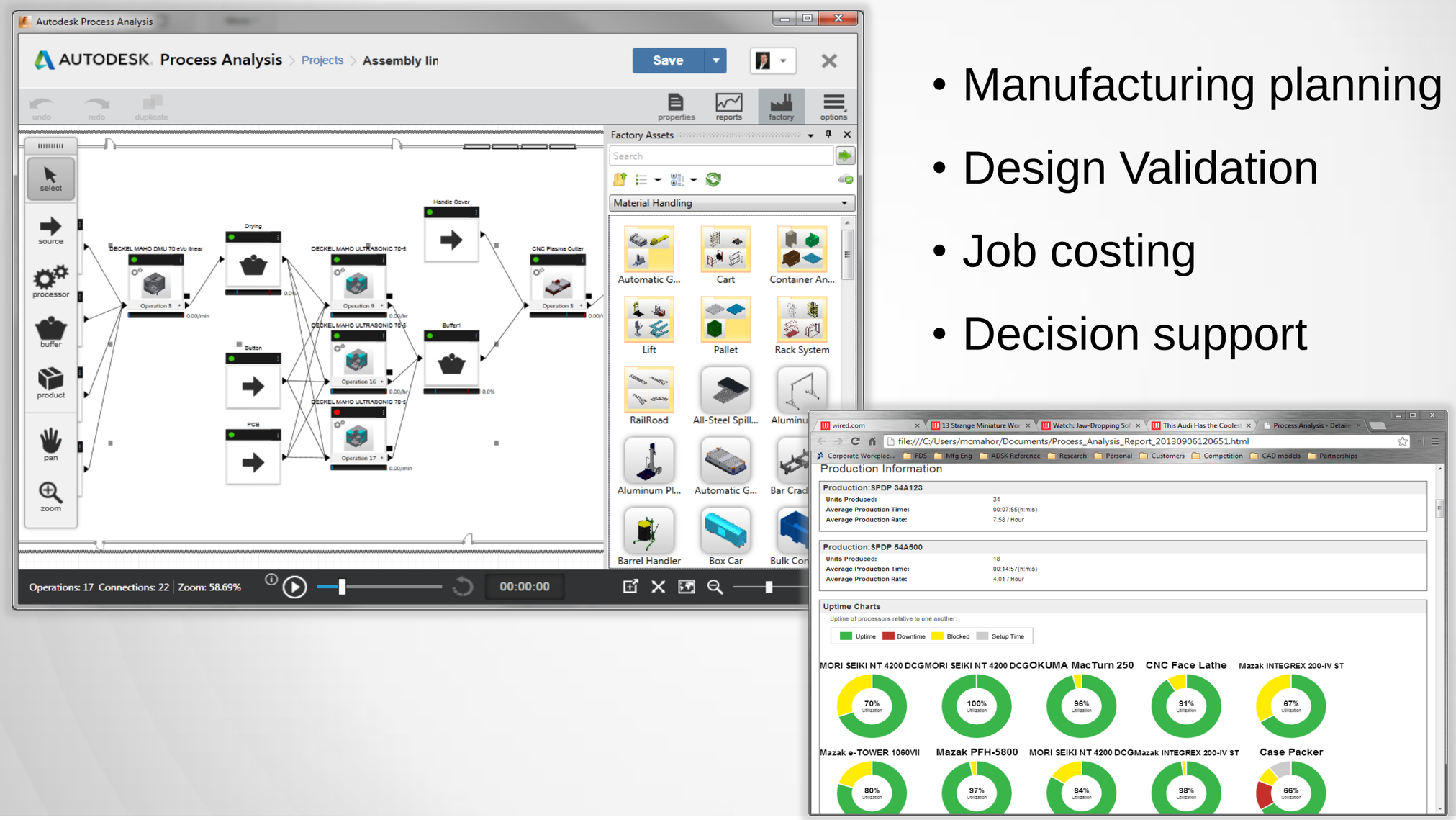
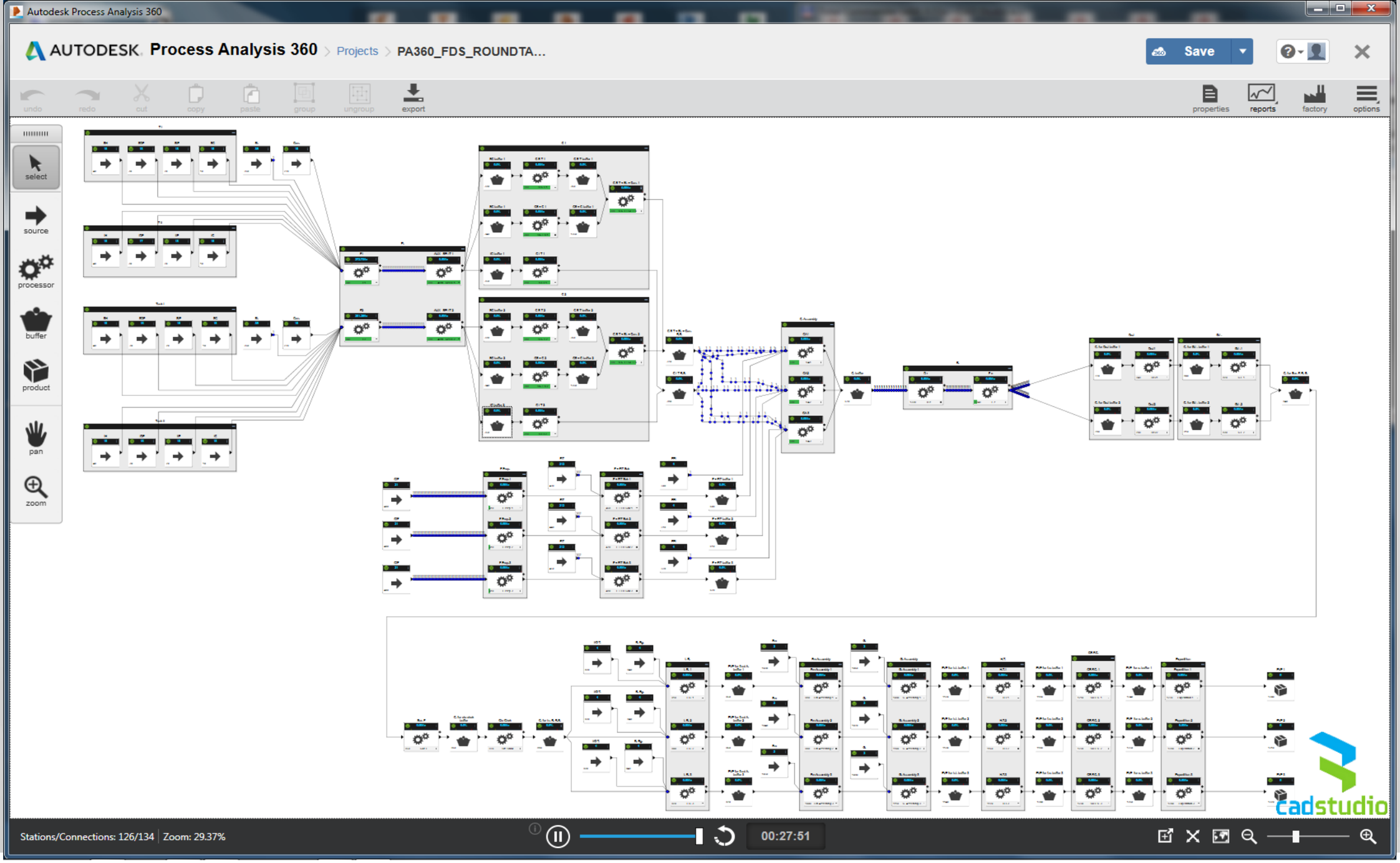
LB15
TURNCELL
SHT2
BEN
INSP
CS20
HC1
HG400
MILL
S30

Autodesk Process Analysis 360



- Manufacturing planning
- Design Validation
- Job costing
- Decision support


Autodesk Process Analysis 360
AUTODESK Process Analysis 360
Projects
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Save
undo
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properties
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Stations/Connections: 126/134
Zoom: 29.37%
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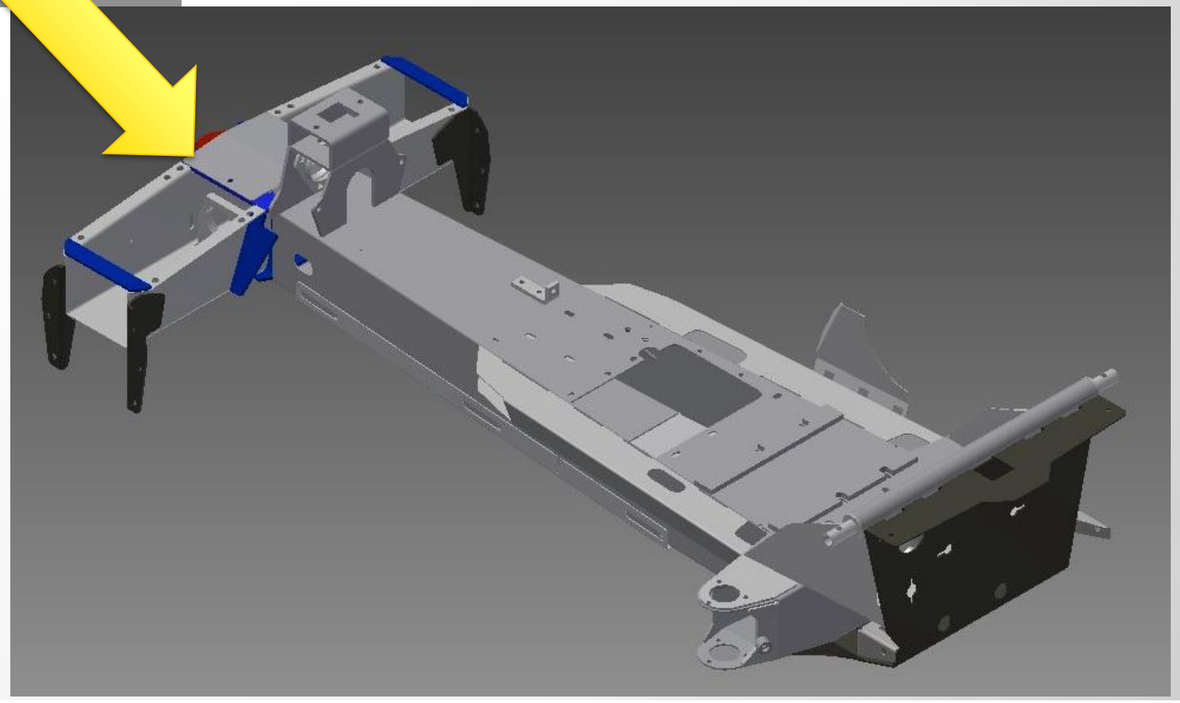
cadstudio

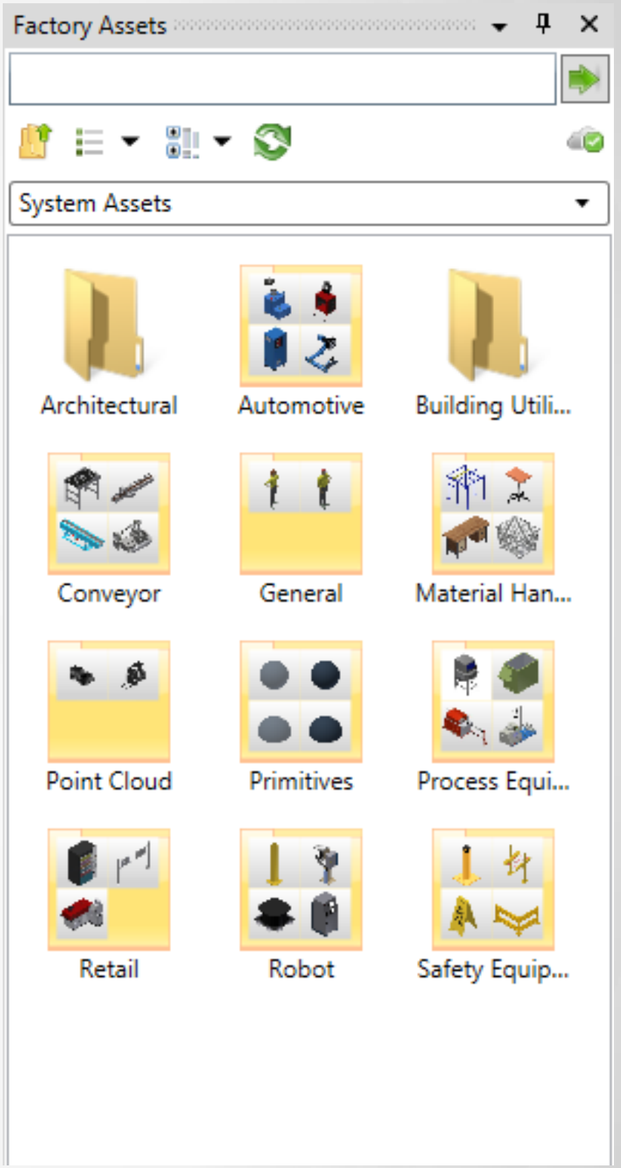


Live

2D

Factory Assets

- *Factory Asset Builder*: Create custom 3D content for layout use; add smart connection points and landing surface definitions on the asset
- *Factory Asset Warehouse*: Publish, store, and share multi-CAD assets in the cloud
- Cloud-based and out-of-the-box content



AutoCAD Architecture 2015 - NOT FOR RESALE VimekWelding.dwg

Type a keyword or phrase | strijkp

Factory | Home | Insert | Annotate | Parametric | View | Manage | Output | Add-ins | Autodesk 360 | Express Tools | Vehicle Tracking | Vault | BIM 360 | Featured Apps

Palettes | Asset Builder | Sync Inventor | Sync Navisworks | Station | Product | Routing | Machine | Create Process Model | Measure | Connect | Factory Help | First Experience Videos | Online Help | Discussion Forum | Share Ideas

Tools | Asset Builder | Suite Workflows | Material Flow | Planning | Utilities | Learn about Factory | Community

Fabrik_2015v2* | SheetMetalProduction* | VimekWelding

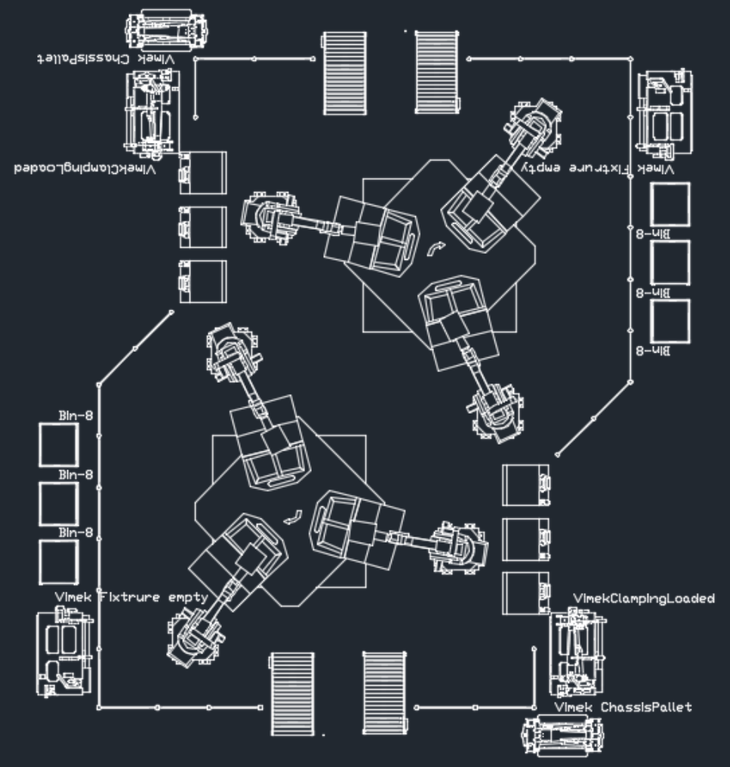
EXTERNAL REFERENCES

File References

Reference ...	Status	Size	Type
VimekWelding	Opened	459 KB	Current

Details

[−][Top][2D Wireframe]



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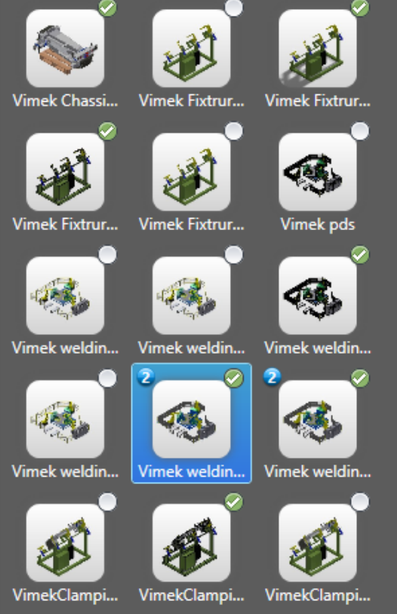
Command: _QSAVE

Type a command

ASSET BROWSER

vimek

Search Results

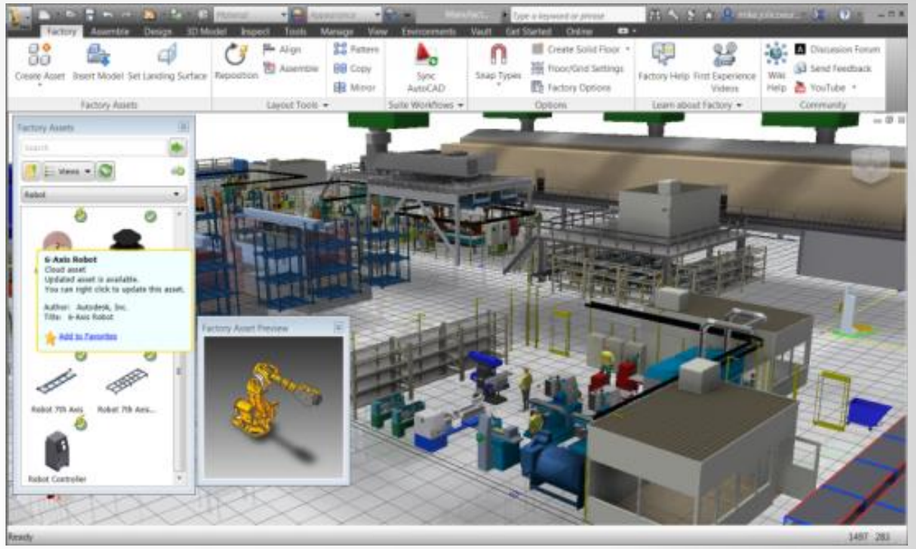


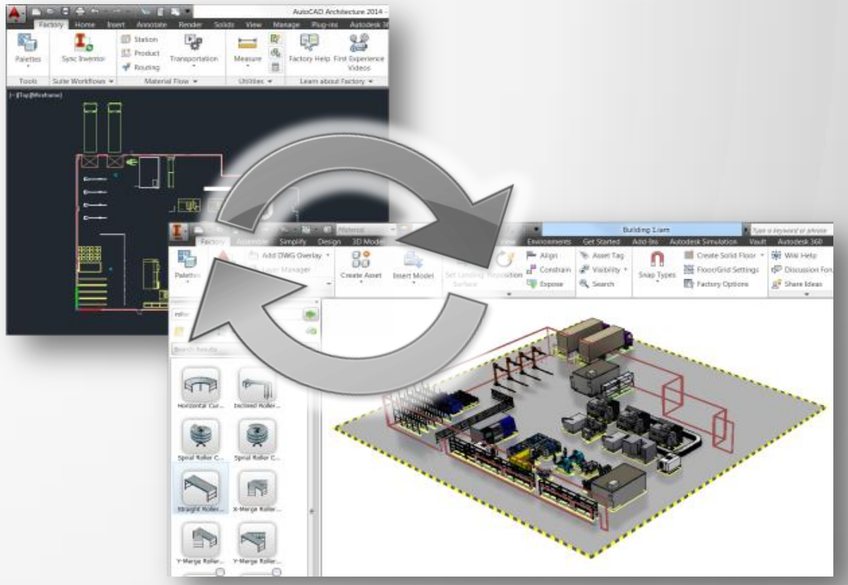
Live

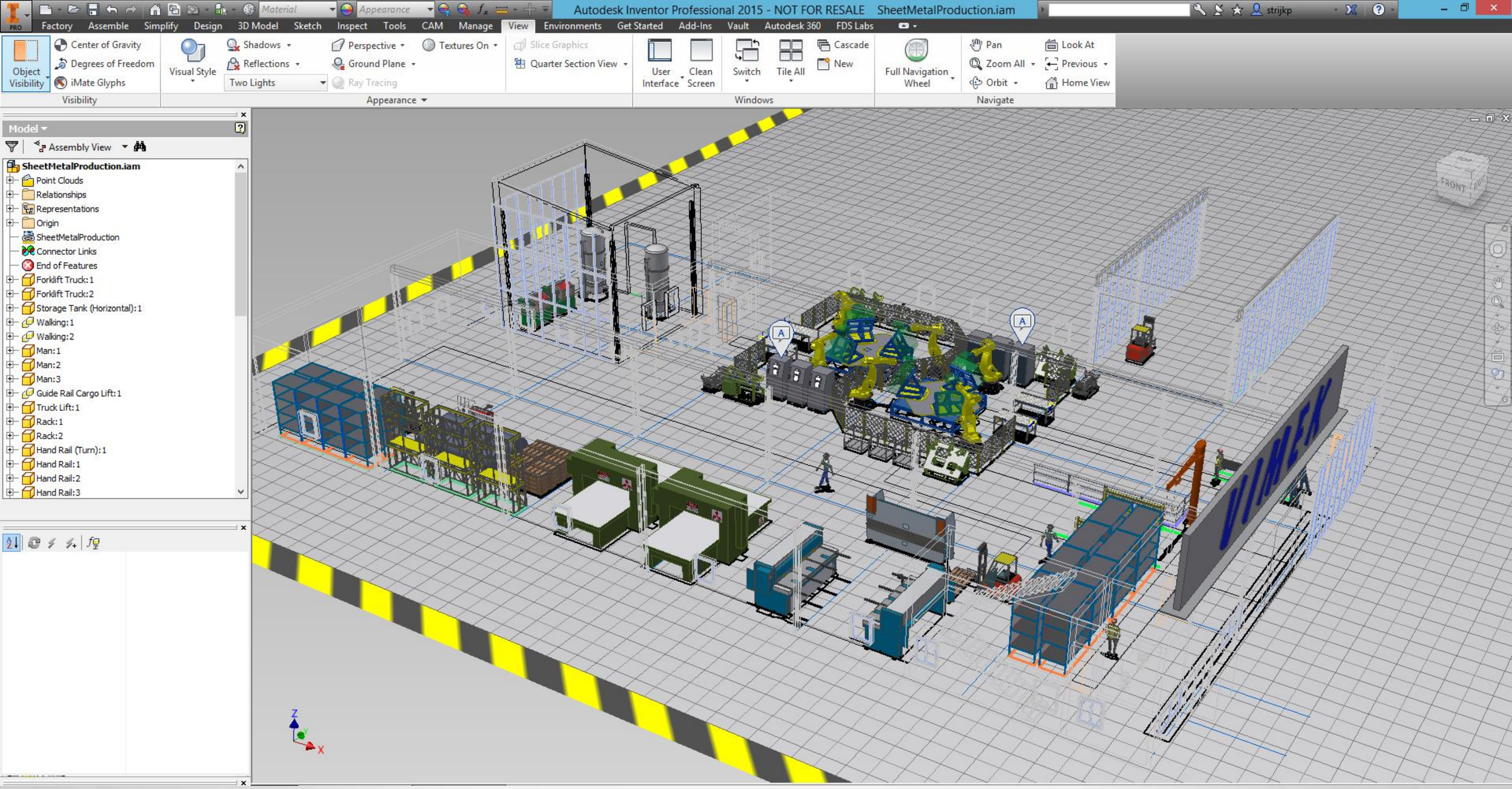
3D

3D visual layout modeling

- **Convert 2D layouts into 3D** with a single click
- Reduce errors with **2D/3D bidirectional associativity**
- Easy **drag-and-drop** placement of components on the factory floor
- Large **library** of 2D & 3D parametric factory content





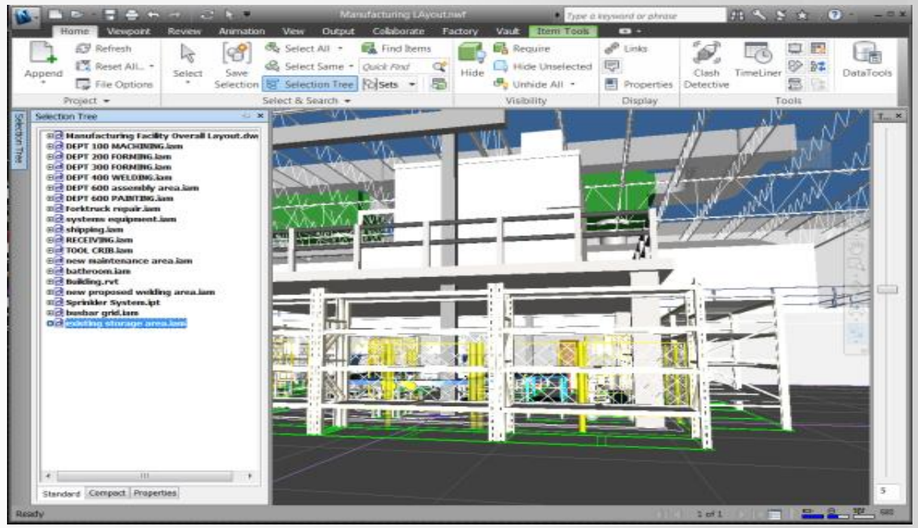

Autodesk Inventor Professional 2015 - NOT FOR RESALE SheetMetalProduction.iam
Factory Assemble Simplify Design 3D Model Sketch Inspect Tools CAM Manage View Environments Get Started Add-Ins Vault Autodesk 360 FDS Labs
Object Visibility
Center of Gravity
Degrees of Freedom
iMate Glyphs
Visibility
Visual Style
Shadows
Reflections
Two Lights
Perspective
Ground Plane
Ray Tracing
Textures On
Slice Graphics
Quarter Section View
Appearance
User Interface
Clean Screen
Switch
Tile All
Cascade
New
Windows
Full Navigation Wheel
Pan
Zoom All
Orbit
Look At
Previous
Home View
Navigate
Model
Assembly View
SheetMetalProduction.iam
Point Clouds
Relationships
Representations
Origin
SheetMetalProduction
Connector Links
End of Features
Forklift Truck:1
Forklift Truck:2
Storage Tank (Horizontal):1
Walking:1
Walking:2
Man:1
Man:2
Man:3
Guide Rail Cargo Lift:1
Truck Lift:1
Rack:1
Rack:2
Hand Rail (Turn):1
Hand Rail:1
Hand Rail:2
Hand Rail:3
VIMEK
FRONT

Live

4D

Engineering review & analysis

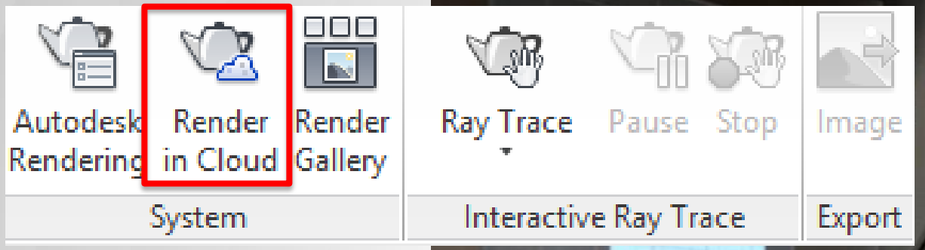
- Multi-CAD & point cloud support
- Communicate design intent with Visual fly-through and walk-through
- **Clash detection and clearance analysis**
- **4D simulation of factory floor equipment installation sequence**
- Collaboration tools for stakeholders without CAD software

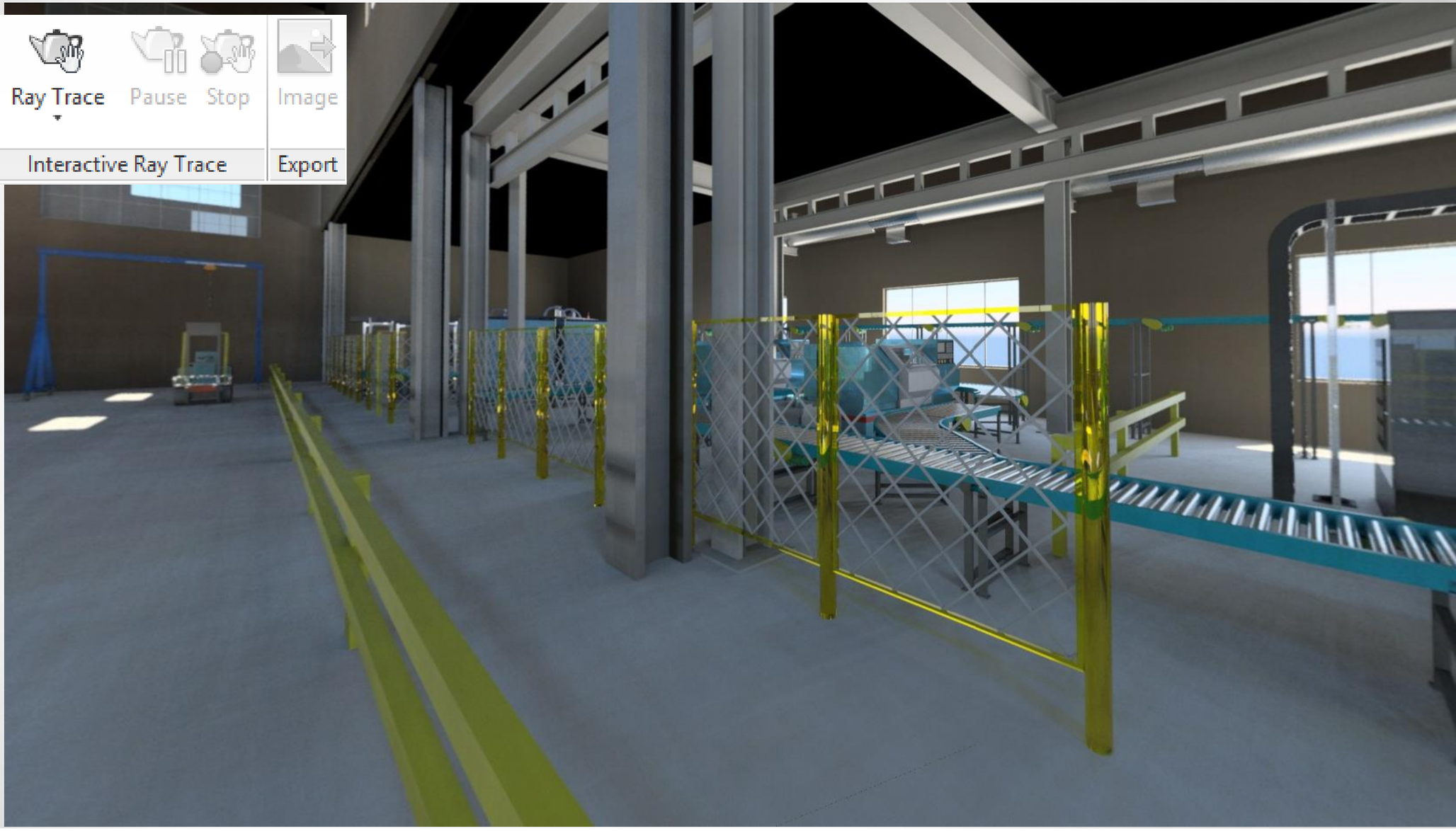


Live

Layouts on mobile device

Virtual Reality Factory





Virtual Reality Factory

Session Feedback

- Via the Survey Stations, email or mobile device
- AU 2015 passes given out each day!
- Best to do it right after the session
- Instructors see results in real-time

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