

WEBINAR

AUTODESK PLANT DESIGN

Velkommen til webinar

Autodesk Plant Design

4. marts 2021

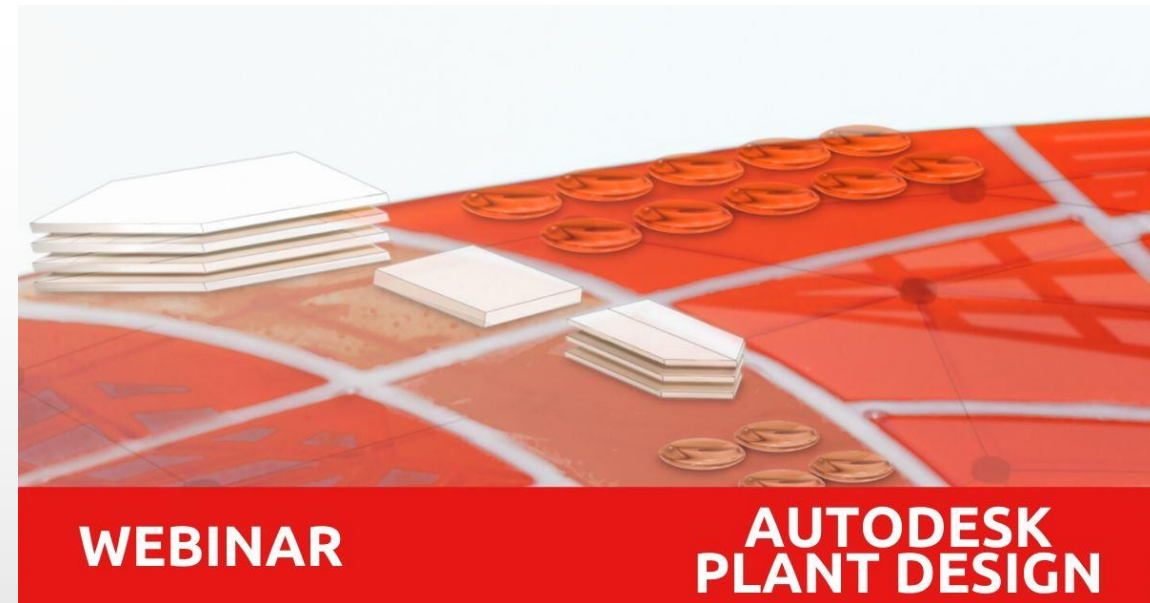
– 9.00 til 9.45 – 1. Del
– 10.00 til 10.45 – 2. Del



Salg & Marketing
Steen Wachter



Support, Uddannelse & implementering
Per Damsgaard



- Velkommen
- Del 1 - Plant Konceptet
- Del 1- Proces Diagrammer- P&ID
- Pause
- Del 2 – Plant konceptet
- Del 2 - 3D Anlægsdesign

NTI Autodesk Plant Design Team



Salg & Marketing
Steen Wachter



Systemkonsulent
Per Damsgaard



Systemkonsulent
Michael Knudsen



Systemkonsulent
Jørgen Olesen

Kort om NTI A/S



Byggeri



Industri



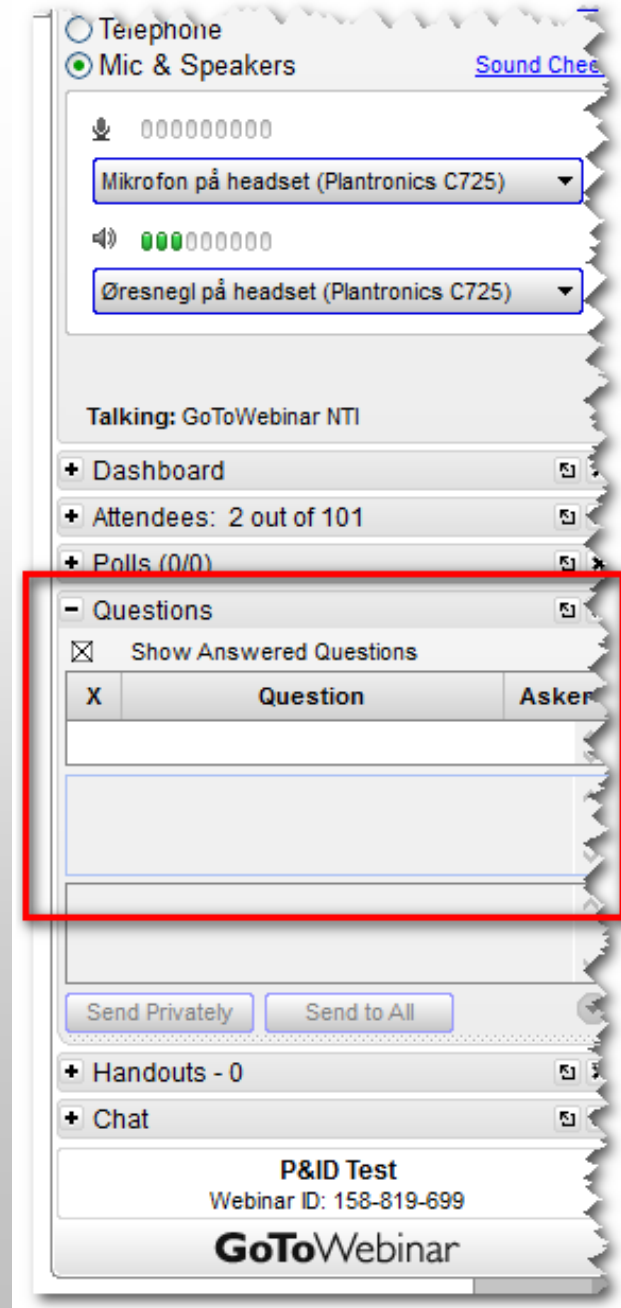
Plant & Process



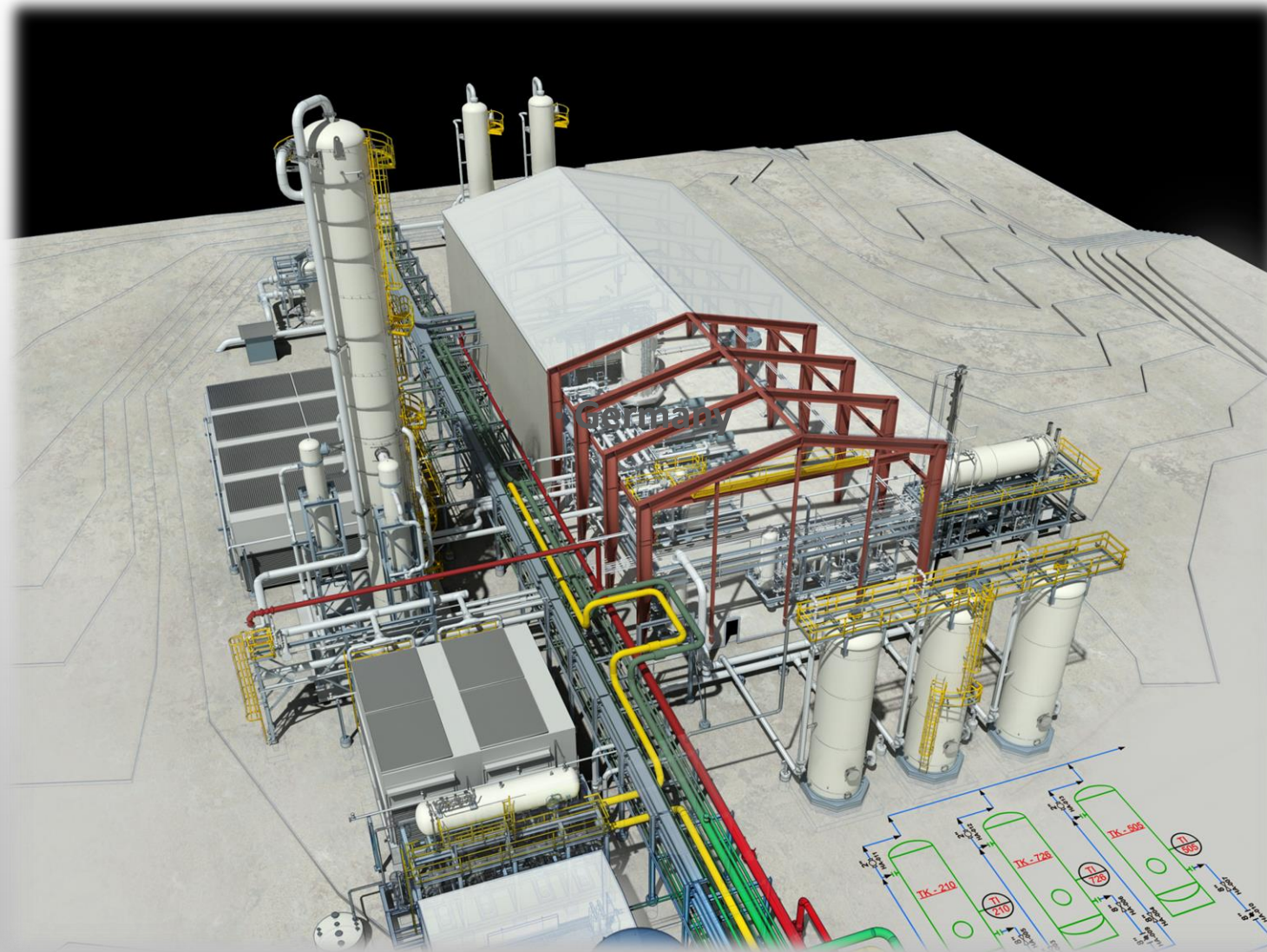
Gis og Infrastruktur

Stil gerne spørgsmål

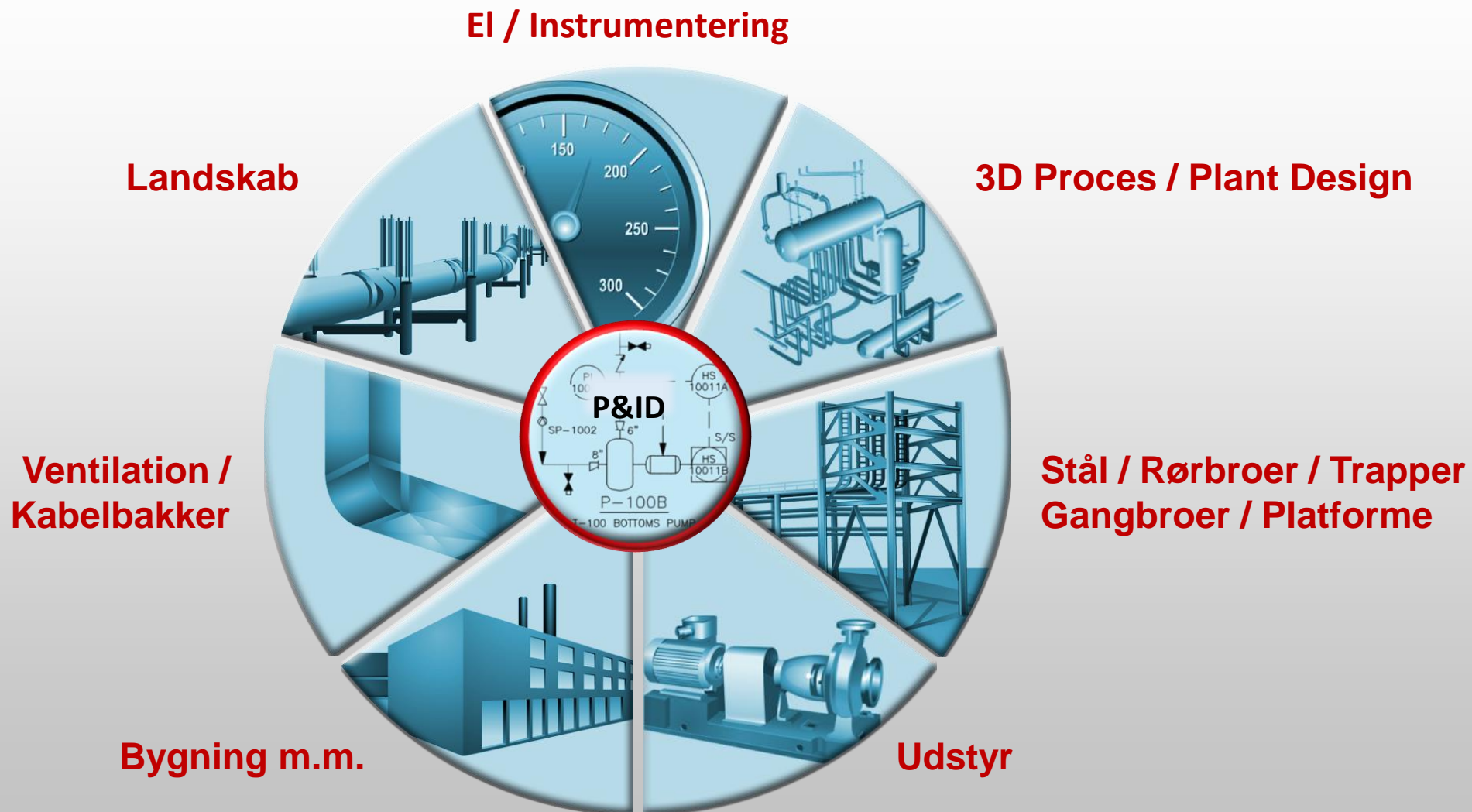
- Vi vil besvare spørgsmål undervejs, hvis muligt.
- Ellers vender vi tilbage efter webinarret i dag.



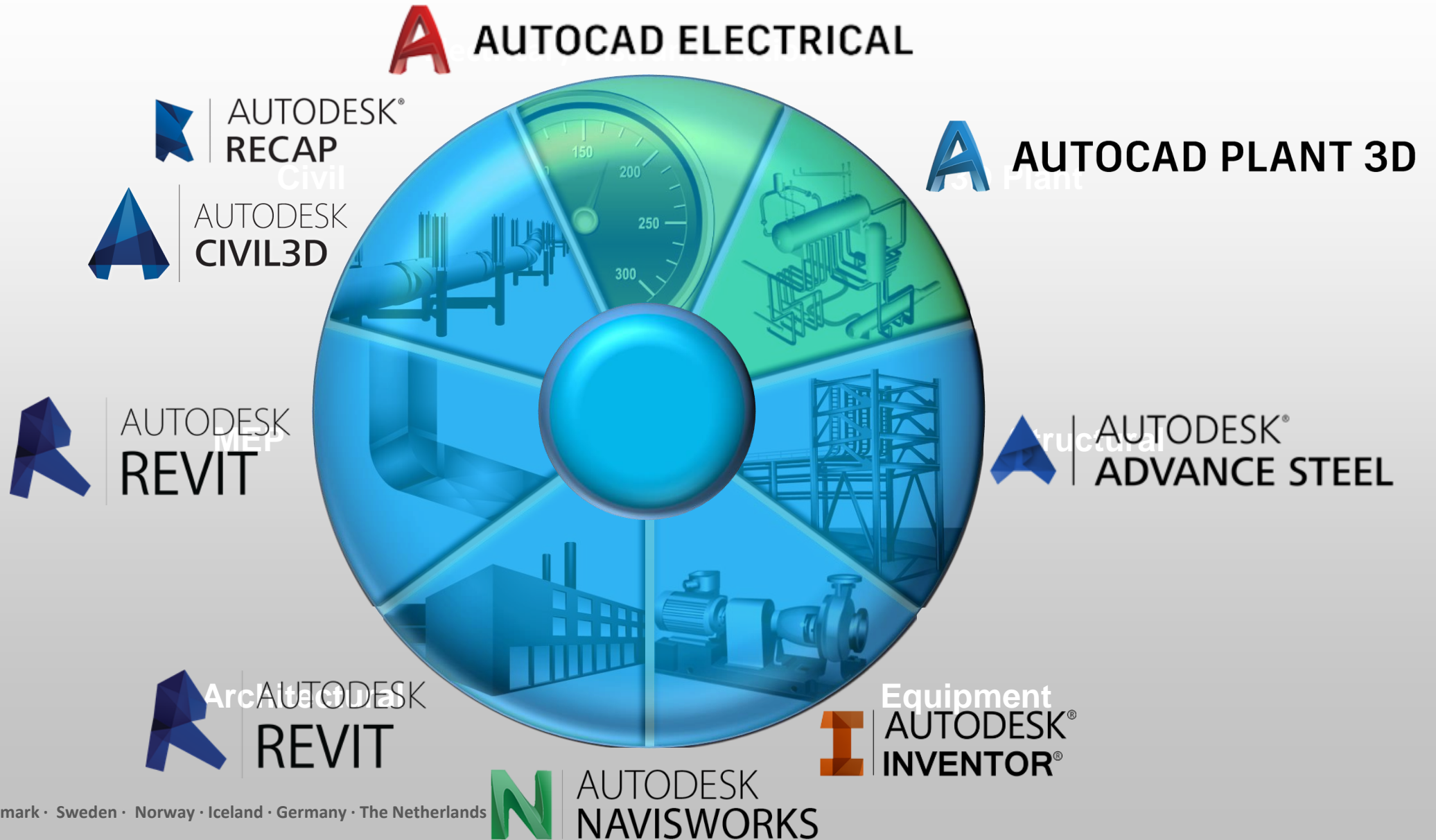
AutoCAD Plant 3D



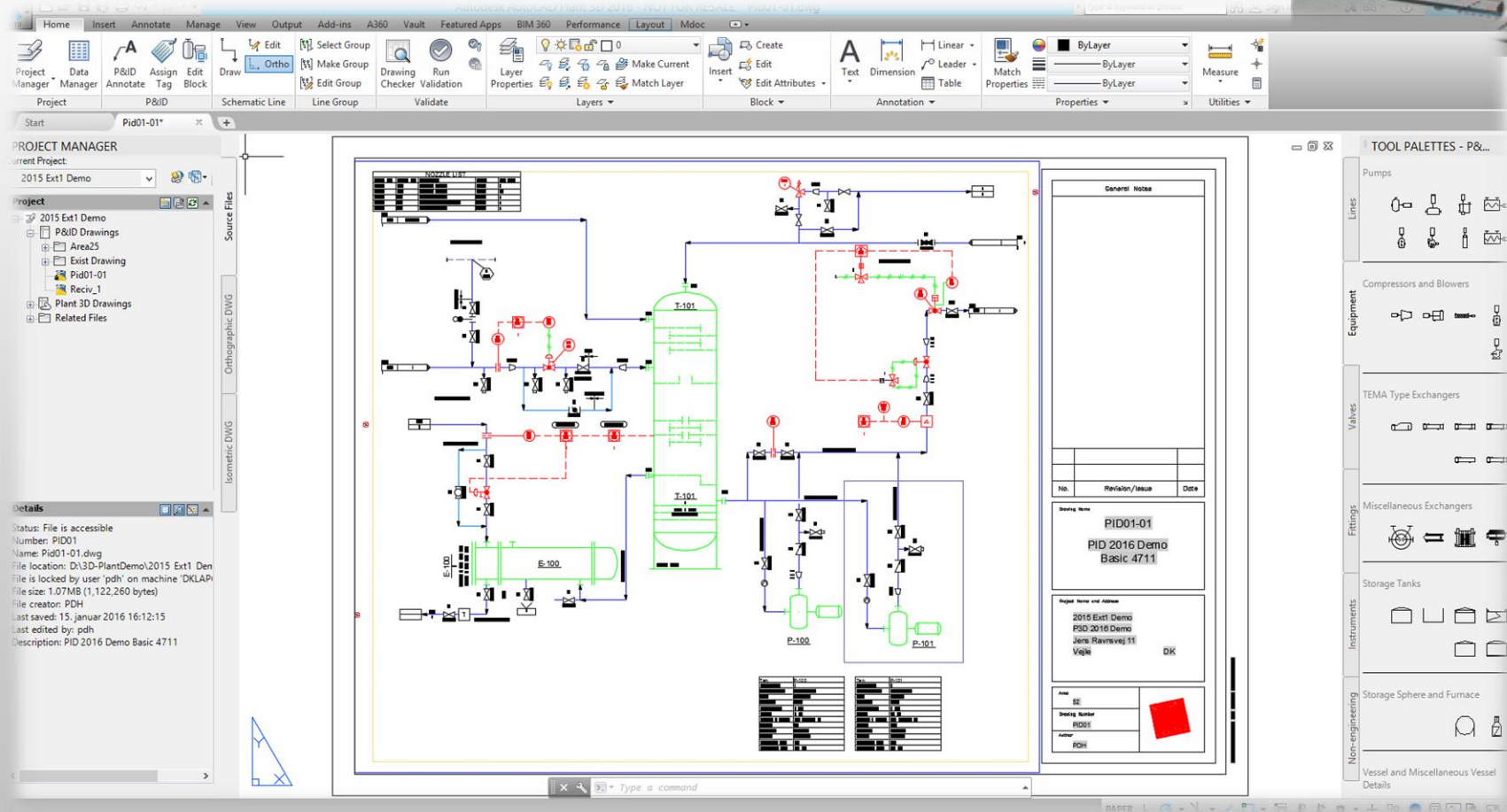
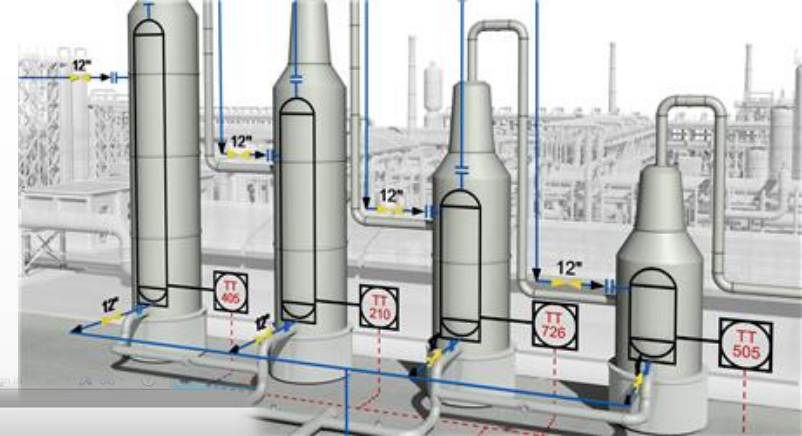
Komplete “Multi-discipline” Design



Komplete Multi-disciplin Design



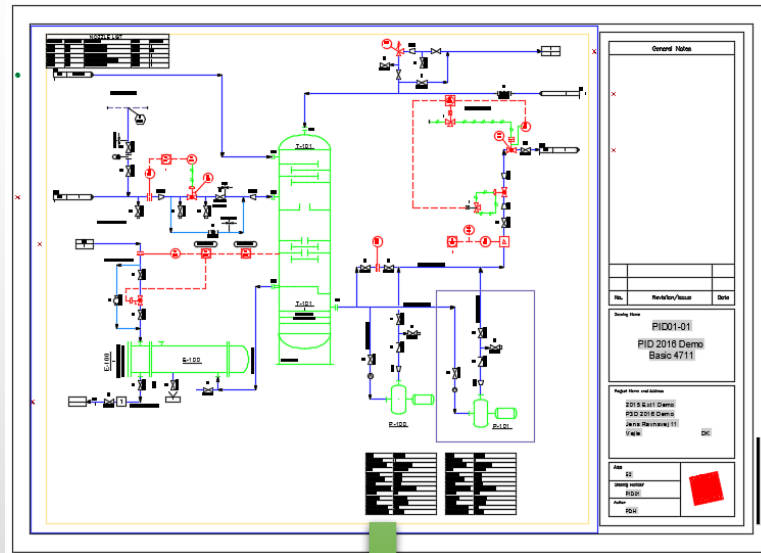
AutoCAD Plant 3D - P&ID



Hvad er AutoCAD Plant 3D - P&ID

- Udviklet specifikt til udarbejdelse af P&I Diagrammer
 - Baseret på AutoCAD
 - Optimere tegne- og redigeringsprocessen
 - Flere informationer – database bagved
 - Nummer systemer (TAG nr., Item nr. Pos nr.)
 - Inkl. ISO, DIN, PIP, JIS standard symbol bibliotek
 - Lister – eksport / import
 - Inklusiv Rapport værktøj til f.eks.:
 - Tag No lister (Item lister, komponent liste)
 - Ventil lister
 - Motor og forbrugs lister
 - Proces linje liste
 - Det ”rigtige værktøj” til ”den rigtige opgave”

Data flow, internt



DWG filen bære
alle informationer



PID



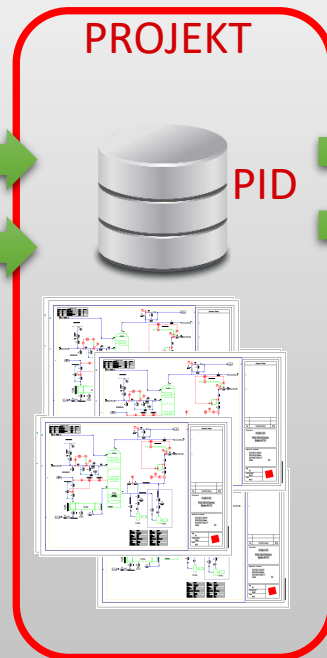
Database for P&ID projekter

Data flow, eksternt

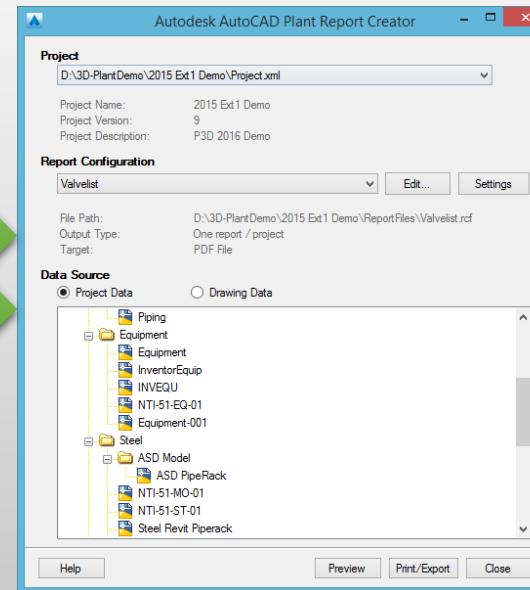
**Arbejds-
regneark**



for ekstern
redigering (med
validering af P&ID
bruger)



AutoCAD Plant 3D Report Creator



(u-licenseret)

Output formater



Rapport eksempler:

- Komponent list
- Tegnings list
- Udstyrs list
- Instrument list
- Linje list
- Pumpe Datablad
- Reducer Report
- Ventil liste
- Motor liste
- Forbrugs liste

Data flow, eksternt

Instrumenliste
Motor og Forbrugs liste
Samlet Komponentliste



NTI A/S

Date: 03 March, 2021

Sign: pdh

2021-01

2021 P3D Demo

P3D 2021 Demo projekt

ITEMLIST

Tag	Description	Type	NO/NC	Part no.	Connection (In/Out)	Purchase no.	Supplier	Comment	Name	D O	D I	A O	A I	3/ 2	4/ 2	I/P
25-TT-001	Field Discrete Instrument															
400-FAH-40	Primary Accessible Discrete Instrument															
52-FQ-121	Vortex															
A-002	Flat-blade Paddle Agitator															
AS-418	Generic Rotary Valve		NO													
BA-000	Kugleventil	KV075-H	NO				Brd. Kier									
BA-232			NC													
BA-461	Kugleventil	KV032-H	NO				Brd. Kier									
BA-462	Kugleventil	KV025-H	NO				Brd. Kier									
BF-200			NO													
BV-419			NO													
C-001	Centrifugal Compressor															
CK-201	NonReturnValve	4721	NC				Valtor									
CK-203	NonReturnValve	4731	NO				DVC									
CS-229		4718	NO				DVC									
E-001	Plate and Frame Exchanger															
E-100		MH4711					PDH Trading AS									
GA-000			NO													
GA-204	DN150 GV HandL	4717	NO				DVC									
GA-205		4722	NO				DVC	Husk PTFE pakninger								
GA-2077	DN200 GV HandL	4725	NO				DVC									

NTI TOOLS for AutoCAD Plant 3D – V1

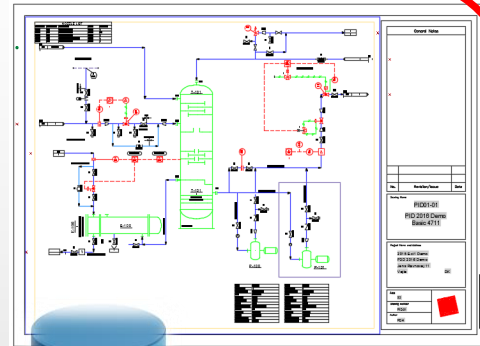
- Main features:
 - **Wizard for file and folder naming and creation.**
 - Number schemes from Vault can be used.
 - Full layer control for viewports in Orthographic drawings
 - **Easy and intuitive handling of drawing boarder and title blocks**
 - **Rename Folder function**
 - Strong function in vault environments
 - Equipment manager



Demo – AutoCAD Plant 3D - P&ID



Hvor kommer "Rapport-indholdet" data fra ?

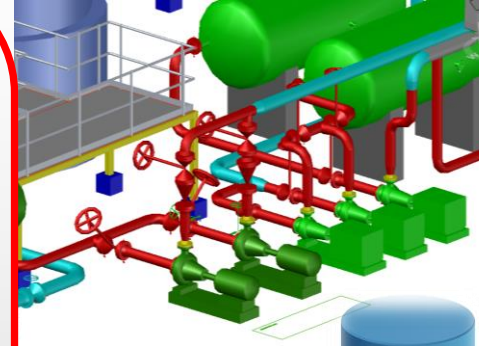


P&I Diagram



Rapport eksempler:

- Komponent list(er)
 - Udstyrs list
 - Instrument list
 - Ventil liste
 - Motor liste
 - Forbrugs liste
 - Linje list
- Pumpe Datablad
- Reducer Report



Layout

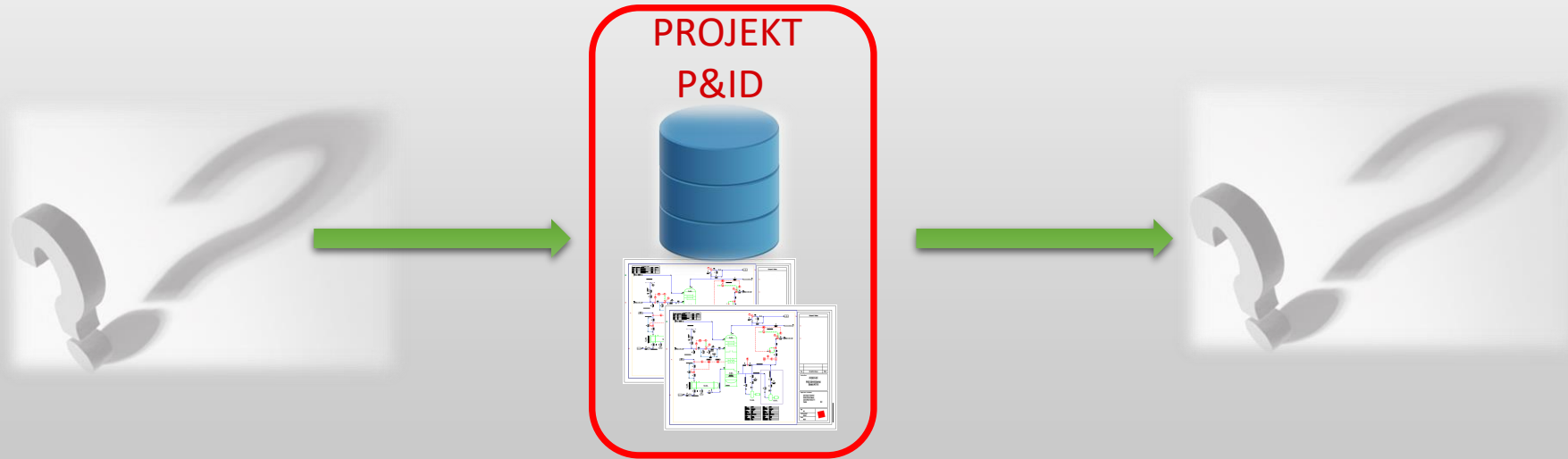


Rapport eksempler:

- 3D Parts (BOM)
- COG / Weight Report
- Weight Report
- Weld Report
- Insulation Report

Data flow !

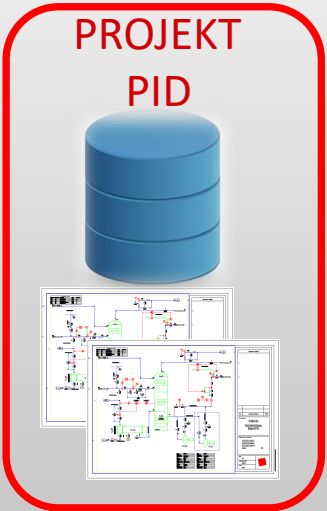
- Hvor fødes data ?
- Hvor skal data afleveres ?
- Hvilke data skal afleveres?



Data flow !

Hvilke data skal afleveres og hvordan?

Motor & Instrument liste i Excel format



Project: Tllpasning 2020

Plant type:

Country:

Filename: HI Standard Projekt V2 - NTI - copy-300

Rev. no.:

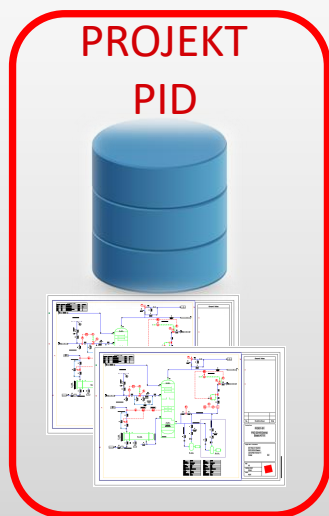
Power supply:

MOTOR LIST

Tag no.	Customer tag	Main Equipment	Functional Description	Power	Load [Amp]	Voltage	Phase	Starting Device	PLC - I/O				PLC Type	Signal Type	
									DI	DO	AI	AO			
				1097	1998	SUM				122	61	0	0	SUM	
??-??		Batch cooker													
??-??MV01								DOL							4-21 mamp
1A01A-B01	B101	Bovine Raw Material bin													
1A01A-B01M01	B101	Bovine Raw Material bin	Motor #1 Bovine Raw material Silo	5.5	10.5	400	3	VFD							300
1A01A-B01M01-M01	B101	Bovine Raw Material bin	Forced Fan, Motor #1 Bovine Raw material Silo	0.16	0.37	400	3	DOL							
1A01A-B01M01-SIC01	B101	Bovine Raw Material bin	Frecurency converter Motor #1 Bovine Raw material Silo	-		400	3	VFD							
1A01A-B01M02	B101	Bovine Raw Material bin	Motor #2 Bovine Raw material Silo	5.5	10.5	400	3	VFD							300
1A01A-B01M02-M01	B101	Bovine Raw Material bin	Forced Fan, Motor #2 Bovine Raw material Silo	0.16	0.37	400	3	DOL							
1A01A-B01M02-SIC01	B101	Bovine Raw Material bin	Frecurency converter Motor #2 Bovine Raw material Silo	-		400	3	VFD							
1A01A-B01M03	B101	Bovine Raw Material bin	Motor #3 Bovine Raw material Silo	5.5	10.5	400	3	VFD							300
1A01A-B01M03-M01	B101	Bovine Raw Material bin	Forced Fan, Motor #3 Bovine Raw material Silo	0.16	0.37	400	3	DOL							
1A01A-B01M03-SIC01	B101	Bovine Raw Material bin	Frecurency converter Motor #3 Bovine Raw material Silo	-		400	3	VFD							
1A01A-B01M04	B101	Bovine Raw Material bin	Motor #4 Bovine Raw material Silo	5.5	10.5	400	3	VFD							300
1A01A-B01M04-M01	B101	Bovine Raw Material bin	Forced Fan, Motor #4 Bovine Raw material Silo	0.16	0.37	400	3	DOL							
1A01A-B01M04-SIC01	B101	Bovine Raw Material bin	Frecurency converter Motor #4 Bovine Raw material Silo	-		400	3	VFD							
1A01A-B01M05	B101	Bovine Raw Material bin	Motor, hydraulic unit	3	6.2	400	3	DOL	2	1					300
1A02A-H01	B102	K-hole screw conveyor #1													
1A02A-H01M01	B102	K-hole screw conveyor #1	Main motor	7.5	14.5	400	3	DOL							300
1A03A-H02	B103	K-hole screw conveyor #2													
1A03A-H02M01	B103	K-hole screw conveyor #2	Main motor	11	21	400	3	DOL							300

Data flow !

Hvor fødes data ?



Properties panel for ACPPASSET:

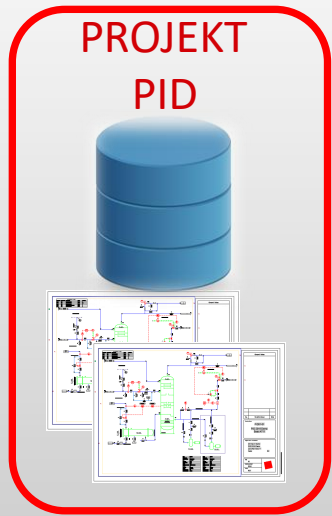
PROPERTY	VALUE
Graphical style	Control Valve Style
PnP GUID	b0226c15-1e43-4746-92e3-0b0156883aba
Description	
Manufacturer	
Model Number	
Supplier	
Comment	
Alt. Tag Number	
Status	
Dokumentation	
Supplier ref no	
Area	20
Type	CV
Loop Number	300
Location	
Signal	
AirPressure	
Communicationtype	
Voltage	
IP Class	
Wiring	
DI	
DO	
AI	
AO	
Safety Zone	
Internal State	
Measuring Range	
Setpoint	
Item Code	
Size	8
End Connections	Unspecified
Valve Code	
Normally	
Failure	
Body Type	Globe Valve
Actuator Type	Hand Wheel Actuator
Pressure Class	

P&ID Drawing:

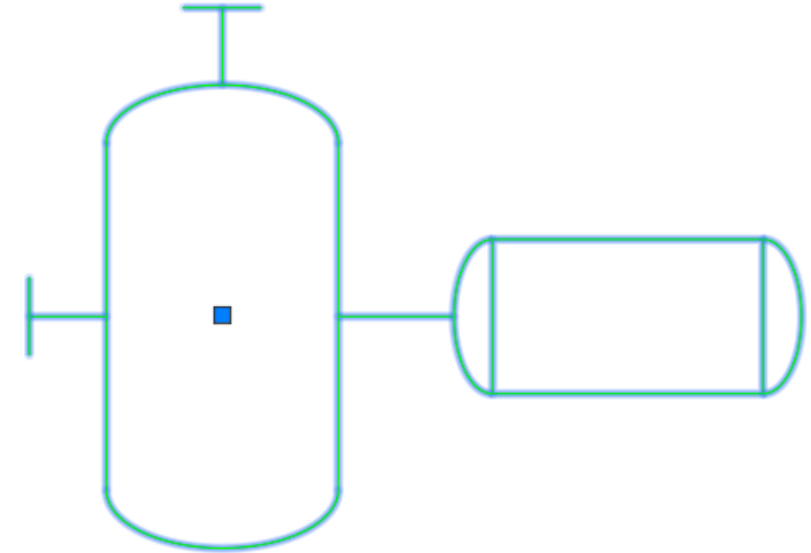
The drawing shows a process flow with a main horizontal line. A vertical line branches off to the right, passing through a valve symbol (a circle with a cross) and a label "CV 300" in a red circle. Below this, the line continues to the right, passing through two 1" valves labeled "GA-209" and "GA-210". At the bottom, an 8" valve labeled "BF-200" is shown. The drawing is titled "[+][Top][2D Wireframe]" and has a label "20-FC-200" at the bottom right.

Data flow !

Hvor fødes data ?



P&ID	
Class	Horizontal Centrifugal Pump
Tag	
Tag	P-001
Styles	
Graphical style	Horizontal Centrifugal Pump Style
General	
PnPGuid	5cce05c9-dc93-44b2-a593-11f6ad448839
Description	Centrifugal Pump
Manufacturer	
Model Number	
Supplier	
Comment	
Alt. Tag Number	
Status	New
Dokumentation	
Supplier ref no	
Type	P
Equipment Spec	
Weight	
Material of Construction	
Number	001
Area	52
Internal State	
Item Code	
Flow Capacity	
Power	
Total Dynamic Head	
Voltage	
Phase	
Frequency	
Insulation Type	
Insulation Thickness	
Design Pressure	
IP Class	
Amp	
Connection1_Inlet	
Connection2_Outlet	



E-100

Data flow – Data kilde(r)

Eksterne databaser



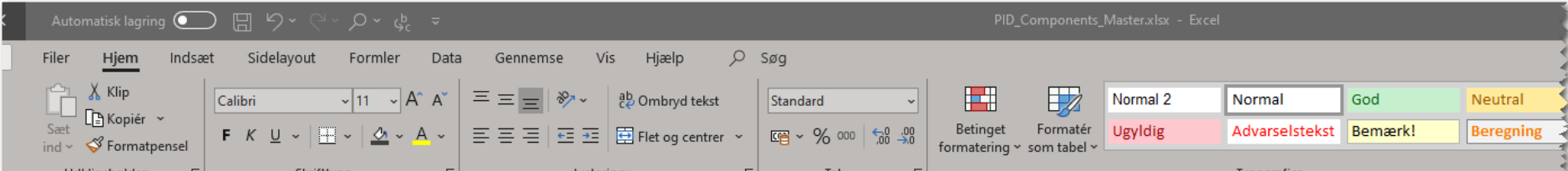
Eksterne databaser:

(Hvilken som helst datakilde hvor der kan laves et opslag til)

- ERP systemer (Navision, Axapta, C5
- SAP
- SQL Databaser
- SQLite Databaser
- Access Databaser
- Excel regneark

Tag no.	Customer tag	Main Equipment	Functional Description	Power	Load [Amp]	Voltage	Phase	Starting Device	PLC - I/O				PLC Type	Signal Type	HI Part no.	Remarks	Safety Zone	Feedback From		Safety State	MCC Panel no.	P&ID no.	Status	Supplied By
									DI	DO	AI	AO						Service Breaker	Thermistor					
				1097	1998	SUM			122	61	0	0	SUM											
??-??		Batch cooker																				123456	ERROR	
??-??MV01								DOL						4-21 mamp			No	No				123456		
1A01A-B01	B101	Bovine Raw Material bin																				Test P&ID-401		
1A01A-B01M2A	B101	Bovine Raw Material bin	M2A	1095	1995	400V	L3	2FD							6000000709430		No	No				Test P&ID-401		

Data flow, Datakilde eksempel med Excel

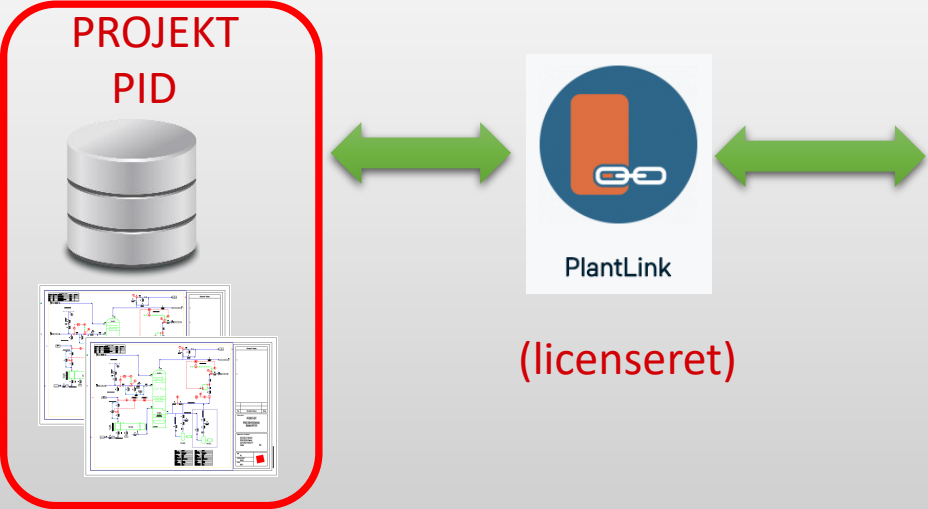


Item Code	Type	Type Description	Manufacturer	Supplier	Model Number	Supplier ref	Capacity	Design Pressure	Connection1_Inlet	Connection2_Inlet	Weight	Material	Power	Amp	Voltage	Phase	Frequency	IP Class
x204000	P	Cirkulations pumpe	Grundfos	Bdr. Dahl	Alpha2 2040N 150	97660453	Ukendt	10			6	ISO 1.4404	Ukendt		230 VAC	1x	50 Hz	IP44
x204001	P	Cirkulations pumpe	Grundfos	Bdr. Dahl	Alpha2 2060N 150	97660456	Ukendt	10			7	ISO 1.4404	Ukendt		230 VAC	1x	50 Hz	IP44
x204002	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE3-8	97660459	Ukendt	10			10	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP44
x204003	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE5-9	97660462	Ukendt	10			11	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP44
x204004	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE10-5	97660465	Ukendt	10			12	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP54
x204005	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE15-3	97660468	Ukendt	10			13	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP21
x204006	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE15-4	97660471	Ukendt	10			14	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP65
x204007	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE20-4	97660474	Ukendt	10			15	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP44
x204008	P	Forsyningspumpe	Grundfos	Bdr. Dahl	CRE32-4	97660477	Ukendt	10			16	ISO 1.4404	Ukendt		400 VAC	3x	50 Hz	IP54
x204009	P	Booster pump	Grundfos	Bdrd. Kier	CMB1-3	97530087	1 m3/h	6 1"	1"			Cast	0,377	2,4	230 VAC	1x	50 Hz	IP55
x204010	P	Booster pump	Grundfos	Bdrd. Kier	CMB3-6	97530150	3 m3/h	10 1"	1"			Cast	0,869	4,4	230 VAC	1x	50 Hz	IP55
x204011	P	Booster pump	Grundfos	Bdrd. Kier	CMB5-5	97687685	5 m3/h	10 1"	1 1/4"			Cast	1,16	5,4	230 VAC	1x	50 Hz	IP55

nt

20	HV	x200019	HV	Butterflyventil	Epos	DVC	54222-02	BFV032-H	32 ISO 1.4404	BV	Flanged	10	Usable
21	HV	x200020	HV	Butterflyventil	Epos	DVC	54222-03	BFV040-H	40 ISO 1.4404	BV	Flanged	10	Usable
22	HV	x200021	HV	Butterflyventil	Epos	DVC	54222-04	BFV050-H	50 ISO 1.4404	BV	Flanged	10	Usable
23	HV	x200022	HV	Butterflyventil	Epos	DVC	54222-05	BFV063-H	63 ISO 1.4404	BV	Flanged	10	Usable
24	HV	x200023	HV	Butterflyventil	Epos	DVC	54222-06	BFV075-H	75 ISO 1.4404	BV	Flanged	10	Usable
25	HV	x200024	HV	Butterflyventil	Epos	DVC	54222-07	BFV090-H	90 ISO 1.4404	BV	Flanged	10	Usable
26	HV	x200025	HV	Butterflyventil	Epos	DVC	54222-08	BFV110-H	110 ISO 1.4404	BV	Flanged	10	Usable
27	HV	x200026	HV	Butterflyventil	Epos	DVC	54222-09	BFV160-H	160 ISO 1.4404	BV	Flanged	10	Usable
28	HV	x200027	HV	Butterflyventil	Epos	DVC	54222-10	BFV200-H	200 ISO 1.4404	BV	Flanged	10	Usable
29	HV	x200028	HV	Butterflyventil	Epos	DVC	54222-11	BFV250-H	250 ISO 1.4404	BV	Flanged	10	Usable
30	HV	x200029	HV	Butterflyventil	Epos	DVC	54222-12	BFV315-H	315 ISO 1.4404	BV	Flanged	10	Usable
31	HV	x200030	HV	Butterflyventil	Epos	DVC	54222-13	BFV400-H	400 ISO 1.4404	BV	Flanged	10	Usable
32	HV	x200031	HV	Butterflyventil	Epos	DVC	54222-14	BFV500-H	500 ISO 1.4404	BV	Flanged	10	Usable
33	HV	x200032	HV	Butterflyventil	Epos	DVC	54222-15	BFV630-H	630 ISO 1.4404	BV	Flanged	10	Usable

Data flow, Datakilde eksempel med Excel



Plant Link

File Help

Project
E:\3D-PlantDemo\2021 P3D Demo\Project.xml

Link Configurations

+ New... Edit Delete Refresh

Name	Type	Status	Disabled
PID-EquipmentMaster-HandValves	Update	Active	<input type="checkbox"/>
PID-EquipmentMaster-Pumps	Update	Active	<input type="checkbox"/>

Link Configuration Wizard

Mapped fields selection
Select fields that will be mapped

Mapped fields:

External table column	Class property	Write back	Clear value	Override Acquisition Mode	Sync mode
Type	Type	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Type Description	Description	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Manufacturer	Manufacturer	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Supplier	Supplier	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Model Number	Model Number	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Supplier ref no	Supplier ref no	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Capacity	Flow Capacity	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Design Pressure	Design Pressure	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Weight	Weight	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Material	Material of Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Power	Power	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Amp	Amp	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Voltage	Voltage	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Phase	Phase	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Frequency	Frequency	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
IP Class	IP Class	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Internal State	Internal State	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Comment	Comment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Dokumentation	Dokumentation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Connection1_Inlet	Connection1_Inlet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never
Connection2_Outlet	Connection2_Outlet	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Never

Behavior for multiple records : ☒ Ask User ☐ Select first matching records

Details
Datasource: E:\3D-PlantD
Link type: Update Auto
Class: Pumps

No new version is available.

nti Denmark • Sweden • Norway • Iceland • Germany • The Netherlands

Data flow, Datakilde eksempel med Excel

PROPERTIES

ACPPASSET

General

P&ID

Class Horizontal Centrifugal Pump

Tag

Tag P-001

Styles

Graphical style Horizontal Centrifugal Pump Style

General

PnP GUID 5ccc05e9-dc93-44b2-a593-11f6ad448839

Description Booster pump

Manufacturer Grundfos

Model Number CMB5-5

Supplier Bdrd. Kier

Comment

Alt. Tag Number

Status New

Dokumentation E:\3D-PlantDemo\Datablade\Pumper\Grundfo...

Supplier ref no 97687685

Type P

Equipment Spec

Weight

Material of Construction Cast

Number 001

Area 52

Internal State

Item Code x204011

Flow Capacity 5 m3/h

Power 1,16

Total Dynamic Head

Voltage 230 VAC

Phase 1x

Frequency 50 Hz

Insulation Type

Insulation Thickness

Design Pressure 10

IP Class IP55

Amp 5,4

Connection1_Inlet 1"

Connection2_Outlet 1 1/4"

Booster

Model Number	Supplier ref no	Capacity	Design Pressure	Weight	Material	Power	Amp	Voltage	Phase	Frequency
31-3	97530087	1 m3/h	6		Cast	0,377	2,4	230 VAC	1x	50 Hz
33-6	97530150	3 m3/h	10		Cast	0,869	4,4	230 VAC	1x	50 Hz
35-5	97687685	5 m3/h	10		Cast	1,16	5,4	230 VAC	1x	50 Hz

Import values Close

PAUSE...

Velkommen til webinar Autodesk Plant Design

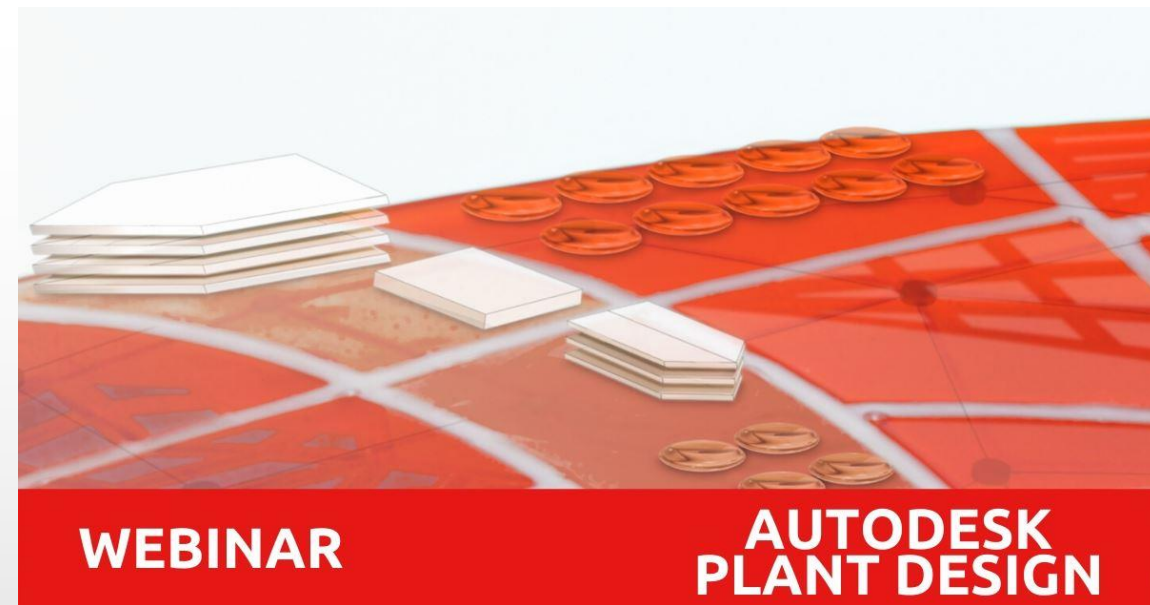
4. marts 2021
– 10.00 til 10.45 – 2. Del



Salg & Marketing
Steen Wachter



Support, Uddannelse & implementering
Per Damsgaard

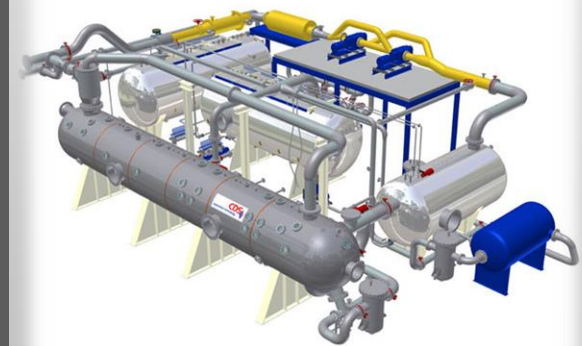
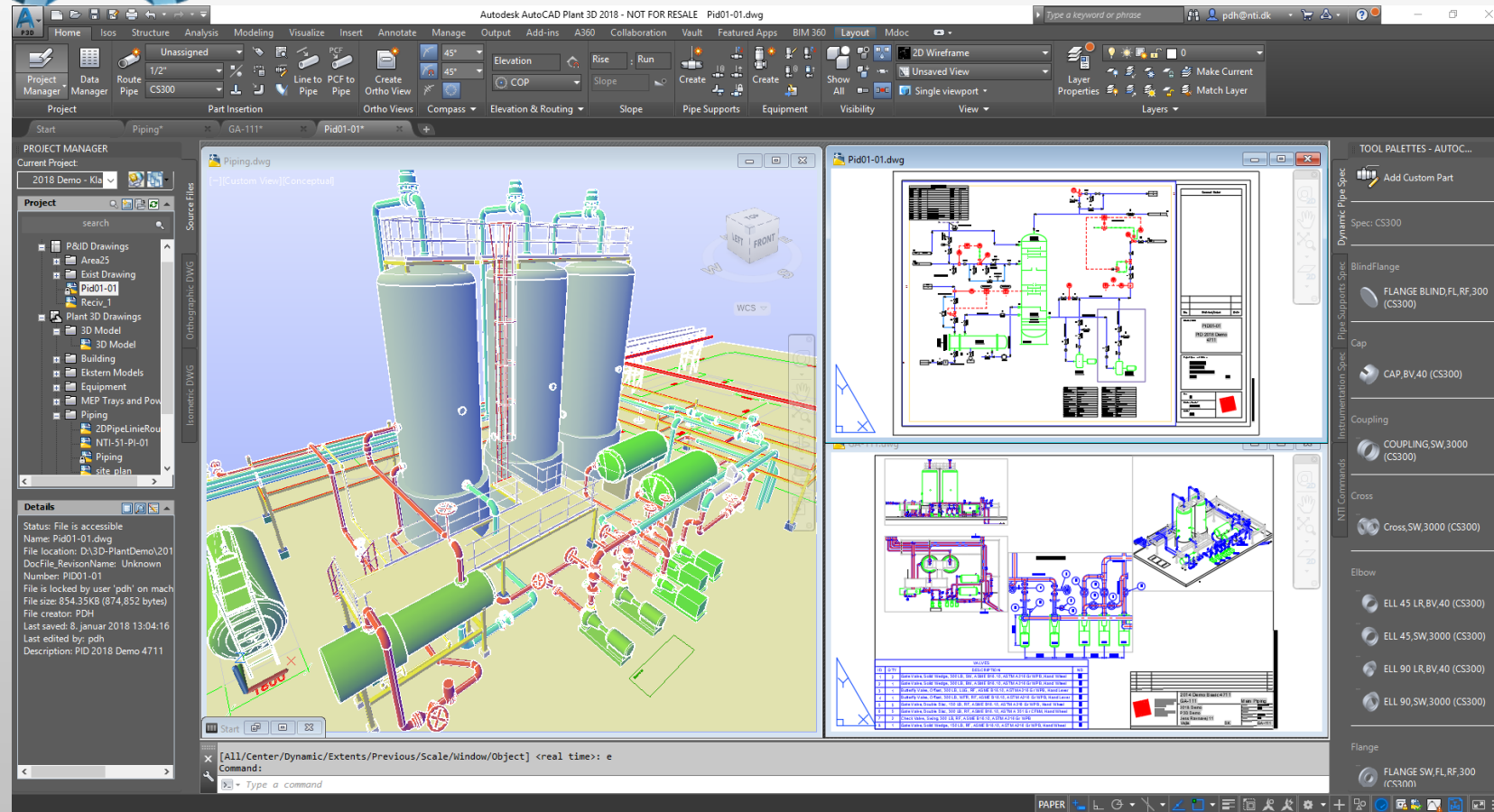


- **Pause**
- Del 2 – Plant konceptet
- Del 2 - 3D Anlægsdesign
- Spørgsmål

Plant Design Værktøj



AUTOCAD PLANT 3D



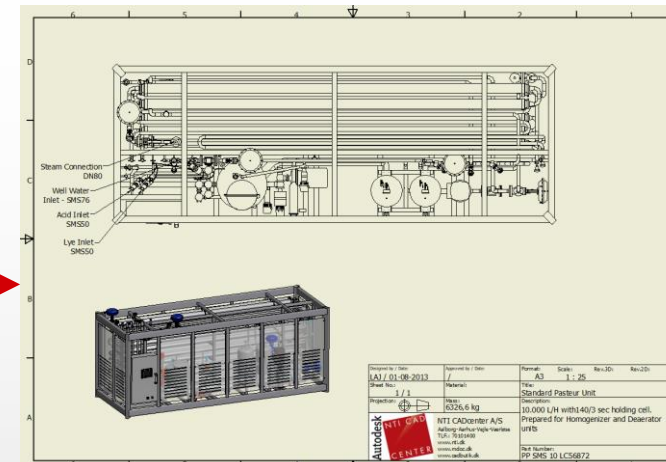
2D / 3D DWF

2D / 3D PDF

Konstruktions værktøj



2D Dokumentation



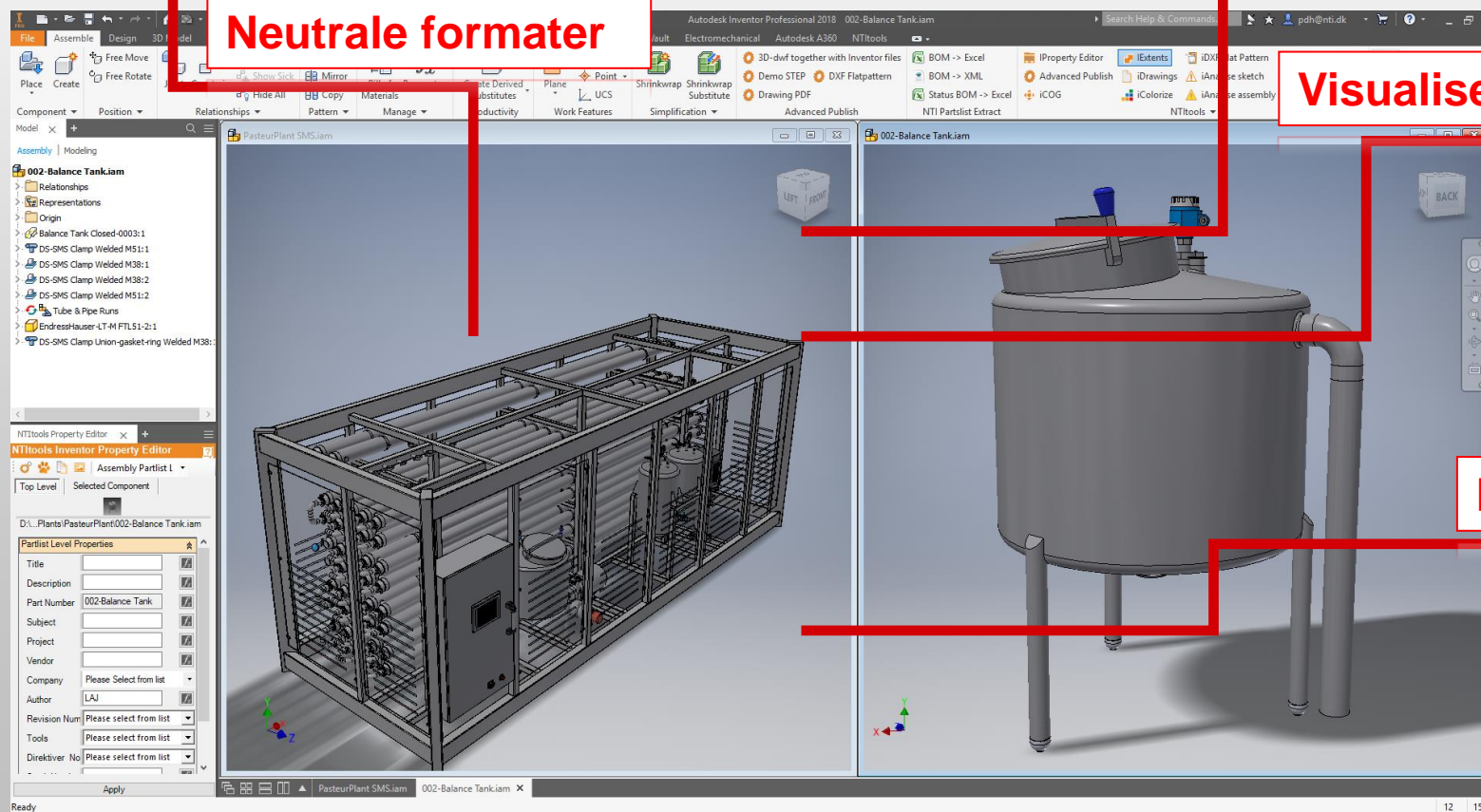
Neutrale formater

Visualisering



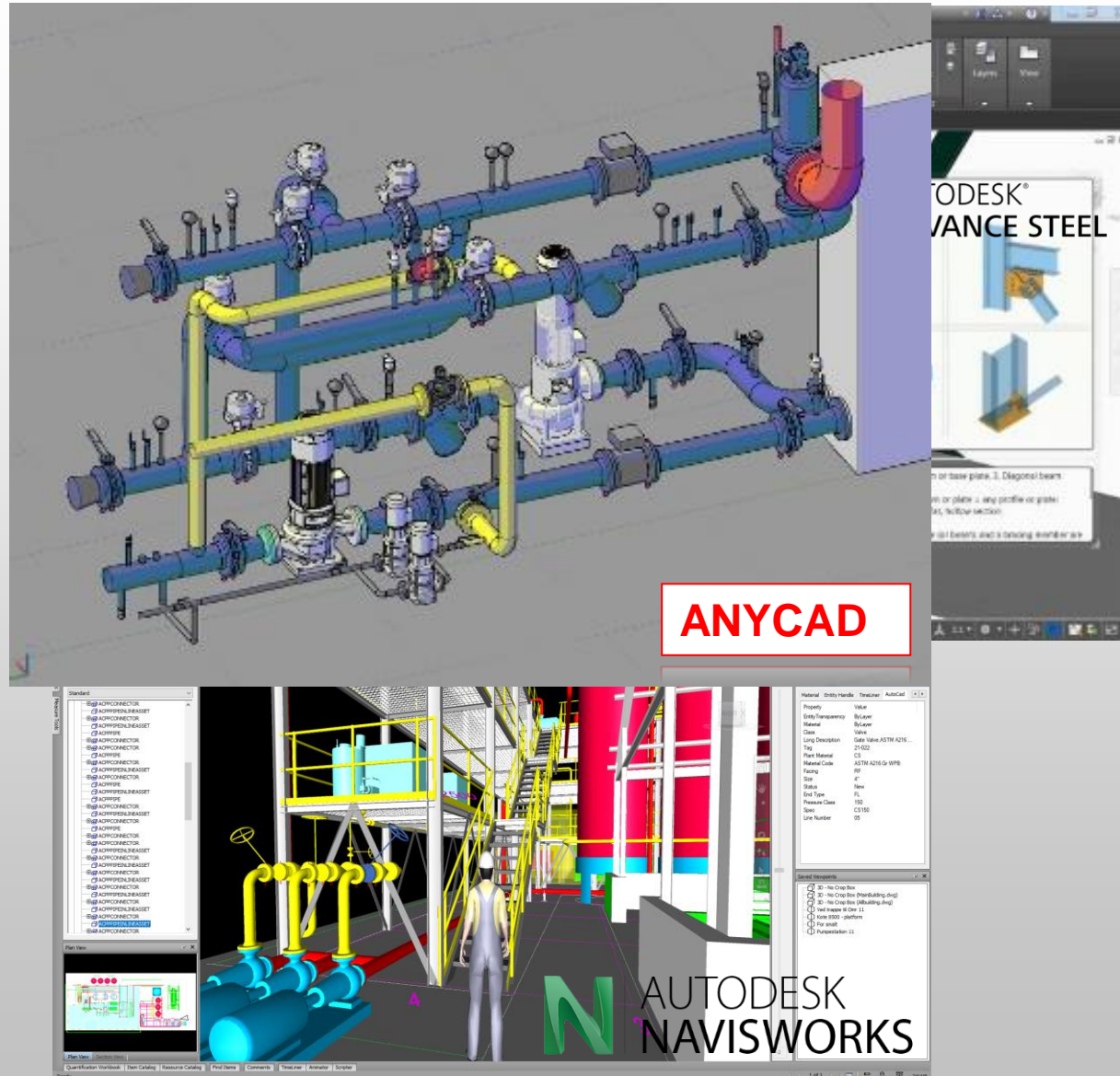
BOM

Item	Part Number	QTY	Title	Description
41	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
42	EndressHauser CMT4MFTL51-2	1	EndressHauser CMT4MFTL51-2	EndressHauser CMT4MFTL51-2
43	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
44	EndressHauser CMT4MFTL51-1	2	EndressHauser CMT4MFTL51-1	EndressHauser CMT4MFTL51-1
45	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
46	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
47	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
48	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
49	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.
50	002-Balance Tank	1	002-Balance Tank	10,000 L/H with 40/3 sec holding cell. Prepared for Homogenizer and Deaerator units.



Leverandør til Plant Designet

Plant Design Workflow



Autodesk ANYCAD

- AnyCAD giver mulighed for at benytte nativ 3D modeller fra andet CAD software, uden behov for en mellemlanding på neutrale filformater.

 AUTODESK
AUTOCAD


 NX

 PTC
creo™

 ISO STEP

 AUTODESK
INVENTOR®


 CATIA

 SOLIDWORKS


 AUTODESK
ALIAS

Leverandør til Plant Designet


Plant Design Workflow



AUTODESK®
RECAP




AUTODESK®
INVENTOR®



AUTODESK
REVIT

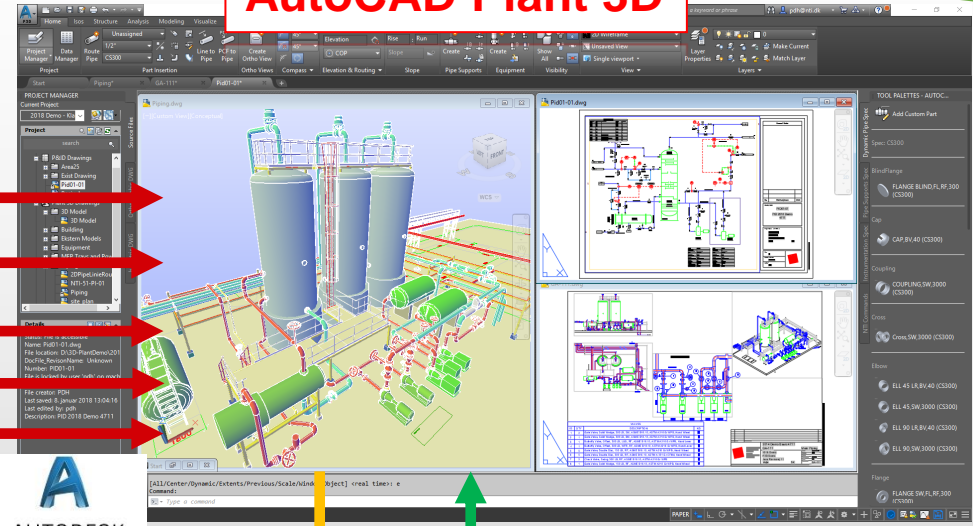
ANYCAD



AUTODESK®
ADVANCE STEEL

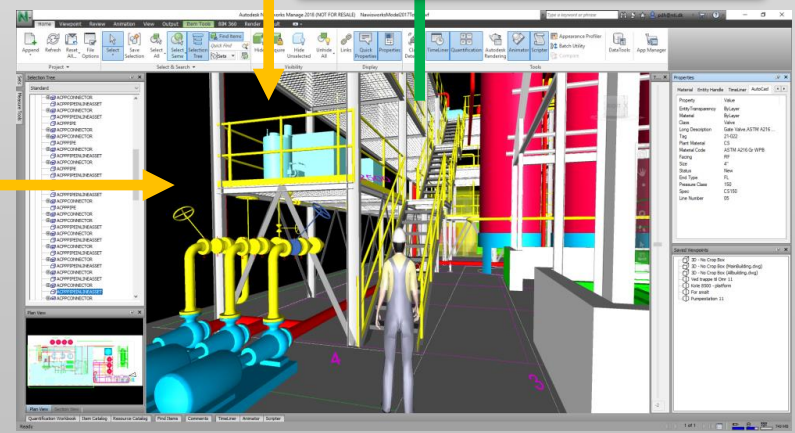
Simplificerings behov

AutoCAD Plant 3D



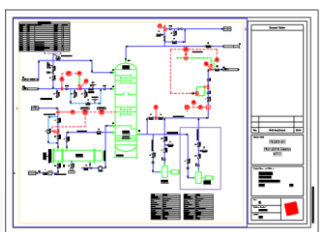
AUTODESK
AUTOCAD PLANT 3D

Coordinations model

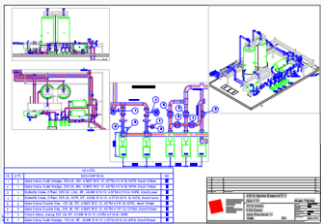


AUTODESK
NAVISWORKS

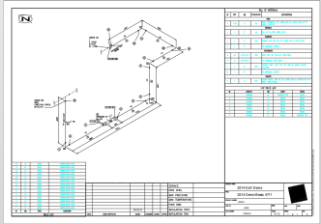
P&I Diagrammer



Layout & Arrangements tegninger



Rør Isometri tegninger

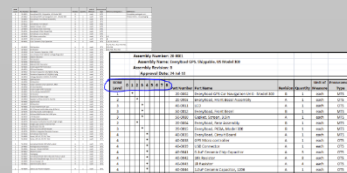


OUTPUT

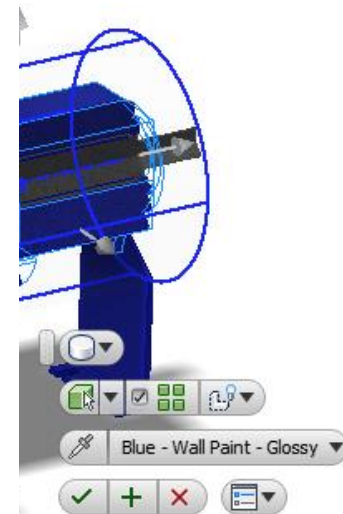
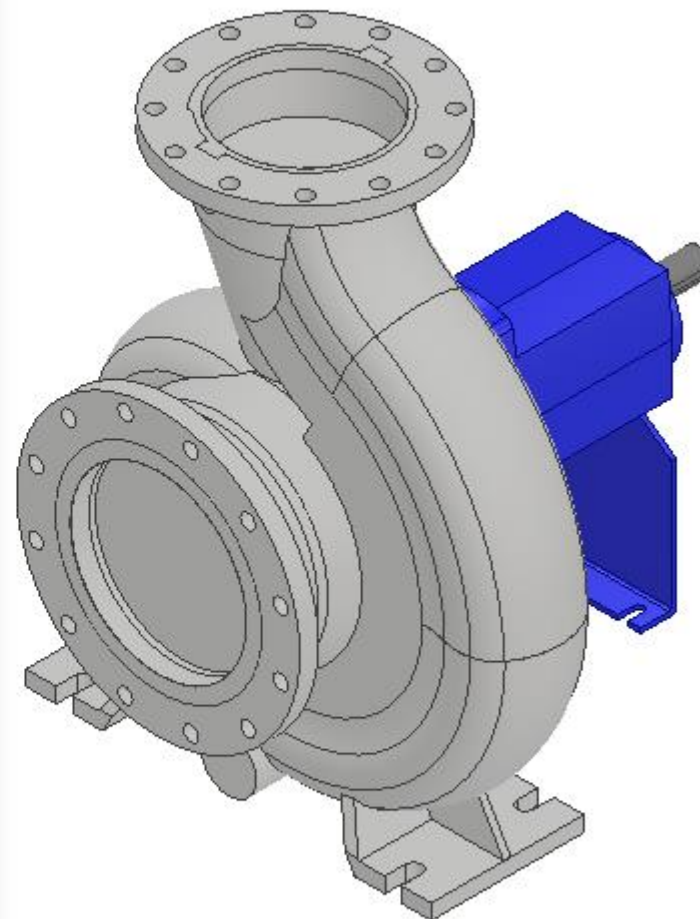
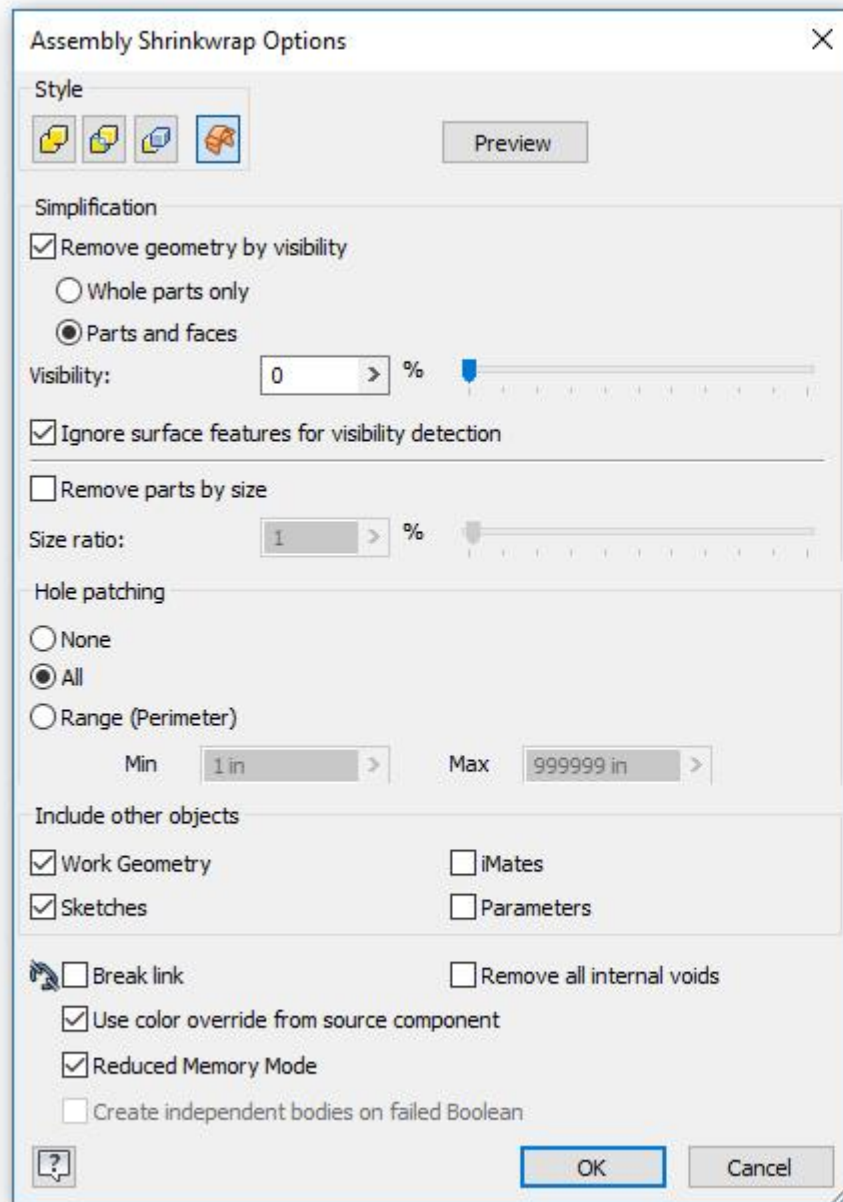
Visualisering /Walk through



Rapporter & Lister



- 3D model
- 3D model
- STP file
- Detail



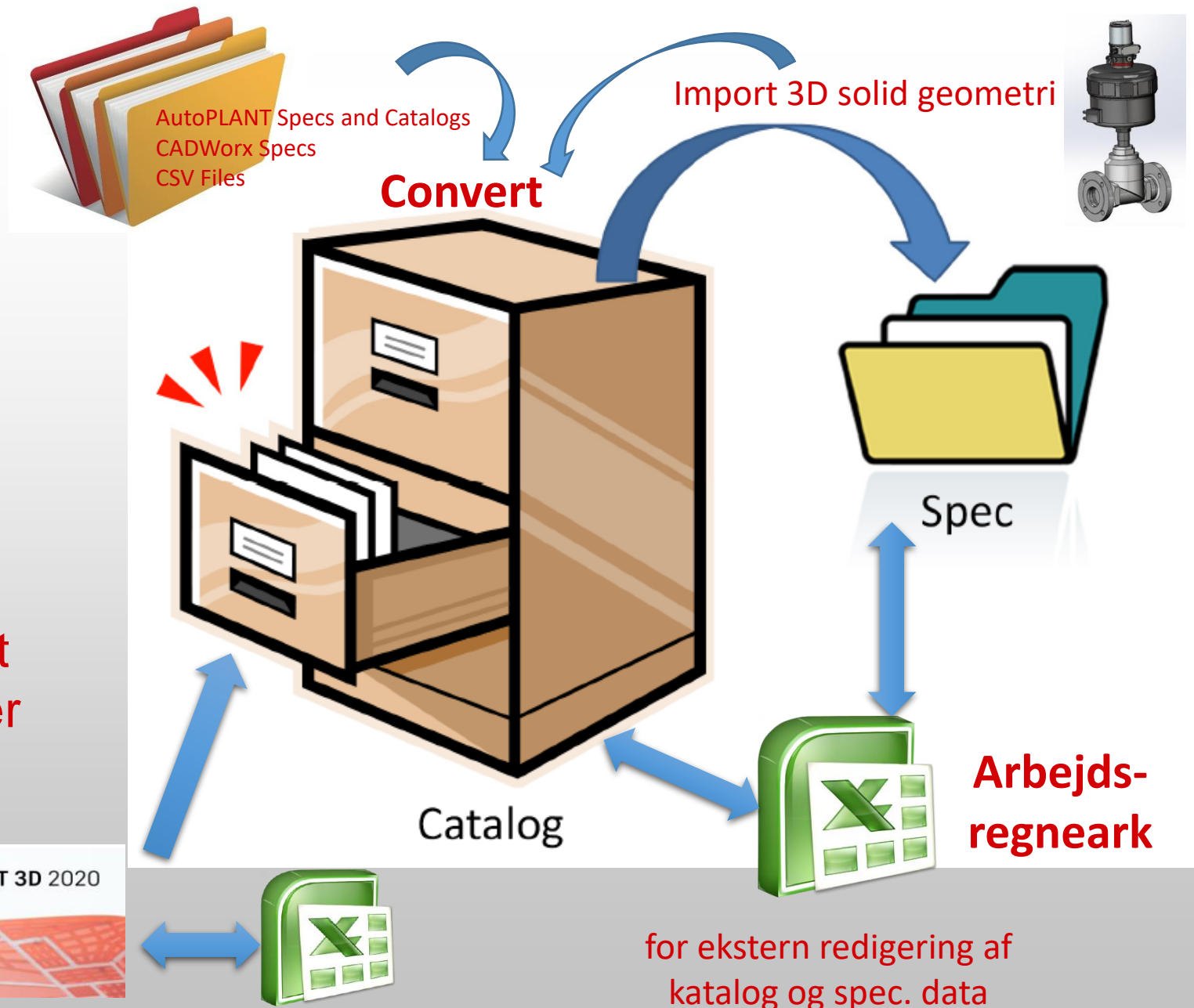
Kataloger & Spec.

Fakta:

- Kataloger er baseret på SQLite databaser.
- Spec's er baseret på SQLite databaser.
- Katalog og Spec editoren er et separat klient software som er u-licenseret.



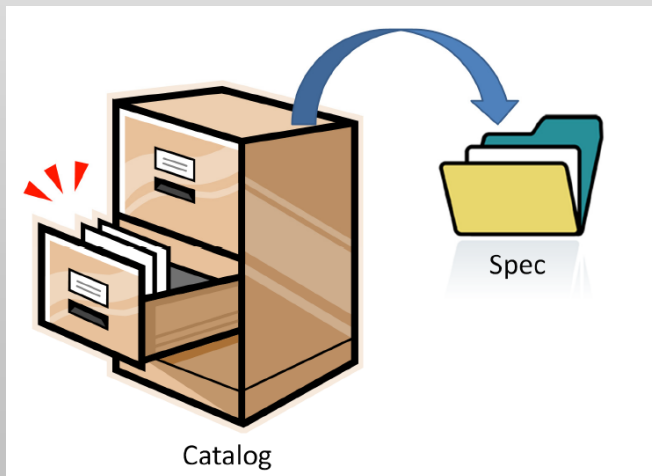
for opbygning af nye kataloger



Kataloger & Spec.

Katalog "in-the-box":

- AME
- ASME
- AWWA
- DIN (EN)



Kataloger til download:

The screenshot shows the Autodesk App Store interface. On the left is a 'Filters' sidebar with sections for 'Categories' (Calculation and Analysis, Catalogs & Specs, P&ID Tools, Productivity, Reality Capture), 'App Type' (Free Apps, Trial Apps, Paid Apps, Digitally signed), 'Version' (2016, 2015, 2014, 2013), and 'OS' (Win32 and 64, Win32, Win64, Mac OS, Linux). The main area displays a grid of app cards. The top card is 'Scaffold Counter by Avontus' (Free). Other cards include 'ASME Cpack with weights V2.1', 'VICTAULIC Content Pack', 'Georg Fischer Content Pack', 'PIP specs updated_V2', 'Spears Content Pack 2015', 'Pharma Content Pack', and 'ASME Cpack with weights V2.2'. Each card shows the app icon, name, OS compatibility, and rating.

App Name	OS	Rating	Price
Scaffold Counter by Avontus	OS: Win32 and 64	★★★★★ (8)	Free
ASME Cpack with weights V2.1	OS: Win64, Win32	★★★★★ (0)	Free
VICTAULIC Content Pack	OS: Win32, Win64	★★★★★ (0)	Free
Georg Fischer Content Pack	OS: Win64, Win32	★★★★★ (0)	Free
PIP specs updated_V2	OS: Win64, Win32	★★★★★ (1)	Free
Spears Content Pack 2015	OS: Win64	★★★★★ (0)	Free
Pharma Content Pack	OS: Win64, Win32	★★★★★ (0)	Free
ASME Cpack with weights V2.2	OS: Win64, Win32	★★★★★ (0)	Free

Demo – AutoCAD Plant 3D

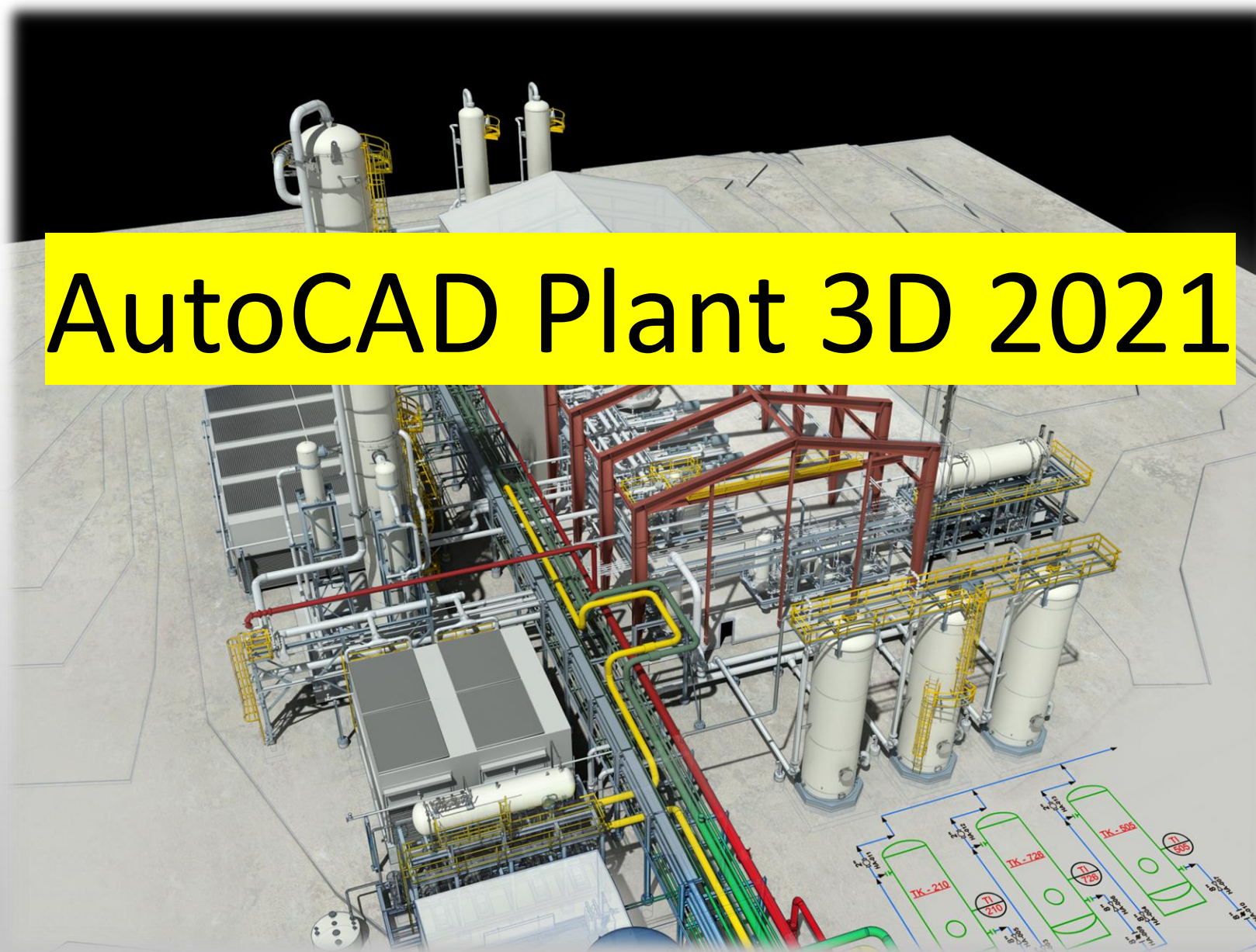


Flere kontor / lokationer / hjemmearbejdes pladser

Corona Situationen – rigtig mange arbejder hjemme fra !



AutoCAD Plant 3D 2021



AutoCAD Plant 3D 2021 og Autodesk BIM 360



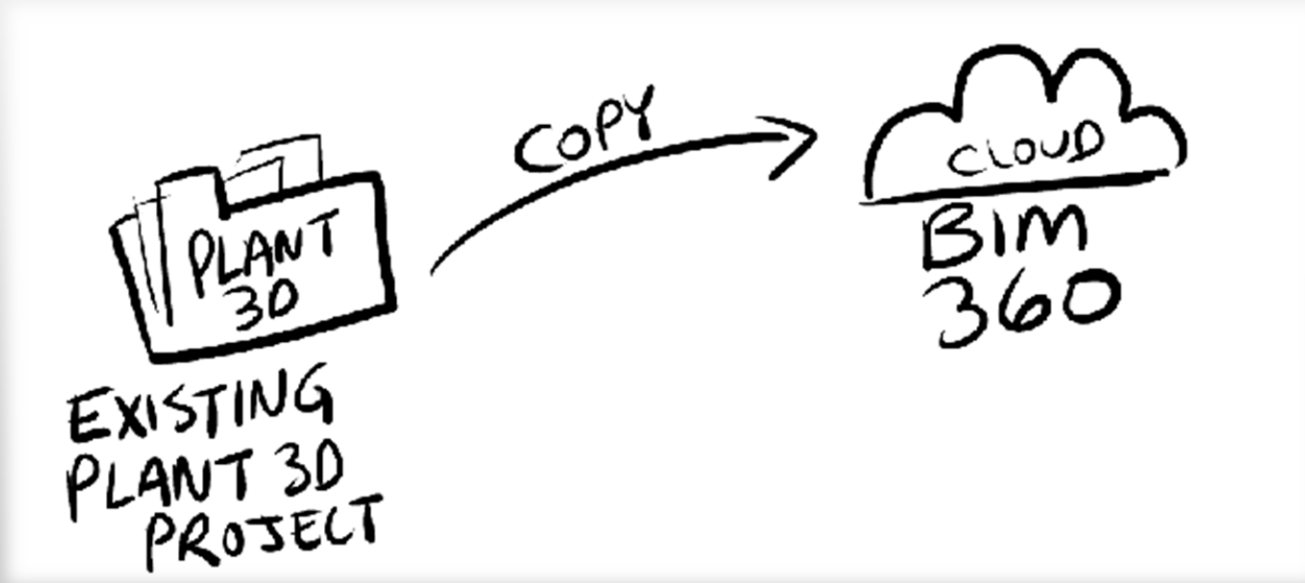
Er det kompliceret at komme i gang med Plant 3D og BIM 360 ?

- Køb adgang til BIM 360, samt licenser til brugerne
- Opret et projekt i BIM 360 og del Plant 3D Projekt(er)
- Invitere og tildel rettigheder til kollegaer og partnere (Team medlemmer) på projektet.
- Arbejd med projektet i BIM 360

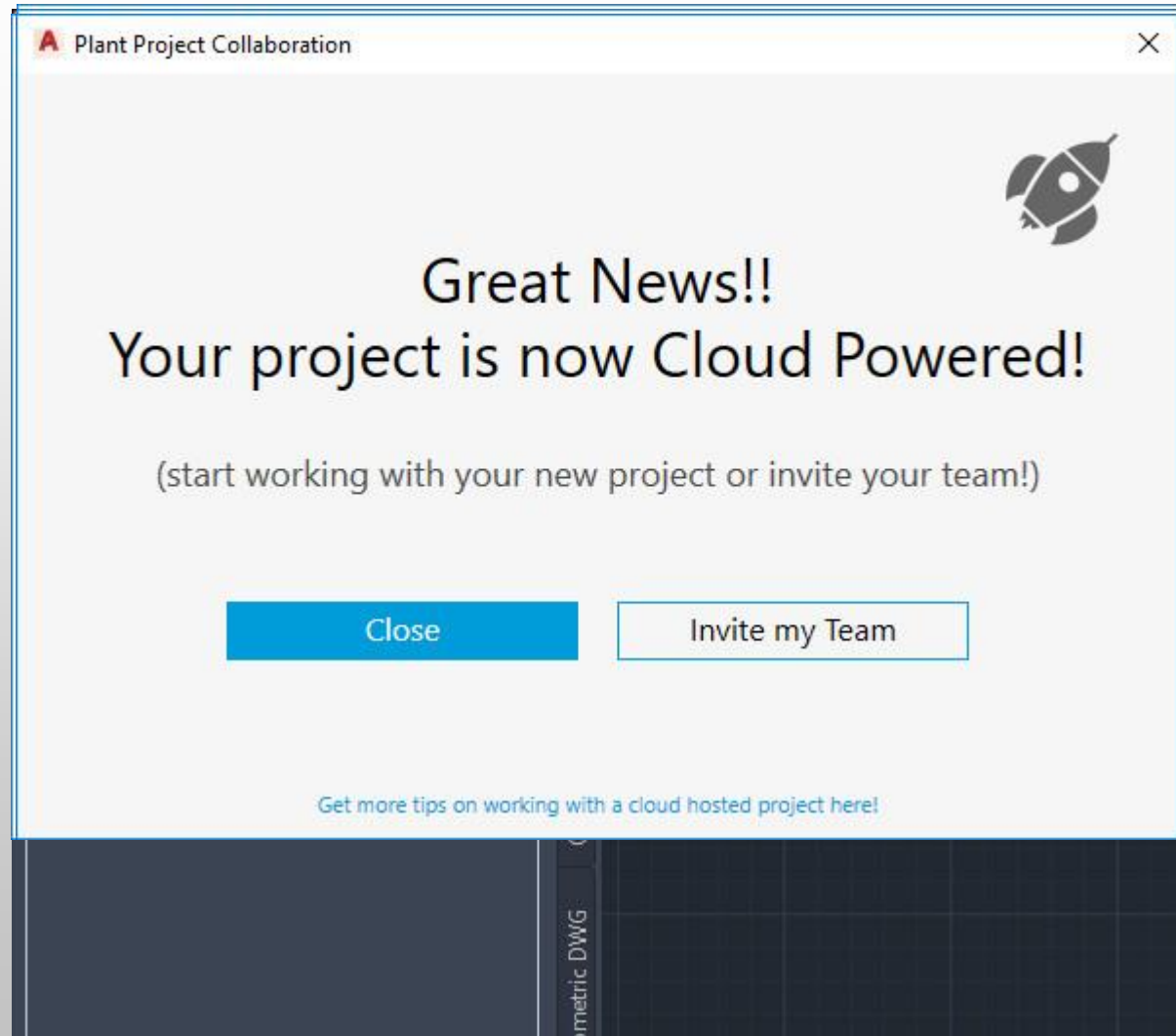


AutoCAD Plant 3D og Autodesk BIM 360

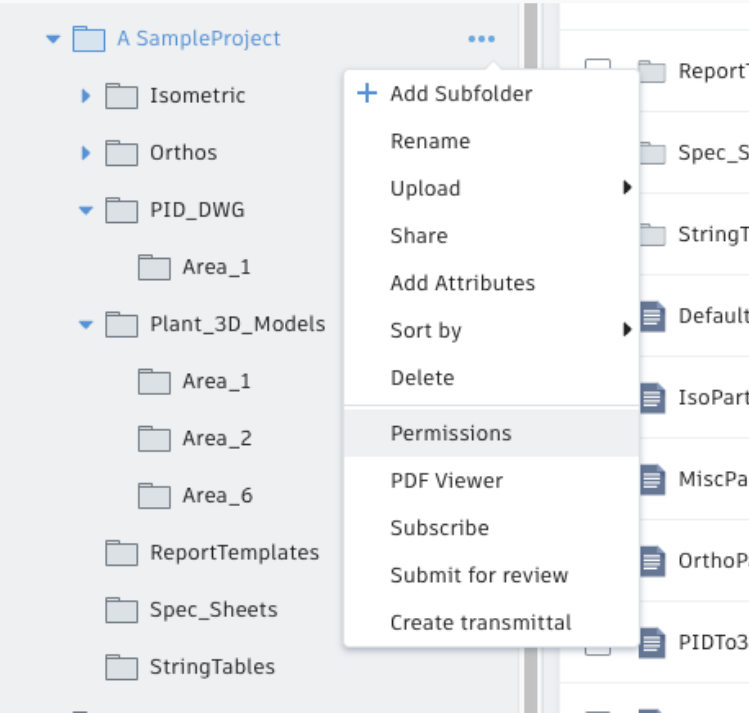
- Upload et eksisterende Plant 3D projekt til BIM 360



Upload et eksisterende Plant 3D Projekt til BIM 360



Team medlemmer tildeles rettigheder til projektet i BIM 360

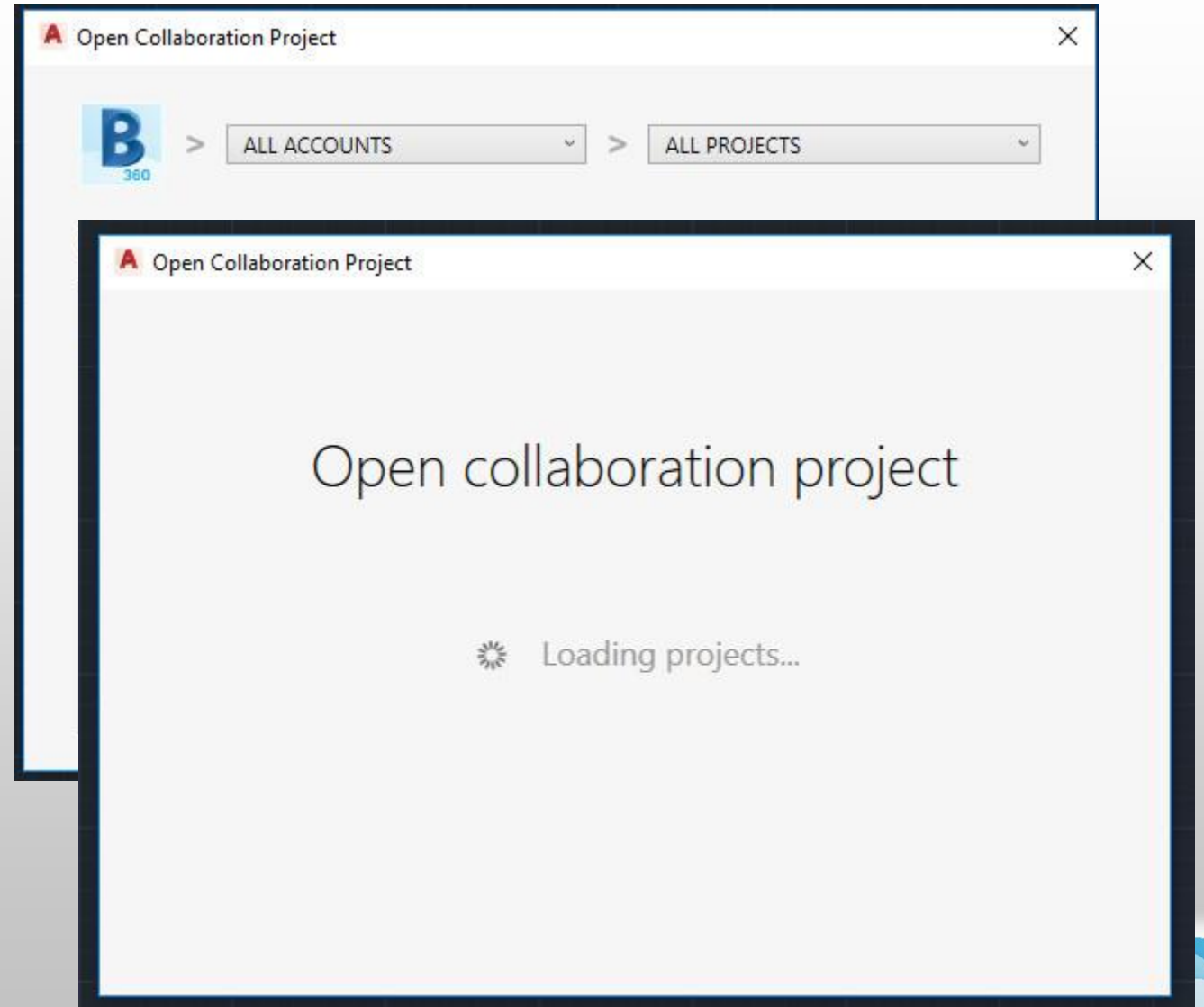
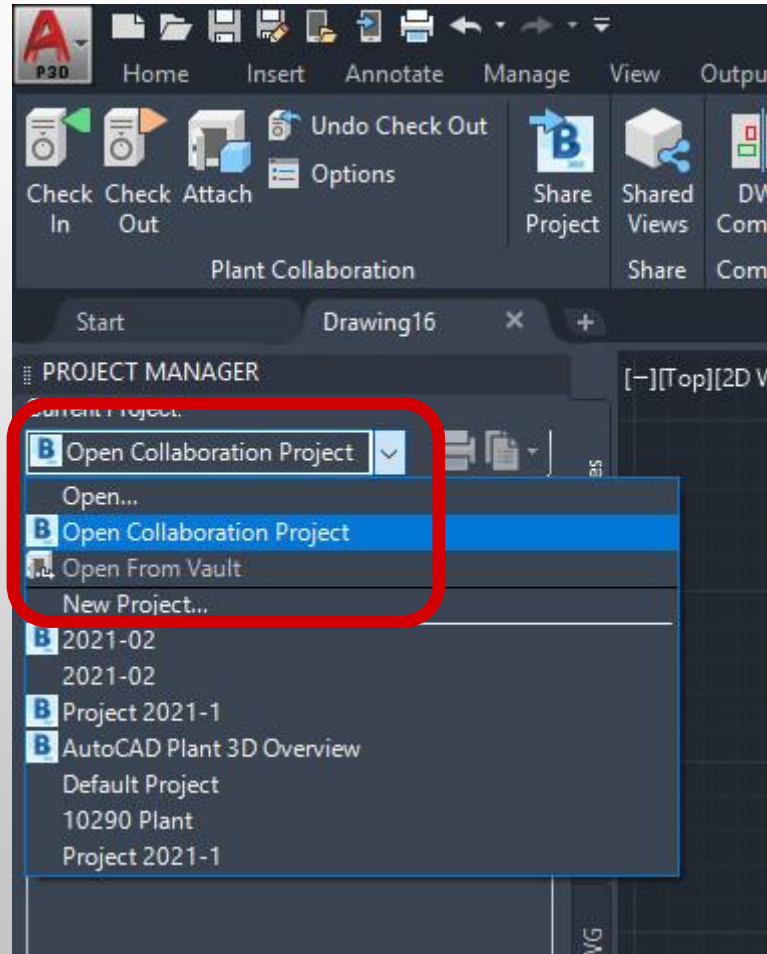


Example Permissions Matrix

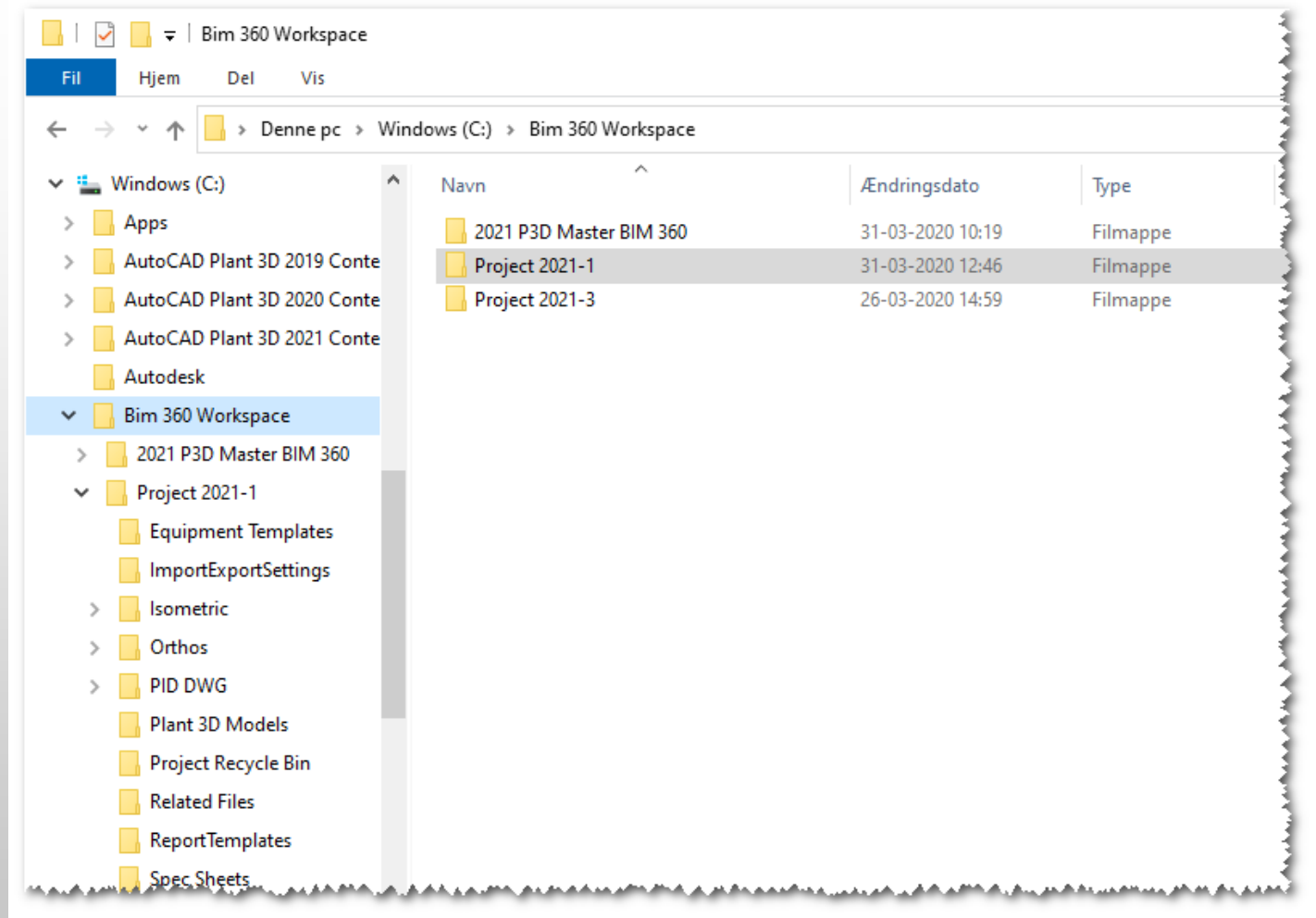
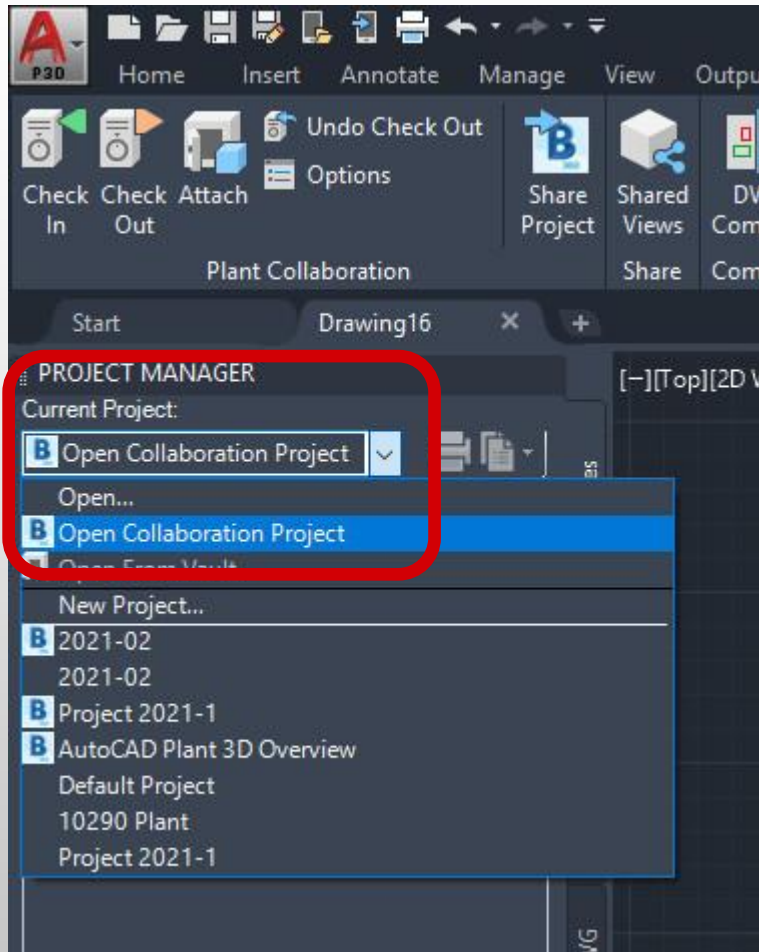
	Cad Administrator	Piping Designer/ 3D Modeling	P&ID Drafting	Pipe Spec Editing
Project Root	Full Control	View+Download	View+Download	View+Download
Isometric	Full Control	View+Download+Upload+Edit	View+Download	View+Download
Orthos	Full Control	View+Download+Upload+Edit	View+Download	View+Download
PID_DWG	Full Control	View+Download	View+Download+Upload+Edit	View+Download
Plant_3D_Models	Full Control	View+Download+Upload+Edit	View+Download	View+Download
Report_Templates	Full Control	View+Download	View+Download	View+Download
Spec_Sheets	Full Control	View+Download	View+Download	View+Download + Upload+Edit



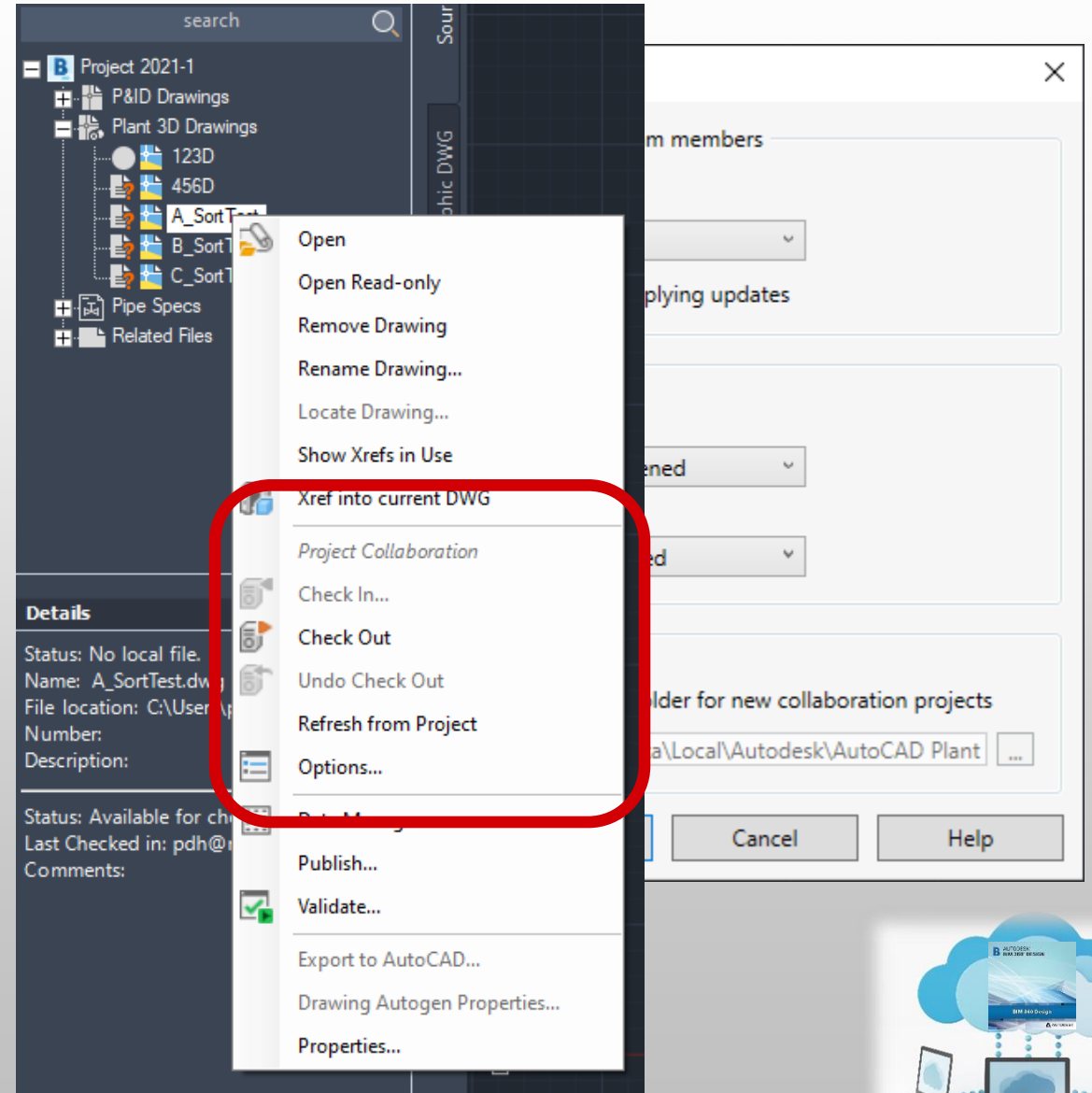
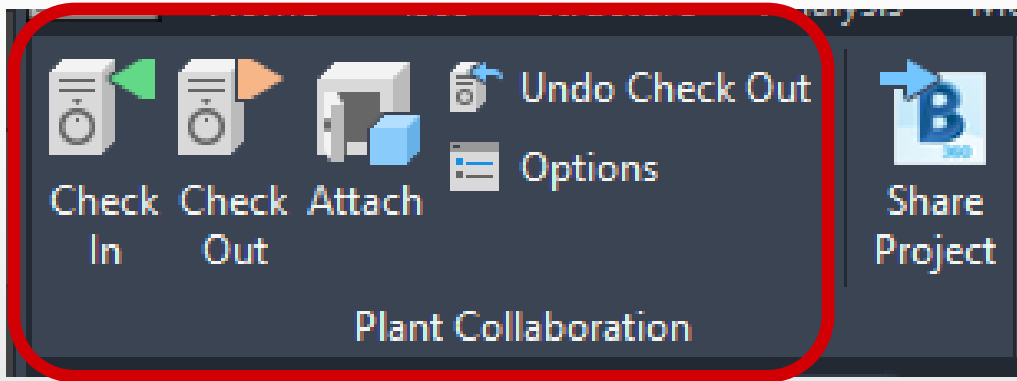
Åbn et Plant 3D Project i BIM 360



Åbn et Plant 3D Project i BIM 360



Fil Håndtering og funktioner i “Collaborate Ribbon”



BIM 360 og Plant 3D

- Bruges udelukkende til:
 - View, Snit,
 - Egenskaber / Properties fra Plant 3D
 - Tag Mål
 - Lave Markeringer og kommunikere
 - Sæt opgaver "problemer" i gang til andre.
- Bruges Absolut ikke til.
 - Filhåndtering af nogen som helst slags.

Document Management

MAPPER

GRANSKN

Document Management

MAPPER

GRANSKNINGER

OVERFØRSLER

PROBLEMER

Vis efter

Mapper

Sæt

Project Files.6

Project KDK 2017

ACPlantTools

Equipment Templates

ImportExportSettings

Isometric

Orthos

PID DWG

01 Kedelcentral

03 LT HTO manifold

04 Hedtoliesystem for tjæ...

05 NAF Hedtoliekreds

06 Hedtoliekreds kold side

10 Osmocsystem



Overfør filer



Viser 2 elementer

Søg efter dokumenter

<input type="checkbox"/>	Navn ^	Beskrivelse	Version	Størrelse	Senest opdateret	Opdateret af	Markering	Problem	Status	Sæt
<input type="checkbox"/>	05-2A-02.dwg		V1	781,2 KB	15. maj 2020 13:21	Per Damsgaard Han...				
<input type="checkbox"/>	05-2A-03.dwg		V1	555,3 KB	15. maj 2020 13:21	Per Damsgaard Han...				

elt

X

3D



X ~ 48.0 mm

Y ~ 263.3 mm

~ 267.6 mm

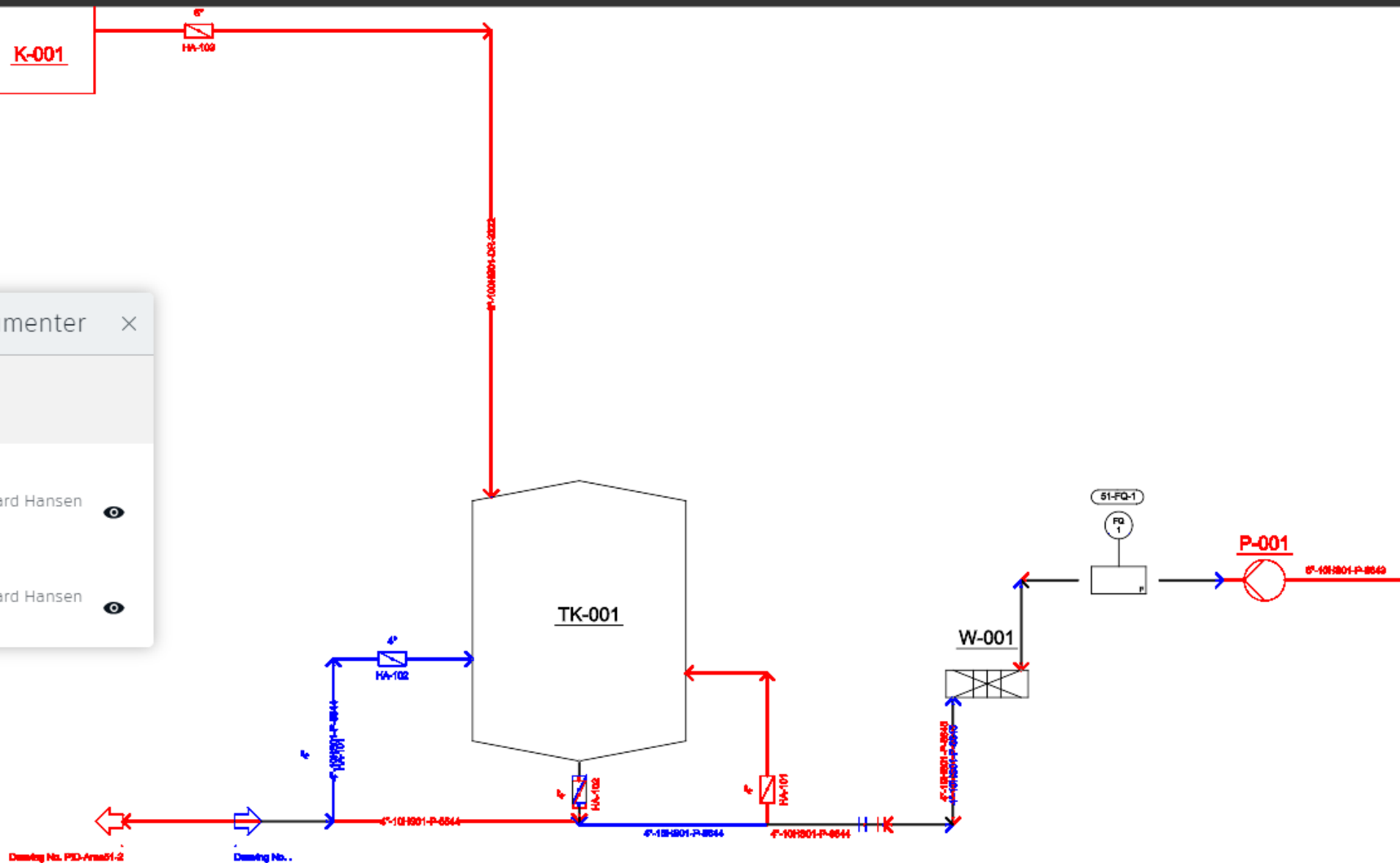
vs. PID1-Area51.dwg v9

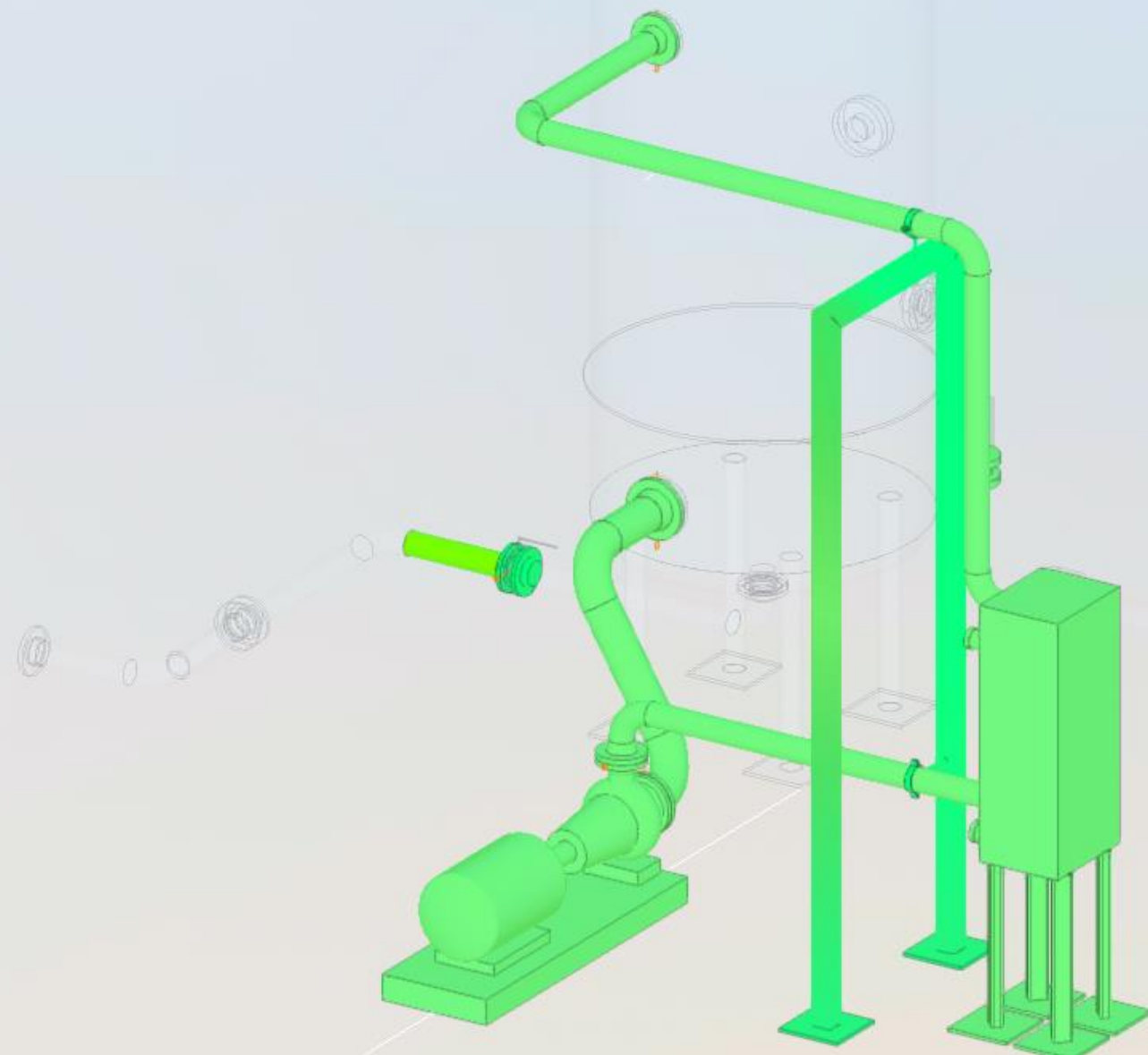
Sammenlignede Dokumenter

PID1-Area51.dwg
v15 Overført af: Per Damsgaard Hansen
Ved: Apr.27

PID1-Area51.dwg
v9 Overført af: Per Damsgaard Hansen
Ved: Nov.06 2019





Ændringer




49
Tilføjet

0
af 9
Fjernet

0
af 20
Ændret

Berørte discipliner

Ændringstype



Søg + filtrer

Flad resultatliste

Resultat som træ

ACPPCONNECTOR [B31]

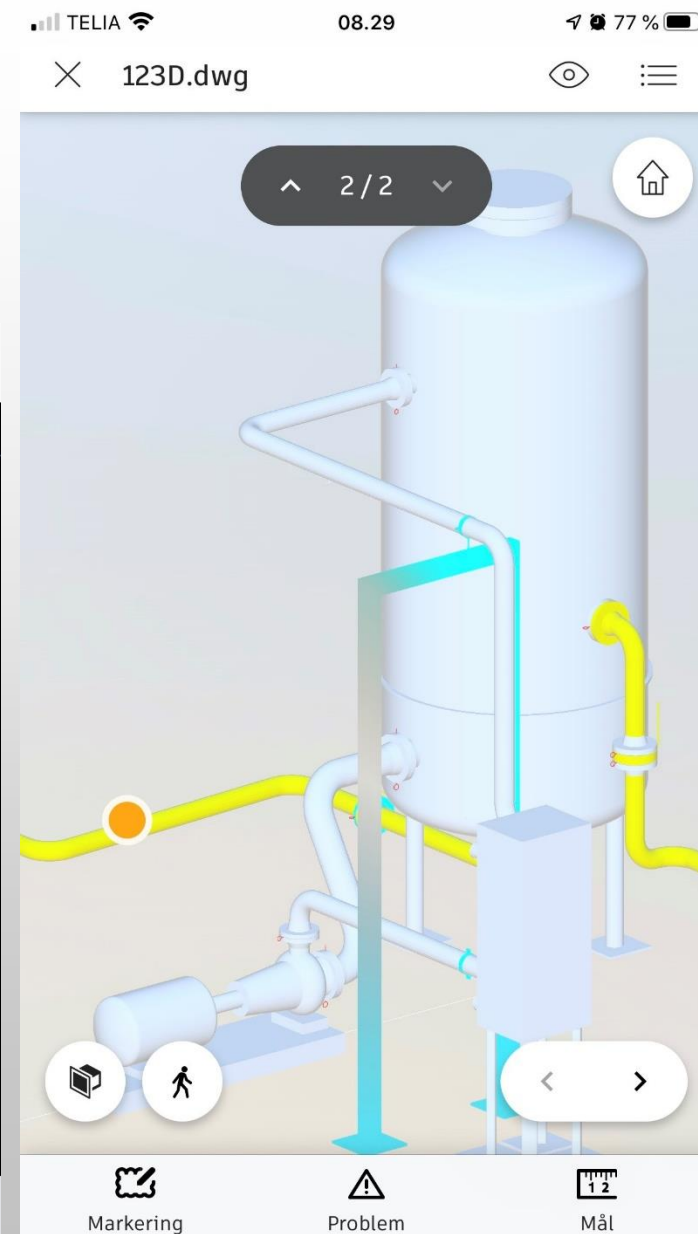
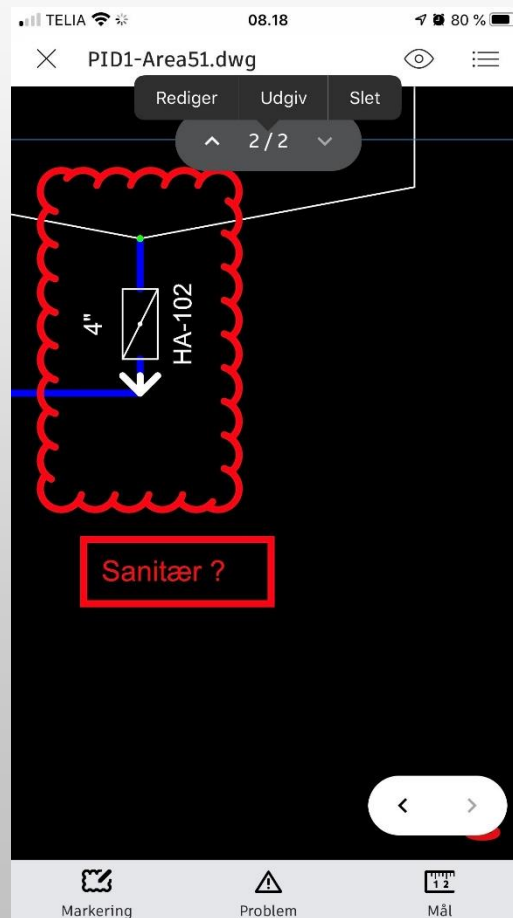
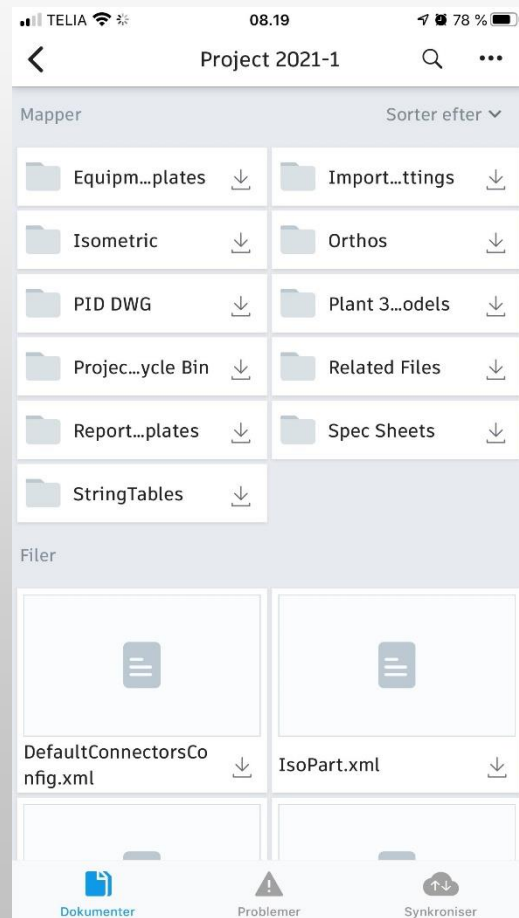
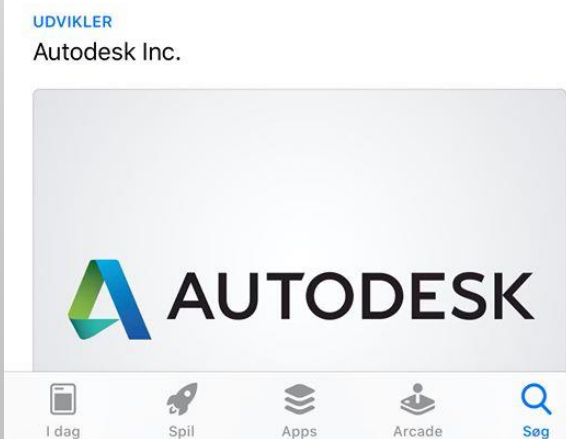
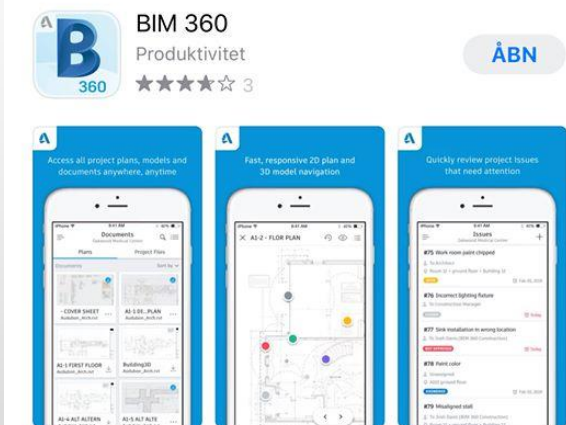
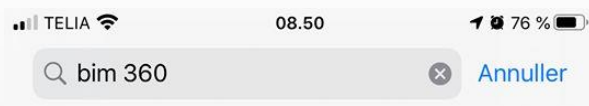
ACPPCONNECTOR [B3A]

ACPPCONNECTOR [C53]

ACPPCONNECTOR [C80]

ACPPCONNECTOR [D02]

Mobiltelefon eller Tablet



Demo – AutoCAD Plant 3D og BIM 360



Plant Design Workflow

AUTODESK®
RECAP

AUTODESK®
INVENTOR®

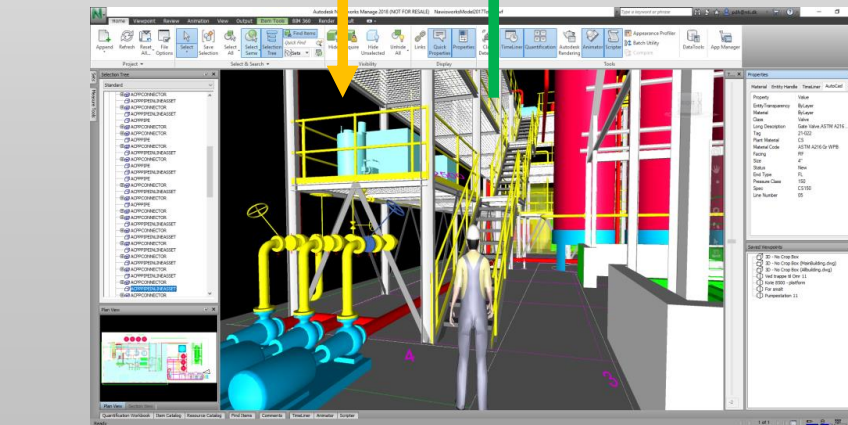
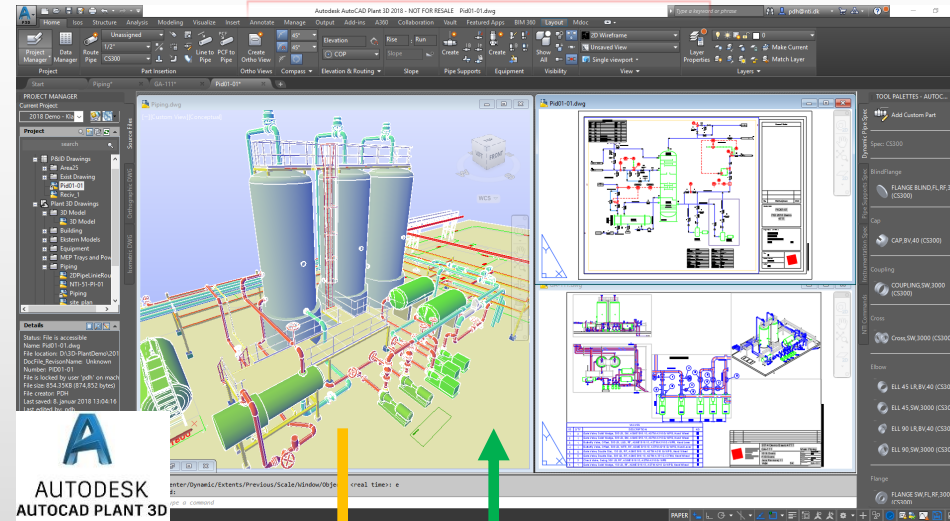
AUTODESK
REVIT

ANYCAD

AUTODESK®
ADVANCE STEEL

INPUT

AutoCAD Plant 3D



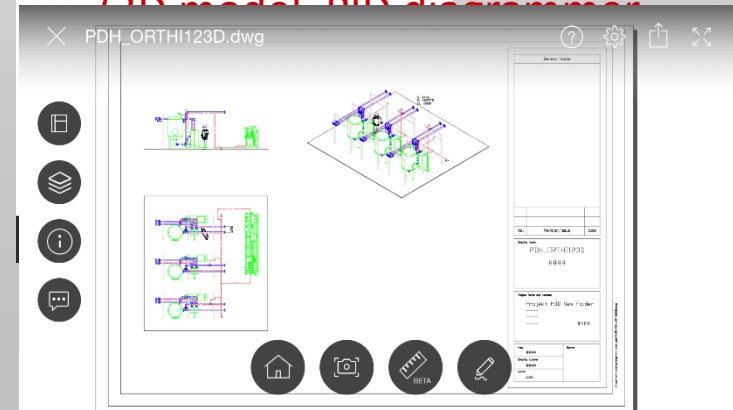
Autodesk

OUTPUT



Nøglefunktioner:

- OnSite adgang til design data
(3D model, PID diagrams)



NTI TOOLS for AutoCAD Plant 3D – V1

- Main features:
 - **Equipment manager**
 - Wizard for file and folder naming and creation.
 - Number schemes from Vault can be used.
 - Full layer control for viewports in Orthographic drawings
 - Easy and intuitive handling of drawing boarder and title blocks
 - Rename Folder function
 - Strong function in vault environments



NTI TOOLS for AutoCAD Plant 3D

Imported Equipment

- Registration of imported solid geometries in each Plant 3D model file
 - Supported formats is: ADSK, IPT, STP, SLDPR
- Unique code for each imported component (filename + timestamp)
- The location (move + rotate) of the imported geometry is registered in the DWG file
- Record metadata and Nozzel data
- Notification to the user if the "source-file" has been overwritten or deleted
- Updating the already installed models
- Ability to select new revision (file) of an inserted model

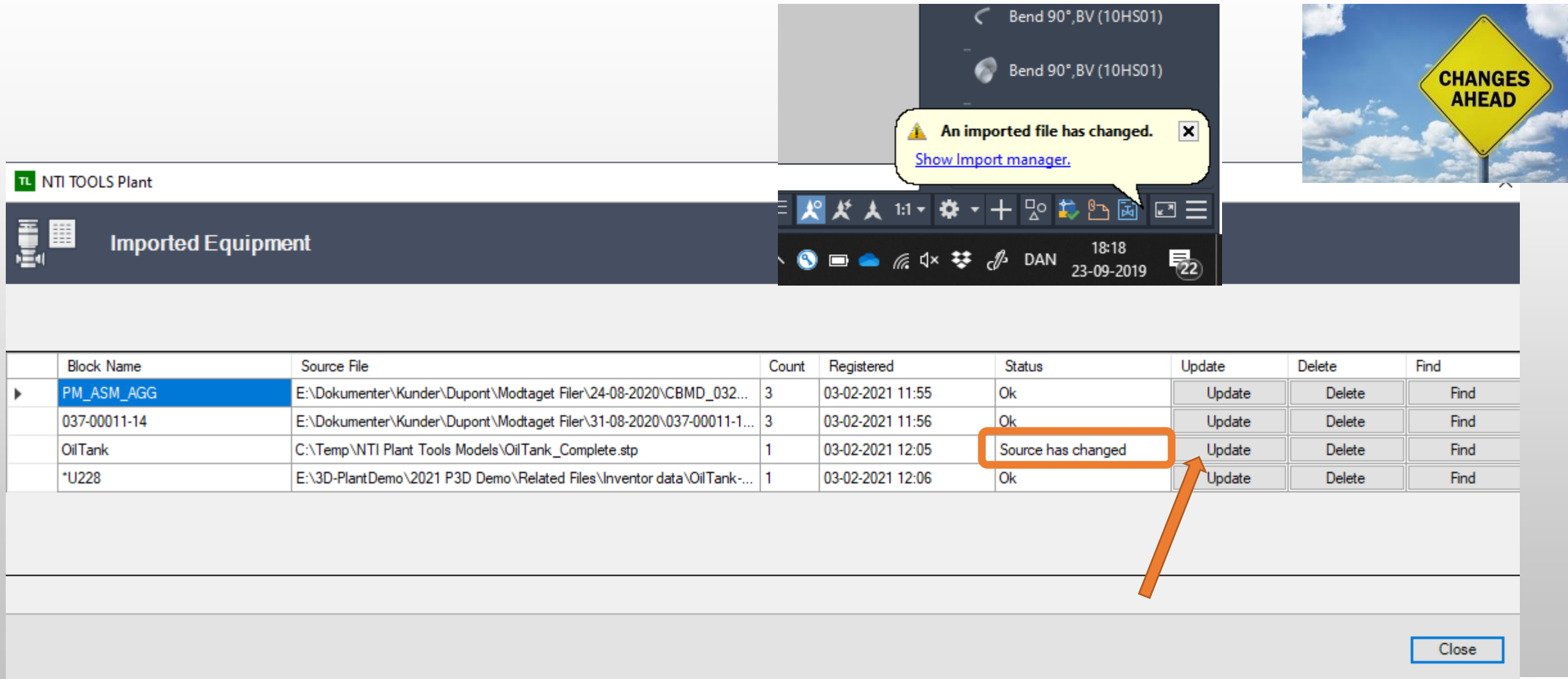
NTI TOOLS for AutoCAD Plant 3D

The screenshot displays the NTI TOOLS Plant software interface. The main window shows a 3D model of industrial equipment, including large vertical vessels and horizontal pumps, rendered in a shaded view. The interface includes a top menu bar with 'Imported Equipment', 'Templates', and 'NTI TOOLS Plant'. A left sidebar contains icons for 'Source Files', 'Orthographic DWG', and 'Isometric DWG'. An 'Imported Equipment' dialog box is open in the foreground, featuring a table with the following data:

Block Name	Source File	Count	Registered	Status	Update	Delete	Find
PM_ASM_AGG	E:\Dokumenter\Kunder\DuPont\Modtaget Filer\24-08-2020\CBMD_032...	3	03-02-2021 11:55	Ok	Update	Delete	Find
037-00011-14	E:\Dokumenter\Kunder\DuPont\Modtaget Filer\31-08-2020\037-00011-1...	3	03-02-2021 11:56	Ok	Update	Delete	Find

The dialog box also includes a 'Close' button at the bottom right.

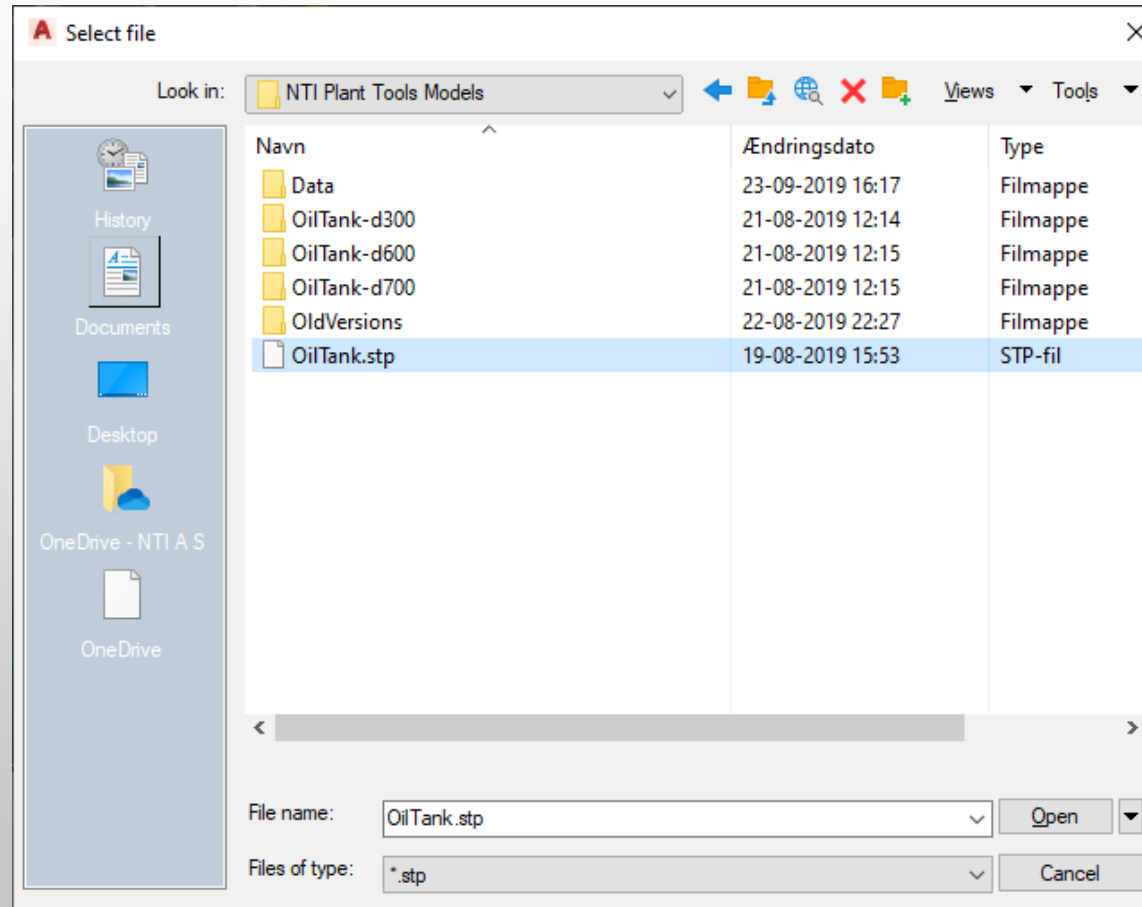
NTI TOOLS for AutoCAD Plant 3D



The screenshot displays the NTI TOOLS Plant software interface. At the top, a warning message box states: "An imported file has changed. Show Import manager." Below this, the "Imported Equipment" table lists various components. The "OilTank" entry is highlighted with an orange box around its status "Source has changed", and an orange arrow points to the "Update" button in the same row. The table includes columns for Block Name, Source File, Count, Registered, Status, Update, Delete, and Find. A "Close" button is located at the bottom right of the table area.

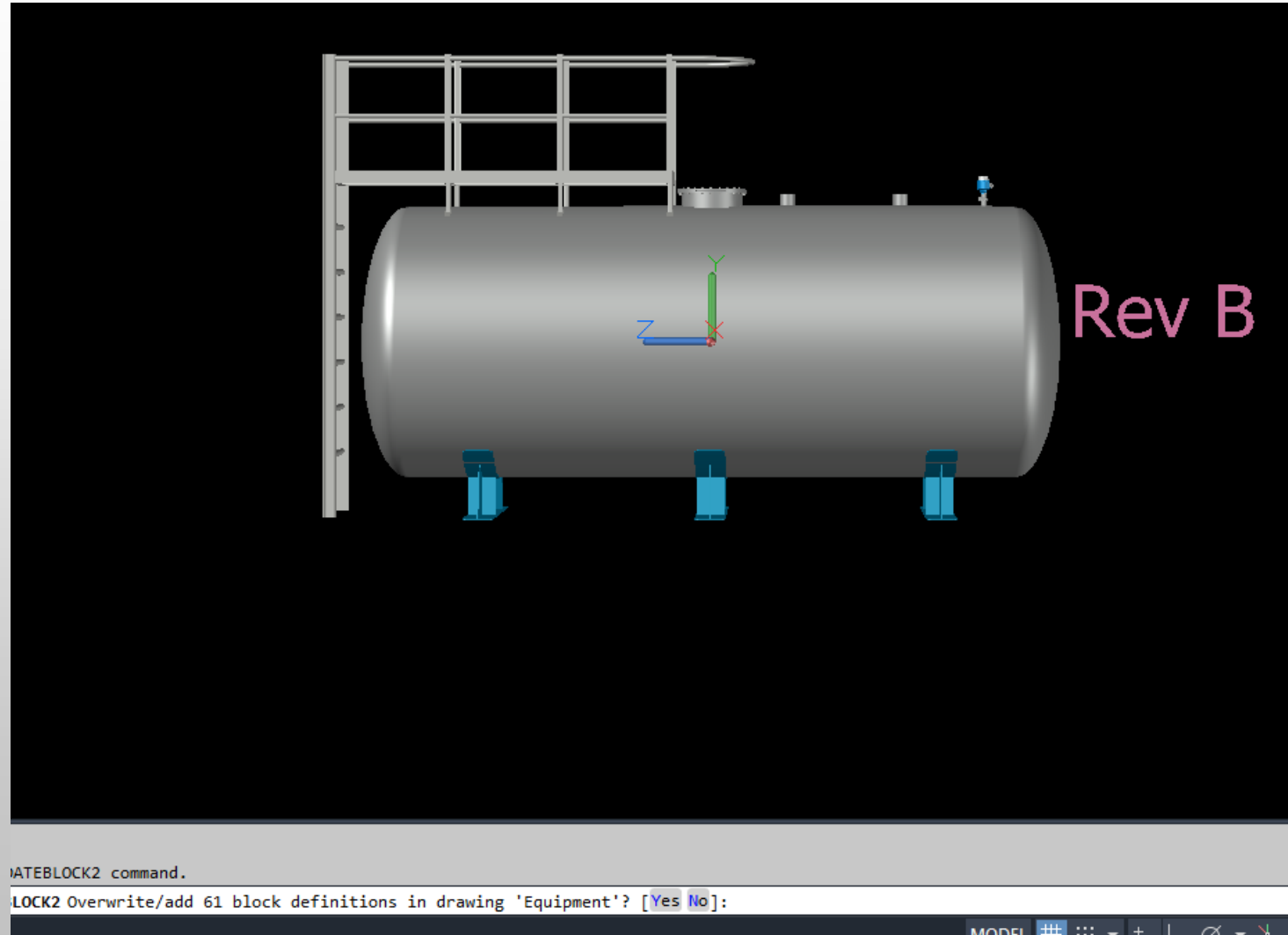
Block Name	Source File	Count	Registered	Status	Update	Delete	Find
PM_ASM_AGG	E:\Dokumenter\Kunder\Dupont\Modtaget Filer\24-08-2020\CBMD_032...	3	03-02-2021 11:55	Ok	Update	Delete	Find
037-00011-14	E:\Dokumenter\Kunder\Dupont\Modtaget Filer\31-08-2020\037-00011-1...	3	03-02-2021 11:56	Ok	Update	Delete	Find
OilTank	C:\Temp\NTI Plant Tools Models\OilTank_Complete.stp	1	03-02-2021 12:05	Source has changed	Update	Delete	Find
*U228	E:\3D-PlantDemo\2021 P3D Demo\Related Files\Inventor data\OilTank-...	1	03-02-2021 12:06	Ok	Update	Delete	Find

NTI TOOLS for AutoCAD Plant 3D

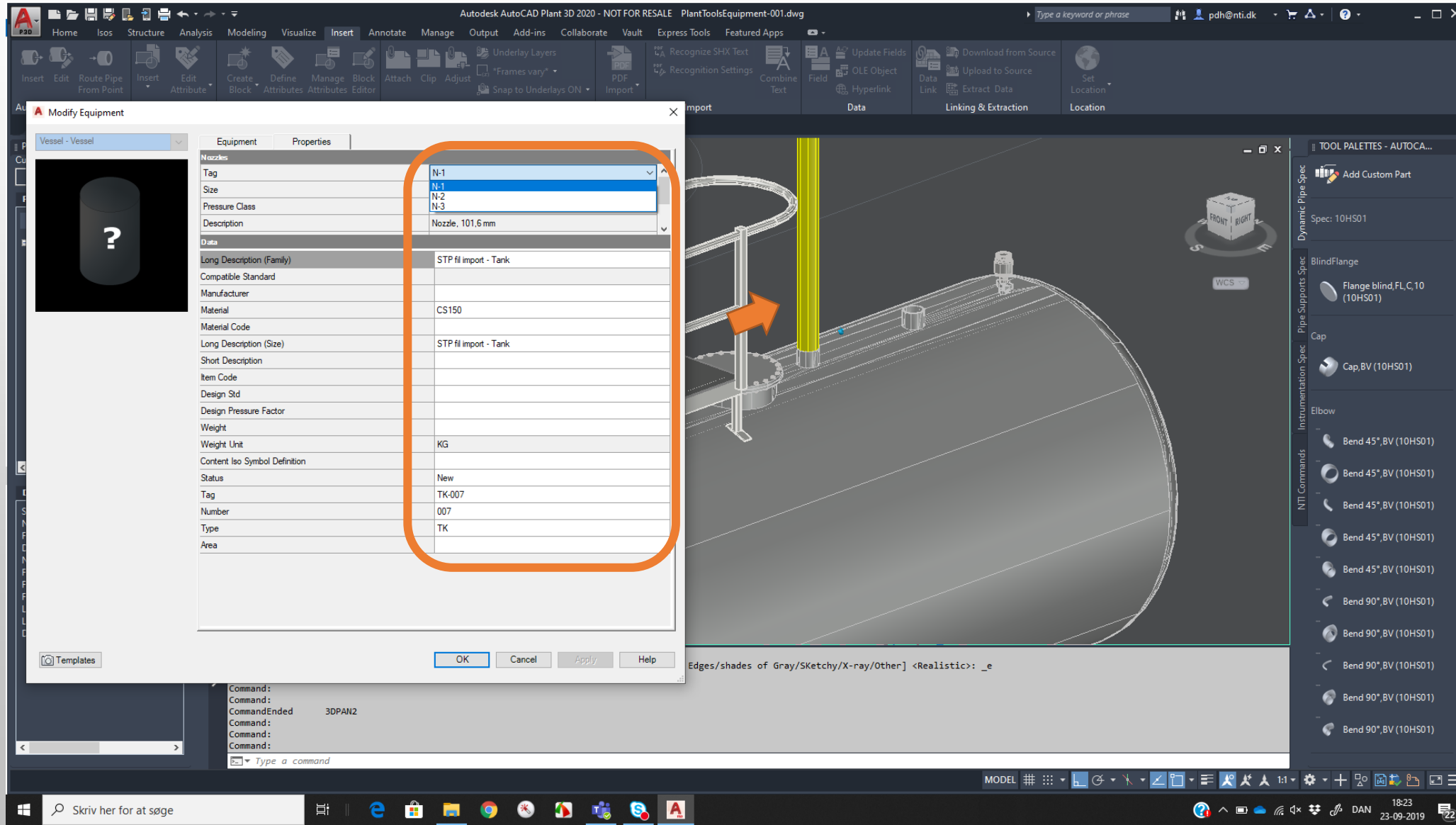


NTI TOOLS for AutoCAD Plant 3D

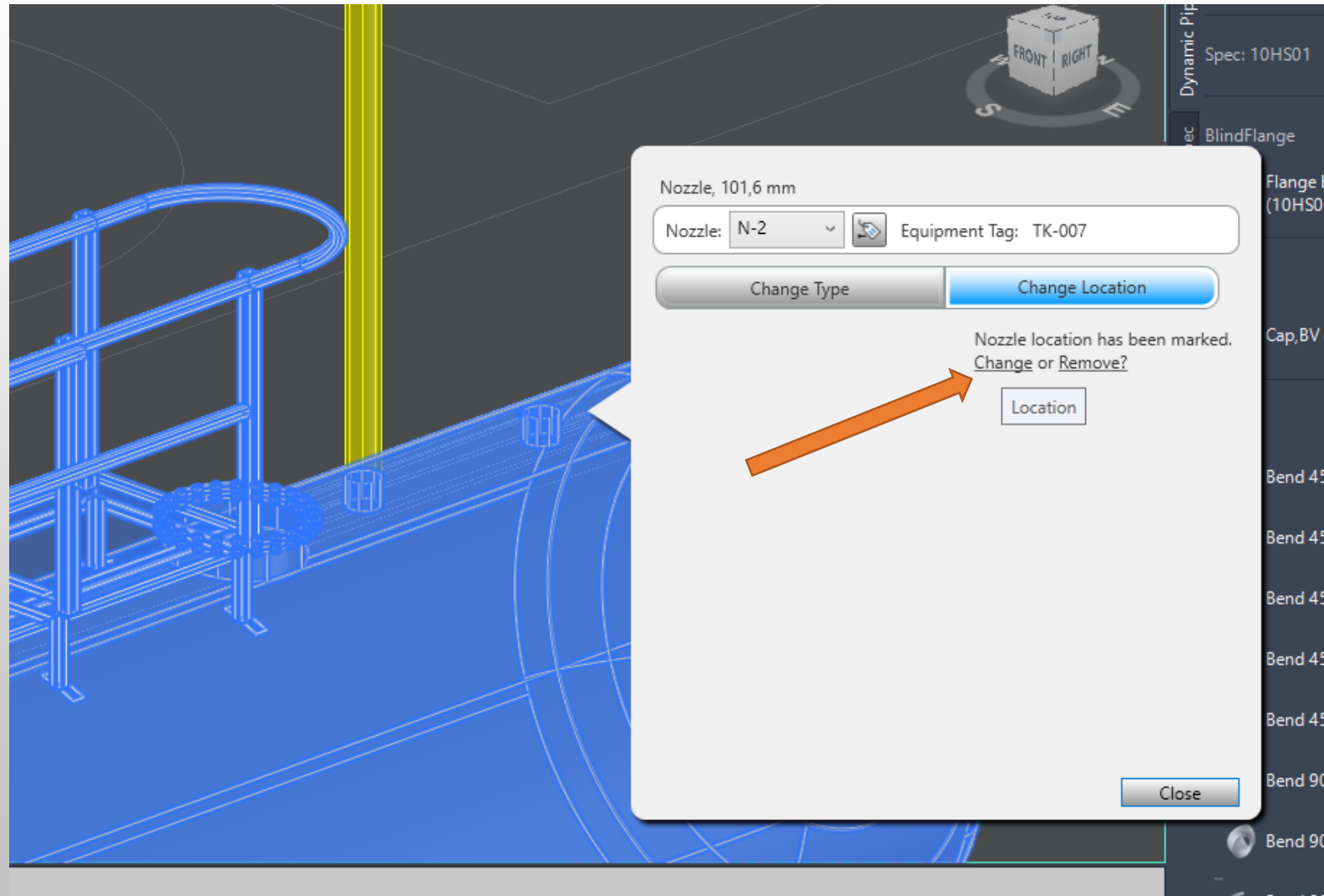
- Preview before updating the models



NTI TOOLS for AutoCAD Plant 3D

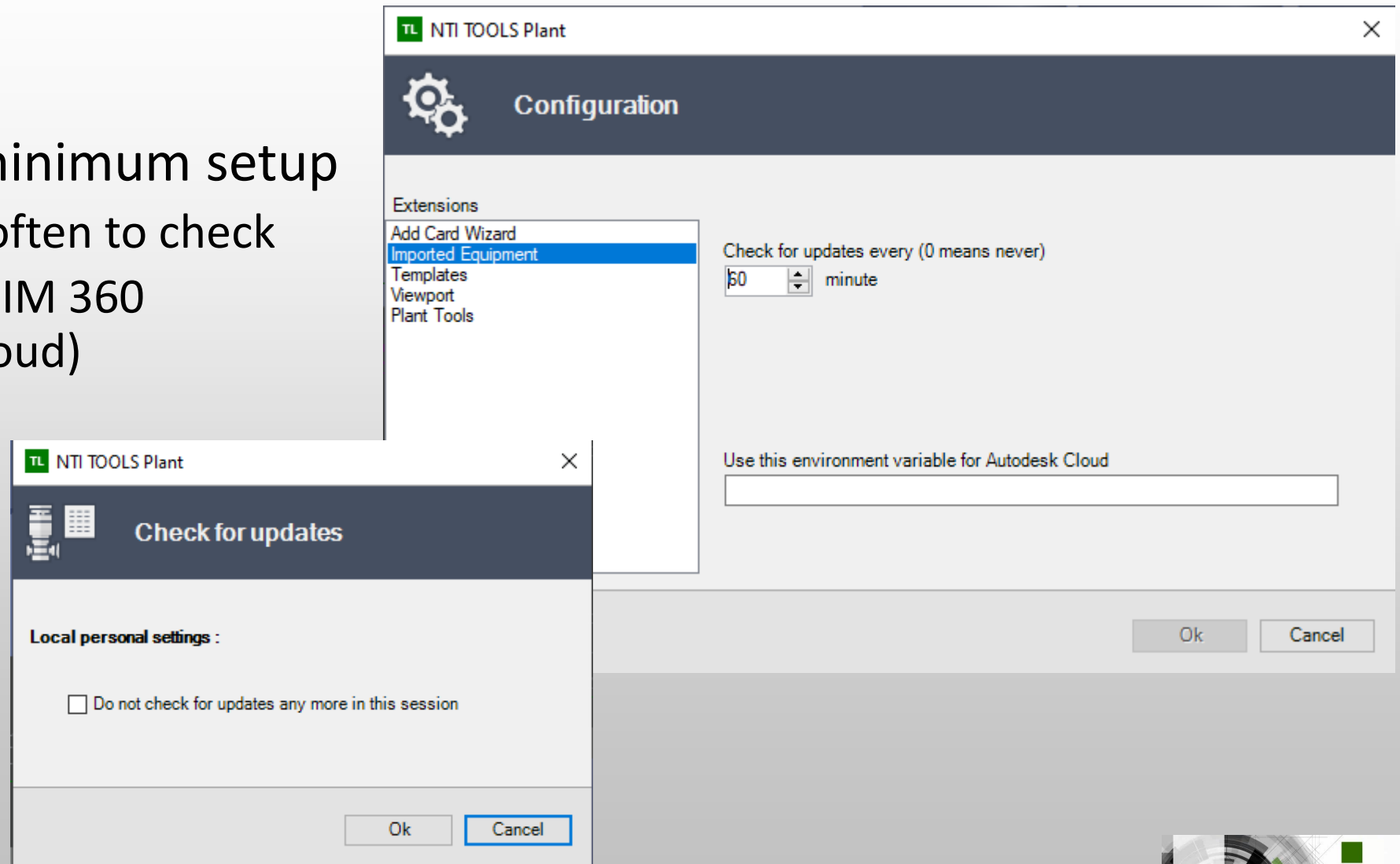


NTI TOOLS for AutoCAD Plant 3D



NTI TOOLS for AutoCAD Plant 3D

- Easy to use - minimum setup
 - Setting how often to check
 - Support for BIM 360 (Autodesk Cloud)



Opsummering.

■ AutoCAD Plant 3D

- Et program der dækker de primære discipliner i et Plant design
- Out of the box – klar til at skabe PI Diagrammer og Rapporter
- Out of the box – klar til at skabe 3D anlægsdesign med udstyr, rør, ventiler, stål konstruktioner med afledte Arrangementetegninger, ISOmetrisk rørtegninger samt Rapporter / Styklister.
- Baseret på AutoCAD og dermed en hurtig adaptation og nemt at rekrutterer nye kollegaer til.



Tak fordi vi måtte bruge jeres tid !

