Building Ops

Cross-Platform Workflows for a Mobile Asset Management Solution

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Class summary

To date, created and collected asset data has been siloed within its respective native software, forcing users to extract information from each software and aggregate it to create a custom electronic deliverable. This is a very time-consuming manual process with inconsistent deliverables to owners. Cross-platform workflows in the Autodesk, Inc., suite has enabled information to be passed from one software to the next, resulting in a more-aggregated, seamless deliverable.

Class attendees will learn how to capitalize on the Autodesk suite of products (Navisworks software, BIM 360 Glue software, BIM 360 Field software, Building Ops software) to efficiently tie the intelligent model and collected asset data together for better use and navigation of the closeout deliverable. We will highlight a recently completed project that adopted Building Ops software as an asset management tool, gaining efficiency in the facility management process. This session features Building Ops, BIM 360 Field, and BIM 360 Glue.

AIA Approved

Key learning objectives

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

- Create a project-specific plan that ensures a valuable owner deliverable
- Streamline the data-management process, by utilizing cross-platform workflows from the Autodesk suite of tools
- Understand the best practices for model linking and collecting construction data
- Understand how building owners and facility managers, can capitalize on the models and data collected throughout the construction process

"Now that **owners** everywhere are increasingly becoming more directly **involved** with **BIM**, their power is even greater to align BIM use with their specific goals, engage more effectively with all stakeholders and extend the **value** of BIM beyond construction into **facility management**."

***The Business Value of BIM*-Smart Market Report; McGraw Hill Construction, 2014**

BIM & FM Statistics

- Trending away from Design and Construction applications into Operations and Maintenance

Owners' Perspectives on the Single Greatest Benefit of BIM

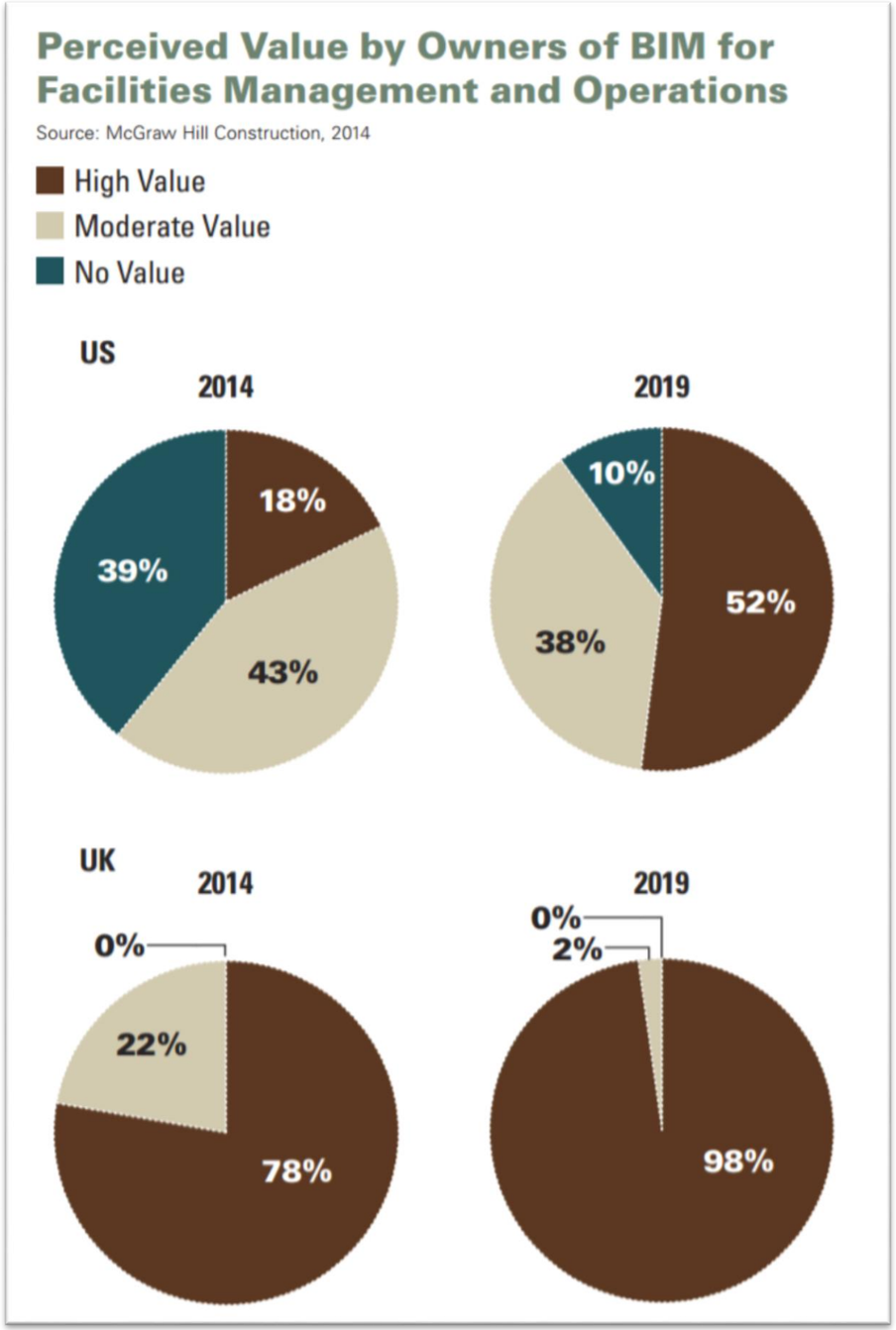
Source: McGraw Hill Construction, 2014

Ranking	US	UK
1	Better Team Coordination/ Collaboration	Better Team Coordination/ Collaboration (tie)
2	Use for Facility Maintenance and Operations/ Long-Term Management	Better Accuracy/ Fewer Errors/ Better Quality (tie)
3	Helps With Visualization/ Understanding Concepts & Scope	More Efficient Design/ Build Process/ Standardized (tie)
4	Better Accuracy/ Fewer Errors/ Better Quality	Cost Savings
5	Cost Savings	Helps With Visualization/ Understanding Concepts & Scope

BIM & FM Statistics

- Trending away from Design and Construction applications into Operations and Maintenance

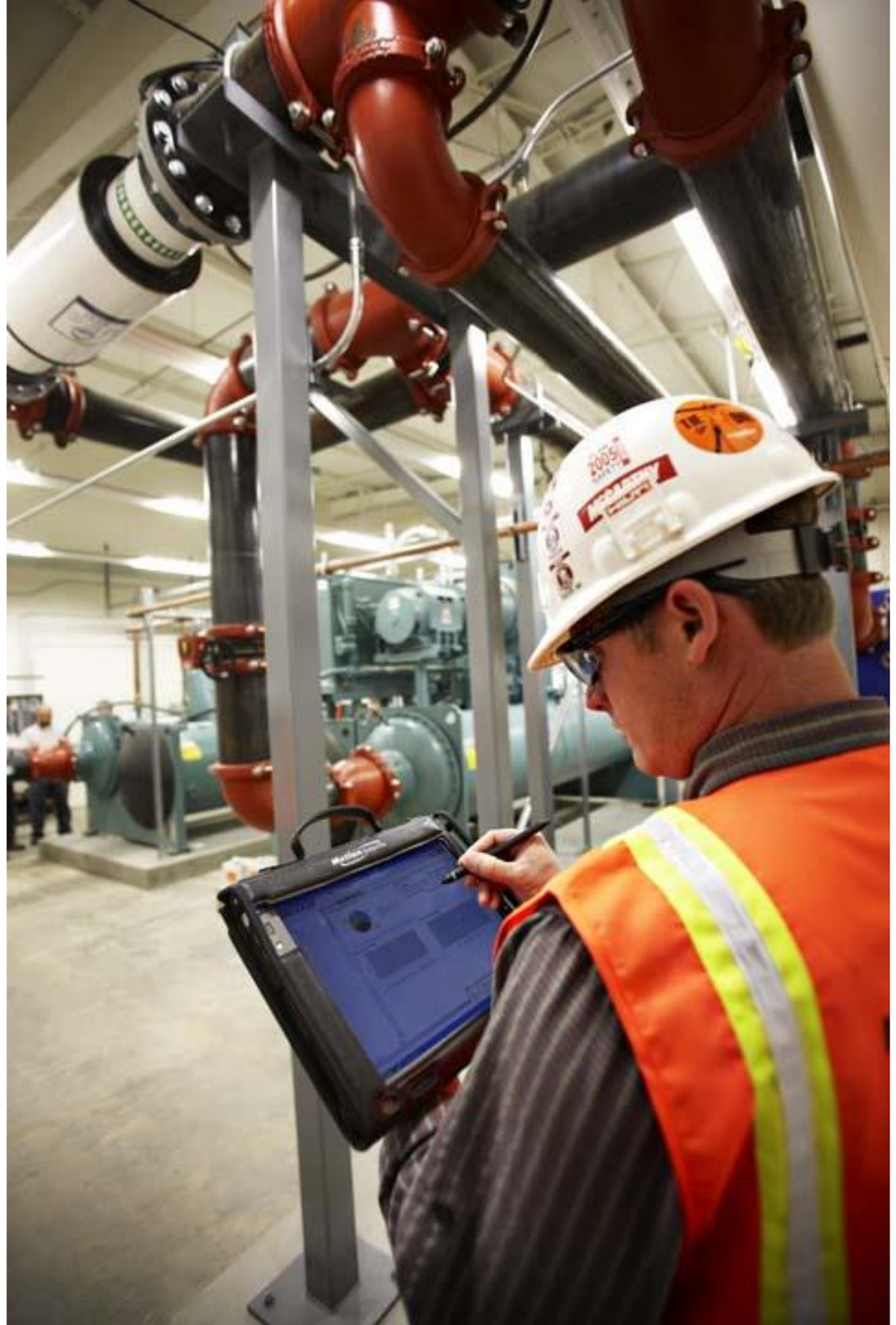
- Forecast looks optimistic for US and UK economy



BIM & FM Statistics

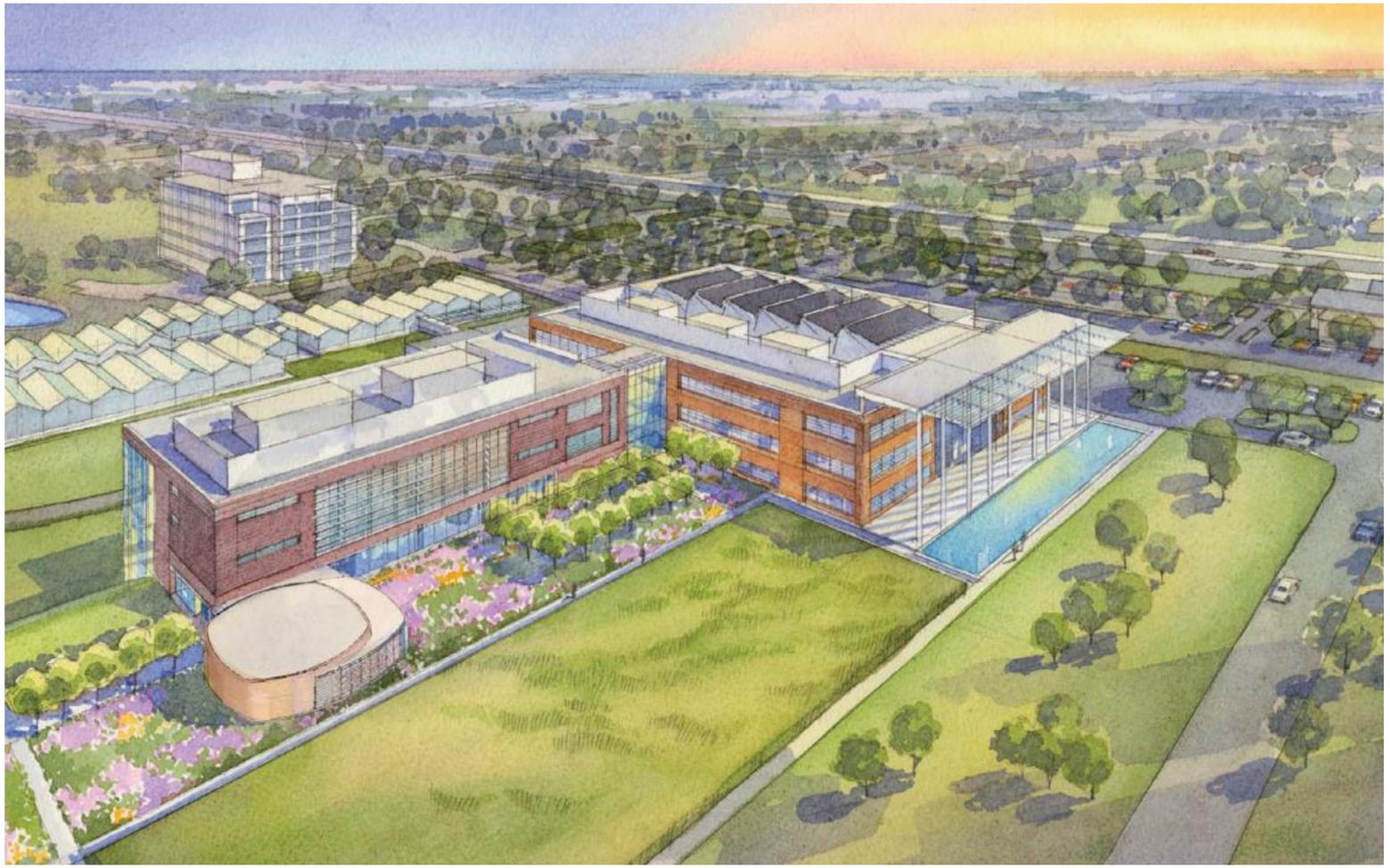
- NIST study shows that inadequate information costs facility maintenance $6.9 billion in the U.S. capital facilities industry

Cost Analysis of Inadequate Interoperability…., National Institute of Standards and Technology



Case Study – Project Info

- $34M
- 70,000 sf
- 3-story research facility expansion
- Repeat client
- Completed the east building in 2001
- Building Ops pilot

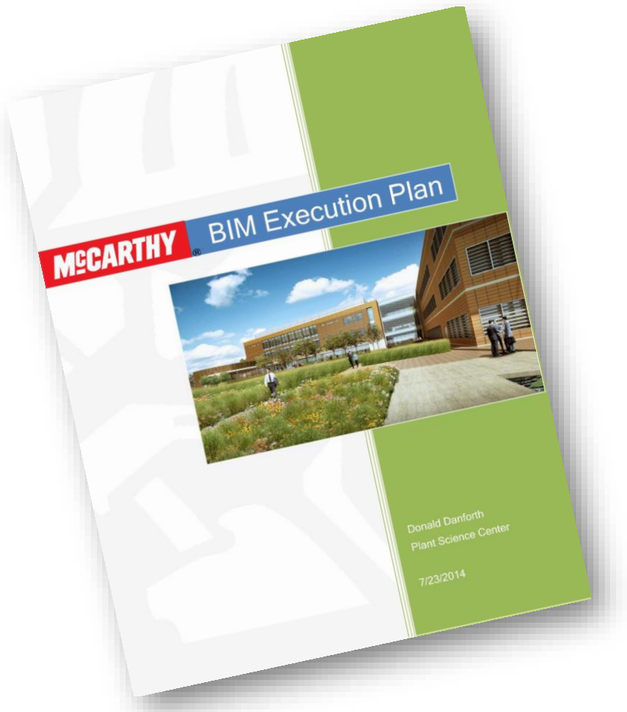


Owner Challenges

- Traditional handover takes too long to get integrated and usable
- Standard paper/digital deliverables were required by contract, but needed a better solution to supplement
- McCarthy proposed Building Ops solution to help with FM handover and start asset management on Day 1.

Project Planning

- BIM Execution Plan
  - Planning with the end in mind
  - Establish client goals for operations & maintenance
  - Define standards and data requirements
  - Trade contractors involvement
  - Data collection process



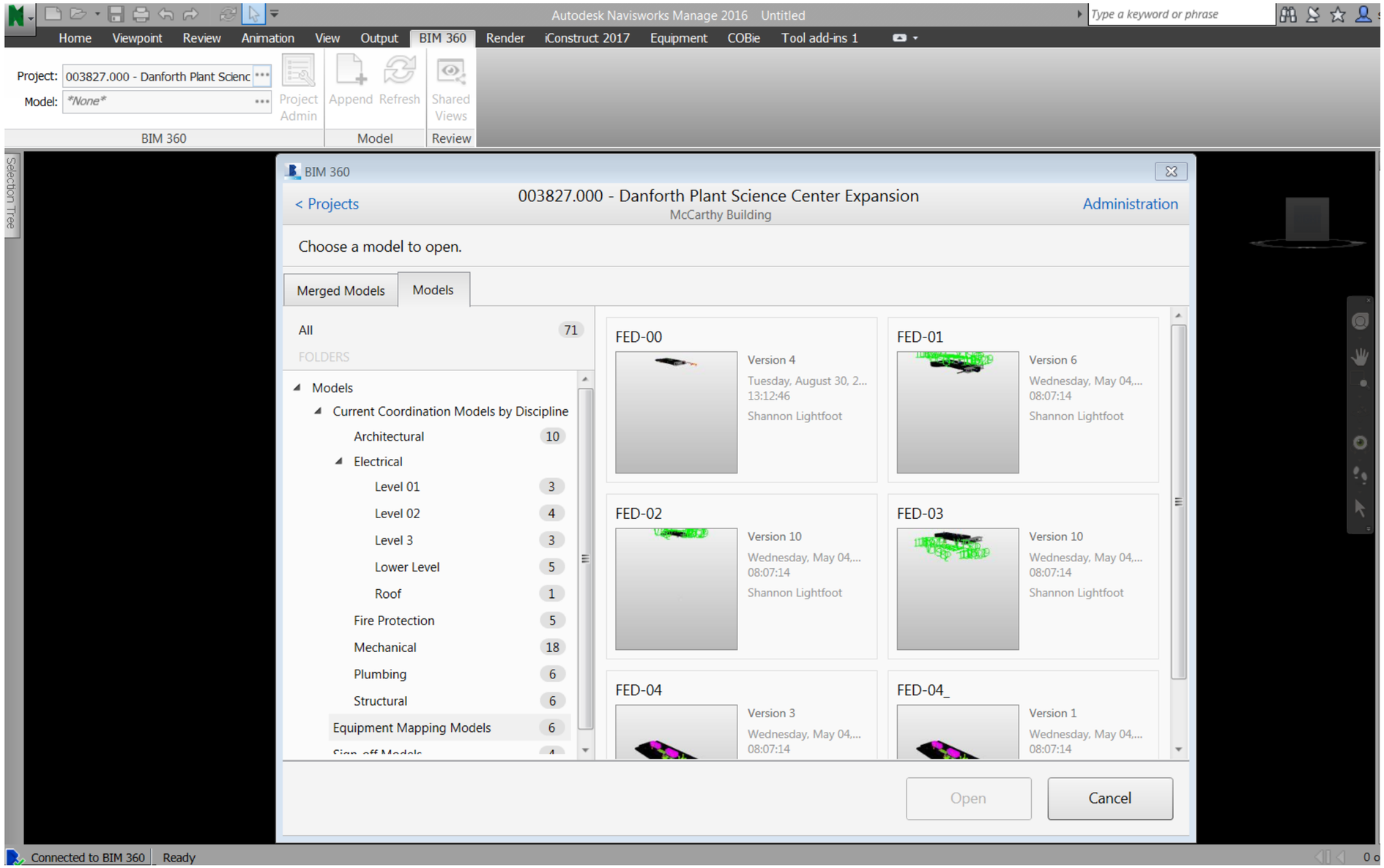
Data Management Workflow

- Tools & Software

BUILDING OPS

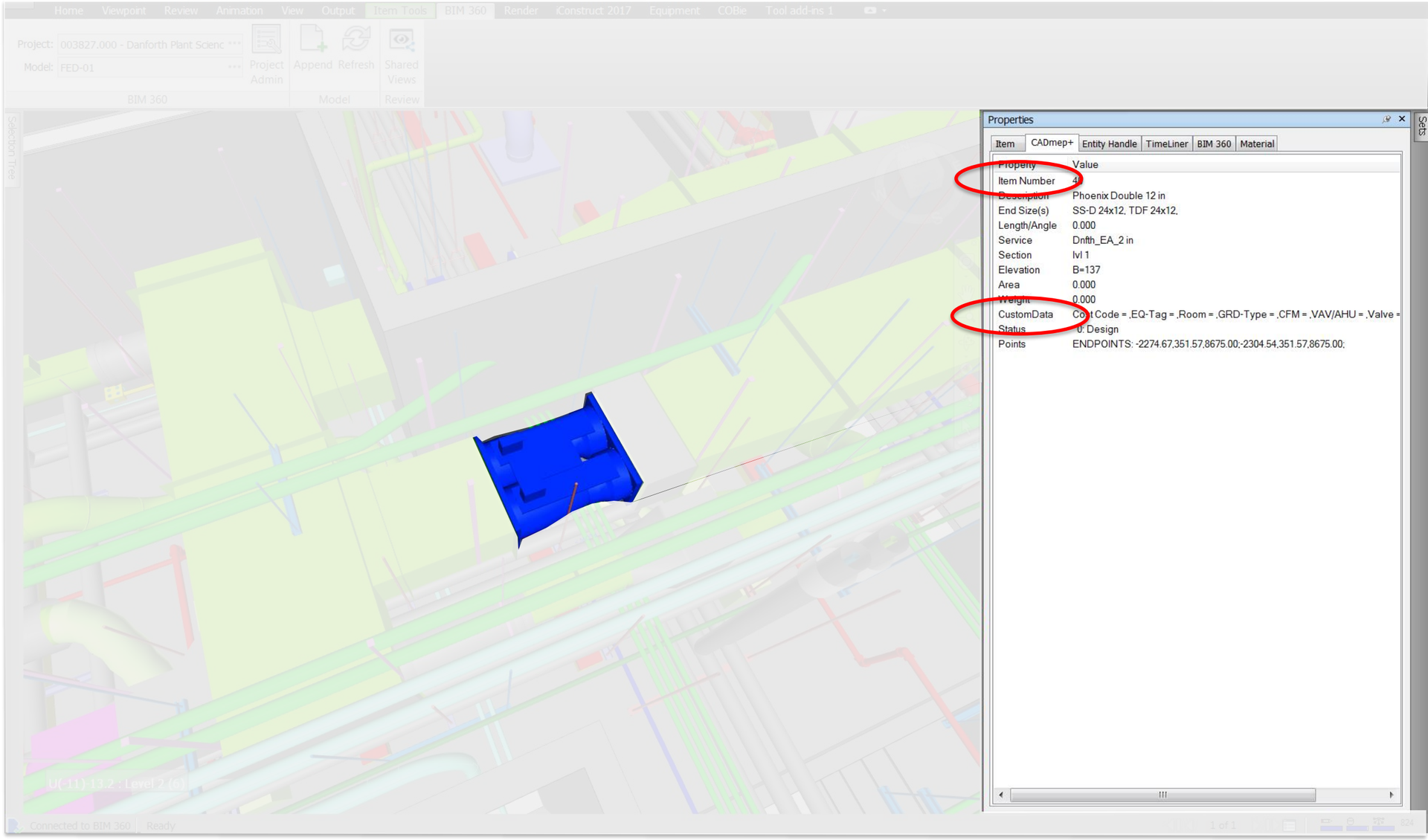
Data Management Workflow

- Glue to Navisworks
  - Model prep for B360F mapping
  - Most flexible option



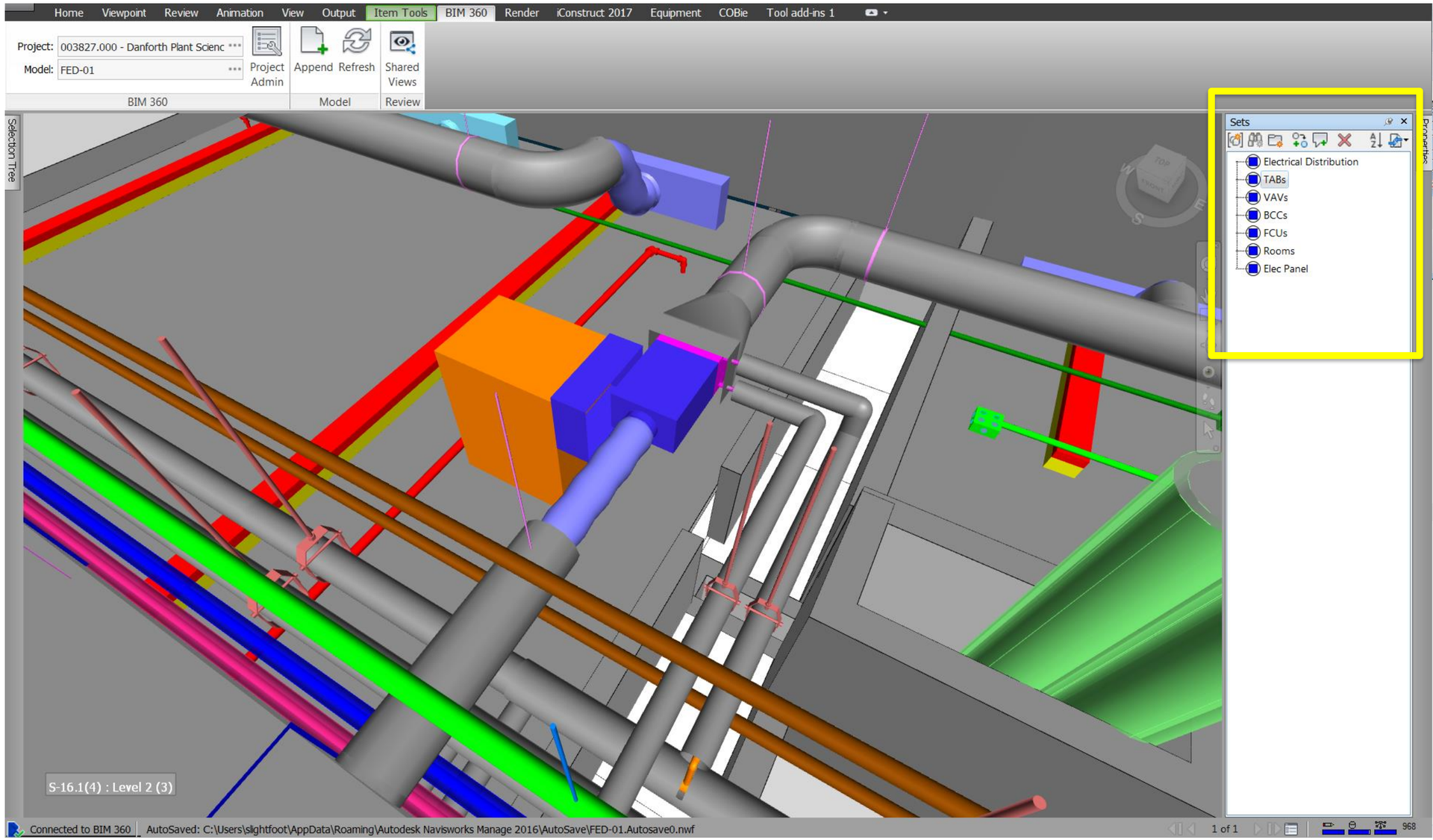
Data Management Workflow

- Model & Data Standards
  - Object Naming Protocol
  - Model Layers
  - Default vs. Custom Parameters



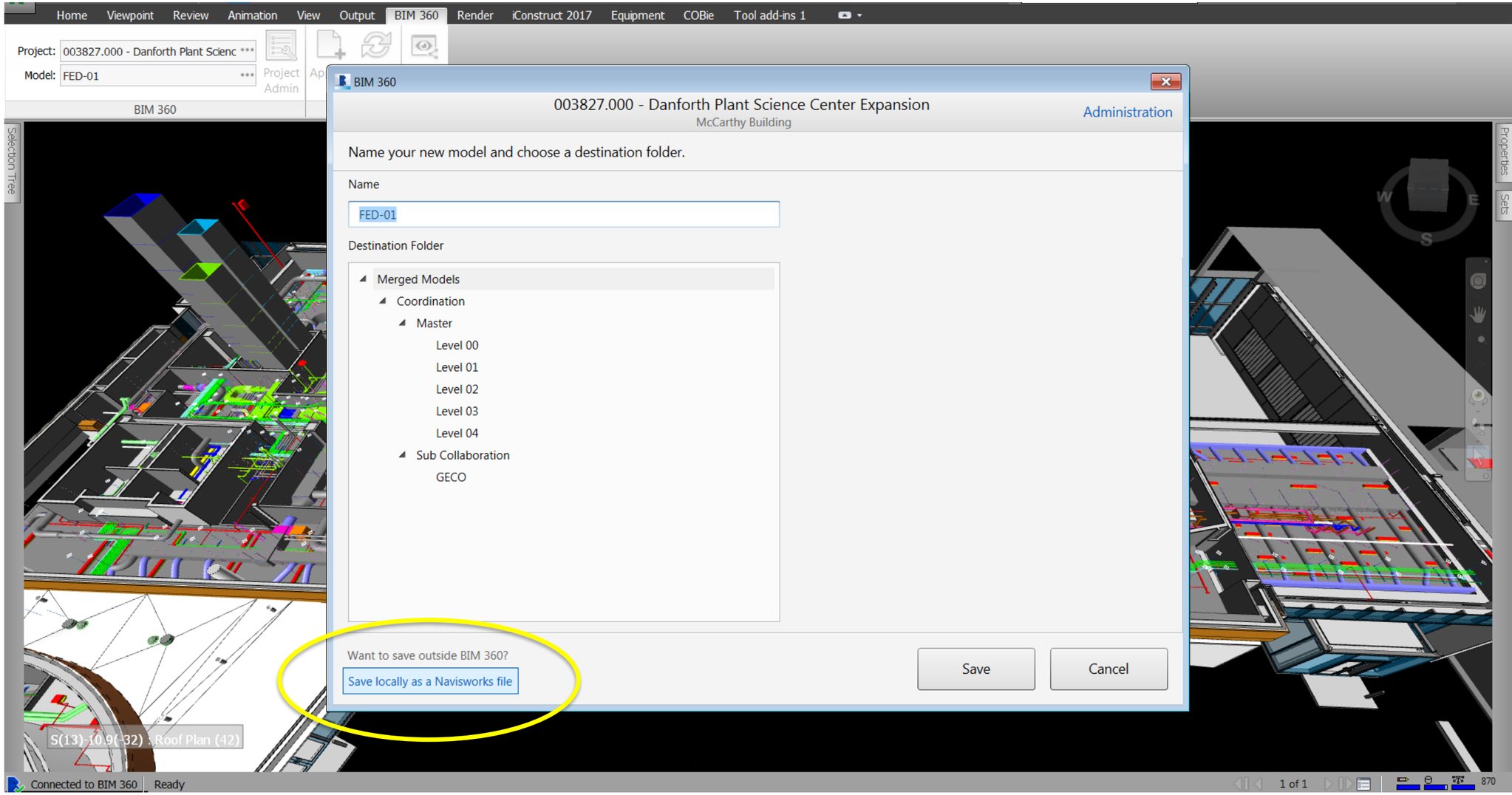
Data Management Workflow

- Equipment Sets
  - Compartmentalize Equipment



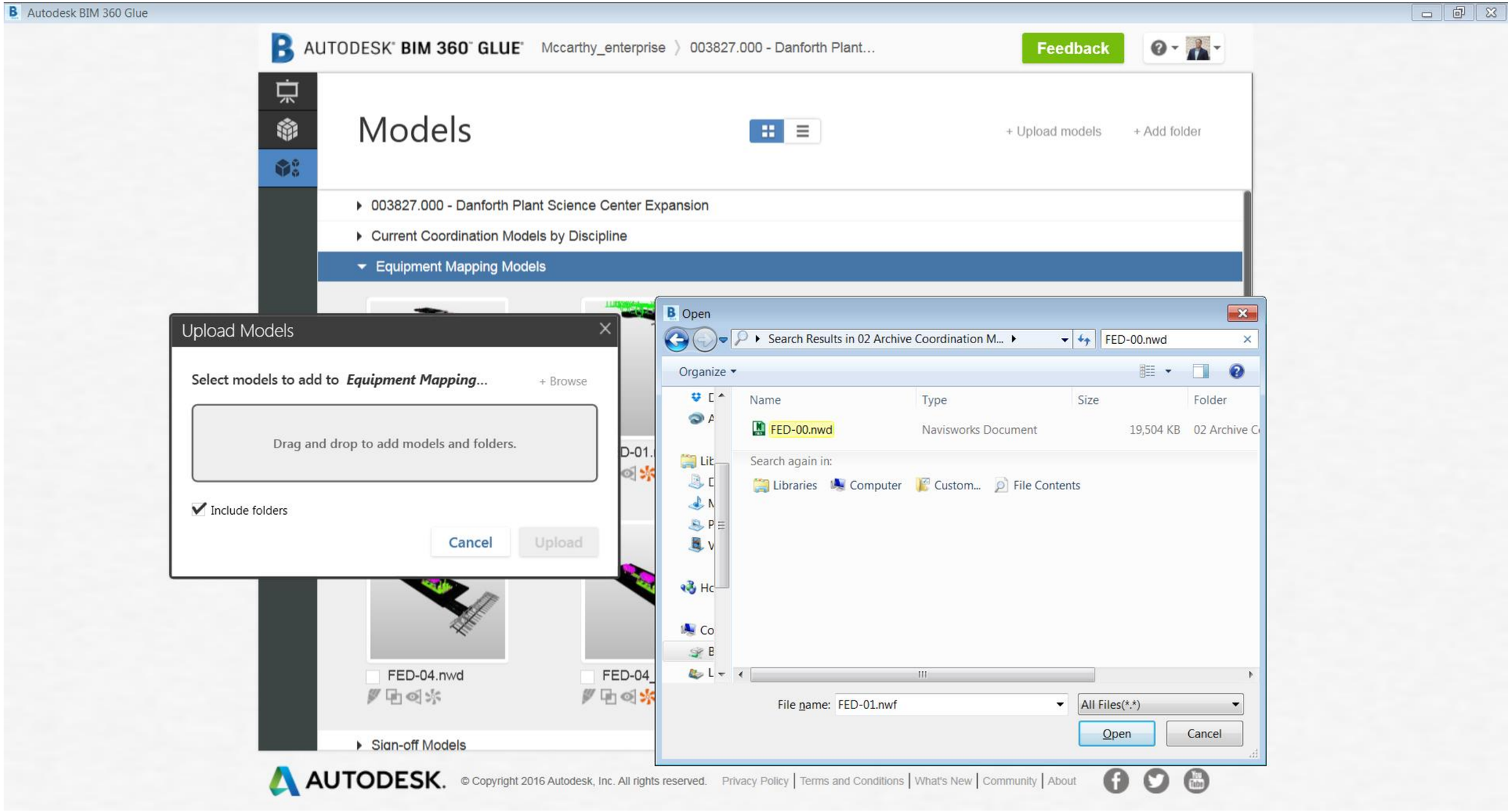
Data Management Workflow

- Save NWD locally



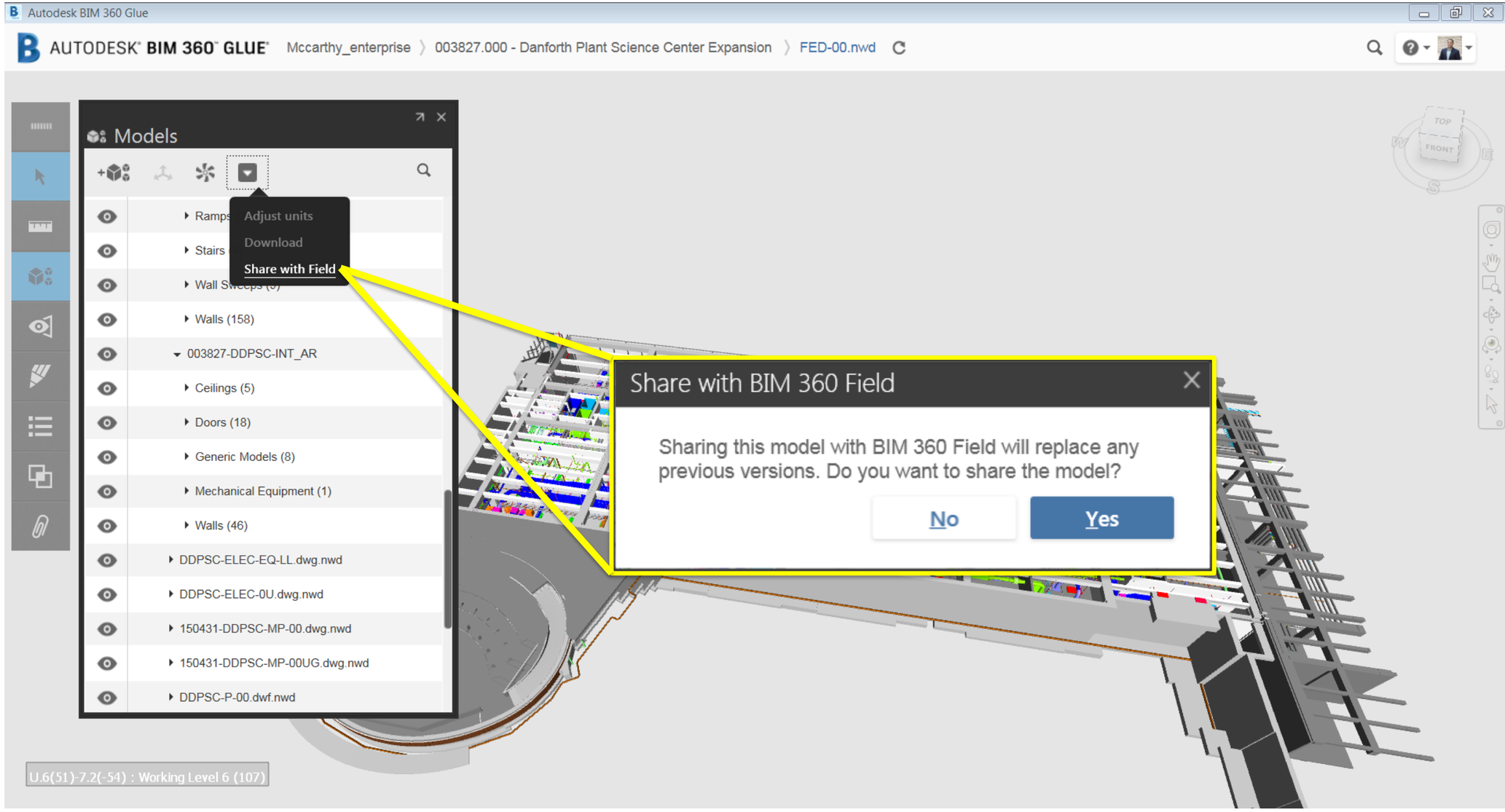
Data Management Workflow

- Upload to Glue



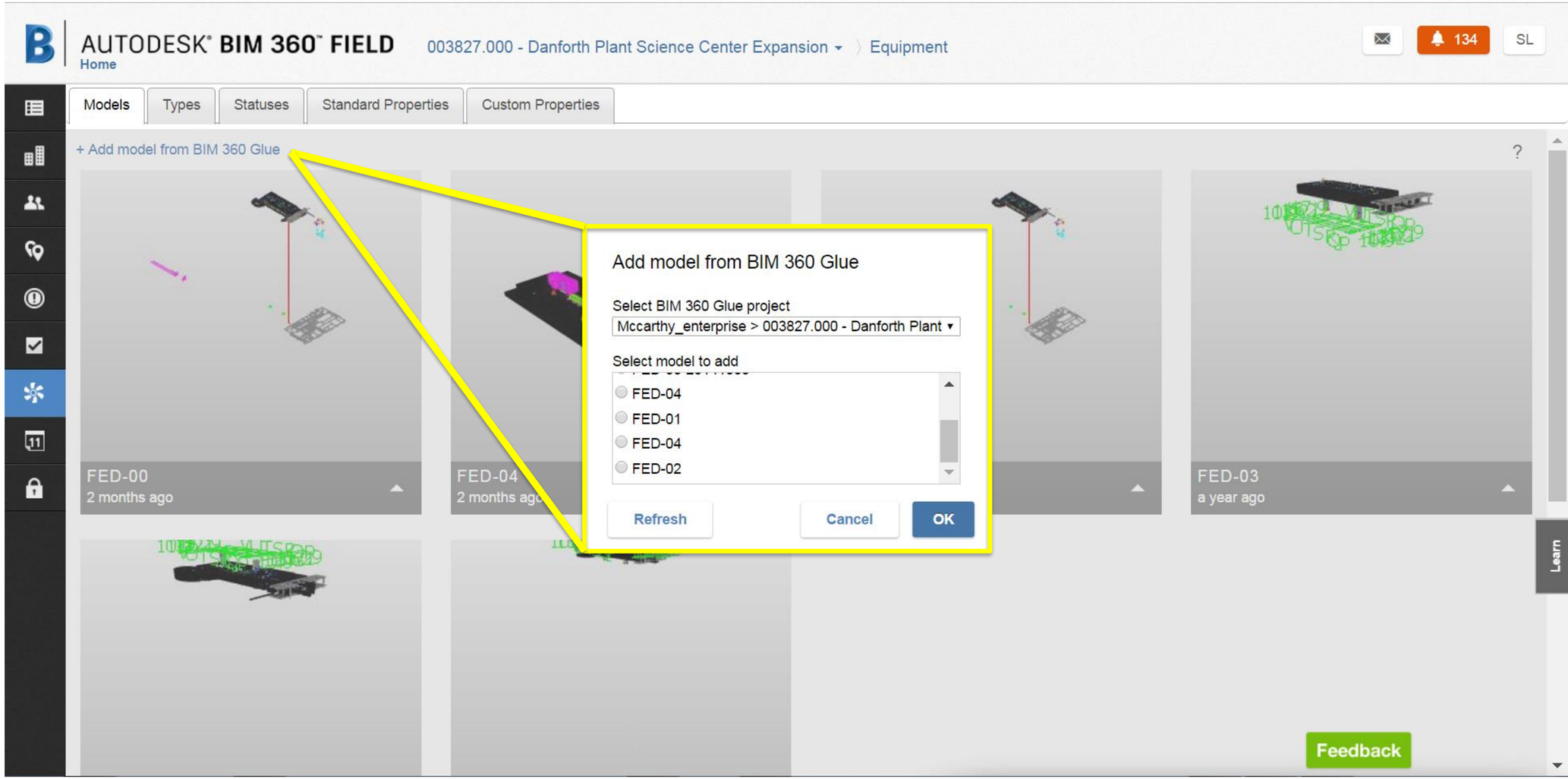
Data Management Workflow

- Share with Field



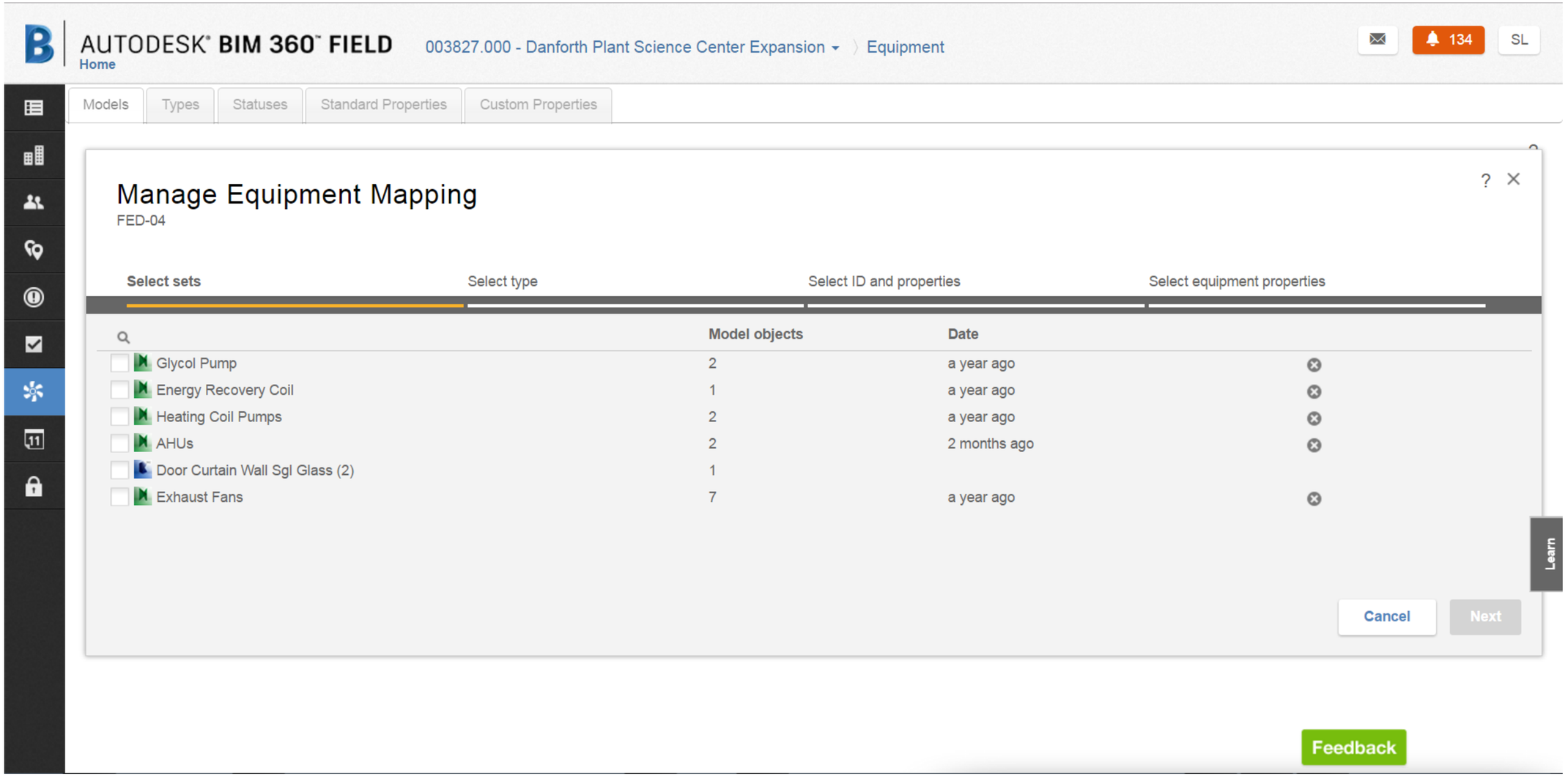
Data Management Workflow

- Add Model to Field



Data Management Workflow

- Equipment Mapping



Data Management Workflow

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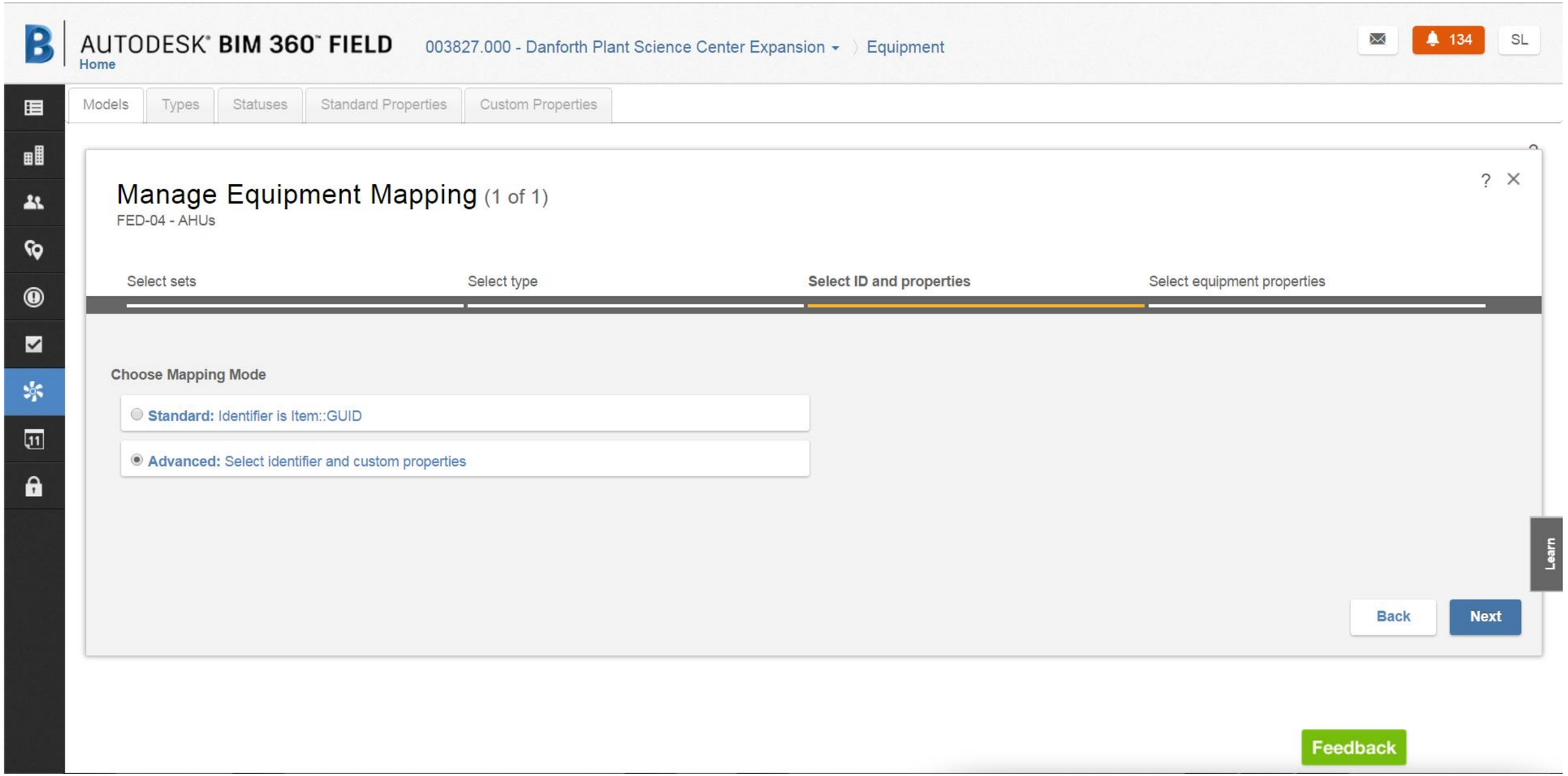

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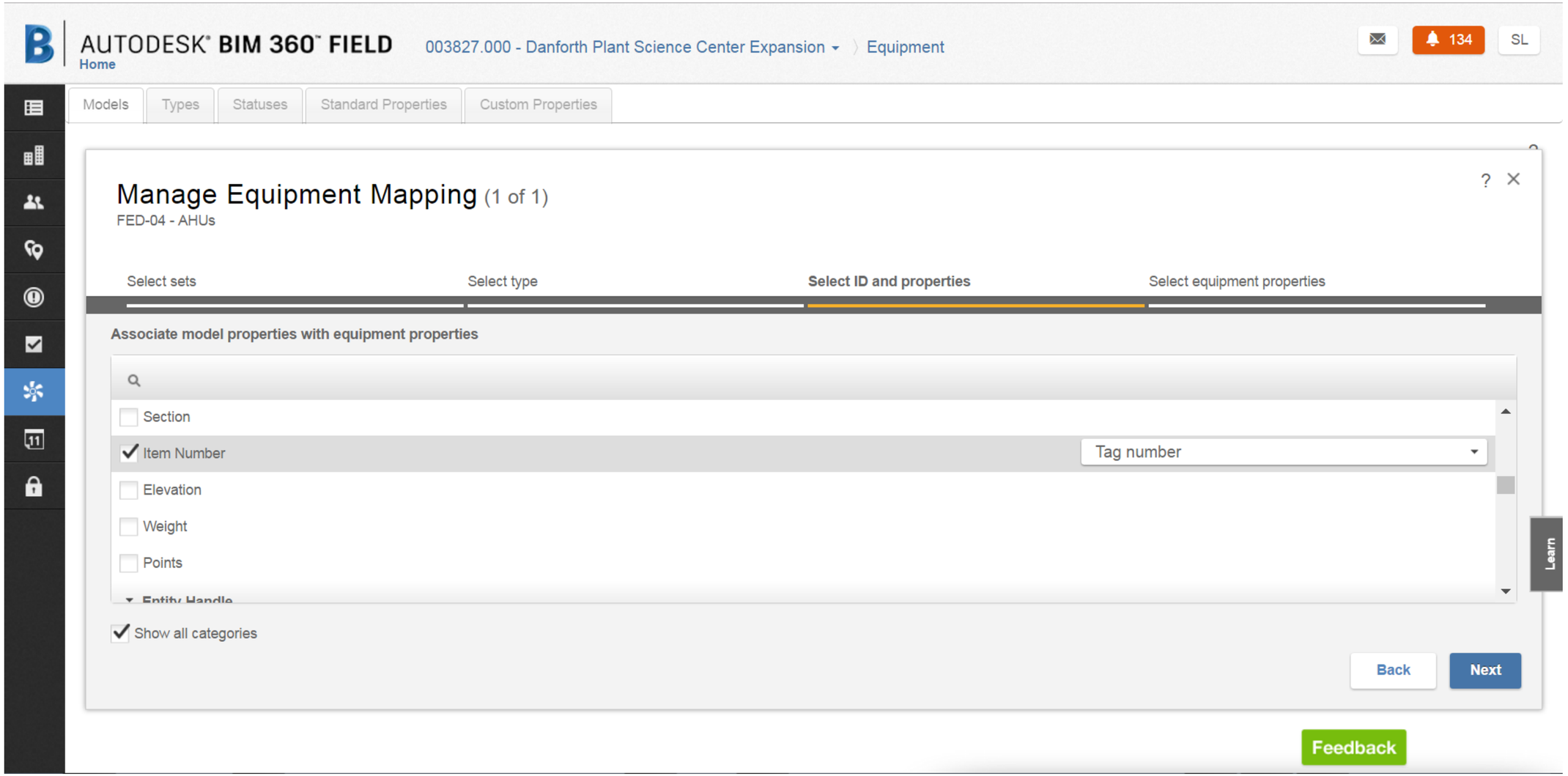
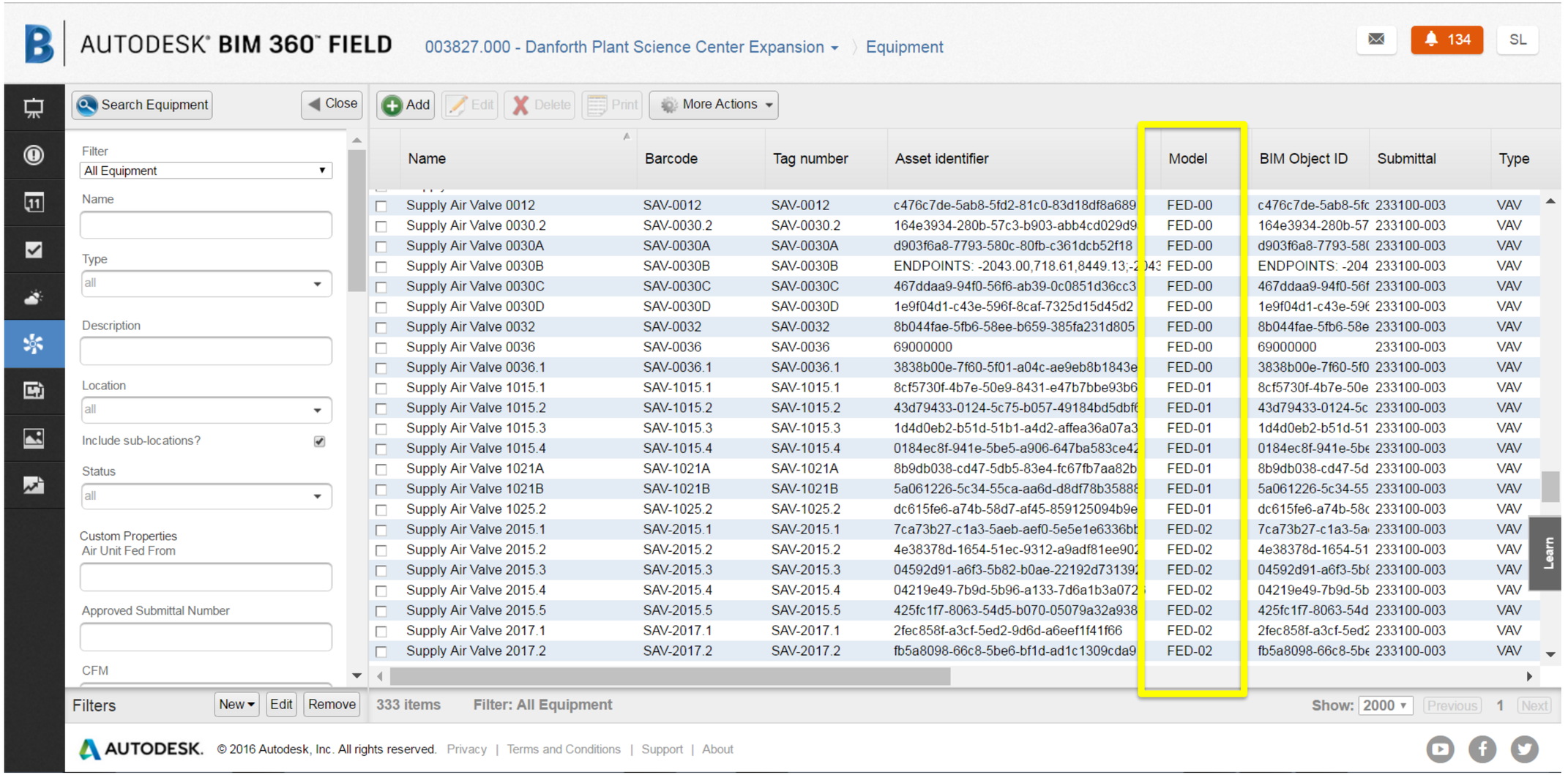


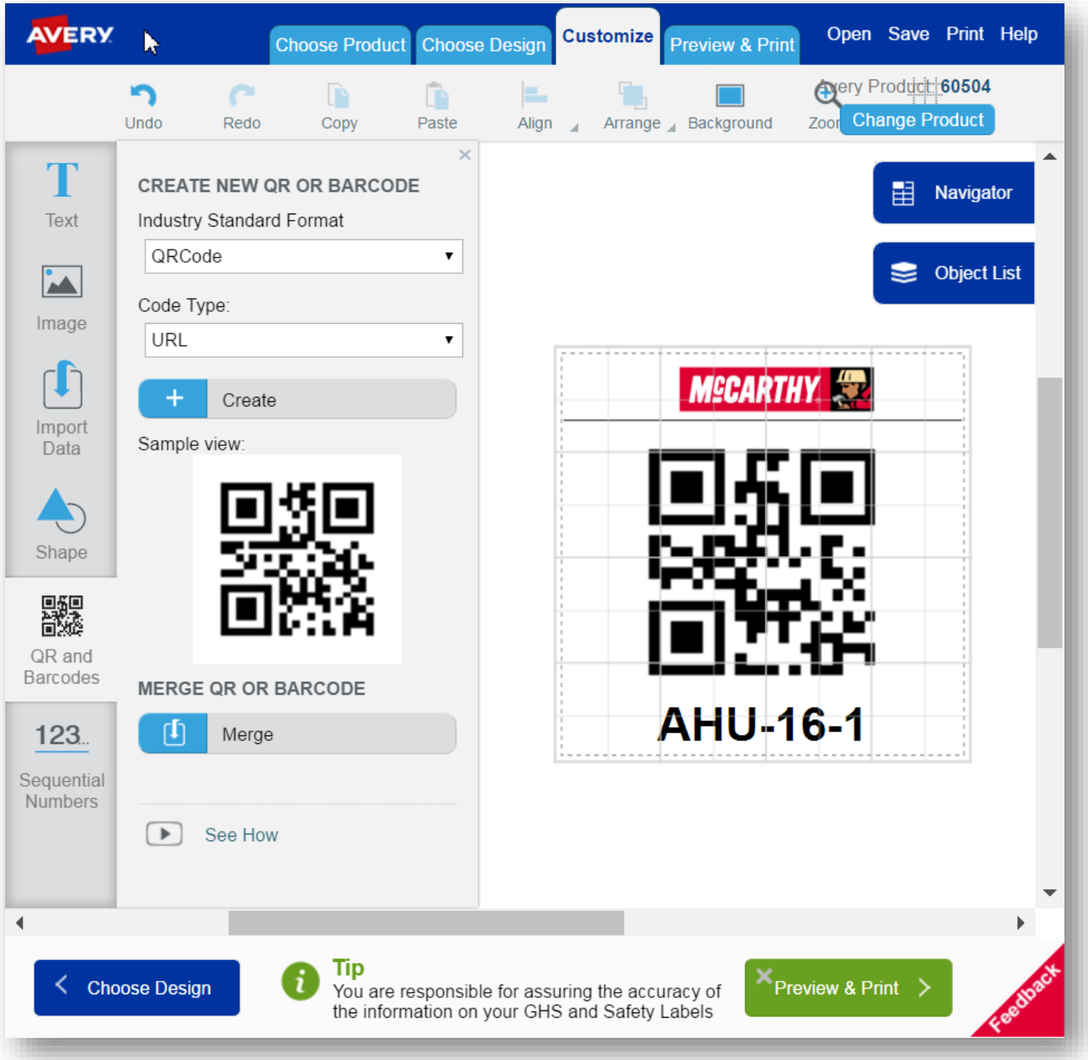
Data Management Workflow

- Equipment Mapping



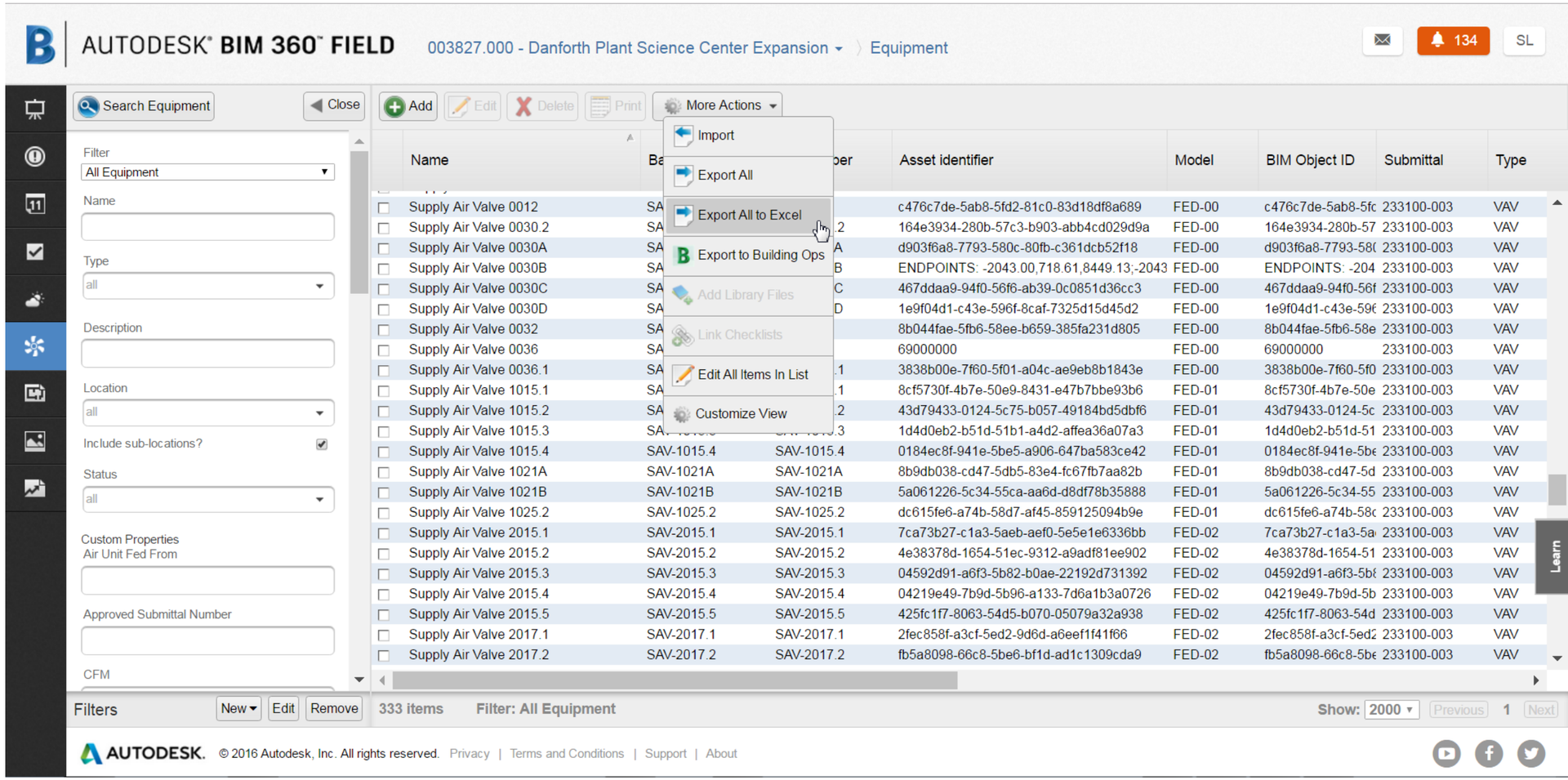
Data Management Workflow

- Barcoding



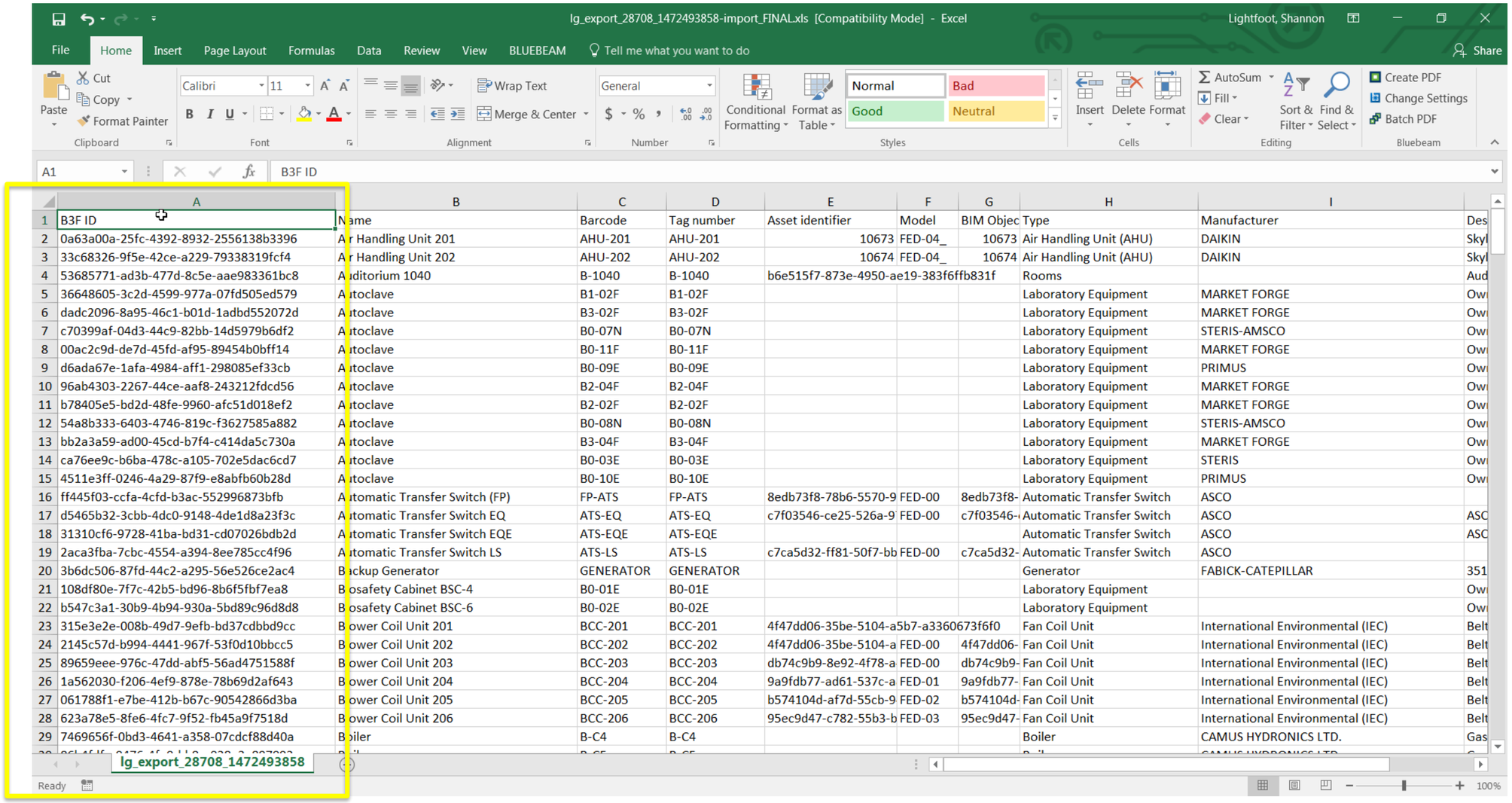
Data Management Workflow

- Equipment Data & Attachments
  - Install date, Serial number, Model number, etc… on BIM 360 Field ipad app
  - Warranty, Submittals, O&M's, etc… in Building Ops



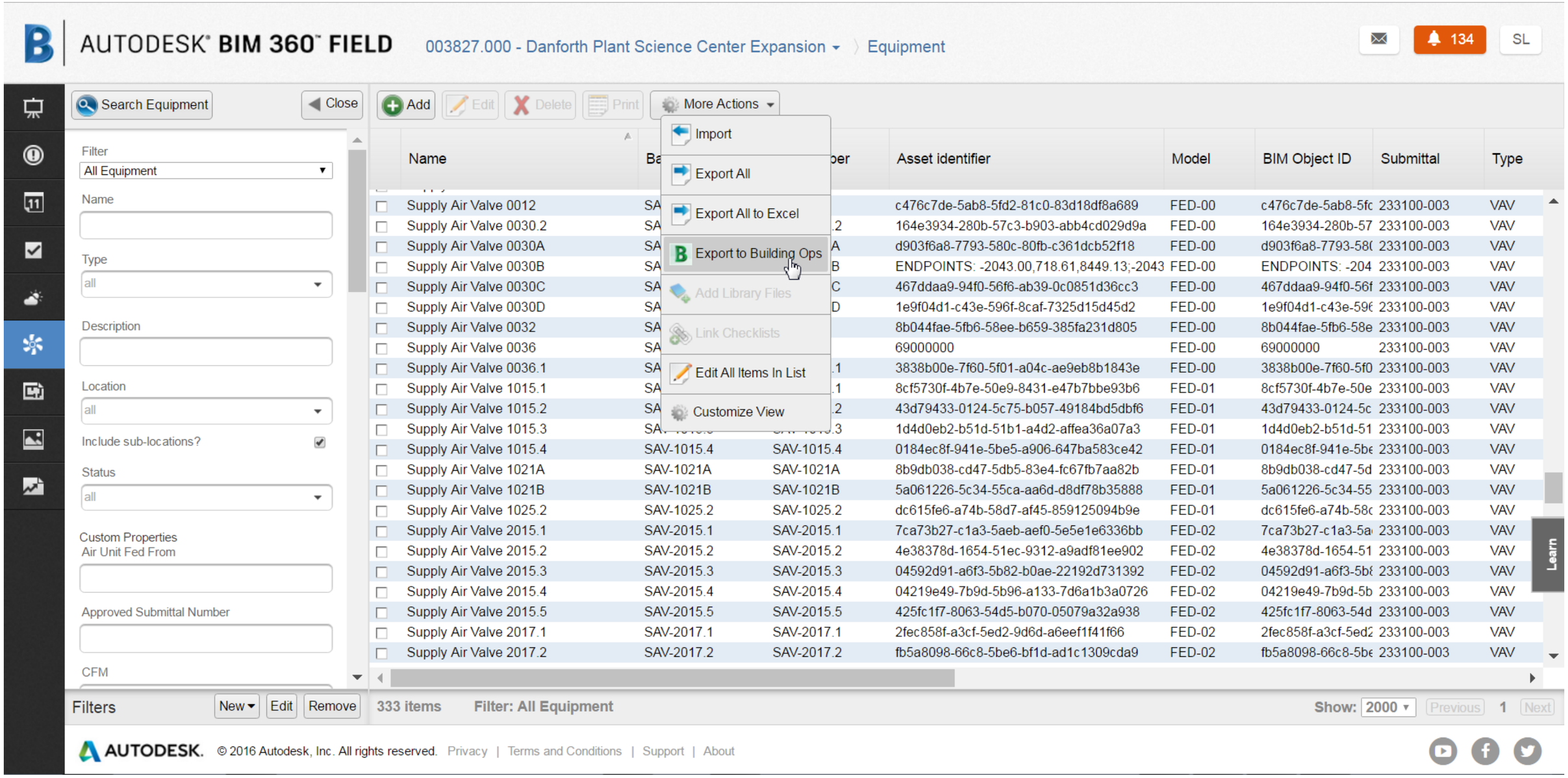
Data Management Workflow

- Mass updates



	A	B	C	D	E	F	G	H	I	
1	B3F ID	Name	Barcode	Tag number	Asset identifier	Model	BIM Objec	Type	Manufacturer	Des
2	0a63a00a-25fc-4392-8932-2556138b3396	Air Handling Unit 201	AHU-201	AHU-201	10673	FED-04_	10673	Air Handling Unit (AHU)	DAIKIN	Skyl
3	33c68326-9f5e-42ce-a229-79338319fcf4	Air Handling Unit 202	AHU-202	AHU-202	10674	FED-04_	10674	Air Handling Unit (AHU)	DAIKIN	Skyl
4	53685771-ad3b-477d-8c5e-aae983361bc8	Auditorium 1040	B-1040	B-1040	b6e515f7-873e-4950-ae19-383f6ffb831f			Rooms		Aud
5	36648605-3c2d-4599-977a-07fd505ed579	Autoclave	B1-02F	B1-02F				Laboratory Equipment	MARKET FORGE	Ow
6	dadc2096-8a95-46c1-b01d-1adbd552072d	Autoclave	B3-02F	B3-02F				Laboratory Equipment	MARKET FORGE	Ow
7	c70399af-04d3-44c9-82bb-14d5979b6df2	Autoclave	B0-07N	B0-07N				Laboratory Equipment	STERIS-AMSCO	Ow
8	00ac2c9d-de7d-45fd-af95-89454b0bff14	Autoclave	B0-11F	B0-11F				Laboratory Equipment	MARKET FORGE	Ow
9	d6ada67e-1afa-4984-aff1-298085ef33cb	Autoclave	B0-09E	B0-09E				Laboratory Equipment	PRIMUS	Ow
10	96ab4303-2267-44ce-aaf8-243212fdcd56	Autoclave	B2-04F	B2-04F				Laboratory Equipment	MARKET FORGE	Ow
11	b78405e5-bd2d-48fe-9960-afc51d018ef2	Autoclave	B2-02F	B2-02F				Laboratory Equipment	MARKET FORGE	Ow
12	54a8b333-6403-4746-819c-f3627585a882	Autoclave	B0-08N	B0-08N				Laboratory Equipment	STERIS-AMSCO	Ow
13	bb2a3a59-ad00-45cd-b7f4-c414da5c730a	Autoclave	B3-04F	B3-04F				Laboratory Equipment	MARKET FORGE	Ow
14	ca76ee9c-b6ba-478c-a105-702e5dac6cd7	Autoclave	B0-03E	B0-03E				Laboratory Equipment	STERIS	Ow
15	4511e3ff-0246-4a29-87f9-e8abfb60b28d	Autoclave	B0-10E	B0-10E				Laboratory Equipment	PRIMUS	Ow
16	ff445f03-ccfa-4cfd-b3ac-552996873bfb	Automatic Transfer Switch (FP)	FP-ATS	FP-ATS	8edb73f8-78b6-5570-9	FED-00	8edb73f8-	Automatic Transfer Switch	ASCO	
17	d5465b32-3cbb-4dc0-9148-4de1d8a23f3c	Automatic Transfer Switch EQ	ATS-EQ	ATS-EQ	c7f03546-ce25-526a-9	FED-00	c7f03546-	Automatic Transfer Switch	ASCO	ASC
18	31310cf6-9728-41ba-bd31-cd07026bdb2d	Automatic Transfer Switch EQE	ATS-EQE	ATS-EQE				Automatic Transfer Switch	ASCO	ASC
19	2aca3fba-7cbc-4554-a394-8ee785cc4f96	Automatic Transfer Switch LS	ATS-LS	ATS-LS	c7ca5d32-ff81-50f7-bb	FED-00	c7ca5d32-	Automatic Transfer Switch	ASCO	
20	3b6dc506-87fd-44c2-a295-56e526ce2ac4	Backup Generator	GENERATOR	GENERATOR				Generator	FABICK-CATEPILLAR	351
21	108df80e-7f7c-42b5-bd96-8b6f5fbf7ea8	Biosafety Cabinet BSC-4	B0-01E	B0-01E				Laboratory Equipment		Ow
22	b547c3a1-30b9-4b94-930a-5bd89c96d8d8	Biosafety Cabinet BSC-6	B0-02E	B0-02E				Laboratory Equipment		Ow
23	315e3e2e-008b-49d7-9efb-bd37cdbbd9cc	Blower Coil Unit 201	BCC-201	BCC-201	4f47dd06-35be-5104-a5b7-a3360673f6f0			Fan Coil Unit	International Environmental (IEC)	Belt
24	2145c57d-b994-4441-967f-53f0d10bbcc5	Blower Coil Unit 202	BCC-202	BCC-202	4f47dd06-35be-5104-a	FED-00	4f47dd06-	Fan Coil Unit	International Environmental (IEC)	Belt
25	89659eee-976c-47dd-abf5-56ad4751588f	Blower Coil Unit 203	BCC-203	BCC-203	db74c9b9-8e92-4f78-a	FED-00	db74c9b9-	Fan Coil Unit	International Environmental (IEC)	Belt
26	1a562030-f206-4ef9-878e-78b69d2af643	Blower Coil Unit 204	BCC-204	BCC-204	9a9fdb77-ad61-537c-a	FED-01	9a9fdb77-	Fan Coil Unit	International Environmental (IEC)	Belt
27	061788f1-e7be-412b-b67c-90542866d3ba	Blower Coil Unit 205	BCC-205	BCC-205	b574104d-af7d-55cb-9	FED-02	b574104d-	Fan Coil Unit	International Environmental (IEC)	Belt
28	623a78e5-8fe6-4fc7-9f52-fb45a9f7518d	Blower Coil Unit 206	BCC-206	BCC-206	95ec9d47-c782-55b3-b	FED-03	95ec9d47-	Fan Coil Unit	International Environmental (IEC)	Belt
29	7469656f-0bd3-4641-a358-07cdcf88d40a	Boiler	B-C4	B-C4				Boiler	CAMUS HYDRONICS LTD.	Gas

Data Management Workflow



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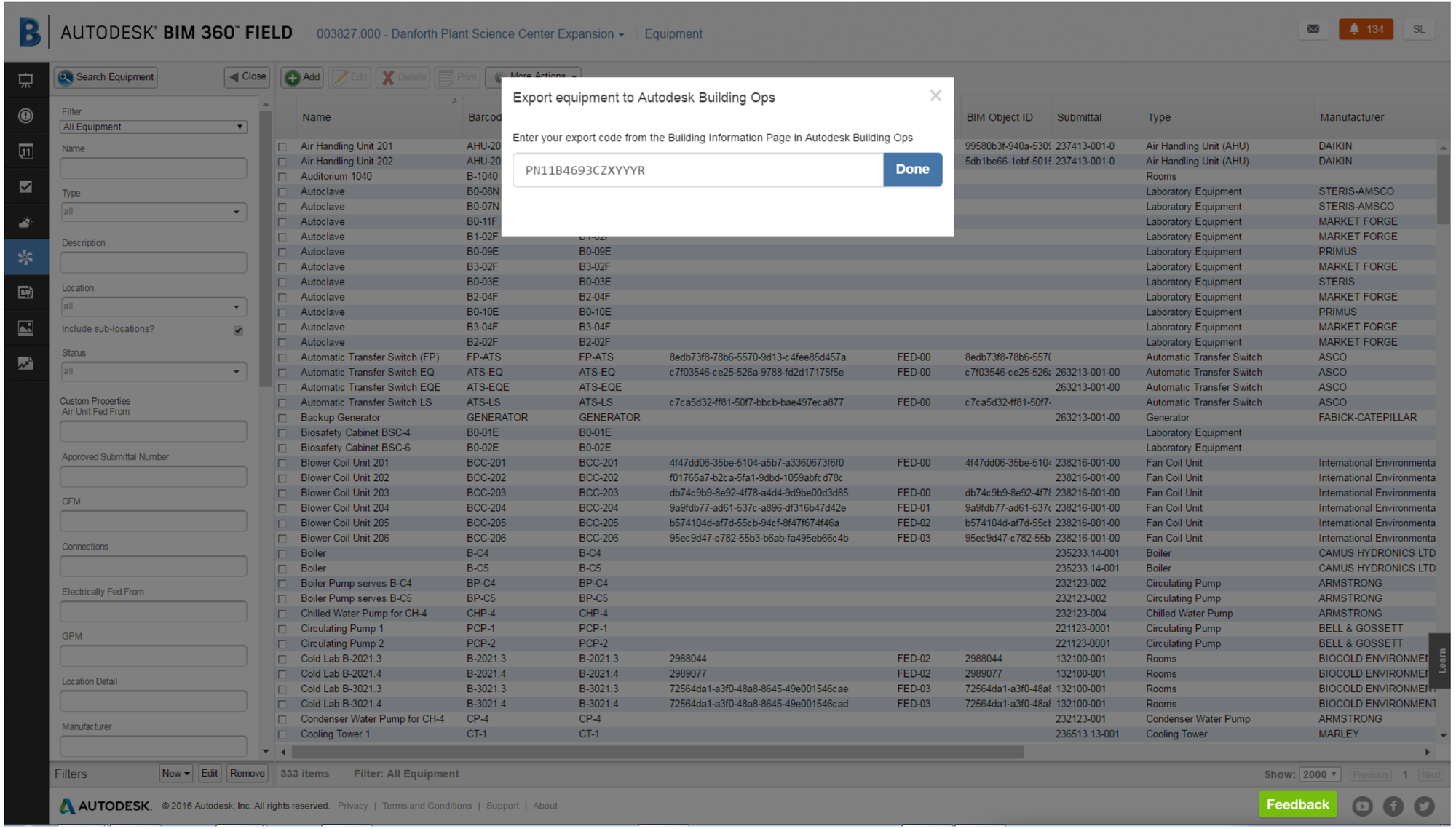

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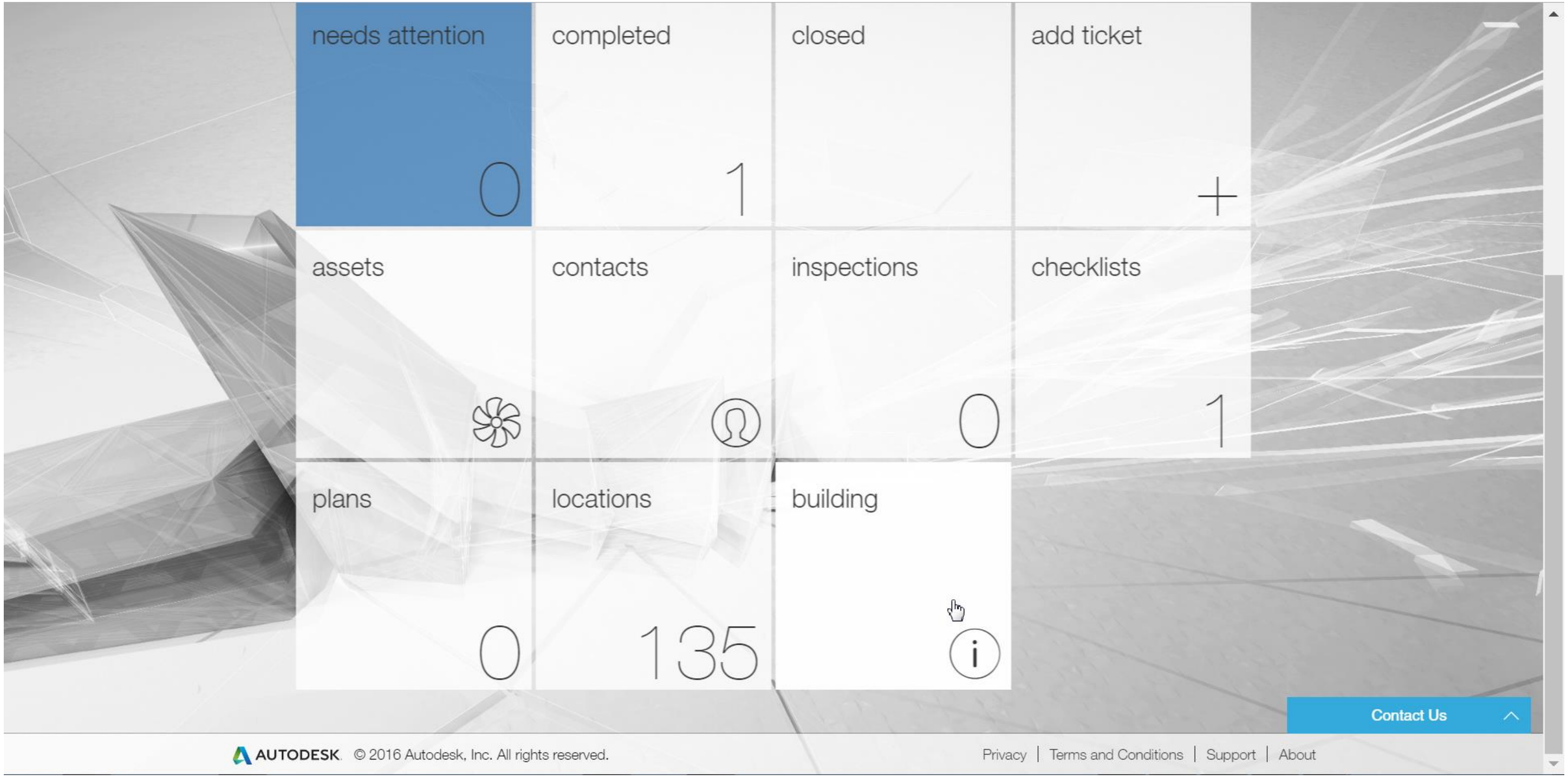

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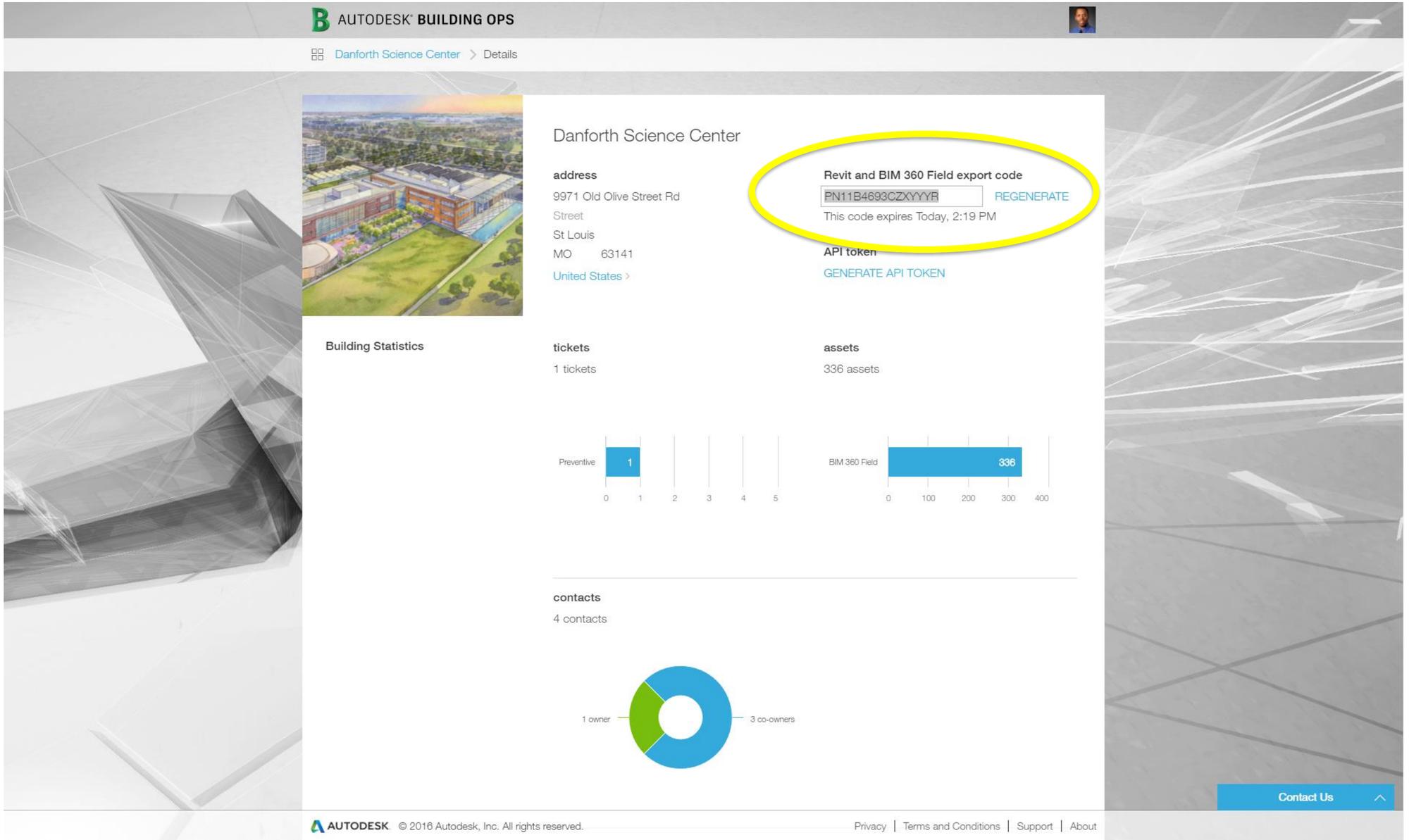

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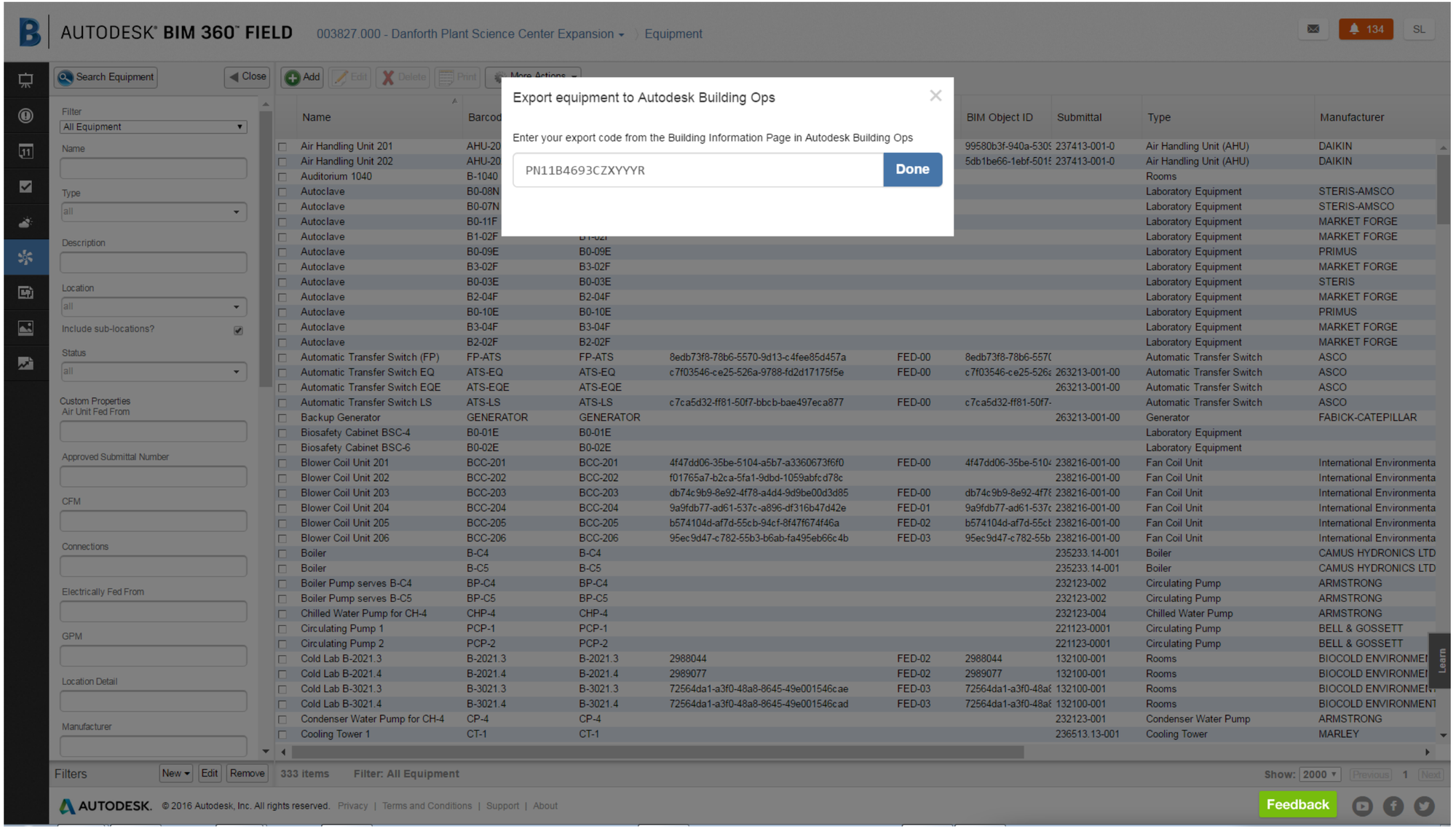

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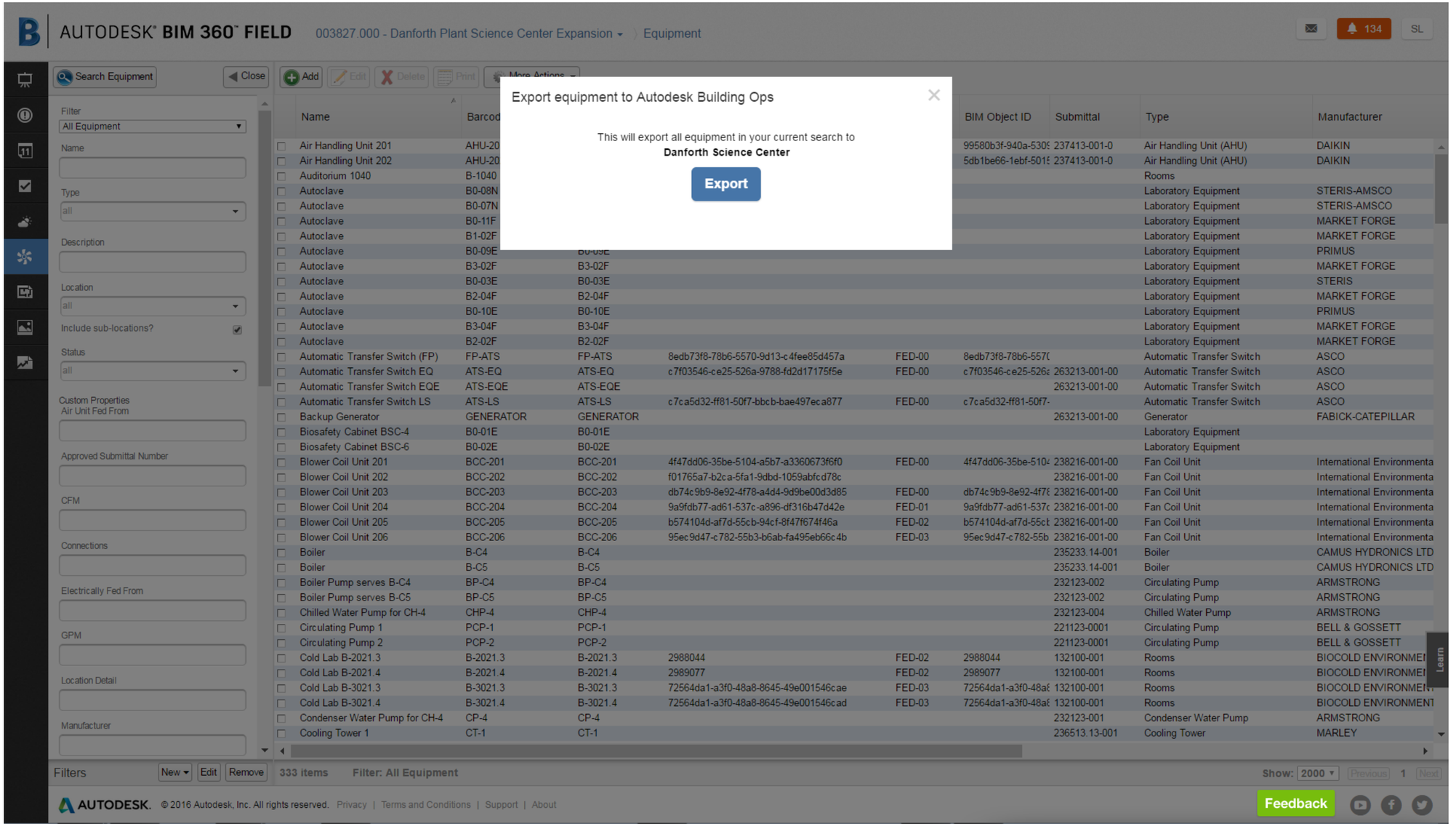

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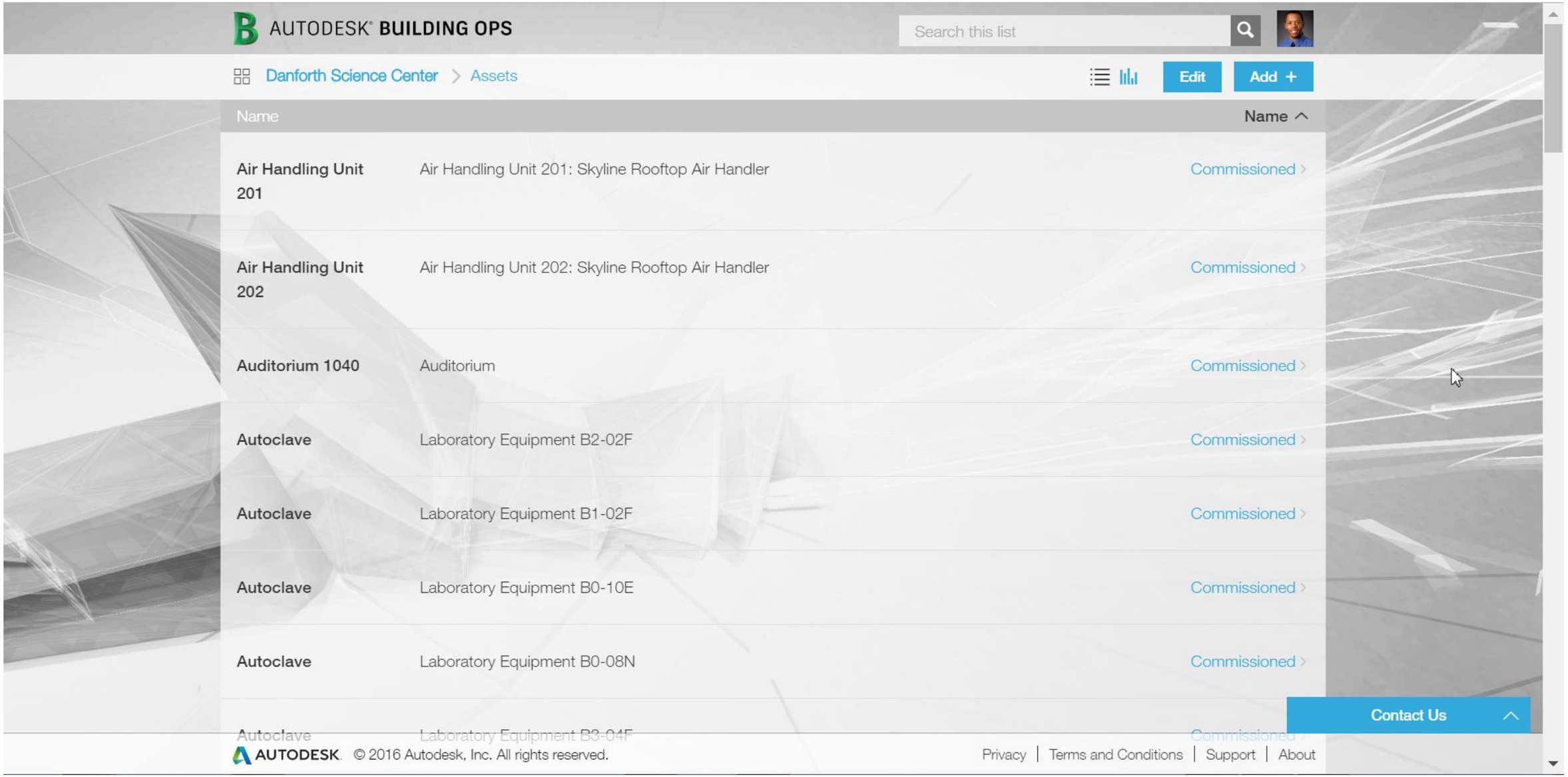

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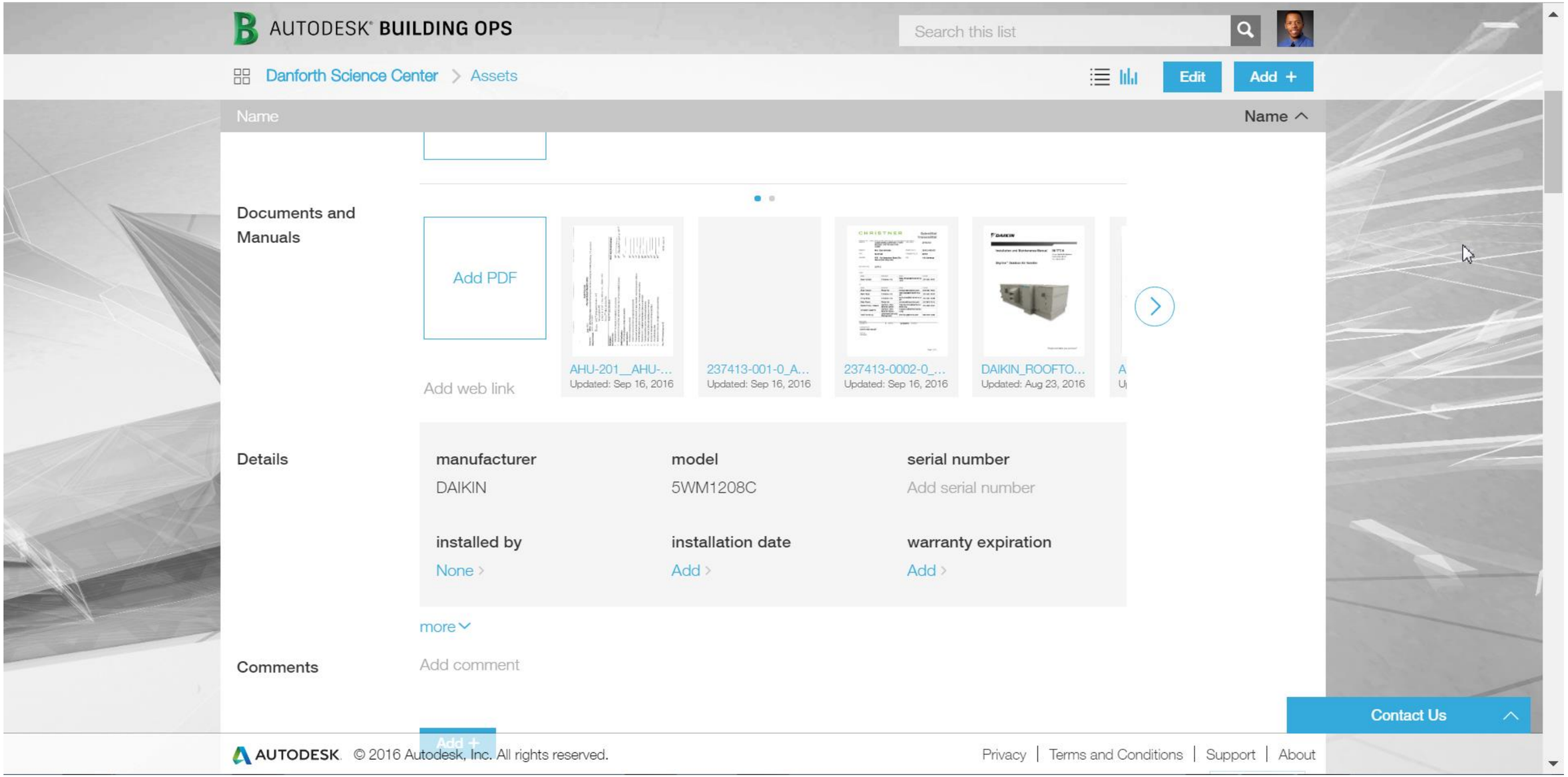
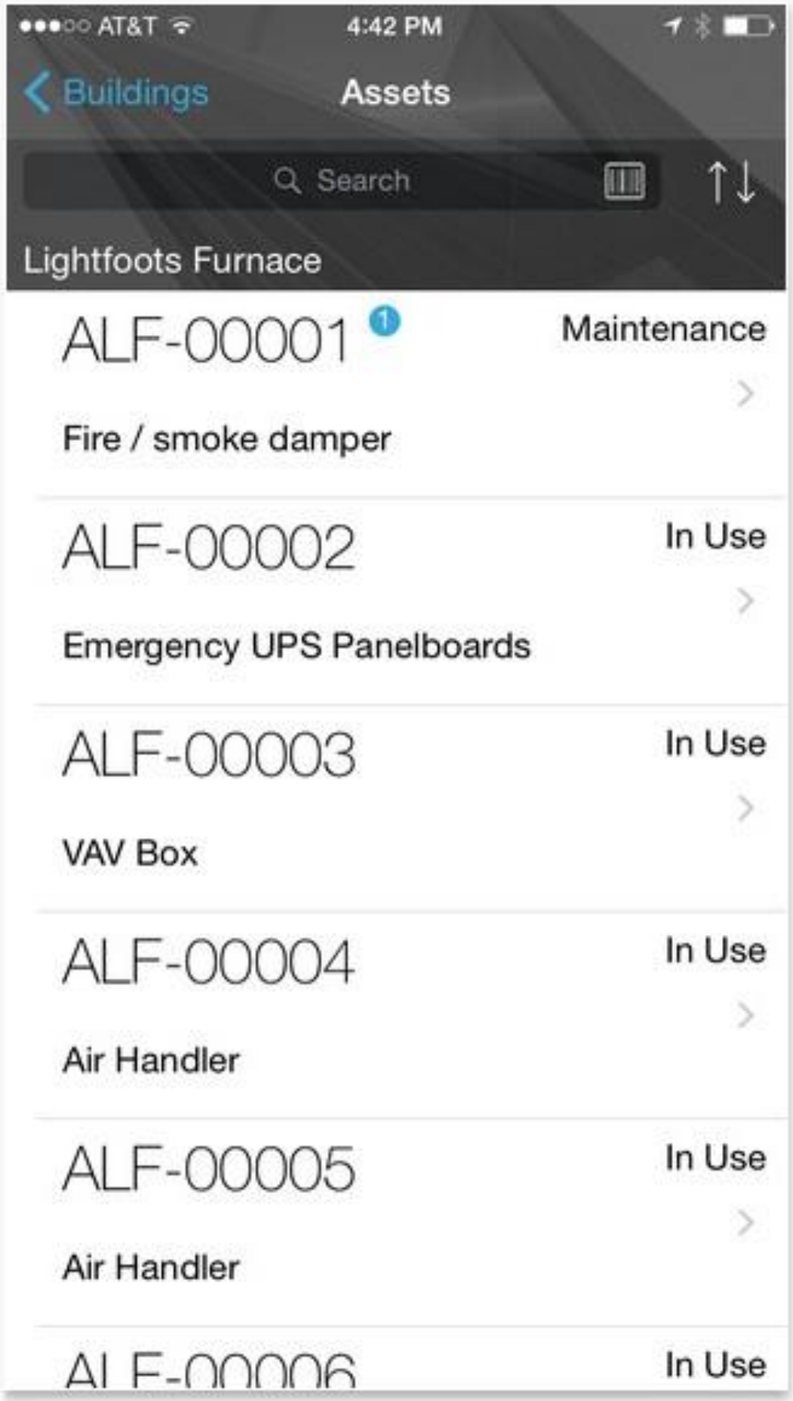


Demo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Buildings
Assets
Search
Lightfoots Furnace
ALF-00001
1
Maintenance
Fire / smoke damper
ALF-00002
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Emergency UPS Panelboards
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VAV Box
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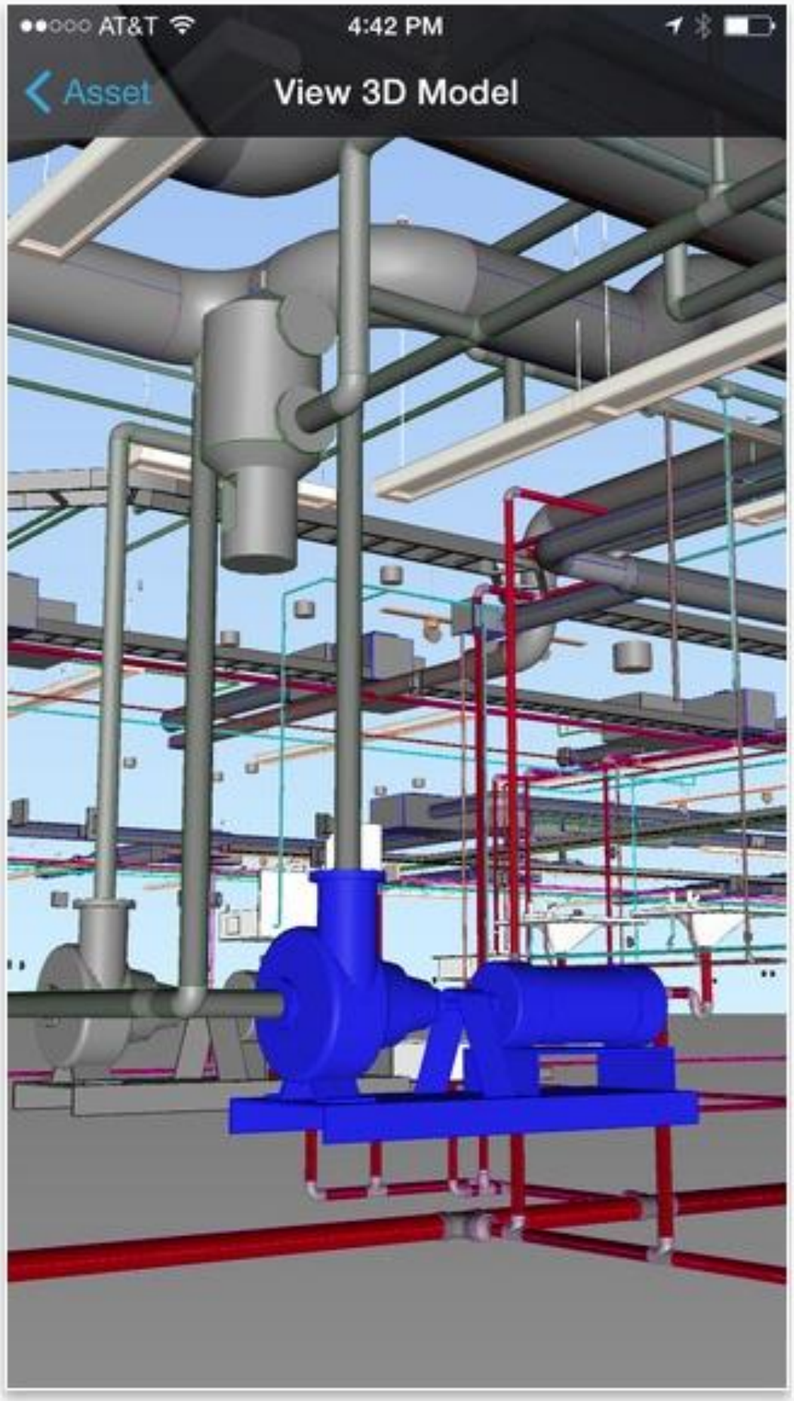
ALF-00005
In Use
Air Handler
In Use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Asset
View 3D Model

Q & A

How did we do?

- Your class feedback is critical. Fill out a **class survey** now.
- Use the AU mobile app or fill out a class survey online.
- Give feedback after each session.
- AU speakers will get feedback in real-time.
- **Your feedback results in better classes and a better AU experience.**

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