

BIM 360 API 最新动态和发展路线图

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Autodesk | @yiskang



关于我

康益昇

- 台湾科技大学营建工程（土木类）信息组硕士
- 2020年夏季正式加入 Autodesk
- 现任 Autodesk 开发技术推广及支持部 开发技术顾问
- 负责多个 Autodesk 开发技术支持，如 Forge、Revit API、Navisworks API 和 BIM360 API等

安全港声明 (Safe Harbor Statement)

接下来的讲题内容将包含一些前瞻性的信息，是我们对于产品或服务的当前期望，未来可能会有所改变，对此我们不做任何承诺，所以请不要依据这些前瞻性信息做出任何业务决策！*1)

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A discussion of factors that may affect future results is contained in our most recent Form 10-K and Form 10-Q filings available at www.sec.gov, including descriptions of the risk factors that may impact us and the forward-looking statements made in these presentations. The forward-looking statements made in these presentations are being made as of the time and date of their live presentation. If these presentations are reviewed after the time and date of their live presentation, even if subsequently made available by us, on our website or otherwise, these presentations may not contain current or accurate information. We disclaim any obligation to update or revise any forward-looking statement based on new information, future events or otherwise.

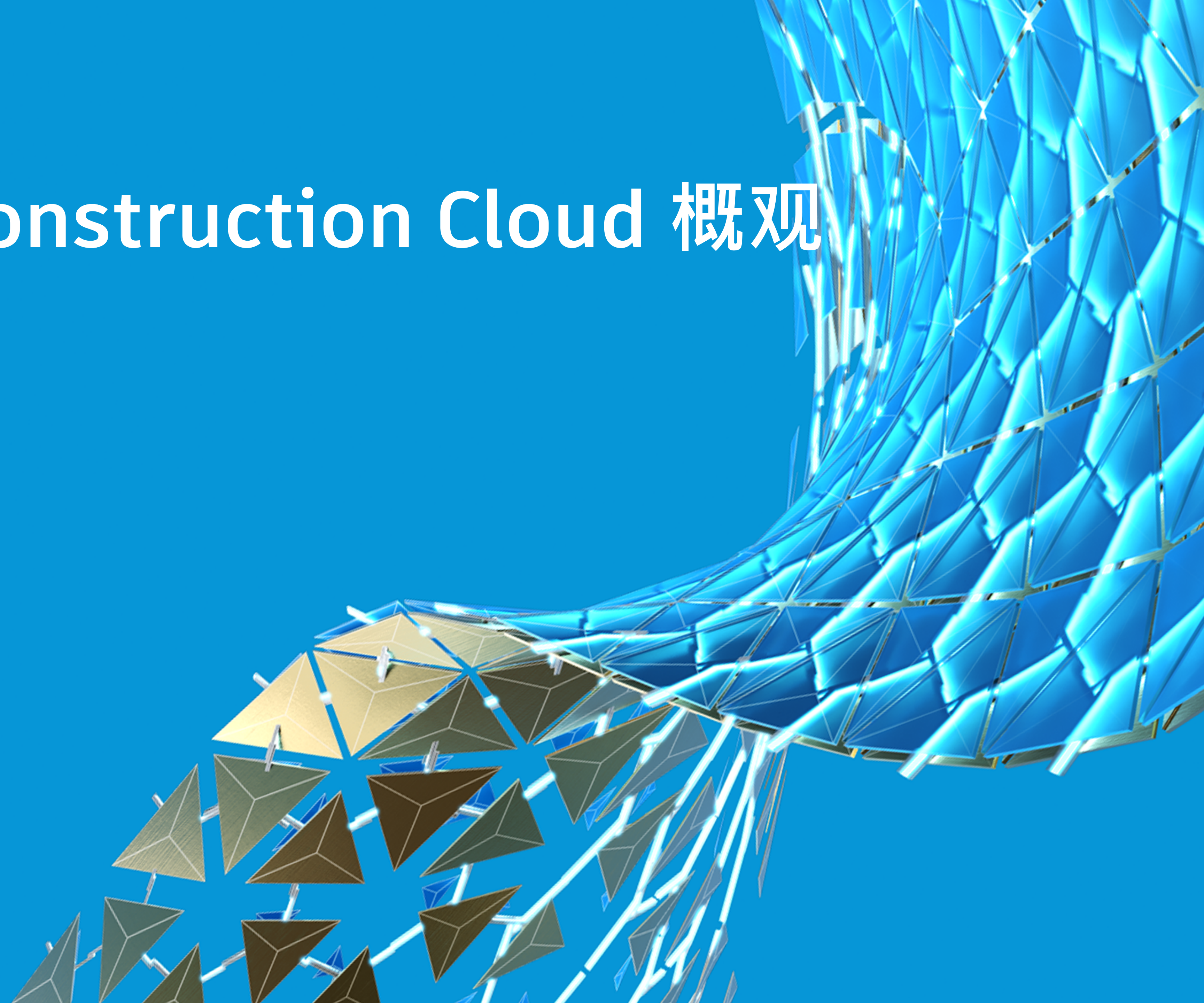
October 6, 2020

*1) 请参阅本页英文说明，一切关于安全港声明以此英文文本为准！

讲题大纲

- Autodesk Construction Cloud 概观
- BIM 360 & API 最新动态和发展路线
- Assets API
- Relationships API
- 未来展望

Autodesk Construction Cloud 概观





AUTODESK CONSTRUCTION CLOUD™



Assemble



BIM 360

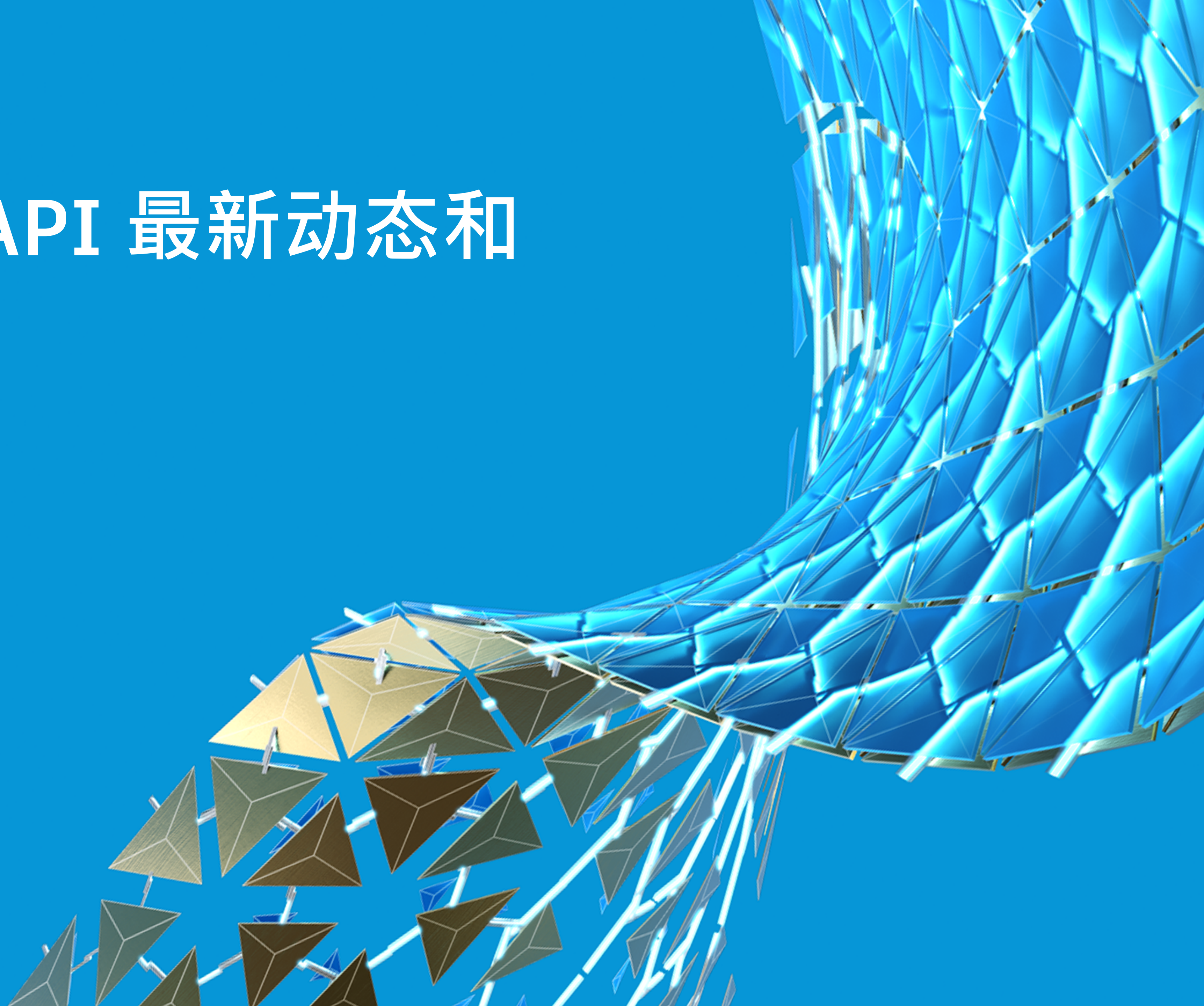


BuildingConnected

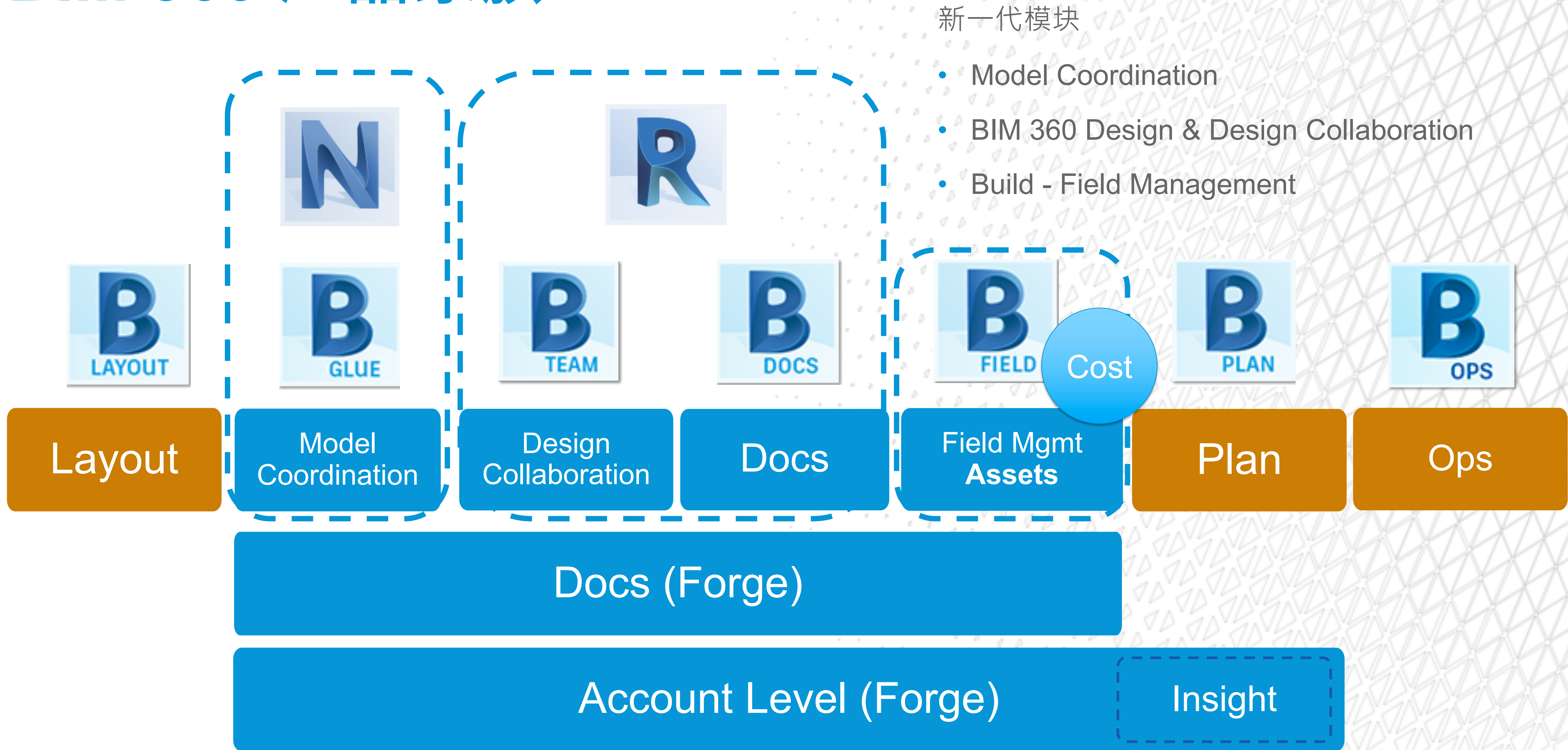


PlanGrid

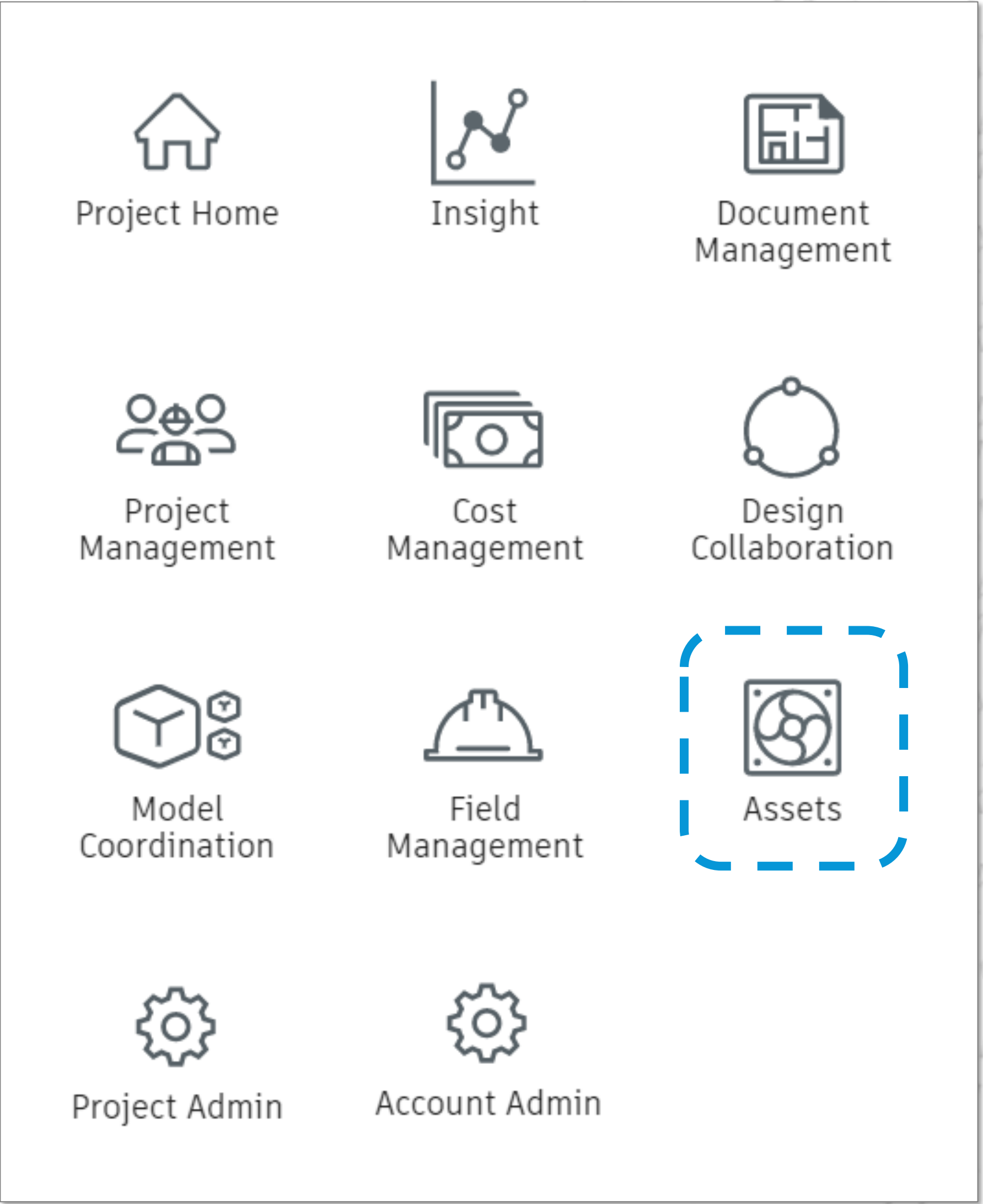
BIM 360 & API 最新动态和 发展路线



BIM 360 产品家族



BIM 360 模块



Document Management

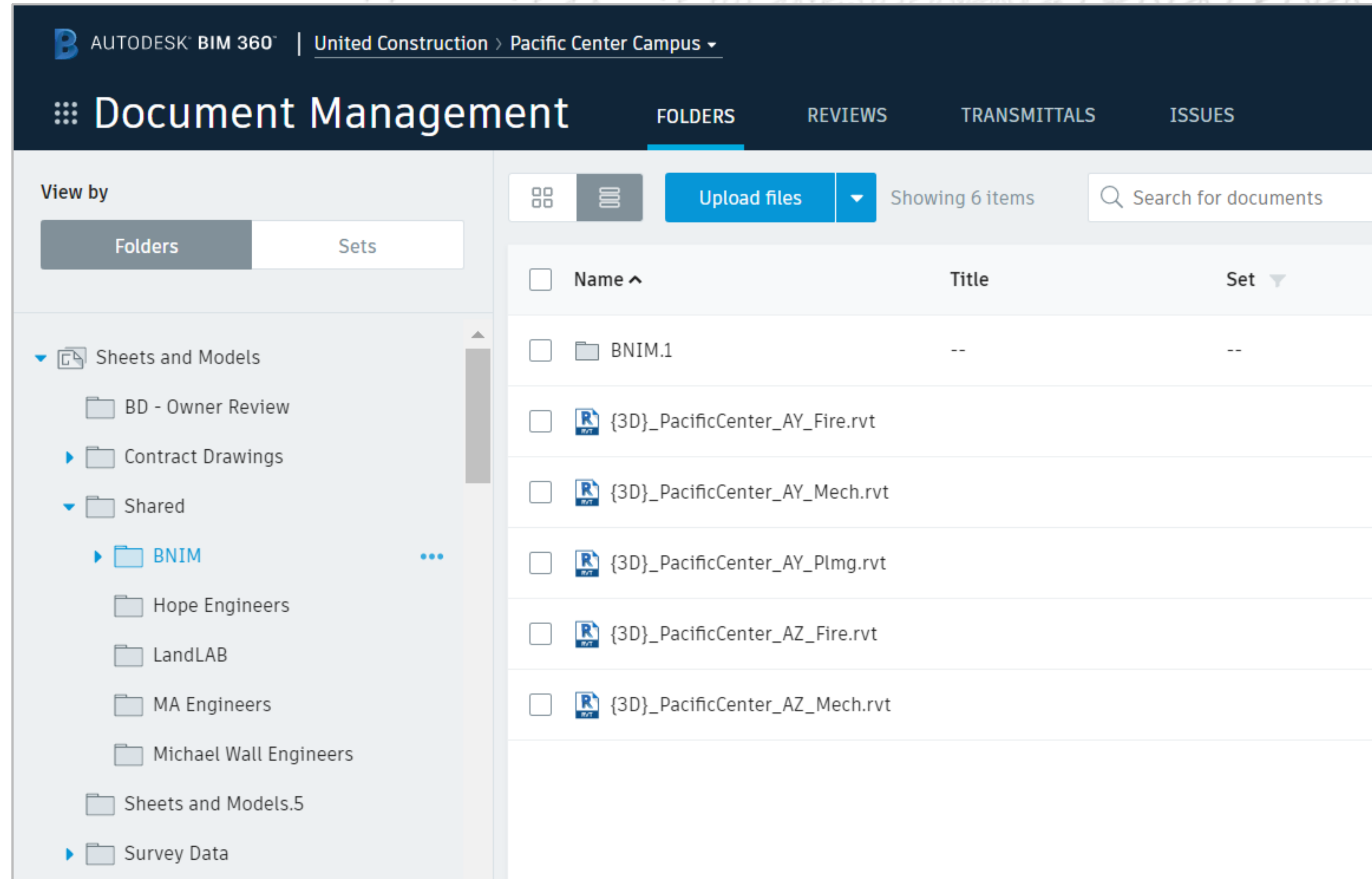
- Data Management API

- API 更新:

-  ○ 文件夹访问权限 (读/写)

- 自定义属性值 (读/写)*¹

*1) 尚不支持自定义属性的创建





Model Coordination

- Navisworks 和 Model Coordination 的集成

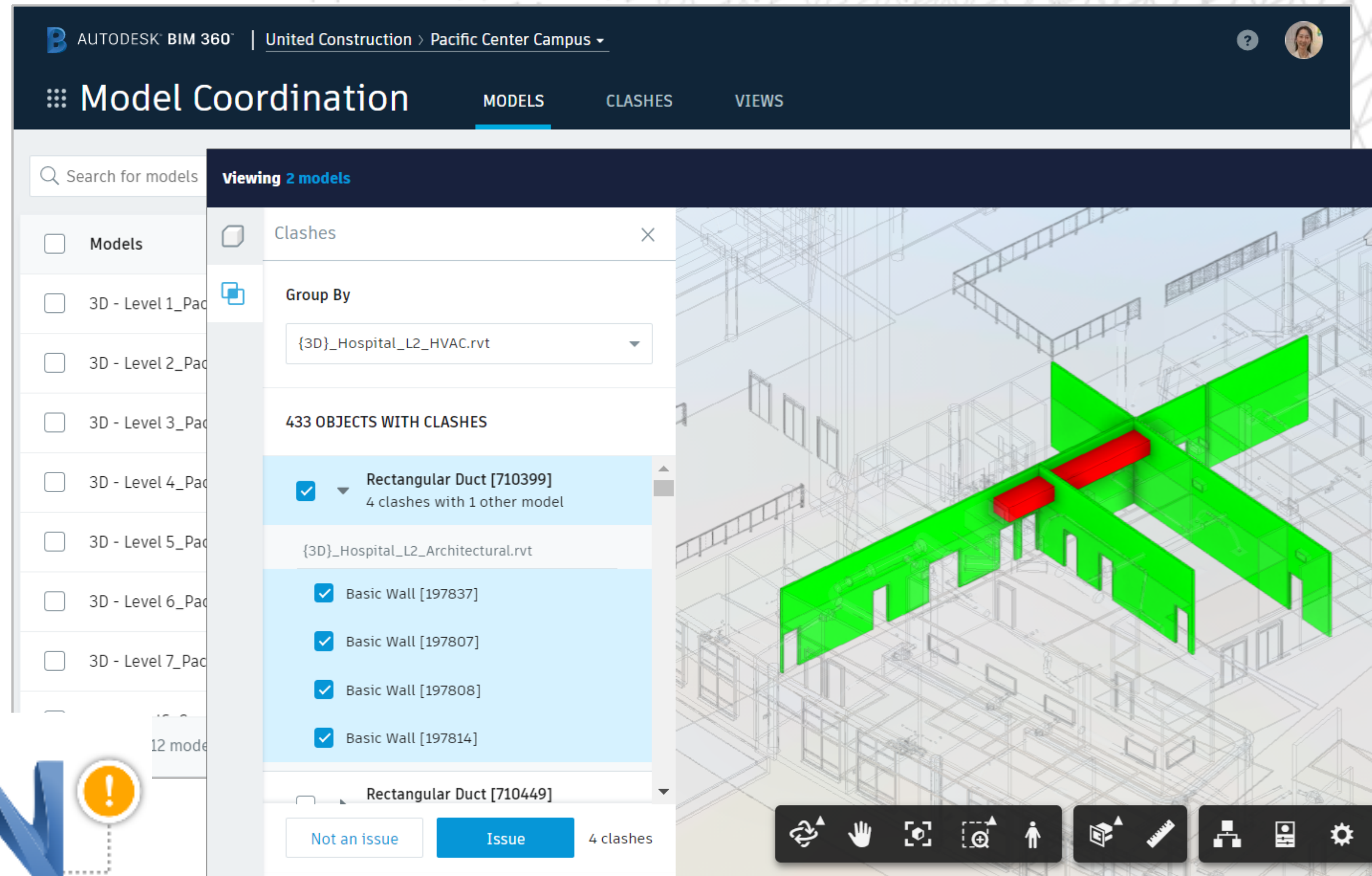
- API 更新：



○ 正式释出！

○ 支持 Project Files 文件夹

○ Relationships API





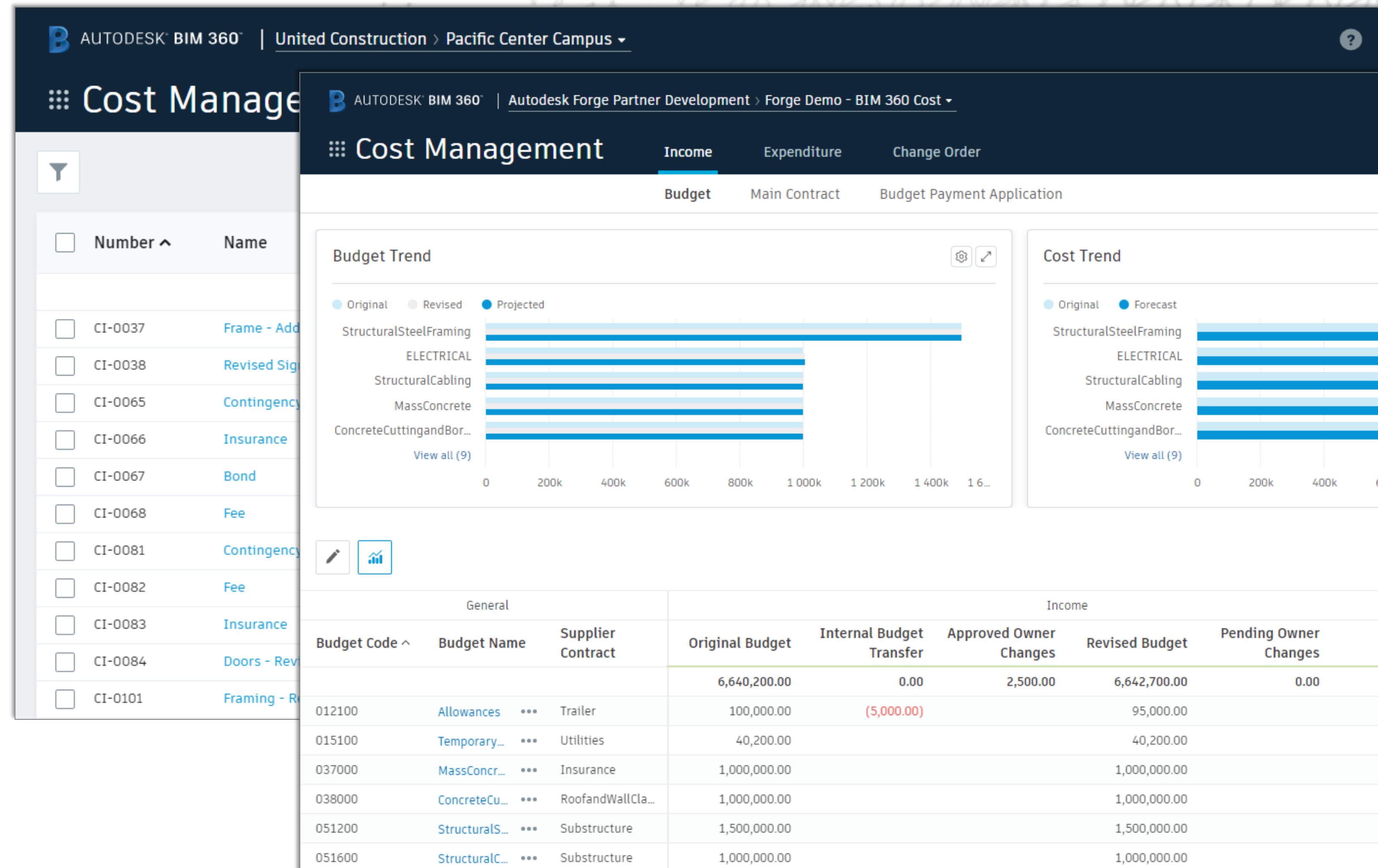
Cost Management

API 更新：

- 预算代码模版
- 创建/修改/搜索，和外部服务或系统间之关联 *1

👍 响应客户反馈！

*1) 尚待 API 帮助文档更新





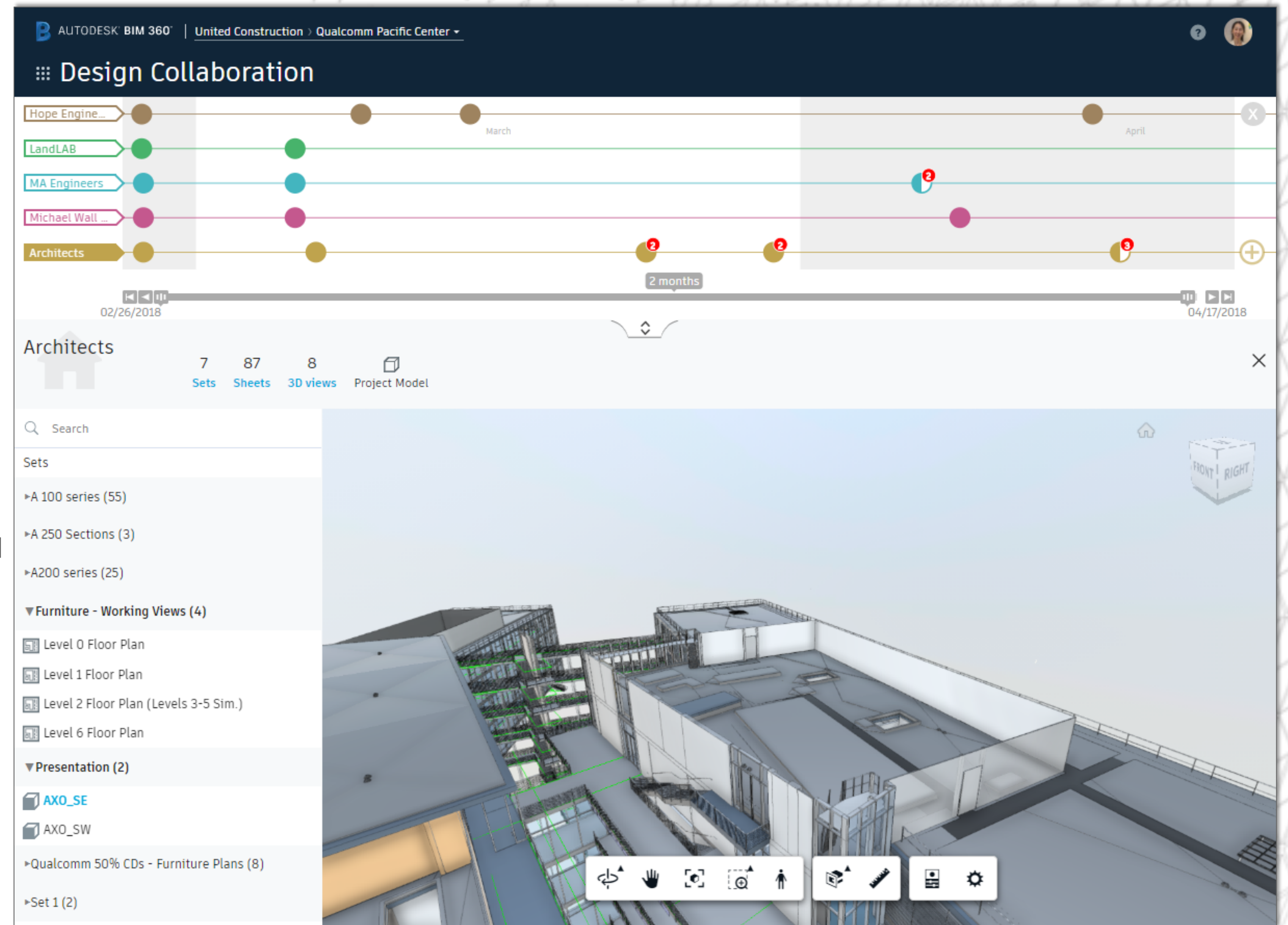
Design Collaboration

更新

- 基于Revit 云协同和 Webhook 事件的集成样例更新：

<https://github.com/Autodesk-Forge/forge-bim360notifier>

- 因应欧盟GDPR支持欧洲数据中心





Project Home

Project Home



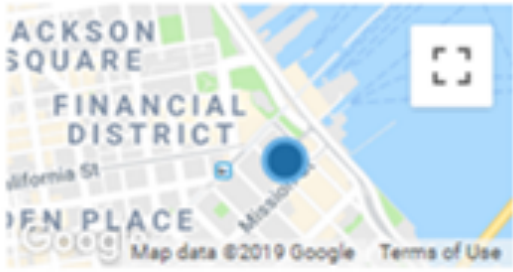
United Construction

Pacific Center Campus

Project Dates: Tue Oct 17 2017 - Fri Oct 29 2021



Project Address



1 Market street
San Francisco, CA 94105

Weather

52°
Cloudy

Tue 52°

Wed 58°

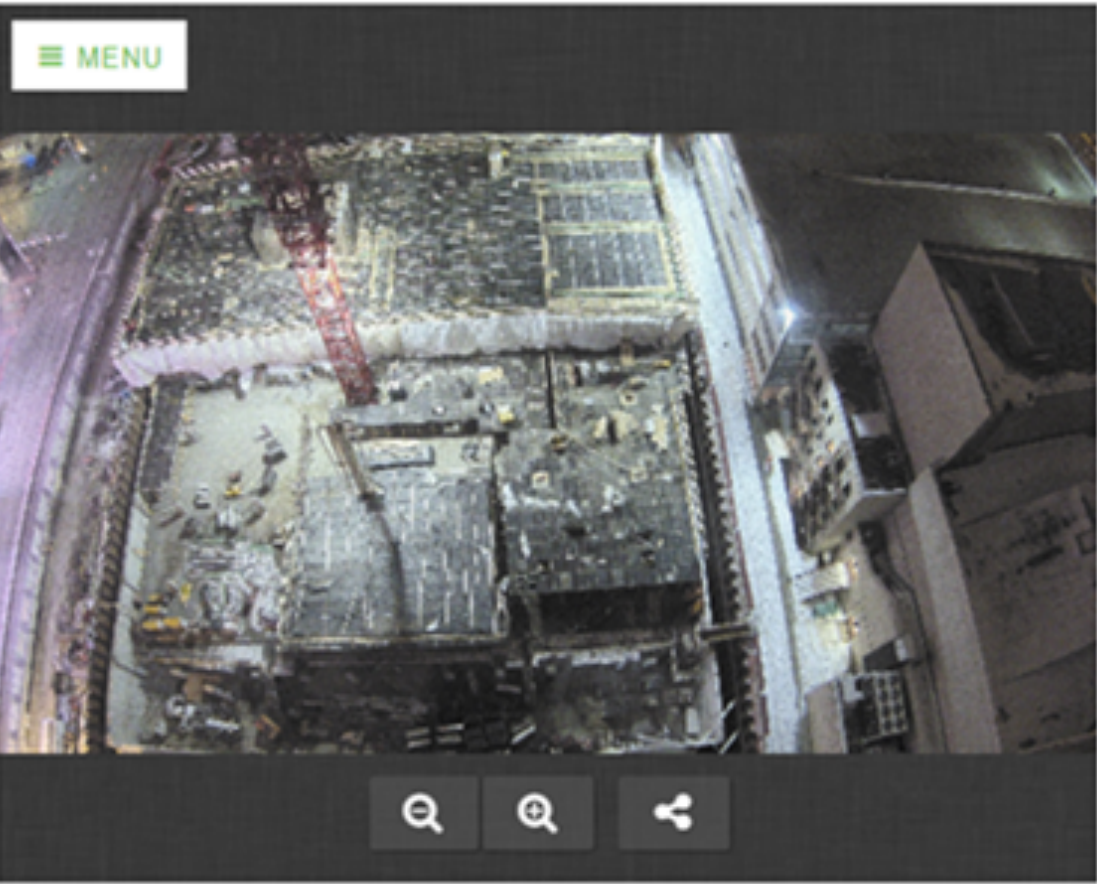
Thu 56°

Fri 57°

Powered by Dark Sky

TrueLook

MENU



TRUELOOK

Project Checklists

Title	Location	Scheduled
Safety Event Form		May 31, 2018
General Space - Punch		May 31, 2018
Above Ceiling Inspection		May 31, 2018
Above Ceiling Inspection		May 31, 2018
Above Ceiling Inspection		May 31, 2018

5 of 134 Open Checklists | View all (134)

Open RFIs and Submittals

44 RFIs

30

2

12

106 Submittal Items

15

91

Document Issue Trend

Added

Closed



添加合作夥伴小卡片
发送请求邮件到:
bim360partnercard@autodesk.com

 AUTODESK® FORGE



Insight

Insight


AUTODESK BIM 360

[United Construction](#) > [Pacific Center Campus](#)


Insight

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[COST](#)
[SCHEDULE](#)
[QUALITY](#)
[SAFETY](#)
[REPORTS](#)



United Construction

Pacific Center Campus

Project Dates: Tue Oct 17 2017 - Fri Oct 29 2021

Quality Risk 

Risk Today: Med

Safety Risk Today 



Quality Risk Factors


2


14


20


14

AUTODESK[®]

BIM 360[™]

| Autodesk Forge Partner Development ▾

?

Insight

RISKDESIGNQUALITYSAFETYDATA

Data Connector PreviewRun

The data connector will automatically extract data from: Account projects, Companies, Users, Roles, and Business Units as well as Project Users, Project Companies (including archived projects), Project Roles, Issues, Checklists, Daily Logs, Locations, Submittals and Cost.

Generated files are only available for 30 days after creation

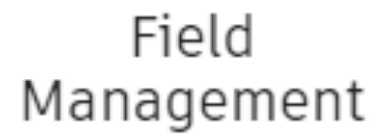
AVAILABLE EXTRACTIONS

Created	
May 7, 2020 3:54 PM	
May 7, 2020 2:38 PM	

- schemas
 - admin_account_services.csv
 - admin_accounts.csv
 - admin_business_units.csv
 - admin_companies.csv
 - admin_project_companies.csv
 - admin_project_services.csv
 - admin_project_user_roles.csv
 - admin_project_user_services.csv
 - admin_projects.csv
 - admin_roles.csv
 - admin_users.csv
 - checklists_checklist_assignees.csv
 - checklists_checklist_items.csv
 - checklists_checklist_items_answers.csv
 - checklists_checklist_section_assignees.csv
 - checklists_checklist_signatures.csv
 - checklists_checklists.csv

-  dailylogs_weather_logs.csv
-  issues_attachments.csv
-  issues_comments.csv
-  issues_issue_subtypes.csv
-  issues_issue_types.csv
-  issues_issues.csv





Field Management

The screenshot displays the Autodesk BIM 360 Field Management web application. The top navigation bar includes the Autodesk BIM 360 logo, the project name "United Construction > Pacific Center Campus", and a user profile icon. The main navigation menu features "Field Management", "TEMPLATES", "CHECKLISTS", "ISSUES" (highlighted), and "DAILY LOGS".

On the left, a sidebar shows a list of issues with columns for "ID" and "Type". The issues listed are:

ID	Type
778	Commissioning
777	Coordination
776	Safety
775	Safety
774	Safety
773	Safety
772	Safety

The main content area shows a detailed view of issue #750, titled "elevator shaft". The issue is created by "Manu Demo (Autodesk)" on Feb 13, 2020. The details section includes:

- Assigned to:** Manu Demo
- Due Date:** Feb 13, 2020
- Location:** Level 3
- Location Details:** Unspecified
- Linked document:** Unspecified
- Type:** Safety > Safety Infraction
- Owner:** Manu Demo
- Root Cause:** Unspecified

The right sidebar shows a table of linked documents with columns for "ID", "Type", and "Status". The table contains several rows of data, including entries with IDs 778, 777, 776, 775, 774, 773, and 772, all with a status of "Open".



Project Management

API 更新

- RFI v2

AUTODESK® BIM 360® | United Construction > Pacific Center Campus

Project Management

RFIs SUBMITTALS MEETINGS

Search RFI

Status	ID
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-
DRAFT	-
SUBMITTED	-
SUBMITTED	-
SUBMITTED	-

RFI #Unspecified

SUBMITTED

Your action is required **Submit to Reviewer**

DETAILS ATTACHMENTS ACTIVITY

Have you completed the work on this site?

Assigned to: Zohar Liran

Due date: Mar 31, 2020

Cost impact: Unspecified

Schedule impact: Unspecified

Question: Have you completed the work on this site?

Suggested answer: Yes



Assets

Assets

ASSETS



Asset Tree	Details			
All Categories	Asset ID	Category	Location	Model
▶ Air Handling Units (AHU's)	621642	Lighting Fixtures > Rece...	... > Rm 212	-
▶ Electrical Equipment	621643	Lighting Fixtures > Rece...	Tower 2 > 1 Floor	-
▶ Lighting Devices	621644	Lighting Fixtures > Rece...	... > Rm 116	-
▶ Lighting Fixtures	694117	Lighting Fixtures > Rece...	... > Rm 115	-
▶ Mechanical Equipment	694251	Lighting Fixtures > Rece...	... > Security Of...	-
▶ Plumbing Fixtures	694268	Lighting Fixtures > Rece...	... > Elevator Lo...	-
▶ Pumps	694269	Lighting Fixtures > Rece...	... > Facility Offi...	-

Asset

621642

INSTALLED ▾ ✕

DETAILS

ISSUES

CHECKLISTS

ATTACHMENTS

Create Issue

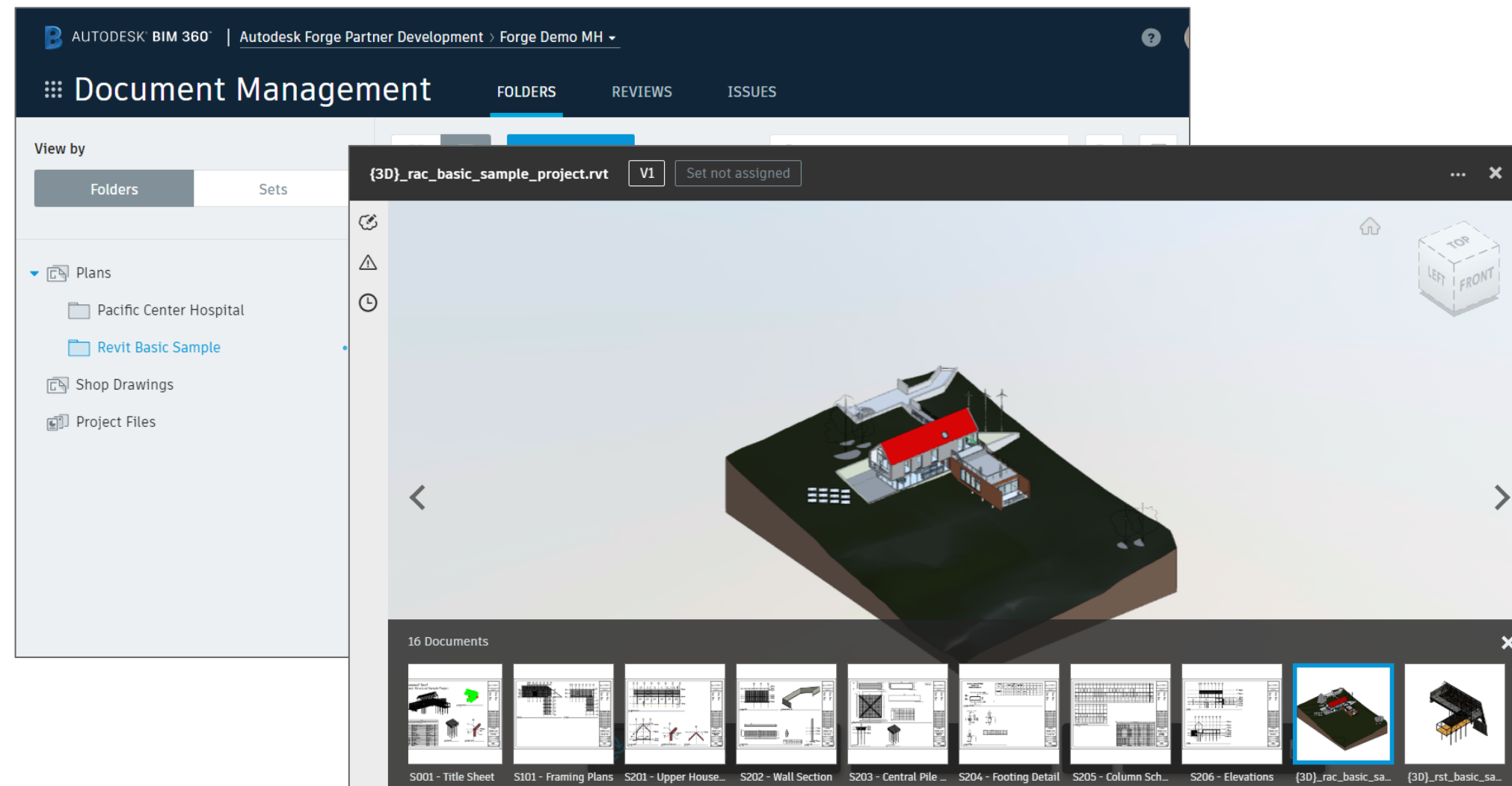
Add reference

Linked references

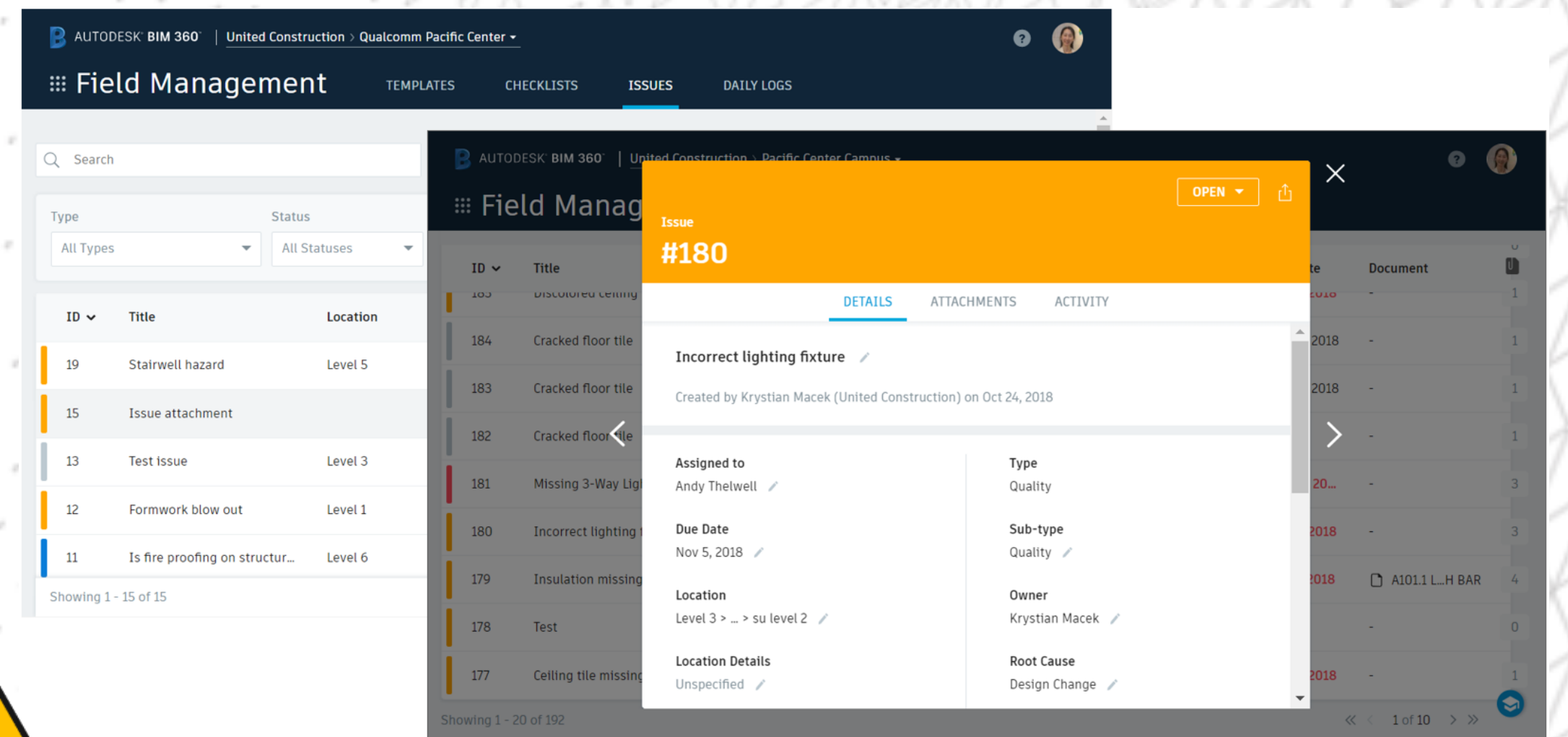
Issue **OPEN** #35 air handler installation issue

Issues

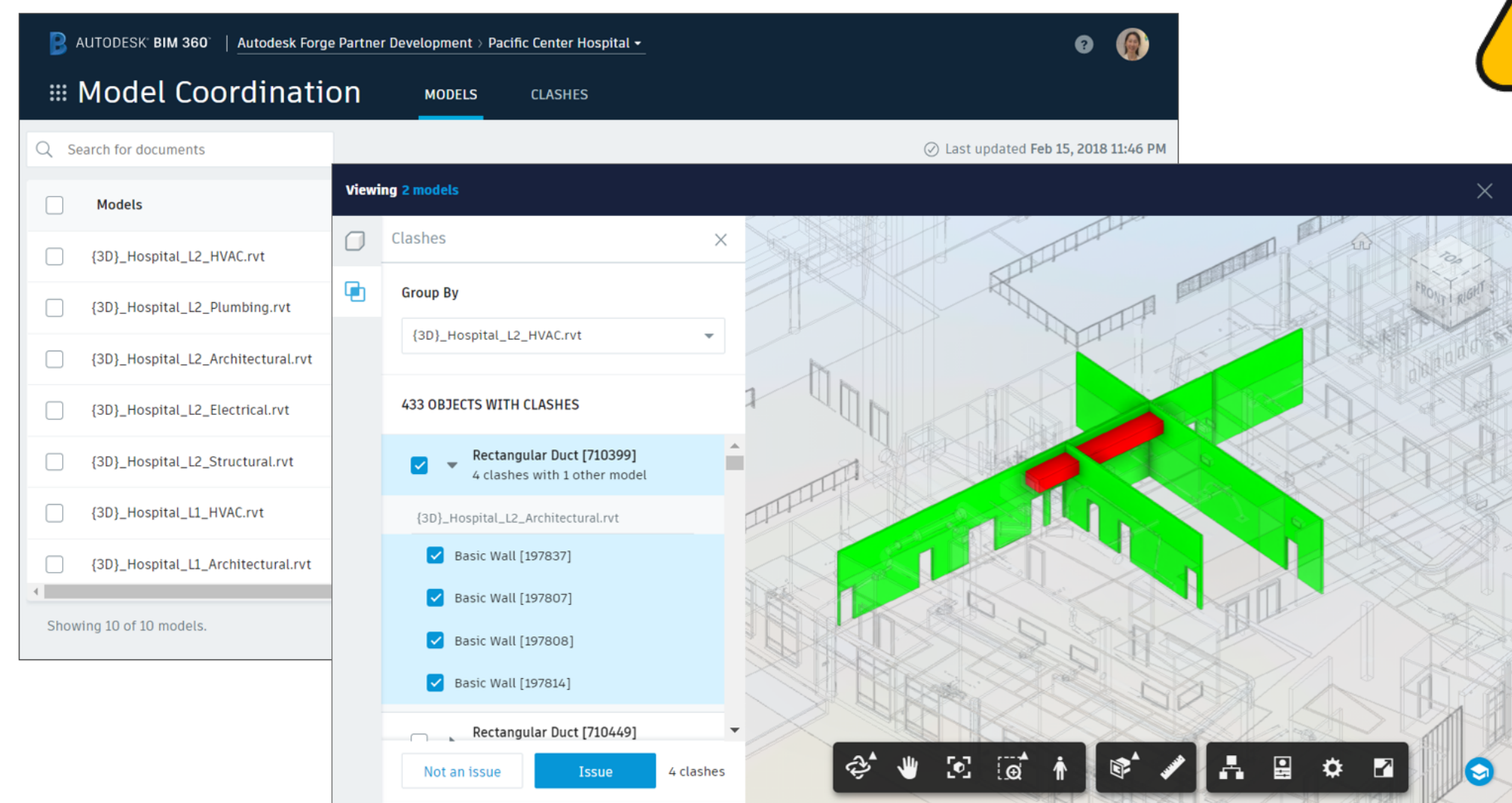
Document Management



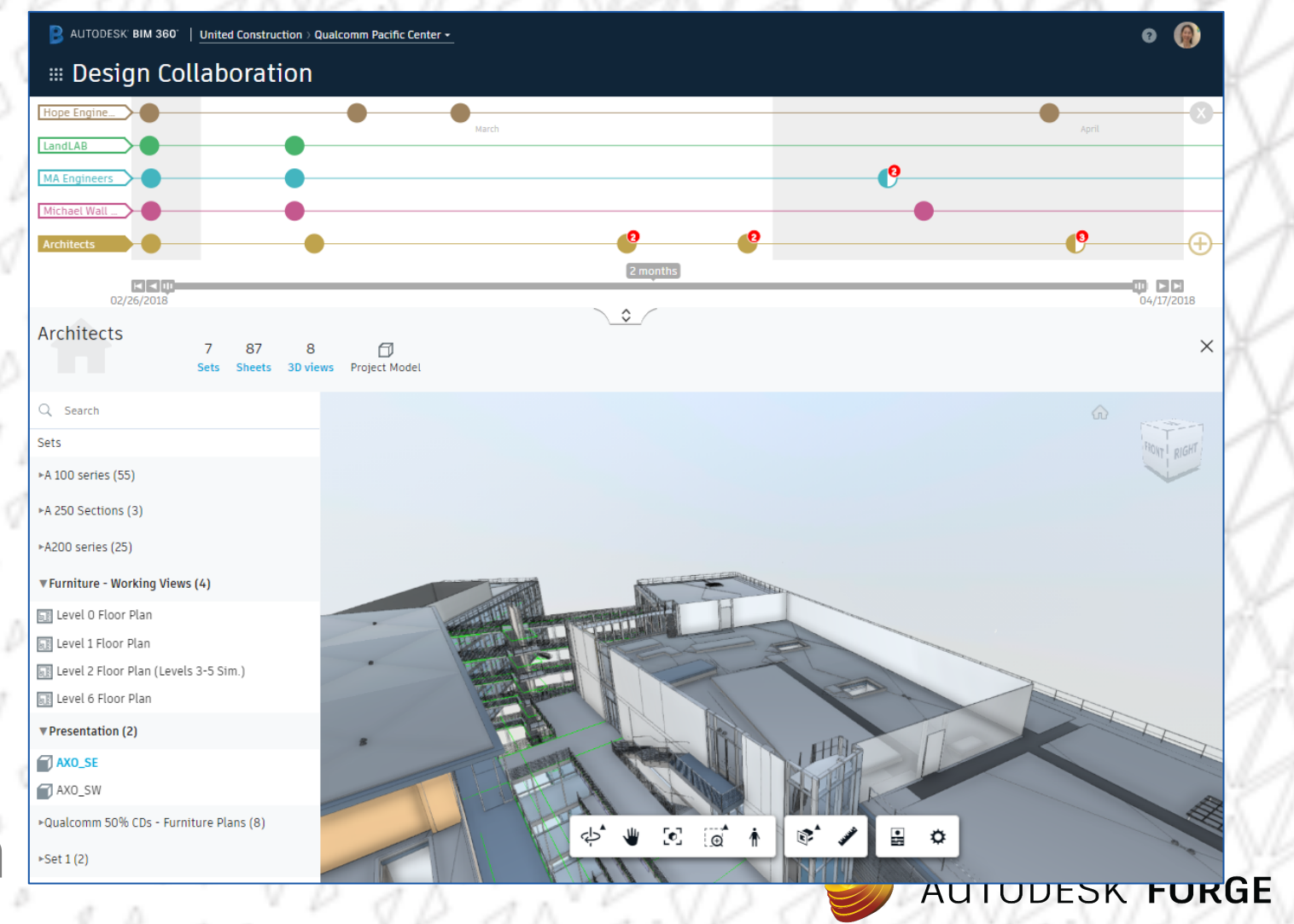
Field Management



Model Coordination



Design Collaboration



Navisworks BIM 360 Issues



Revit Issues Add-in

BIM 360 更新信息

<https://blogs.autodesk.com/bim360-release-notes/2020>

<https://help.autodesk.com/view/BIM360D/ENU/>

BIM 360 Release Notes



Multiple Daily Logs

FIELD MANAGEMEN... Sep 24, 2020



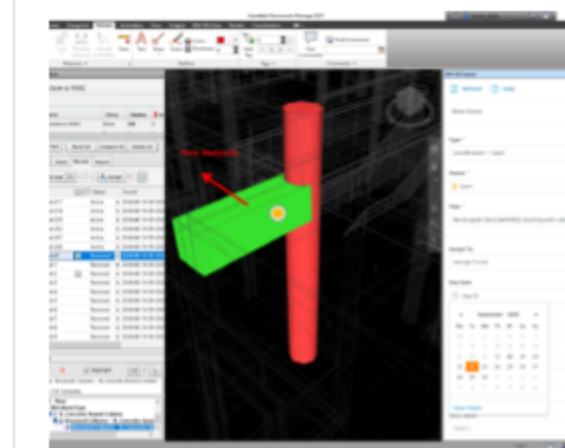
BIM 360 Docs Search and Filter Enhancements f...

NEXT GEN BIM 3... Sep 23, 2020



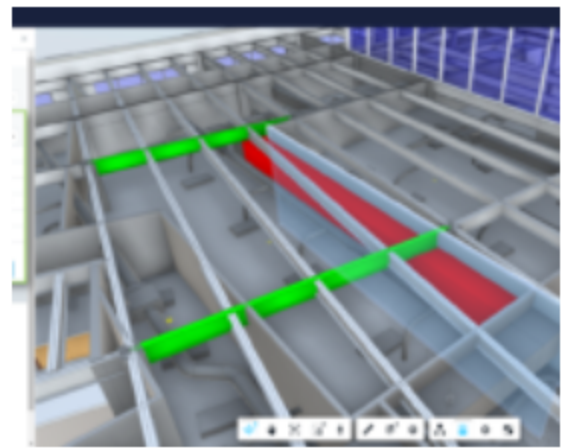
Reopen Closed RFI

PROJECT MANAGE... Sep 22, 2020

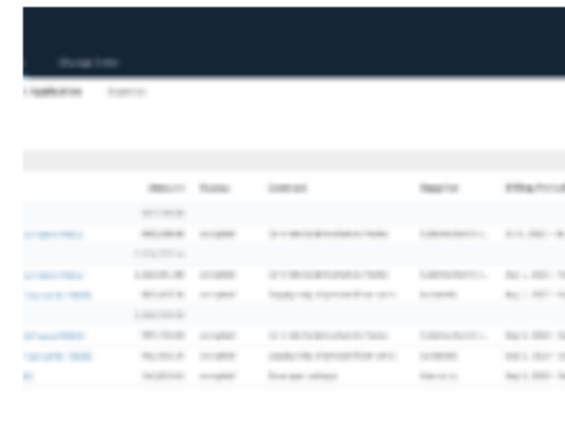


Navisworks Issues Integration – September 202...

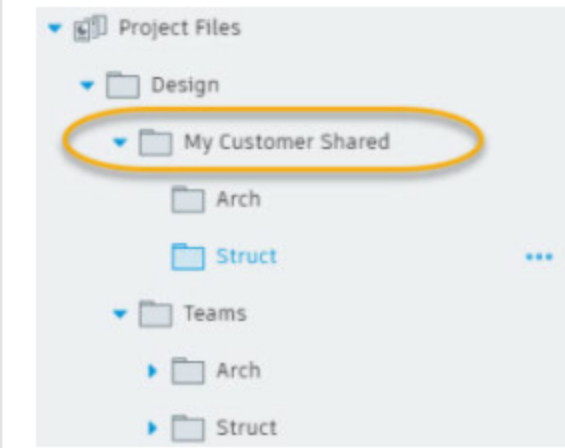
NAVISWORKS Sep 22, 2020



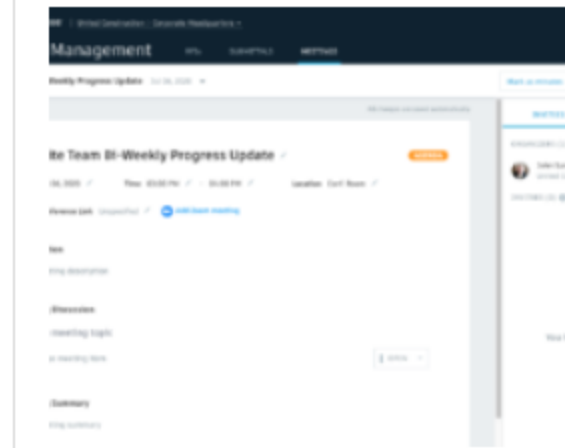
BIM 360 Model Coordination – September 2020 R...



BIM 360 Cost Management Updates – Septe...



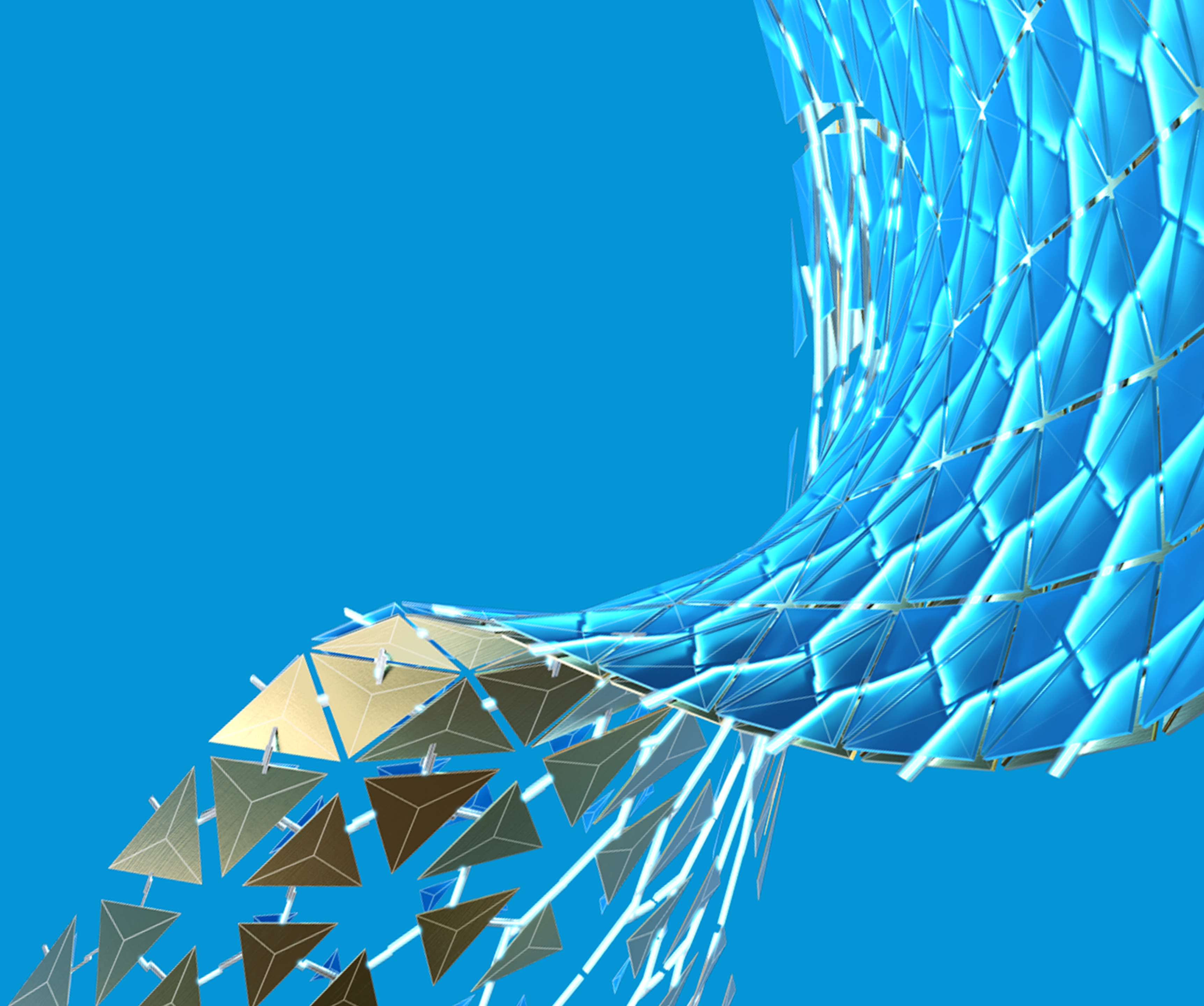
BIM 360 Design Collaboration Update – Septemb...



Meetings Release – Delete a Record

Assets API

开发进行中



Assets API

内部测试 (只读)

- Asset 信息
- Asset 自定义属性
- Asset 类型
- Asset 状态

公开测试 (敬请期待)

- Read + write items, batch, import^{*1}

Priority feedback welcome!

^{*1}) prioritize based on feedbacks

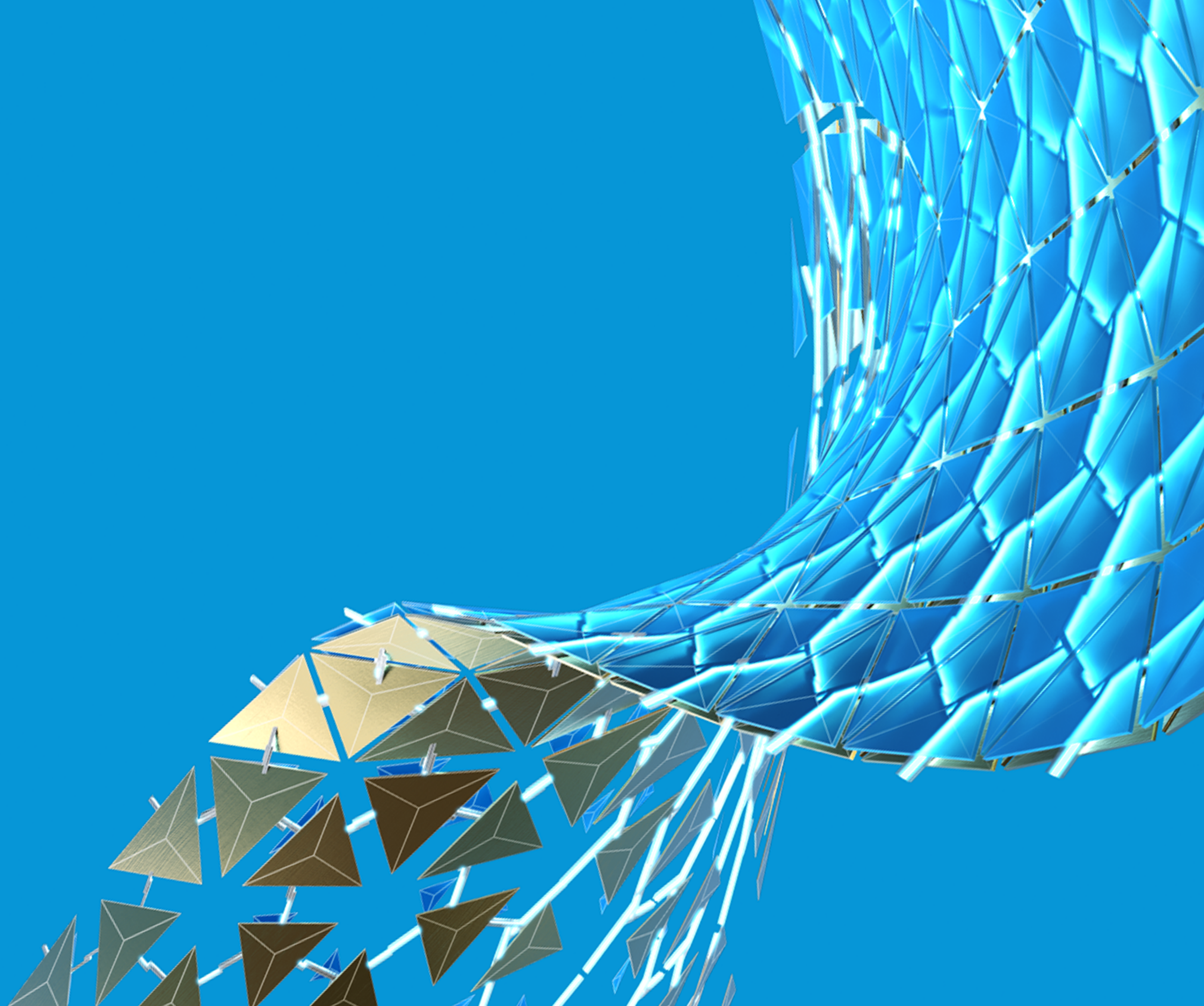
The screenshot displays the Autodesk BIM 360 Project Admin interface. The top navigation bar includes 'Project Admin' and tabs for 'MEMBERS', 'COMPANIES', 'SERVICES', and 'PROFILE'. The left sidebar lists 'Overview', 'Issues', 'Notifications', 'Locations', 'Document Management', and 'Assets'. The main content area shows the 'Categories' tab, which lists various asset categories like 'All Categories' and 'Air Handling Units (AHU's)'. A table below shows the 'Name', 'Active / Inactive' status, 'Status Set', and 'Attributes' for these categories. The bottom section shows the 'Assets' tab, which displays a list of assets with columns for 'Asset ID' and 'Category'. The 'Asset ID' column is highlighted, and the 'Category' column is also highlighted. The 'Asset ID' values are 621642, 621643, 621644, 694117, 694251, and 694268. The 'Category' values are 'Lighting Fixtur...', 'Lighting Fixtur...', 'Lighting Fixtur...', 'Lighting Fixtur...', 'Lighting Fixtur...', and 'Lighting Fixtur...'. The right side of the interface shows the 'Asset 621642' details, including 'Asset ID', 'Category', 'Description', 'Barcode', 'Location', 'Serial number', 'Submittal', 'Purchase order', and 'Purchase date'.

Name	Active / Inactive	Status Set	Attributes
All Categories		Default	-
▶ Air Handling Units (AHU's)	Active	Default	-

Asset ID	Category
621642	Lighting Fixtur...
621643	Lighting Fixtur...
621644	Lighting Fixtur...
694117	Lighting Fixtur...
694251	Lighting Fixtur...
694268	Lighting Fixtur...

Asset ID	Category	Description	Barcode	Location	Serial number	Submittal	Purchase order	Purchase date
621642	Lighting Fixtures > Recessed Parabolic Light	2'x2'(2 Lamp) - 277V	Unspecified	Tower 2 > 2 Floor > Rm 212	Unspecified	Unspecified	Unspecified	Unspecified

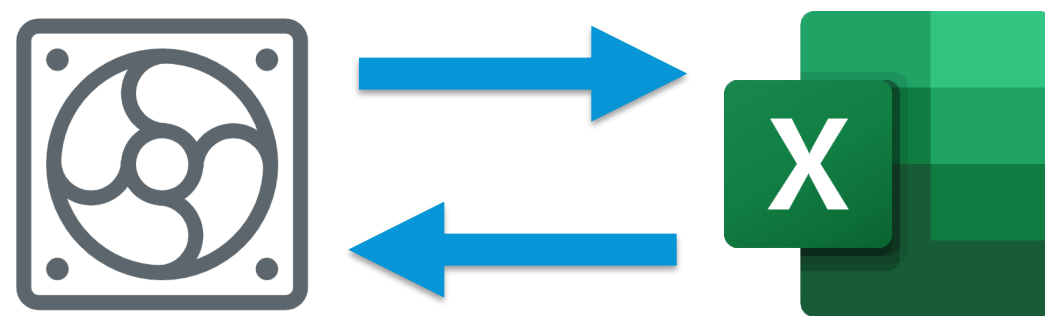
样例程式



输入跟导出 Excel 文档

- 功能简介:
 - 导出用户存放在 BIM360 Assets 模块上的数据到网页上，在导出 Excel 文档
 - 在修改 Excel 文档内容后倒回去 BIM360 Assets 模块里，并覆写原来的 Assets 数据

- 代码: GitHub 样例 (待定)
- 作者: Xiaodong Liang, Autodesk



BIM 360 Assets

BIM 360 Asset Data Export & Import

localhost:3000

Apps

BIM360

MC API

China

AU2018

aws

Live Demos

Video Demos

quick-demos

DevDays 2016

3DWebFest

Autodesk

Prototype

Customer

AUTODESK FORGE

BIM 360 Asset Data Exchange

Enable n

BIM360 Project List

Autodesk Forge Partner Development

BIM360 AU Asset Test Project(Zhong)

Daimler POC Project

Delete Test Sample 4 by Zhong

Flow Test

Forge Concert Hall

Forge Demo EK

Forge Demo ZW DA

Forge Demo Zhong

Forge Infracore

Pacific Center Hospital v2

Xiaodong Tes & Patch

Xiaodong-test-MC

Zhong Revit File Upgrader Project

xiaodong-test-asset

FPD EMEA

ASSETS

CATEGORIES

CUSTOM ATTRIBUTES

STATUSES

clientAssetId	version	description	isActive	category	status	barcode	serialNumber	installationDate	installedBy	warrantyStartDate	warrantyEndDate
AHU-999	3937	Performance Climate Changer Air Handler Floor 1	true	Air Cooled Chiller	Installed	barcode-12345	SN-7890456	2020-09-02	company-B	2020-09-09	2021-09-09
AHU-998	3938	Performance Climate Changer Air Handler Floor 2	true	Air Cooled Chiller	Functional Performance Tests	barcode-45789	SN-7890456	2020-09-02	company-C	2020-09-09	2021-09-09
AHU-997	3939	Performance Climate Changer Air Handler Floor 3	true	Air Cooled Chiller	Acceptance	barcode-34896	SN-674456	2020-09-02	company-R	2020-09-09	2021-09-09
VAV-996	3940	Base Mounted	true	Primary Water Pump	Installed	barcode-33556	SN-490874	2020-09-02	company-F	2020-09-09	2021-09-09
VAV-995	3941	Base Mounted	true	Primary Water Pump	Functional Performance Tests	barcode-33556	SN-098745	2020-09-02	company-F	2020-09-09	2021-09-09

BIM 360
Autodesk Forge Partner Development > xiaodong-test-asset

Assets

ASSETS

Asset Tree

- All Categories
- Air Handling Units (AHU's)
 - Air Terminal
 - Electrical
- Mechanical
- Pumps
- xiaodongtest

Asset ID	Category	Location	Barcode
AHU-999	Air Handling U...	CH/PH Stock 1 [...]	barcode-12
AHU-998	Air Handling U...	> Stock 3 [57...]	barcode-45
AHU-997	Air Handling U...	> Workshop 4 [...]	barcode-34
VAV-996	Pumps > Prima...	> Leader 8 [5...]	barcode-33
VAV-995	Pumps > Prima...	CH/PH I 2 [5737...]	barcode-22
AHU-767	Air Handling U...	CH/PH Stock 1 [...]	barcode-99
PIPE-111	Air Handling U...	> Stock 3 [57...]	-
PIPE-222	Air Handling U...	CH/PH Stock 1 [...]	-
MECH-876	Pumps > Prima...	> Leader 8 [5...]	-
DUCT-995	Pumps > Prima...	> Workshop 4 [...]	-

Assets

ASSETS



Export

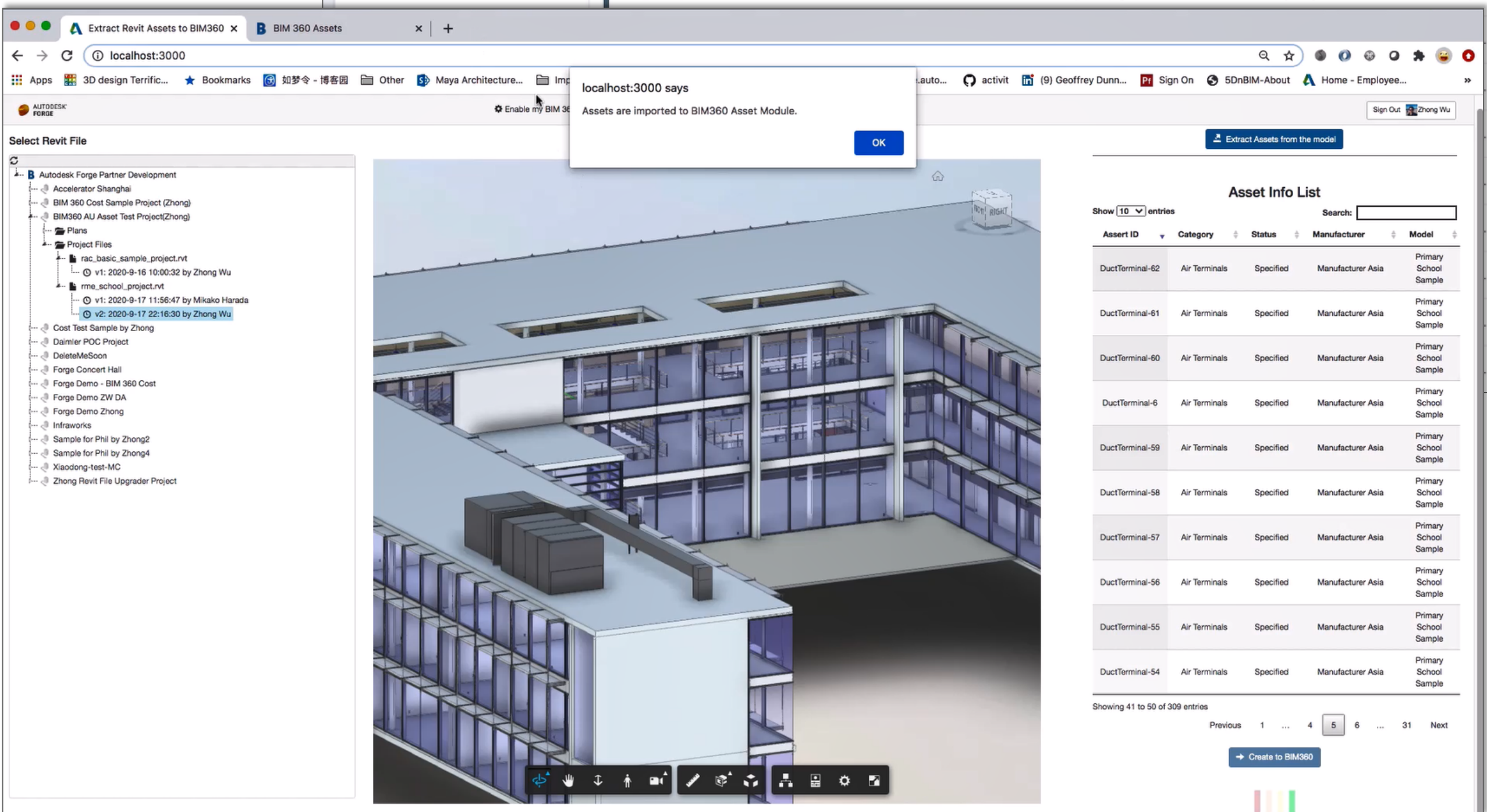
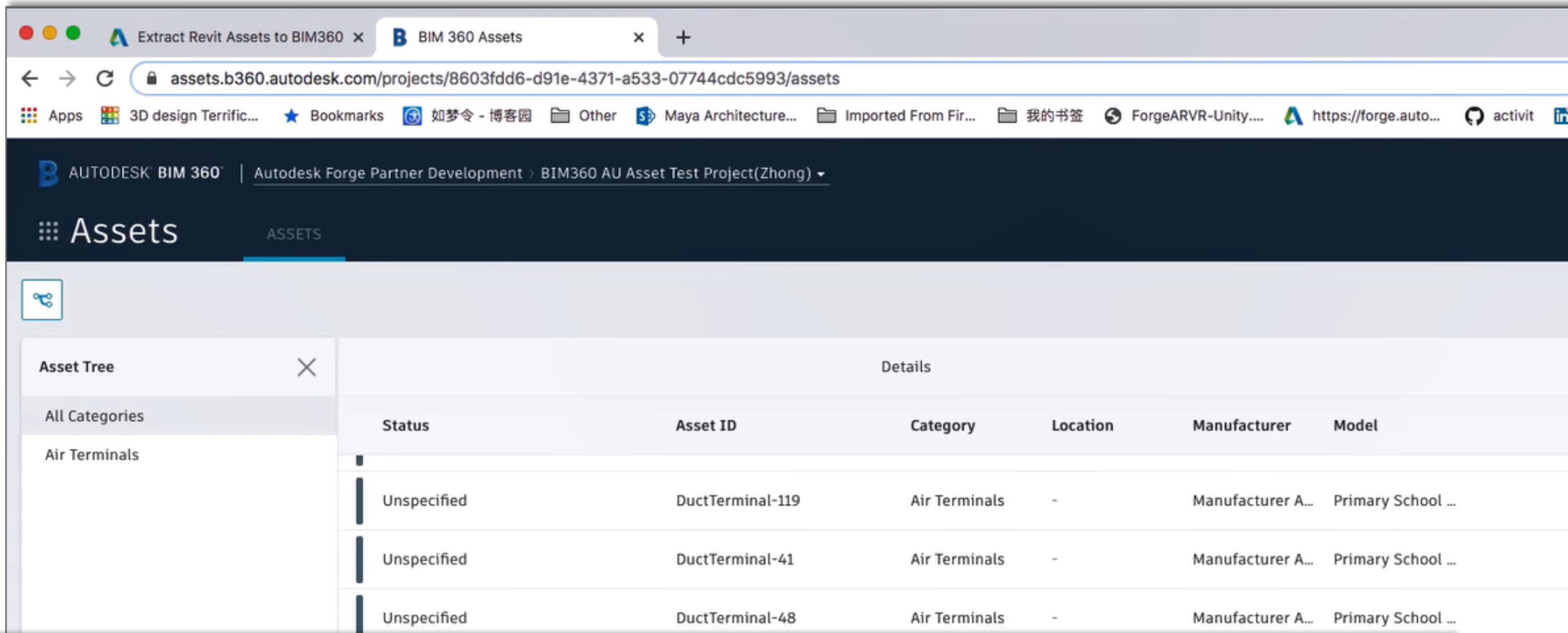
Import

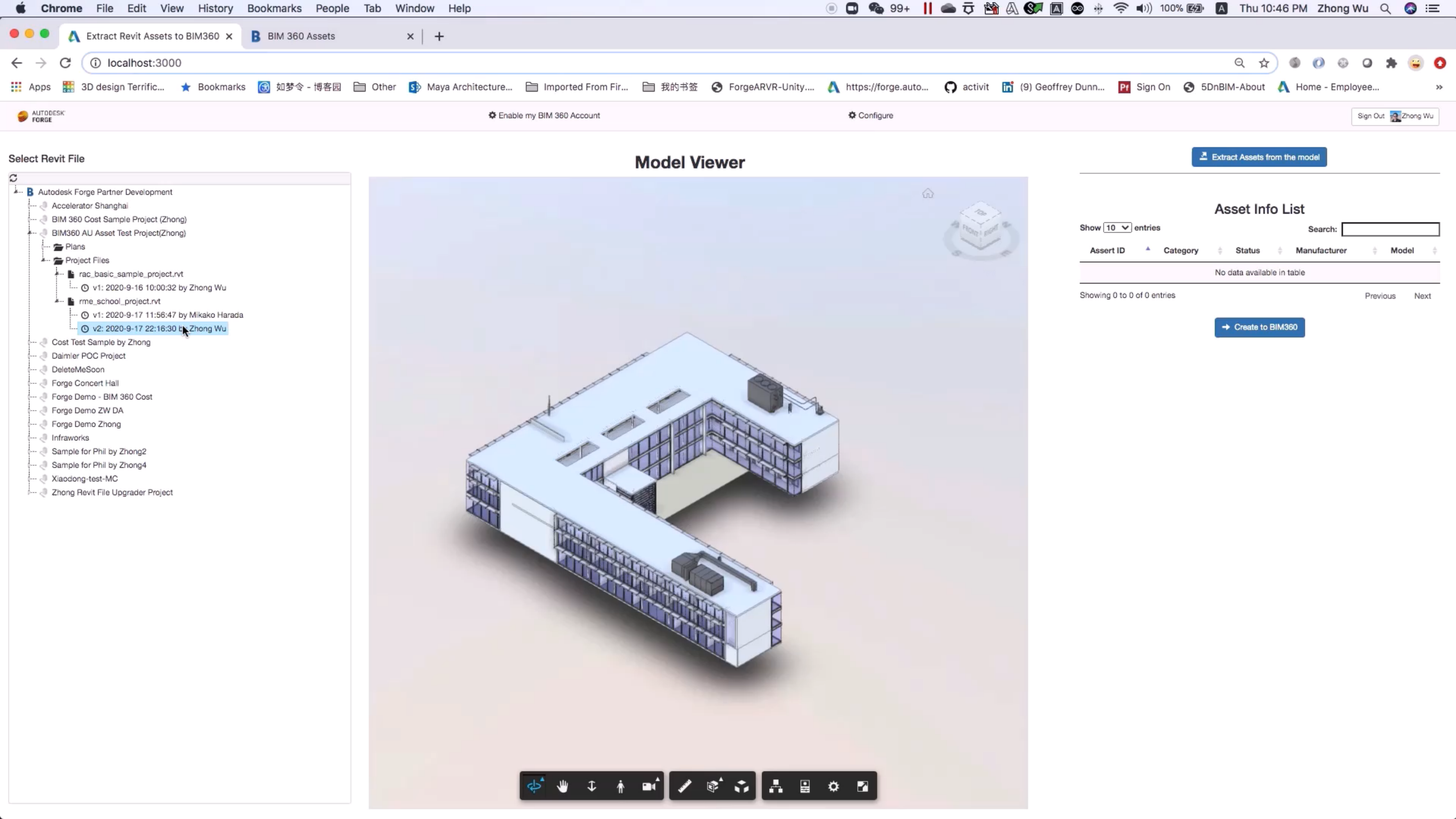
Asset Tree		Details												
All Categories		Asset ID	Category	Location	Barcode	Created by	Spec section	Purchase order	Purchase date	Manufacturer	Model	vendor	count	maintai engineer 
▶ Air Handling Units (AHU's)														
Air Terminal		AHU-999	Air Handling U...	CH/PH Stock 1 [...]	barcode-12345	Xiaodong Liang	mechanical	P03678056	Sep 9	Schneider Elect...	Basic-MEP	Daikin	20	David,M
Electrical		AHU-998	Air Handling U...	... > Stock 3 [57...	barcode-45789	Xiaodong Liang	electrical	P03678056	Sep 9	ABB Electric	Basic-MEP	Daikin	20	David,M
▶ Mechanical														
▶ Pumps		AHU-997	Air Handling U...	... > Workshop 4...	barcode-34896	Xiaodong Liang	pipe	P03678056	Sep 9	IBM	Basic-MEP	Daikin	20	David,M
▶ xiaodongtest		VAV-996	Pumps > Prima...	... > Leader 8 [5...	barcode-33556	Xiaodong Liang	duct	P03678056	Sep 9	Model	Basic-MEP	Daikin	20	David,M
		VAV-995	Pumps > Prima...	CH/PH I 2 [5737...	barcode-22390	Xiaodong Liang	internet	P03678056	Sep 9	JE	Basic-MEP	Daikin	20	David,M
		AHU-767	Air Handling U...	CH/PH Stock 1 [...]	barcode-999	Devtech China	floor5	P0888888	Sep 9	ABB	Mechanical	ABB	30	Michael
		PIPE-111	Air Handling U...	... > Stock 3 [57...	-	Devtech China	-	-	-	-	-	-	-	-
		PIPE-222	Air Handling U...	CH/PH Stock 1 [...]	-	Devtech China	-	-	-	-	-	-	-	Peter,Ji
		MECH-876	Pumps > Prima...	... > Leader 8 [5...	-	Devtech China	-	-	-	-	-	-	-	-
		DUCT-995	Pumps > Prima...	... > Workshop 4...	-	Devtech China	-	-	-	-	-	-	-	-

从设计模型导入 Assets 数据

- 功能简介:
 - 我们通过 Design Automation API for Revit 从设计模型获取设施、设备相关的信息，在导入 Assets 数据到 Assets 模块
 - 在这边我们取 Revit 构件的 Unique Id 做为 Asset 的自定义属性以用于匹配 Revit 构件和 Asset 数据

- 代码: GitHub 样例 (待定)
- 作者: Zhong Wu, Autodesk



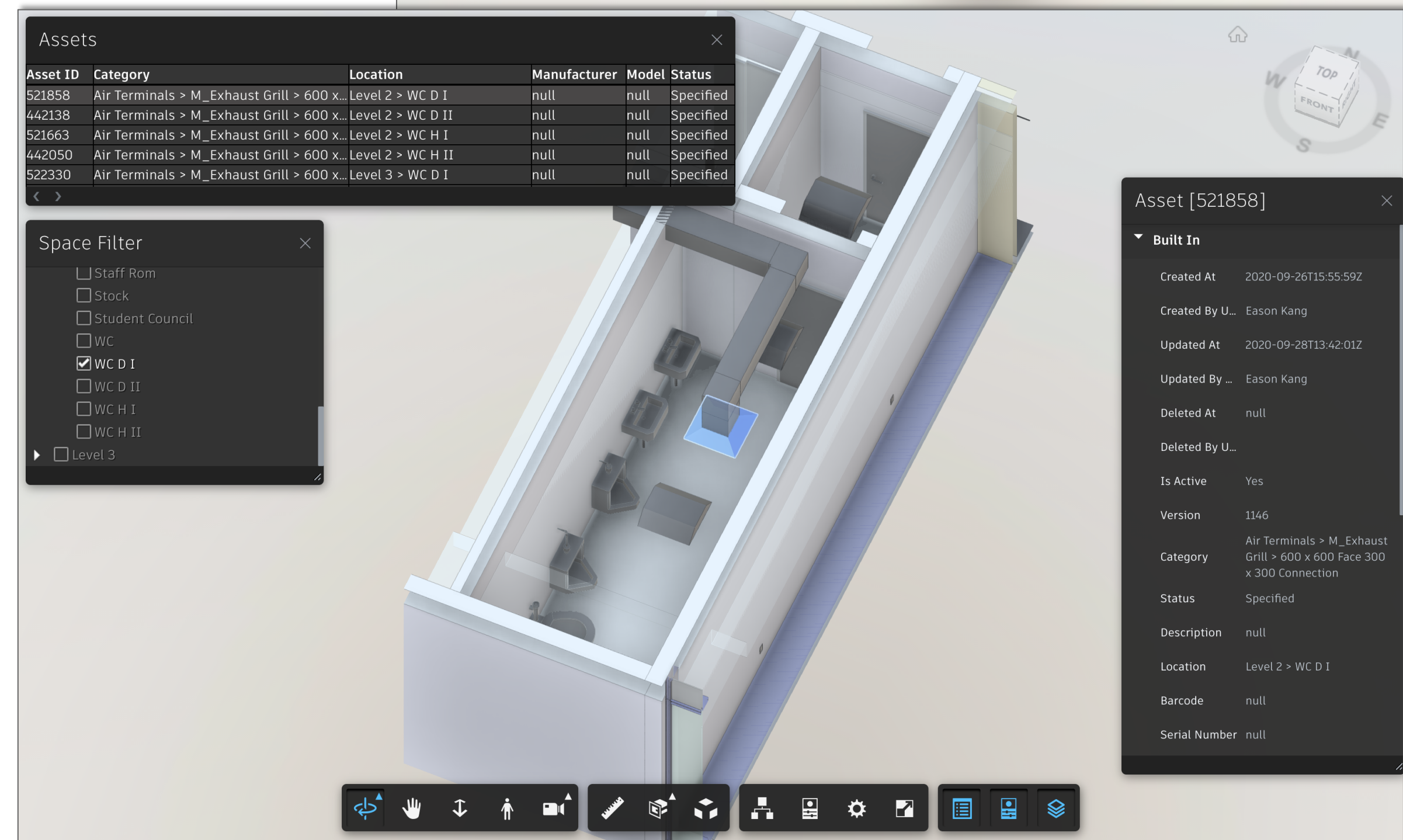
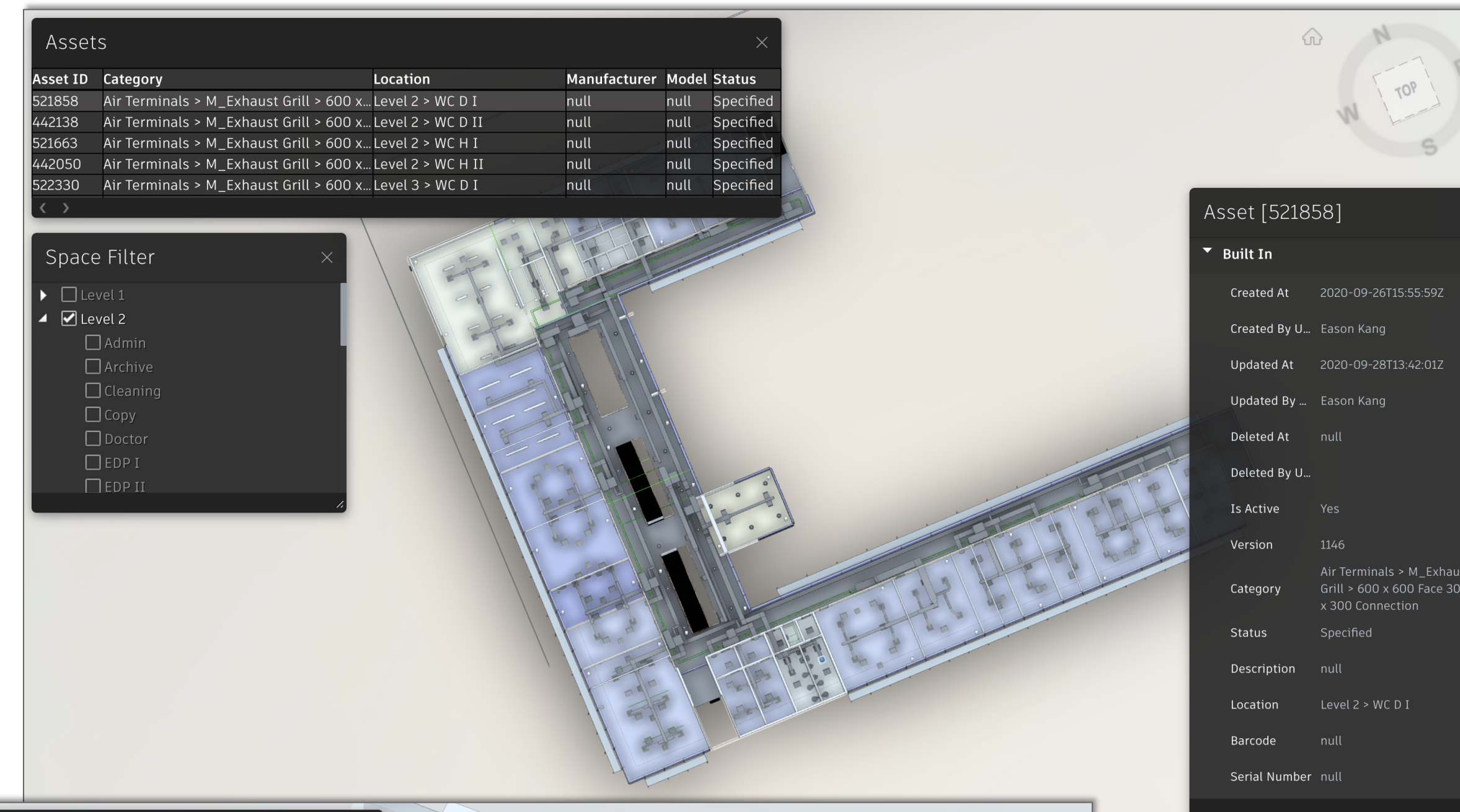


从设计模型查看 Asset

功能简介: View asset data in the model viewer. You can filter assets by level and room. (We use Revit unique element ids saved as custom attributes to keep the association between assets to elements in Revit.)

代码: GitHub 样例 (待定)

作者: Eason Kang, Autodesk



Asset Tree

All Categories

Air Terminals

Electrical Equipment

Electrical Fixtures

Lighting Devices

Lighting Fixtures

Mechanical Equipment

Asset ID	Category	Location
521858	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC D I
442138	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC D II
521663	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC H I
442050	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 2 > WC H II
522330	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 3 > WC D I
522312	Air Terminals > M_Exhaust Grill > 600 x 600 Face 300 x 30...	Level 3 > WC H I
431155	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > Admin
430655	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > Archive
431276	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > Cleaning
430663	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > Copy
431304	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > EDP I
431365	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > EDP I
430875	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > EDP II
430885	Air Terminals > M_Return Diffuser > 600 x 600 Face 300 x ...	Level 2 > EDP II

DETAILS ISSUES CHECKLISTS ATTACHMENTS

Asset ID

521858

Category

Air Terminals > ... > 600 x 600 Face 300 x 300 Connection

Description

Unspecified

Barcode

Unspecified

Location

Level 2 > WC D I

Serial number

Unspecified

Submittal

Unspecified

Purchase order

Unspecified

Purchase date

Unspecified

Installation date

Unspecified

Warranty start date

Unspecified

Warranty end date

Unspecified

Expected life (years)

Unspecified

Installed by

Unspecified

Spec section

Unspecified

Manufacturer

Unspecified

Model

Unspecified

External Id

f056ea9d-8fba-434e-80ce-46b4df0ea740-0007f682



开发资源

- API 帮助文档 / 说明文件
- GitHub 代码样例
- Postman 脚本

AUTODESK
FORGE

Success Stories

Solutions ▾

Getting Started

Documentation

Community ▾

Support ▾

Pricing

▾ API Reference

▾ HTTP Specification

> Admin

▾ Assets

▾ Assets

[GET assets](#)

POST assets:batch-get

▾ Asset-Statuses

GET asset-statuses

POST asset-statuses:batch-get

▾ Categories

GET categories

POST categories:batch-get

▾ Custom-Attributes

GET custom-attributes

POST custom-attributes:batch-get

GET categories/:categoryId/custom-attributes

▾ Status-Step-Sets

GET status-step-sets

GET categories/:categoryId/status-step-set

Get all Assets paginated

GET

assets

Get all Assets paginated

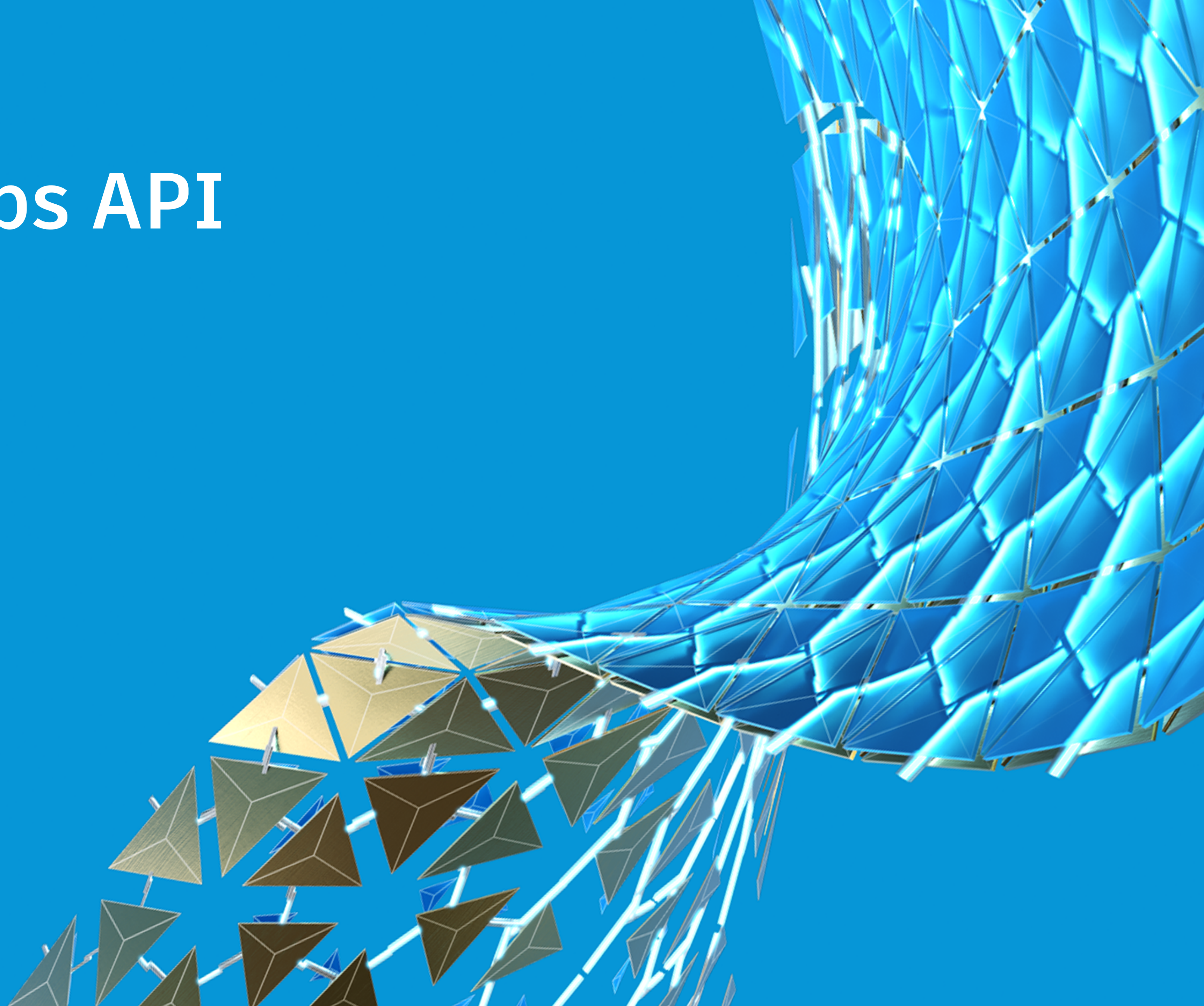
Resource Information

Method and URI	GET https://developer.api.autodesk.com/bim360/assets/v1/projects/:projectId
Authentication Context	user context required
Required OAuth Scopes	data: read
Data Format	JSON

Request

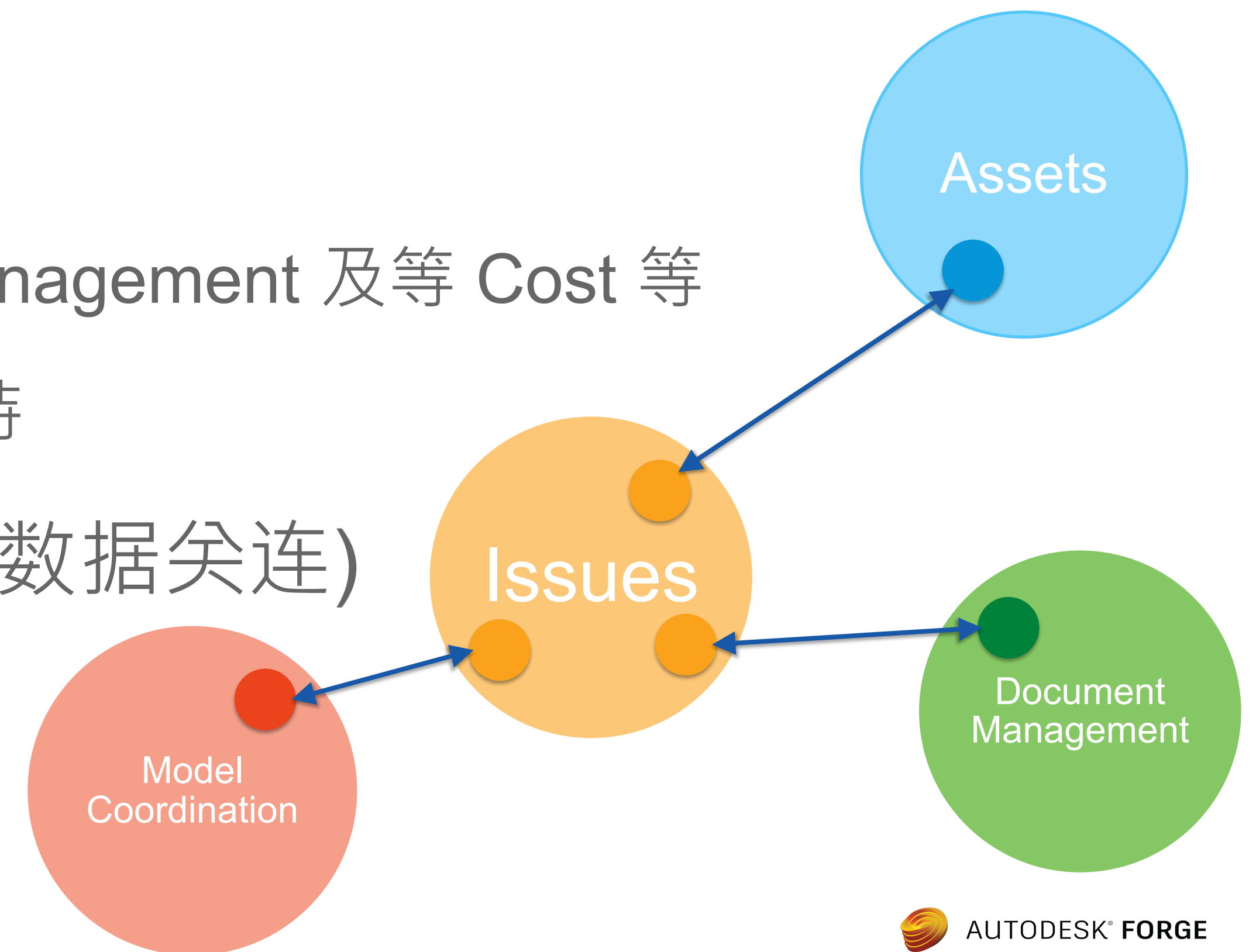
Headers

Relationships API



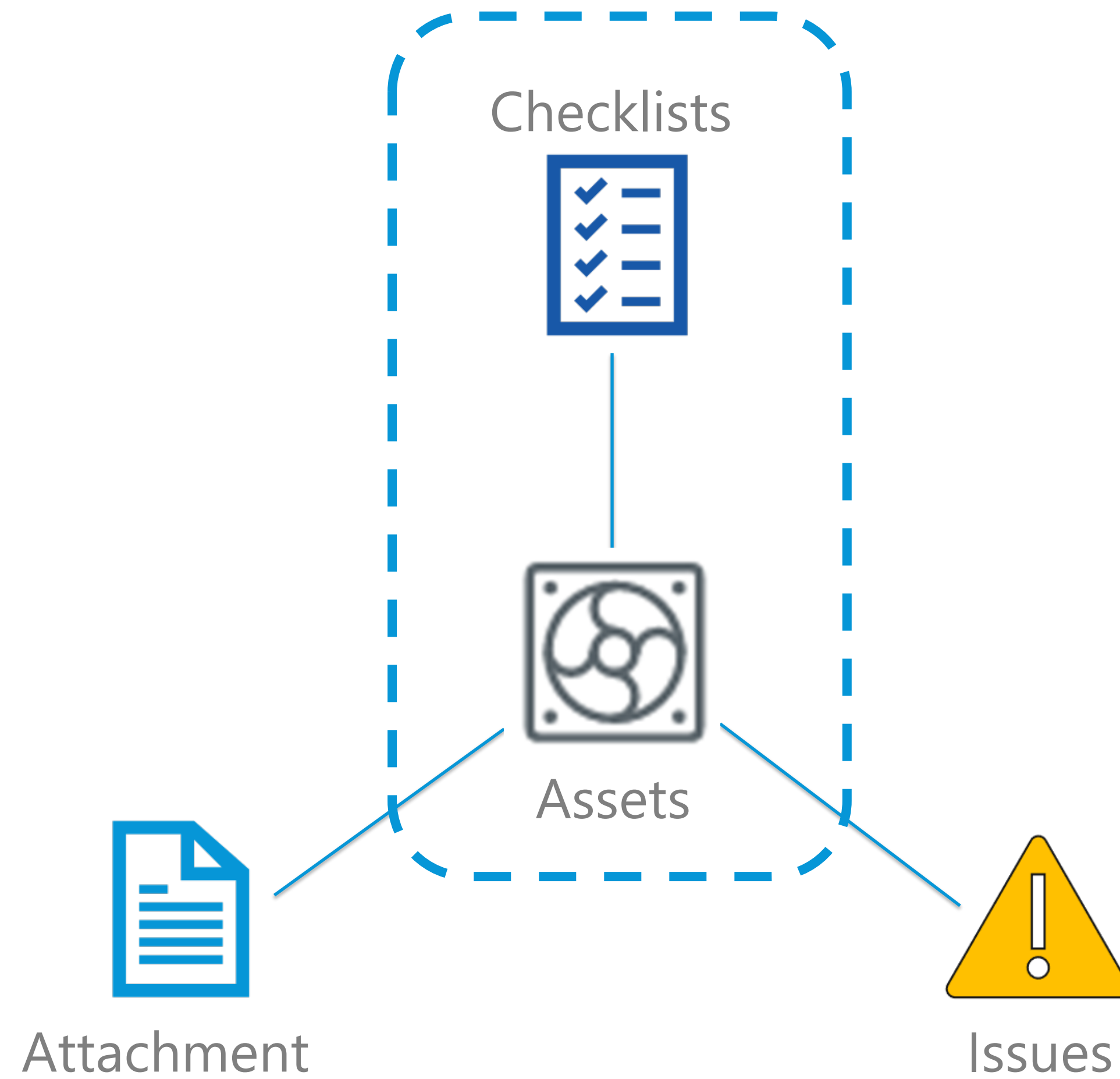
Relationships API

- 用来表示不同功能模块间 (Component、Domain) 的数据连结关系 (Entity)
- 支持的 BIM360 服务模块：
 - Model Coordination、Assets、Field Management 及等 Cost 等
 - 早期的 BIM360，如 Classic Field 不支持
- 仅支持数据读取 (需通过各模块创建数据关连)
- API 已发布

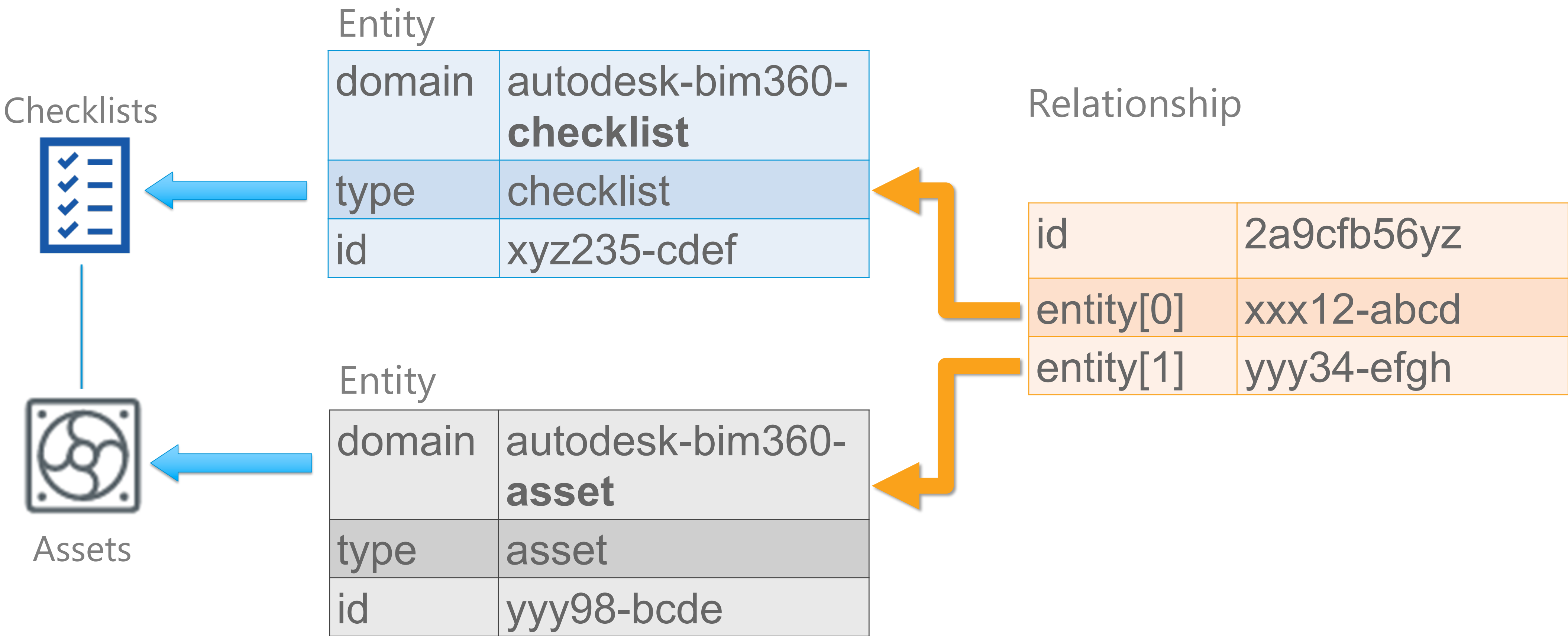


Relationships API

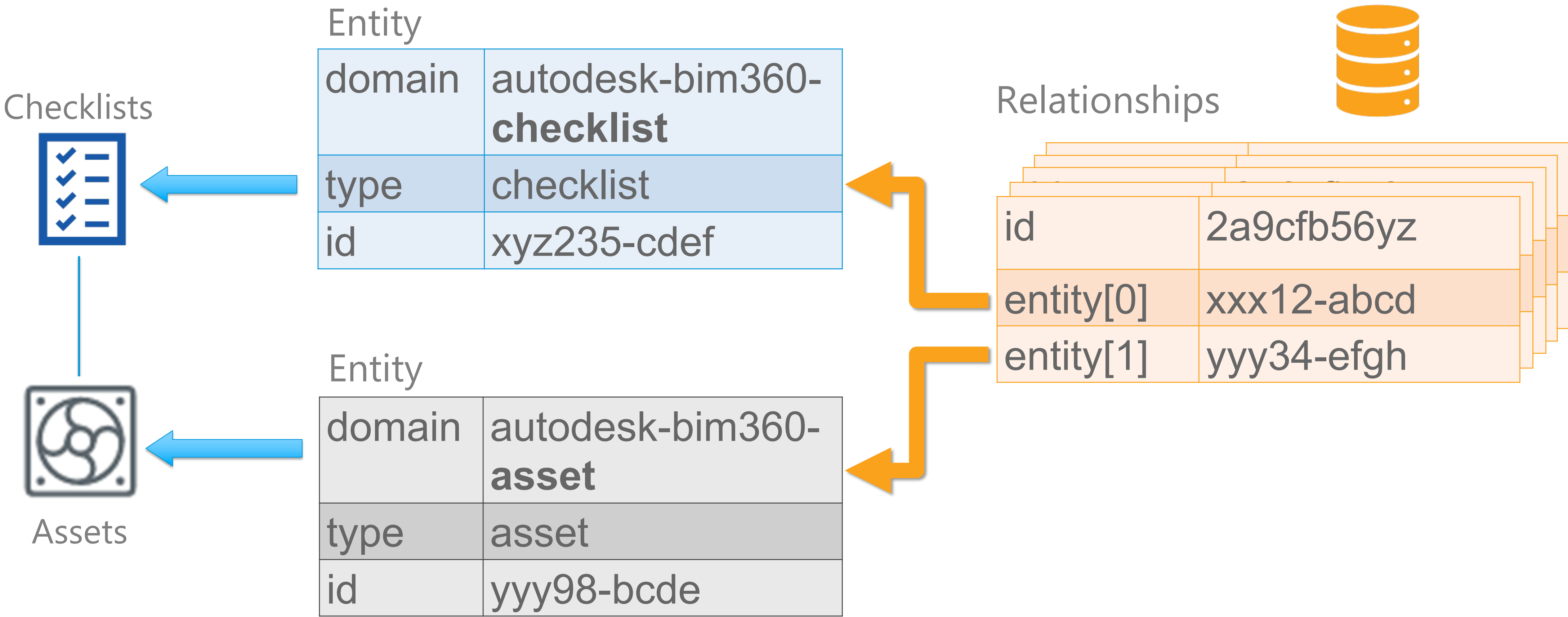
说明样例



Relationships API



Relationships API



Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
Sync	POST relationships:intersect
	POST relationships:sync
	POST relationships:syncStatus

Get relationship(s) from id(s)

```
JSON
{
  id : "79835e9e-ab4c-4c43-b480-a7ba54196e6e"
  createdOn : "2020-10-03T20:53:14.268952+00:00"
  isReadOnly : true
  isService : true
  isDeleted : false
  entities : [
    0
    {
      createdOn : "2020-10-03T20:53:14.175205+00:00"
      domain : "autodesk-bim360-checklist"
      type : "checklist"
      id : "569859"
    }
    1
    {
      createdOn : "2020-10-03T20:49:21.651508+00:00"
      domain : "autodesk-bim360-asset"
      type : "asset"
      id : "f972c095-d6b2-4fd3-ae1c-70ef6061c8af"
    }
  ]
}
```


Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

以搜索 domain、类型、id 和时间等条件来搜索想要的 Relationship 数据，例如：

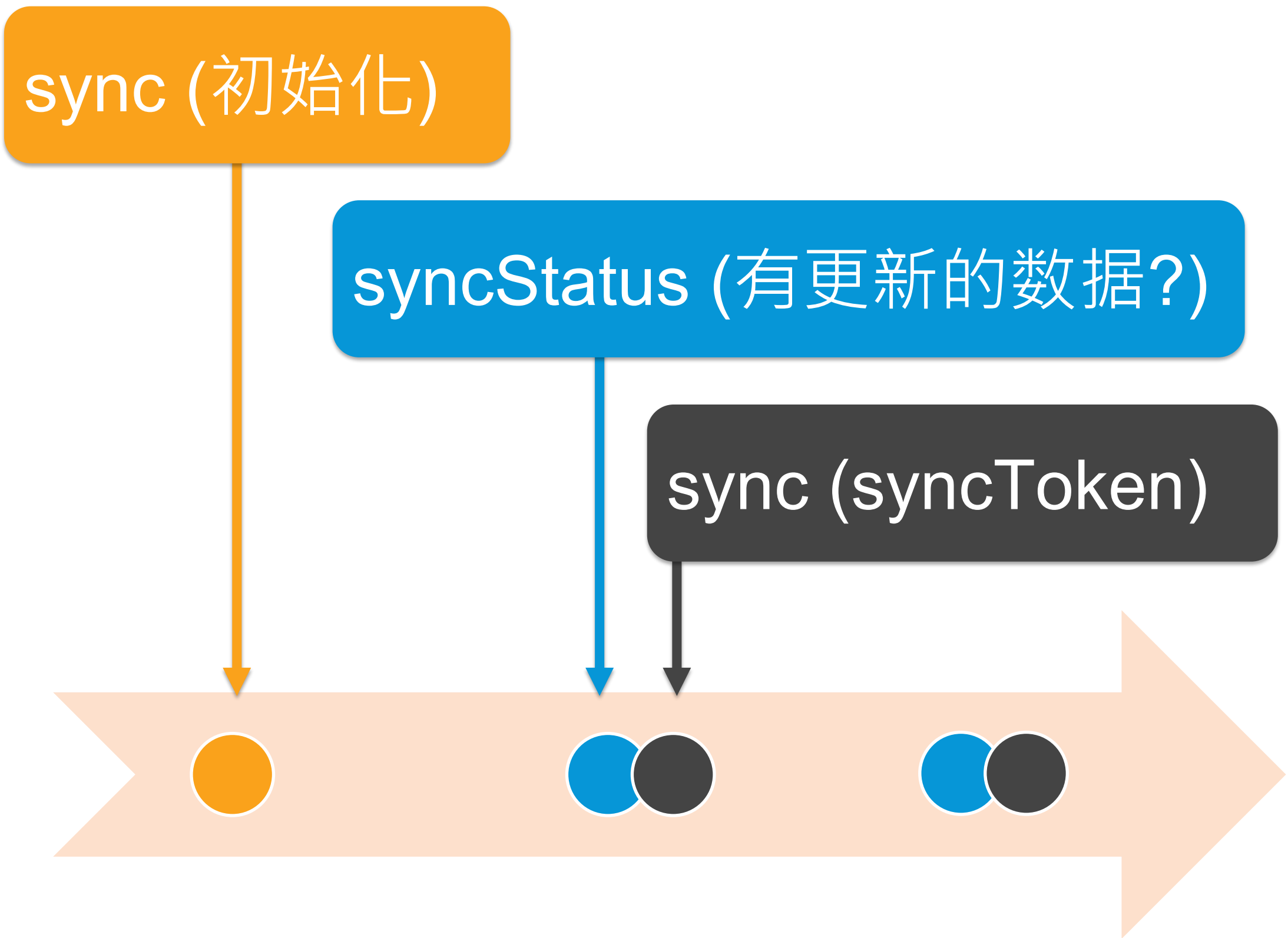
请给我所有 *asset* 和 *checklist* 之间的 *Relationship* 数据

```
GET relationships:/search?
domain=autodesk-bim360-asset
&withDomain=autodesk-bim360-
checklist
```


Relationships API

Category	Endpoints
Search	GET relationships/:relationshipId
	POST relationships:batch
	GET relationships:search
	POST relationships:intersect
Sync	POST relationships:sync
	POST relationships:syncStatus

用来同步 relationship 模块和外部存储
快取的关联数据



开发资源

Relationship API SDK

- .NET Core nuget 套件
- JavaScript 和 Node.js



开发资源

API 帮助文档 / 说明文件

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[BIM 360 API v1](#)

[Developer's Guide](#)

[Introduction](#)[API Basics](#)[Field Guide](#)

[Account Admin](#)[Model Coordination](#)[Cost Management \(beta\)](#)[Relationships](#)

[Parameters](#)[Rate Limits and Quotas](#)[Partner Program](#)

[Step-by-Step Tutorials](#)

[API Reference](#)

Relationships

Containers vs. BIM 360 Projects

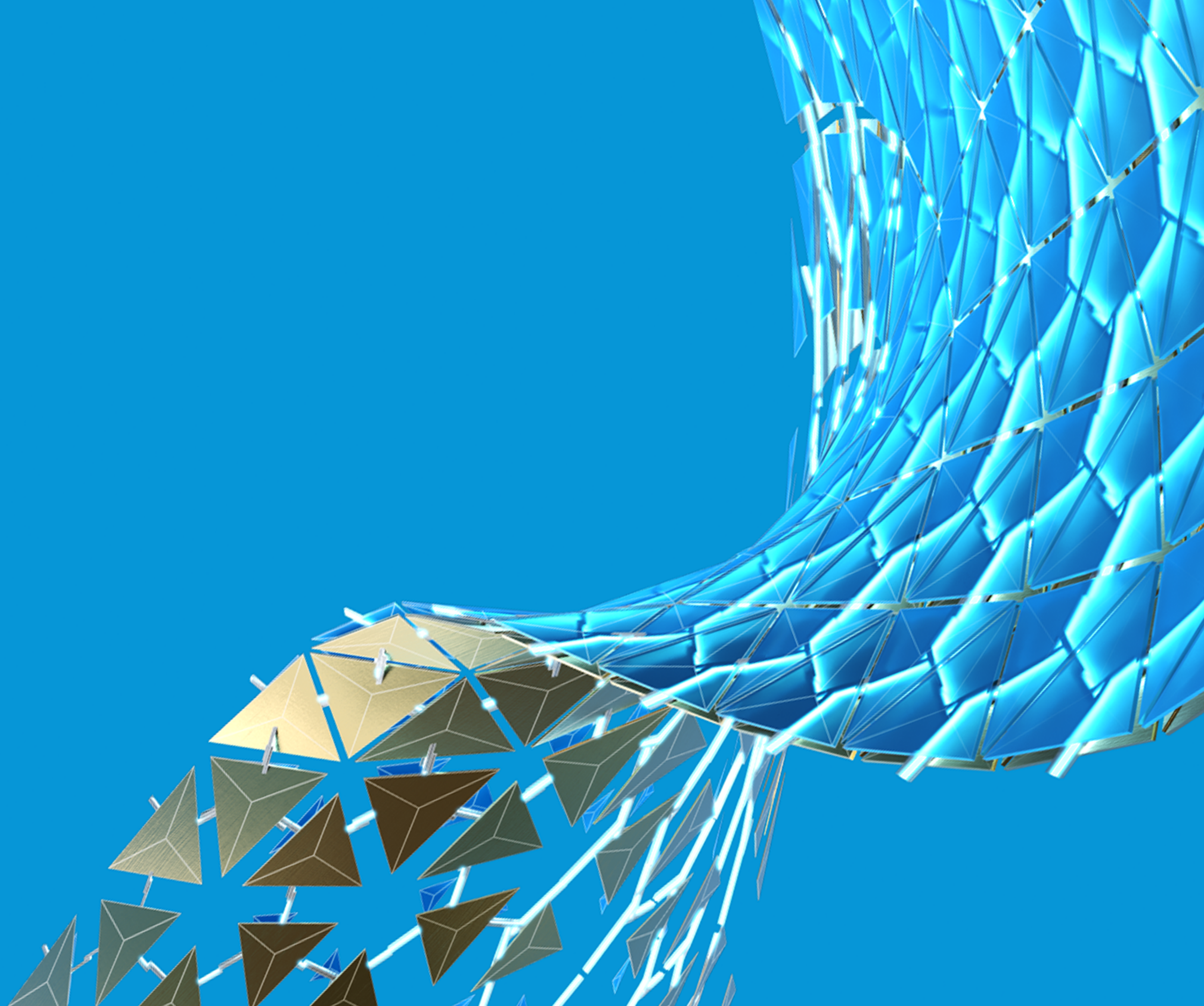
BIM 360 Data Services e.g. the Relationship Service use “Containers” as a primary data partition for all the service data associated with a specific Project and or Account. In the case of the Relationships Service, a container is created when a new BIM 360 Project is created. The application uses the BIM 360 Docs Project ID as the container GUID for the Relationships container.

Domain Entities

The Relationship Service is built on the concept of *Domain Entities*. Put simply, a Domain Entity is something which can be identified in one of the applications which comprise BIM 360 today. Examples of Domain Entities include Issues, Files, Meetings, Check-lists etc.. Each of these things (or Entities) has three distinct attributes :-

1. They belong to a *Domain* e.g. Budgets belong to the BIM 360 Cost domain (Application).
2. They have an *Entity Type* which allows them to be distinguished from other types of entity in the Domain, e.g. a Budgeted is distinct from a Contract, however both these entity types belong to the Cost domain.

未来展望



未来展望

Document Management

- 支持自定义属性的创建 API
- 支持文档审批 API
- 支持转档及可视内容的控制

Assets

- 公开发布API

Cost Management

- 支付方式、帐单周期、主合约、价目明细表、开销*1

Admin

- 优化项目API
 - 添加用户的方式、
 - 更新公司信息等
- 项目活动历程

Model Coordination

- 优化模型对齐方式、聚合方法、索引方法*1
- 2LO 权杖, Webhooks

Field Managements

- API 优化
 - 支持Checklists的写入
 - RFI、Issues的改善

*1) prioritize based on feedbacks

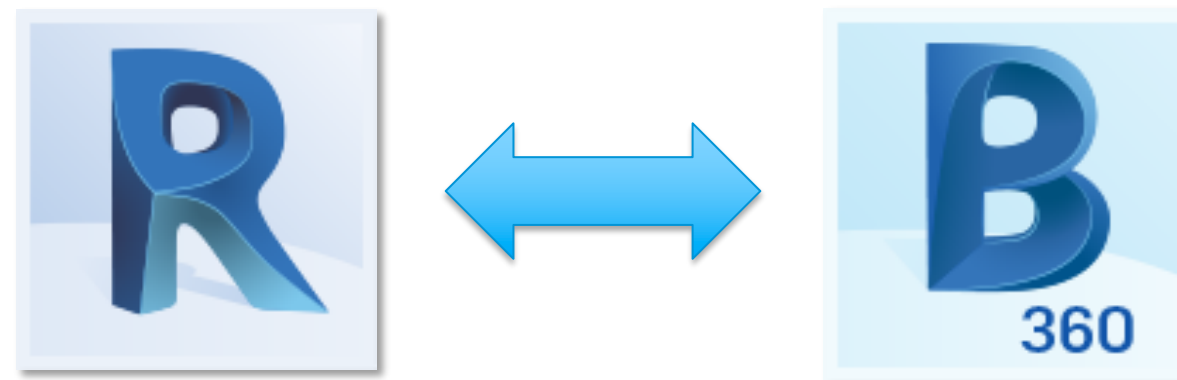
未来展望

Insight

- Data connector

Design Collab.

- cloud model/
worksharing^{*2}



*2) Revit API

Forge 支持体系

- API 说明文档及样例：
 - 管网：<https://forge.autodesk.com>
 - 官方博客：<https://forge.autodesk.com/blog>
 - SDK：<https://forge.autodesk.com/en/docs/quickstarts/v1/overview/>
 - 官方样例：<https://github.com/Autodesk-Forge>
 - 非官方中文帮助中心：<https://autodesk-forge.gitee.io/helpcenter/>
- 论坛提问：
 - 官方（英文）：<https://stackoverflow.com/questions/tagged/autodesk-forge>
 - 非官方（简中）：<https://segmentfault.com/t/autodesk-forge>
 - Facebook 社群（繁中）：<https://www.facebook.com/groups/197996544021180>
 - 即时通讯软件（非官方）：
 - 大陆微信群
 - 台湾 Line 群
- Email 题问：forge.help@autodesk.com

Thank you!



@autodeskforge @yiskang



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