SD22350

Introduction to BIM 360 Docs API

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Developer Technical Services
Autodesk

Class summary

In this class, we will introduce you to BIM 360 Docs software's API. BIM 360 Docs software is a cloud-based document management system tailored specifically for construction projects. As the document at the center of BIM 360 family products, BIM 360 Docs software promises to play an important role for unified development of the BIM 360 mobile and web platform. BIM 360 Docs software provides an API as a part of the Forge Platform Data Management API. Using the Forge Platform API, you can access documents stored in BIM 360 Docs software, display models using the Viewing API, and search data in the model. Using the API, for example, you can automate updating models from external applications, make a report to keep track of a team's progress, and connect your own web services applications with BIM 360 Docs projects. We will show you how to get started with the BIM 360 Docs API, share examples of use cases, and demonstrate what you can do using the BIM 360 Docs API. This session features BIM 360 Docs and Forge.

Key learning objectives

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

- Understand the basic structure of Forge Platform Data Management API
- Learn how to use the Forge Platform Data Management and Model Derivative API to access BIM 360 Docs file and model data
- Learn how to use Forge Platform Viewing API to display models in their application
- Understand current capabilities and limitations of the BIM 360 Docs API

Who's in the Room?

- Forge DevCon in June?
- Products Familiarity?
  - Forge
  - BIM 360
  - Revit
  - Others
- Development experience
  - Web vs. desktop
  - Technical vs. Business decisions

Session Goals

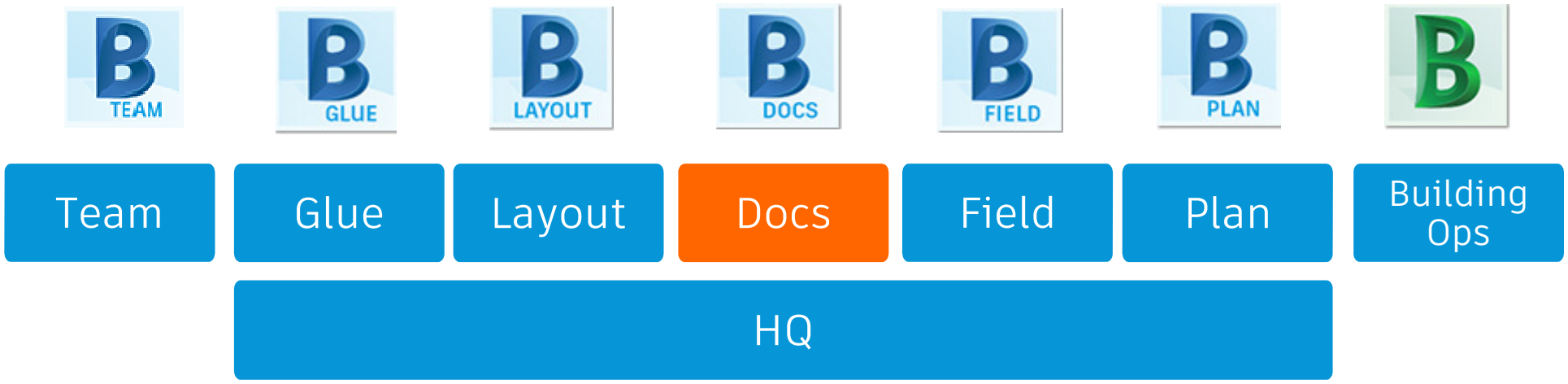
- Preview API's for BIM 360 Docs
- Give overview of API structure and design
- Get ready for the beta

Agenda

- BIM 360 Docs and Family Products
- BIM 360 Docs – API
  - Overview
  - Forge
    - Authentication,
    - Account level (HQ) API
    - Data Management
    - Model Derivative
    - Viewer
- Summary
- Q&A

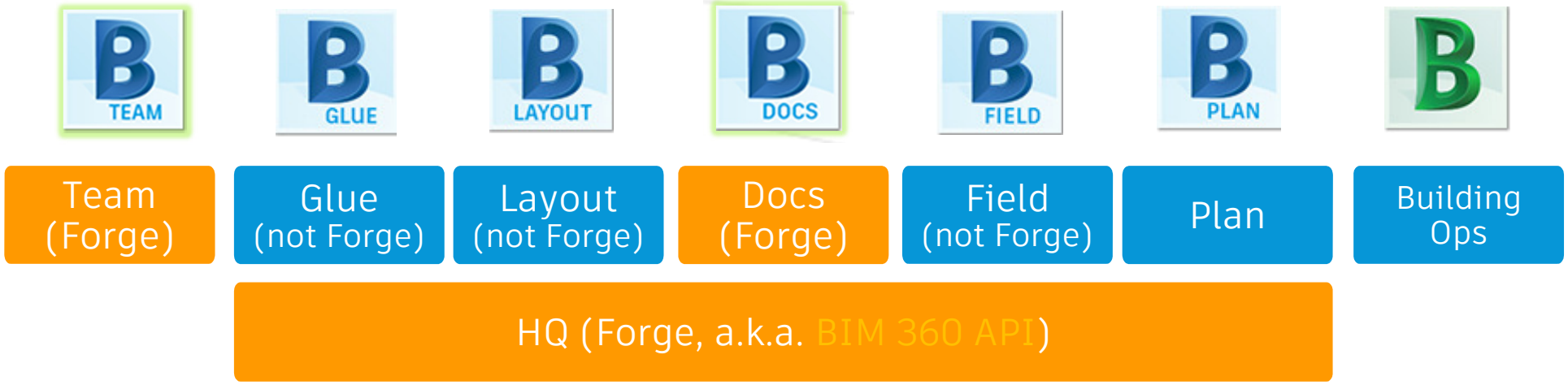
BIM 360 Docs and Family Products

BIM 360 Family Products



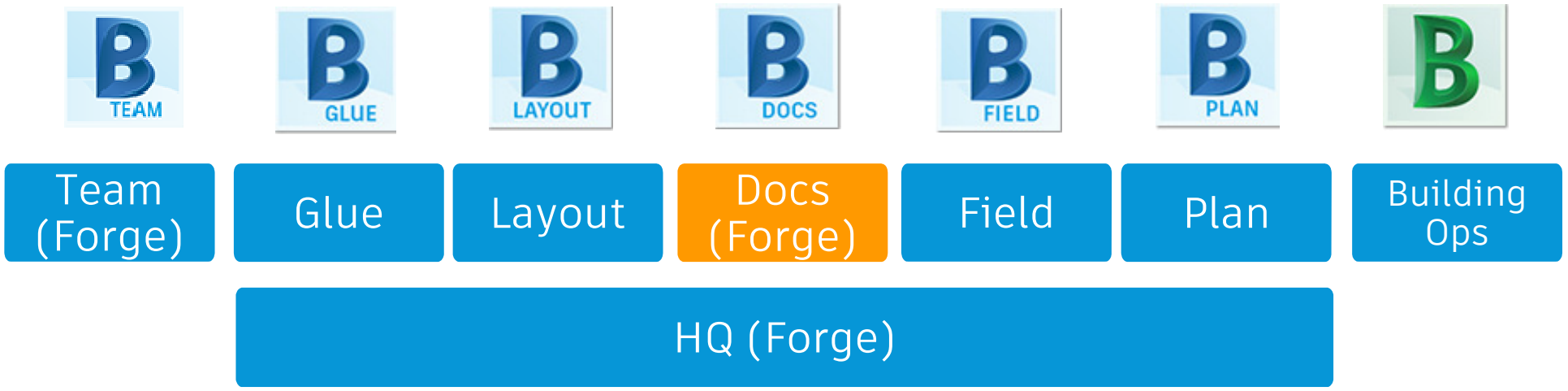
BIM 360 Family Products

- Forge vs. non-Forge

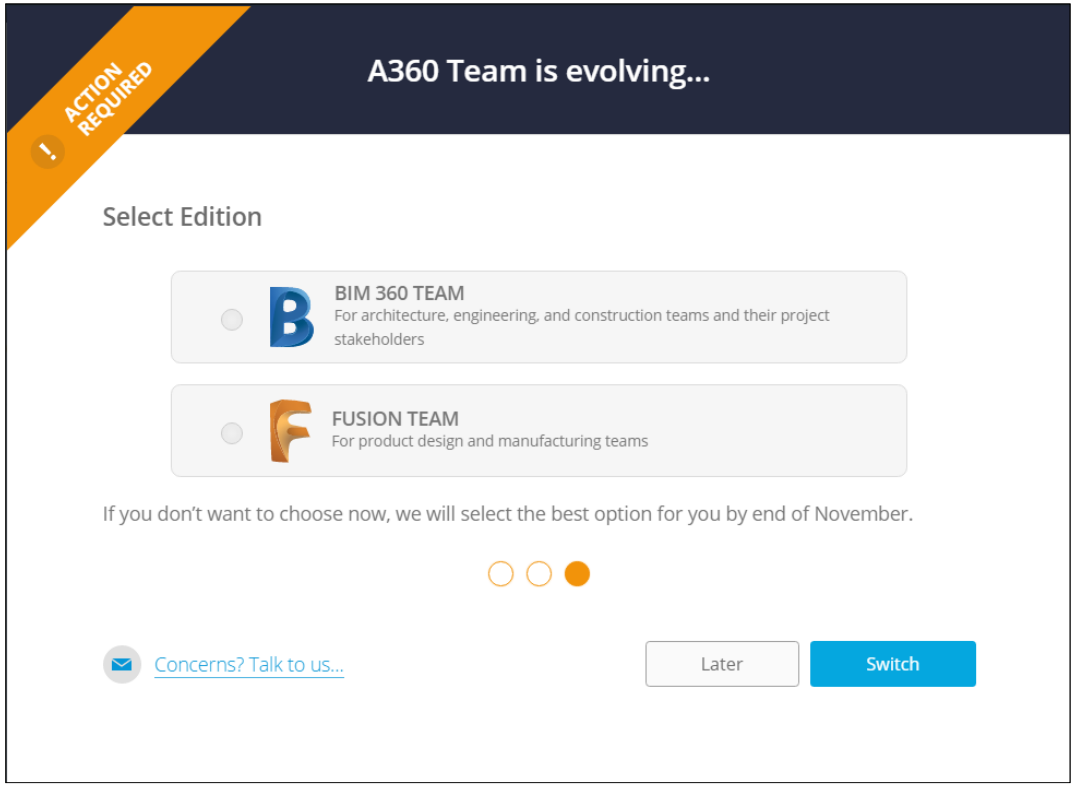


Why BIM 360 Docs?

- Docs as data at center
- Seamless, unified future

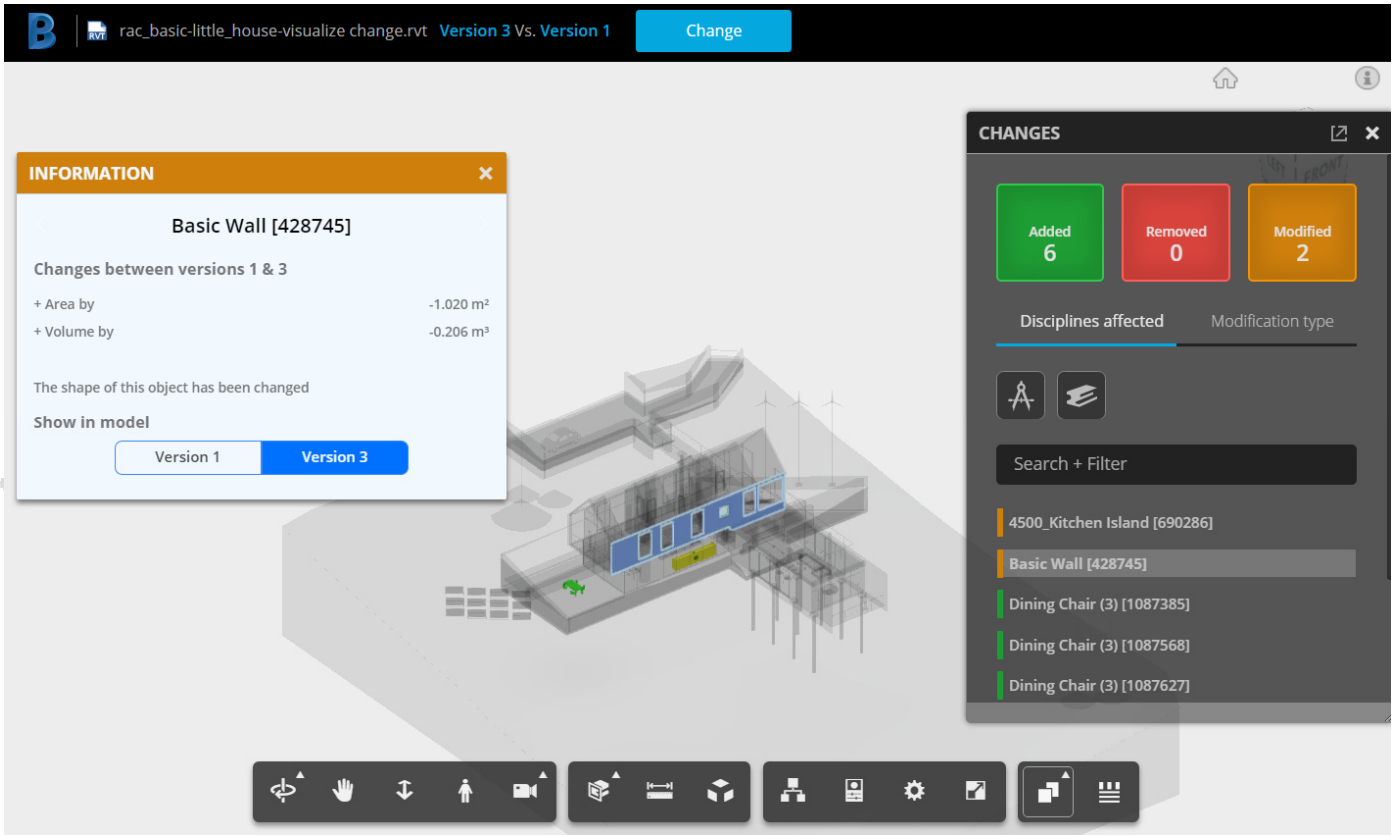


BIM 360 Team



http://www.autodesk.com/products/a360/overview

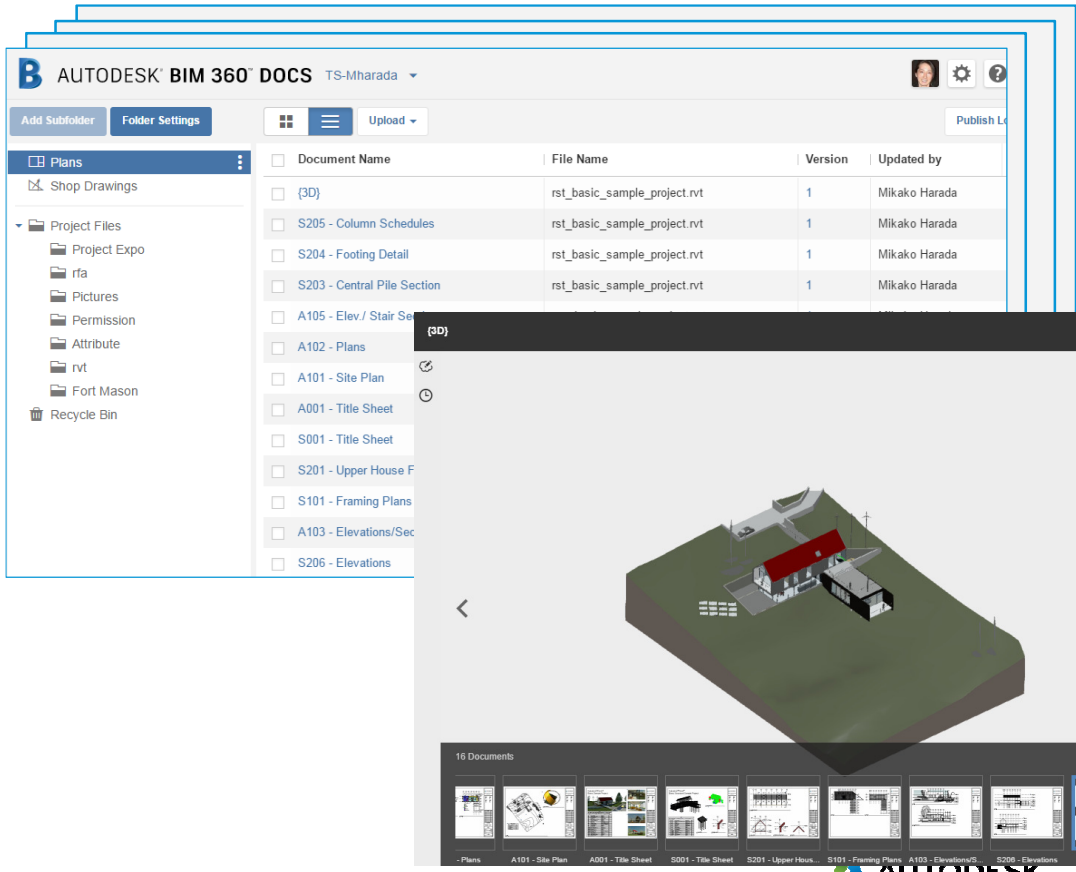
BIM 360 Team
Compare Changes



BIM 360 Docs – API

BIM 360 Docs – API Overview

- Authentication (OAuth)
- BIM 360 API (Account/HQ Mgmt)
- Data Management API
- Model Derivative API
- Viewer
- Issues API



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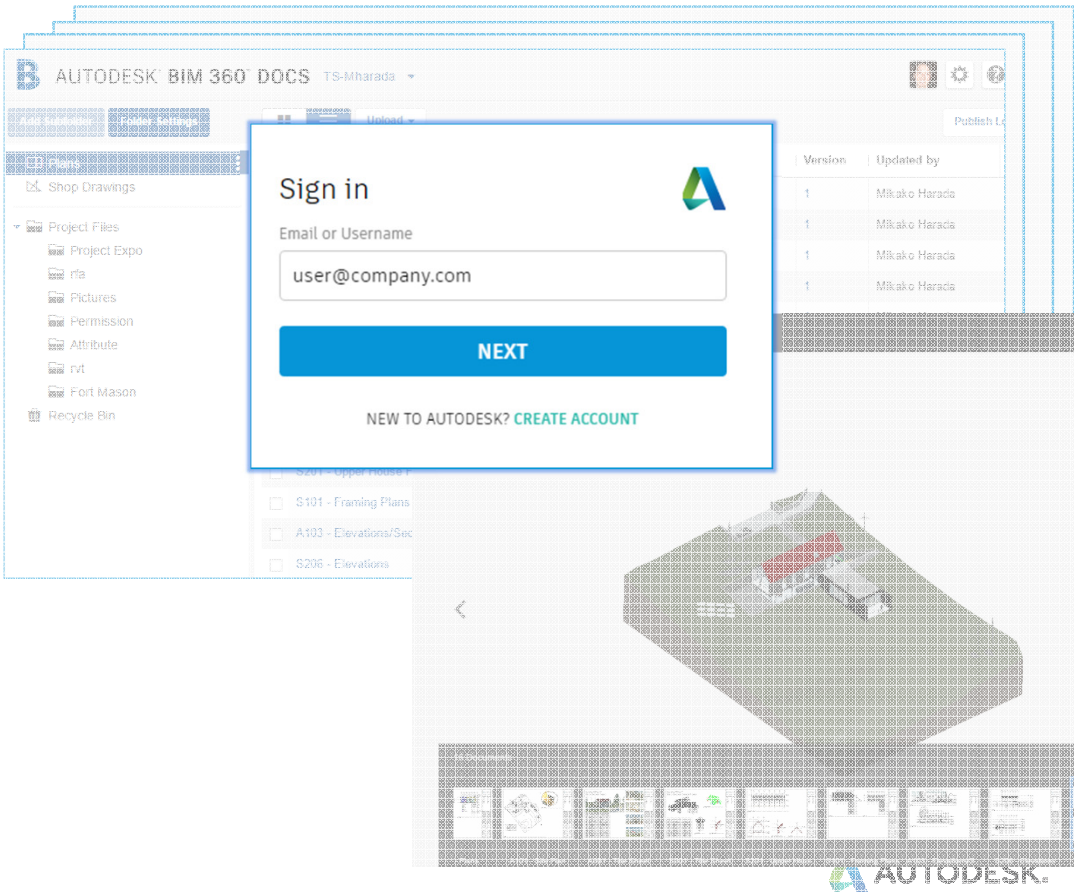

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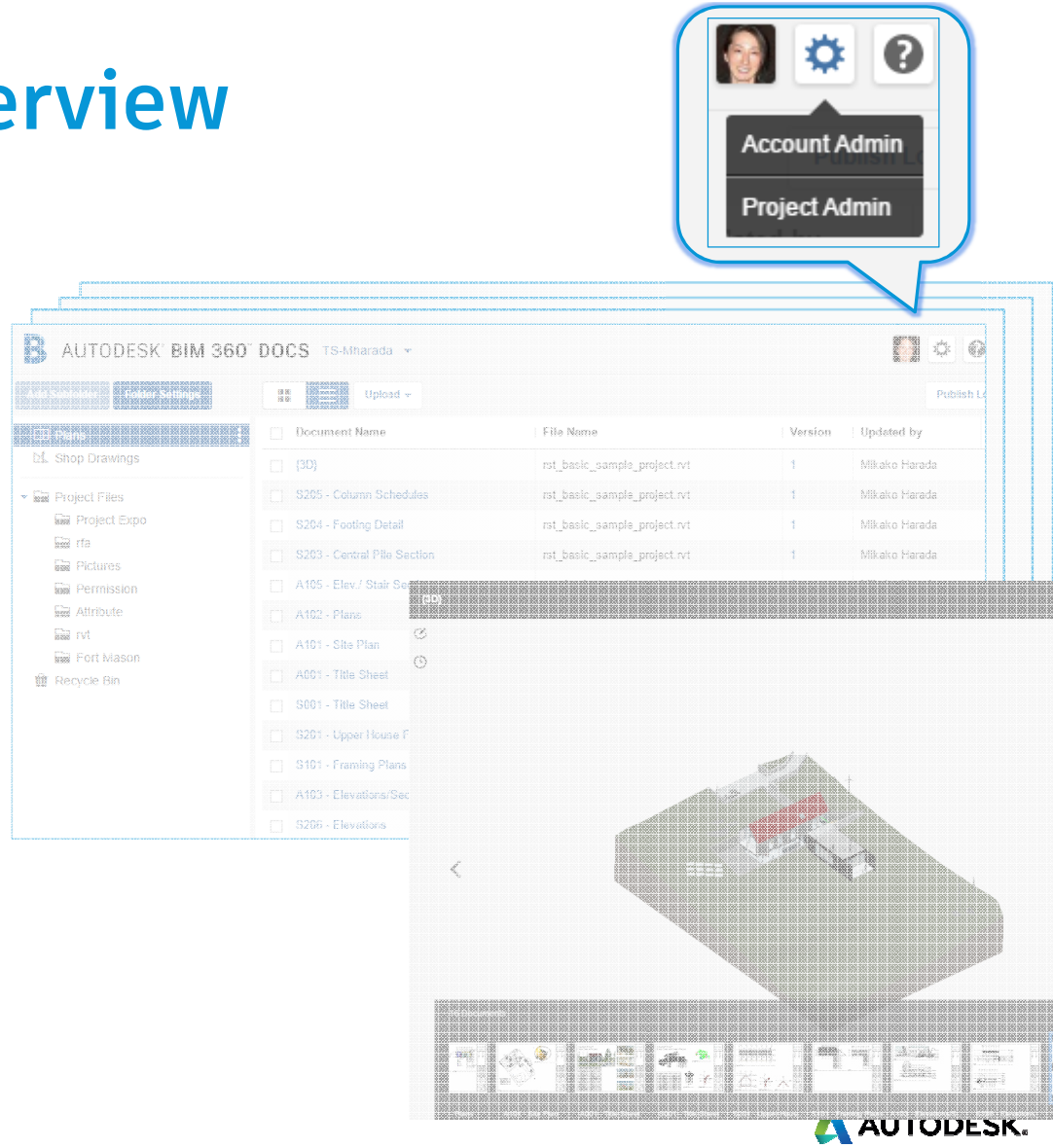

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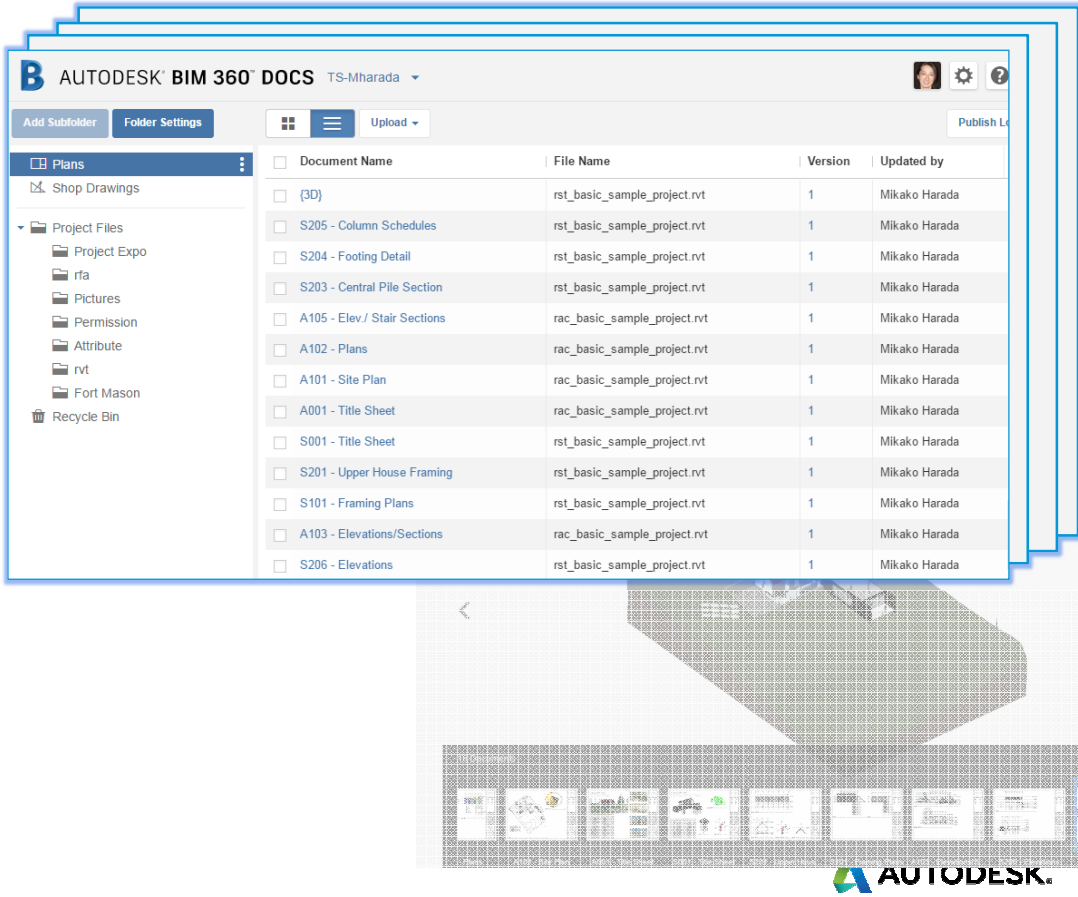

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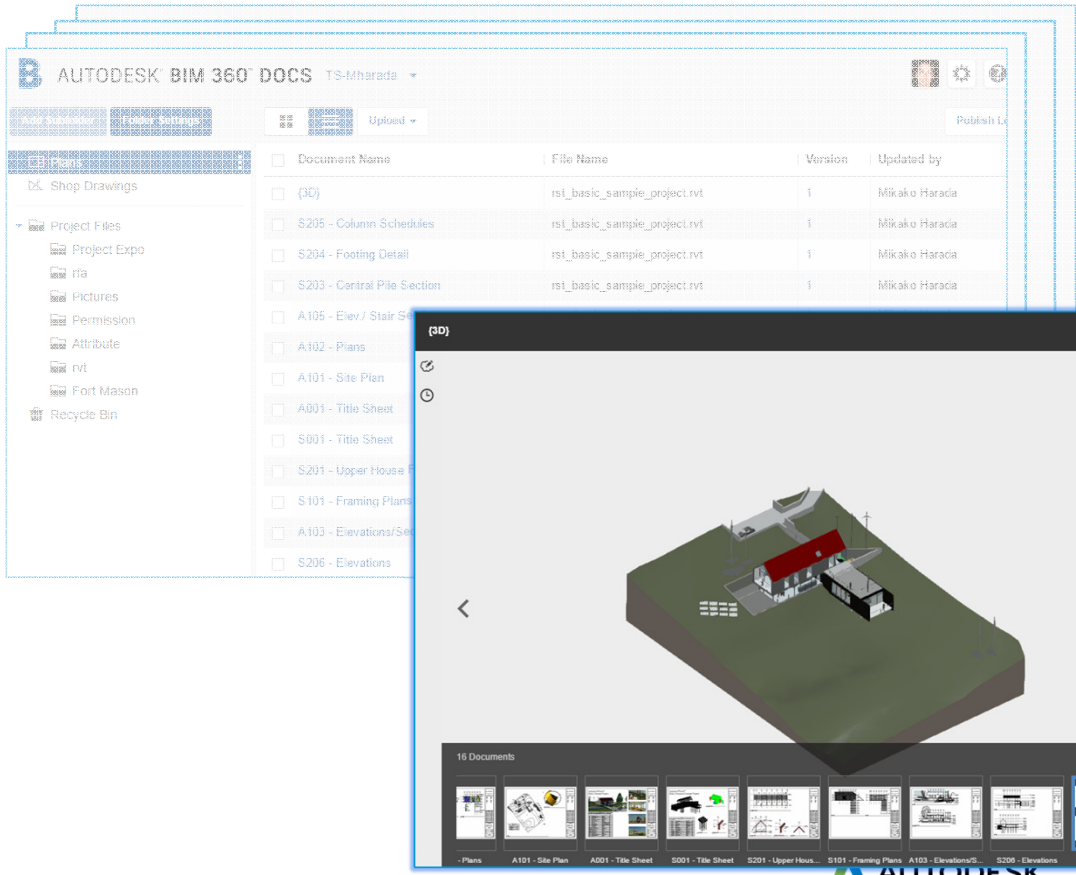

BIM 360 Docs – API Overview

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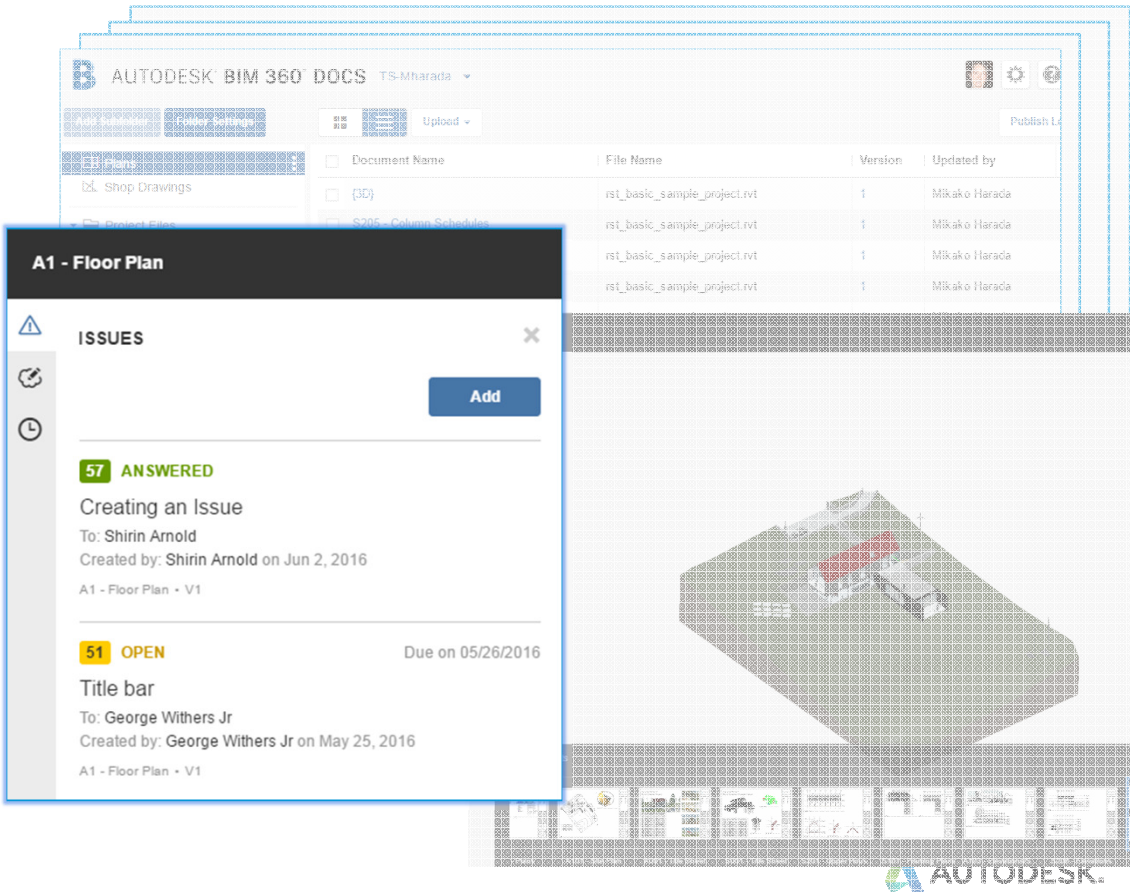
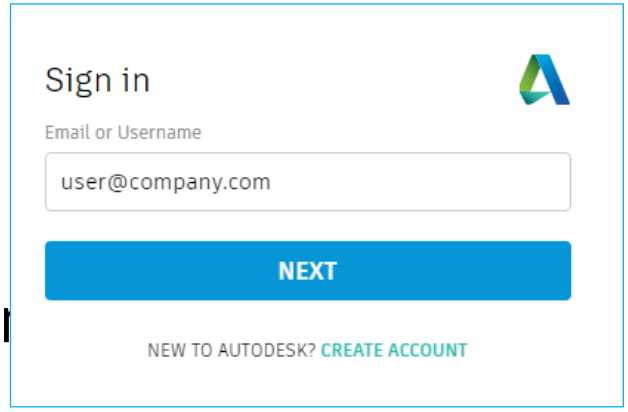


Authentication

Authentication Methods for BIM 360 Docs

- OAuth2
  - 2-legged
    - Application-only
  - 3-legged
    - User context
    - Re-direct to accounts.autodesk.co

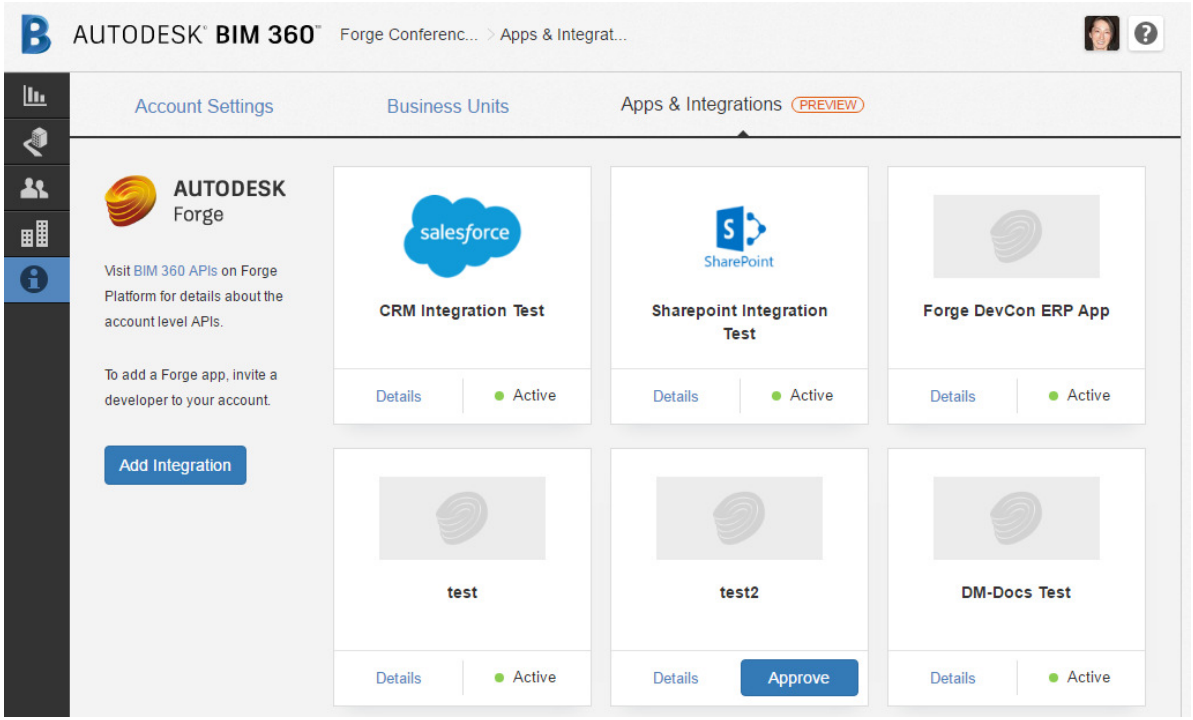


https://developer.autodesk.com/en/docs/oauth/v2/overview/

Account Admin API (BIM 360 API)

- bim360enterprise
- Projects
- Members
- Companies

- HQ provisioning will be extended to Docs



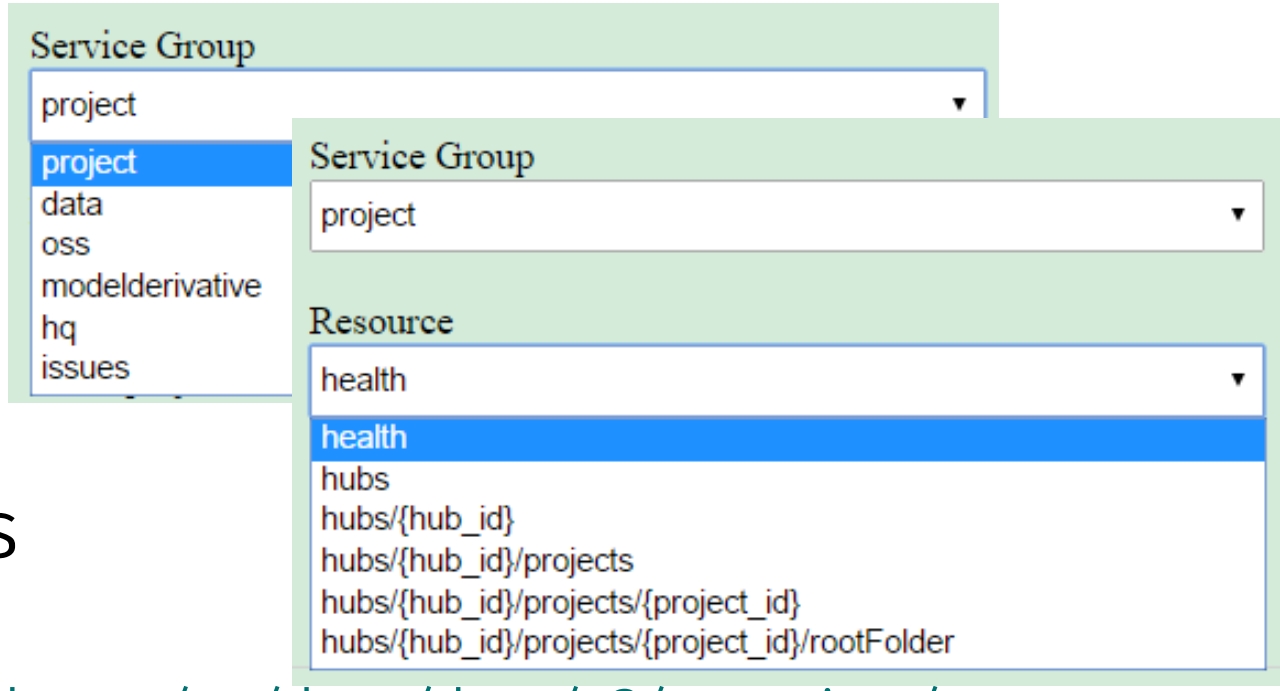
Data Management API

Data Management API – Overview

- Document Management
- Common across Autodesk products
  - A360
  - Fusion/Life Cycle
  - BIM 360 Docs
  - Consumer products (Tinker CAD)
  - …

Data Management API – Service Groups

- Project service
- Data service
- Object storage service (OSS)
- Schema services



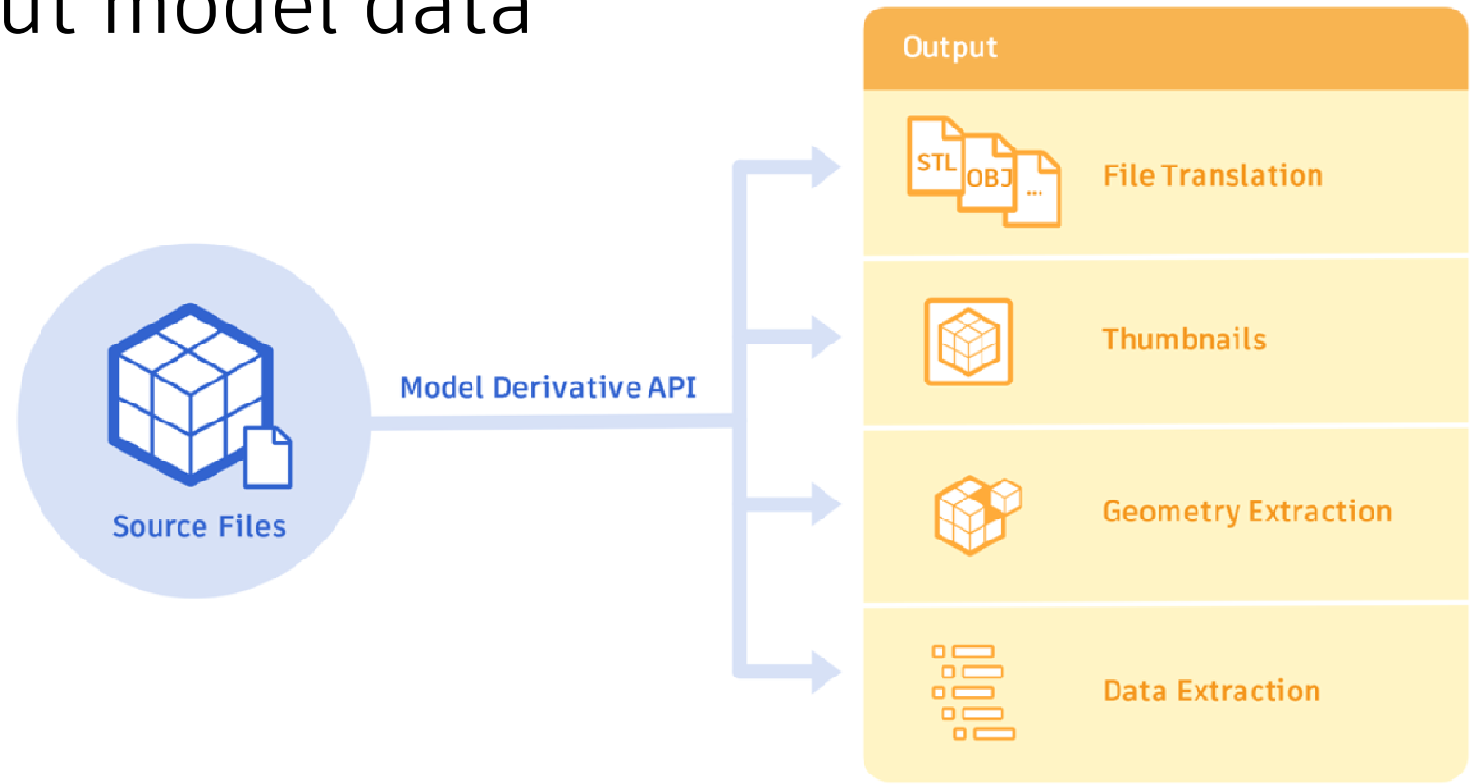
https://developer.autodesk.com/en/docs/data/v2/overview/

Data Management API

- JSON API {json:api}
  http://jsonapi.org/format/

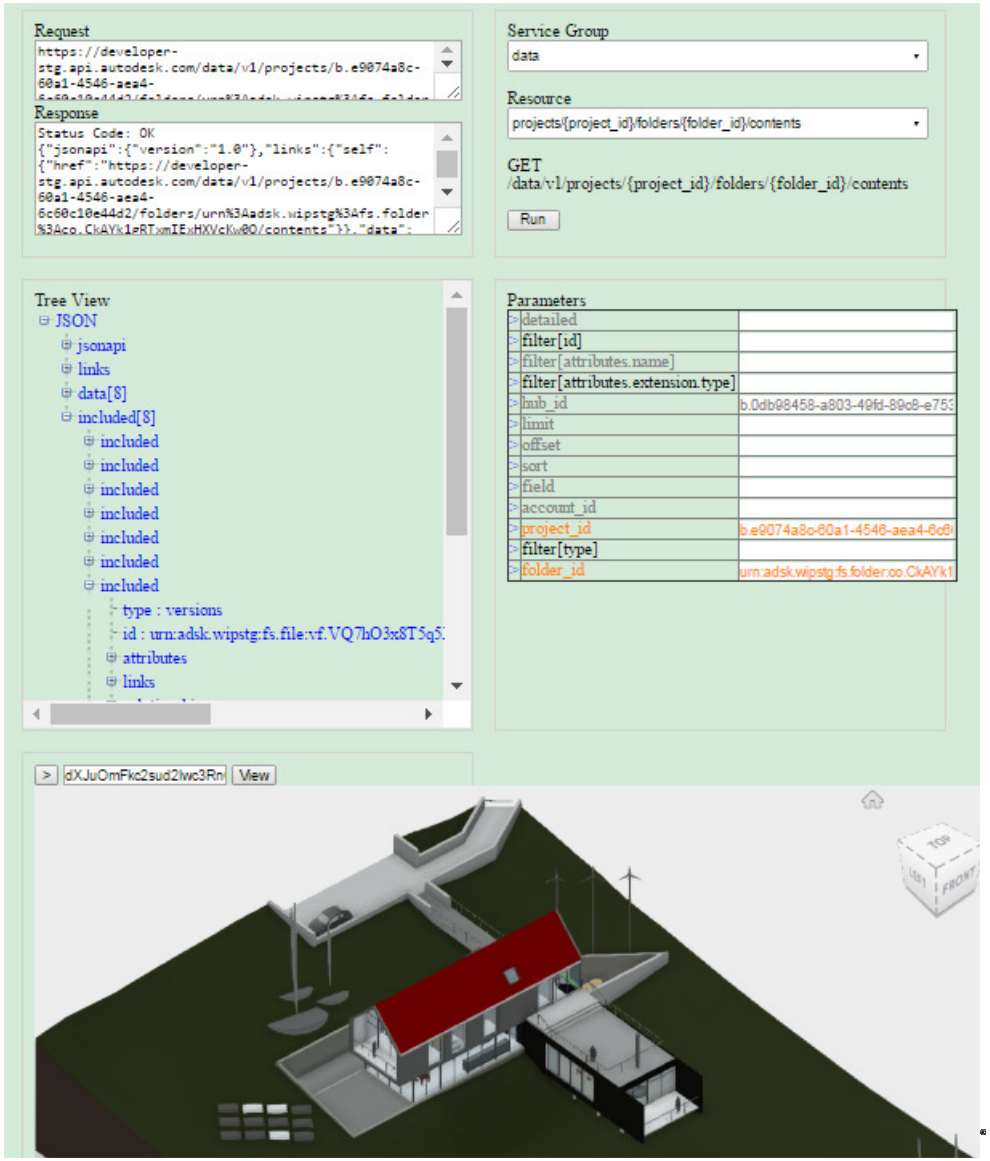
Model Derivative API

- All about model data

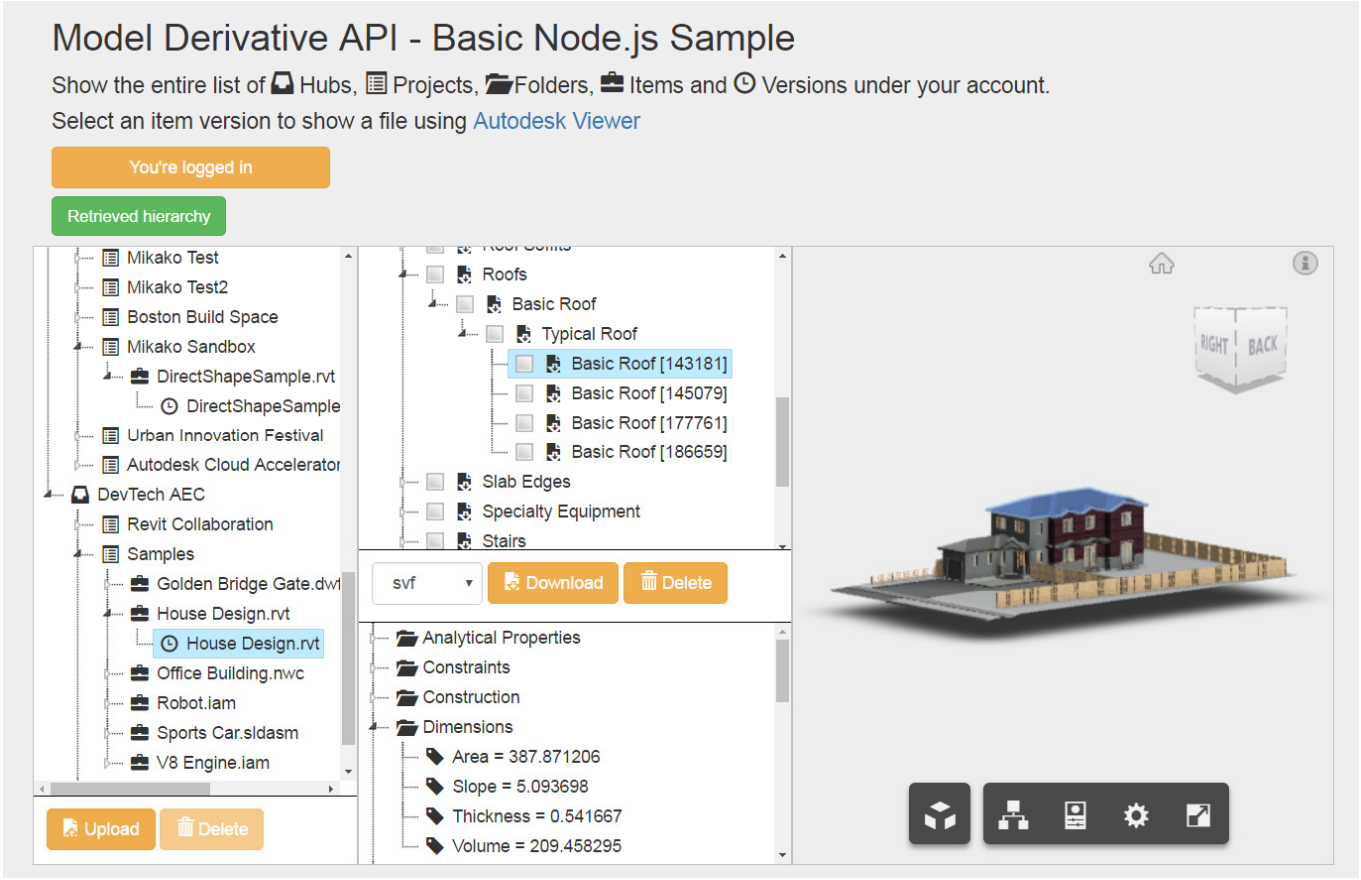


Data Management API

- Drill down with Test Harness



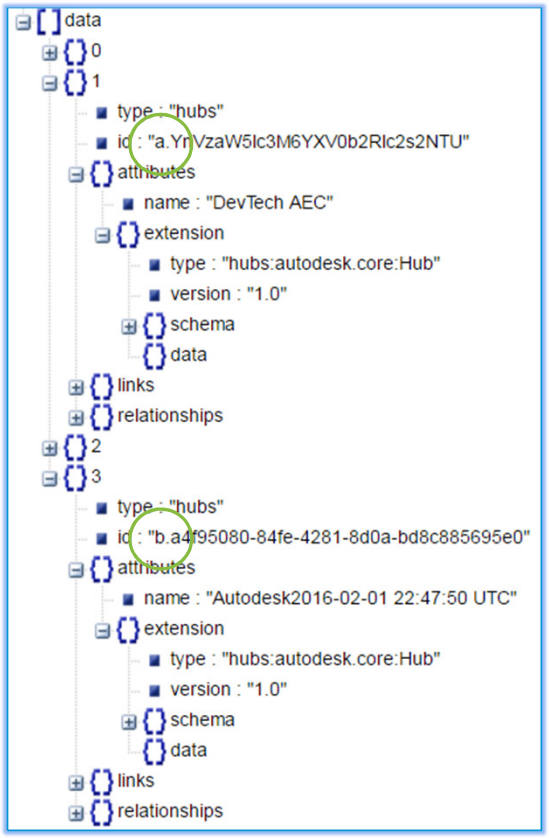
Model Derivative API – Basic Node.js Sample

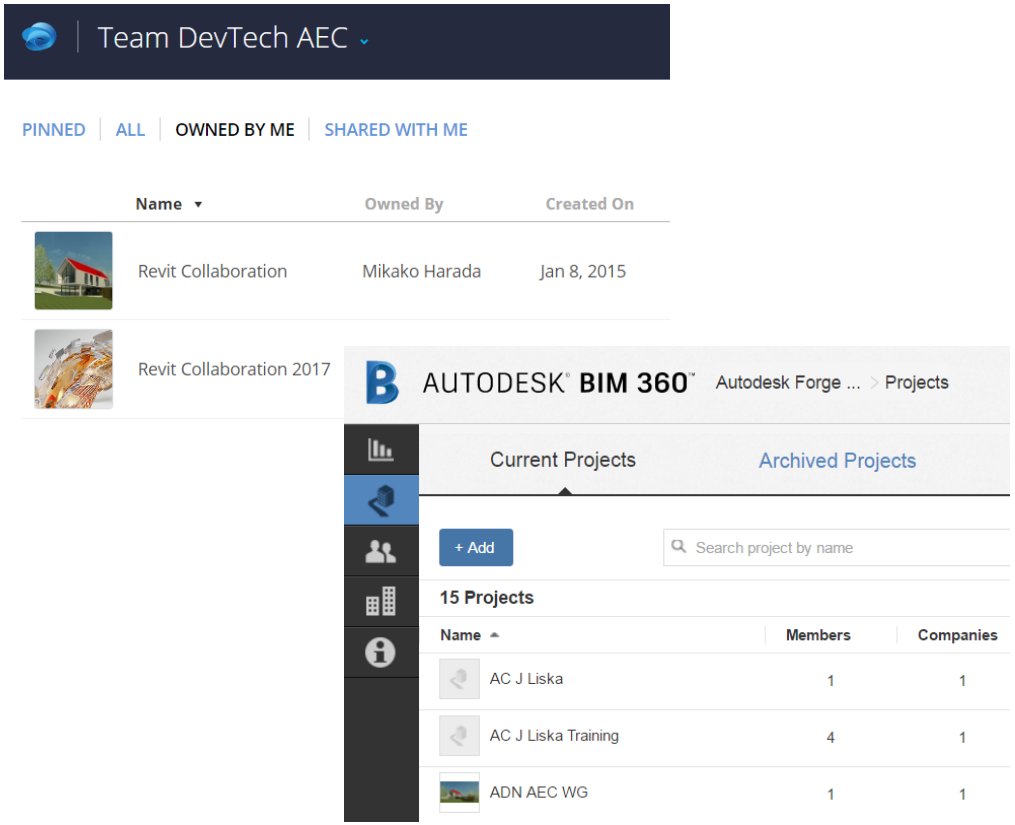


Many samples written by DevTech members. Visit Forge booth for demo. (above: Courtesy of Adam Nagy)

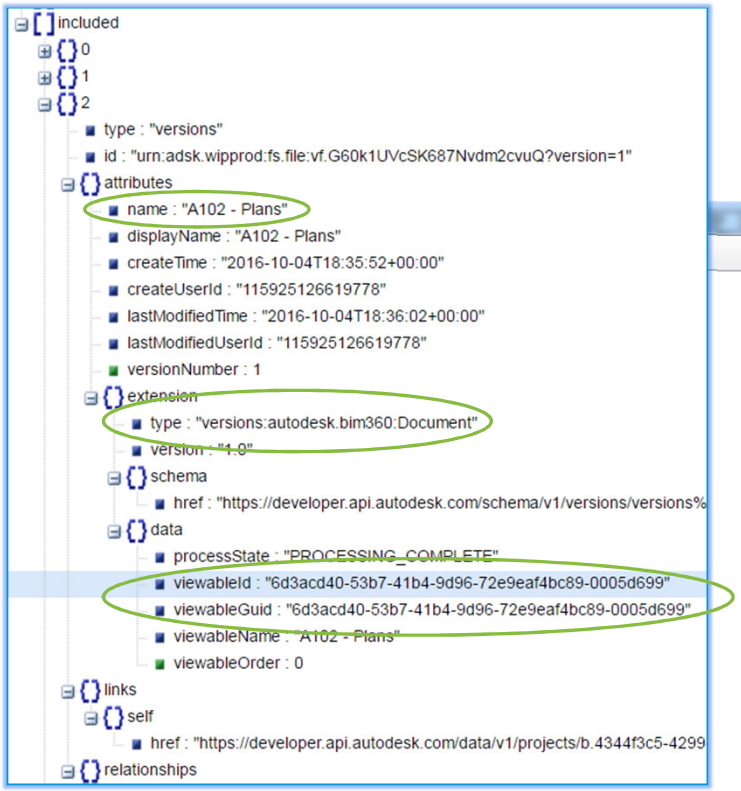
DM Closer Look …

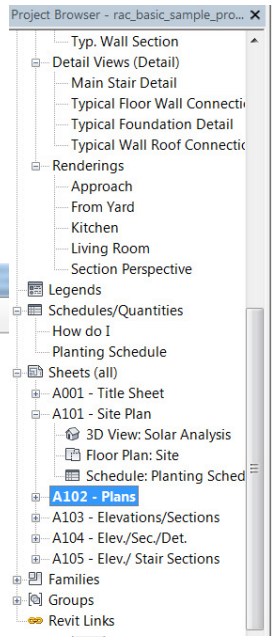
core:Hub
a.xxx vs b.zzz

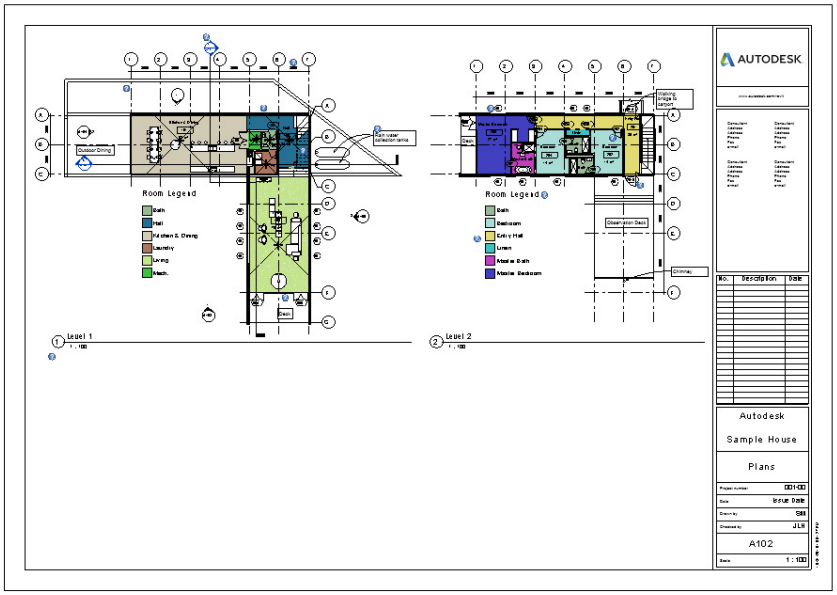




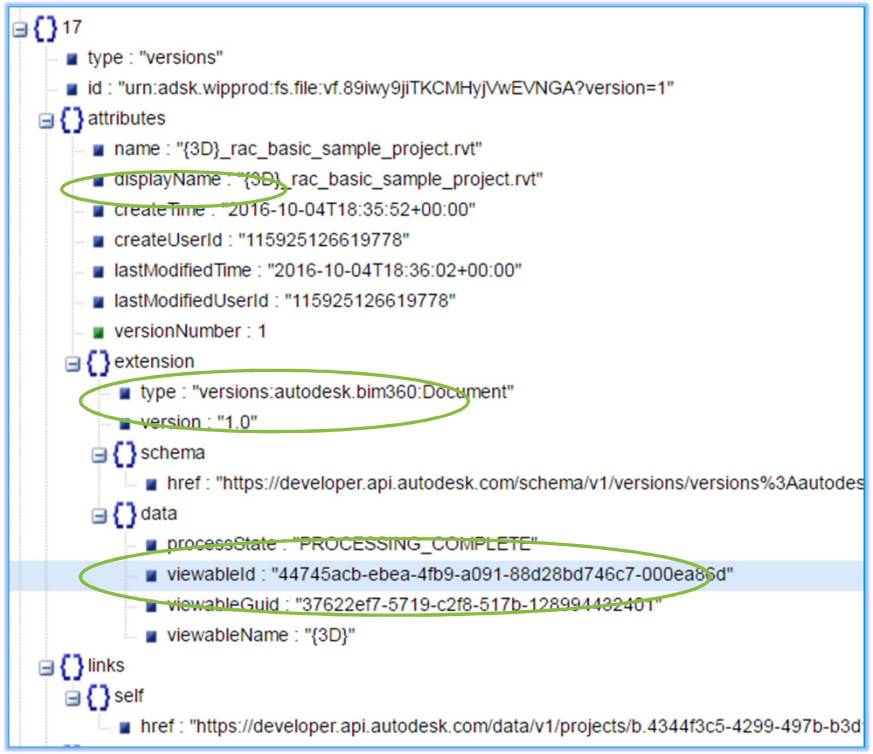
bim360:Document
rvt sheet

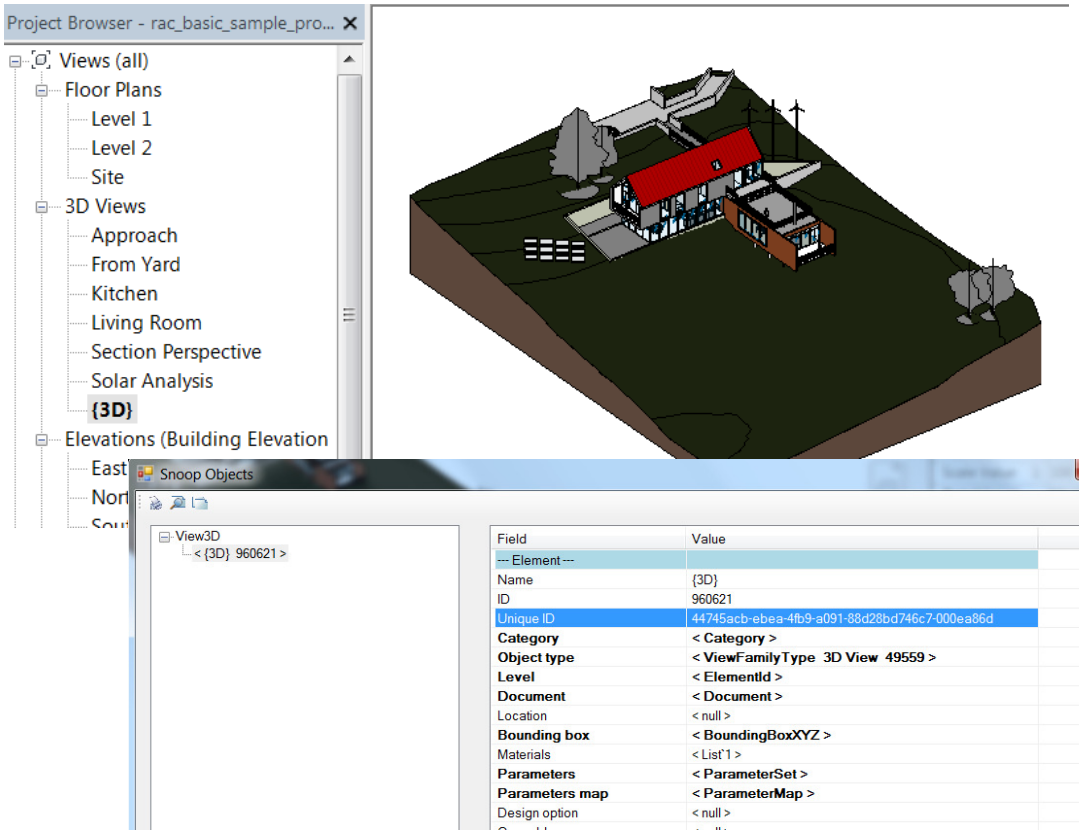






bim360:Document
rvt view





bim360:File
.rvt project file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    createUserId : "115925126619778"
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    extension
      type : "items:autodesk.bim360:File"
      version : "1.0"
      schema
        href : "https://developer.api.autodesk.com/schema/v1/version
      data
  links
    self
      href : "https://developer.api.autodesk.com/data/v1/projects/b.434
  relationships
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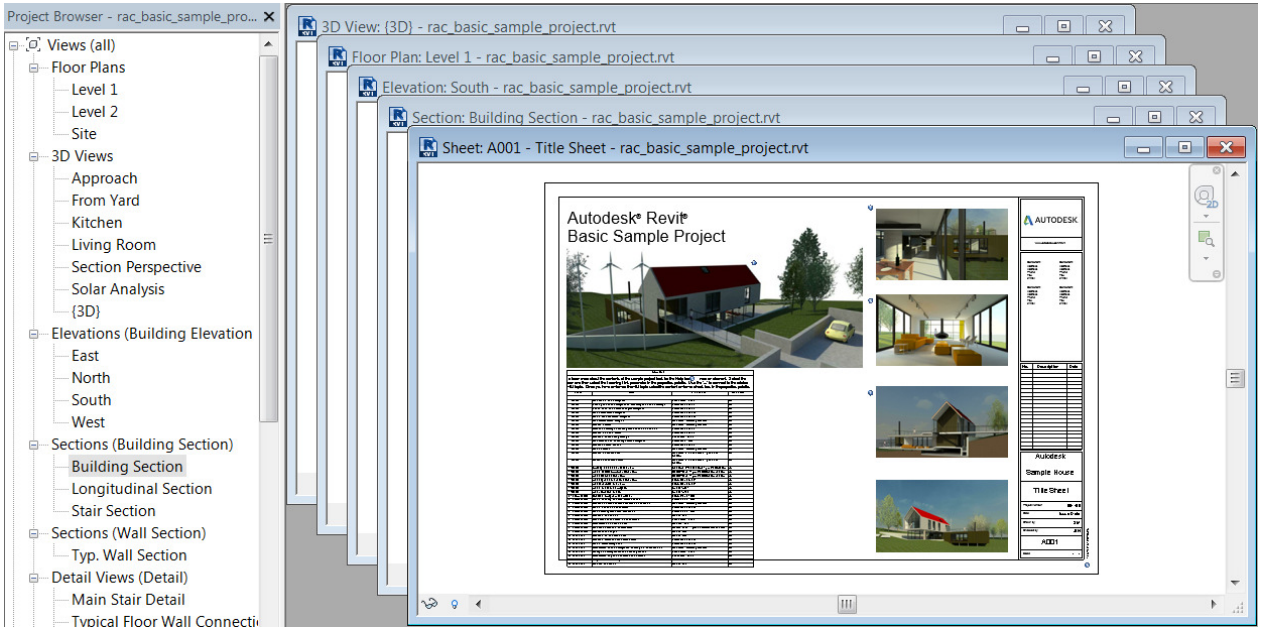

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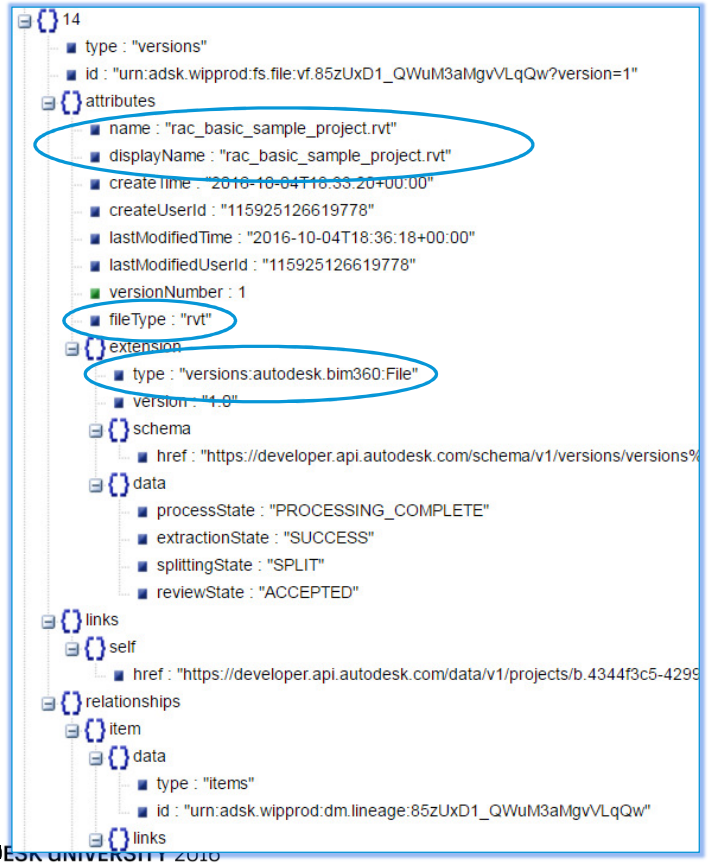

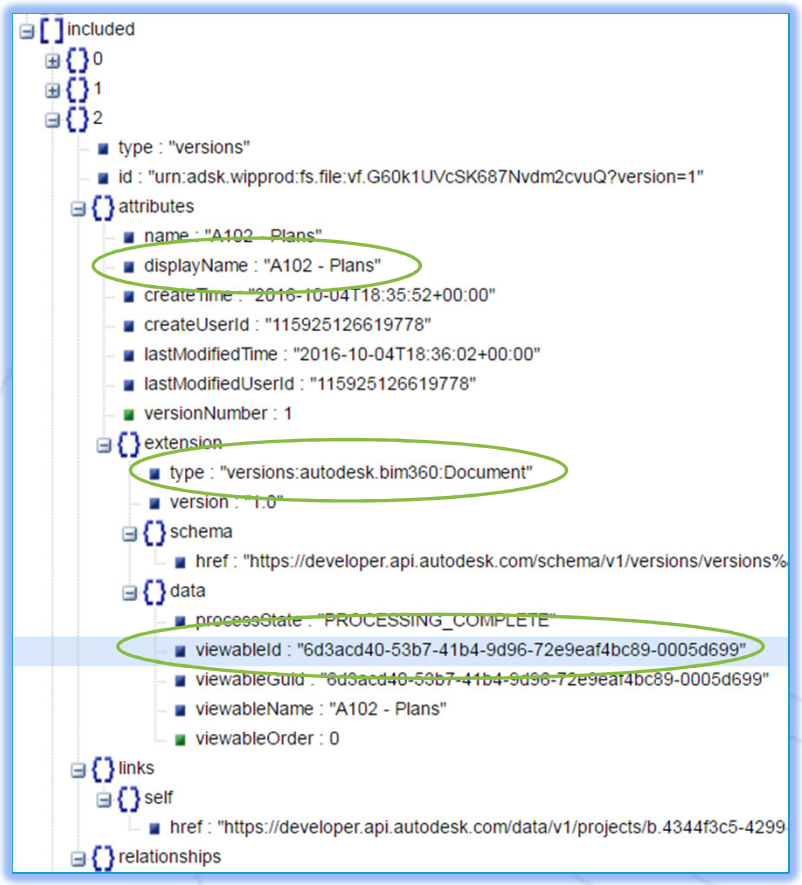
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lastModifiedUserId : "115925126619778"
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viewableName : "A102 - Plans"
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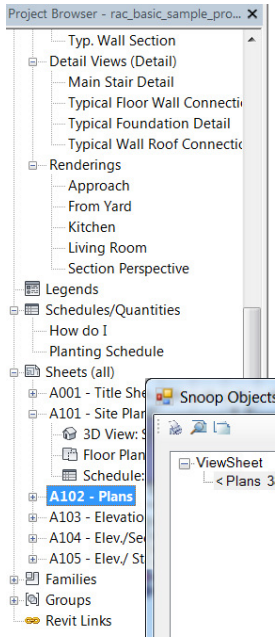
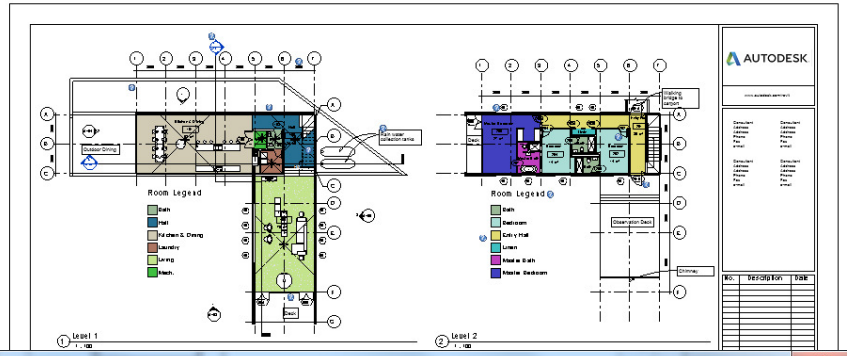
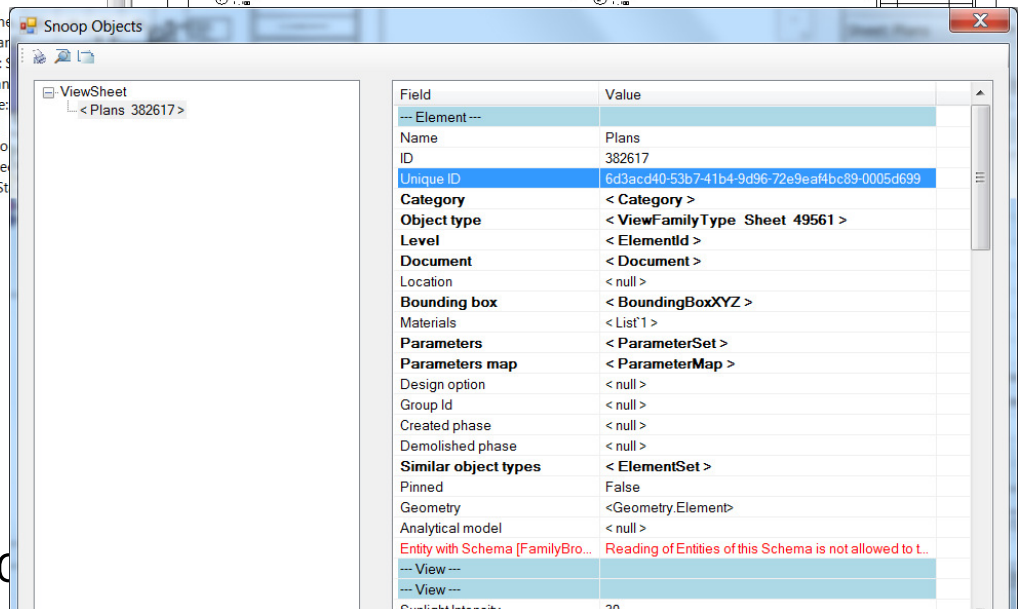

Project Browser - rac_basic_sample_pro...
Typ. Wall Section
Detail Views (Detail)
Main Stair Detail
Typical Floor Wall Connecti
Typical Foundation Detail
Typical Wall Roof Connectic
Renderings
Approach
From Yard
Kitchen
Living Room
Section Perspective
Legends
Schedules/Quantities
How do I
Planting Schedule
Sheets (all)
A001 - Title She
A101 - Site Plan
3D View:
Floor Plan
Schedule:
A102 - Plans
A103 - Elevatio
A104 - Elev./Se
A105 - Elev./ St
Families
Groups
Revit Links


AUTODESK
Room Legend
Room Legend


Snoop Objects
ViewSheet
< Plans 382617 >
Field
Value
--- Element ---
Name
Plans
ID
382617
Unique ID
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Object type
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Level
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Location
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Bounding box
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Materials
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Parameters
< ParameterSet >
Parameters map
< ParameterMap >
Design option
< null >
Group Id
< null >
Created phase
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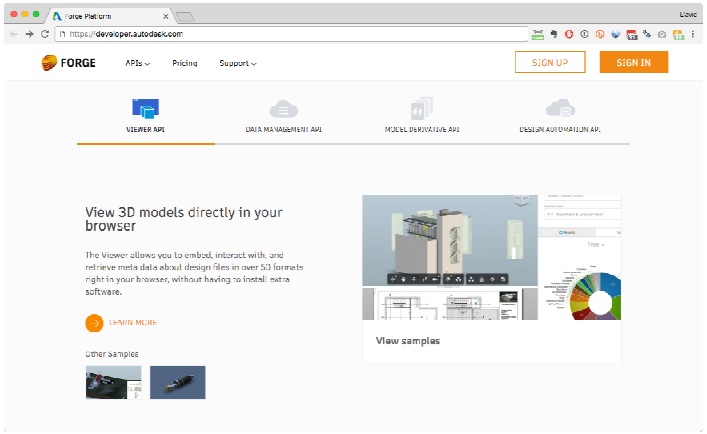
Demolished phase
< null >
Similar object types
< ElementSet >
Pinned
False
Geometry
<Geometry.Element>
Analytical model
< null >
Entity with Schema [FamilyBro...
Reading of Entities of this Schema is not allowed to t...
--- View ---
--- View ---

Learn more
Data Management & Related API Classes

Time		Title	Focus
Wednesday			
1:00-2:30	SD20744-L	Forge Viewer and Model Derivative API—Getting Started Lab By Jaime Rosales and Augusto Goncalves	Forge Viewer and Model Derivative
3:00-4:30	SD21092	Visual Reporting with Connected Design Data By Philippe Leefsma	Forge Viewer
4:45-5:45	SD21005	Unleash Your Autodesk Data with Forge Platform Data Management API By Augusto Goncalves	Forge Data Management
Thursday			
8:00-9:30	SD20908	Connect Desktop and Cloud—Free Your BIM Data By Jeremy Tammik	Revit and Forge
10:30-11:30	SD22363	Free Your Design Data By Adam Nagy	Forge Model Derivative



Developer.Autodesk.com

@autodeskforge

Visit Forge booth for more demo.

Questions?

Thank you!

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