

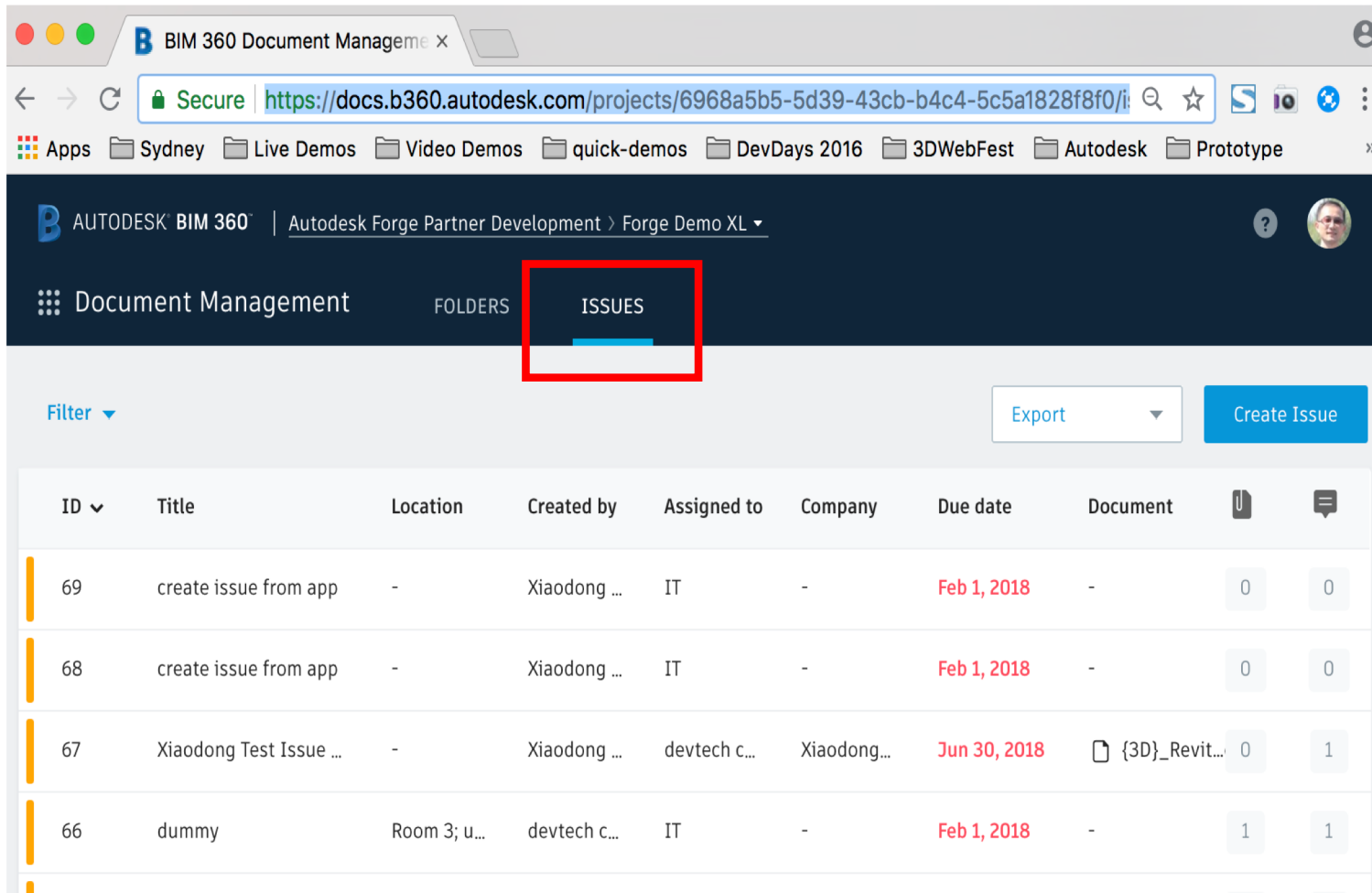
The background of the slide is a complex, abstract wireframe mesh. It consists of numerous interconnected lines forming a series of organic, flowing shapes that resemble a network or a series of interconnected tubes. The lines are thin and light gray, creating a sense of depth and movement. The overall effect is that of a digital or architectural structure.

# BIM 360 Issues API

# Overview

- Four Types of Issues
- Permissions
- Attachment
- Issue with API
- Current Scope and Limitations

# Document Issue in Project Level



The screenshot displays the Autodesk BIM 360 Document Management interface. The browser address bar shows the URL: <https://docs.b360.autodesk.com/projects/6968a5b5-5d39-43cb-b4c4-5c5a1828f8f0/i/>. The navigation bar includes 'Document Management', 'FOLDERS', and 'ISSUES', with 'ISSUES' highlighted by a red box. Below the navigation bar, there is a 'Filter' dropdown, an 'Export' button, and a 'Create Issue' button. The main content area displays a table of document issues.

ID	Title	Location	Created by	Assigned to	Company	Due date	Document		
69	create issue from app	-	Xiaodong ...	IT	-	Feb 1, 2018	-	0	0
68	create issue from app	-	Xiaodong ...	IT	-	Feb 1, 2018	-	0	0
67	Xiaodong Test Issue ...	-	Xiaodong ...	devtech c...	Xiaodong...	Jun 30, 2018	{3D}_Revit...	0	1
66	dummy	Room 3; u...	devtech c...	IT	-	Feb 1, 2018	-	1	1

# Field Issue in Project Level

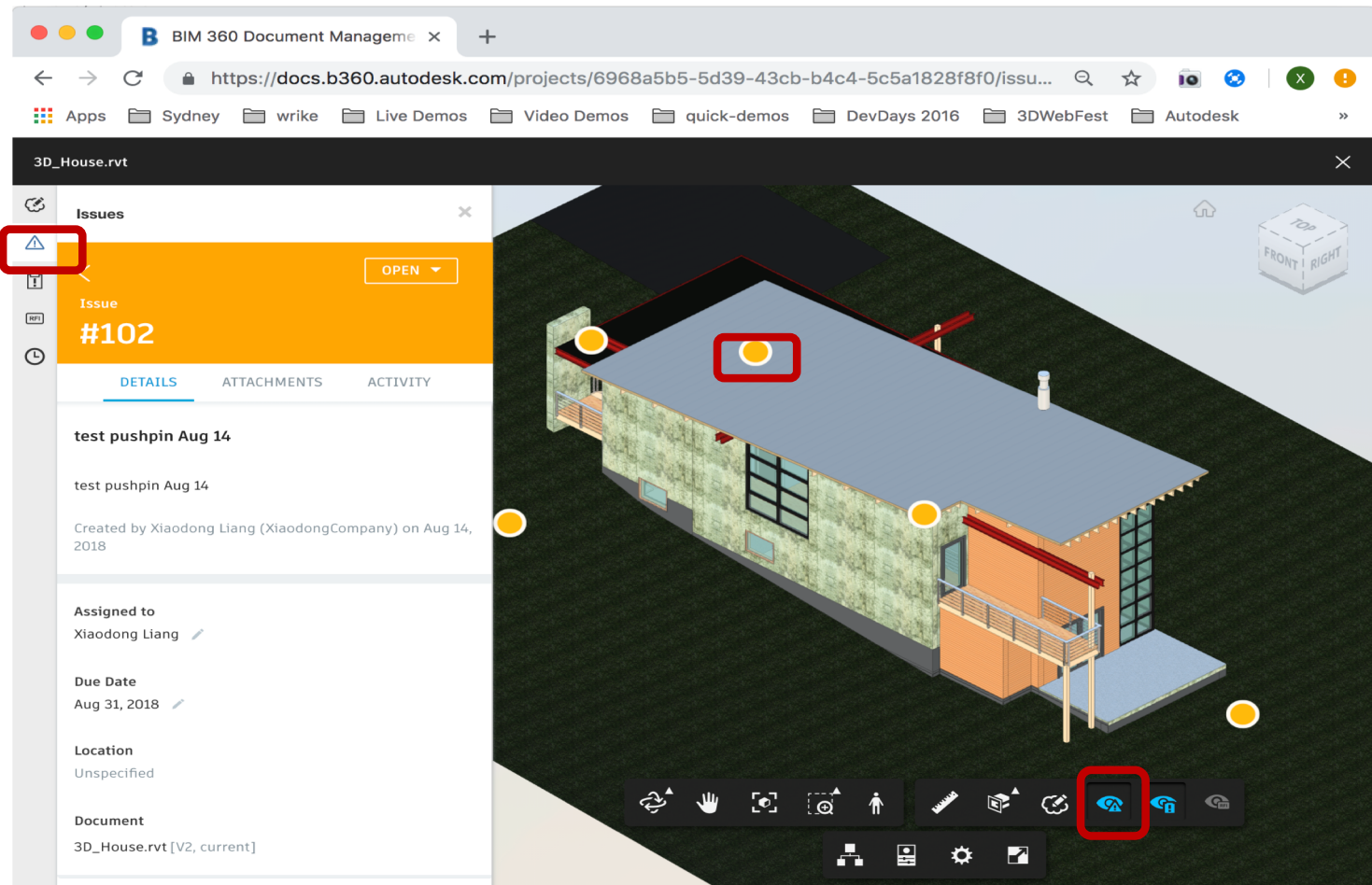
The screenshot shows the BIM 360 Field Management interface. The browser address bar displays the URL: <https://field.b360.autodesk.com/projects/6968a5b5-5d39-43cb-b4c4-5c5a1828f8f0/issues>. The navigation menu includes 'Field Management', 'TEMPLATES', 'CHECKLISTS', 'ISSUES' (highlighted with a red box), and 'DAILY LOGS'. Below the navigation is a search bar and an 'Export' dropdown menu. A 'Create New Issue' button is also visible.

The main content area displays a table of field issues with the following columns: ID, Title, Location, Assigned To, Company, Issue Type, Root Cause, Due Date, and Document. The table contains six rows of data:

ID	Title	Location	Assigned To	Company	Issue Type	Root Cause	Due Date	Document		
70	Check this edge of the roof		Engineer		Safety		Jul 8	3D_House.rvt	0	0
36	DevTechChina Test Create ...		devtech china	XiaodongTest	Quality		Today		2	3
35	Xiaodong Test Create Field ...		Estimator		Quality	Coordination	Today		0	0
34	Xiaodong Test Create Field ...		Scheduler		Quality	Coordination	Today		0	0
33	Xiaodong Test Create Field ...		Xiaodong Liang	Autodesk Forge ...	Quality	Coordination	Today		0	0
32	Xiaodong Test Create Field ...		Xiaodong Liang	Autodesk Forge ...	Quality	Coordination	Today		1	0

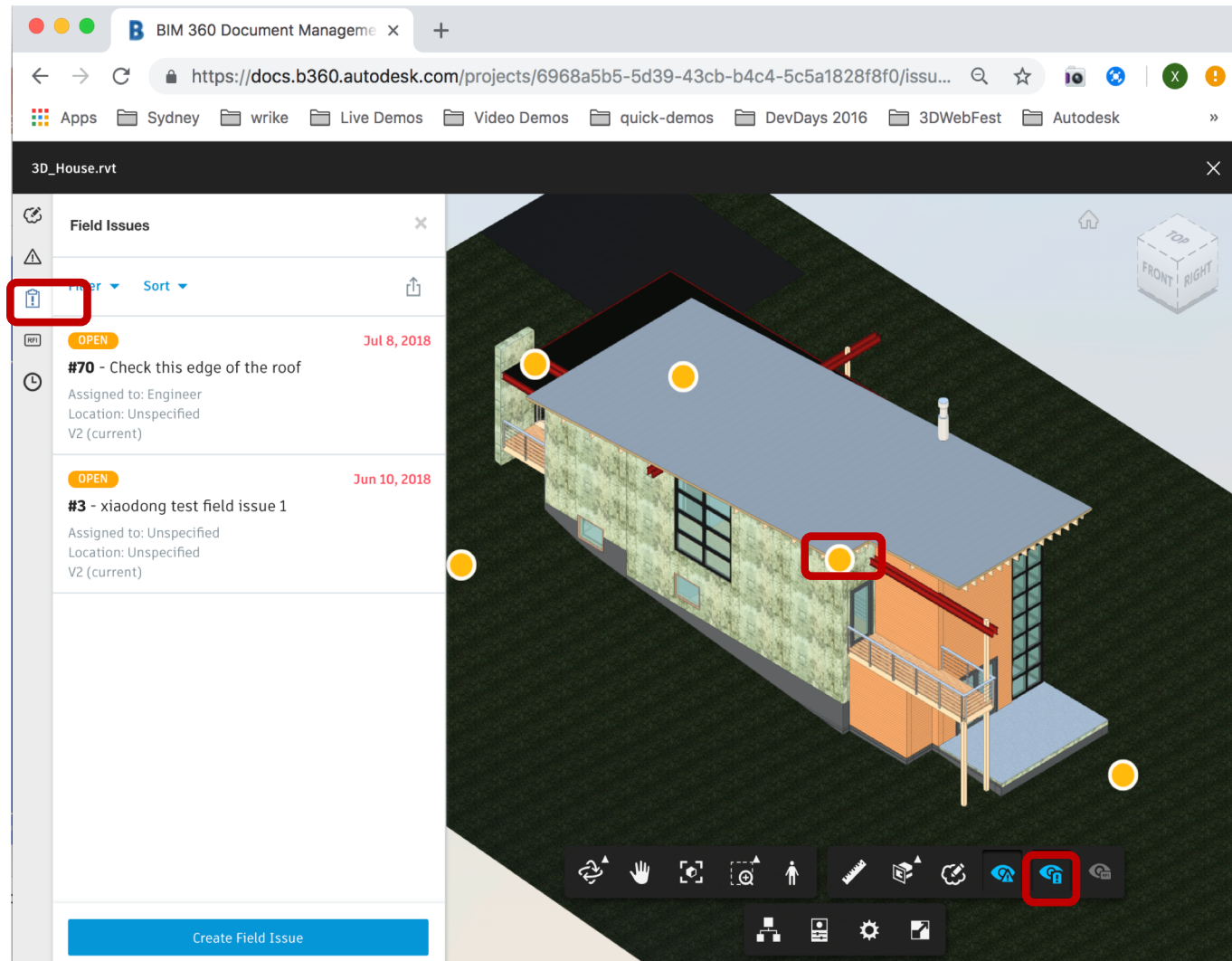
# Document Issue in Document Level

- Button on panel
- Button in Forge Viewer
  - Toggle visibility of issue
- Pushpin is SVG



# Field Issue in Document Level

- Button on panel
- Button in Forge Viewer
  - Toggle visibility of issue
- Pushpin is SVG



# Permission for Document Issues

- By default, every member of the project can create a document issue in project level
- By default, if a member has permission to a folder, she can create a document issue on the specific document within this folder

The screenshot displays the 'Document Management' interface. The top navigation bar includes 'Document Management', 'FOLDERS', and 'ISSUES'. The left sidebar shows a tree view with folders like 'Plans', 'DWG', 'PDF', 'Sample', '分包商', '模型审查', '设计方案', 'Shop Drawings', and 'Project Files'. The main content area is titled 'Folder Settings' and has two tabs: 'Permissions' (selected) and 'Title Blocks'. Below the tabs is a search input field with the placeholder text 'Enter roles, companies, individual names or emails'. A legend for 'Permission Level' shows a progress bar with 'View-only' on the right. A table lists users and their permission levels:

Name	Permission Level
Xiaodong Liang	View + Upload + Edit + Control
Zhong Wu	View + Upload + Edit + Control

# Permission for Field Issues

- Basic: can view issues the member has created or assigned to
- View All: can view all , but cannot create
- Create: can create new and view created and assigned to
- View and Create: can create new issues and view all issues
- No permission with a folder: cannot view the model the field issue was created from.

The screenshot shows the 'Project Admin' interface with the 'SERVICES' tab selected. The left sidebar contains navigation options: Overview, Locations, Document Management, Field Management (highlighted), BIM 360 Glue, and BIM 360 Plan. The main content area is titled 'Permissions' and includes a search bar for users, a table of users, and a dropdown menu for the 'devtech china' user.

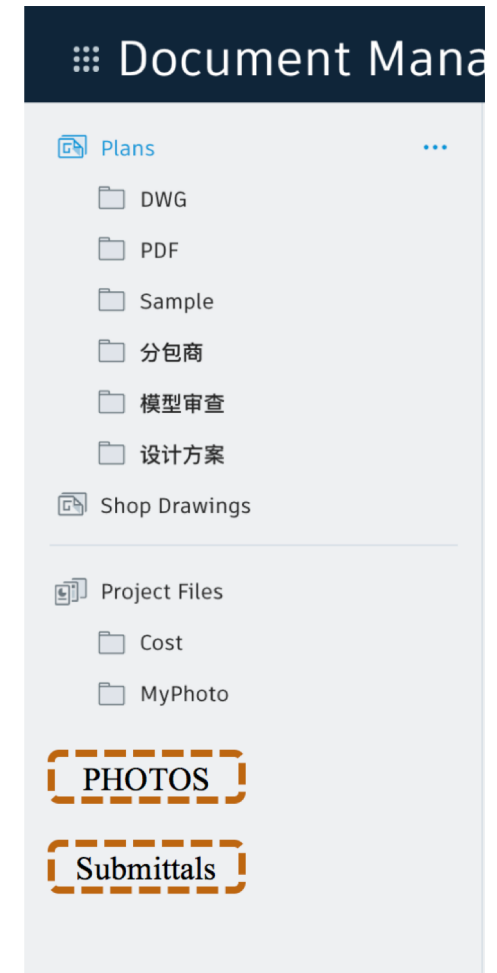
Name	Type	Templates	Checklists	Issues
Xiaodong Liang (Admin)	User	Full Control	Full Control	Full Control
Zhong Wu (Admin)	User	Full Control	Full Control	Full Control
devtech china	User	View All	Basic	Basic

The dropdown menu for 'devtech china' shows the following options: Create (checked), Basic, View All, Create (checked), View and Create, Full Control, and a 'Learn more' link.



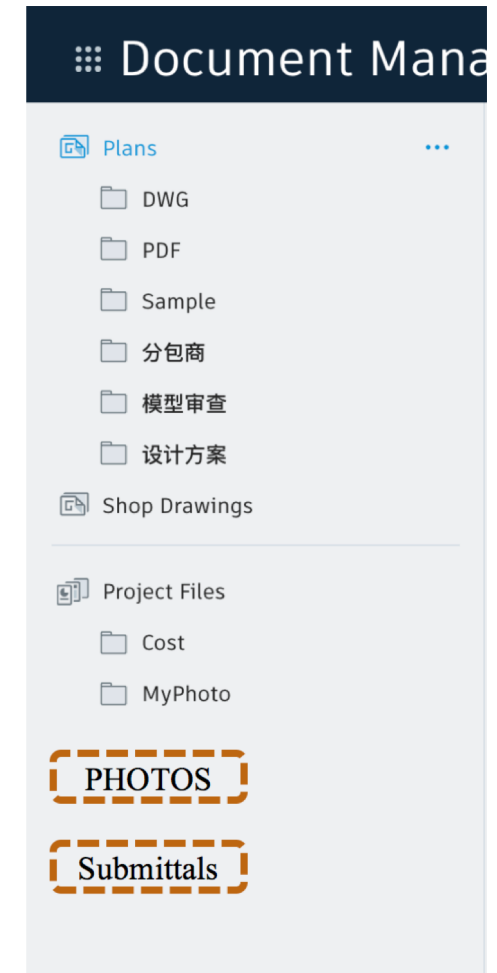
# Attachment for Document Issue

- Docs on PC can attach any kind of files (existing in the folders) to an issue
- Docs on PC can only upload and attach photo formats to an issue
- Docs on mobile can only attach photo format to an issue
- Where are the photos ?
  - A hidden folder named 'Photos'
  - Save level as Plans, Project Files, Shop Drawings



# Attachment for Field Issue

- Field on PC can attach any kind of files to issue, such as photo
- Field on mobile can only attach photo format to an issue
- Where are the photos ?
  - A hidden folder named ' Photos'
  - Save level as Plans, Project Files, Shop Drawings



# Assignee

- Assign To
- User: valid member in this project
- Role:
  - Engineer, Designer, ...
- IT:
  - Project Engineer, Project Manager, ...

DETAILS A

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**create issue from app**

a test to create issue from app

Created by Xiaodong Liang (Autodesk Forge F

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Assigned to

User

devtech china

Xiaodong Liang

Zhong Wu

Role

Designer

Engineer

IT ✓

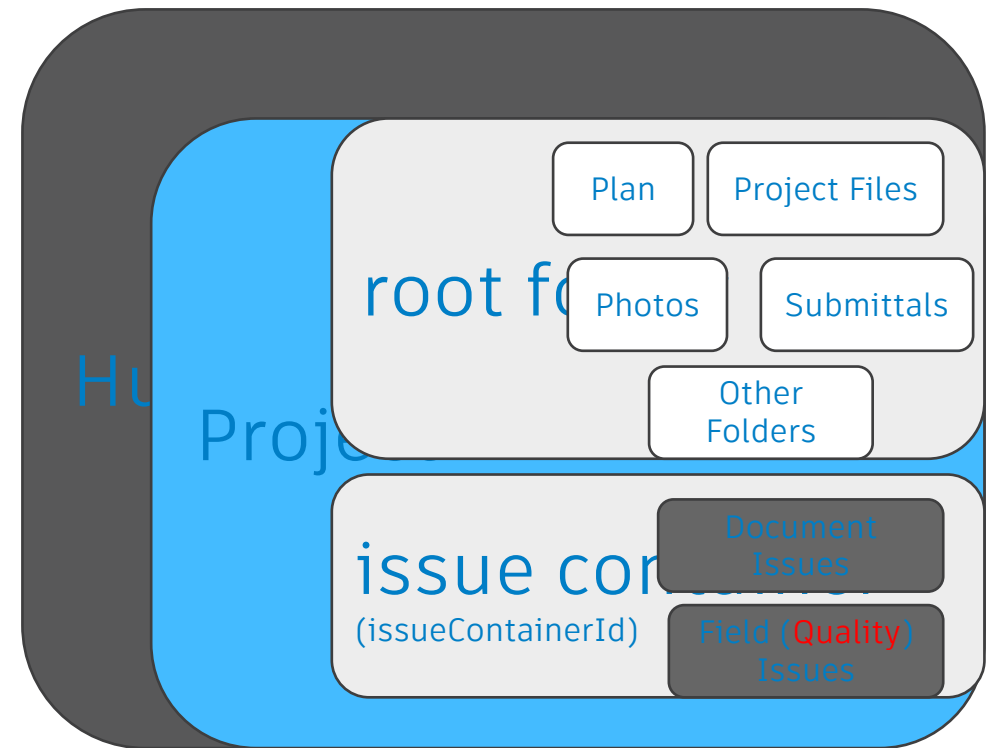
Project Engineer

Project Manager

Scheduler

# API – Get Issues

- GET: `{{base_domain}}/issues/v1/containers/{{issue_container_id}}/issues?filter[status]=closed`
- GET: `{{base_domain}}/issues/v1/containers/{{issue_container_id}}/quality-issues`
- Issue Container
  - Document Issue
  - Field Issue (in API: **Quality** Issue)
- API Help:
  - [Document Issue](#), [Field Issue](#)



# Create Issues – only in Project Level currently

- POST: {{base\_domain}}/issues/v1/containers/{{issue\_container\_id}}/issues
- POST: {{base\_domain}}/issues/v1/containers/{{issue\_container\_id}}/quality-issues

```
{
  "data": {
    "type": "issues",
    "attributes": {
      "title": "Create My Document Issues",
      "description": " Create My Document Issues",
      "status": "open",
      "target_urn": null,
      "assigned_to": "7462015",
      "assigned_to_type": "role",
      "starting_version": 1,
      "due_date": "2018-02-01T00:00:00.000Z",
      "location_description": "Room 3; under the window",
      "created_at": "2017-12-31T00:00:00Z"
    }
  }
}
```

```
{
  "data": {
    "type": "quality-issues",
    "attributes": {
      "title": "Create My Document Issues",
      "description": " Create My Document Issues",
      "status": "open",
      "target_urn": null,
      "assigned_to": "7462015",
      "assigned_to_type": "role",
      "starting_version": 1,
      "due_date": "2018-02-01T00:00:00.000Z",
      "location_description": "Room 3; under the window",
      "created_at": "2017-12-31T00:00:00Z"
    }
  }
}
```

- API Help:
  - [Document Issue](#), [Field Issue](#)

# Issue Type And Root Cause of Field Issue

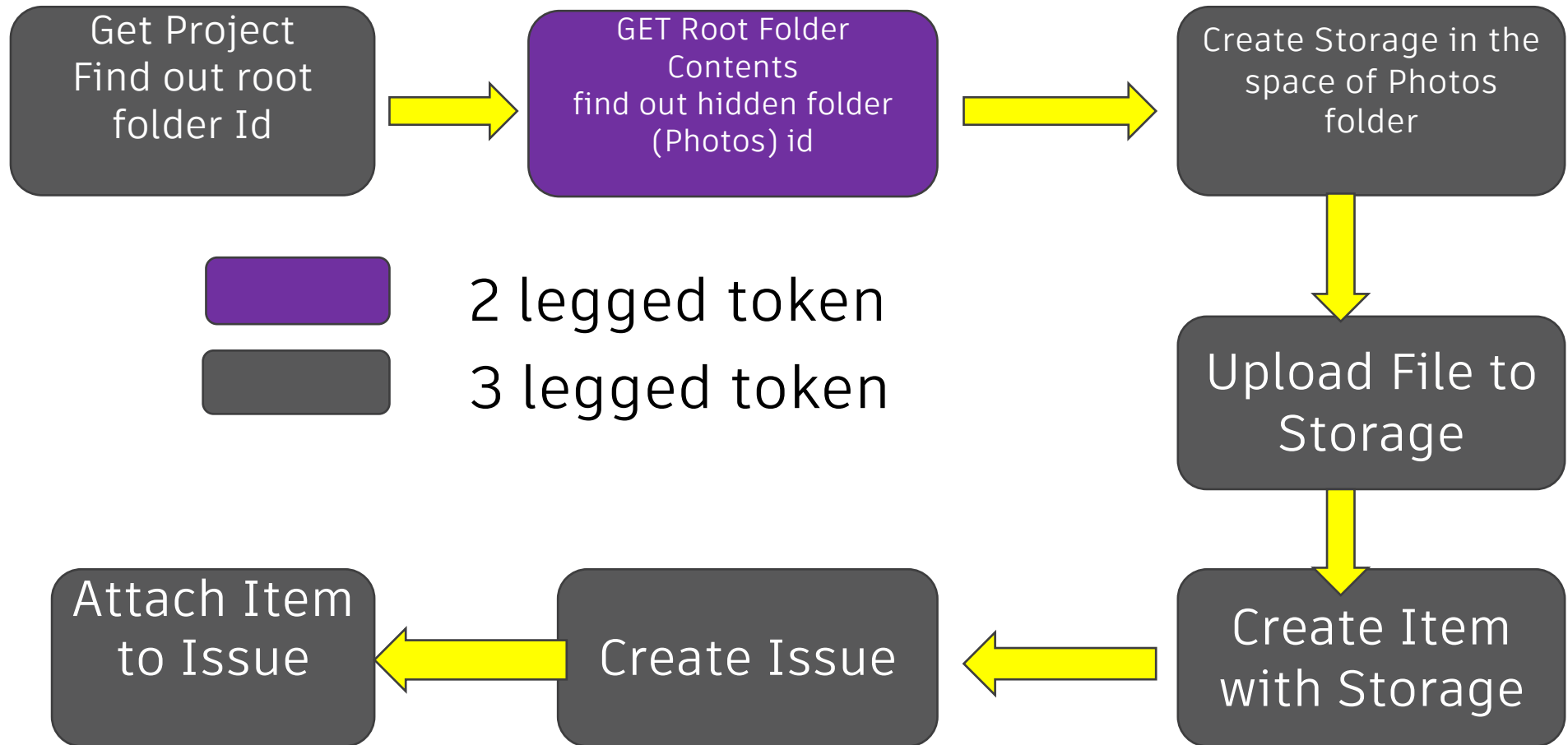
- Issue Type
  - Quality
  - Safety
  - PushList
  - Commitment
  - In API: enum index
  - [GET supported field issue types](#) to get the corr string
- Root Cause
  - [GET Root-Cause-Types](#)

The screenshot displays a search interface for root causes. The search bar contains the text "Search Root Cause". Below the search bar, a list of root cause types is shown, including "Access and Egress", "Administration", "Allergic Reaction", "Barricade", "Caught Between", "Communication", "Confined spaces", "Coordination", and "Cranes & Hoisting Equipment". The "Access and Egress" option is highlighted. Below the list, there are navigation icons (back, forward, refresh) and a breadcrumb trail: "object > data > 0 > attributes > title".

The developer tool shows the following JSON response:

```
object {2}
  data [59]
    0 {4}
      id : a50045c0-973a-43b0-a470-b63d1adc9cdf
      type : root_causes
      links {1}
      attributes {2}
        key : ACCESS_AND_EGRESS
        title : Access and Egress
    1 {4}
```

# Directly Attach Local Files (photo) to Issues



# Pushpin Forge Viewer Extension

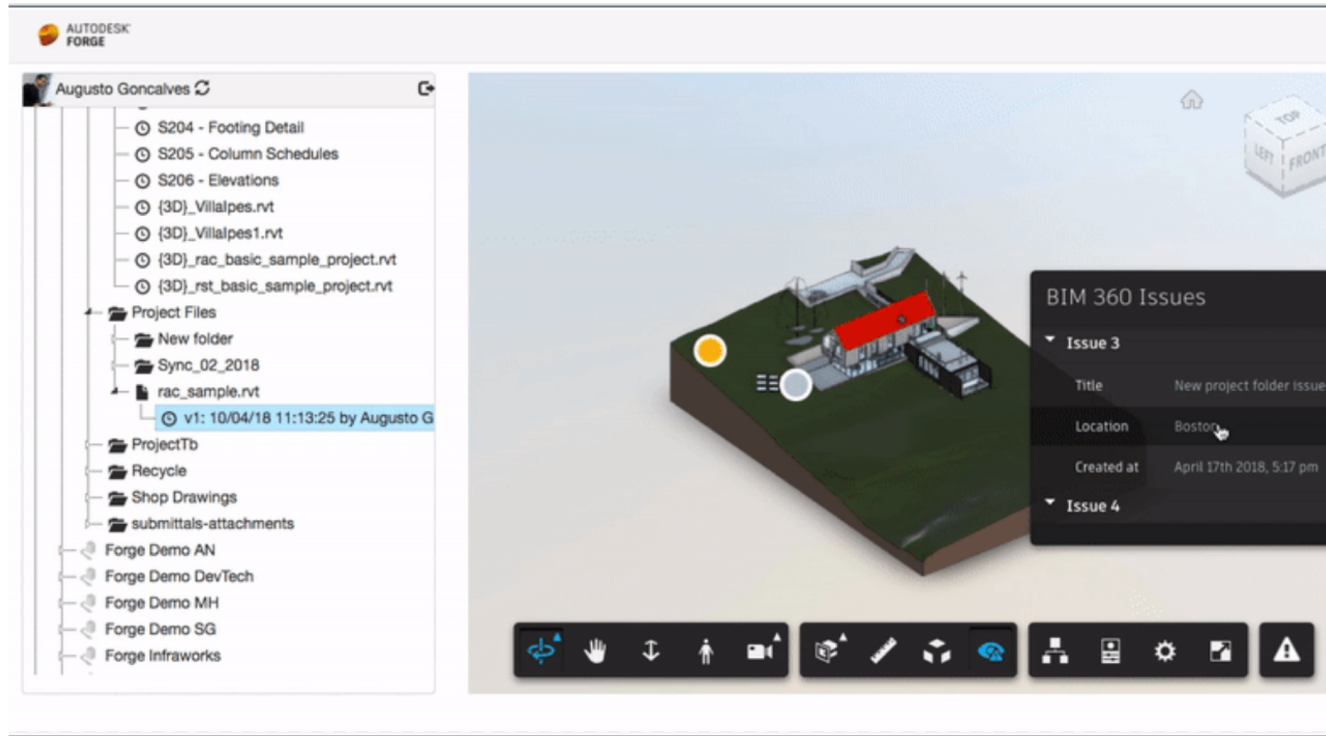
- Extension in Forge Viewer
- Same experience as BIM 360 UI
- Can toggle visibility of Issues
- Other data source (custom issue) could also use the skeleton

```
viewer3D.loadExtension('Autodesk.BIM360.Extension.PushPin')
  .then((pushPinExtension)=>{
    pushPinExtension.removeAllItems();
    pushPinExtension.showAll();
    for(var index in IssuesArrayFromBIM360API){
      pushPinExtension.createItem({
        id: IssuesArrayFromBIM360API[index].id,
        label: IssuesArrayFromBIM360API[index].label,
        status: IssuesArrayFromBIM360API[index].status,
        position: IssuesArrayFromBIM360API[index].position,
        type: IssuesArrayFromBIM360API[index].type,
        objectId: IssuesArrayFromBIM360API[index].objectId,
        viewerState: IssuesArrayFromBIM360API[index].viewerState
      });
    }
  });
```



# .NET Core Sample

- Get all document issues of one document
- Show up the pushpins by Pushpin Extension



- Live Demo:

<https://bim360issues.herokuapp.com/>

- Blog:

<https://forge.autodesk.com/blog/introducing-bim-360-issues-api>

# Node.js Sample

- Demos on how to manipulate issues
- Attach local photos to an issue
- Load specific issue and its model
- Export all issues to an CSV file (a little different to BIM 360 UI function, the CSV contains comments list)
- Live demo:
  - <https://bim360-issue-csv.herokuapp.com/>
  - Blog: <https://forge.autodesk.com/blog/bim-360-issues-api-sample-nodejs>

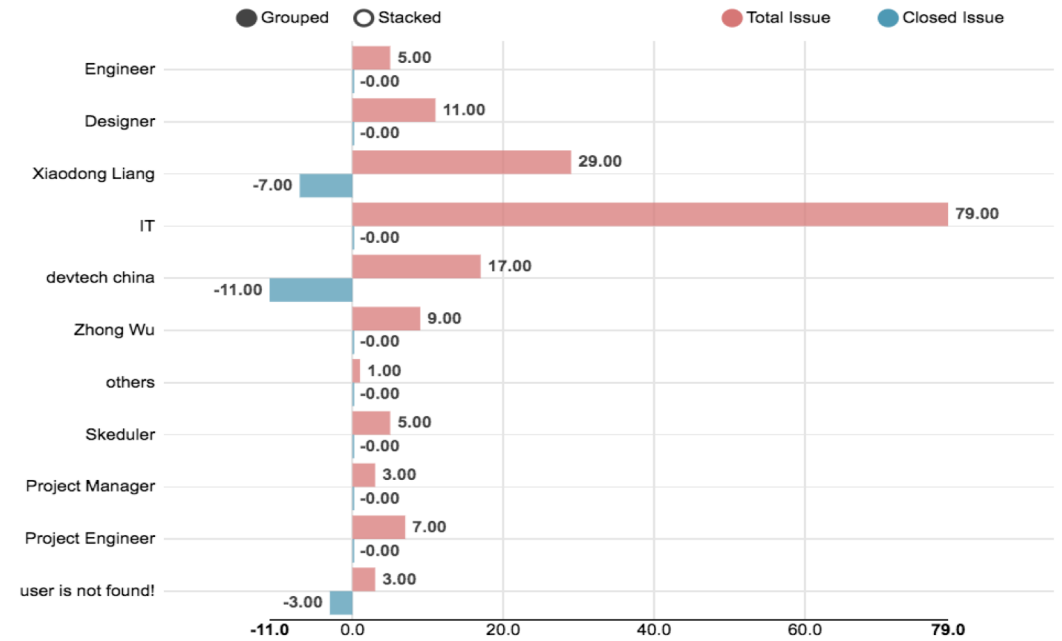
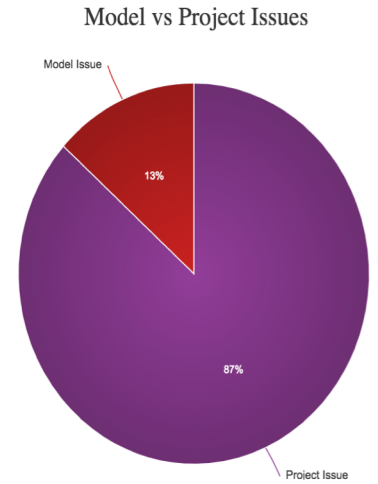
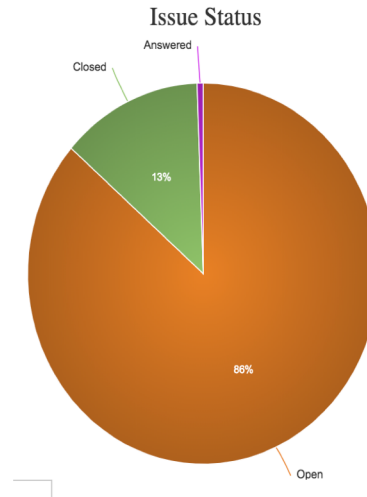
The screenshot displays a web browser window titled "BIM 360 Issue API Demo" at localhost:5678. The interface is divided into several sections:

- File Tree:** Shows a project structure under "Autodesk Forge Partner Development" with folders like "Forge Demo XL", "Forge Demo Zhong", "Forge Infraworks", and "Zhong Test project 1".
- Issue Details:** Shows a "new issues on Aug 22" with a title "aws summit". It lists attachments (00.png, RevitTest.png, and three screenshots) and attributes such as "answered\_by: null", "assigned\_to: user", "created\_at: 2018-08-09T08:04:12.680Z", "description: 200902260532621", "due\_date: 2018-08-11T00:00:00.000Z", "push\_pin: 1353", and "status: open".
- Comments:** Lists several comments with their body text, creation times, and authors.
- 3D Model Viewer:** Displays a 3D architectural model of a building with a red circle highlighting a specific area.

Below the browser is a screenshot of a Microsoft Excel spreadsheet titled "Forge Demo XL - Issues - 2018.9.15.23.40.42.csv". The spreadsheet has columns for "id", "Title", "Description", "Location", "Status", "Official Resp", "Assigned To", "Assignee Ty", "Company", "Due Date", "Associated to", "Create At", "Updated At", "Attachment", and "Comments". The data includes various issue entries with their respective details and comment lists.

# Node.js Sample

- Dashboards on stats of the issues
  - Coming soon



# API Limitations

- Creating Issue in Document Level is not supported
- Getting project users (Assignee) has not been exposed
- No endpoints to manage permissions
- Attachment workflow by mixing 2&3 legged token is confusing



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