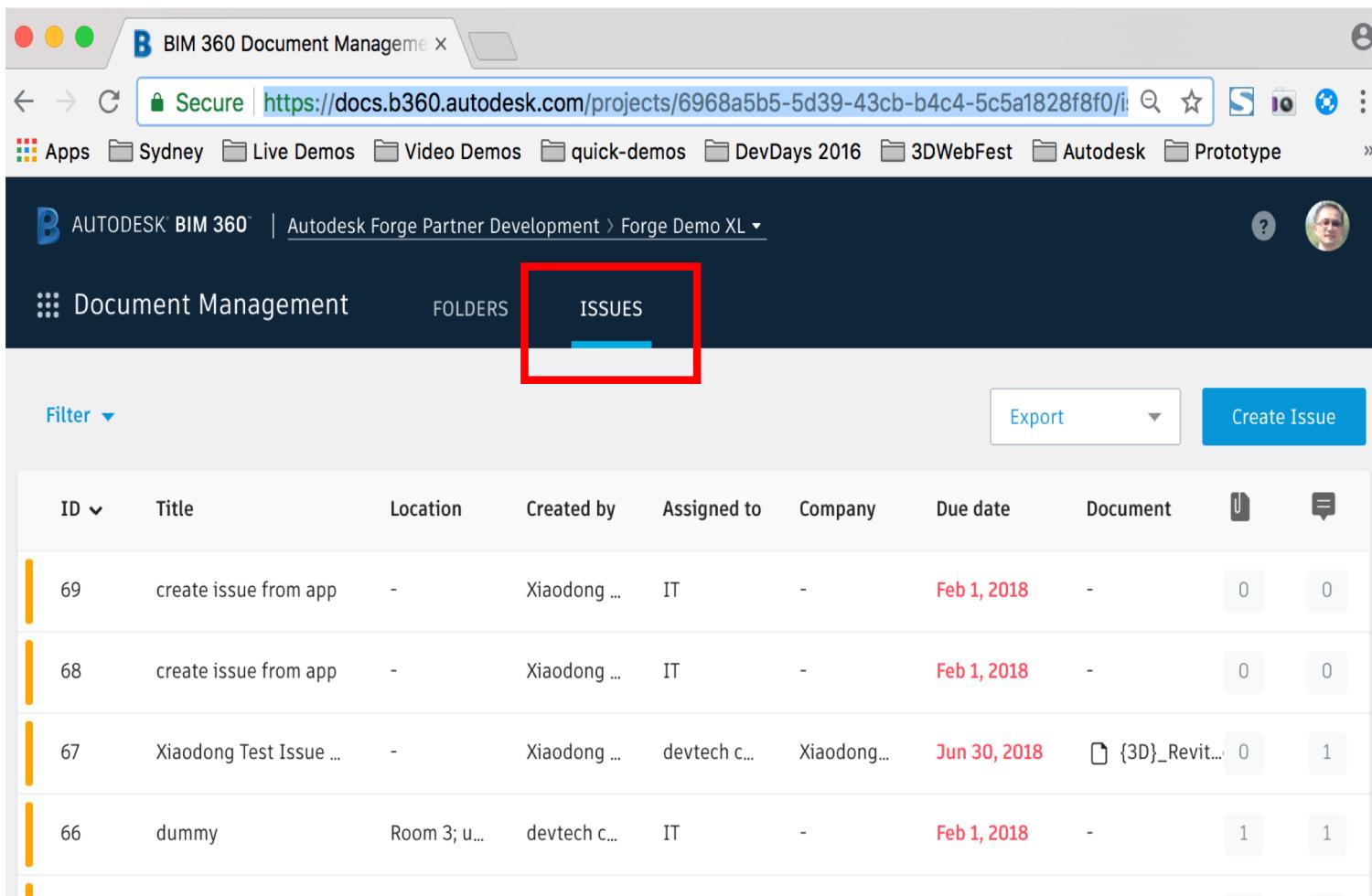


BIM 360 Issues API

Overview

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

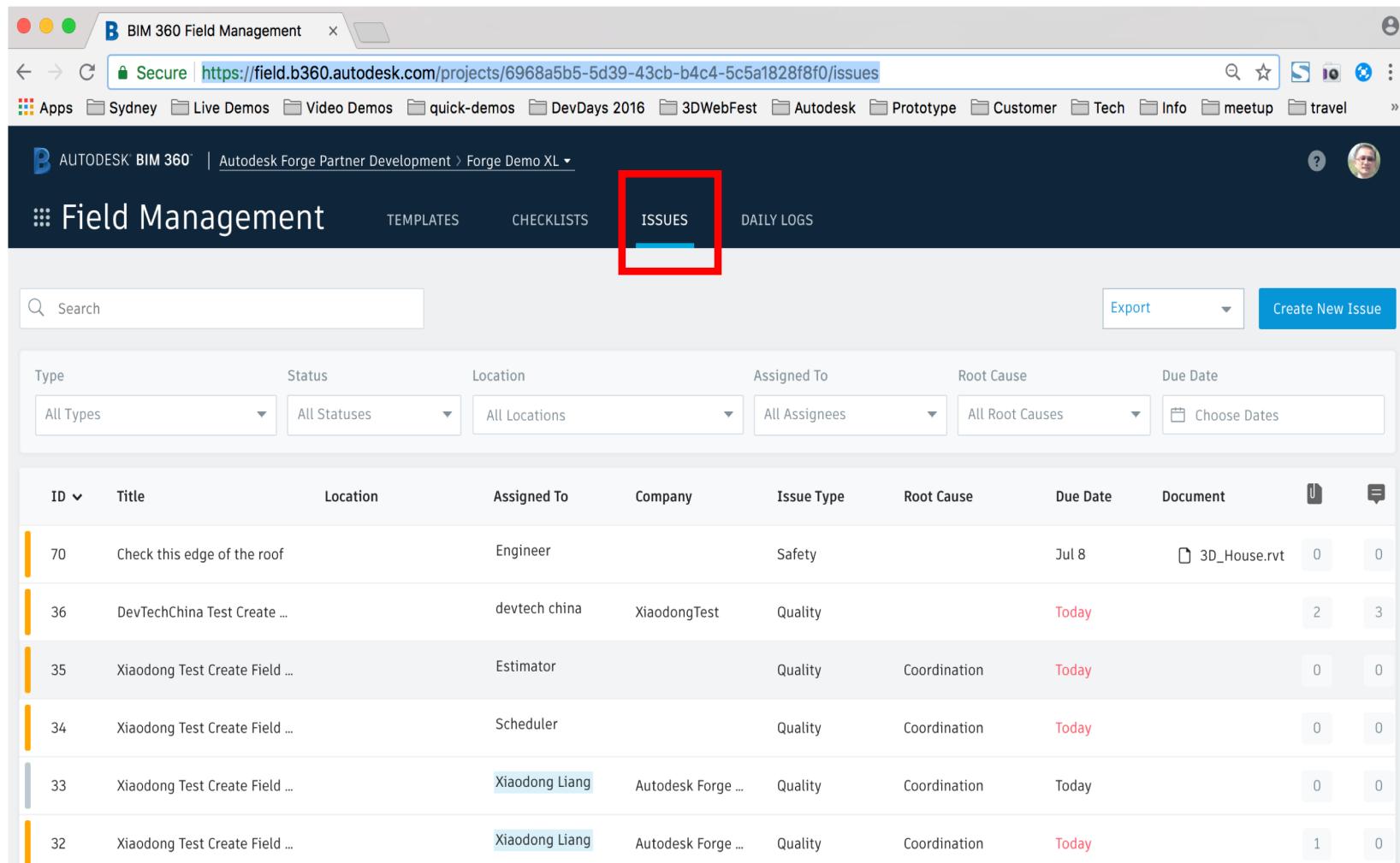
Document Issue in Project Level



The screenshot shows the Autodesk BIM 360 Document Management interface. The top navigation bar includes standard browser controls (back, forward, search, etc.) and links to Apps, Sydney, Live Demos, Video Demos, quick-demos, DevDays 2016, 3DWebFest, Autodesk, and Prototype. The main header displays the Autodesk BIM 360 logo and the current project path: Autodesk Forge Partner Development > Forge Demo XL. Below the header, there are three main tabs: Document Management, FOLDERS, and ISSUES. The ISSUES tab is highlighted with a red box. On the right side of the header, there are buttons for Filter, Export, and Create Issue. The main content area is a table listing document issues. The columns are: ID, Title, Location, Created by, Assigned to, Company, Due date, Document, and two small icons. There are four rows of data:

ID	Title	Location	Created by	Assigned to	Company	Due date	Document	Icon 1	Icon 2
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. At the top, there's a navigation bar with links like Apps, Sydney, Live Demos, Video Demos, quick-demos, DevDays 2016, 3DWebFest, Autodesk, Prototype, Customer, Tech, Info, meetup, and travel. Below that is a dark header bar with the Autodesk BIM 360 logo, the project name "Autodesk Forge Partner Development > Forge Demo XL", and a user profile icon.

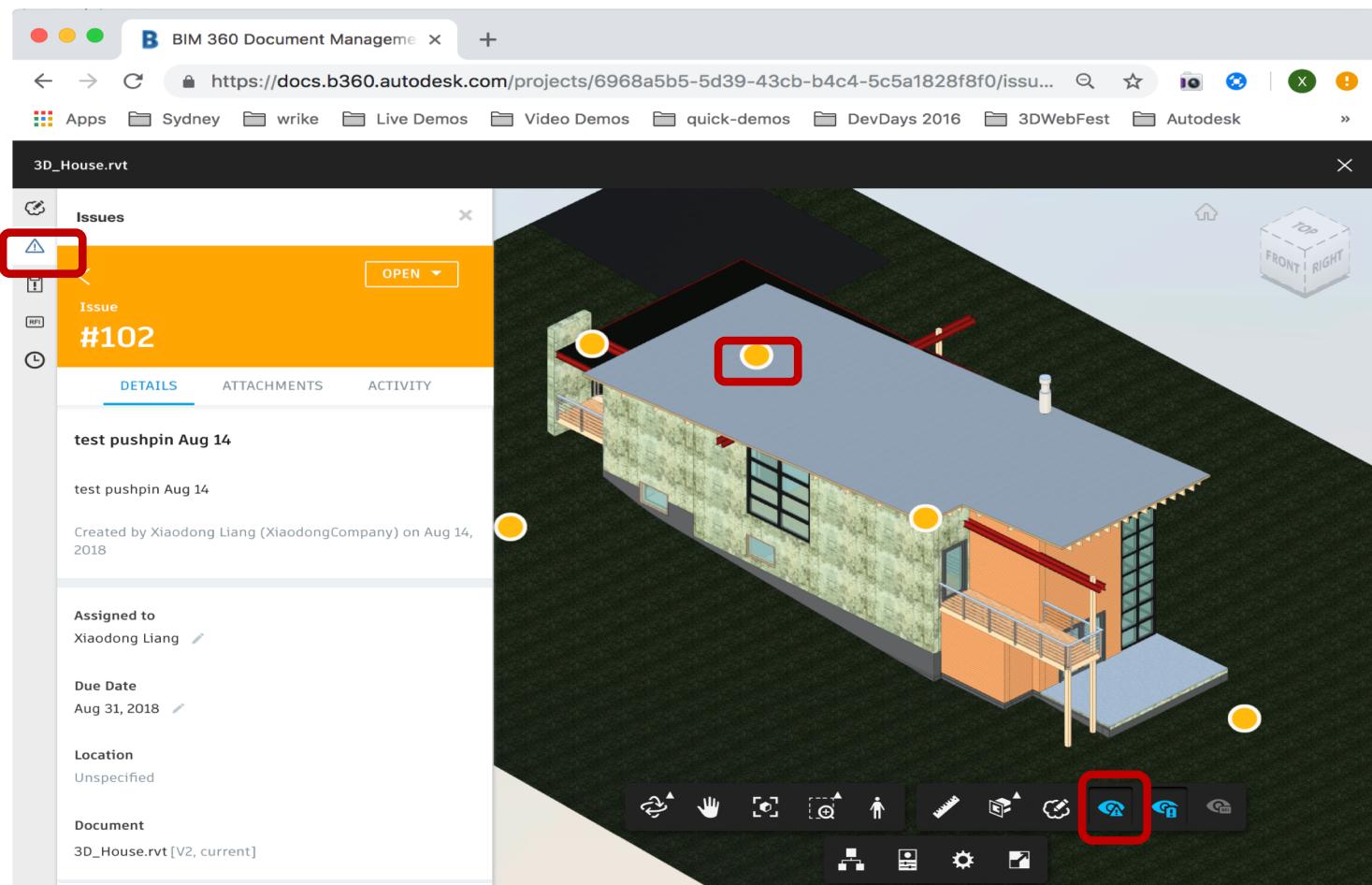
The main content area has tabs for Field Management, TEMPLATES, CHECKLISTS, and ISSUES. The ISSUES tab is highlighted with a red box. Below the tabs is a search bar and an "Export" button. A "Create New Issue" button is also visible.

Underneath, there are filters for Type (All Types), Status (All Statuses), Location (All Locations), Assigned To (All Assignees), Root Cause (All Root Causes), and Due Date (Choose Dates). The main table lists six issues:

ID	Title	Location	Assigned To	Company	Issue Type	Root Cause	Due Date	Document	Comments	Attachments
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

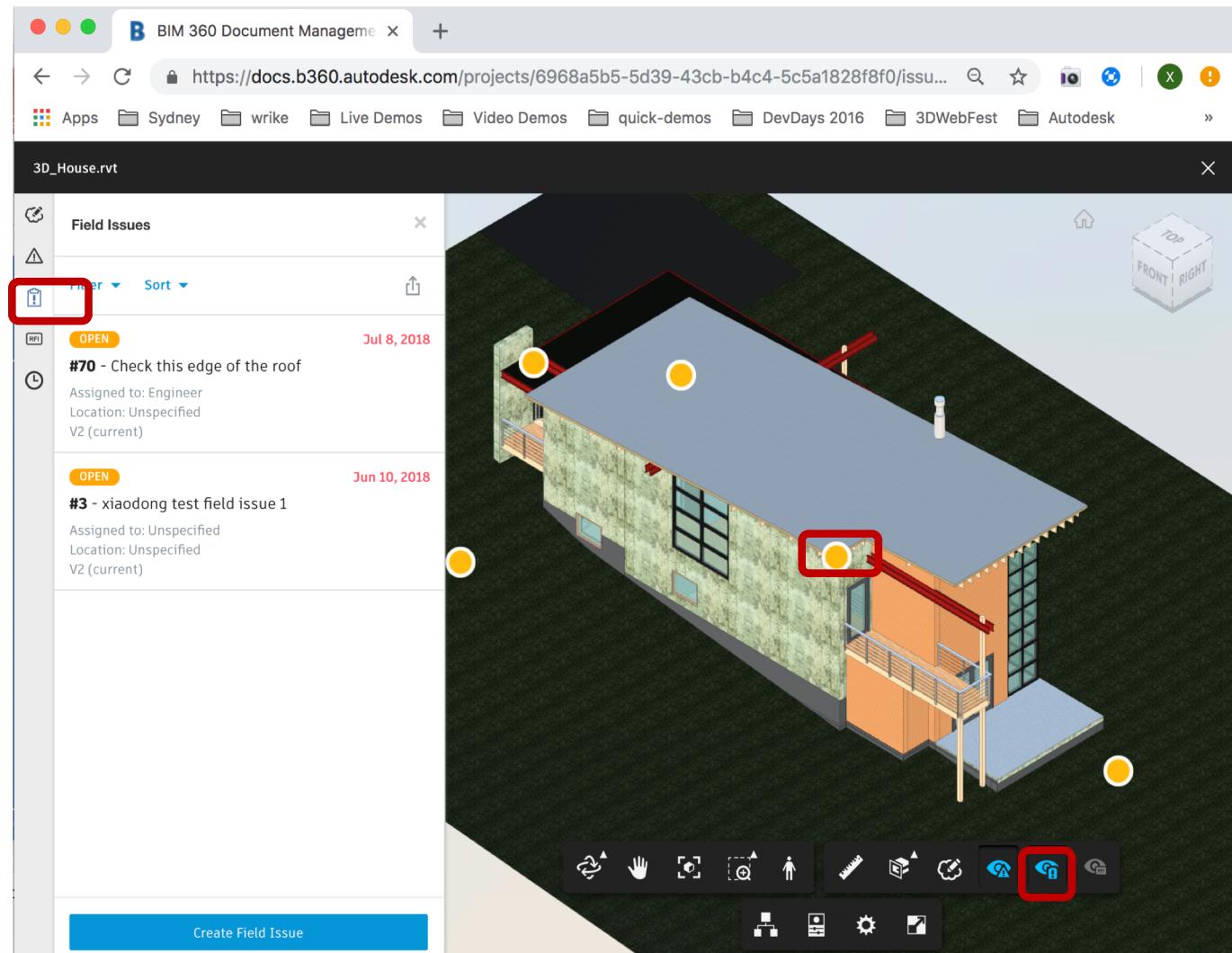
Document Issue in Document Level

- 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 shows a 'Document Management' application interface. At the top, there are tabs for 'FOLDERS' (which is active) and 'ISSUES'. On the left, a sidebar lists categories like 'Plans' (containing DWG, PDF, Sample, 分包商, 模型审查, 设计方案), 'Shop Drawings', 'Project Files' (containing Cost), and 'Other'. The main area is titled 'Folder Settings' and shows a 'Permissions' tab selected. It includes a search bar ('Enter roles, companies, individual names or emails') and a slider for 'Permission Level' (set to 'View-only'). A table lists users with 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. On the left, there's a sidebar with 'Overview', 'Locations', 'Document Management', and 'Field Management' (which is highlighted). Below that are 'BIM 360 Glue' and 'BIM 360 Plan'. The main area is titled 'Permissions' and contains a search bar and an 'Add' button. A note says 'Members can always view and edit items they create and items assigned to them.' Below is a table with columns: Name, Type, Templates, Checklists, and Issues. It lists three users: 'Xiaodong Liang (Admin)' (User, Full Control, Full Control, Full Control), 'Zhong Wu (Admin)' (User, Full Control, Full Control, Full Control), and 'devtech china' (User, View All, Basic, Basic). To the right is a context menu with options: Create (with dropdown for Basic, View All, Create, View and Create, Full Control), Remove, and Learn more ».

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

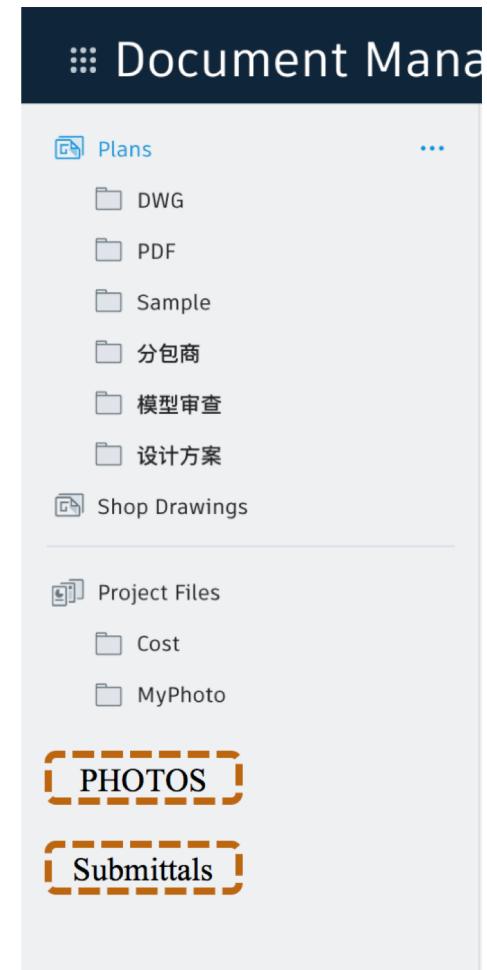
Attachment for Document Issue

- 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

create issue from app

a test to create issue from app

Created by Xiaodong Liang (Autodesk Forge F

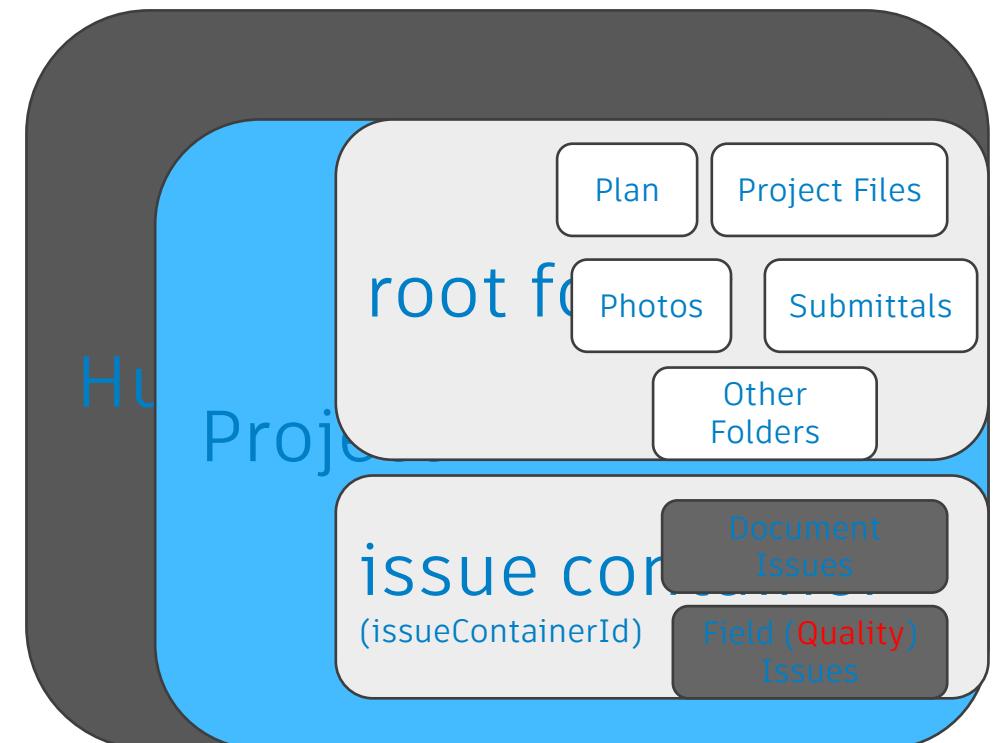
Assigned to

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 corresponding string
- Root Cause
 - [GET Root-Cause-Types](#)

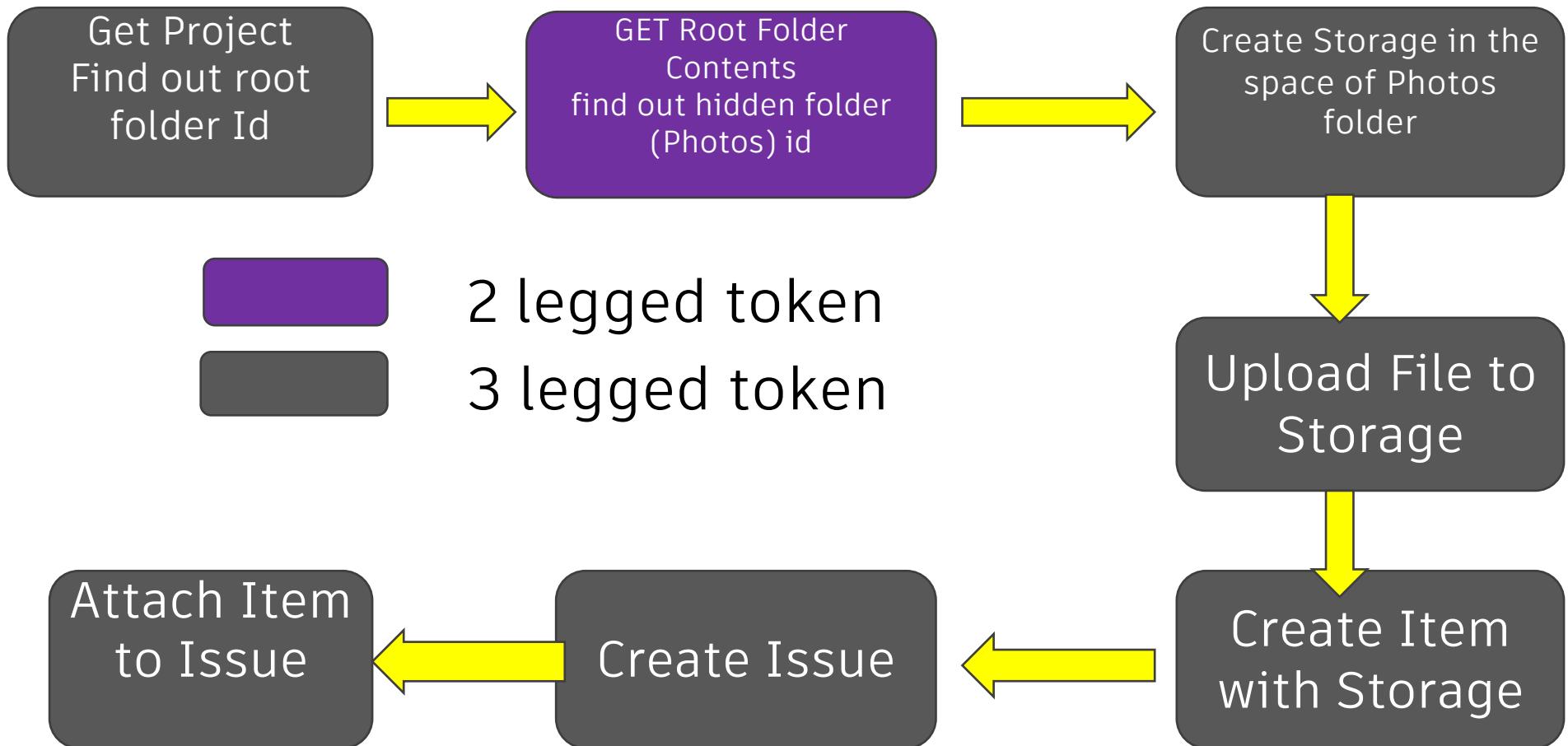
The screenshot shows a user interface for managing root causes. At the top, there is a search bar labeled "Search Root Cause". Below the search bar is a list of root cause categories: Access and Egress, Administration, Allergic Reaction, Barricade, Caught Between, Communication, Confined spaces, Coordination, and Cranes & Hoisting Equipment. The "Access and Egress" category is highlighted with a blue background. Below this list is a "Clear" button.

At the bottom of the screen, there is a detailed view of the selected root cause. The path to this view is indicated by a breadcrumb trail: object ▶ data ▶ 0 ▶ attributes ▶ title. The detailed view shows the following JSON-like structure:

```
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}
```

The "title" field of the root cause is highlighted with a yellow box.

Directly Attach Local Files (photo) to Issues



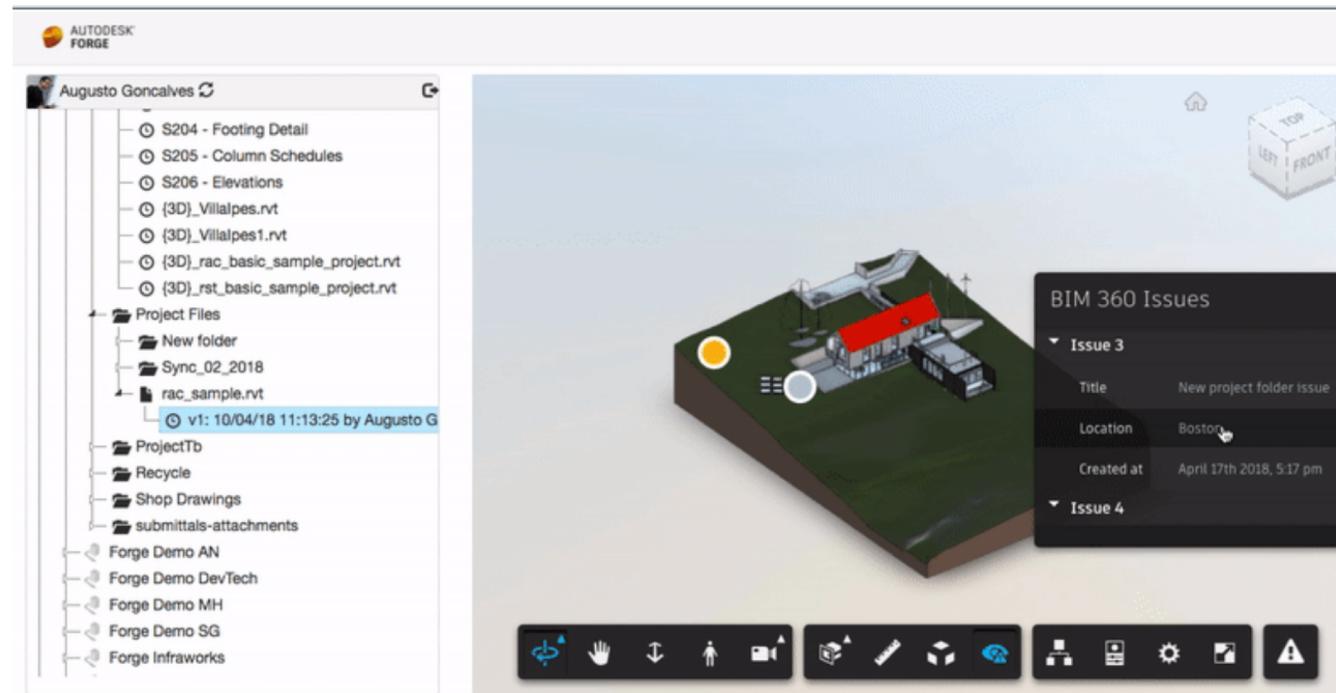
Pushpin Forge Viewer Extension

- 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>

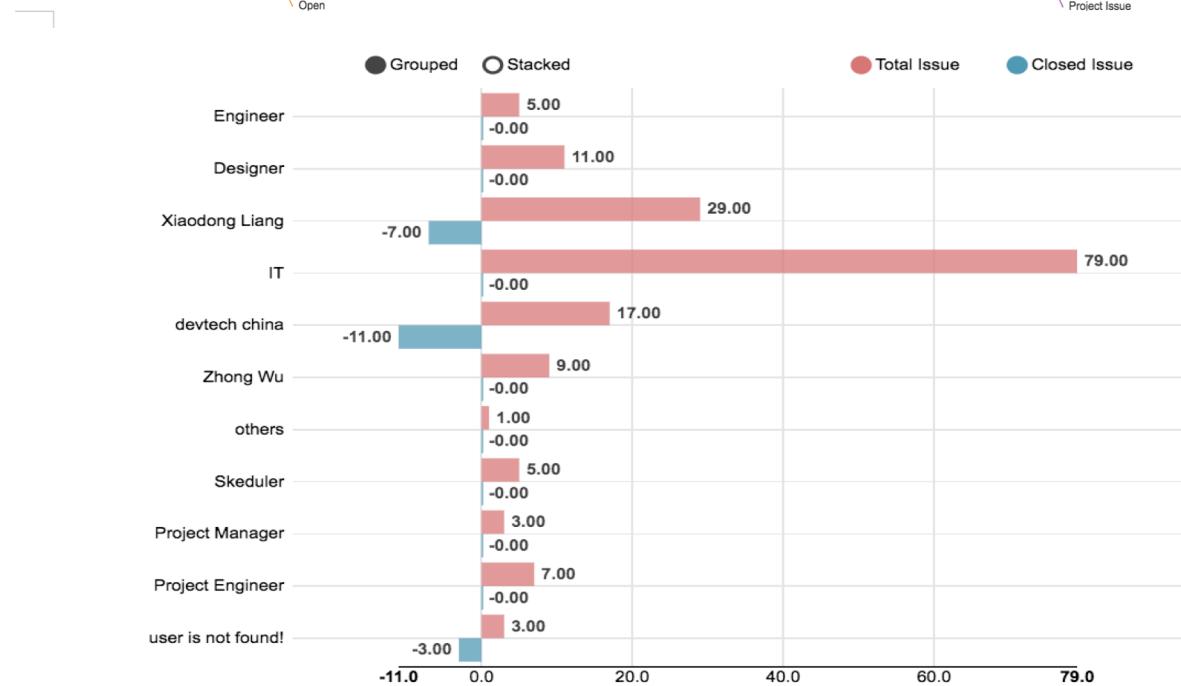
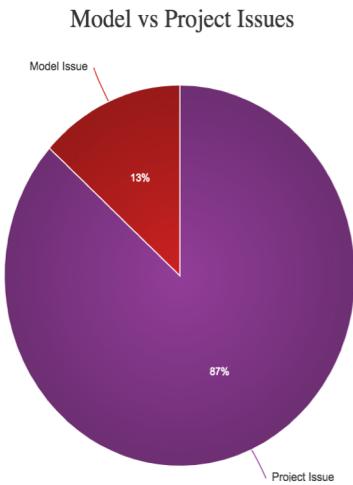
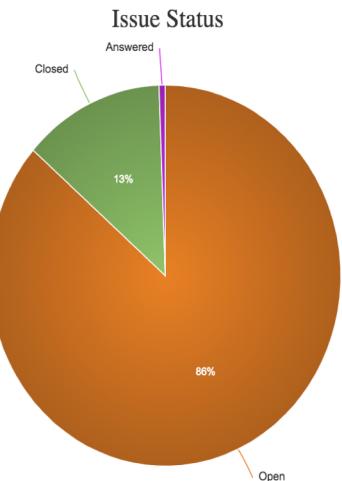
The image shows two screenshots of the BIM 360 Issue API Demo application.

The top screenshot displays the 'Document Issues Due At' section for '08/08/2018'. It lists attachments including '00.png', 'RevitTest.png', and several screen shots from January to August 2018. Below this is a detailed view of an issue, including attributes like 'answer: null', 'answered_at: null', and 'Comments' (with entries from August 2018). A large 3D model of a building is visible on the right.

The bottom screenshot shows an 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, Type, Company, Due Date, Associated To, Create At, Create By, Updated At, Attachment, and Comments. The 'Comments' column contains links to the comments made in the BIM 360 interface.

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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