

## Contact

autodesk@diatec.co.uk +  
contact@diatec.ie



# HOW AUTODESK CONSTRUCTION CLOUD CAN SUPPORT LEAN ON YOUR CONSTRUCTION PROJECTS

Jonathan Reinhardt

MCIAT, MSc. BIM, BSc. Arch. Tech (Hons)

# How ACC supports LEAN?



# AUTODESK Construction Cloud

The image shows a screenshot of the Autodesk Construction Cloud web interface. The browser address bar shows 'acc.autodesk.com/docs/files/projects/d385...'. The interface includes a left-hand navigation menu with options like 'Files', 'Reviews', 'Transmittals', 'Issues', 'Reports', 'Members', 'Bridge', and 'Settings'. The main content area displays a 'Files' view with a folder tree under 'Project Files' and '01. WORK IN PROGRESS'. An iPad is overlaid in the center, displaying the time '09:41' and date 'Tuesday 12 September'. On the right side, there is a table with columns for 'Last updated', 'Updated by', and 'Review status'. The table contains several rows of data, including dates, user names, and review statuses like 'Rejected' and 'Approved'.

Last updated	Updated by	Review status
17 Aug 2023 13:07	Jonathan R	--
7 Apr 2022 12:19	jonathan Reinha	--
10 Aug 2022 09:47	Jonathan R	--
23 Sep 2022 10:25	Jonathan R	--
9 May 2023 12:48	Jonathan REINH	
13 Sep 2023 11:40	Jonathan R	
6 Oct 2023 13:29	Joe Plumber	
9 May 2023 12:42	Jonathan REINH	
9 May 2023 12:49	Jonathan REINH	
9 May 2023 12:49	Jonathan REINH	
9 KB 23 Feb 2023 14:53	Jonathan REINH	Rejected
3 KB 1 Sep 2023 09:55	Jonathan R	Approved

# AUTODESK Construction Cloud

	AUTODESK BIM COLLABORATE / BIM COLLABORATE PRO*		AUTODESK TAKEOFF	AUTODESK BUILD				
Capabilities	Design Collaboration	Coordination	Quantification	Project Management	Cost Management	Quality	Safety	Project Closeout
Workflows	<ul style="list-style-type: none"> <li>Constructability Review</li> <li>Change Visualization</li> <li>* <a href="#">Collaboration for Civil 3D / Revit / Plant 3D</a></li> <li>Issue Management</li> </ul>	<ul style="list-style-type: none"> <li>Model Coordination</li> <li>Clash Detection</li> <li>Constructability Review</li> <li>Issue Management</li> </ul>	<ul style="list-style-type: none"> <li>Scope Analysis</li> <li>2D/3D Takeoff</li> </ul>	<ul style="list-style-type: none"> <li>RFIs</li> <li>Submittals</li> <li>Meeting Minutes</li> <li>Daily Reports</li> <li>Photos</li> <li>Scheduling</li> </ul>	<ul style="list-style-type: none"> <li>Contract Creation / Administration</li> <li>Change Orders</li> <li>Payment Applications</li> <li>Forecasting</li> </ul>	<ul style="list-style-type: none"> <li>Quality Planning</li> <li>Quality Checking</li> <li>Punchlists</li> <li>Issue Management</li> </ul>	<ul style="list-style-type: none"> <li>Safety Planning</li> <li>Safety Training</li> <li>Safety Observations</li> <li>Safety Inspections</li> </ul>	<ul style="list-style-type: none"> <li>Commissioning</li> <li>Handover Documentation</li> <li>Final Completion</li> <li>As-Built Survey</li> </ul>
	AUTODESK DOCS Document Management			Document Control · Document Versioning · Document Approvals · Issues · Compare				
Unified Data	Models · Drawings · Documents · Cost Items · Assets · As-Built · Photos · Videos							
Insight	Dashboards · Reports · Construction IQ · Data Connector							
Admin	Admin Console · Permissions · Project Setup · Templates · Notifications							

# ENABLING FILE NAMING CONVENTIONS



# Interrogate and attach all the data you require

Human readable description to further identify files

Hover over codes to find out what they represent

Use code filters to avoid folder labyrinths

Holding area

Deleted items Settings

Export Search and filter

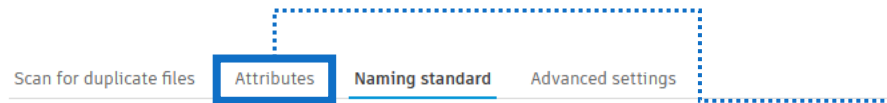
Name ↑	Description	Project	Originator	Funci... break...	Spatial breakdown	Form	Discipline	Number	Status	Revision	Uniclass
<input type="checkbox"/> EXAMINFRA03-DIA-MRD-MW1-M-C-00001.rvt	Mooring dolphin - main wall lo...	EXAMINFRA03	DIA	MRD	MW1	M	C	00001	S0	P01	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-MRD-MW1-M-C-00002.rvt	Mooring dolphin - main wall lo...	EXAMINFRA03	DIA	MRD	MW1	M	C	00002	S0	P01	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-PAV-ZZ-M-C-00001.dwg	Finished paving level surface ...	EXAMINFRA03	DIA	PAV	ZZ	M	C	00001	S0	P01	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-PAV-ZZ-M-C-00001.shared.dwg	Finished paving level surface ...	EXAMINFRA03	DIA	PAV	ZZ	M	C	00001.shared	S0	P03	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-PAV-ZZ-M-C-00002.dwg	Line marking design	EXAMINFRA03	DIA	PAV	ZZ	M	C	00002	S0	P01	FI_60_55
<input type="checkbox"/> EXAMINFRA03-DIA-QWS-MW1-M-C-00001.rvt	Quay wall structure - main wall...	EXAMINFRA03	DIA	QWS	MW1	M	C	00001	S0	P03	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-QWS-MW2-M-C-00001.rvt	Quay wall structure - main wall...	EXAMINFRA03	DIA	QWS	MW2	M	C	00001	S0	P02	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-QWS-MW3-M-C-00001.rvt	Quay wall structure - main wall...	EXAMINFRA03	DIA	QWS	MW3	M	C	00001	S0	P02	FI_60_53
<input type="checkbox"/> EXAMINFRA03-DIA-QWS-MW4-M-C-00001.rvt	Quay wall structure - main wall...	EXAMINFRA03	DIA	QWS	MW4	M	C	00001	S0	P02	FI_60_53

Intuitive interface helps support and guide users

File names are automatically transposed into filterable columns

Include customisable metadata to suit your organisation or meet client requirements

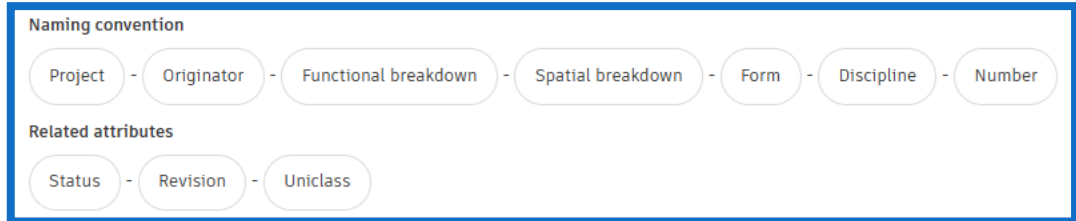
# Customised to suit requirements



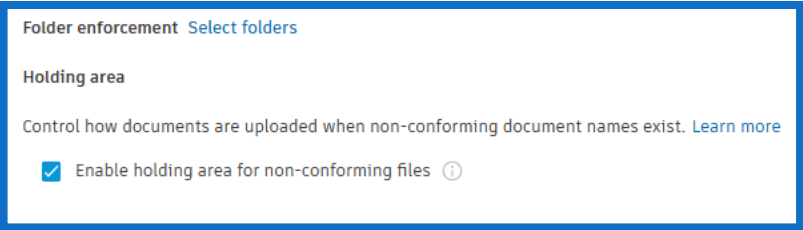
Define various naming fields to suit requirements and allowable inputs such as free-form data entry, dates, dropdown lists, etc. including constraints such as character numbers and data types

Default - ISO 19650

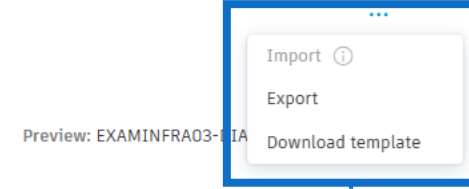
File attributes [Customize](#)



Configure included fields, presentation order, delimiters, and included metadata



Ensure naming conventions are followed and policed by selecting areas of the CDE where it is to be enforced and allow for a holding area for files not conforming to the standard



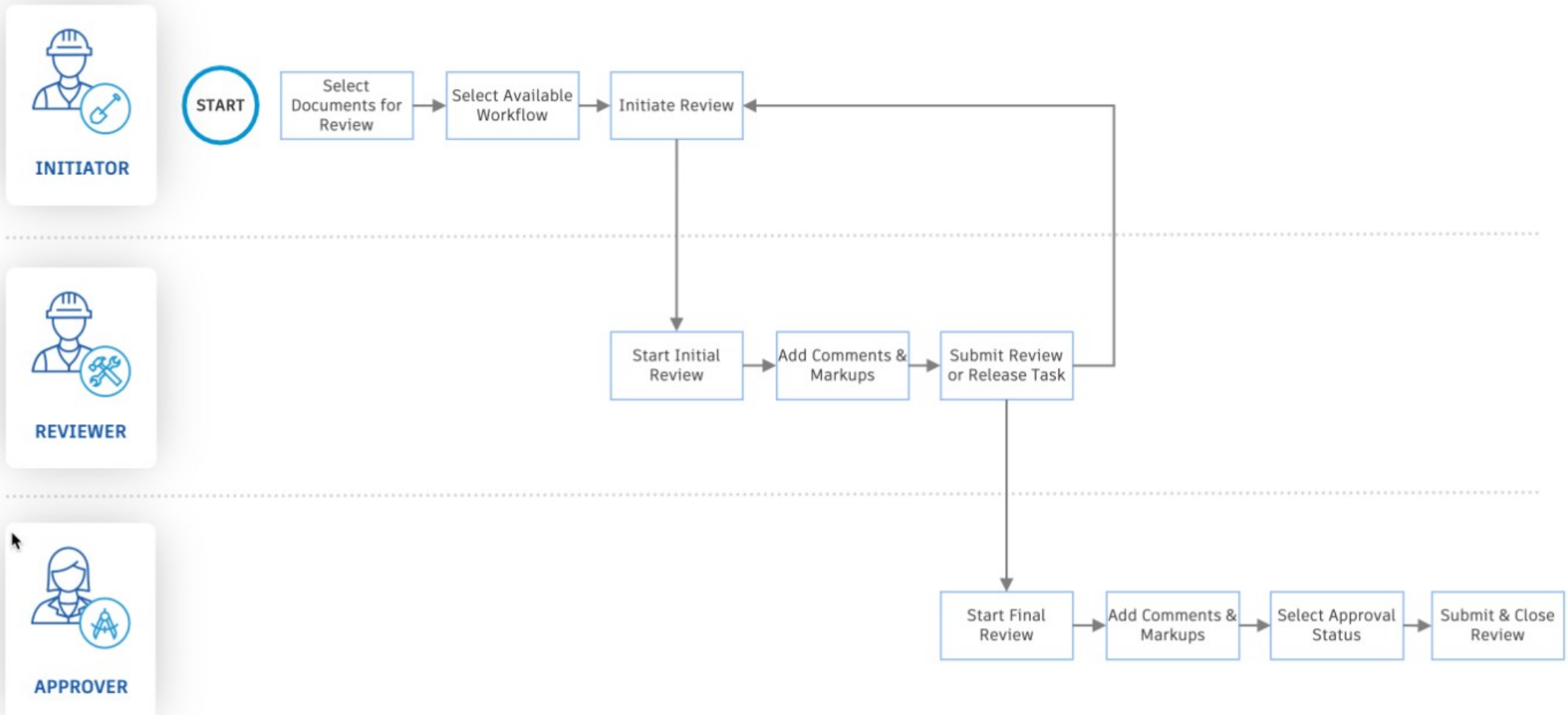
Import predefined / preconfigured naming conventions from CSV for repeat client or internal standards

# SUPPORTING QUALITY MANAGEMENT SYSTEMS (QMS)



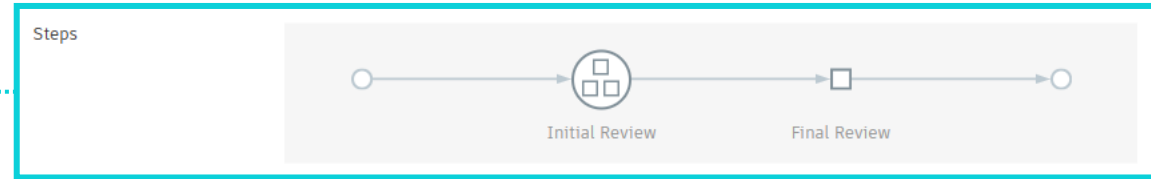


# Document Approval Workflow (Reviews)



# Custom review and approval workflows

Configure out of the box workflows to suit various review and approval workflows



Assign tasks by User, Role, or Company

**Initiator \***  
Engineer X

**Step name** Initial Review  
**Reviewer Type \*** Multiple Reviewers  
**Key reviewers \*** Team Leader X  
**Optional reviewers** BIM Coordinator X  
**Time allowed \*** 3 Calendar day...

**Step name** Final Review  
**Approver \*** Project Manager X  
**Time allowed \*** 3 Calendar day...

Ensure delays are mitigated against by including review deadlines

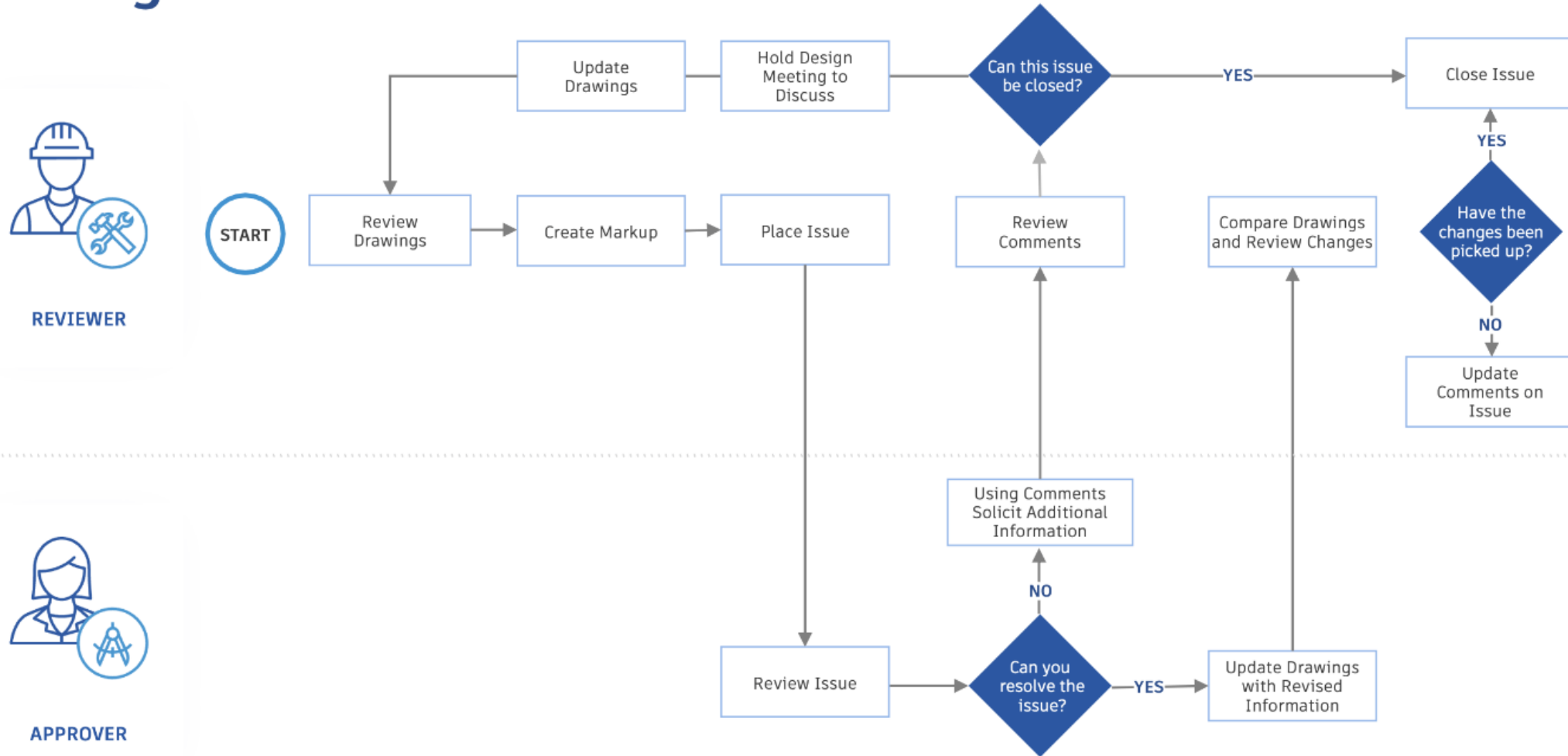
Additionally:  
Decide upon what happens when the review is complete such as updating metadata, including markups and comments, and copying the file to a destination folder

File review status	Value *	Review status label *	Icon *
	Approved	Approved	
	Rejected	Rejected	
	Approved	Approved w/ comments	

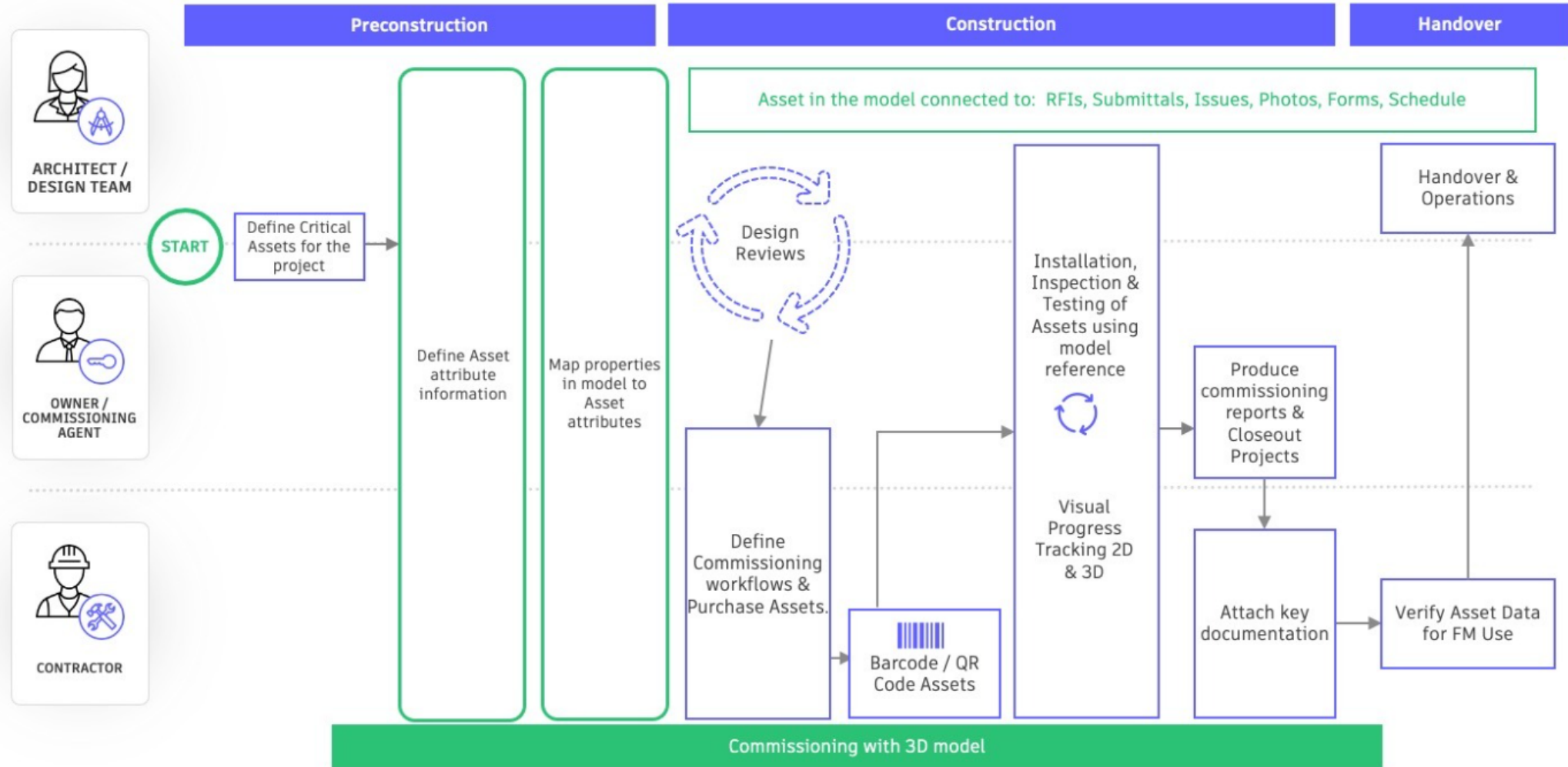
Add status

Customise review responses aligning to your processes

# Design Review Workflow



# Asset & Equipment Tracking Workflow



# Assets Tracking

Track object installation & link barcodes

- Sheets
- Files
- Issues
- Forms
- Photos
- RFIs
- Submittals
- Meetings
- Correspondence
- Schedule
- Assets**

## Assets

All Categories			
+ Create asset			
<input type="checkbox"/>	Name	Category	Status
<input type="checkbox"/>	AHU-999111	... > Air Cooled Chiller	Installed
<input type="checkbox"/>	AHU-998222	... > Air Cooled Chiller	Functional P...
<input type="checkbox"/>	AHU-997222	... > Air Cooled Chiller	Installed
<input type="checkbox"/>	AHU-998	... > Air Cooled Chiller	Functional P...
<input type="checkbox"/>	AHU-997	... > Air Cooled Chiller	Acceptance
<input type="checkbox"/>	AHU-999	... > Air Cooled Chiller	Acceptance



# Locations



**i** This form is visible to viewers.

### Form Details

Form date  
17/10/2023

ID  
#51

Location  
ROOM 100

Description

Due date  
Select date

Once submitted, this form will be visible to 3 members

References  
Add references

Add references to other objects or project files.

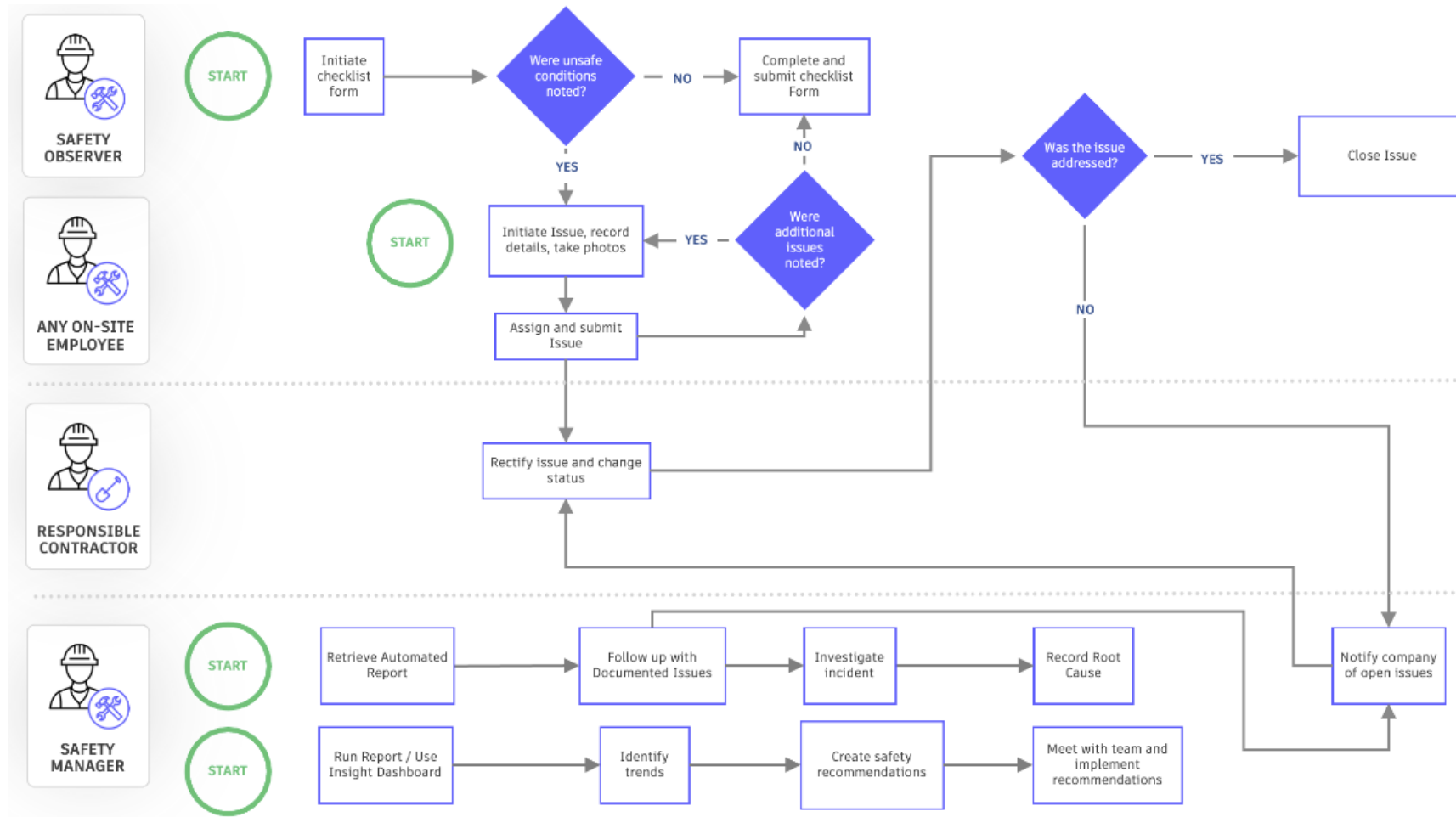
### 1. Ductwork

1.1 Confirm all materials are in compliance with specification  
 Yes  No  NA  
Photos Issues Note

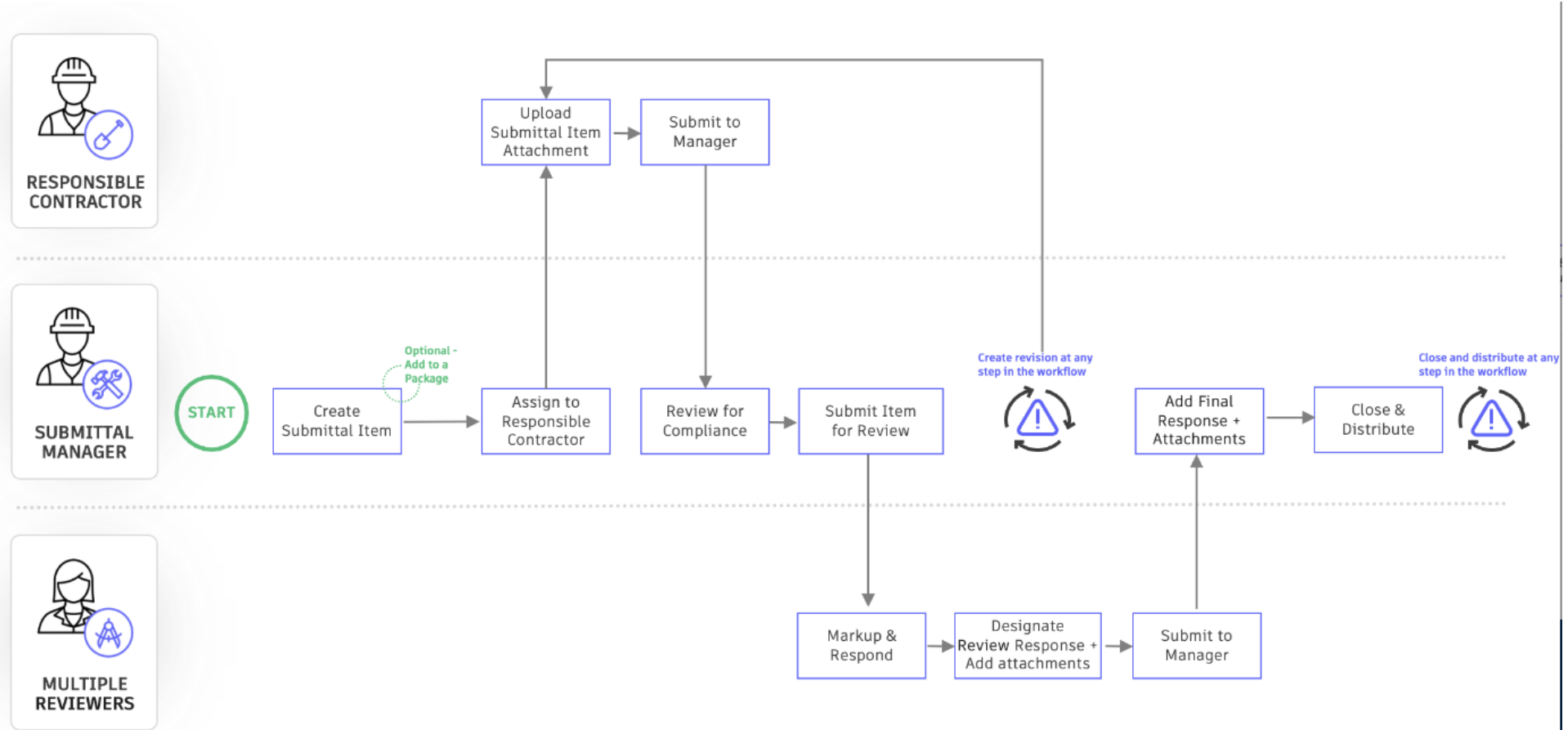
1.2 Confirm flange clamps are installed as required  
 Yes  No  NA  
Photos Issues Note

Signature \*  
+ Add signature  
Note

# Safety - Suggested Workflow

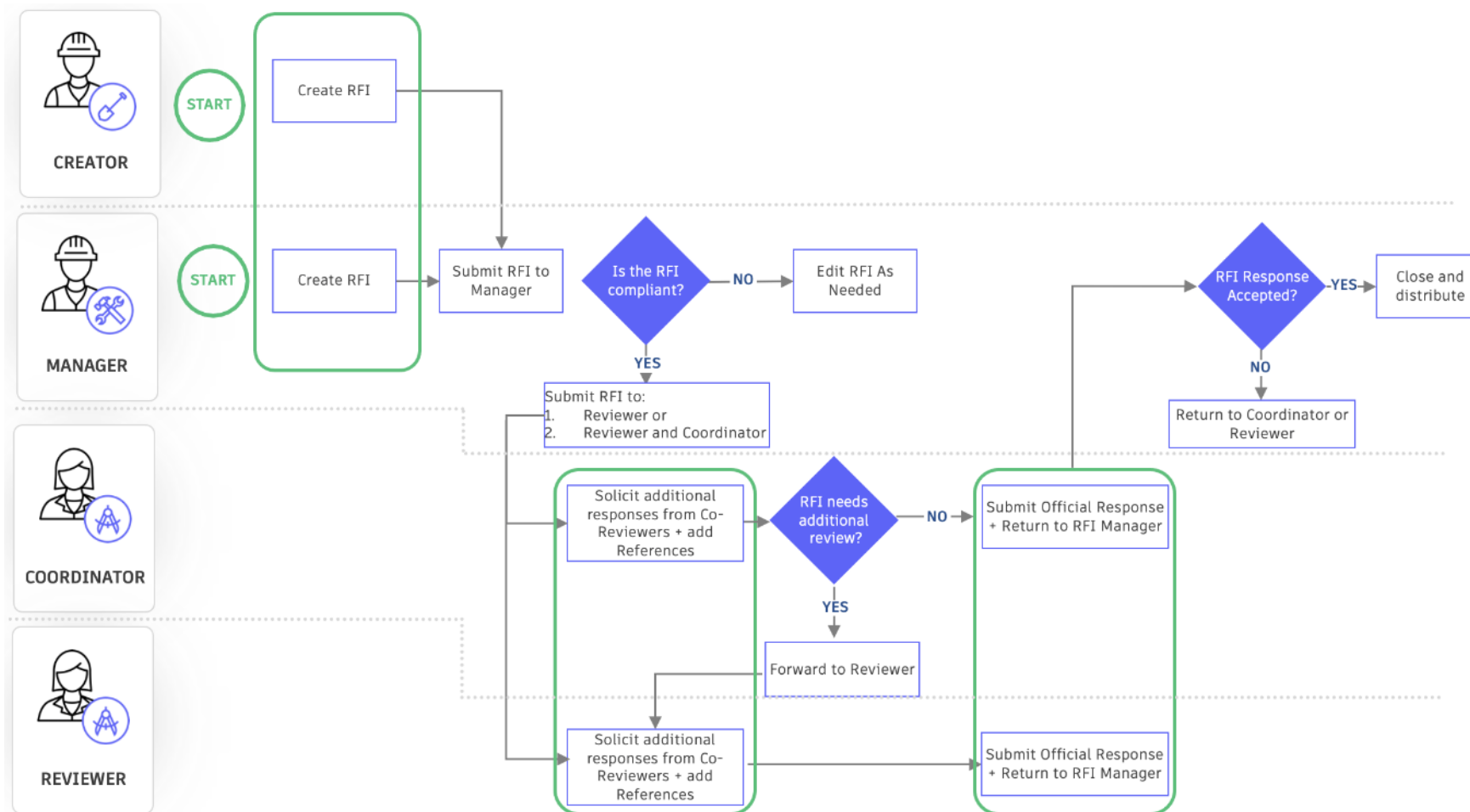


# Technical Submittals

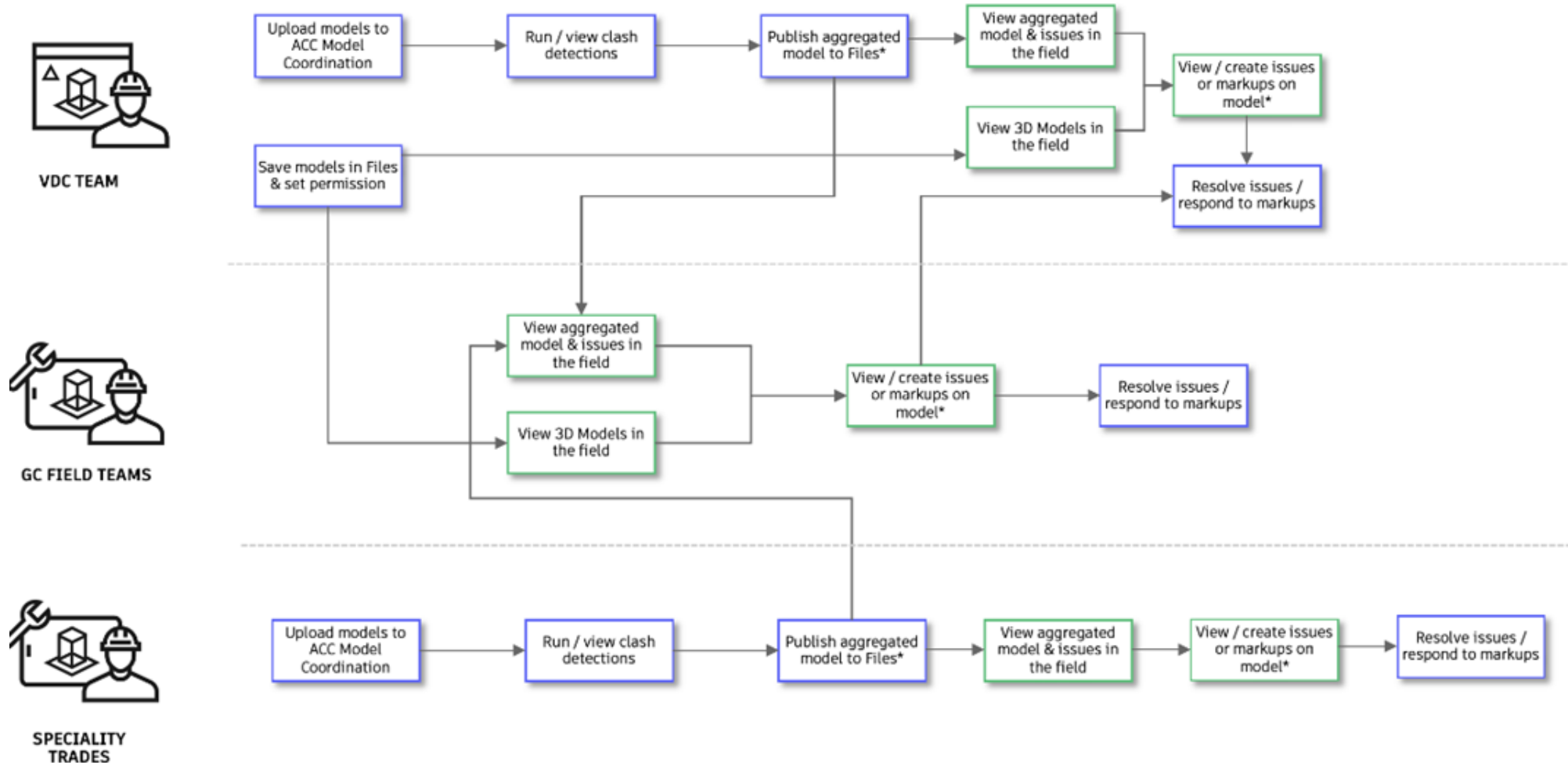




# RFI Workflow



# 3D BIM Model - Site Use Workflow



# Issues

The screenshot displays a software interface for project management and design collaboration. At the top, the project name is "JR\_001\_ALL\_ACC\_ARPRT\_DUBLIN". Below this is a "Project timeline" section with a horizontal axis from 26/04/2022 to 19/10/2023, showing various task bars and markers. A red hand-drawn line highlights the "Architecture (A)" track. The central part of the interface is a 3D architectural rendering of an interior space with a staircase, labeled "01 - Entry Level". On the left, an "Issues" panel lists several design issues, with #219 selected. On the right, a detailed view of "Issue #219" is shown, including its status, type, description, assignee, and location.

Design Collaboration | JR\_001\_ALL\_ACC\_ARPRT\_DUBLIN

Project timeline

Shared

Architecture (A)

26/04/2022 | 19/10/2023

Architecture (A)

Sets | Sheets | 3D views | Project Model

Issues

- #243 - Design  
Open · Design  
Nathan A | No due date
- #219 - Design  
Open · Design  
Nathan A | No due date
- #218 - Design  
Open · Design  
Joe Plumber | No due date
- #215 - Design  
Open · Design  
Unassigned | No due date
- #213 - Import Symbol [427494] and 5 other objects.

Issue #219

Details | Activity log

Unpublish | Delete

Status: Open

Type: Design > Design

Description: Unspecified

Assigned to: Nathan A (ABC ENGINEERS LTD.)

Watchers: Nathan A

Location: Unspecified

# Email Correspondence

**AUTODESK Construction Cloud**

Design Collaboration | JR\_001\_ALL\_ACC\_ARPRT\_DUBLIN

- Home
- Issues
- Project Status
- Changes
- Meetings
- Correspondence**
- Reports
- Members
- Bridge
- Settings

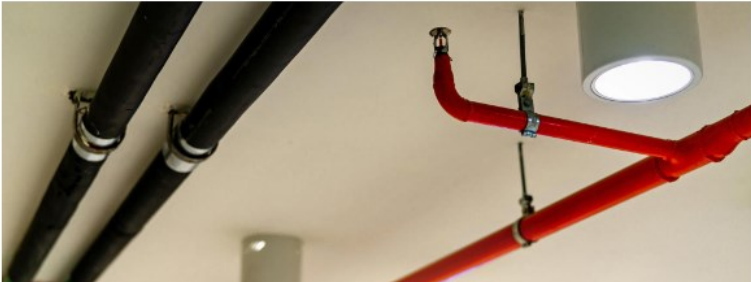
Correspondence / Site Photos

[Reply](#)

Content GCOR-3-1

From: Jonathan R <jreinhardt@diathec.ie>  
To: Project email address <jr\_001\_all\_acc\_resi\_dublin-awq75nrie276qv8@corr.acc.autodesk.com>  
CC:  
Subject: Site Photos  
Date: Wed, 25 Oct 2023 at 10:15

Pls see site photos below.



Site Photos - Message (HT...)

File | Message | Help


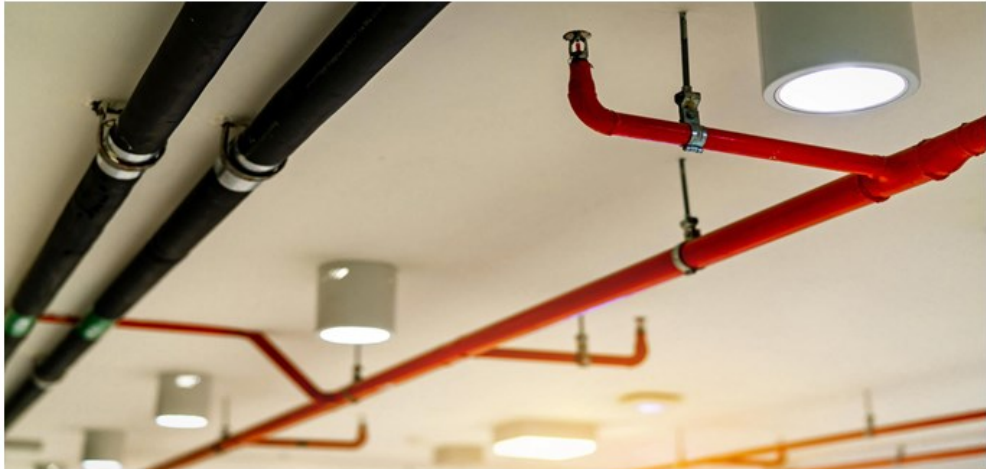
- Delete
- Respond
- Share to Teams
- All Apps
- Quick Steps
- Move
- Tags
- Editing
- Immersive
- Translate
- Zoom
- Reply with Scheduling Poll
- Viva Insights

Site Photos

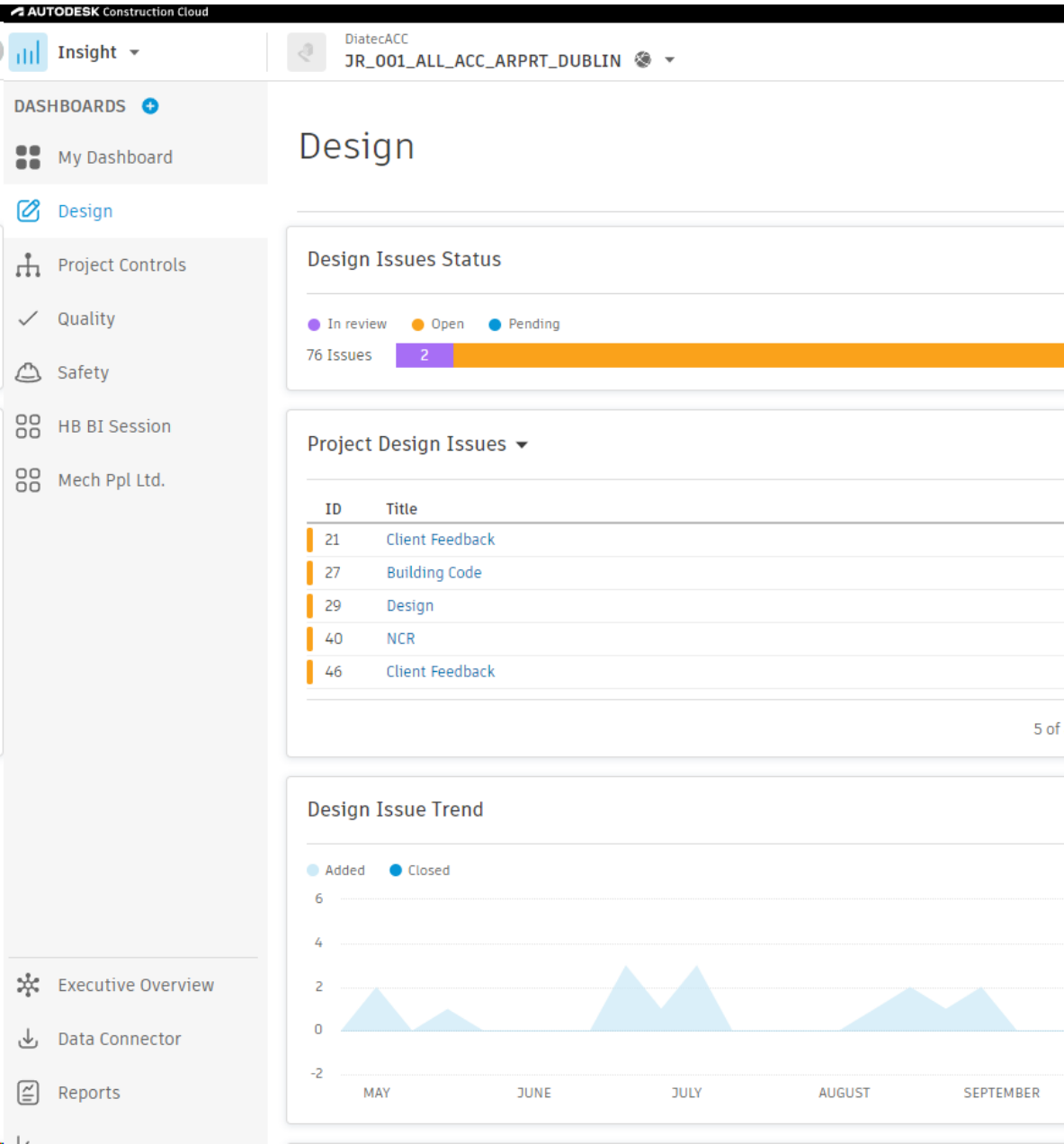
Jonathan Reinhardt  
To: jr\_001\_all\_acc\_resi\_dublin-awq75nrie276qv8@corr.acc.autodesk.com  
Wed 25/10/2023 10:15

- automatic-fire-sprinkler-safety\_096788483 (1).jpeg (564 KB)
- A101 - OFFICE - FLOOR PLAN - LEVEL 1.pdf (241 KB)

Pls see site photos below.



# Dashboards / Reporting



Issue detail-202310161346 (1).pdf | 8 / 36 | 100%

## Issue detail

### #224: Design

**diatec GROUP** | **AUTODESK** | Platinum Partner

**Status** | **Open**

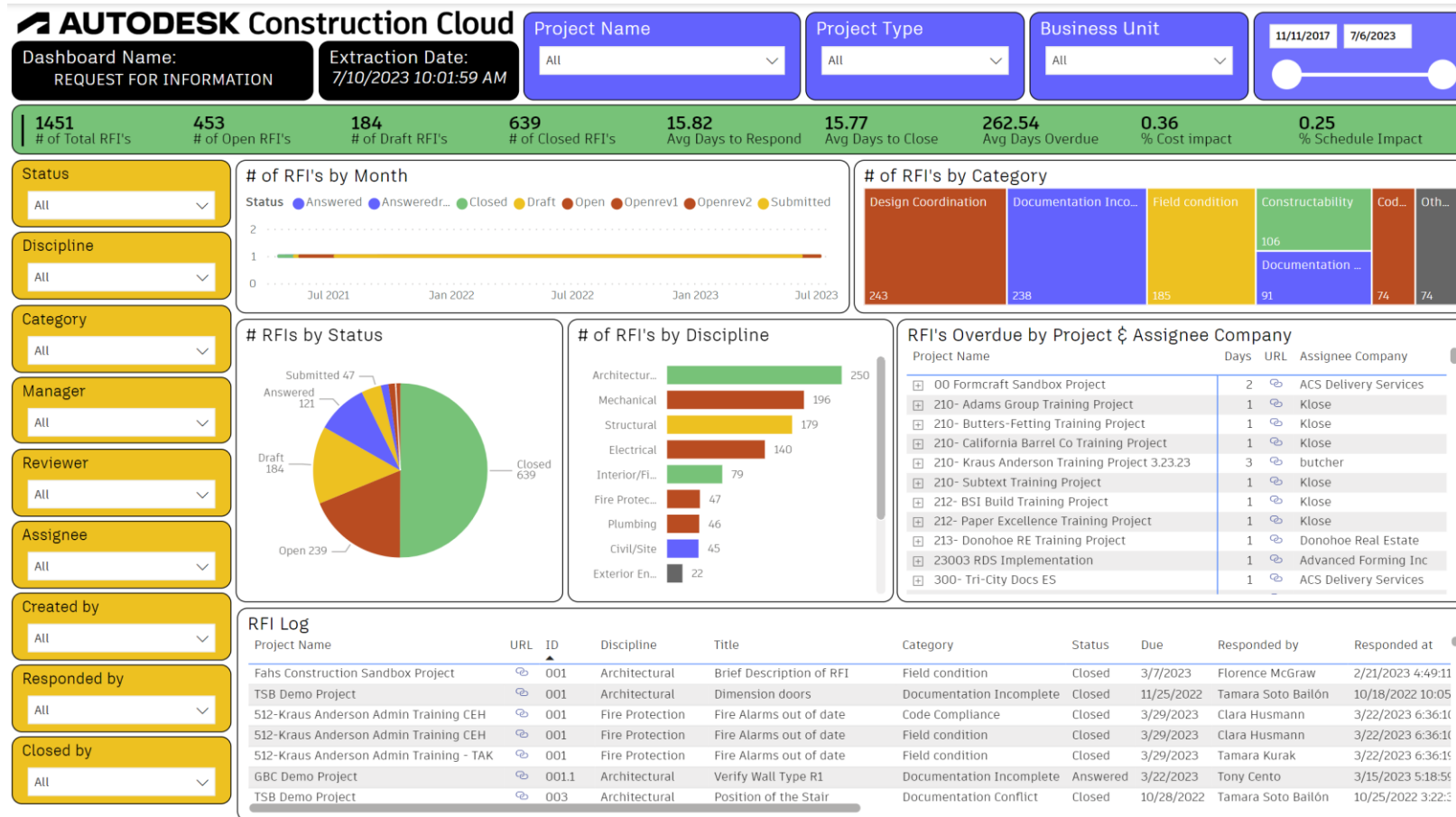
**Type** | **Design > Design**

### Standard fields

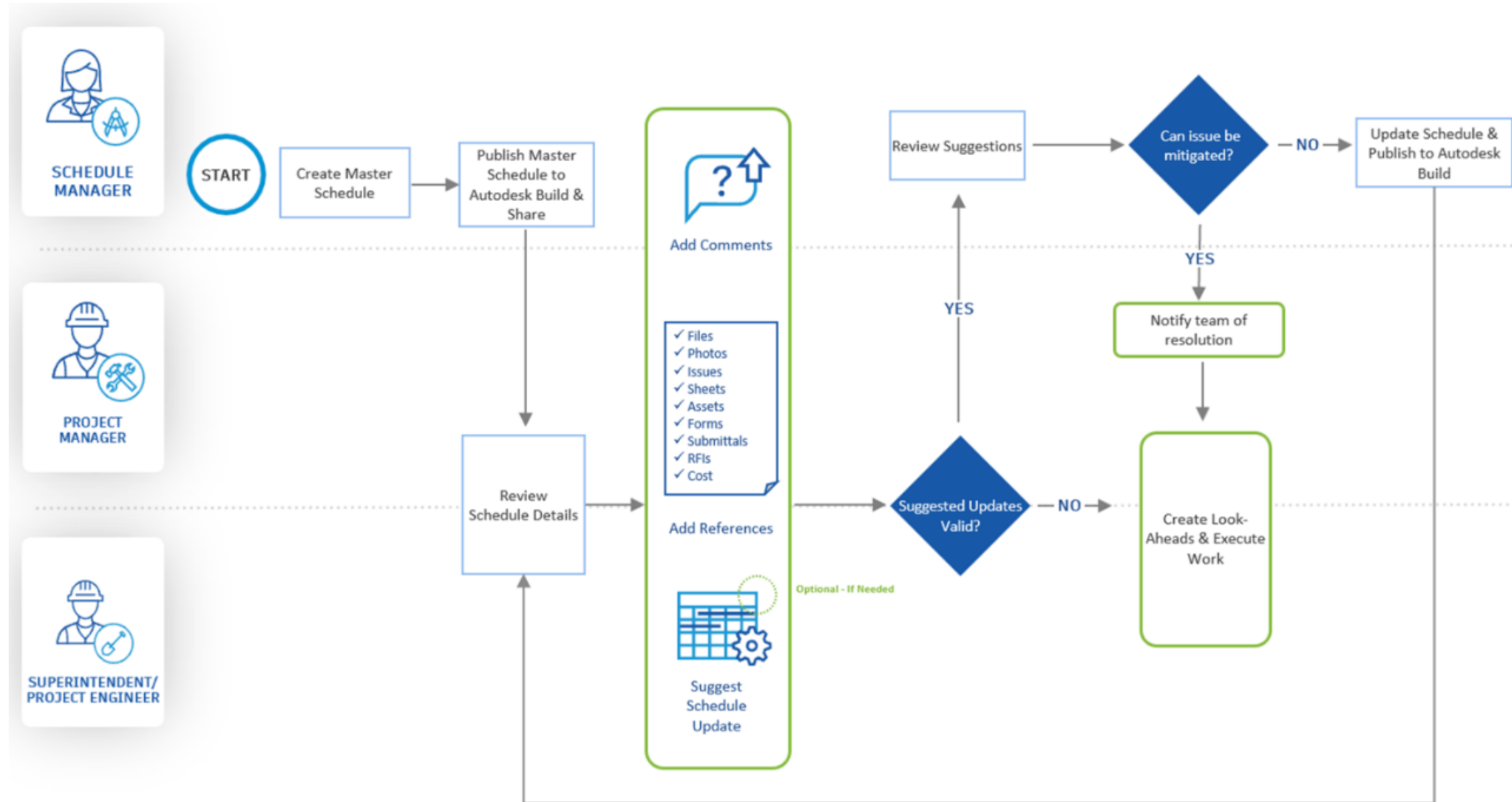
Description	—
Assigned to	Jonathan R (Best Builders (Main Con.))
Created by	Jonathan R (Best Builders (Main Con.))
Created on	8 Aug 2023
Location	—
Location details	—
Due date	—
Start date	—
Placement	DUB01-DTC-00-ZZ-DR-A-066.pdf
Root cause	—

# Custom Reporting

Link in custom dashboards in Power BI



# Schedule Management



# Construction Schedule

Upload MS Project, Asta or P6 files into Build > Schedule

Update schedule Viewing

Search activity...

Group Expand Collapse

ID	Activity name	Start	Finish	% Complete	Duration	Remai
44	Strip Topsoil & Stockpile	28 Jul 2008	28 Jul 2008	0%	1 days	1 days
45	Stake Lot for Excavation	28 Jul 2008	28 Jul 2008	0%	1 days	1 days
46	Rough grade lot	29 Jul 2008	29 Jul 2008	0%	1 days	1 days
47	Excavate for foundation	30 Jul 2008	31 Jul 2008	0%	2 days	2 days
48	Foundation	1 Aug 2008	3 Sept 2008	0%	24 days	24 day
49	Layout footings	1 Aug 2008	1 Aug 2008	0%	1 days	1 days
50	Dig Footings & Install Rei...	4 Aug 2008	4 Aug 2008	0%	1 days	1 days
51	Footing Inspection	4 Aug 2008	4 Aug 2008	0%	0 days	0 days
52	Pour footings	5 Aug 2008	5 Aug 2008	0%	1 days	1 days
53	Pin Footings	6 Aug 2008	6 Aug 2008	0%	1 days	1 days
54	Stock Block, Mortar, Sand	7 Aug 2008	7 Aug 2008	0%	1 days	1 days
55	Build Block Foundation	8 Aug 2008	28 Aug 2008	0%	15 days	15 day:
56	Foundation Certification	28 Aug 2008	28 Aug 2008	0%	0 days	0 days

Today Month 2008

May Jun Jul Aug Sep Oct

Strip Topsoil & Stockpile

Stake Lot for Excavation

Rough grade lot

Excavate for foundation

Layout footings

Dig Footings & Install Reinforcing

Footing Inspection

Pour footings

Pin Footings

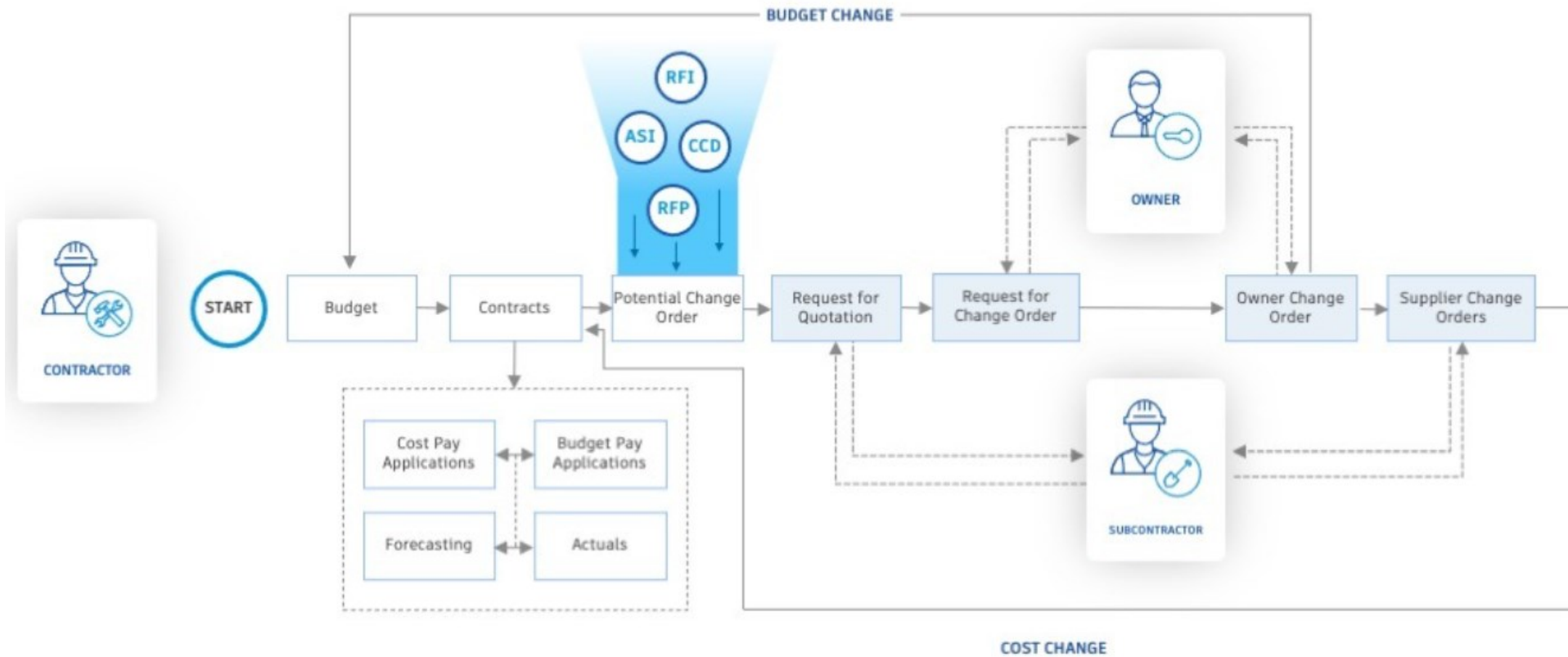
Stock Block, Mortar, Sand

Build Block Foundation

Foundation Certification



# Budget Control & Change Order Workflow



# Manage Project Variations, Request Quotes & Forecast Budget Impact Cost Management

**AUTODESK Construction Cloud**

**Cost Management** ACC Turner Towers

**Forecast**

Cost & Time Cash Flow

Create schedule task

My Home

Available in this project

- Docs
- Design Collaboration
- Model Coordination
- Takeoff
- AutoSpecs
- Build
- Cost Management**
- Insight
- Project Admin

Task Name	Start	End	Duration (Days)
Turner Towers Construction	Feb 1, 2021	Nov 14, 2022	466
Office Building Addition	Nov 16, 2020	Nov 14, 2022	521
Design and Engineering	Nov 16, 2020	Mar 12, 2021	81
Foundation	Feb 1, 2021	Jun 7, 2021	91
Structure	Jun 7, 2021	Jul 27, 2022	296
Mechanical/Electrical S...	Nov 8, 2021	Nov 10, 2022	264
Exterior Finishes	Feb 14, 2022	Aug 19, 2022	131
Interior Finishes	Jun 13, 2022	Nov 14, 2022	111

Budget Code	Budget Name	Schedule Task
100.007200.0MAT	Office Supplies	
100.007200.2GEN	Sundry Materials	
100.011100.3LAB	General Labour Crew	Turner Towers Constructi...
100.012100.0INT	Contingency	Turner Towers Constructi...
100.012100.1INT	Fee	Turner Towers Constructi...
100.013000.1GEN	Printing	Turner Towers Constructi...
100.013100.0INT	Design Manager	Design and Engineering
100.013100.1INT	Project Executive	Office Building Addition
100.013100.2INT	Project Manager	Office Building Addition
100.013100.3INT	Superintendent - Substructure	Foundation
100.013100.4INT	Superintendent - Superstruct...	Structure
100.013100.5INT	Superintendent - MEP	Mechanical/Electrical Sys
100.013100.6INT	Superintendent - Envelope	Exterior Finishes
100.013100.7INT	Project Engineer	Turner Towers Constructi...
100.015000.0SUB	Demolition	Design and Engineering
100.015000.1SIR	Finshment	Design and Engineering

2020-2022 Today

General Labour Crew Budget

Dates

Internal Budget Transfer History

Actual Cost

Name	Qty	Unit	Unit Cost	Total
				19,400.00
General Labour Crew...	4	wk	2,300.00	9,200.00
General Labour Crew...	4	wk	2,550.00	10,200.00

Forecast Adjustments

Add line item

Last modified: Oct 11, 2021

Description	Qty	Unit	Unit Cost	Total
				14,560.00
New adjustment	83.2	ea	175.00	14,560.00

Forecast Distribution

Amount % Per period

	Revised Budget	Work Completed	Actual Cost	Forecast Final Cost
Actual Total	206,640.00	9,200.00	19,400.00	221,200.00
Distribution Total	206,640.00	9,200.00	19,400.00	221,200.00

# Model Coordination

- Automatically detect clashes when models are published/updated
- Group clashes by object
- Create and assign coordination issues

Viewing 2 models (Unsaved View) ▾

Clashes

Filter and group ▲

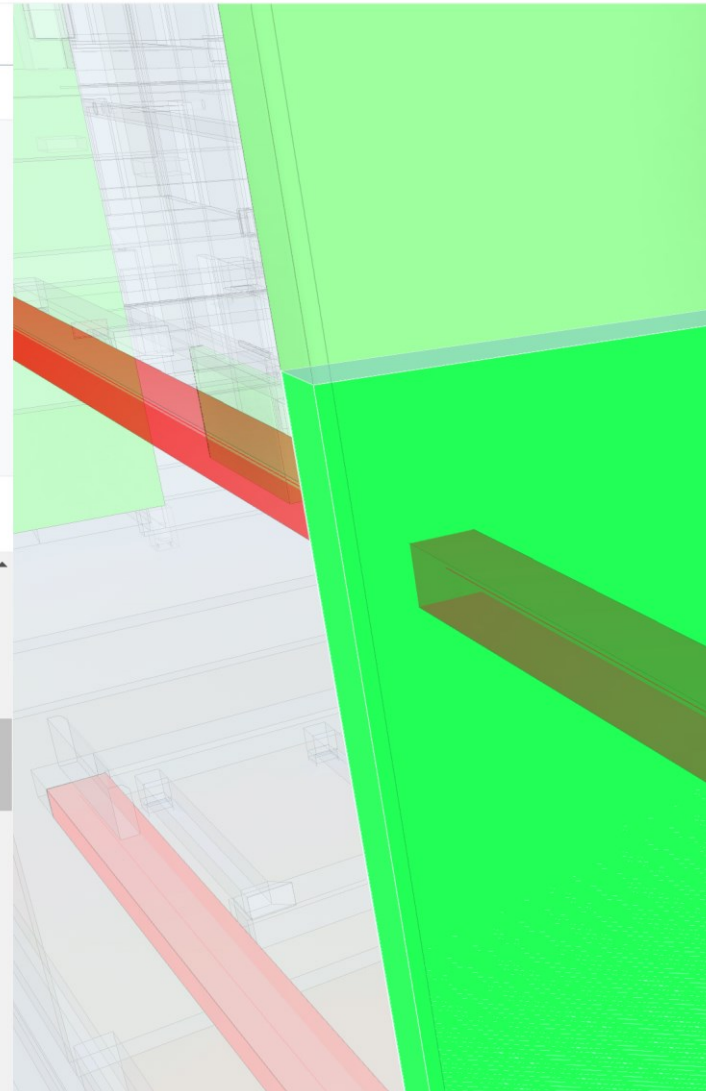
Primary model  
R21 LTU Housing -...COORD - MECH-DUCT ▾

Clash with  
R21 LTU Housing - ... - STEEL DETAILING ▾

Group by  
Object ▾

126 CLASHES (1 Selected)

<input checked="" type="checkbox"/>	Rectangular Duct [2486214] 1 clash with 1 other model
	R21 LTU Housing -...- STEEL DETAILING
<input checked="" type="checkbox"/>	Basic Wall [1646695]
<input type="checkbox"/>	▶ Rectangular Duct [2486339] 1 clash with 1 other model
<input type="checkbox"/>	▶ Rectangular Duct [2657848] 1 clash with 1 other model
<input type="checkbox"/>	▶ Rectangular Duct [2663884] 2 clashes with 1 other model
<input type="checkbox"/>	▶ Rectangular Duct [2664545] 2 clashes with 1 other model
<input type="checkbox"/>	▶ Rectangular Duct [2710523]



AUTODESK Construction Cloud

Model Coordination ▾

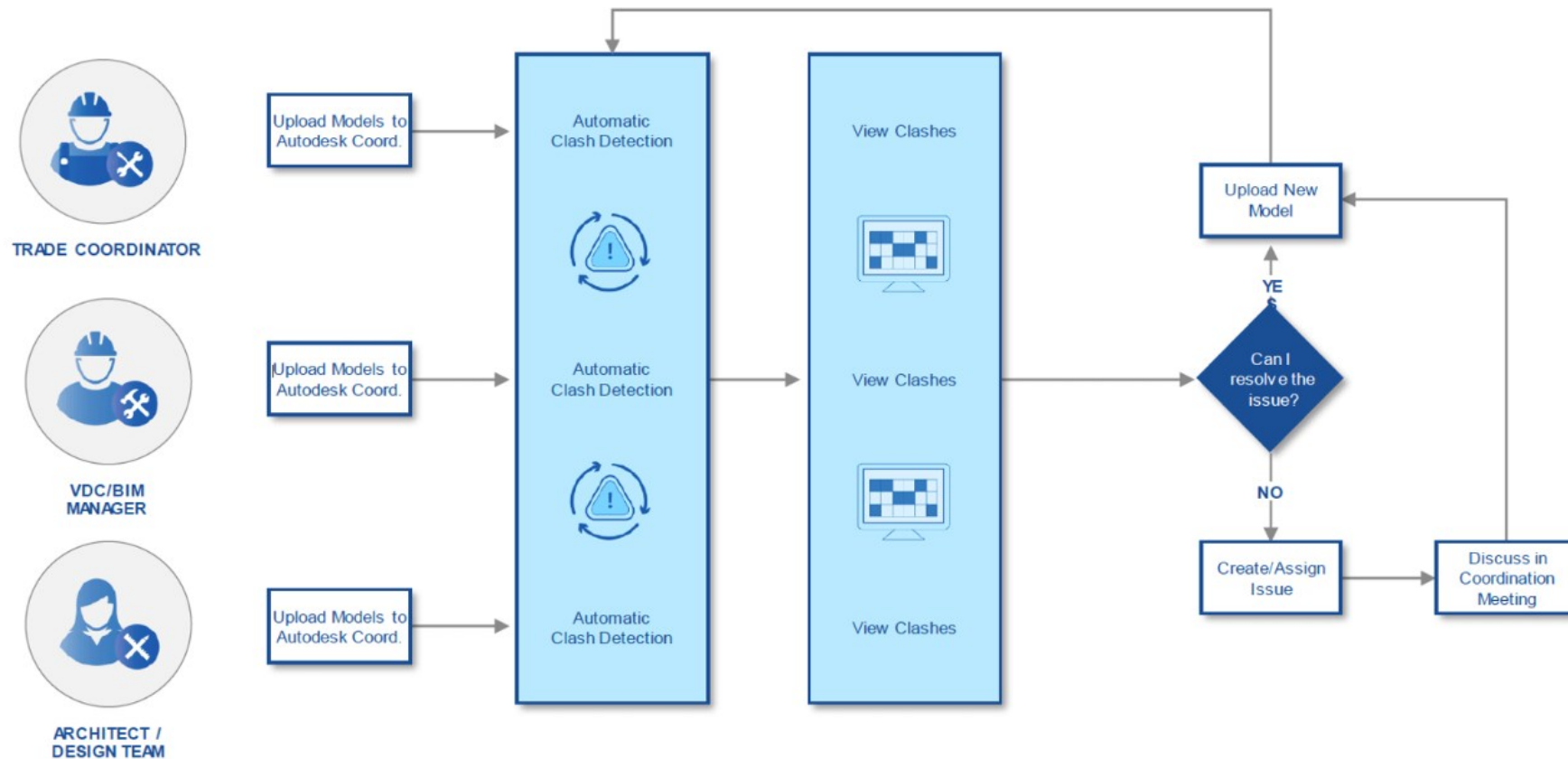
1222 GV

My Home

Available in this project

- Docs
- Design Collaboration
- Model Coordination**
- Takeoff
- AutoSpecs
- Build
- Cost Management
- Insight
- Project Admin

# Workflow to coordinate 3D BIM models

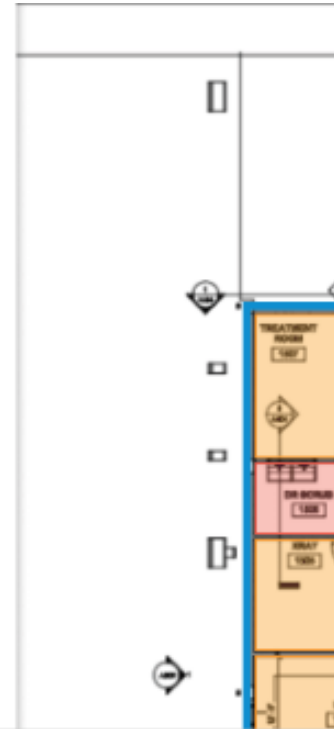


# 2D & 3D Quantification

Search issues by title...

31 Takeoff types

- 030000 - Concrete
  - 035000 - Cast Decks & Underlayment
    - 4-1/2" Upper Floor Lightw... 12.06 SF
    - 6" Roof Lightweight 12.06 SF
  - 033000 - Cast-In-Place Concrete
    - 12x24 Continuous Footings 2.345 SF



Takeoff

Search

- 12" Shell Brick 25348.00 SF
- HSS12X12X1/2 1826.00 LF
- HSS12X12X1/2
- HSS12X12X1/4
- Round Column 12" 1375.50 LF
- W10X33
- W14X120 12914.97 LF
- W40X149 240.00 LF
- W40X149
- W8X10



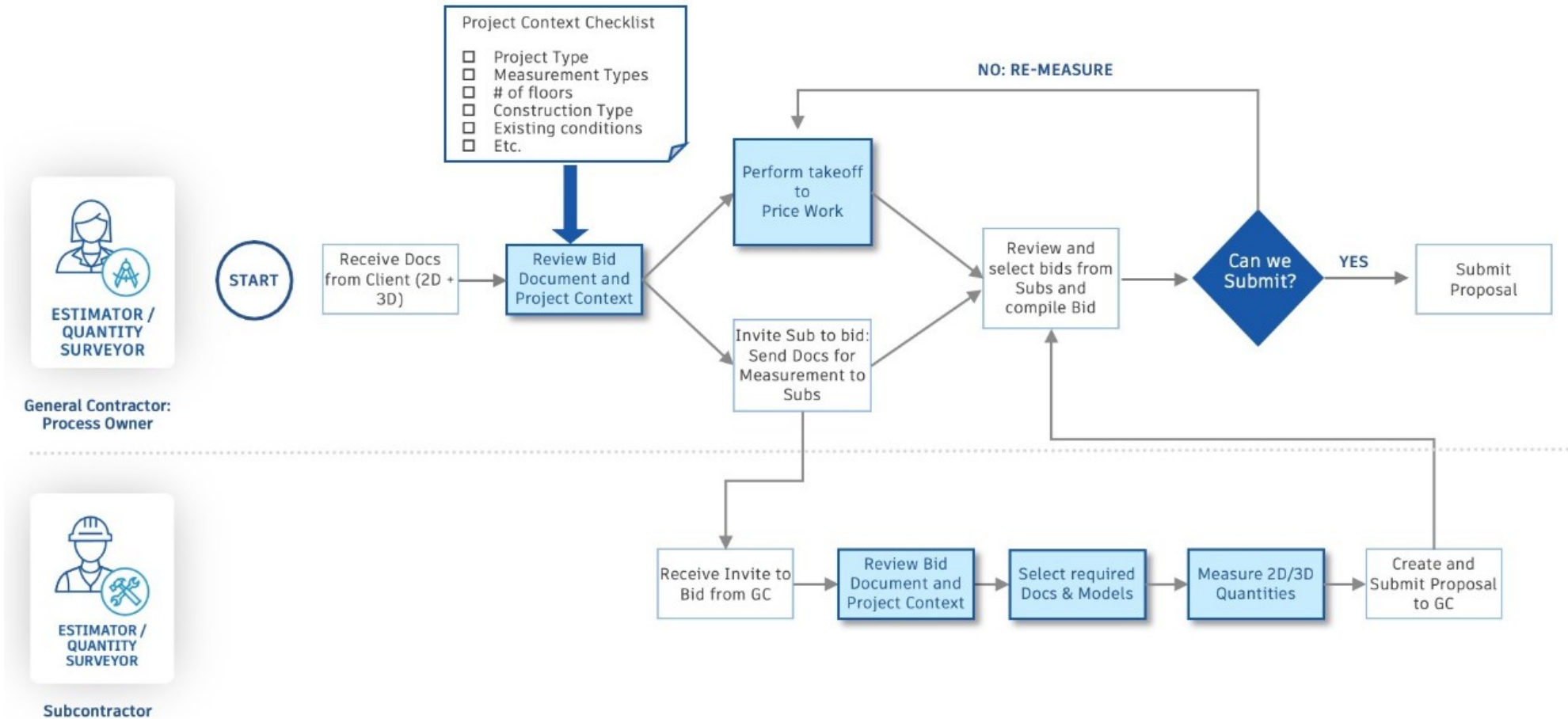
Inventory Group by: Takeoff

Name	Count	Quantity	Unit	Classification	Document	Round Colu
12" Shell Brick	6	25348.00	SF	040000 - Masonry	New Construct	<input type="checkbox"/> Takeoff Name
HSS12X12X1/2	44	1826.00	LF	051000 - Structural Metal Framing	New Construct	<input type="checkbox"/> Round Colu
Round Column 12"	21	1375.50	LF	050000 - Metals	New Construct	<input type="checkbox"/> Round Colu
W14X120	213	12914.97	LF	051000 - Structural Metal Framing	New Construct	<input type="checkbox"/> Round Colu
W40X149	4	240.00	LF	050000 - Metals	New Construct	<input type="checkbox"/> Round Colu

Inventory Snapshot: CD 100%

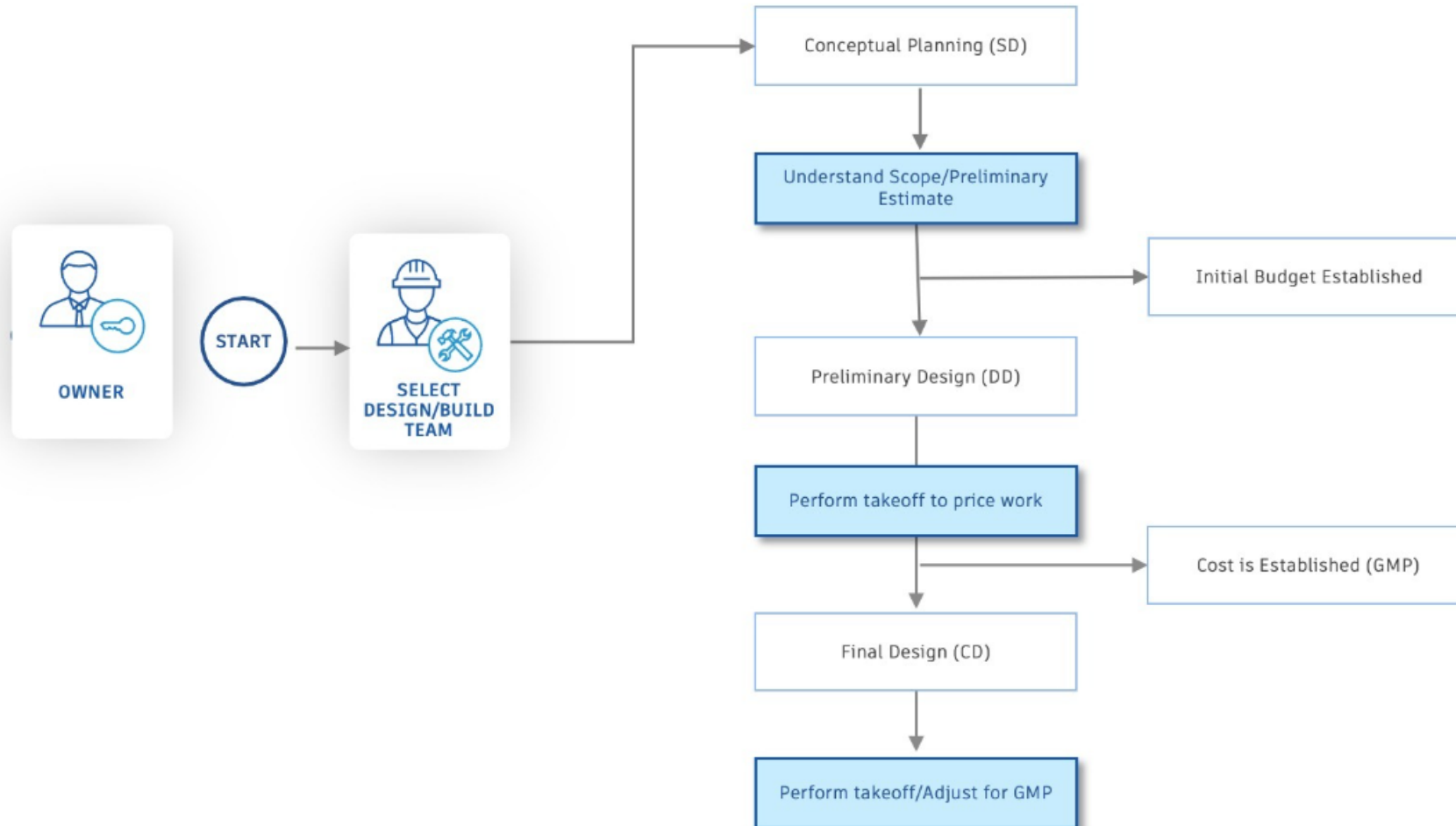
Name	Quantity	Unit	Classification
03000 - Concrete	-	-	-
4-1/2" Upper Floor Lightwave Beam	12.06	SF	035000 Cast Decks & Underlayment
12 x 24 Continuous Footings	2,345	SF	033000 Cast-in-Place Concrete

# Design Bid Build Workflow



Design-Bid-Build: General Contractor is engaged when bidding documents are 100% complete

# Design Build Workflow



Design-Build delivery method brings both design and construction functions together as one team as a single contractual entity to the owner.



# THANK YOU.

- **Contact**
- [autodesk@diatec.co.uk](mailto:autodesk@diatec.co.uk)
- [contact@diatec.ie](mailto:contact@diatec.ie)