

BIM LED COMMUNICATION: IN PRACTICE

PART OF CitA EVENT
Eliminating Information Silos & Poor
Information Practice

05 April 2023



1 INTRODUCTION



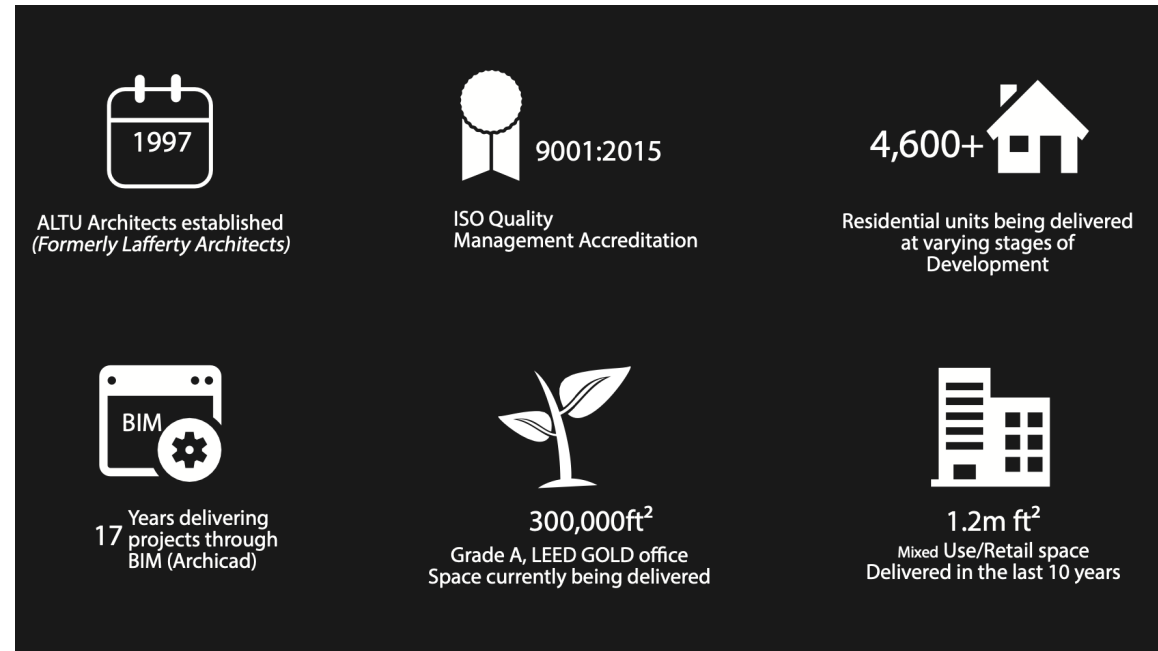
1.01 INTRODUCTION

Myself:

- Senior architectural technologist
- Qualifications – BSc (Hons) ACIAT
- AEC industry experience - 12yrs

Altu Architects:

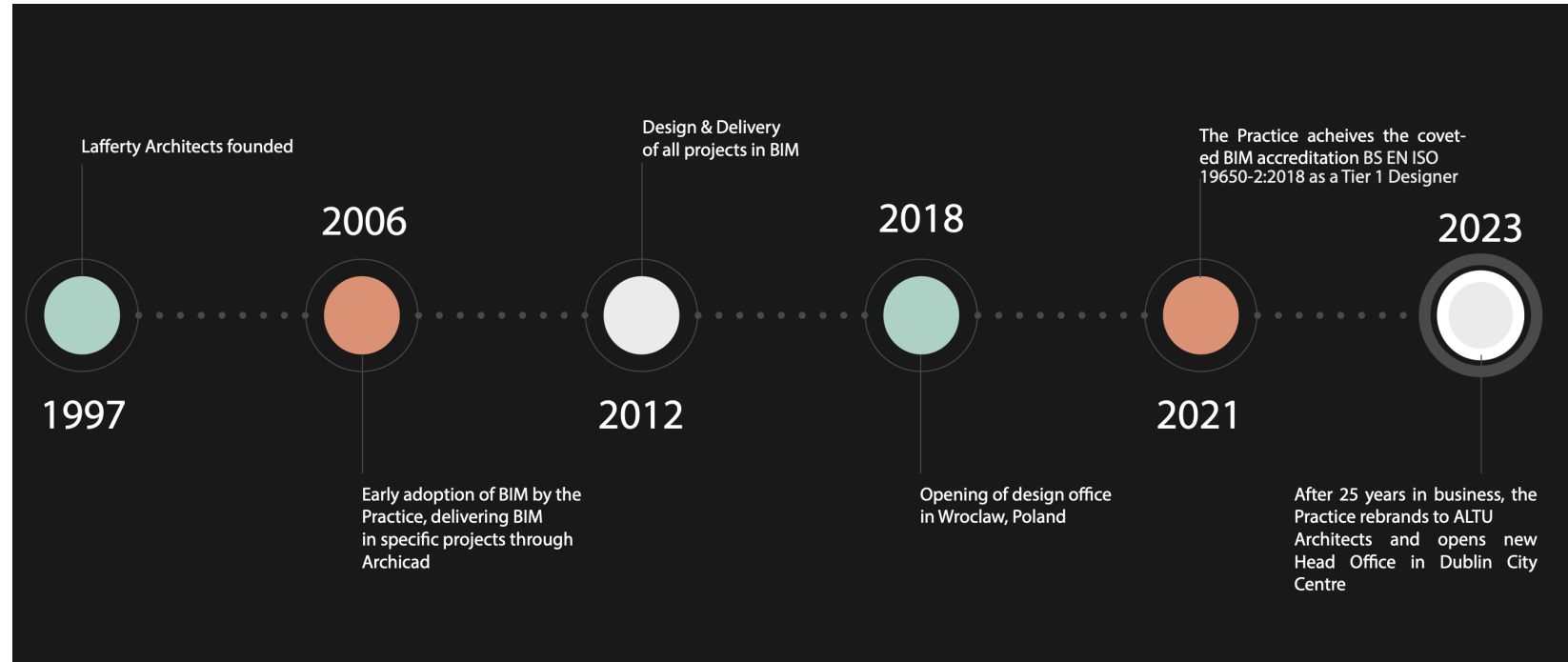
- Established 1997
- Approx. 34 architects and technologists in the Dublin office
- Working in commercial, retail, housing and healthcare sectors



1.02 ALTU INTRODUCTION

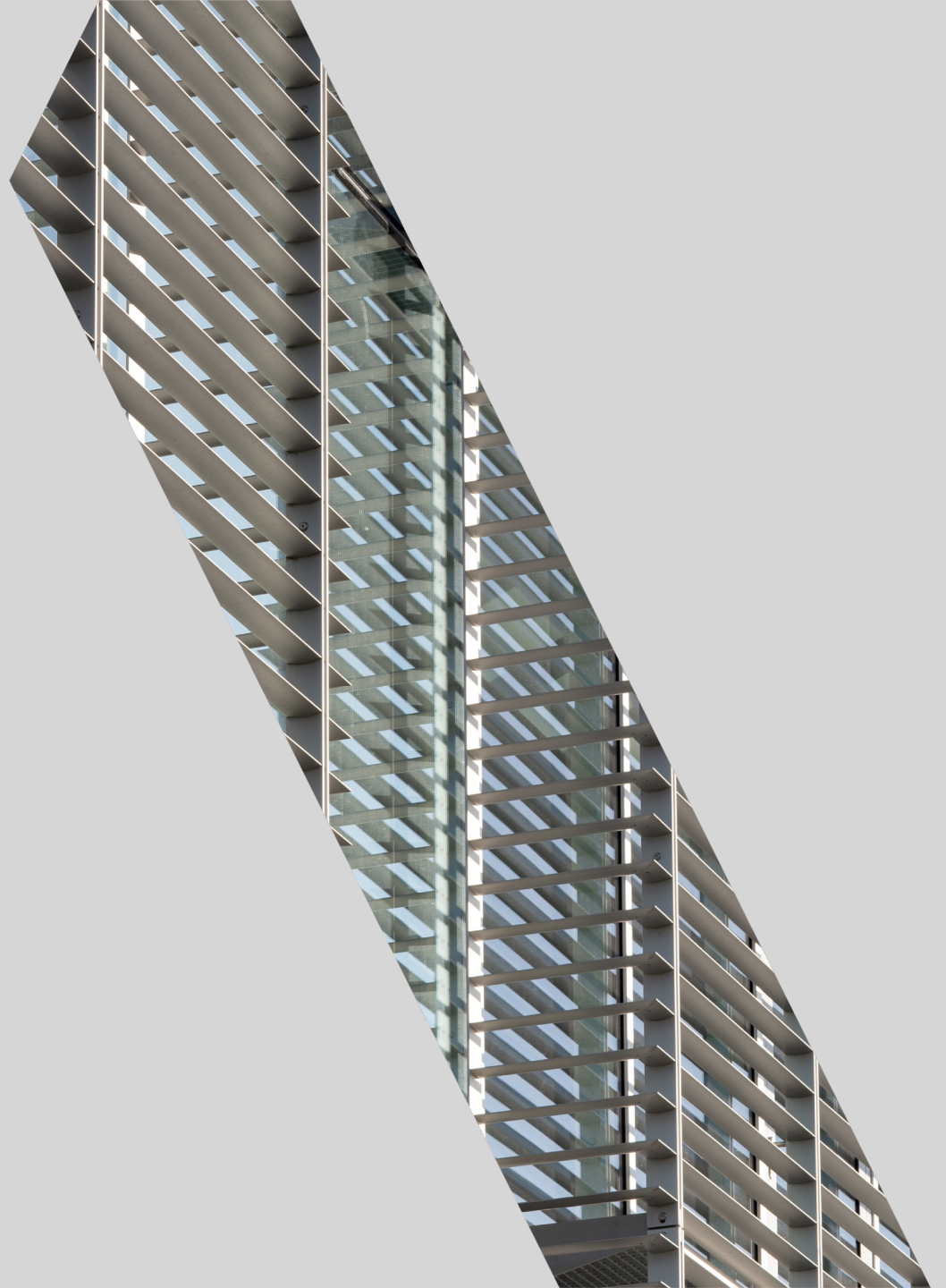
BIM JOURNEY

- Recognition of the benefits to us as a company:
 - Time saving
 - Increase quality
 - Reduced risk
- Recognise the reality that there is a journey to adopting a full BIM workflow, not implemented overnight. Possibility to develop in areas that present the most value and build from there.



EARLY DESIGN AND PLANNING

2

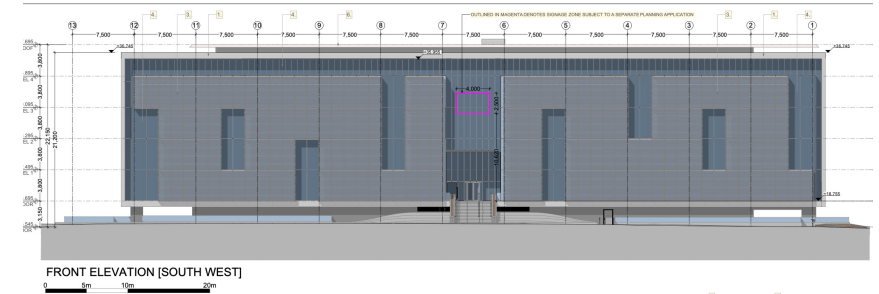


2.01 EARLY DESIGN AND PLANNING DESIGN EVOLUTION

Common Practices and limitation

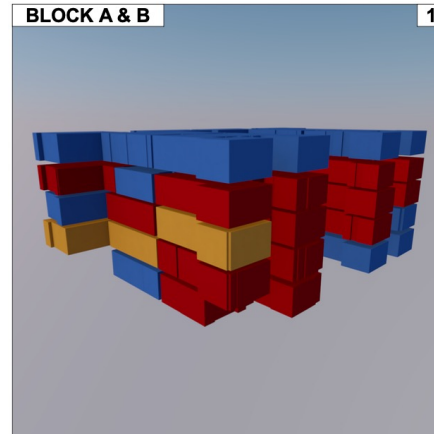
- Separate 3D and 2D packages that may not be coordinated
- Full 3D information available but only 2D information coordinated

- Utilisation of 3D renderings and BIMx drawing package viewer
- All renders and drawings referencing back to the model to ensure changes are coordinated.
- Possibility to better communicate with planners



2.02 EARLY DESIGN AND PLANNING STAKEHOLDER COMMUNICATION

- Increasing accessibility by reducing barriers to understanding
- Client understanding and ability to communicate communicate to stakeholders and up the funding chain
- Quicker client approvals and reduced planning risk



IT Bull Alley - Block A Unit Schedule											
Level	Block	Unit Number	Inner Room Y/N	Type	Preferred Option	Occupied Y/N	Murphys Survey Y/N	Survey Matches 2002 FSC	LA Survey	LA Drawing	Notes
Ground Floor	Block A	Unit 1/2A	No	-	-	-	-	-	-	-	
Ground Floor	Block A	Unit 20/21A	Yes	-	-	-	Yes	-	-	-	Not on Schedules - Layout indicates inner kitchen.
First Floor	Block A	Unit 22/23A	Yes	-	-	-	No	-	-	-	Not on Schedules - Assumed layout indicates inner kitchen. No access for Murphy's survey.
First Floor	Block A	Unit 24A	Yes	-	-	-	Yes	-	-	-	Not on Schedules - Appears to have 2no inner rooms plus inner kitchen. Most similar to type 16.
First Floor	Block A	Unit 3A	No	-	-	-	-	-	-	-	
First Floor	Block A	Unit 4A	No Inner Room But Potential Issue	-	-	-	Yes	-	-	-	Not on Schedules - No inner room however Murphy's survey raises query of fire rated construction.
First Floor	Block A	Unit 5A	No Inner Room But Potential Issue	-	-	-	Yes	-	-	-	Not on Schedules - No inner room however Murphy's survey raises query of fire rated construction.
First Floor	Block A	Unit 6A	No Inner Room But Potential Issue	-	-	-	Yes	-	-	-	Not on Schedules - No inner room however Murphy's survey raises query of fire rated construction.
Second Floor	Block A	Unit 10A	No	-	-	-	-	-	-	-	
Second Floor	Block A	Unit 25/26A	No Inner Room But Potential Issue	-	-	-	Yes	-	-	-	Not on Schedules - Murphy's survey raises query of fire rated construction. Inner kitchen however secondary escape.
Second Floor	Block A	Unit 27A	Yes	-	-	-	Yes	-	-	-	Not on Schedules - Layout indicates inner kitchen.
Second Floor	Block A	Unit 7A	No	-	-	-	-	-	-	-	
Second Floor	Block A	Unit 8/9A	Yes	-	-	-	Yes	-	-	-	Not on Schedules - Layout indicates inner kitchen. Murphy's survey raises query of fire rated construction.
Third Floor	Block A	Unit 11A	No	-	-	-	-	-	-	-	
Third Floor	Block A	Unit 12/13A	No	-	-	-	-	-	-	-	



Option 1



Option 2



Option 2B

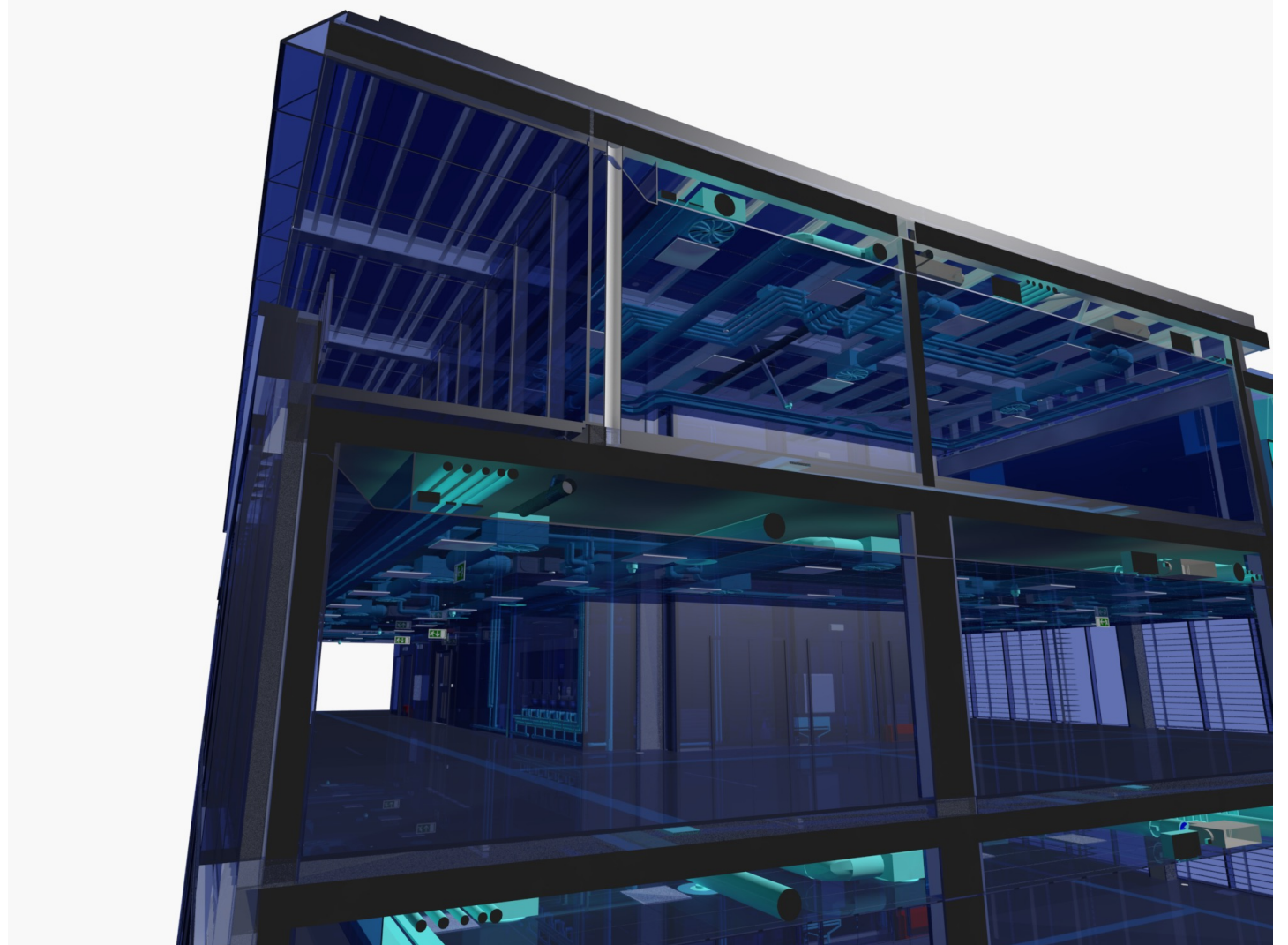
3

**DETAILED DESIGN &
TENDER**



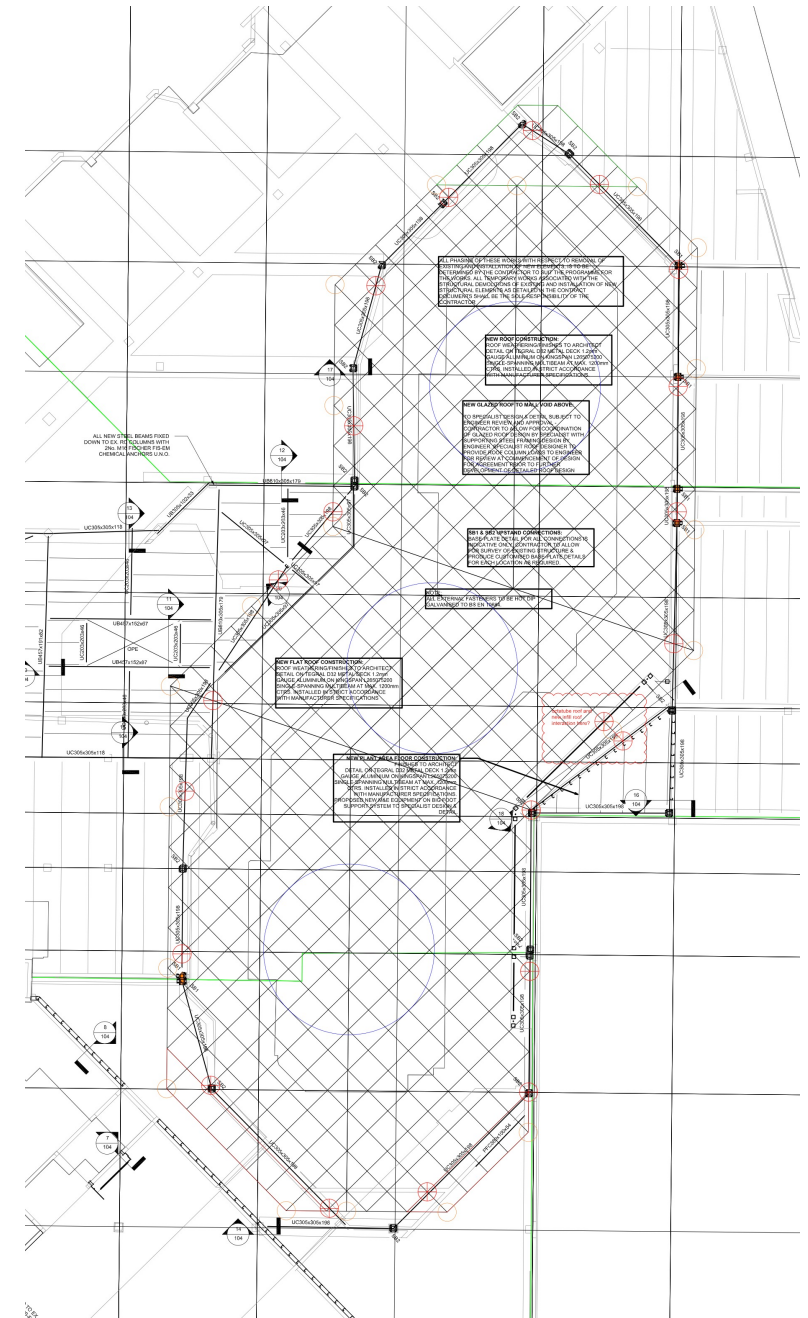
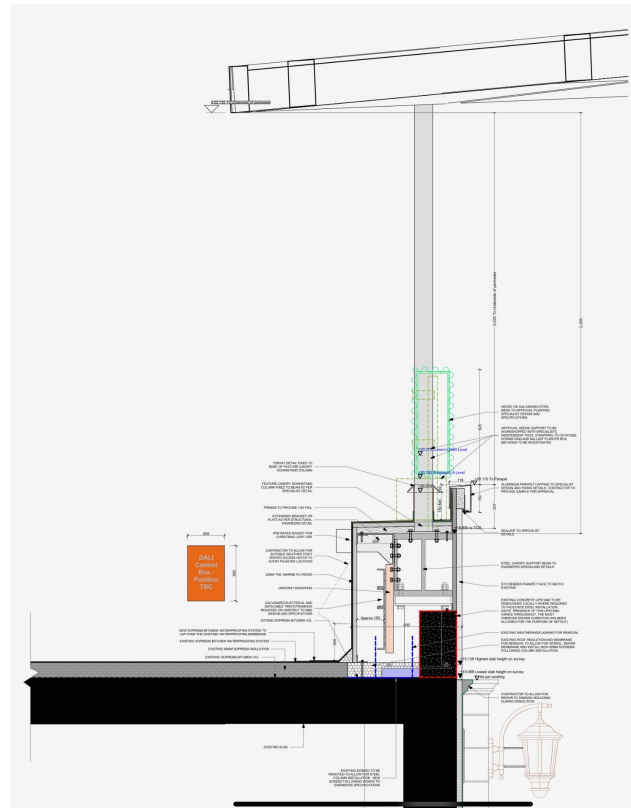
3.01 DETAIL DESIGN & TENDER MODEL BASED COORDINATION

- Open BIM principles
- Industry Foundation Class (IFC)
- Federated BIM models and identification of clashes and coordination issues
- Clear and useful presentation of this information



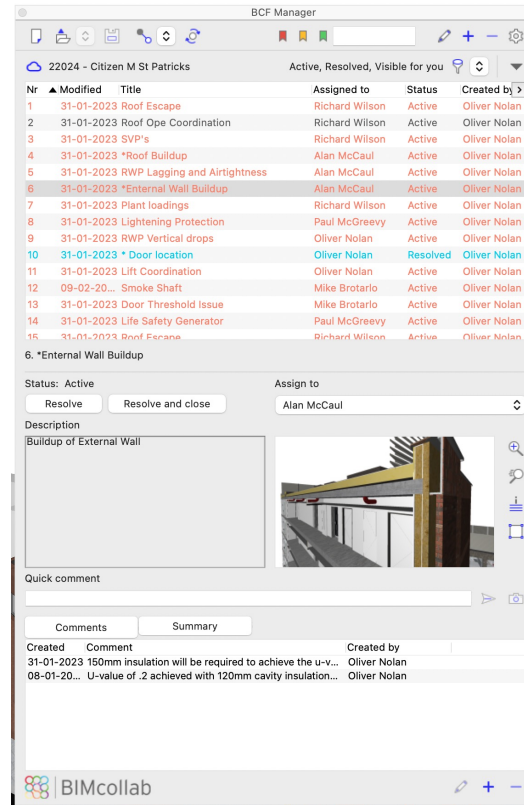
3.02 DETAIL DESIGN & TENDER MODEL BASED COORDINATION

- Reduced risk and better understanding by all parties
- Opportunity to extract the most value from the design

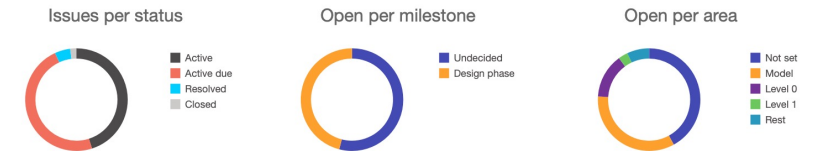


3.03 DETAIL DESIGN & TENDER OPEN COLLABORATION

- BIM Collaboration Format (BCF) to raise and track issues and clashes
- Benefits for both managers and BIM technicians
- BCF manager plugins, communicating element and model location data across different design packages
- Elimination of information lost in email inboxes
- Potential extending further forward in our processes to assist with initial design development and client feedback



BIM Software Palette

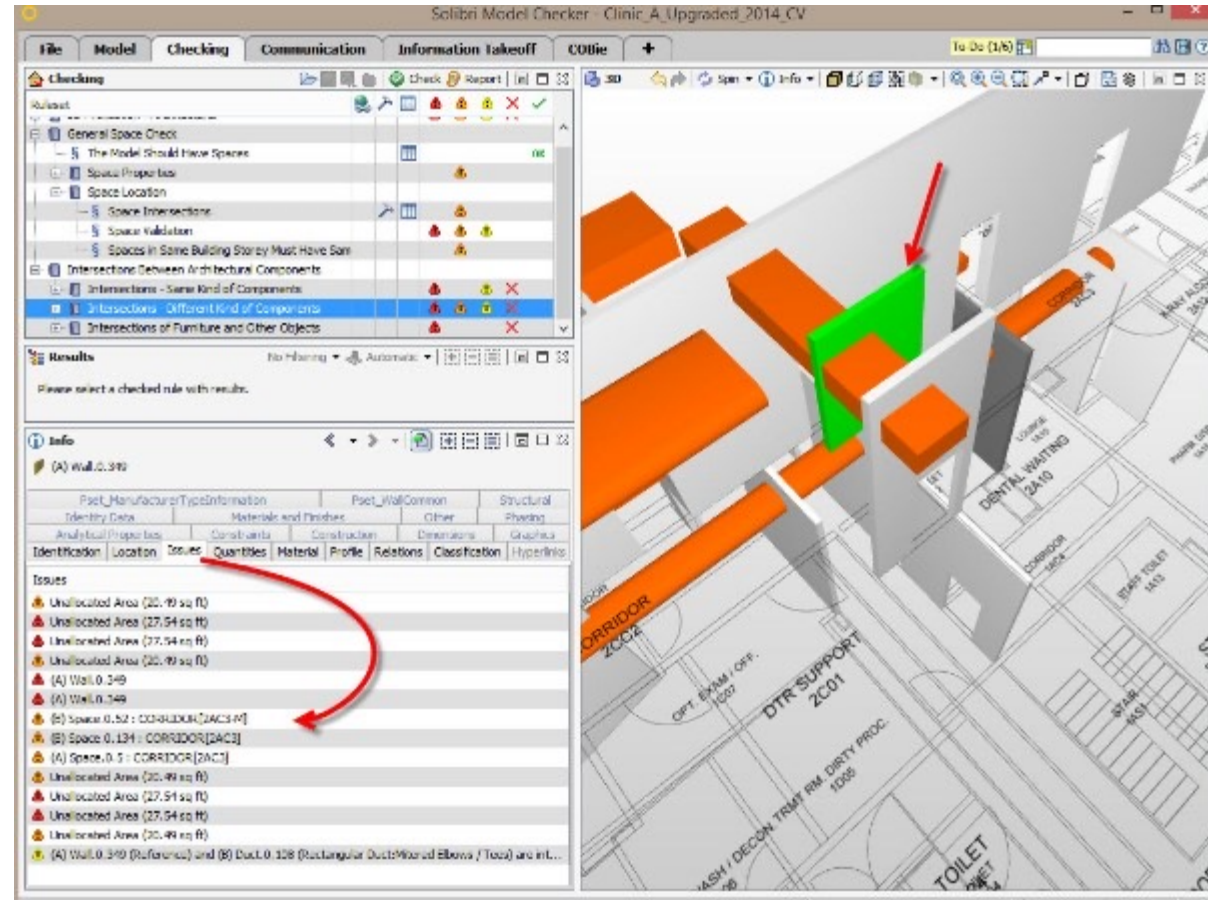


Nr	Title	Changed by	Date	Action
102	Steel Column	Mike Brotarlo	09-03-2023	Created
101	Roof Plant Levels	Liam Willoughby	08-03-2023	Created
100	AHU Over AOV	Liam Willoughby	08-03-2023	Created
99	IFC Coordination	Liam Willoughby	08-03-2023	Created
98	BOH solid block on existing ground floor slab.	Mike Brotarlo	28-02-2023	Created
97	Roof Plant Screen	Mike Brotarlo	27-02-2023	Created
96	Guestroom C1	Suzanne Bailie	17-02-2023	Created
95	CM - Guestroom B1	Suzanne Bailie	17-02-2023	Created
94	CM - Toilet Pod Height	Suzanne Bailie	17-02-2023	Created
93	Powerfloat Slab Tolerance	Liam Willoughby	16-02-2023	Created
92	Coordination of Structure and services	Liam Willoughby	15-02-2023	Created
91	Coordination of Structure and services	Liam Willoughby	15-02-2023	Created
31	*Door Spec	Maren Seibold	13-02-2023	Reminder sent

Web Interface & Pdf Reporting

3.04 DETAIL DESIGN & TENDER OPEN COLLABORATION

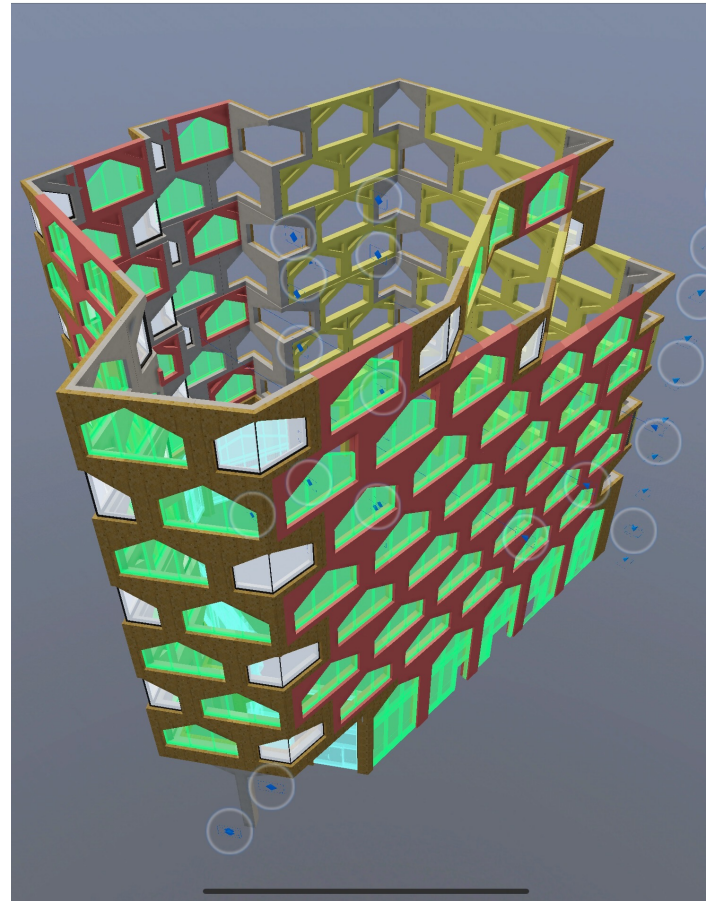
- Automated model validation and clash detection software
- Current use in our projects
- BIM coordination manager
- Further OpenBIM compatibility, Feeding into BFC management software and existing workflows



3.04 DETAIL DESIGN & TENDER AGILE DEVELOPMENT

- Current commercial pressures and VE
- Agile reassessment and ability to respond
- Effective communication of the design solution to allow quick and accurate design team validation and cost review.

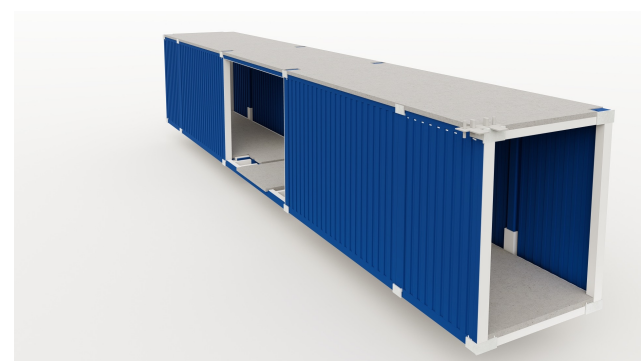
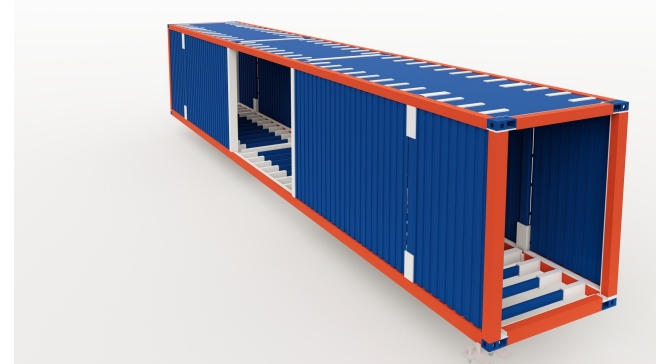
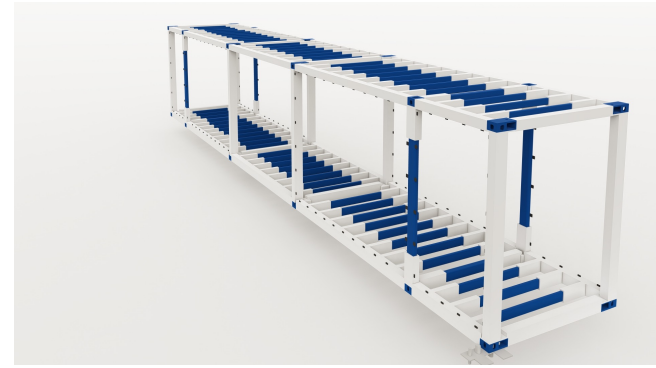
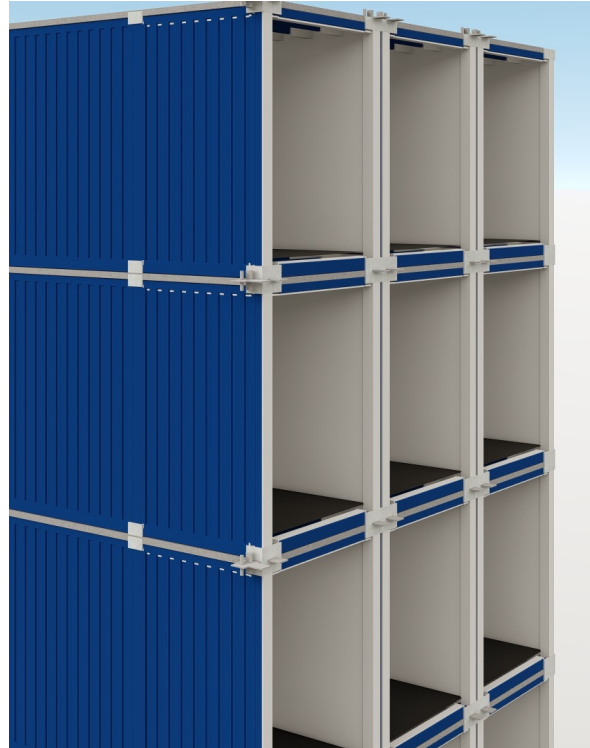
BIMX View (Offsite Module)



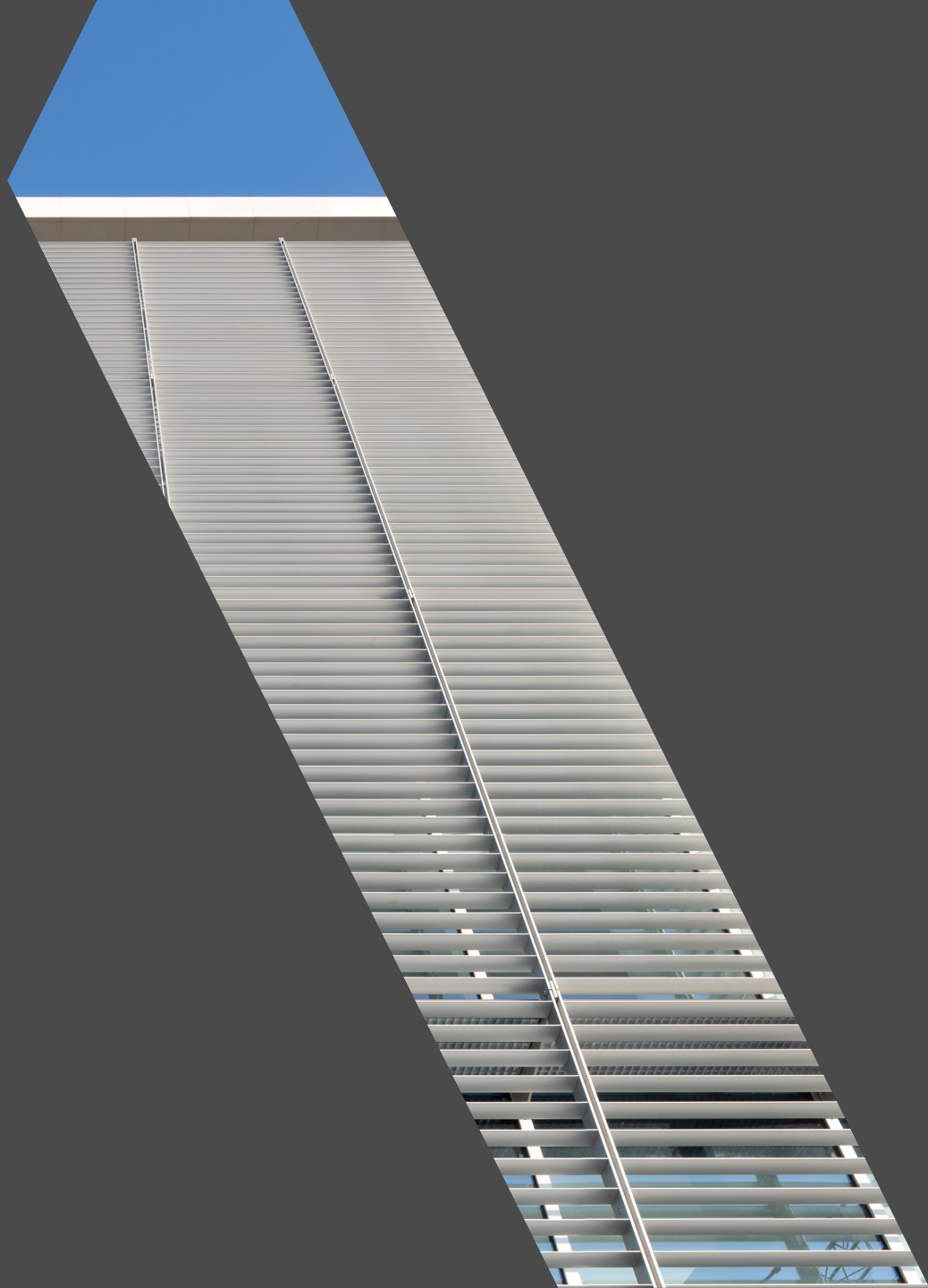
LA SH SP Structural Column & Panel Schedule				
Element ID	Quantity	Height	3D Axonometry	Description
Odd C6 450	1	3,600		Specialist to confirm if can be single corner with glazing factory installed or if this needs to be split with site applied glazing
Odd C7 300	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Odd C7 375	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Odd C7 450	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Odd C9 300	1	3,600		Specialist to confirm if can be single corner with glazing factory installed or if this needs to be split with site applied glazing
Odd C9 375	1	3,600		Specialist to confirm if can be single corner with glazing factory installed or if this needs to be split with site applied glazing
Odd C9 450	1	3,600		Specialist to confirm if can be single corner with glazing factory installed or if this needs to be split with site applied glazing
Odd C10 300	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Odd C10 375	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Odd C10 450	1	3,600		Similar to Standard RC Panel (Small) with a non standard junction at one end.
Standard RC Panel 300 (Large)	9	3,600		
Standard RC Panel 300 (Small)	12	3,600		
Standard RC Panel 375 (Large)	9	3,600		
Standard RC Panel 375 (Small)	18	3,600		
Standard RC Panel 450 (Large)	13	3,600		
Standard RC Panel 450 (Small)	30	3,600		

3.04 DETAIL DESIGN & TENDER CONSTRUCTION VALIDATION

- Assessing new methods of construction
- Modelling ensured our full understanding of the module
- Allowed us to quickly bring all members of the design team and client up to speed.
- Enabled productive discussion on solutions and quick assessment of impact



4 CONSTRUCTION PHASE




4.01 CONSTRUCTION COMMON DATA ENVIRONMENTS

- Good Main Contractor and occasional client uptake
- Drawing management
- RFIs
- Submittals
- Good notification management required

PROJECT OVERVIEW

Overview	■ Overdue ■ Next 7 Days ■ > 7 Days	Total Open
RFIs	<div style="display: flex; justify-content: space-between;"> <div style="width: 75%;">2</div> <div style="width: 25%;">1</div> </div>	3
Submittals	10	10
Inspections	<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;">1000</div> <div style="width: 55%;">1110</div> </div>	2113
Snag List	<div style="display: flex; justify-content: space-between;"> <div style="width: 70%;">17</div> <div style="width: 30%;">6</div> </div>	23

MY OPEN ITEMS

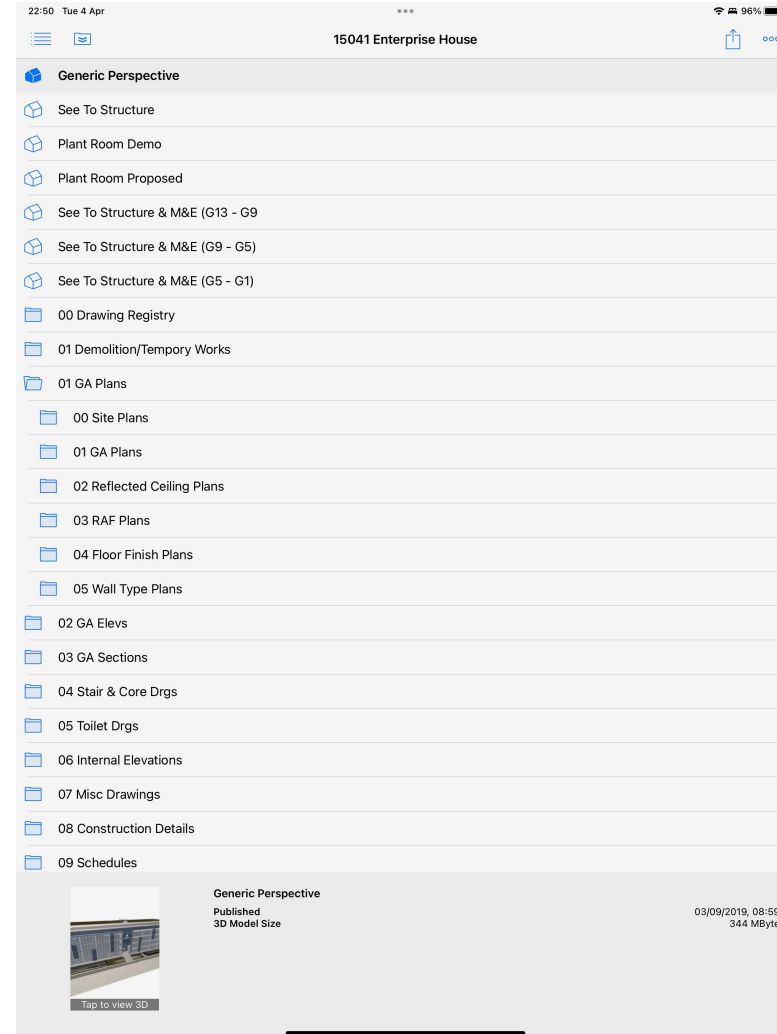
	Item Type	Details	Status	Due Date
	Submittals	#203.1: Reception screen Drawing and options	Re-Submit	12/04/22

> RECENTLY CHANGED ITEMS

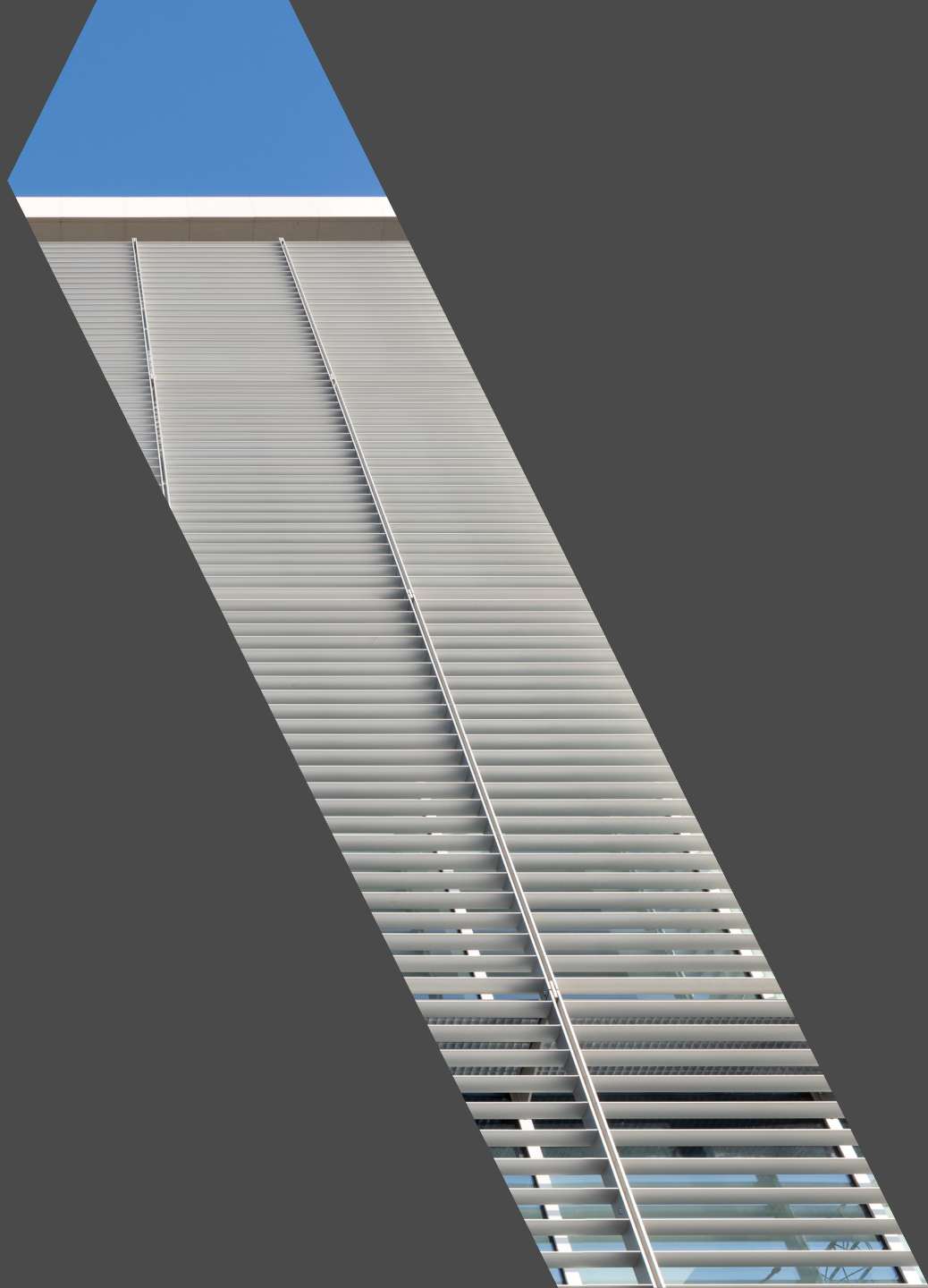
4.02 CONSTRUCTION ACCESSIBILITY OF INFORMATION

Utilisation of model viewers onsite for quick access to drawings and aid productive discussion.

- Full offline package of drawings
- 3D model
- All intelligently linked
- Site walks
- Sub contractor workshops



5 COMPLETE ASSET



4.01 COMPLETE ASSET ACCELERATORS TO WIDER ADOPTION

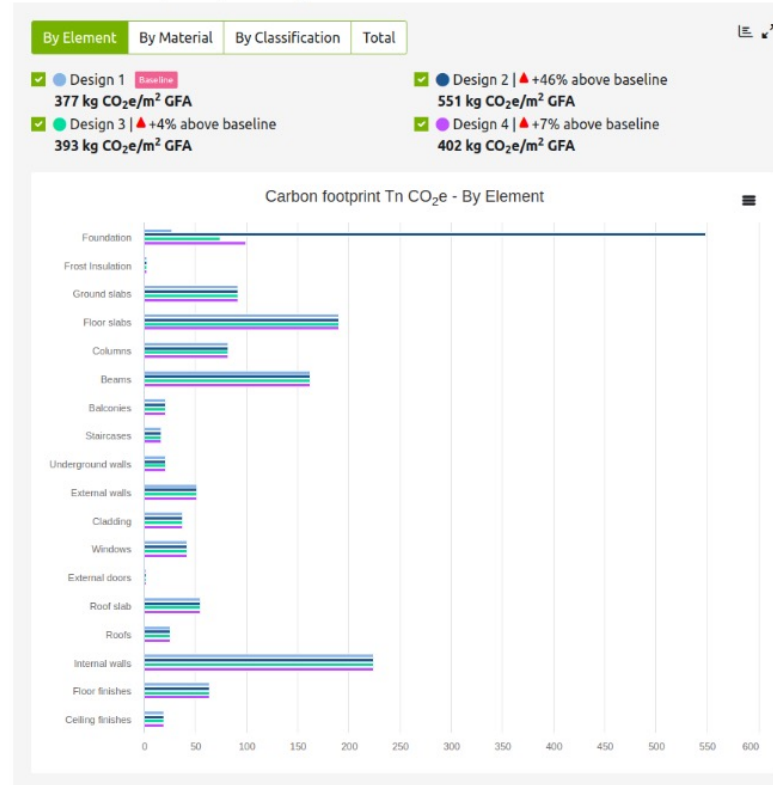
Challenge:

- Client appetite/awareness to approach Facilities Management (FM) via BIM.
- Low value to the design team in isolation

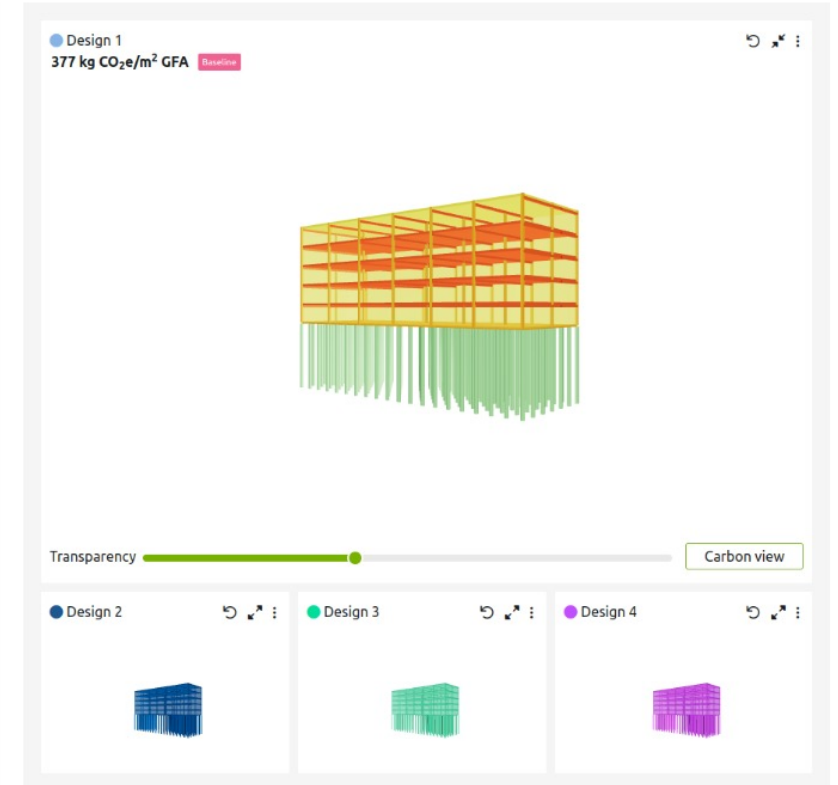
Development:

- Increasing client awareness and interest in FM applications, increasing willingness to invest
- EU Sustainable Finance Taxonomy aims to increasing auditability and reducing ability to greenwash buildings. BIM model workflows are a natural enabler of this

Carbon footprint, Tn CO₂e



3D View



THANK YOU