

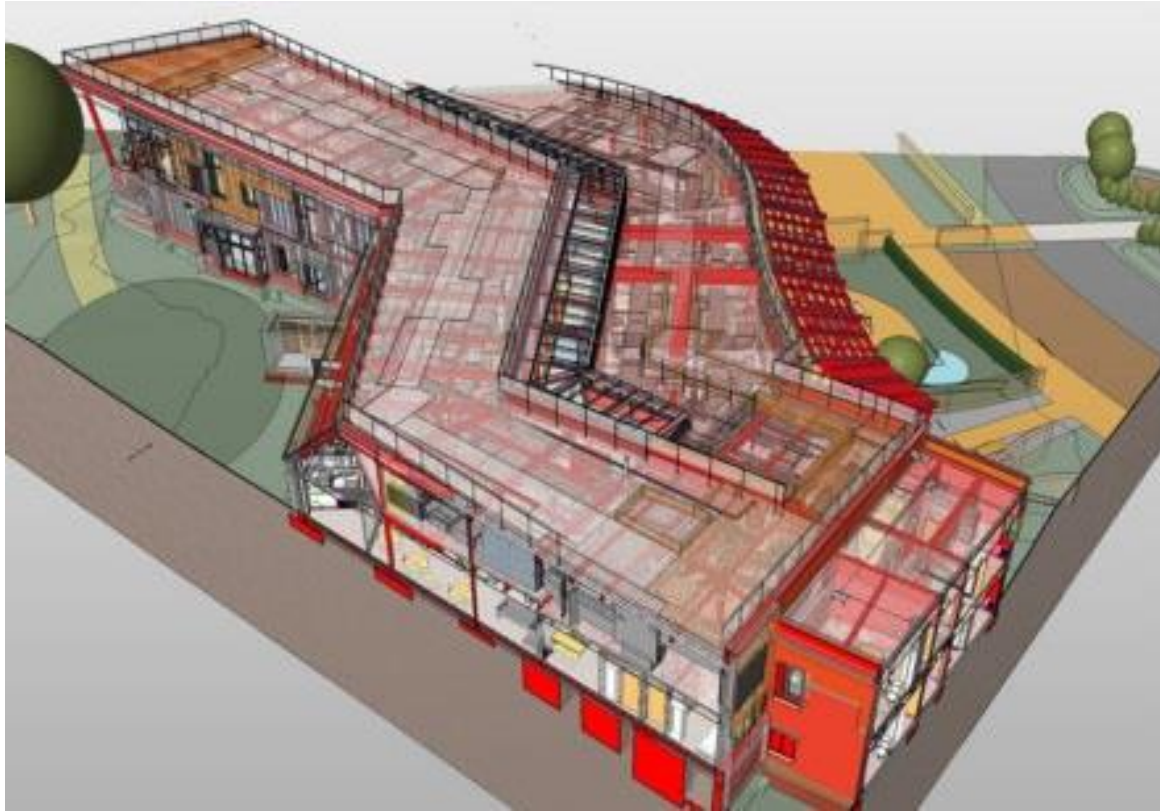
UTILISING BIM FOR REFURBISHMENT PROJECTS



JDDK ARCHITECTS



JDDK ARCHITECTS



INTRODUCTION TO THE OLD POST OFFICE PROJECT

RIBA Competitive Interview

JDDK appointed in August 2014

Grade II Listing

Refurbish 3,350m² office space

Completed October 2016

Construction cost ~ £1.8m



CLIENT BRIEF

Workspace for 180 – 200 staff

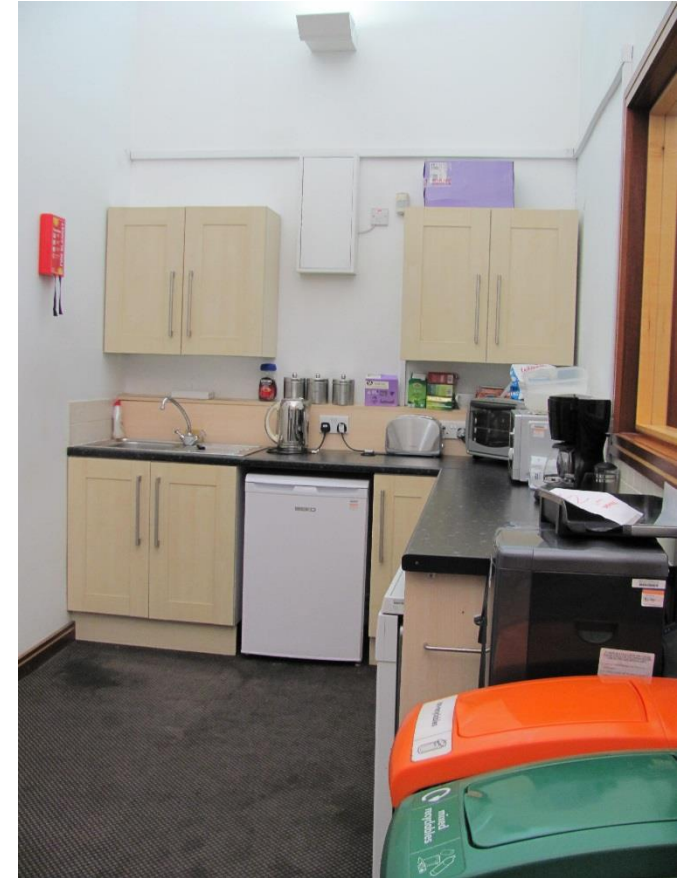
Café, Lecture, Exhibition, Gym

Environment to inspire

Promote wellbeing, attract & retain recruits

Maximise collaboration

BIM exemplar, to Level 2



CAPTURING INFORMATION – BRIEFING AND ENGAGEMENT

Staff engagement

Lunchtime presentations

Graffiti wall

Postcard from your desk



Postcard from my desk Place Stamp Here



Dear Architect,

If I was designing this I would.....

I appreciate not everyone is going to get generous vistas of scenic downtown Newcastle, but even a view of my colleagues would be better than feeling I've been put in the naughty corner.



self-actualisation
Esteem
Love/Belonging
Safety
physiological

each builds on the last
problems in the lower levels destabilise, undermine the upper levels

open plan? NO BIG OPEN PLAN AREAS!
divide into spaces, using colour, texture
styles to create calm, inspiring & comfortable work space

So how do we solve the microclimate dilemma?
+ Make the people to the climate, regardless of how or build?
+ Give everyone some climate autonomy?
+ Access - Airs, humidity, noise, vibrations, temp, CO2 + humidity, PM10, etc.
Should take time to think to more in shorts?
Yes please

Remember this from Management Training?
Sue Cole told us all about Maslow's Hierarchy of needs.
We can never give our best to our work if we are too cold, too hot, too tired, too hungry, too thirsty, bursting for the loo...

with photos allowed IS IT?
BIG TREE IN HERE!
No bean bag
GET RID OF POOL OF POOL TABLE
A Great Place to Work that is an inclusive environment for all people of all levels, backgrounds, abilities, interests
A place where we can work hard but also play hard when the time is right
Where we can make friends + share ✓
Knowledge + contribute to creating a great col

FRESH AIR

Remember this from Management Training?
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CAPTURING INFORMATION – HERITAGE RESEARCH

Archive research

Regional significance

Discovered original drawings

Understand original building

Inform interior design



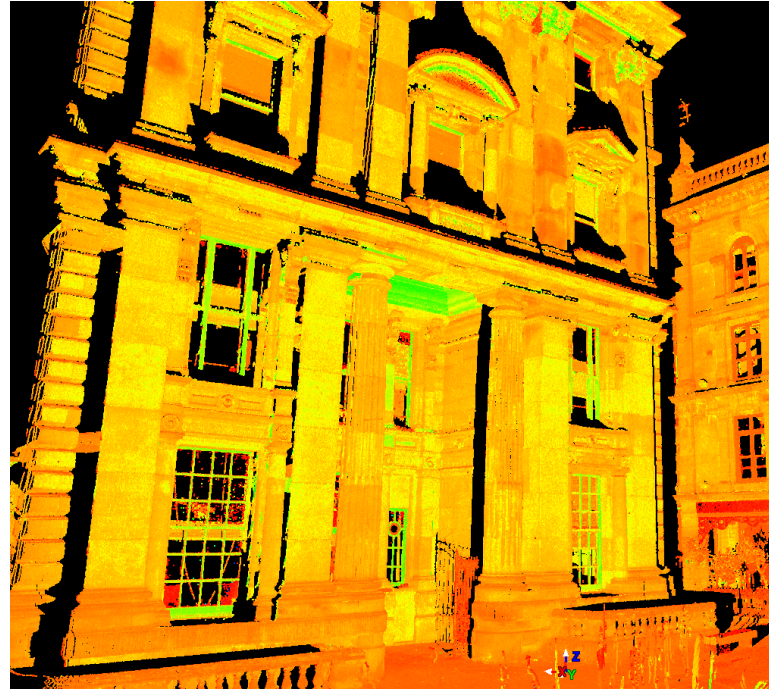
CAPTURING INFORMATION – LASER SURVEY

Only PDF plans available

Commissioned full laser survey

Importance of survey brief

Vital piece of info to refer back
to for verification

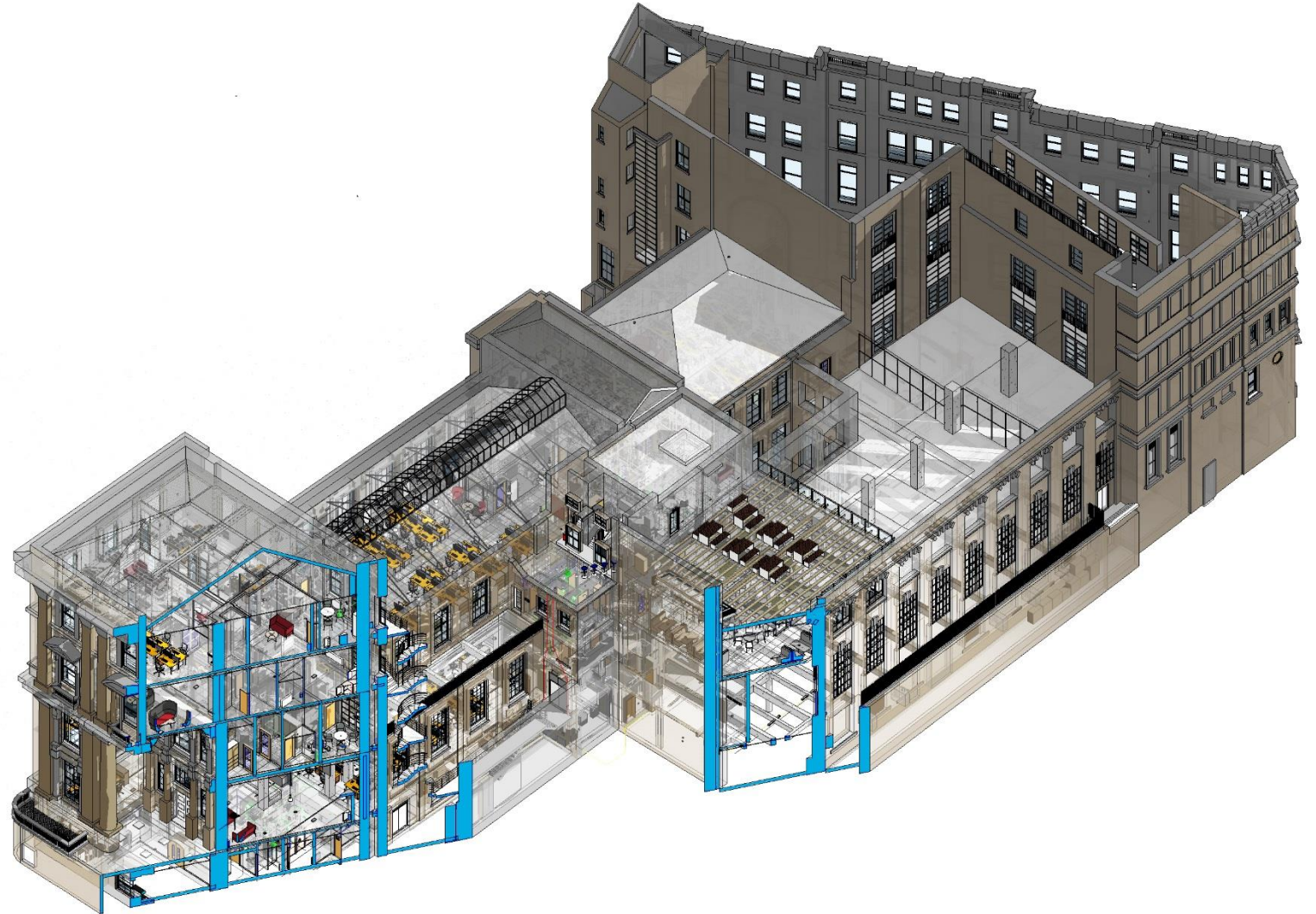


INFORMATION CONTROL

Common Data Environment

Captured information shared

Available to client, design team
and later the contractor

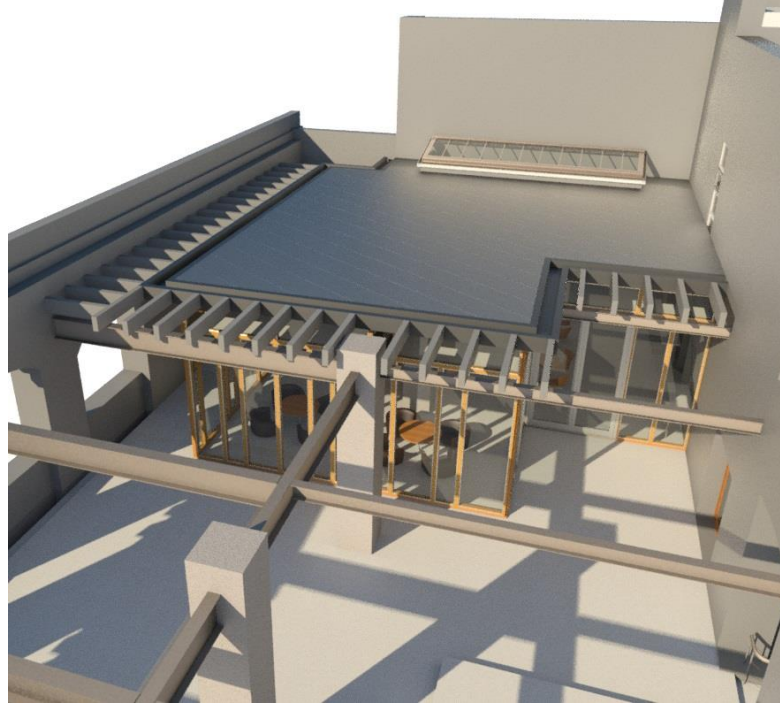


DESIGN – TESTING AND SHARING IDEAS

Beyond sketching

Testing alternative options

Presenting ideas to the Client



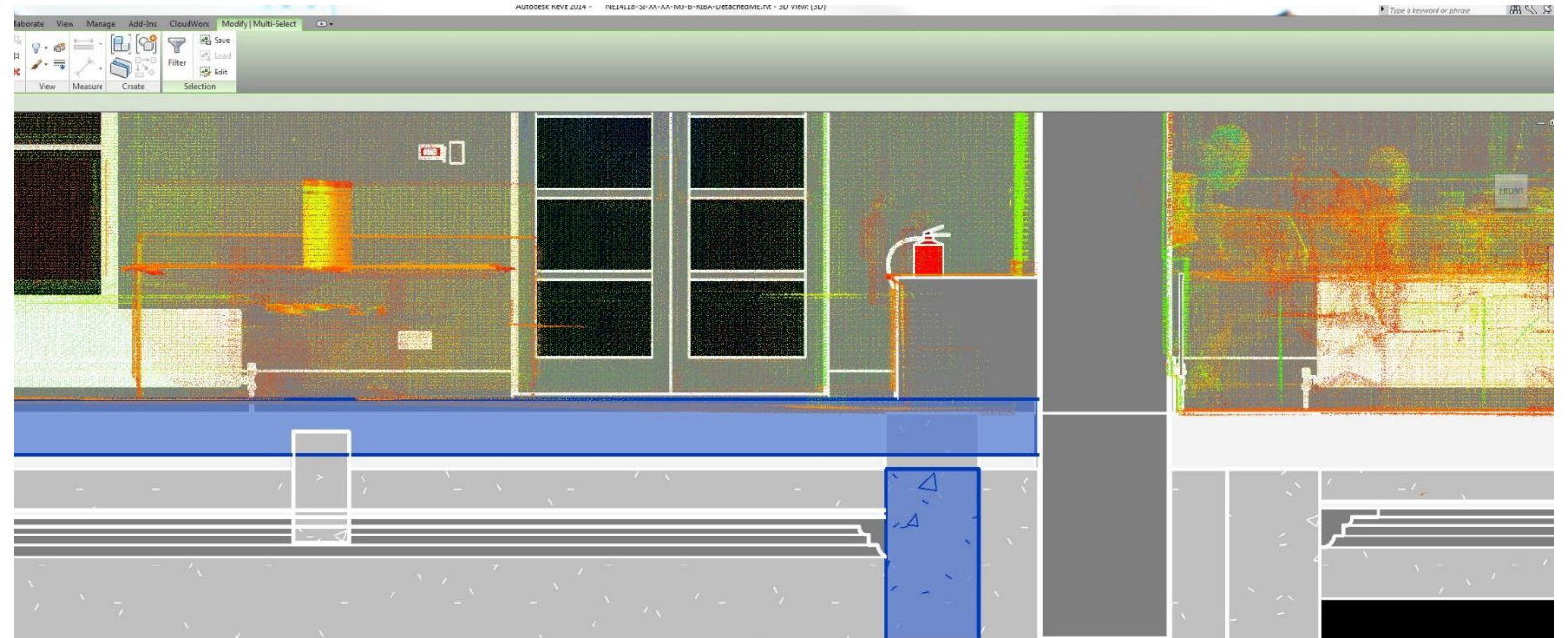
DESIGN – COMPLEX GEOMETRY

Fragmented building with complex
floor levels

Revit survey helped understand
complex geometry

How will spaces fit together?

Avoided intrusive surveys



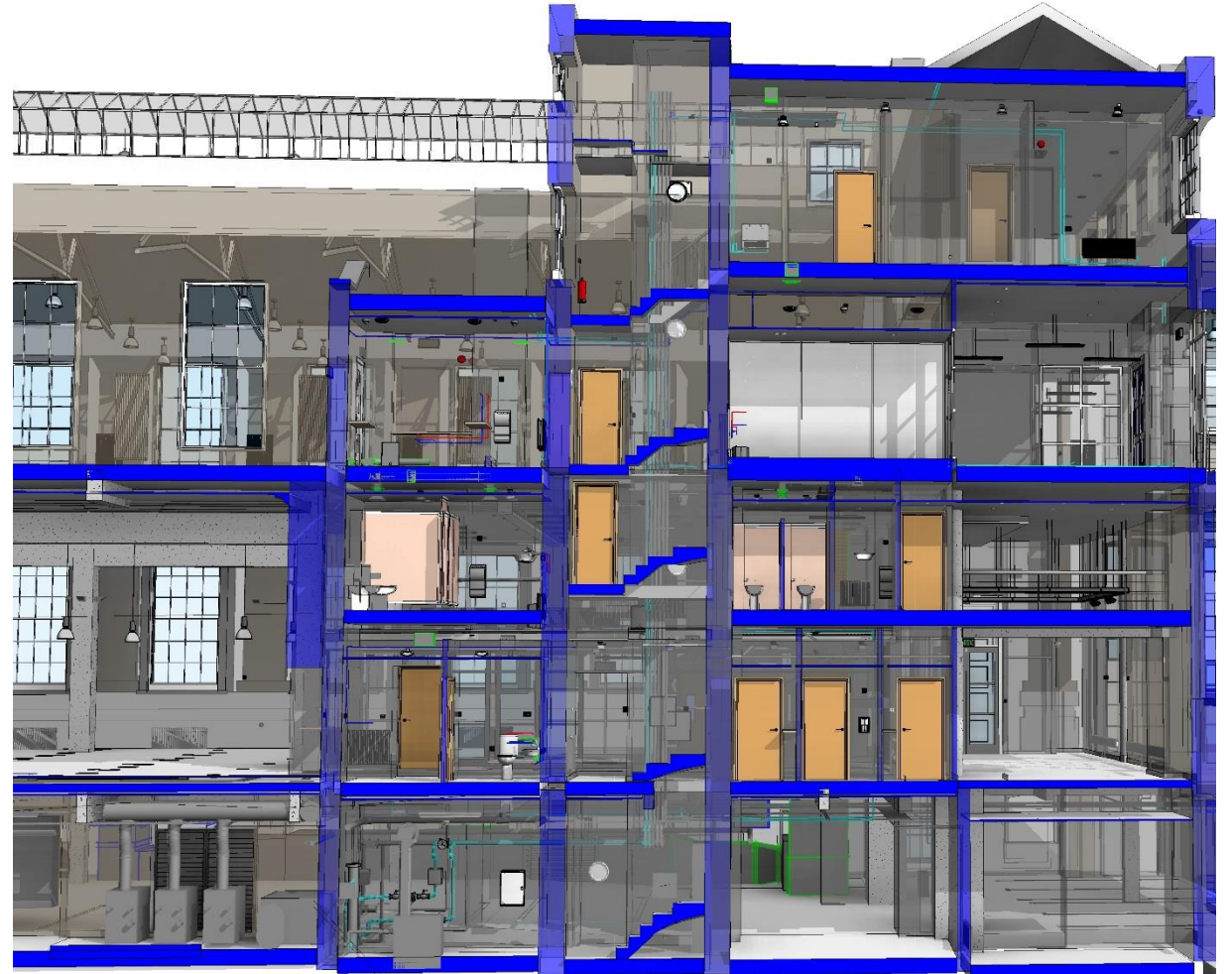
DESIGN - COLLABORATION

Revit as primary means of collaboration

Central model with linked models

Resorted to other techniques at times

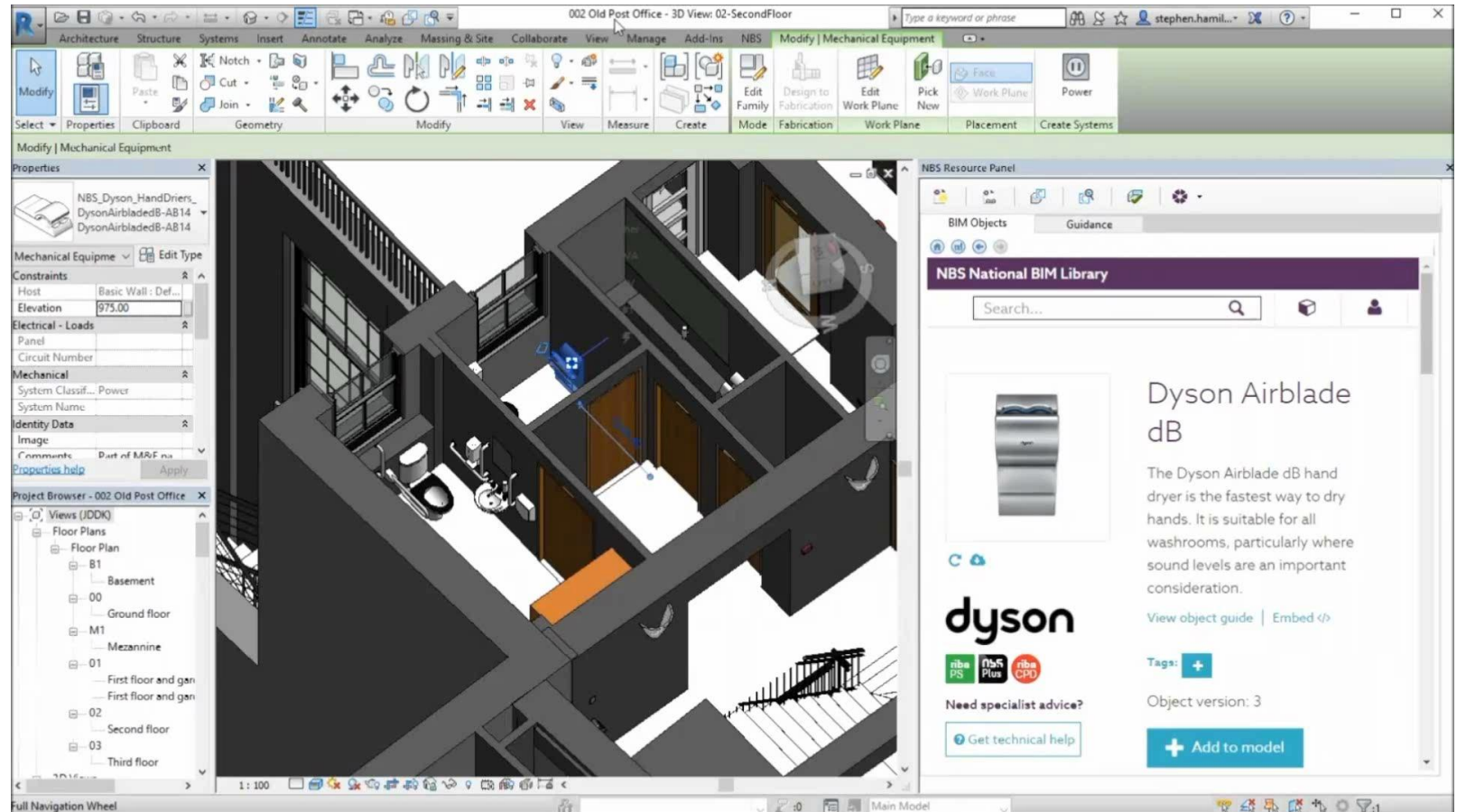
Clash detection – M&E



DESIGN – STANDARDISED OBJECTS

National BIM Library

Used a range of standardised
objects

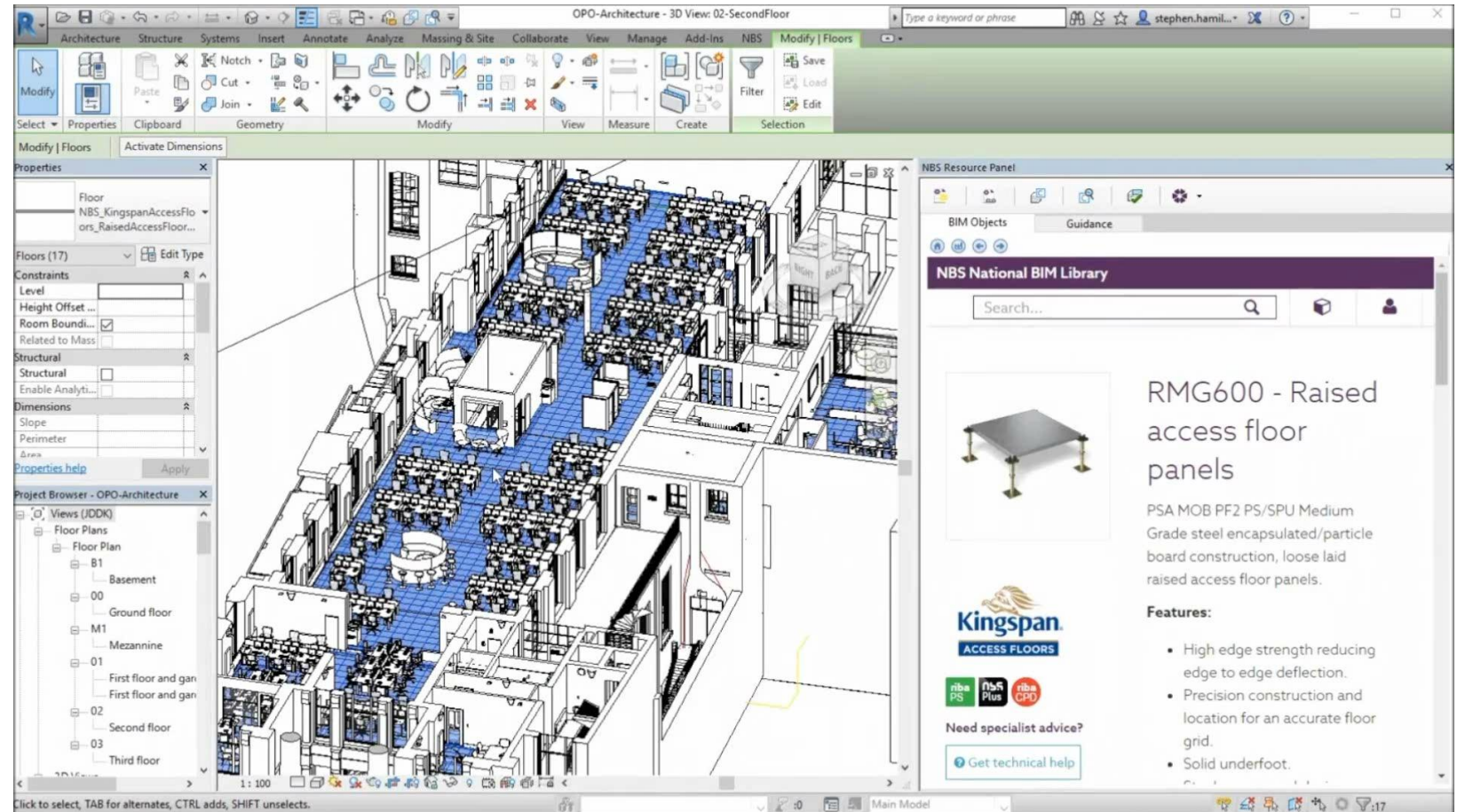


DESIGN – LINKING MODEL AND SPECIFICATION

NBS Create

Easier to use NBS Plus

Both full and performance
specification clauses



TENDER AND CONSTRUCTION

Small to medium contractors still

getting to grips with BIM

Quizzed on BIM approach at interview

Issued federated model

No contractor design elements

Revit model was phased

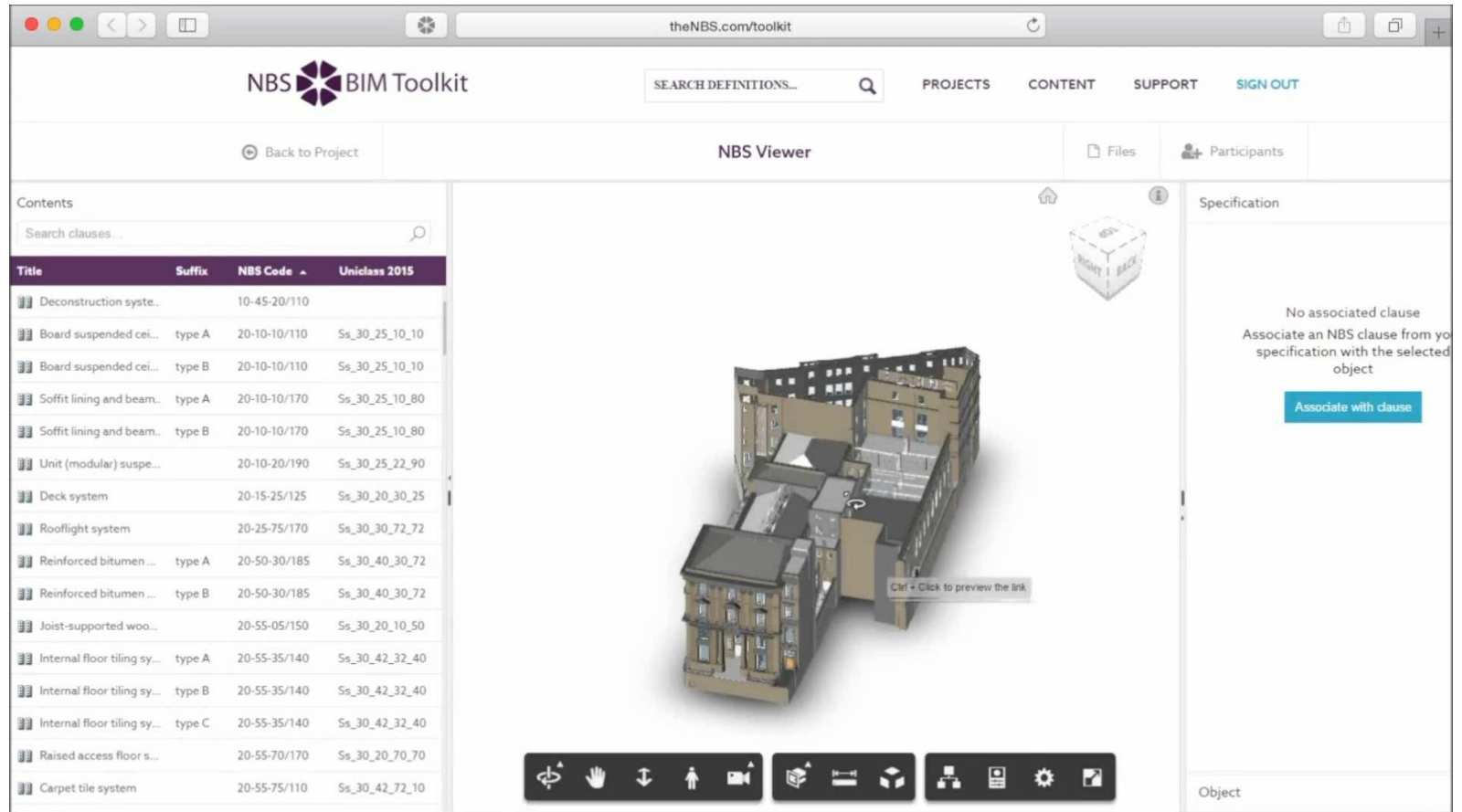


BIM TOOLKIT

Arrived during the programme

BETA testing

Could have helped contractor



HANDOVER – COBie DATA

Limited range of items in refurb projects

Most of the building is 'existing'

Typical objects to be included in the COBie spreadsheet can include;

Architectural	Doors; Windows; Fittings, Furniture & Equipment (FF&E); Plumbing fixtures (where not in Mechanical model); Room data (Finishes)
Mechanical	Plumbing fixtures; Lifts; Boilers; Ducts & terminals; Valves; HVAC units; Filters; Pumps
Electrical	Plumbing fixtures (hand driers); Light fittings; Sockets & Outlets; Distribution boards; Generators

	A	B	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
	Name	CreatedBy	TypeName	Space	Description	ExSystem	ExObject	ExIdentifier	SerialNumber	InstallationDate	WarrantyStartDate	TagNumber	BarCode	AssetIdentifier	Area	Length
2	ELE_Domestic_Generic_Fridgefreezer Upright 2	adamv@jdd	Electrical Equipment	F1-03 CA	n/a	Autodesk	Electrical	2424363	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
3	ELE_Domestic_Generic_Fridgefreezer Upright 2	adamv@jdd	Electrical Equipment	G1-15 TE	n/a	Autodesk	Electrical	3513984	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
4	ELE_Domestic_Generic_Fridgefreezer Upright 2	adamv@jdd	Electrical Equipment	G1-15 TE	n/a	Autodesk	Electrical	3514070	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
5	ELE_Domestic_Generic_Fridgefreezer Upright 2	adamv@jdd	Electrical Equipment	F1-03 CA	n/a	Autodesk	Electrical	3745304	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
6	ELE_Domestic_Generic_Fridgefreezer Upright 2	adamv@jdd	Electrical Equipment	F1-03 CA	n/a	Autodesk	Electrical	3745592	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
7	2225827	adamv@jdd	Roofs_Roofs_Cafe Rtn	n/a	n/a	Autodesk	Roofs	2225827	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
8	Refrigerator - Under Counter_Built-in under counter	adamv@jdd	Specialty Equipment	G1-12 RE	n/a	Autodesk	Specialty	3334732	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
9	Dishwasher (1) 5000 x 600 x 860mm 3391016	adamv@jdd	Specialty Equipment	T1-01 TE	n/a	Autodesk	Specialty	3391016	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10	Refrigerator_Fridge Freezer 595 x 1400 x 600mm	adamv@jdd	Specialty Equipment	n/a	n/a	Autodesk	Specialty	3397626	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
11	Refrigerator - Under Counter_Built-in under counter	adamv@jdd	Specialty Equipment	S1-03 BR	n/a	Autodesk	Specialty	3446674	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
12	Refrigerator - Under Counter_Built-in under counter	adamv@jdd	Specialty Equipment	S1-01 LE	n/a	Autodesk	Specialty	3450843	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
13	Refrigerator - Under Counter_Built-in under counter	adamv@jdd	Specialty Equipment	F1-11 TE	n/a	Autodesk	Specialty	3493243	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
14	Refrigerator - Under Counter_Built-in under counter	adamv@jdd	Specialty Equipment	G1-15 TE	n/a	Autodesk	Specialty	3514452	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
15	Wallmounted Longlight LOD 200-400 v.2.06_Defau	adamv@jdd	Windows_Wallmount	n/a.n/a	n/a	Autodesk	Windows	3197706	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
16	Electrical Equipment_Lift MonoSpace 500 569357	iphillips@a	Electrical Equipment	110	630kg 6 P	Autodesk	Electrical	5693579	n/a	July 2016	July 2016	n/a	n/a	n/a	13.09	n/a
17	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	294	Hand Drier	Autodesk	Electrical	2485705	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
18	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	n/a	Hand Drier	Autodesk	Electrical	2486008	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
19	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	293	Hand Drier	Autodesk	Electrical	2573861	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
20	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	238	Hand Drier	Autodesk	Electrical	2573908	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
21	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	170	Hand Drier	Autodesk	Electrical	2574197	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
22	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	n/a	Hand Drier	Autodesk	Electrical	2574515	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
23	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	202	Hand Drier	Autodesk	Electrical	2574699	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
24	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	138	Hand Drier	Autodesk	Electrical	2575015	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
25	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	109	Hand Drier	Autodesk	Electrical	2575091	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
26	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	n/a	Hand Drier	Autodesk	Electrical	2575293	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a
27	Electrical Fixtures_Hand Dryer - LOVAIR L-89C	24iphillips@a	Electrical Fixtures_H	n/a	Hand Drier	Autodesk	Electrical	2575324	n/a	October 2016	n/a	n/a	n/a	n/a	0.2812	n/a

COMPLETED BUILDING



COMPLETED BUILDING



COMPLETED BUILDING



LESSONS LEARNT – E.I.R. AND B.E.P.

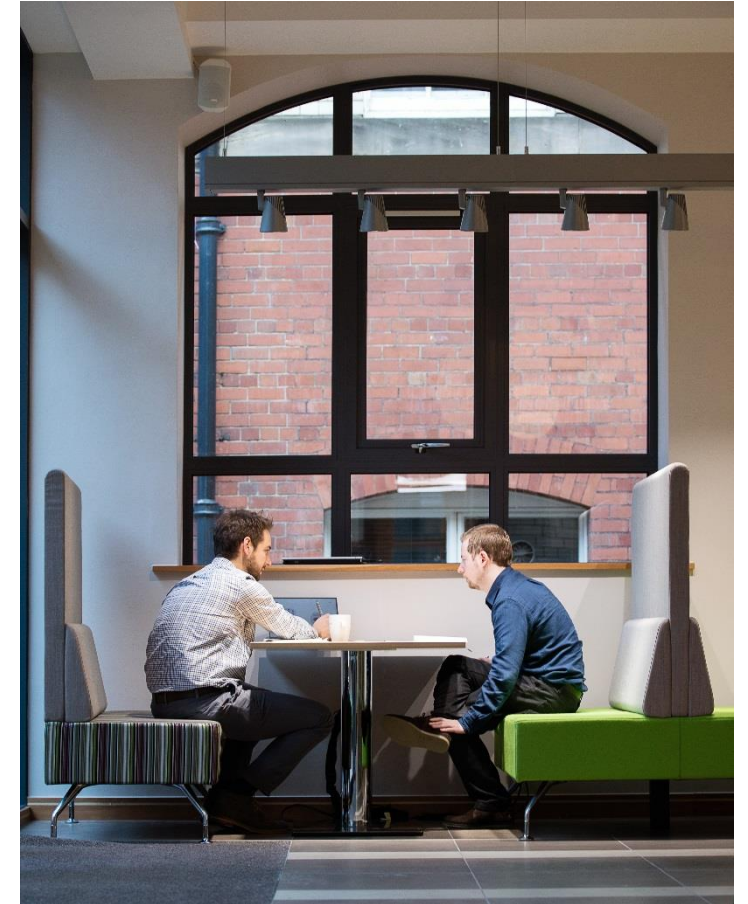
Employers Information Requirements

Key part of briefing process

Knock-on effect for later stages

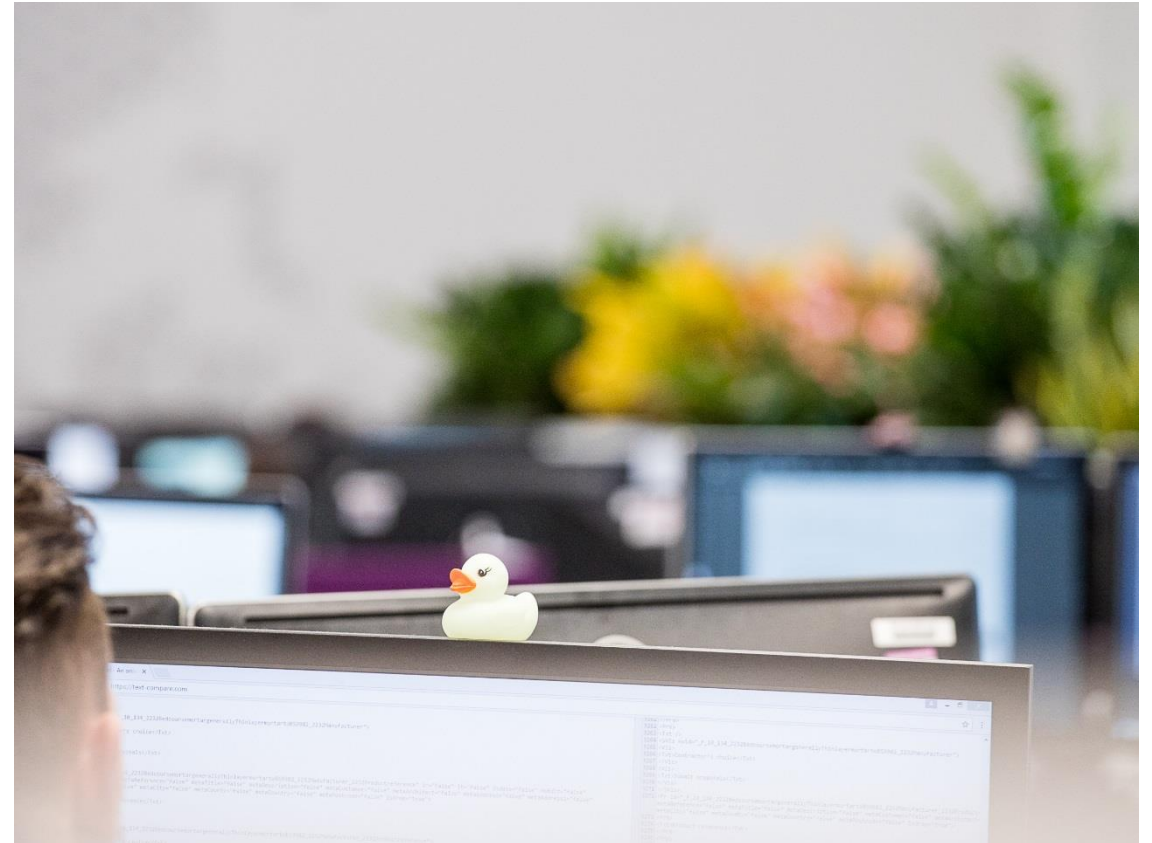
Pre-Contract BIM Execution Plan

NBS BIM Toolkit



LESSONS LEARNT - COBie

Handover information compromised
Has to be planned through the project



SUMMARY

