



The impact of technology on Building Surveying and Asset Management

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RICS Building Surveying Board

23 June 2017

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- Disruption
- Why?
- Range of Surveys
- Case study - RICS HQ
- Next Steps








Disruption

- Steve Sasson invented the digital camera
- Kodak senior management thought:
 - It was too big
 - Had poor image quality
 - Printing required a PC
 - Feared it would cannibalise existing business
- Responded “don’t tell anyone about it.”



Surveying and construction disruptors

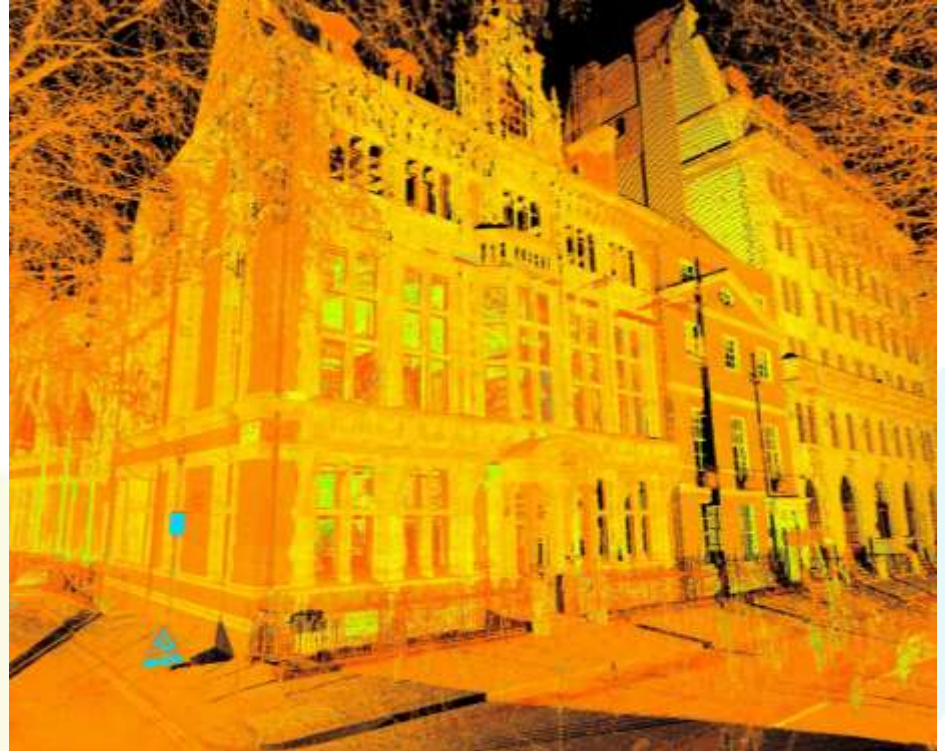
	Higher definition surveying
	Building Information Modelling
	Digital collaboration and mobility
	The Internet of things, AI, VR
	Future design and construction

Why?

- Data Quality - robust Q&A
- Efficient and Consistent
- Reduced risks of error
- Creates intelligence
- Inform investment decisions
- Procurement efficiencies

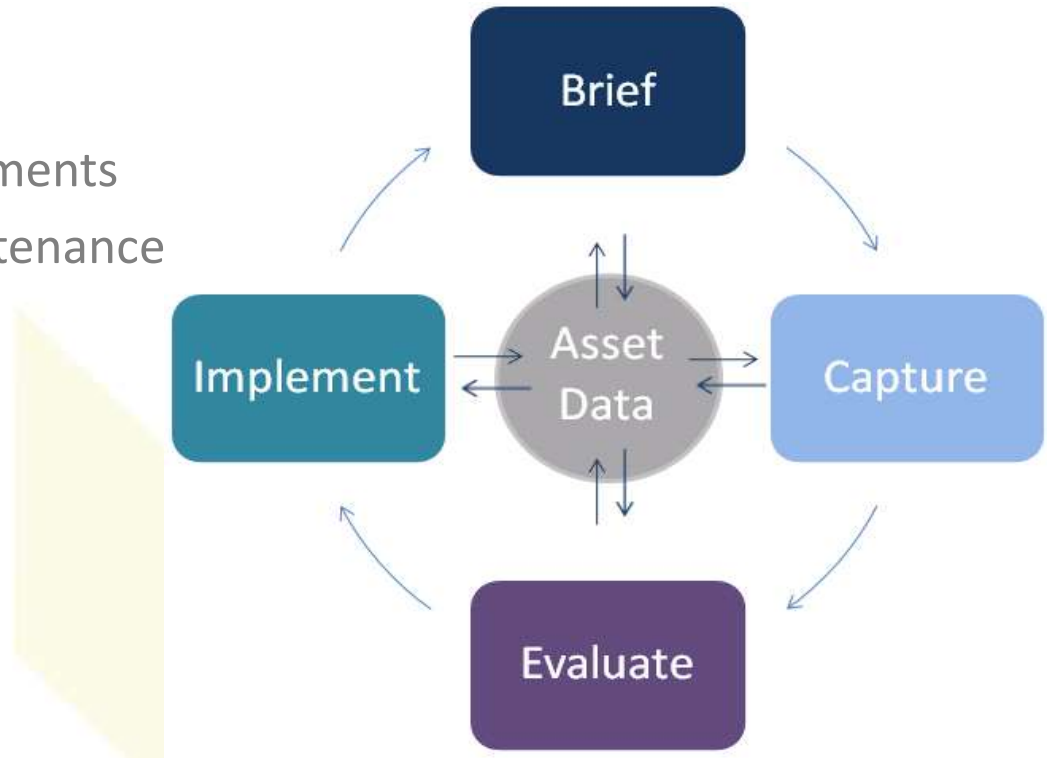
But

- Be clear on future use of data
- Consider a Digital Strategy



Types of Survey

- Schedules of Condition
- Reinstatement Cost Assessments
- Planned Preventative Maintenance
- Dilapidations Surveys
- Project Management
- Acquisition Surveys
- Energy auditing
- Legal Compliance surveys



BS8544 – Guide to Lifecycle Costing and Maintenance – Section 4.1 Fig 2 – Integrating the key stages of LCC of maintenance, which are part of the cyclical process

Case Study: RICS Headquarters

Building

- Grade 2 listed building
- Parliament Square, London
- Main building - 1899
- Rear extension – 1980s
- Floor area - 3,684m²

Brief

- 5 year PPM survey
- Data extracted from BIM model
- Present at RICS BS Conference
- Future article in RICS BS Journal



Case Study: RICS Headquarters

Pre-survey

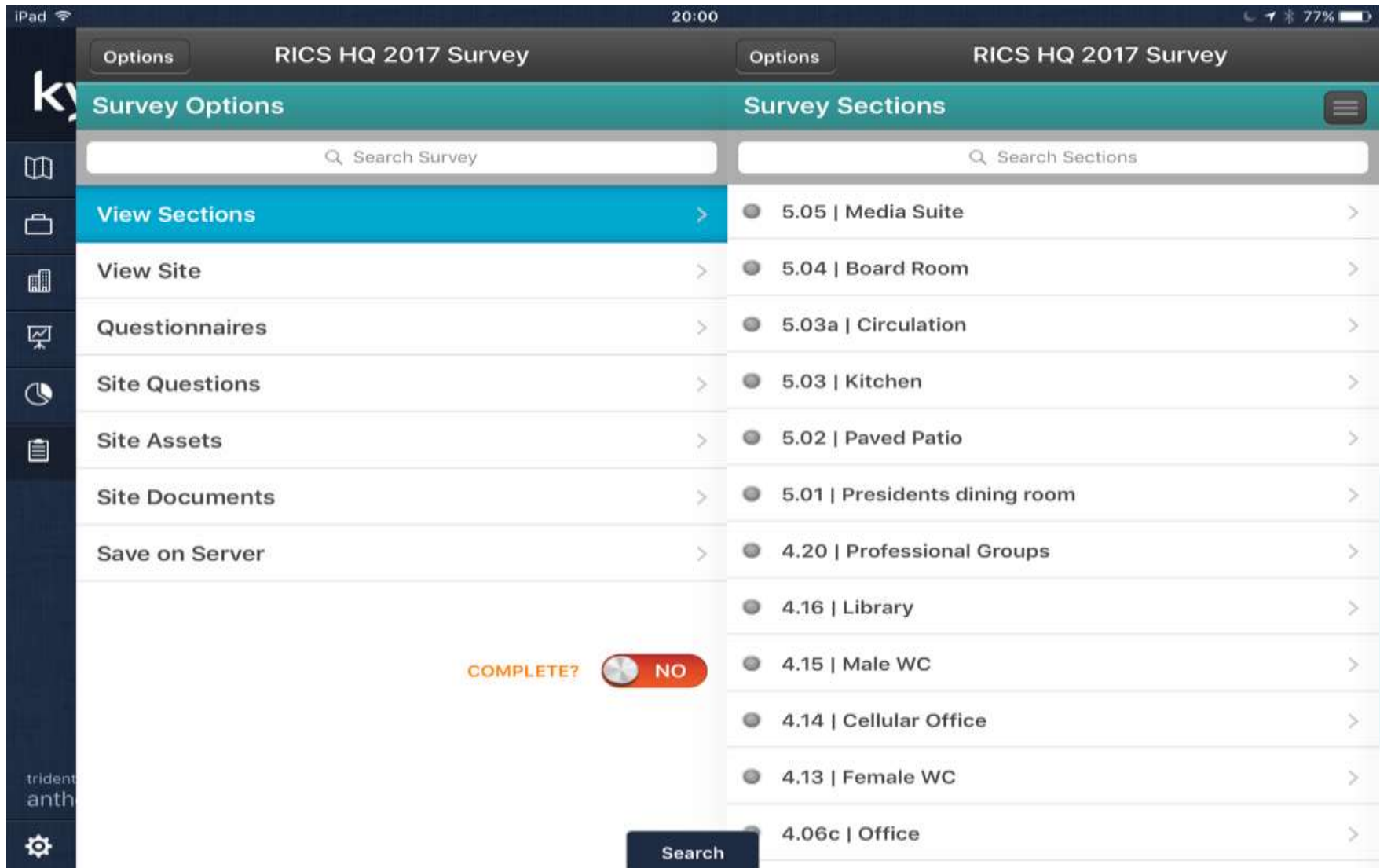
- Meeting with Client
- Obtained existing information
- Extracted info from BIM Model
- Setting up of templates
- Conference call with all parties

Carrying out the survey

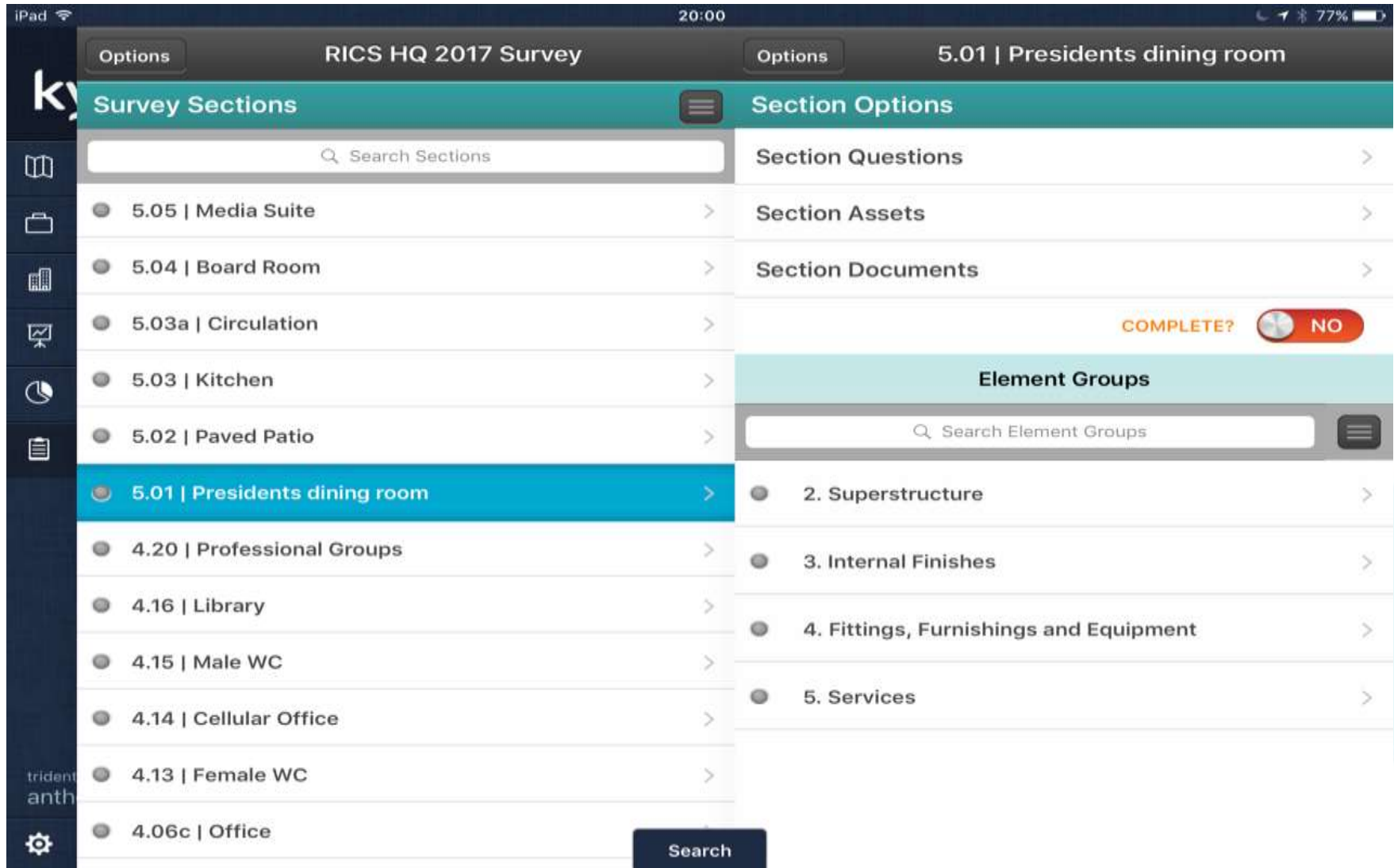
- Pre-defined
 - NRM Element lists
 - Activity cycles
 - BCIS Costs
 - Floor and ceiling areas



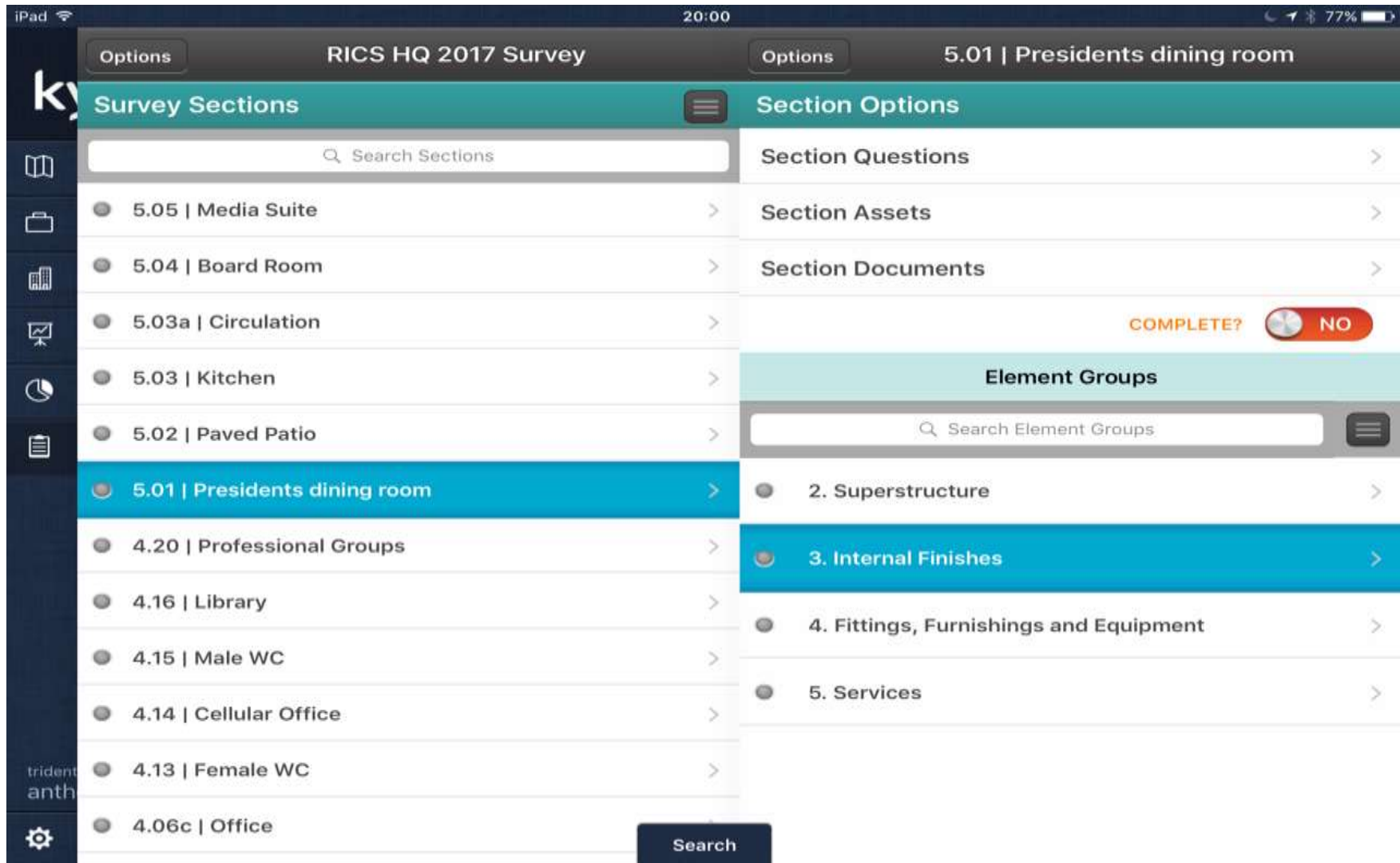
Case Study: Data capture



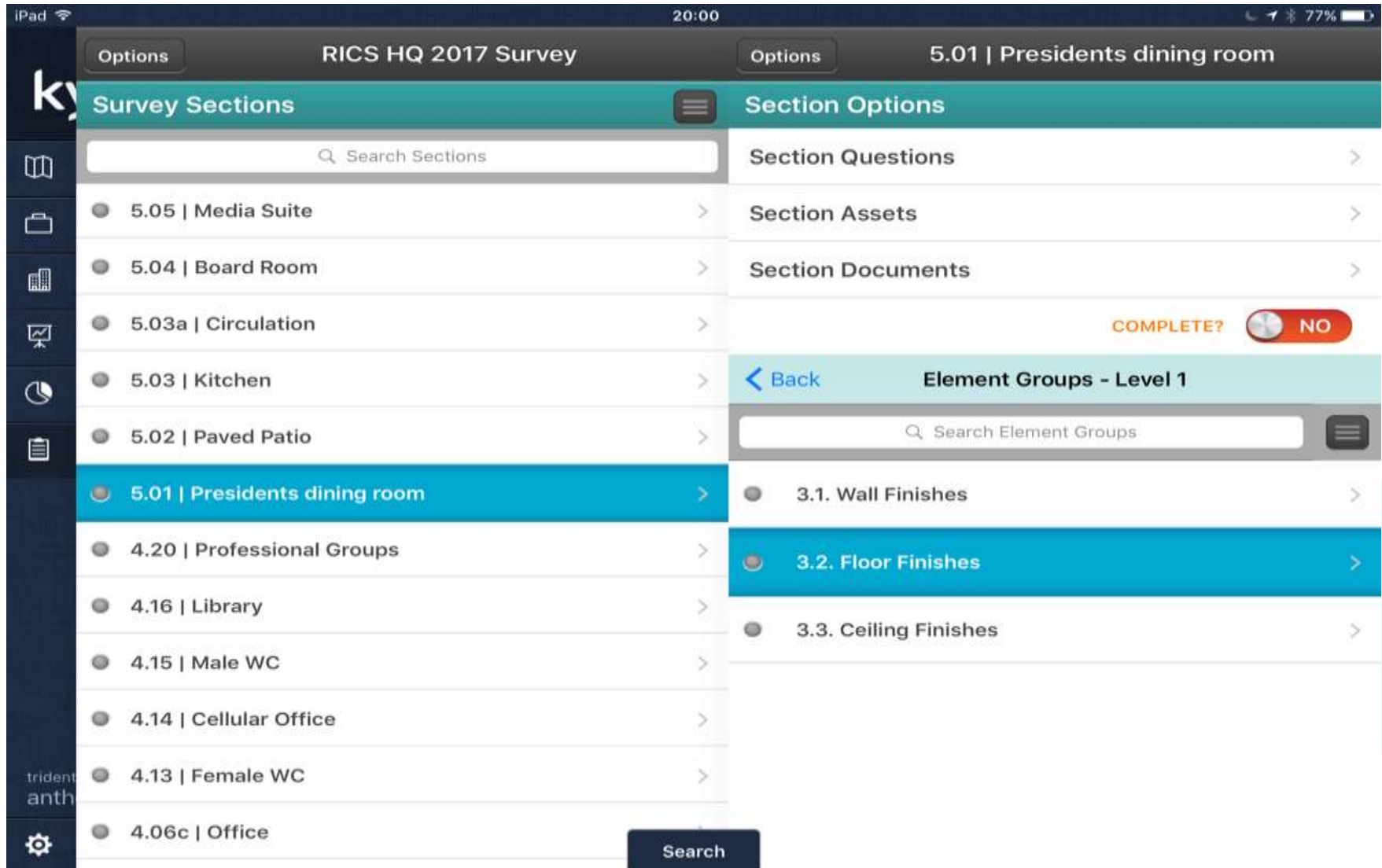
Case Study: Data capture



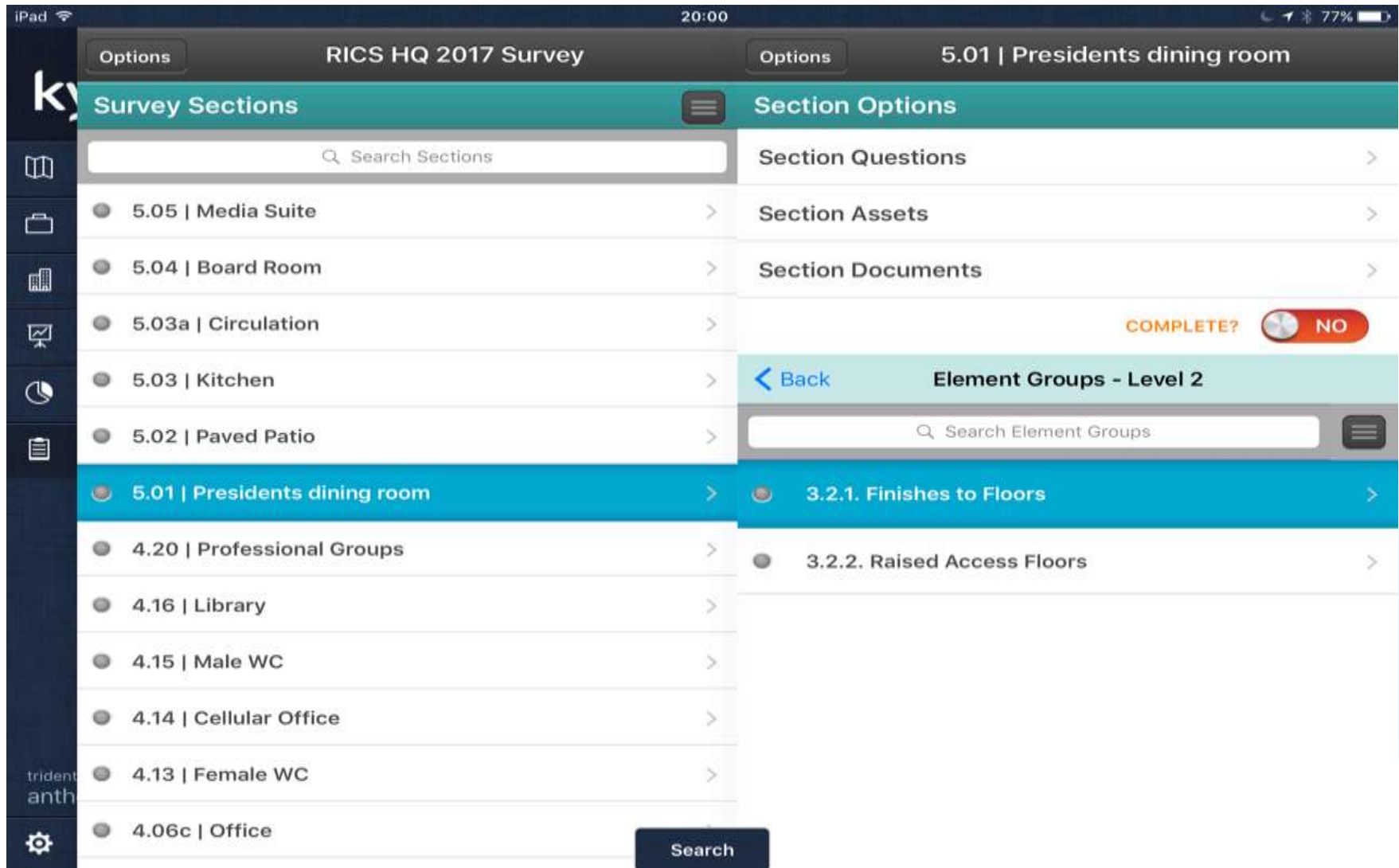
Case Study: Data capture



Case Study: Data capture



Case Study: Data capture



Case Study: Data capture

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Options RICS HQ 2017 Survey Options 5.01 | Presidents dining room

Survey Sections

Search Sections

- 5.05 | Media Suite
- 5.04 | Board Room
- 5.03a | Circulation
- 5.03 | Kitchen
- 5.02 | Paved Patio
- 5.01 | Presidents dining room
- 4.20 | Professional Groups
- 4.16 | Library
- 4.15 | Male WC
- 4.14 | Cellular Office
- 4.13 | Female WC
- 4.06c | Office

Section Options

Section Questions

Section Assets

Section Documents

COMPLETE? NO

Section Elements

Back

Search Elements

- 3.2.1.9. - Carpet
Condition: A
Action Required: Replace
- 3.2.1.10. - Carpet tiles
Condition: A
Action Required: Replace
- 3.2.1.11. - Ceramic tiles
Condition: A
Action Required: Replace
- 3.2.1.12. - Entrance mat wells
Condition: A
Action Required: Replace

Search

Case Study: Data capture

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Options 5.01 | Presid 3.2.1.9. - Carpet Element Options COMPLETE? NO

Section Options

- Section Questions
- Section Assets
- Section Documents

< Back Section Elements

Search Elements

3.2.1.9. - Carpet
Condition: A
Action Required: Replace

3.2.1.10. - Carpet tiles
Condition: A
Action Required: Replace

3.2.1.11. - Ceramic tiles
Condition: A
Action Required: Replace

3.2.1.12. - Entrance mat wells
Condition: A
Action Required: Replace

Condition Please select the condition of element(s)

A B C D

ACCESS
Access granted

QUANTITY
60.7

UNIT
m2

RESIDUAL LIFE
0

FREQUENCY IN YEAR
1

ACTIVITY CYCLE
15

You may have to fill in some additional information

CONDITIONAL DEFECT
Please Select..

ACTION REQUIRED
Replace

HEALTH AND SAFETY ISSUE
NO

COST
45

COMMENTS
Enter value

Conditional Defect Other
Enter value

PHOTO IMPORT NOTE

Search COMPLETE? NO

Case Study: Data capture

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Options 5.01 | Presid 3.2.1.9. - Carpet Element Options COMPLETE? NO

Section Options

- Section Questions
- Section Assets
- Section Documents

< Back Section Elements

Search Elements

3.2.1.9. - Carpet
Condition: B
Action Required: Replace

3.2.1.10. - Carpet tiles
Condition: A
Action Required: Replace

3.2.1.11. - Ceramic tiles
Condition: A
Action Required: Replace

3.2.1.12. - Entrance mat wells
Condition: A
Action Required: Replace

Condition Please select the condition of element(s)

A B C D

ACCESS
Access granted

QUANTITY
60.7

UNIT
m2

RESIDUAL LIFE

FREQUENCY IN YEAR

CONDITIONAL DEFECT
Please Select..

HEALTH AND SAFETY ISSUE
NO

COMMENTS
Enter value




PHOTO

Please Select..

- Heavily soiled
- Heavily worn
- Lightly soiled
- Lightly worn
- Minor ruckling
- Missing section
- No Defect
- Other
- Poor Condition
- Reasonable condition
- Various ruckling

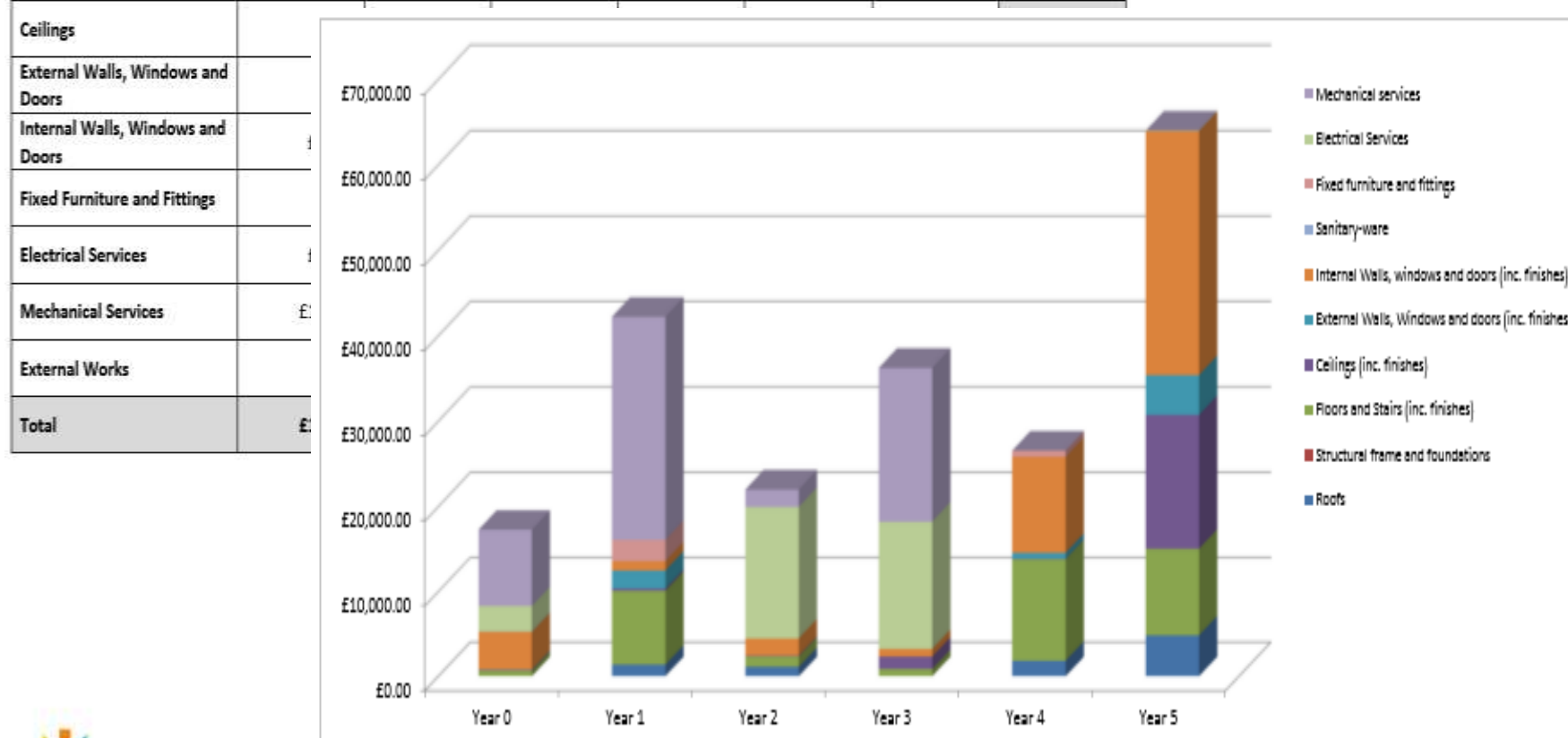
Search COMPLETE? NO

Case Study: Reporting

Photo Location	Element	Defect	Action	Cost Estimate	Comments	Photo
5.03 Kitchen	3. Internal Finishes / 3.2. Floor Finishes / 3.2.1. Finishes to Floors / Welded vinyl sheet	Various bubbling	Replace	£ 374	Recommend to replace vinyl in conjunction with kitchen replacement	
S.07 Stairwell	3. Internal Finishes / 3.2. Floor Finishes / 3.2.1. Finishes to Floors / Carpet	Debonded	Repair	£ 135	Carpet from fourth to fifth floor (including adjoining circulation area) is lifting in isolated areas. Repair in the short term.	
S.06 Stairwell	3. Internal Finishes / 3.2. Floor Finishes / 3.2.1. Finishes to Floors / Carpet	Heavily soiled	Replace	£4,400	Carpet from second to fourth floor (including adjoining circulation area) requires replacement. Stained throughout and lifting in sections	

Case Study: Reporting

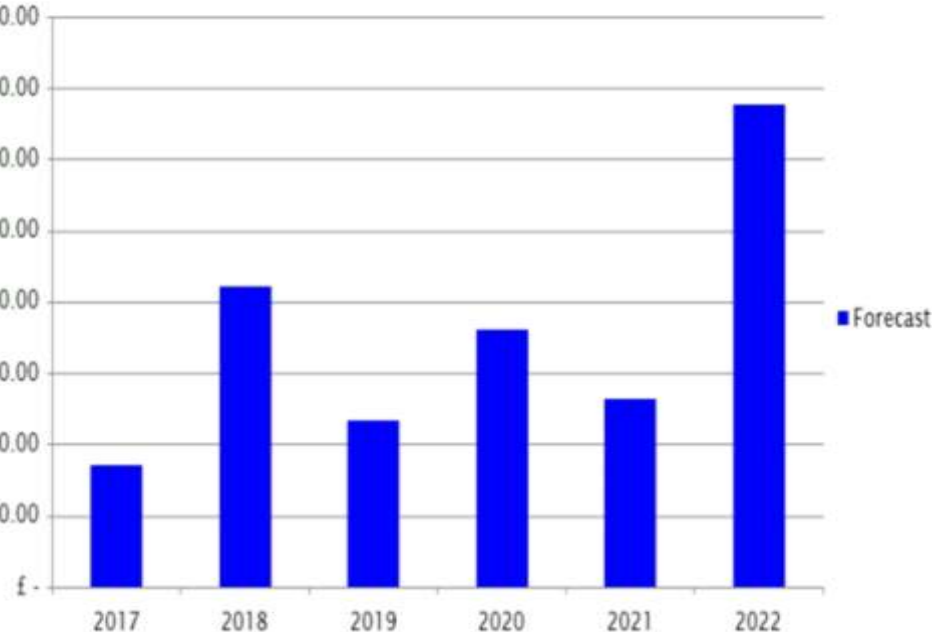
Element	Year 0 (2017)	Year 1 (2018)	Year 2 (2019)	Year 3 (2020)	Year 4 (2021)	Year 5 (2022)	Total
Roofs	£ 0	£1,360	£1,105	£ 0	£1,835	£4,824	£9,124
Structural Frame and Foundations	£ 0	£ 0	£ 0	£ 0	£ 0	£ 0	£ 0
Floors and Stairs	£ 624	£8,716	£1,218	£ 837	£11,986	£10,221	£33,602



Case Study: Reporting

4.1 5 Year High level financial summary by element.

	Grade	Total Cost			Number of Actions		
	Most Common	5 Year	D's	C's	5 Year	D's	C's
Roofs	C	£9,123	£ 0	£4,300	14	0	9
Structural frame and foundations		£ 0	£ 0	£ 0	0	0	0
Floors and stairs (including finishes)	B	£33,601	£ 509	£10,223	27	2	10
Ceilings (including finishes)	B	£ 80,000.00					
External walls, windows and doors	C	£ 70,000.00					
Internal walls, windows and doors	B	£ 60,000.00					
Fixed furniture and fittings	B	£ 50,000.00					
Electrical Services	C	£ 40,000.00					
Mechanical Services	C	£ 30,000.00					
External works	C	£ 20,000.00					
	Total	£ 10,000.00					



Case Study: Reporting

Location	Group (2)	Description	Grad	Defect	Remedial Actio	Residual Life	Activity Cycle	Total	2017	2018	2019	2020	2021	2022
5.04 Board Room	3.2. Floor Finishes	Carpet	B	Reasonable Condition	Replace	5	15	£ 927.00	£ -	£ -	£ -	£ -	£ -	£ 927.00
5.06 WC	3.1. Wall Finishes	Ceramic tiles	C	Missing	Replace	1	60	£ 77.00	£ -	£ 77.00	£ -	£ -	£ -	£ -
5.06 WC	3.2. Floor Finishes	Carpet	B	Lightly worn	Replace	3	15	£ 301.50	£ -	£ -	£ -	£ 301.50	£ -	£ -
5.07 WC	3.1. Wall Finishes	Decoration - Paint (plaster)	C	Impact damage	Redecorate	3	6	£ 14.40	£ -	£ -	£ -	£ 14.40	£ -	£ -
B.02 Facilities	3.1. Wall Finishes	Decoration - Paint (plaster)	B	Good condition	Redecorate	5	6	£ 1,080.00	£ -	£ -	£ -	£ -	£ -	£ 1,080.00
B.04 AV Storage	2.8. Internal Doors	Flush	C	Defective	Replace	2	25	£ 476.00	£ -	£ -	£ 476.00	£ -	£ -	£ -
B.06 Strong Room	3.3. Ceiling Finishes	Paint (plaster)	C	Hairline Cracking	Redecorate	1	6	£ 125.10	£ -	£ 125.10	£ -	£ -	£ -	£ -
B.06 Strong Room	3.3. Ceiling Finishes	Paint (plaster)	C	Hairline Cracking	Redecorate	1	6	£ 125.10	£ -	£ 125.10	£ -	£ -	£ -	£ -
B.07	2.8. Internal Doors	Door furniture general	C	Defective Ironmongery	Replace	0	30	£ 50.00	£ 50.00	£ -	£ -	£ -	£ -	£ -
B.07	3.1. Wall Finishes	Decoration - Paint (plaster)	C	Poor Condition	Replace	0	6	£ 27.00	£ 27.00	£ -	£ -	£ -	£ -	£ -
B.12 Electrical Intake	5.7. Ventilation Systems	Ductwork - Galvanised sheet	C	Missing Parts	Replace	1	40	£ 500.00	£ -	£ 500.00	£ -	£ -	£ -	£ -
B.13 Plant Room	2.7. Internal Walls and Partitions	Block dense	D	General deterioration of mortar pointing	Repair	0	50	£ 50.00	£ 50.00	£ -	£ -	£ -	£ -	£ -
B.13 Plant Room	5.12. Communication, security and control	Fire Alarm Devices	B	Reasonable Condition	Replace	5	10	£ 45.00	£ -	£ -	£ -	£ -	£ -	£ 45.00
B.13 Plant Room	5.12. Communication, security and control	Control Panel Electric/electronic	B	Reasonable Condition	Replace	23	30	£ -	£ -	£ -	£ -	£ -	£ -	£ -
B.13 Plant Room	5.12. Communication, security and control	Control Panel Electric/electronic	B	Reasonable Condition	Replace	13	20	£ -	£ -	£ -	£ -	£ -	£ -	£ -
B.13 Plant Room	5.12. Communication, security and control	Control Panel Electric/electronic	B	Reasonable Condition	Replace	23	30	£ -	£ -	£ -	£ -	£ -	£ -	£ -

Case Study: Summary

- Survey personnel
 - 4 Building Surveyors , 2 M&E Engineers
- Data seamlessly integrated
- Survey carried out whilst building in use
- PDF report and Excel issued within 2 weeks
- Data used immediately
- Drone survey to take place in July
 - High res condition, Thermal and 3D model
- Ongoing discussions re further use of PropTech
- Thought leadership group set up



“Property Technology – was employed to capture, quality assure and produce a comprehensive, detailed and accurate report and data set that we were immediately able to use to prioritise investment “

Head of FM RICS

Next steps

- PropTech Thought leadership Group
- PropTech - APC competency
- BS Journal article - October
- Future PropTech events
- PropTech agenda item on BSPG Board



