

Asset Information Management from a Local Perspective

28th September

Phil Catton

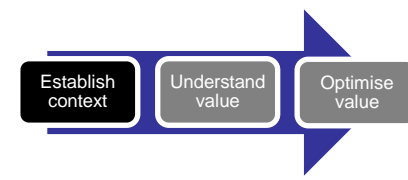
ppc29@cam.ac.uk



1. Establish the context

2. Understand the value

3. Optimise the value



- Background to project
- Approach
- Findings
- Assessment tool
- Next steps

Background

Establish
context

Understand
value

Optimise
value



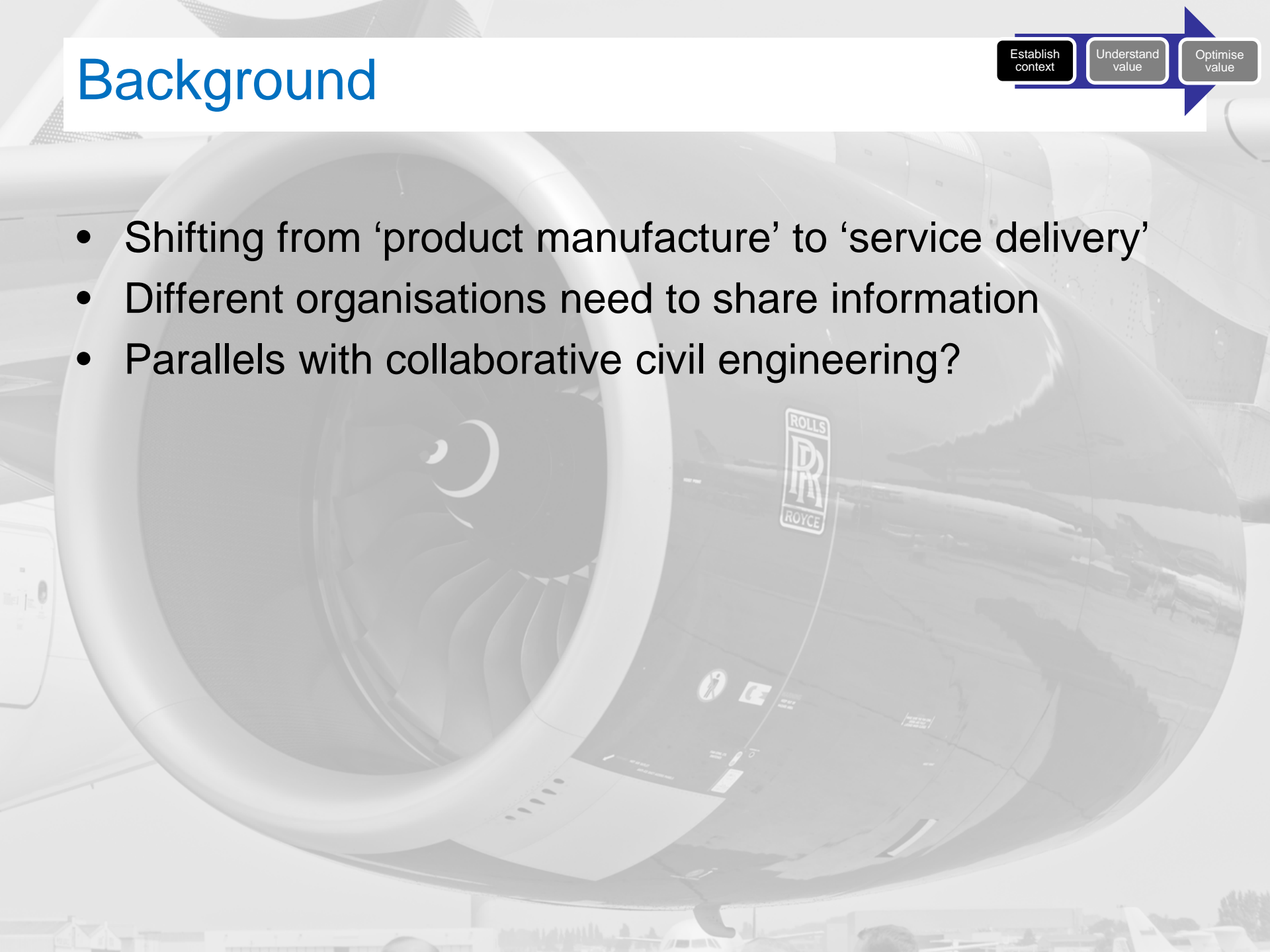
Background

Establish
context

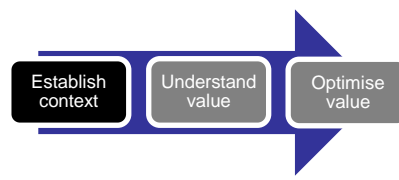
Understand
value

Optimise
value

- Shifting from 'product manufacture' to 'service delivery'
- Different organisations need to share information
- Parallels with collaborative civil engineering?



Establishing the context



- 2011, Cabinet Office release Government Construction Strategy report

“Government will require fully collaborative 3D BIM (with all project and asset information, documentation and data being electronic) as a minimum by 2016”



2011

2012

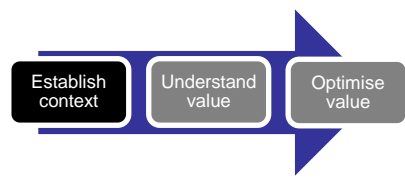
2013

2014

2015

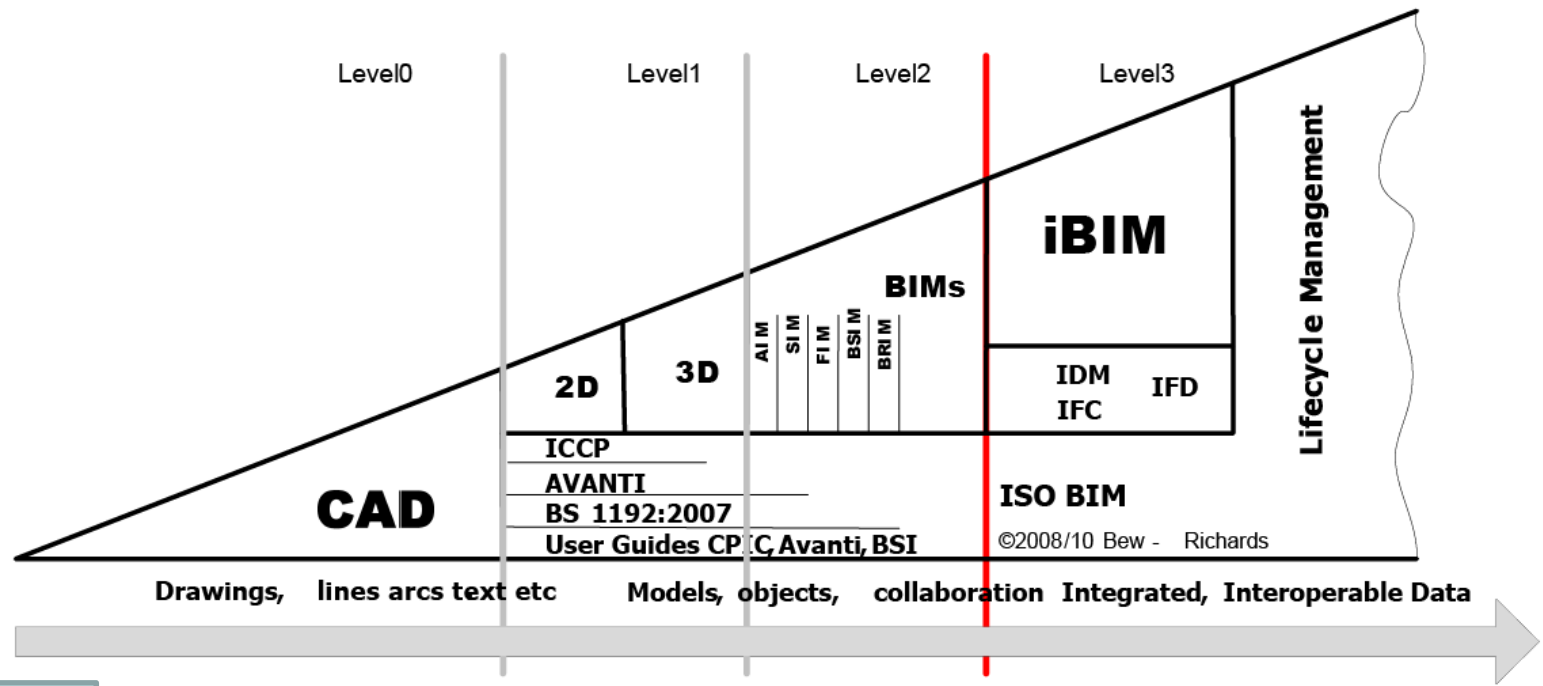
2016

Establishing the context



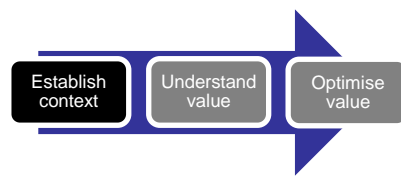
- 2011, BIM Task Group formed and agree target of BIM Level 2

2011
2012
2013
2014
2015
2016

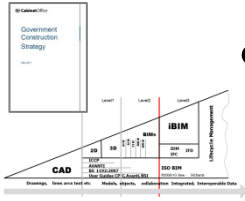


← 'BIM'

Establishing the context



2011
2012
2013
2014
2015
2016

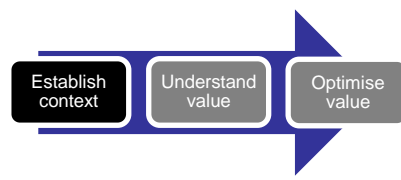


- 2011-12, BS8541-x “Library objects for architecture, engineering and construction” released

Covering various mechanics of BIM



Establishing the context



2011

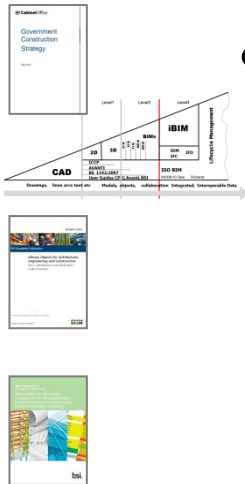
2012

2013

2014

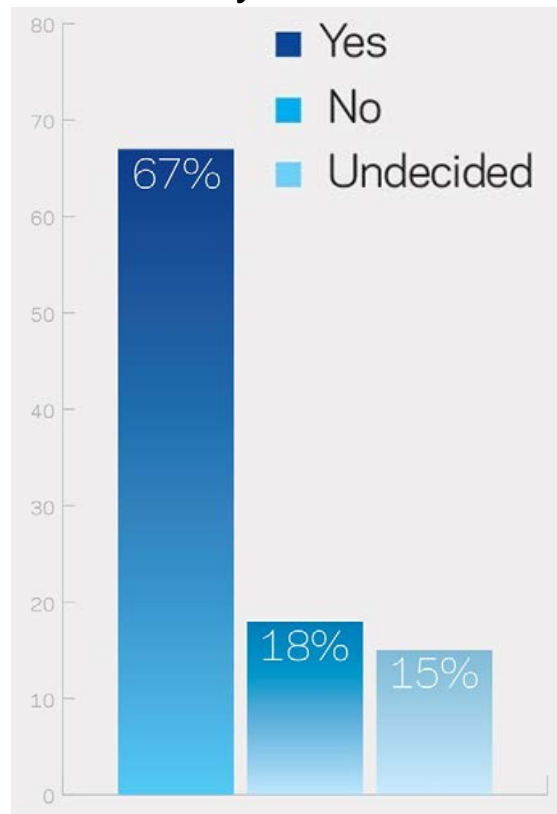
2015

2016



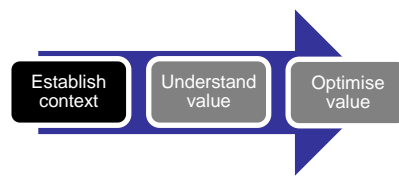
- 2014, Panic sets in

“Do you think **the government will fail to hit its key target** of having all centrally procured projects achieve Level 2 BIM by 2016?”

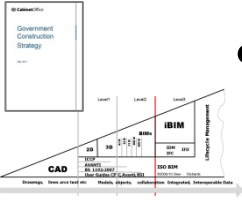


<http://www.building.co.uk/government-will-miss-key-2016-bim-target%E2%80%99/5066460.article>

Establishing the context



2011



2012



2013



2014



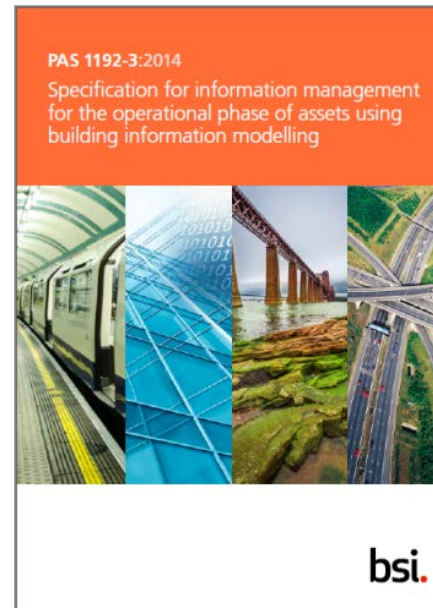
2015

2016

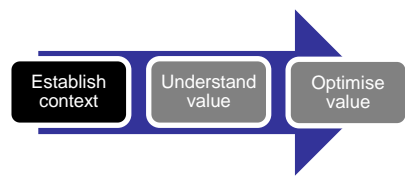


- 2014, PAS1192:3-2014 “Specification for information management for the operational phase of assets (...)” released

“The purpose of PAS1192:3 is to act as a partner to PAS 1192:2 and support the Level 2 BIM objective by setting out a framework for information management for the whole life cycle of asset”



Establishing the context



- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

2011: Government Construction Strategy, BIM Level 2 diagram, CAD vs BIM comparison chart.

2012: [Cover image]

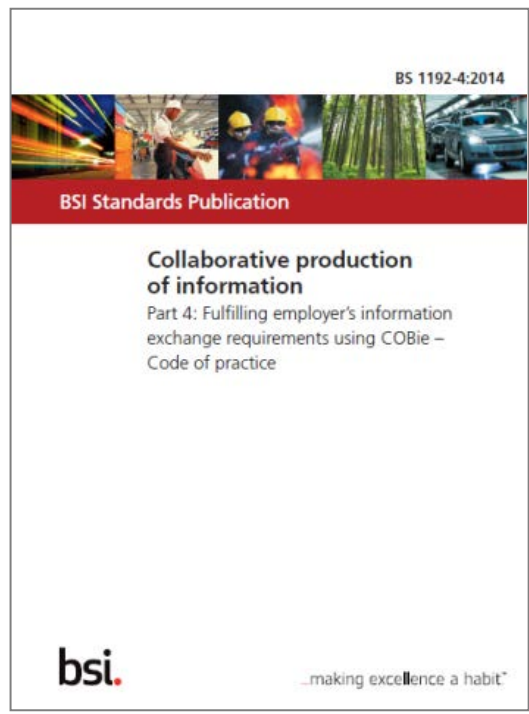
2013: [Cover image]

2014: BIM Panic (pointing to 2013)

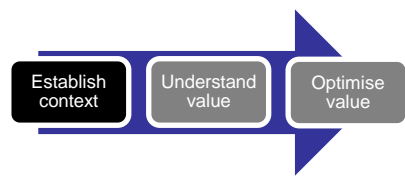
2015: [Cover image]

2016: BIM L2 (pointing to 2015)

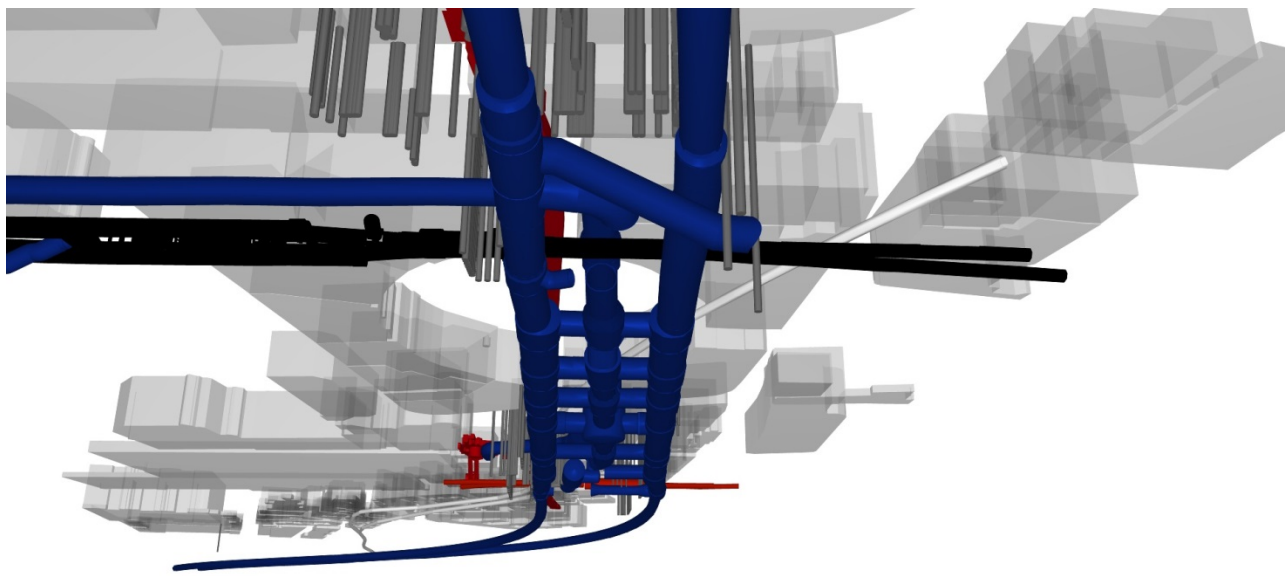
- 2014, BS 1192-4:2014 “Fulfilling employers information exchange requirements using COBie” released
Code of practice to help show compliance to BIM Level 2



Establishing the context

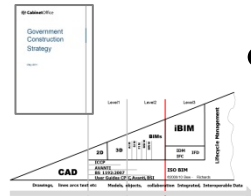


- 2015, Various high profile success stories
Some people stop panicking quite as much



Liverpool Street Station

- 2011
- 2012
- 2013
- 2014
- 2015
- 2016

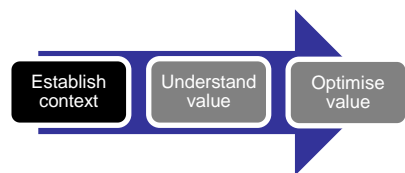


BIM Panic

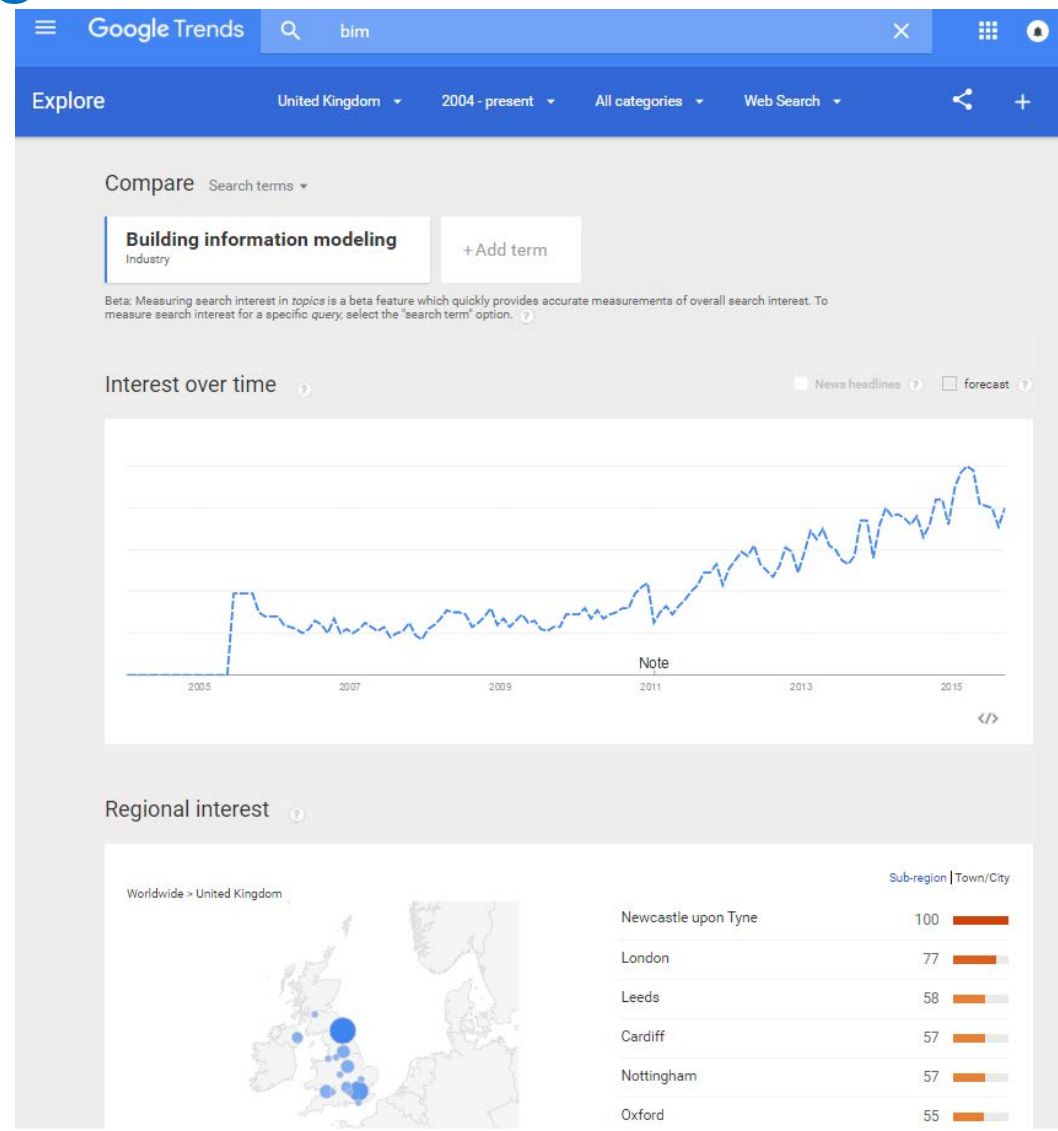


BIM L2

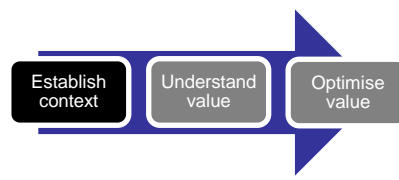
Establishing the context



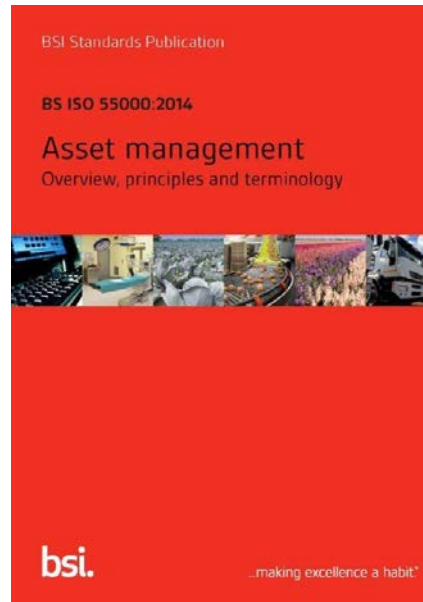
- 2011
- 2012
- 2013
- 2014
- 2015
- 2016



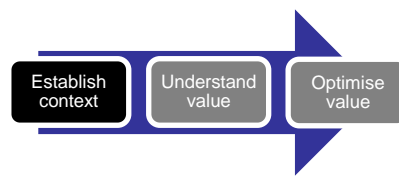
Establishing the context



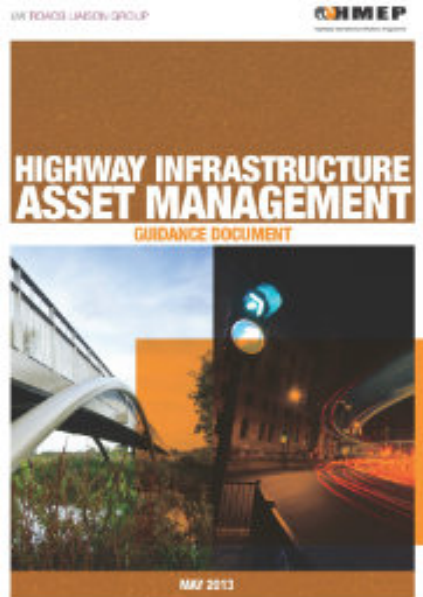
- Meanwhile, at the IAM...
- 2014, ISO 55,000 “Asset Management” released
 - Drawing heavily from PAS55-2008, sets out ‘whole life value’ approaches to managing various assets



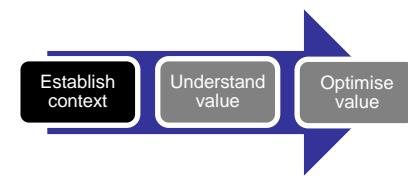
Establishing the context



- Meanwhile, at the UK Roads Liaison Group...
- 2013, “Highway Infrastructure Asset Management Guidance Document” released
 - “This Guidance makes 14 recommendations which are presented as the minimum requirements to achieve a reasonable level of benefit from asset management”

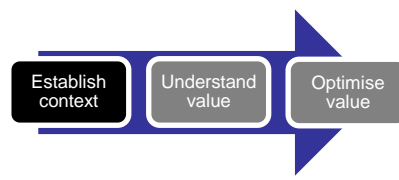


Establishing the context



- Many parallel streams in the same space
- Large construction projects and strategic assets able to see real benefits

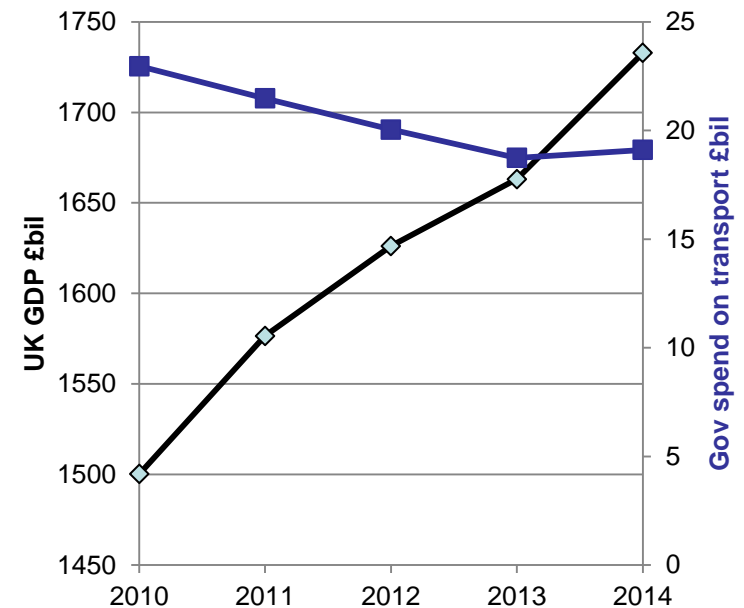
Establishing the context



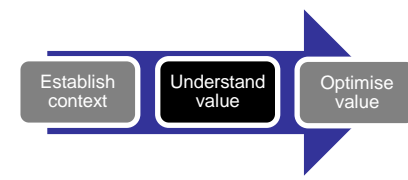
- Many parallel streams in the same space
- Large construction projects and strategic assets able to see real benefits

However...

- Asset managers for existing assets can't easily achieve BIM
- Civil infrastructure assets (roads, bridges etc) are managed by Local Authority councils (LAs)
- Small teams, with small budgets and thousands of assets



Approach to Understand Value



- Observations:
 - LAs lack the resources of larger strategic asset owners
 - LAs are less engaged with BIM and ISO 55,000
 - LAs have wide ranging info systems
- Aims:
 - Interview LA asset owners regarding their asset information systems
 - Highlight common issues to draw attention
 - Match current weaknesses in practice with opportunities in guidance

Approach to Understand Value

Establish context

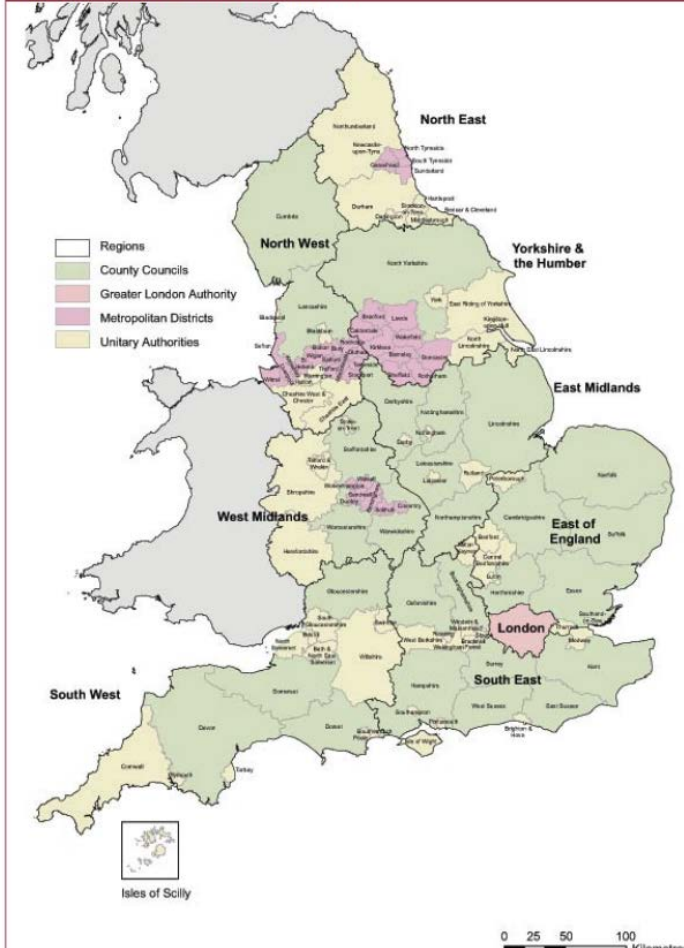
Understand value

Optimise value

- Approach:
 - One-to-one interviews with asset owners
- Selected English two-tier councils
 - Nation-wide, covering the most land
- Interviewed asset owners responsible for:
 - 82% of shire counties
 - 50,000 bridges
 - More than 300km of retaining walls
 - £50mil total budget
- Many many thanks to Kevin!

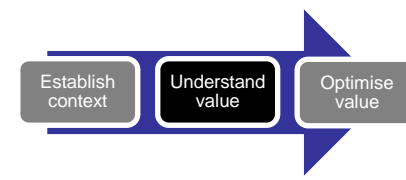
ADEPT
ASSOCIATION OF DIRECTORS OF ENVIRONMENT, ECONOMY
PLANNING AND TRANSPORT

Map A1a: Government office regions; shire counties (upper tier), metropolitan districts and unitary authorities in England as at 1 April 2009



Produced by DCAA, Local Government Finance
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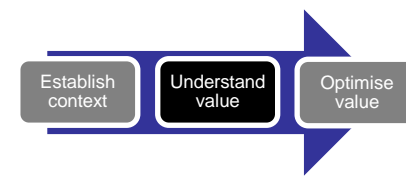
Interview findings



Management

- About 1500 bridges and several hundred walls per LA is typical
- Ignoring walls, about £1000 per bridge per year
- 4-20 head count, normally closer to 4
- ‘Special assets’ (tunnels, swing bridges, sea walls) can really skew budgets and staffing
- ‘Capital’ and ‘revenue’ budgetary pots are handled differently in different places
- Decisions can be driven by politics rather than engineering

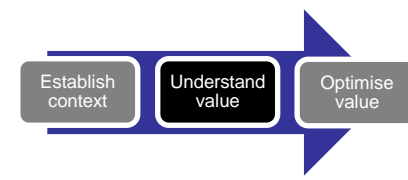
Interview findings



Information systems

- About 5 different software systems used
- Only one is bespoke for bridges
- The rest are ‘bolt-ons’ to highways systems, and are not ideal
- Some LAs have fully integrated cloud/smartphone based systems with everything stored online
- Some have exclusively paper based systems

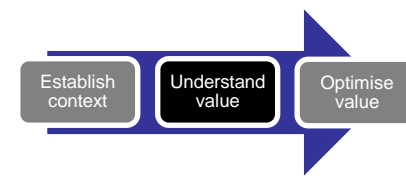
Interview findings



Information quality

- What info is held and how/where/for how long varies dramatically
- As a minimum, all recent inspection reports are available everywhere (allegedly)
- Older records are consistently less available, but ‘what is there is good’

Interview findings



Self perception

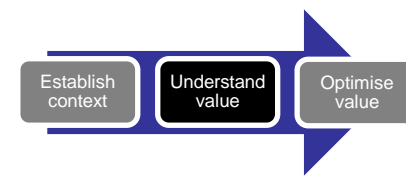
How do you think you compare (marks out of 5)

We're no worse than our peers...

...In fact, we're probably a little better...

... But we're not perfect...

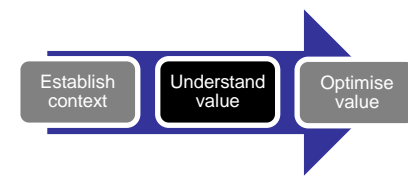
Interview findings



Specific recurring themes

- Legacy issues:
 - Bridges are 100+ years old, which gives plenty of scope for records to be lost
 - Migrating data between systems
 - Scanning microfilm/paper records
- Ownership of retaining walls
 - Records never existed, or ambiguous – often gets litigious
- Communication with other stakeholders
 - Some can be dogmatic, steamrolling through
 - Never speak to the same person twice

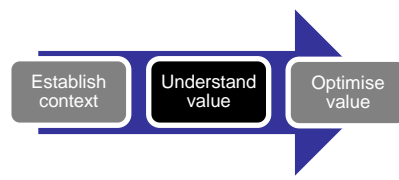
Interview findings



Specific recurring themes

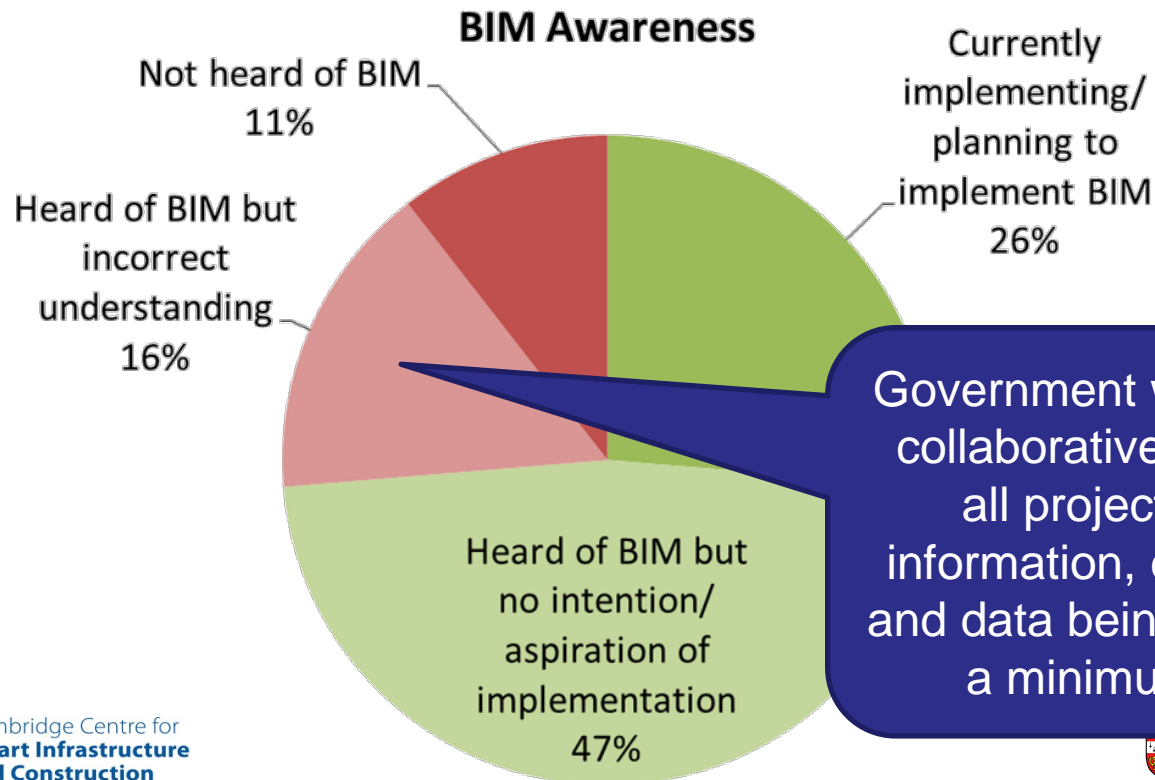
- Lack of bespoke info management system for bridges
 - Often unable to find the right info, even if it is ‘definitely there somewhere’
- Calculating replacement costs for government accounting
 - Difficult to pull out info from some systems
 - Info unavailable or quality insufficient
- Information generally missing
- Lack of resources (people’s time) to solve any of the above

Interview findings

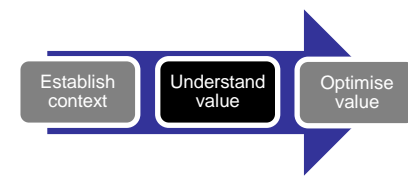


BIM Awareness

- Most people have heard of BIM
- Very few have heard of COBie or PAS1192



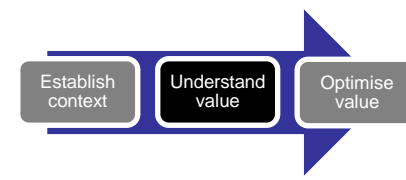
Interview findings



BIM – Perceived Barriers

- ‘What’s in it for me’ is not clear
- General feeling that its ‘more trouble than its worth’
- ‘Want a solution appropriate to the problem, which BIM isn’t’
- The best of the existing systems would probably (at least) come close to BIM Level 2

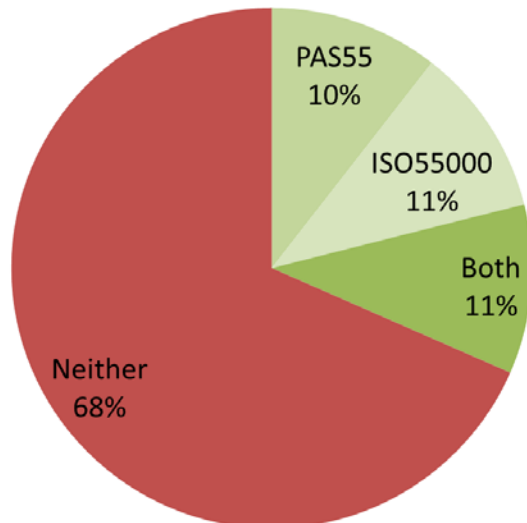
Interview findings



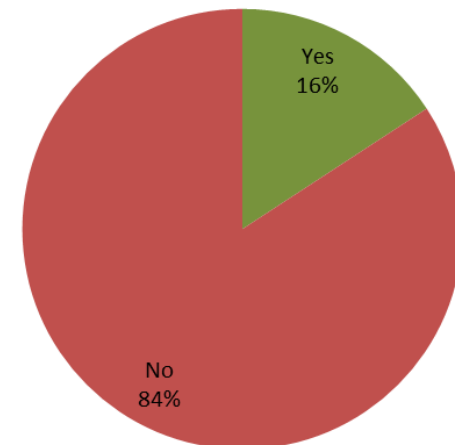
PAS55 and ISO 55,000

- Most people either have copies on their desk...
- ...OR have said 'our asset management people will probably be aware of this', and don't know themselves
- Many are beginning to take a long term view, such as waterproofing bridges, thanks to HMEP document

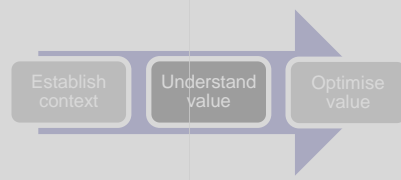
Which asset management standards are you aware of?



Currently implementing/ planning to implement PAS55 or ISO55000



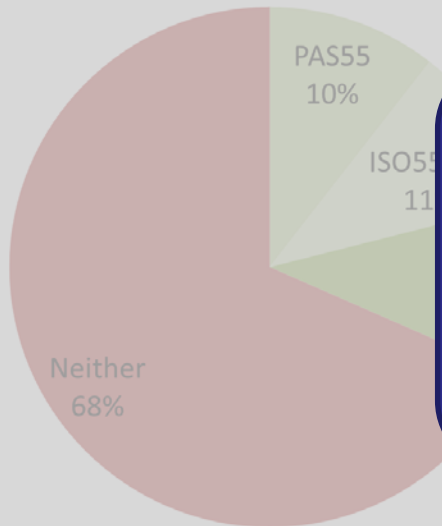
Interview findings



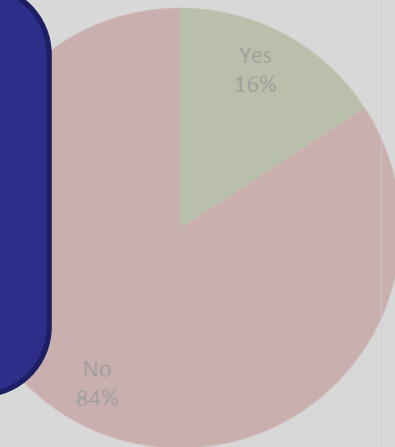
PAS55 and ISO 55,000

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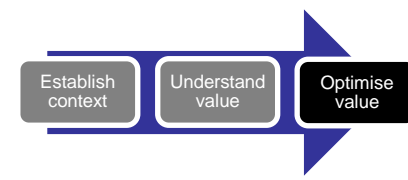


Currently implementing/ planning to implement PAS55 or ISO55000



...Our asset management people will probably be aware of this...

Optimising value



Specific, actionable challenges

- Lack of awareness of ISO 55,000 and BIM in LA community
- Lack of buy-in to ‘asset management’ as a mind set from senior managers (eg, local councillors)
- With 50,000 assets, ranging from two planks of wood to swing bridges, where do we start?

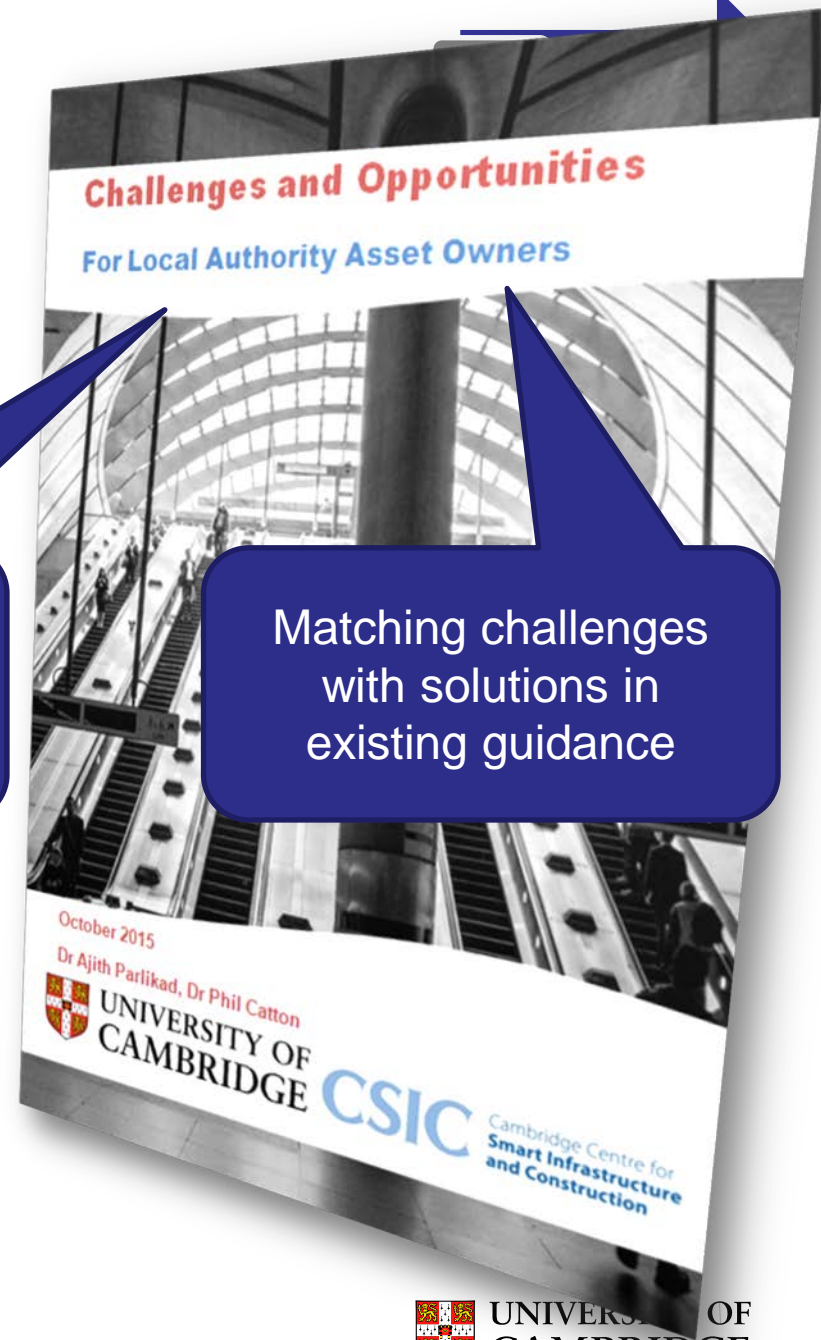
Optimising value

Specific, actionable challenges

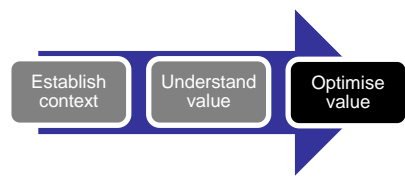
- Lack of awareness of ISO 55,000 and BIM in LA community
- Lack of buy-in (e.g. management, senior managers, councillors)
- With 50,000 assets, ranging from two planks of wood to swing bridges, where do we start?

Covering the detailed findings of the above interviews

Matching challenges with solutions in existing guidance



Optimising value



Specific, act

- Lack of awareness and BIM in L
- Lack of buy-in to 'asset management' as a mind set from senior managers (eg, local councillors)

Questionnaire-based information system self assessment tool

Directs users to the 'right' part of guidance documents

	Present	Availability	Accuracy	Score
General information search	0 - Not present	0 - Can't get access to this?	0 - I would never trust this (or not present)	27
Architectural information model	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	13
Structural information model	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	12
Use of industry standard classes (IFC)	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	4
Use of international standards for documents (PDF)	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	18
Completed information delivery model (IDM)	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	4
Information security plan	1 - Sometimes present	1 - More than one hour search time (or not present)	1 - I would never trust this (or not present)	4

Prioritises 'problem areas'

Benchmarks against peers with optional online submission

Offers personalised and targeted advice direct from guidance docs

Optimising value

Establish context

Understand

Optimise

Specific, active

- Lack of awareness and BIM in local government
- Lack of buy-in to 'asset management' as a mind set from senior managers (eg, local councillors)
- With 50,000 assets, ranging from two planks of wood to swing bridges where do we start?

“BIM should be deployed where the risks of not doing so are too high” - Julian Schwarzenbach



Apply IfM's existing Total Information Risk Management (TIRM) tools to assets

Quantify potential benefits of BIM deployment to existing assets to build a business case

Summary

- Local authority asset managers interviews
- Represent thousands of assets, but often not on the same page as strategic asset owners
- Self assessment tool developed to help uptake of guidance in standards
- Future work – prioritisation of deploying BIM to existing assets