TOUCHING

WHERE DO WE STAND?

We stand with you. Whoever you are – a client, a colleague, a supplier, someone who lives or works in, or is just passing through, a building we've designed. We stand with you because, for us, architecture is all about people. Get to know them and what's important to them, connect with them and collaborate, deal with them respectfully and with integrity and, together, you can solve any problem, overcome any challenge and achieve any ambition. That's what it takes to create sustainable, innovative, valuable and positive architecture. Architecture that improves lives, builds communities and enhances society.

Life touching design.

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Life touching design.

Project Information Model - Asset Information Model

University of East Anglia

LIFE TOUCHING DESIGN

KIER

Client	University of East Anglia
Architect	LIFE TOUCHING DESIGN
Main Contractor	KIER
Structural Engineer	RAMBOLL
CLT Fabricator	EURBAN
MEP Designers	BSD
MEP Sub-Contractor	INTEGRAL

232 En-Suite Bedrooms

£900k Under Budget

Project Cost £10.1m - Value £17m

Feasibility to Occupation in 22 Months

BIM Pathfinder Project

Multiple BIM Authoring Tools

First Asset Information Model for all Stakeholders

232 En-Suite Bedrooms

£900k Under Budget

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BIM Pathfinder Project

Multiple BIM Authoring Tools

First Asset Information Model for all Stakeholders

“Exceeded the clients expectations in every way”

2014

Constructing Excellence - Legacy Award for Sustainability

Construction Computing Awards – Collaboration Project of the Year
Construction Computing Awards - Shortlisted for BIM Project of the Year

2015

Constructing Excellence – Integration and Collaborative working

RICS National Award – Design through Innovation

British Construction Industry Awards – BIM Project Application of the Year (shortlisted)

Green Apple Awards for the built environment and architectural heritage – National Gold Award

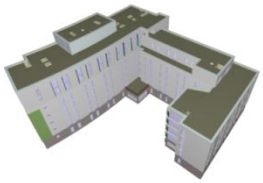
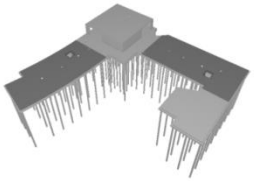
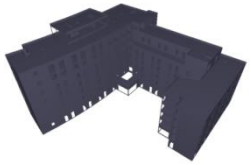
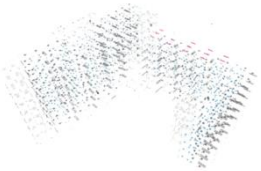
Graphisoft ArchiCAD awards – BIM Project of the Year

NAA Craftmanship Award

lsi
Freeze Background
Share
3D View
Settings
Hide shadows
Rotate
Add a model

LIFE TOUCHING DESIGN

“Each team memb
are most app
which th
task”

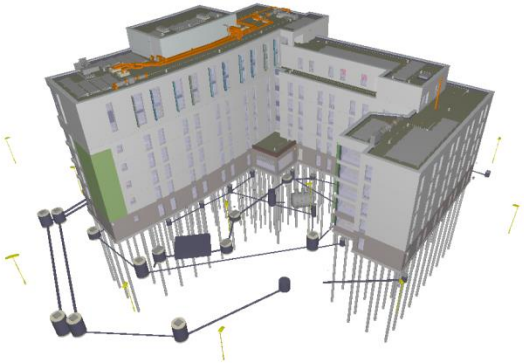
Architectural		lsi LIFE TOUCHING DESIGN	GRAPHISOFT ARCHICAD
Structural		RAMBOLL	AUTODESK REVIT
CLT Fabrication		URBAN	cadwork wood
Mechanical		BSD	AUTODESK REVIT
Electrical		BSD	AUTODESK REVIT
Civil		RAMBOLL	Bentley

Federation
Rule Based Checking
Communication

lsi
LIFE TOUCHING DESIGN

SOLIBRI

Data Capture
Communication
Snagging
Data Verification



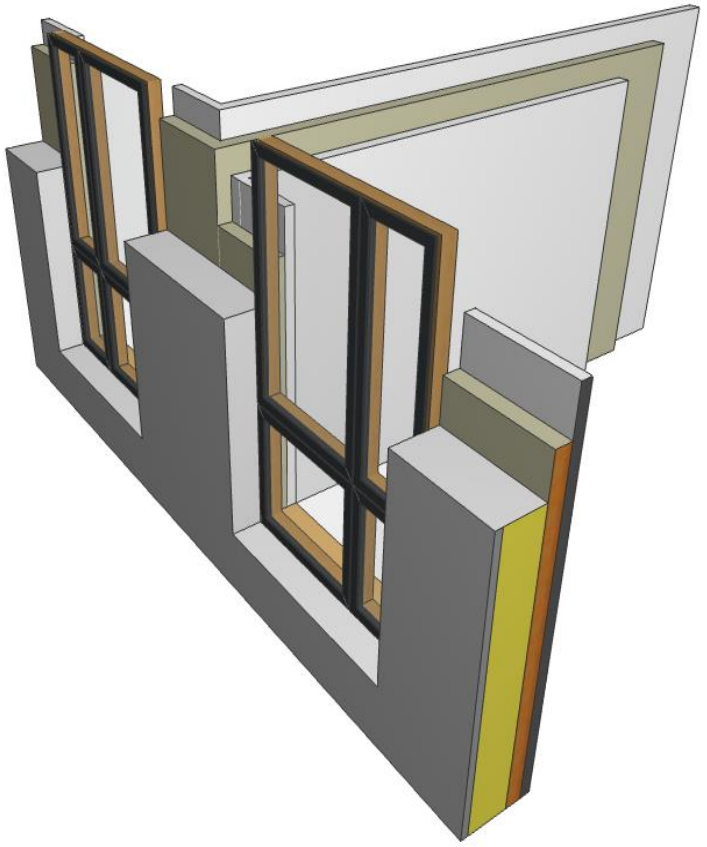
KIER

BIMXtra

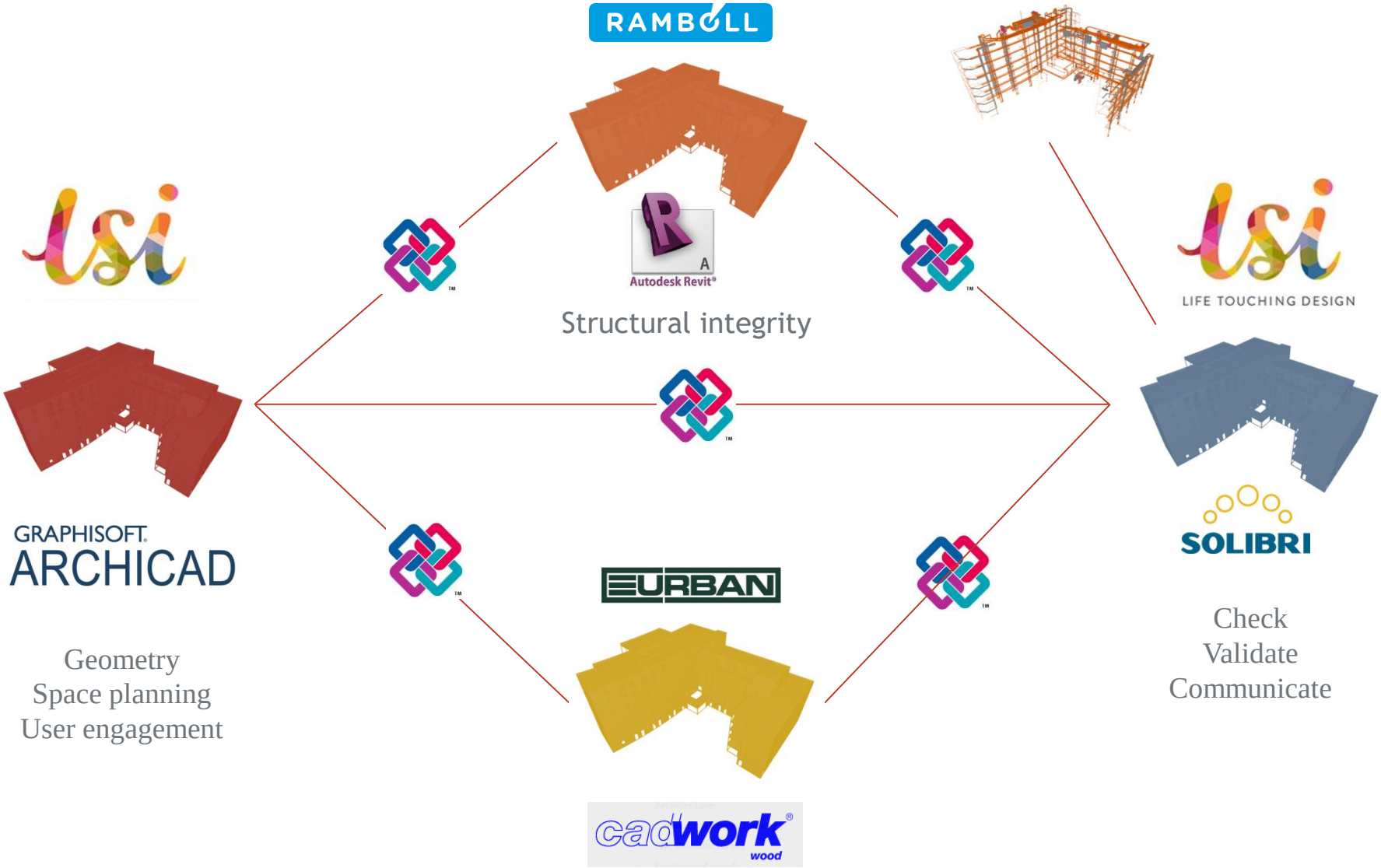
Cross Laminated Timber (Panelised System)

- More difficult to manage than a frame system
- Architects need control over walls!
- We kept CLT until the end of stage E
- Structural Verification through stage F
- Fabrication Model at stage K

Category	Item	RIBA Stag	Level of Development	Responsibility / ownership
03 Shell	Ground Floor Slab	C	100	Ramboll
03 Shell	Ground Floor Slab	D	200	Ramboll
03 Shell	Ground Floor Slab	E	300	Ramboll
03 Shell	Ground Floor Slab	F	300	Ramboll
03 Shell	Ground Floor Slab	K	300	Ramboll
03 Shell	Ground Floor Slab	L	300	Ramboll
03 Shell	CLT Upper Floors	C	100	LSI
03 Shell	CLT Upper Floors	D	200	LSI
03 Shell	CLT Upper Floors	E	300	LSI
03 Shell	CLT Upper Floors	F	300	Ramboll
03 Shell	CLT Upper Floors	K	400	Contractor
03 Shell	CLT Upper Floors	L	400	Contractor
03 Shell	CLT Roof	C	100	LSI
03 Shell	CLT Roof	D	200	LSI
03 Shell	CLT Roof	E	300	LSI
03 Shell	CLT Roof	F	300	Ramboll
03 Shell	CLT Roof	K	400	Contractor
03 Shell	CLT Roof	L	400	Contractor
03 Shell	CLT walls	C	100	LSI
03 Shell	CLT walls	D	200	LSI
03 Shell	CLT walls	E	300	LSI
03 Shell	CLT walls	F	300	Ramboll
03 Shell	CLT walls	K	400	Contractor
03 Shell	CLT walls	L	400	Contractor
03 Shell	CLT Stairs	C	100	LSI
03 Shell	CLT Stairs	D	200	LSI
03 Shell	CLT Stairs	E	300	LSI
03 Shell	CLT Stairs	F	300	Ramboll
03 Shell	CLT Stairs	K	400	Contractor
03 Shell	CLT Stairs	L	400	Contractor

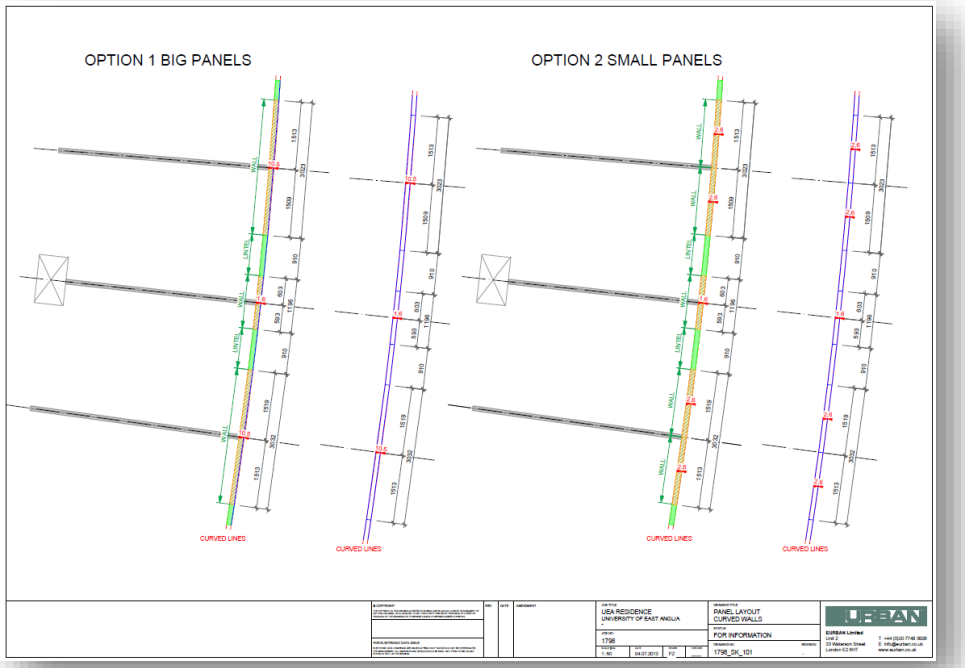


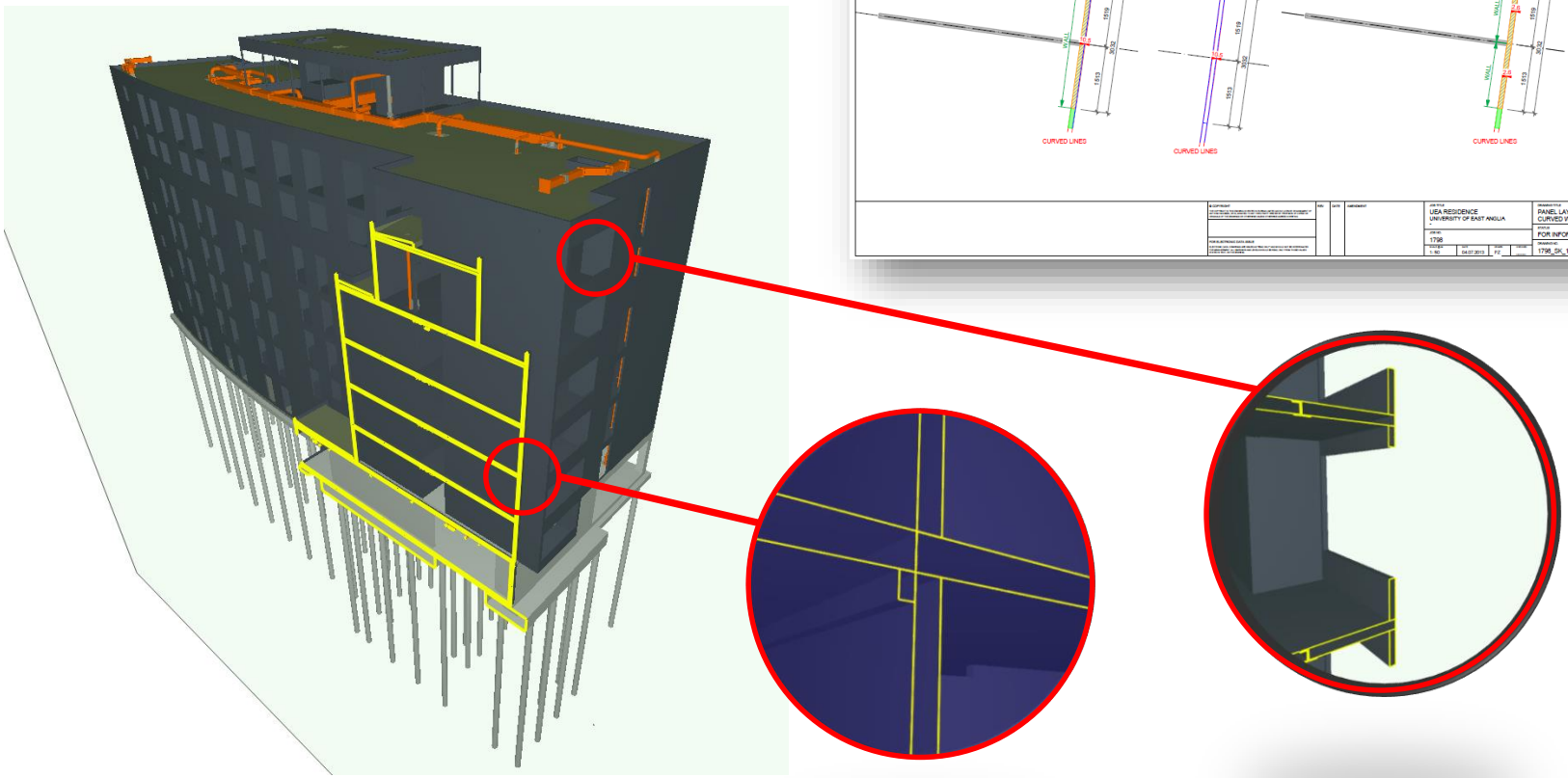
CLT Design, Co-ordinate, Manufacture



CLT Design, Co-ordinate, Manufacture, Assemble

- 1600 CLT Panels
- 1500 m3
- 750,000 nails





Martin Lovett - Senior Estates Project Manager
University of East Anglia

Environmental Optimisation

- Optimised Building Envelope
- Lifecycle Costing

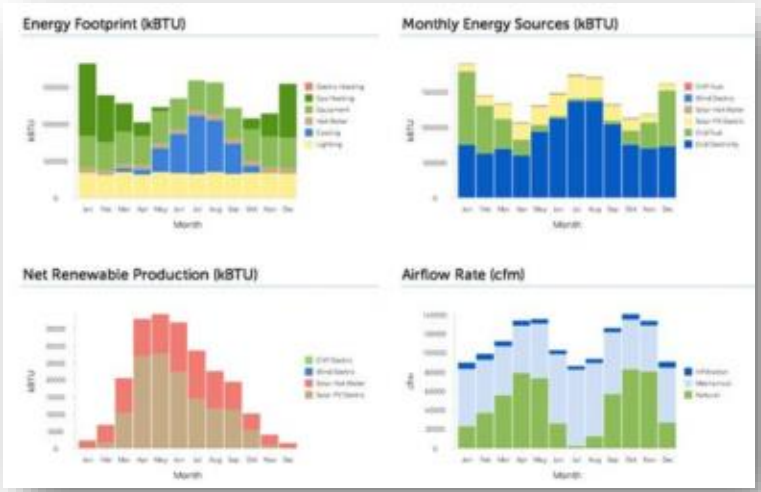
UEA

Export | Add Result

Run Analysis | New Strategy

	Annual Energy Consumption kWh		Annual Energy Use per Gross Internal Area kWh/m2		Annual Water Use m3		Water Use per Person per Day L/person		Annual CO2 Production $kgCO_2$	
Building Regs	**834,521**		**120**		**7,300**		**80**		**268,051**	
▶ UEA Requirement	706,951	↓15%	102	↓15%	7,300	0%	80	0%	243,747	↓9%
▶ Water	714,213	↓14%	103	↓14%	5,840	↓20%	64	↓20%	246,396	↓8%
▷ Notional Standard	767,606	↓8%	111	↓8%	7,300	0%	80	0%	255,441	↓5%
▷ good window	809,158	↓3%	117	↓3%	7,300	0%	80	0%	263,329	↓2%
▷ Passive House	685,493	↓18%	99	↓18%	7,300	0%	80	0%	239,572	↓11%
▷ 30% Glazed	831,578	↓<1%	120	0%	7,300	0%	80	0%	267,463	↓<1%
▷ Brise Soleil	861,054	↑3%	124	↑3%	7,300	0%	80	0%	273,127	↑2%
▷ Solar Thermal	756,933	↓9%	109	↓9%	7,300	0%	80	0%	254,085	↓5%
▷ Showers	772,214	↓7%	111	↓8%	5,840	↓20%	64	↓20%	256,836	↓4%
▷ UEA Air Permeability	804,770	↓4%	116	↓3%	7,300	0%	80	0%	262,498	↓2%
▷ UEA u-values	735,339	↓12%	106	↓12%	7,300	0%	80	0%	249,279	↓7%

TIP: Drag strategies from the list above to create bundles.



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9 October 2014 Last updated at 15:20

UEA students urged to urinate in shower

Chris Dobson and Debs Torr want people to declare their support for their shower challenge on social media

University students are being urged to urinate in the shower in a bid to save water.

The Go with the Flow campaign is the brainchild of students Debs Torr and Chris Dobson, from the University of East Anglia (UEA) in Norwich.

They want the university's 15,000 students to take their first wee of the day while having their morning shower.

Mr Dobson, 20, said the idea could "save enough water to fill an Olympic-sized swimming pool 26 times".

The pair want those taking part to pledge their allegiance on Facebook and Twitter and have offered gift vouchers to the first people to join the challenge.

Related Stories

University halls to 'meet demand'

Survey reveals showering habits

Go with the Flow

Water savings could result in:

720m litres

annually if everybody in the UK took part

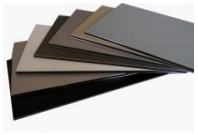
£42.5m per year if population of East Anglia backed campaign

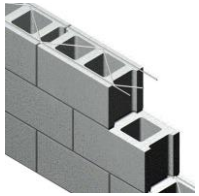
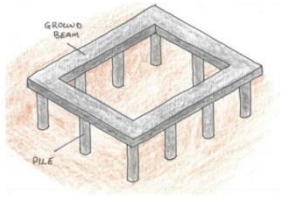
£125k per year if all UEA students accepted challenge

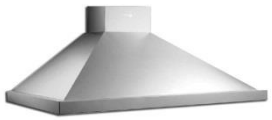
Source: Go with the Flow campaign

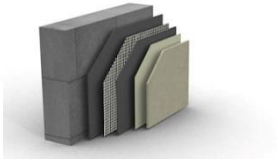
What M&E assets do we need to manage in BIM?

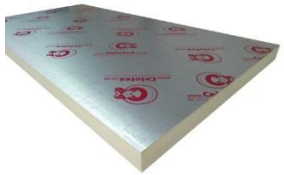
What Architectural and Structural assets do we need to manage in BIM?

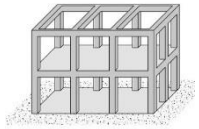
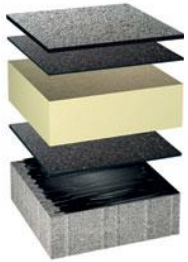


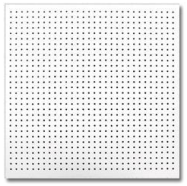



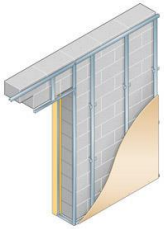


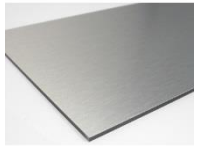


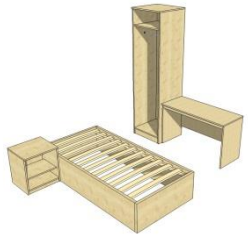




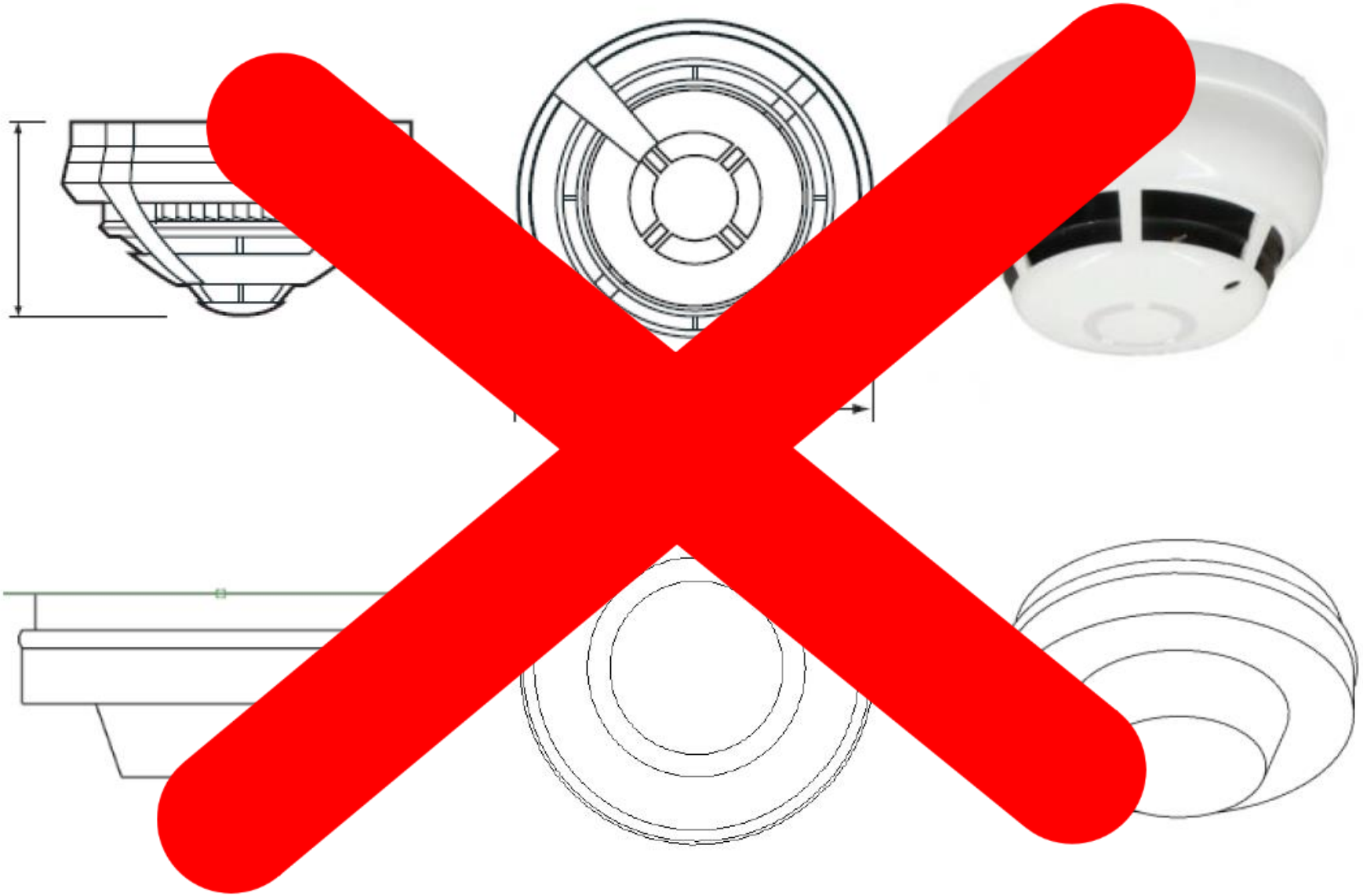




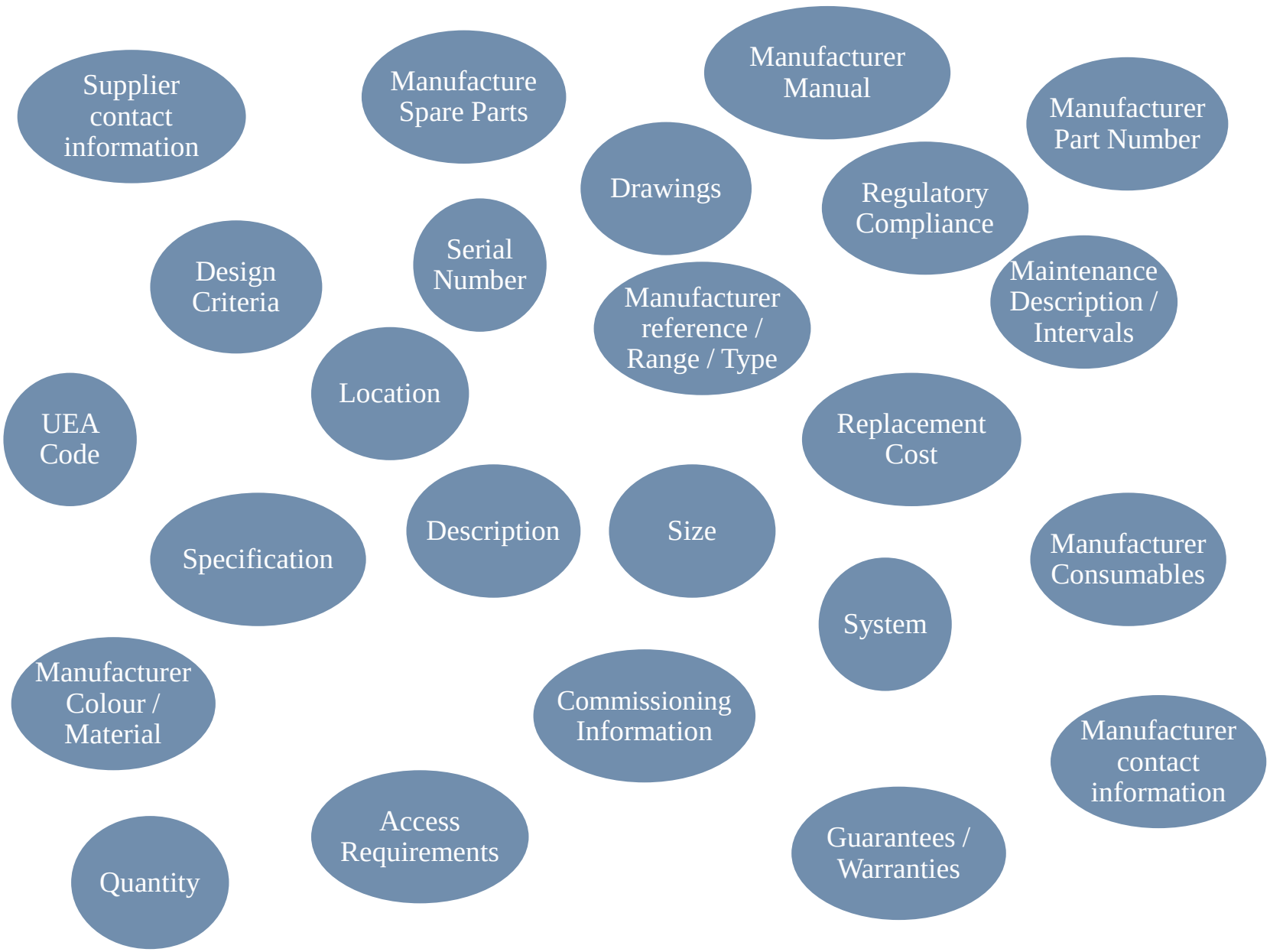


What Architectural and Structural assets do we need to manage in BIM?

BURCO



What Data should we capture?



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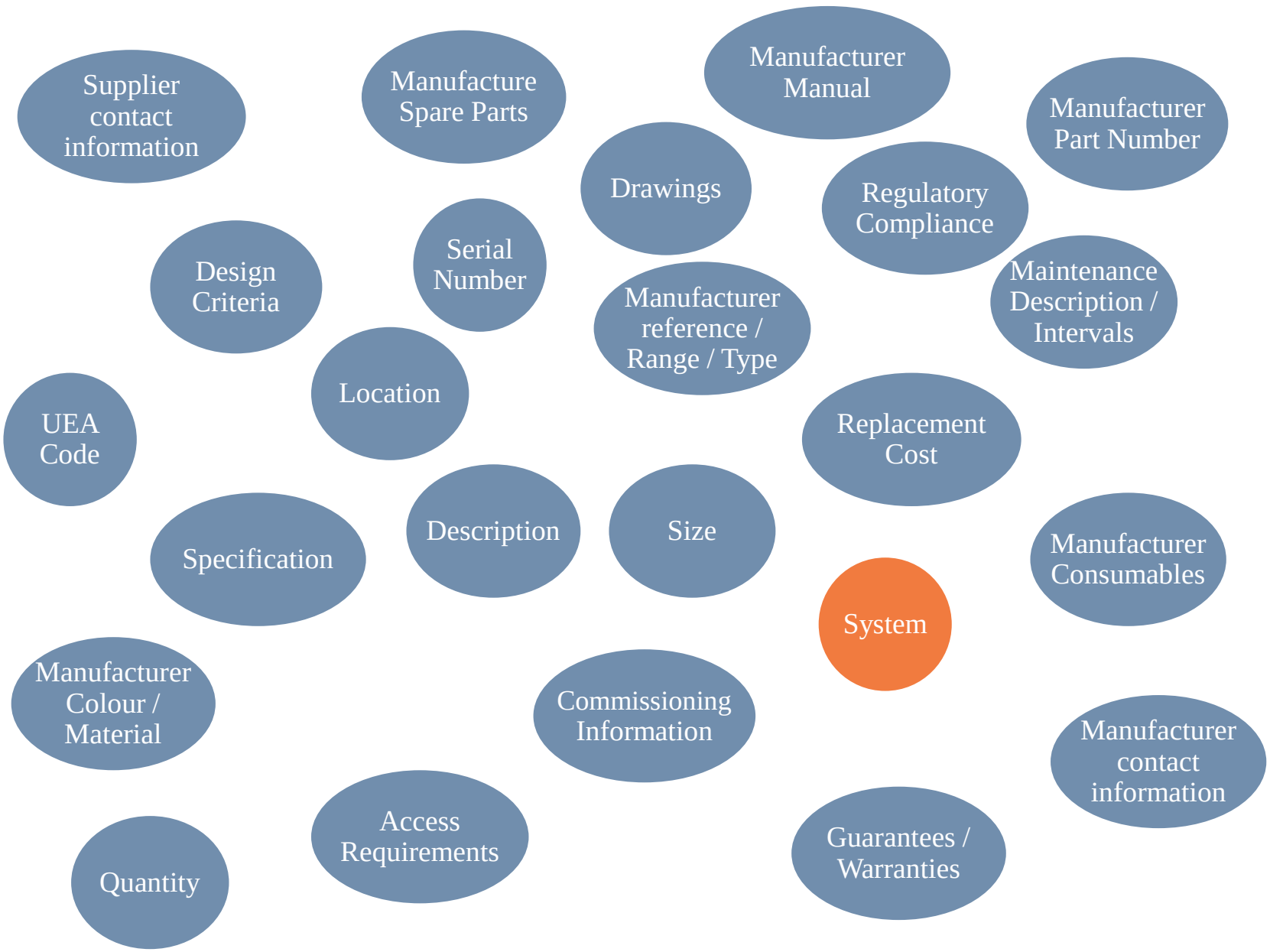

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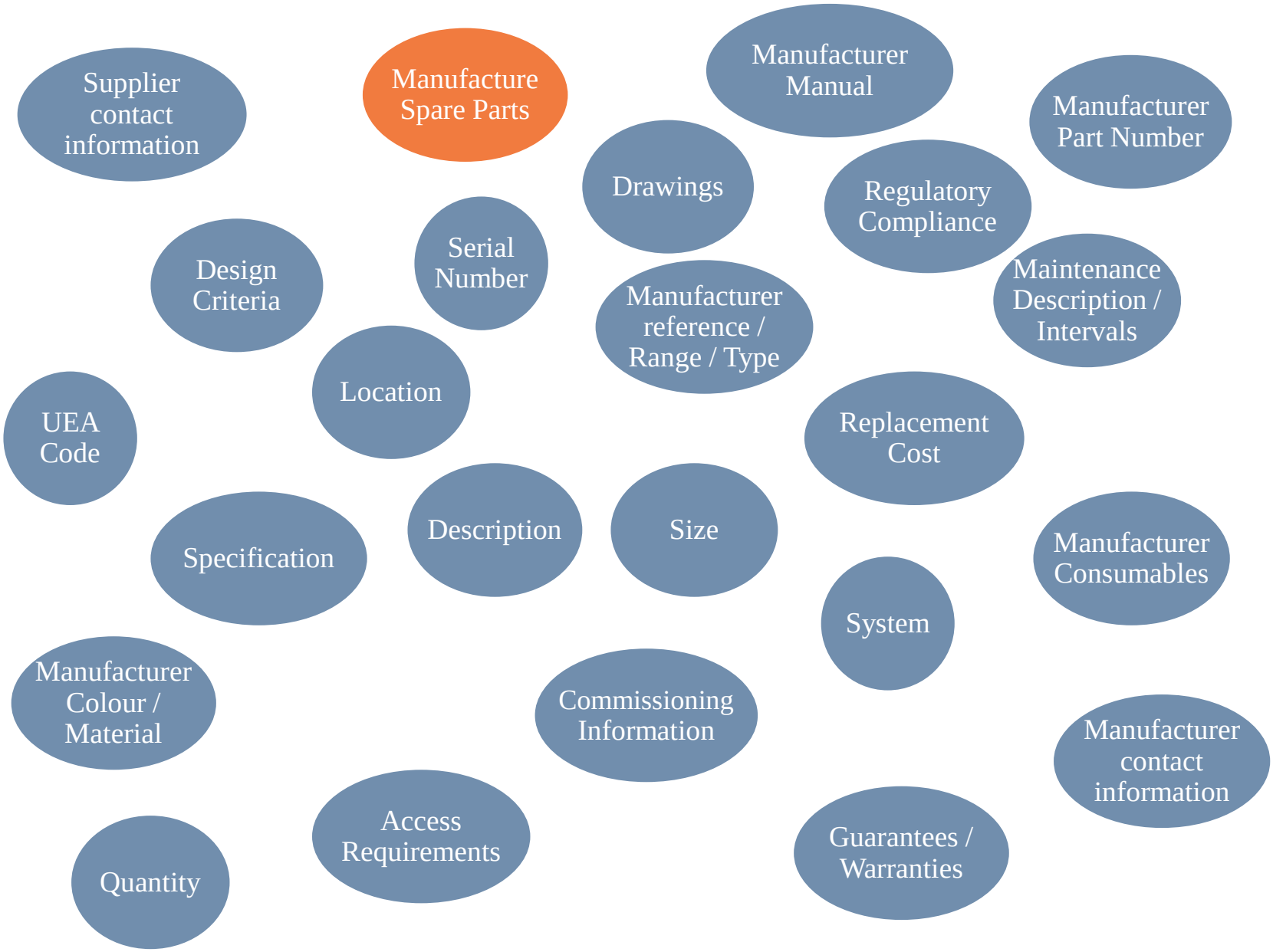

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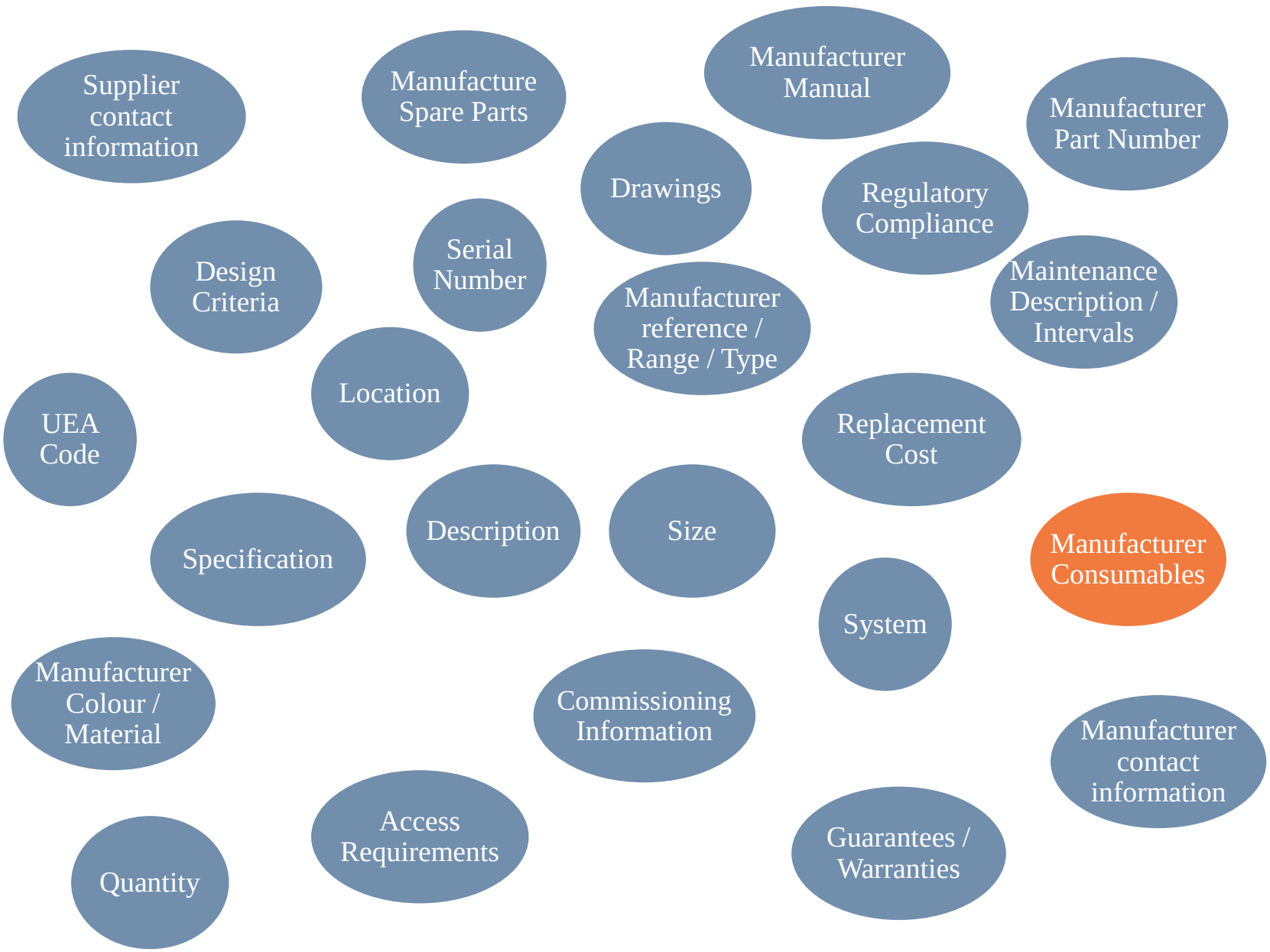

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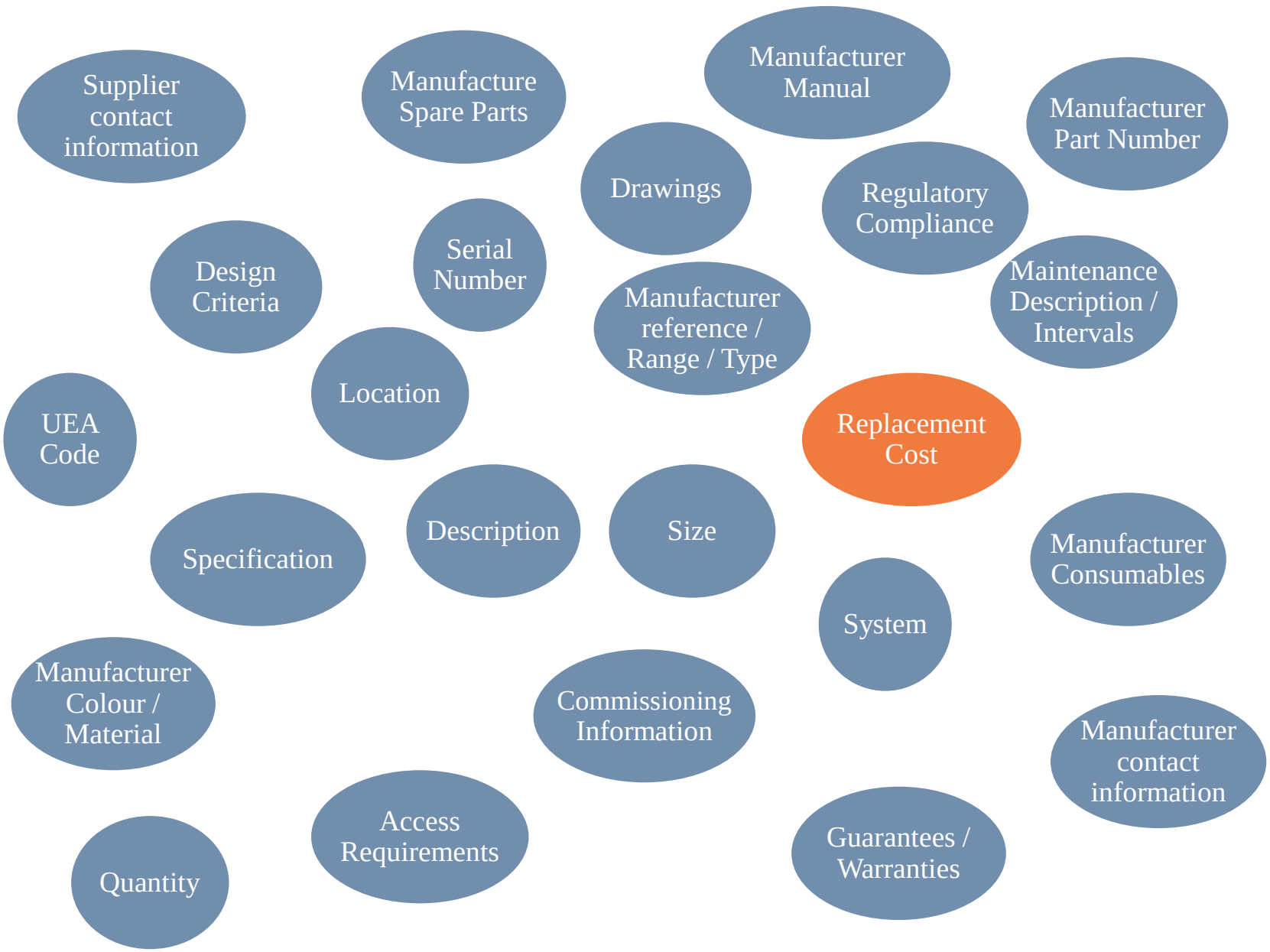

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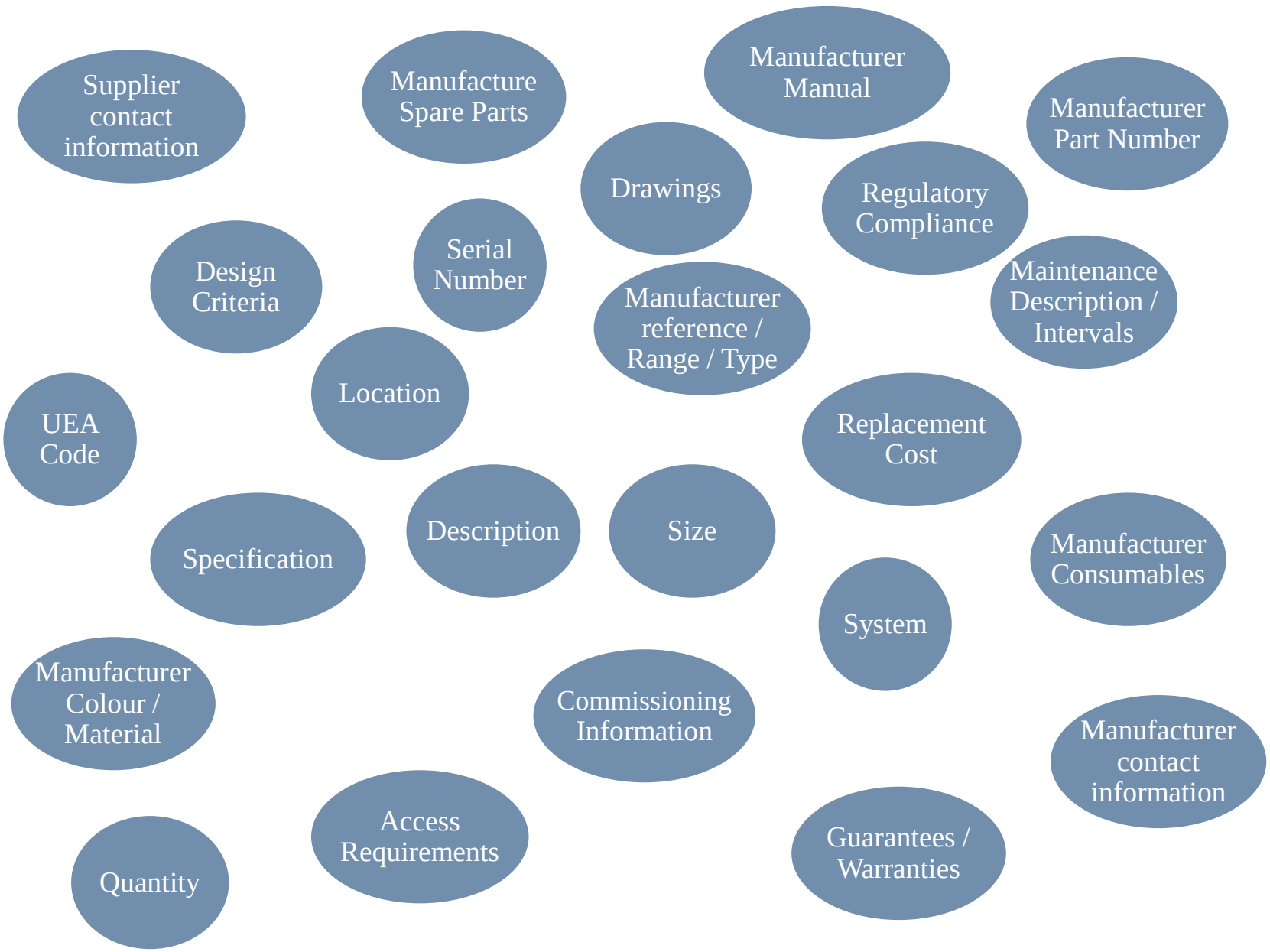

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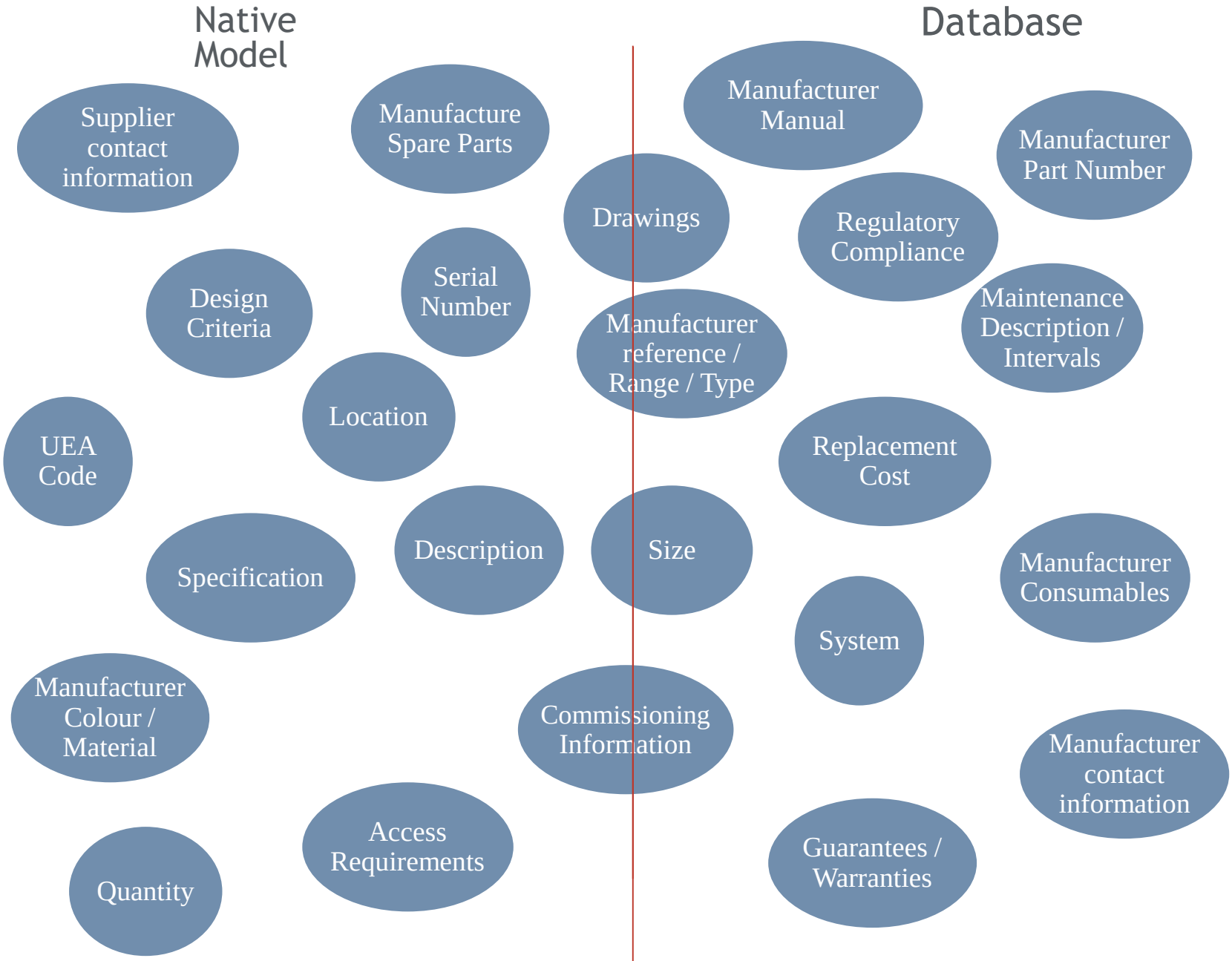
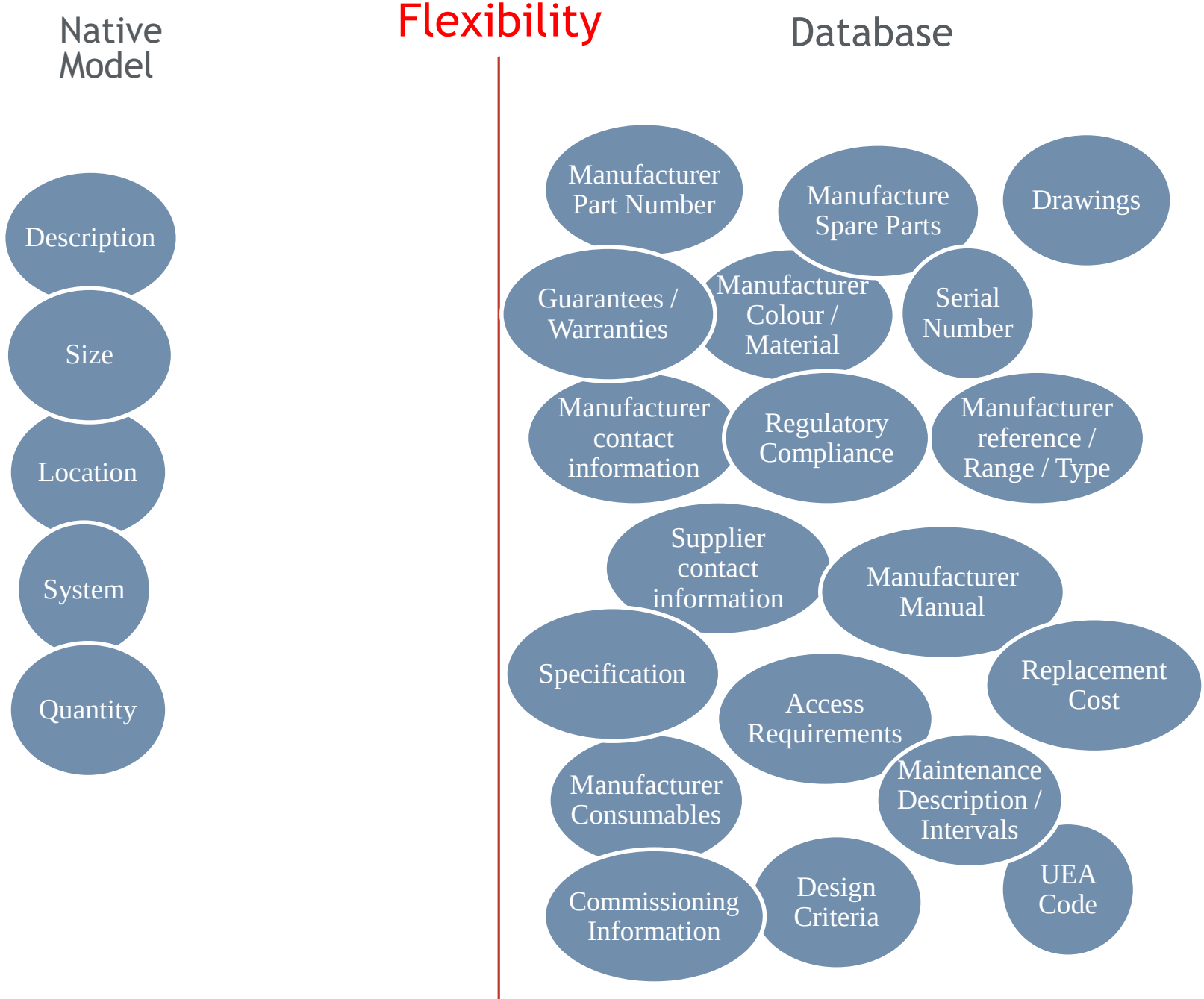


Where Should the Data go?



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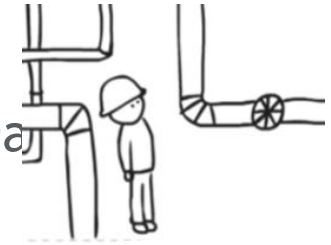

Designer

- Description
- Size
- Location
- System
- Quantity

Contractor

Installer

- Design Criteria
- UEA Code
- Manufacturer Colour / Material
- Manufacturer Part Number
- Regulatory Compliance
- Manufacturer reference / Range / Type
- Manufacturer contact information

Client

FM team

- Manufacture Spare Parts
- Drawings
- Guarantees / Warranties
- Serial Number
- Specification
- Manufacturer Manual
- Access Requirements
- Replacement Cost
- Maintenance Description / Intervals
- Manufacturer Consumables
- Supplier contact information
- Commissioning Information

Designer

Descripti

Size

Location

System

Design Criteria

Specification

Manufacturer Colour / Material

facturer reference / Range / Type

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Quantity

Contractor

Manufacturer contact information

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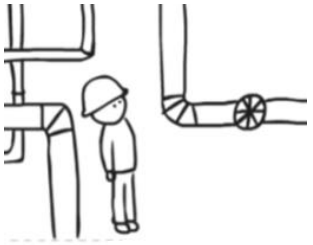


FM team

What Data for what Asset?

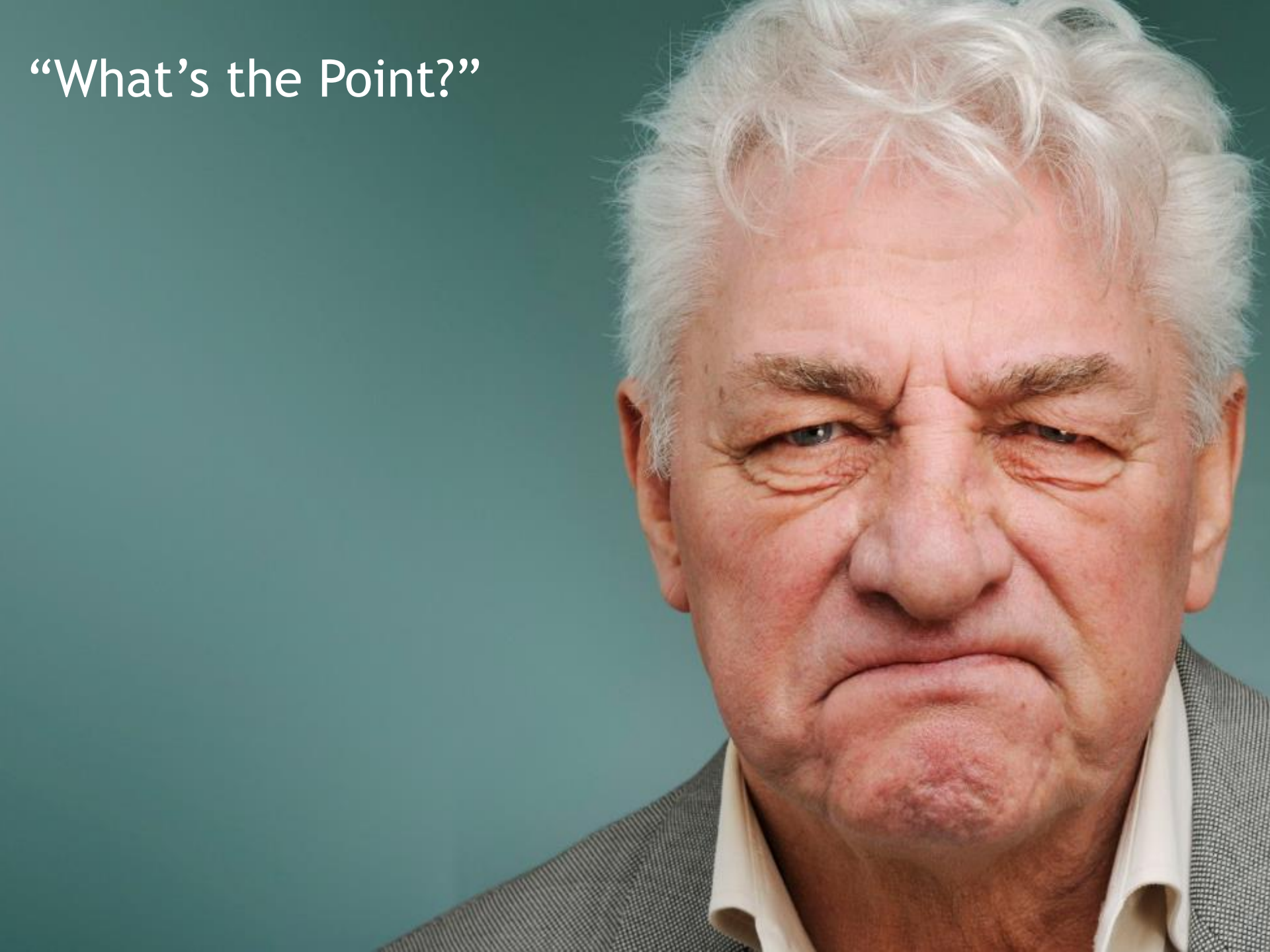
UEA - Crome Court Student Residences

74,000 assets modelled

380,000 data attributes

1000 associated documents

“What’s the Point?”



LSI 3D to BIM timeline

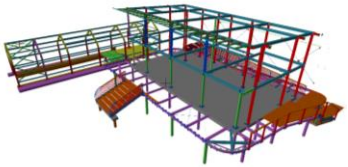
Castle Mall, Norwich. 3D hidden line from Gable

1988

First model to manufacture use point cloud & lighting analysis

2005

First project using IFC



2009

Design team collaborations

2012

6D FM handover

2014

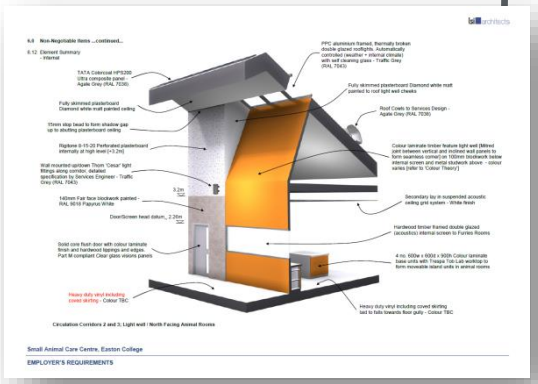
3D Visualisations

Lonely BIM

Collaborative BIM

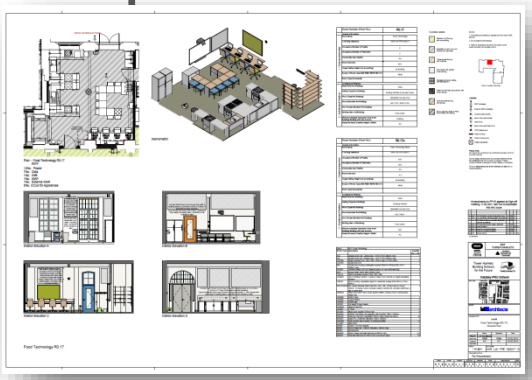
1994

2007



Models used to communicate Employers Requirements

2008



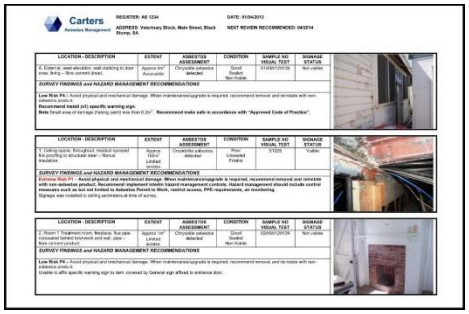
Fully co-ordinated FFE "C"sheets

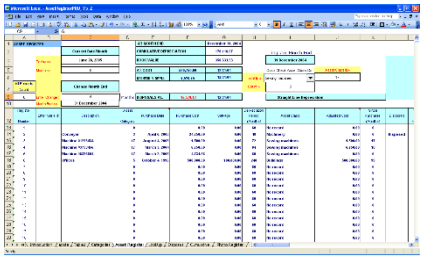
2010

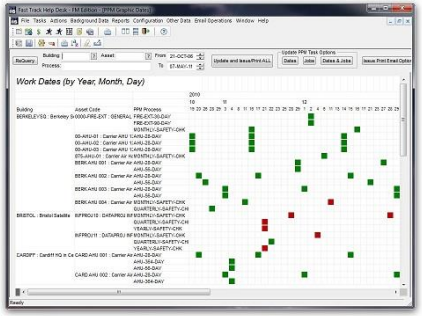
First Use of Interactive models

Typical timeline

micad
property management software



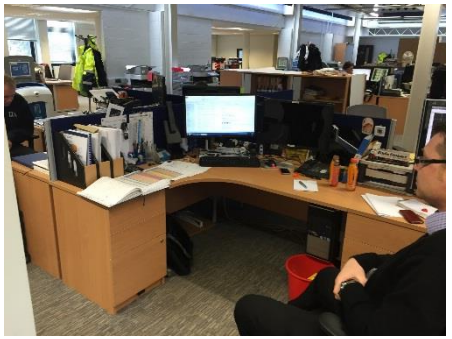




SCORE RANGE	RISK RANKING
1-6	LOW
7-10	MODERATE
11-16	SIGNIFICANT
17-25	HIGH

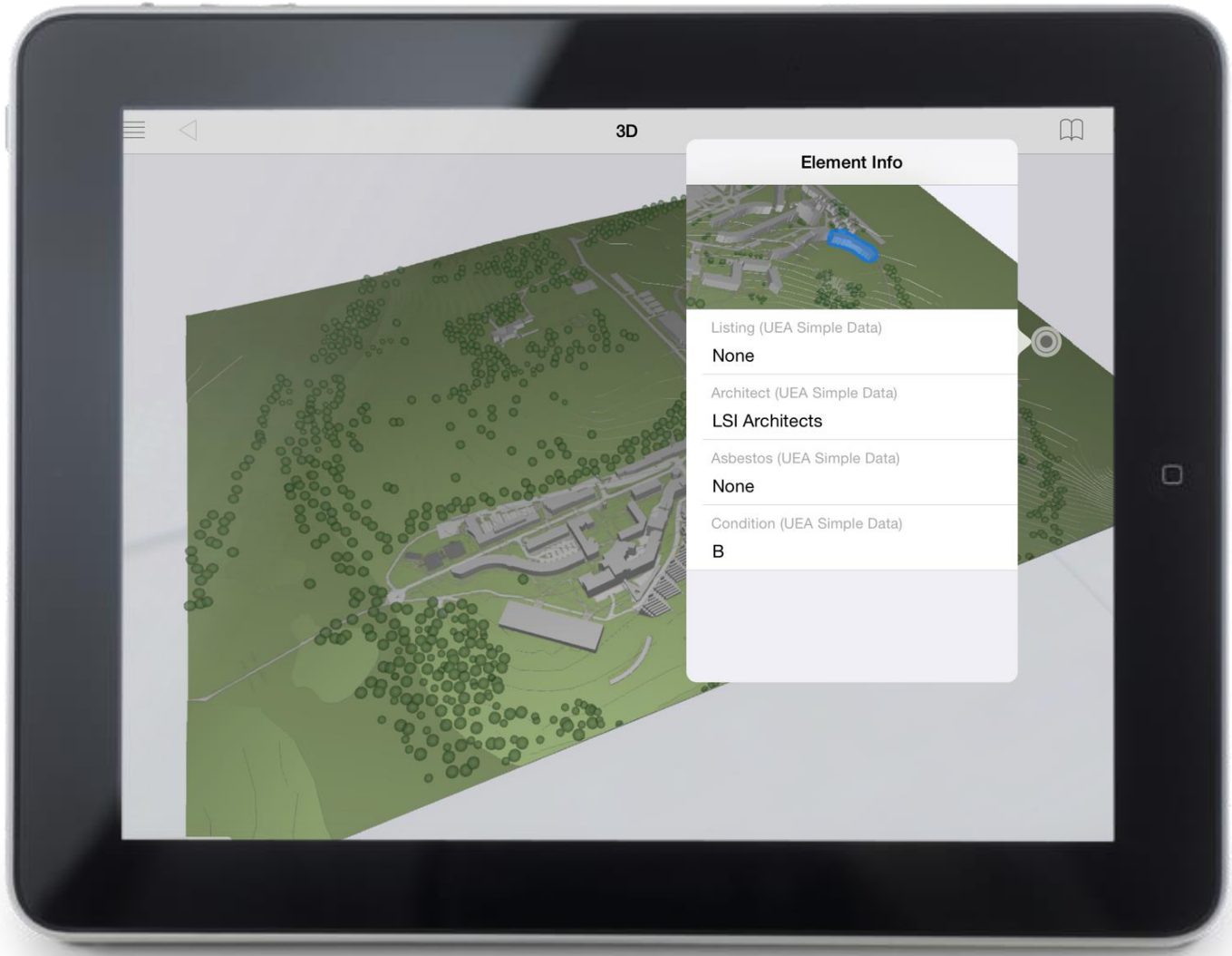
Rating	Failure descriptors	1 RARE	2 UNLIKELY	3 POSSIBLE	4 LIKELY	5 CERTAIN
		PROBABILITY OF FAILURE				

	SEVERITY Rating	Descriptor	Health & safety	Environment	Business	Operational 'bolting' engineering element				
POTENTIAL CONSEQUENCES	1	INSIGNIFICANT					1	2	3	4	5
	2	MINOR					2	4	6	8	10
	3	MODERATE					3	6	9	12	15
	4	MAJOR					4	8	12	16	20
	5	CATASTROPHIC					5	10	15	20	25



Rubbish
Expensive
Limited people to talk to

Powerful
Less expensive
Everybody's got one


3D
Element Info
Listing (UEA Simple Data)
None
Architect (UEA Simple Data)
LSI Architects
Asbestos (UEA Simple Data)
None
Condition (UEA Simple Data)
B

Simple Data

Area – square meter costing

Compliance / guidance checks

Perimeter - skirting

Area – Floor / ceiling finishes

Volume – heating / cooling loads

Carbon in use calcs

Condition

Running costs

Occupancy – Fire Assessments

Power loads

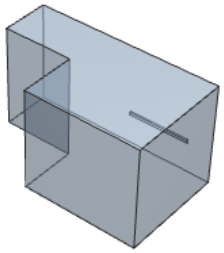
Income / revenue

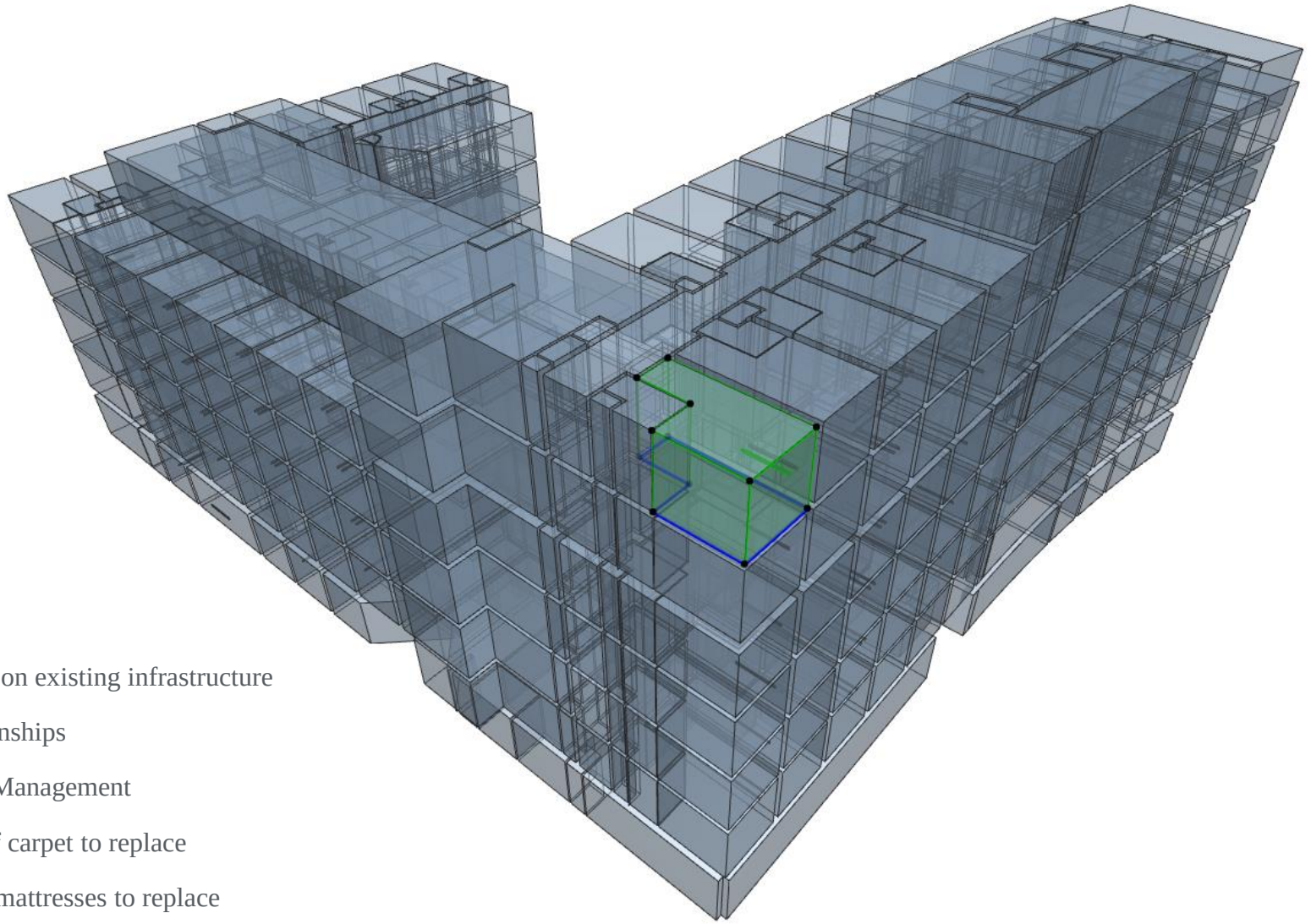
Payback

Number of people

Additional spaces required

Structural Spans……





Impact on existing infrastructure

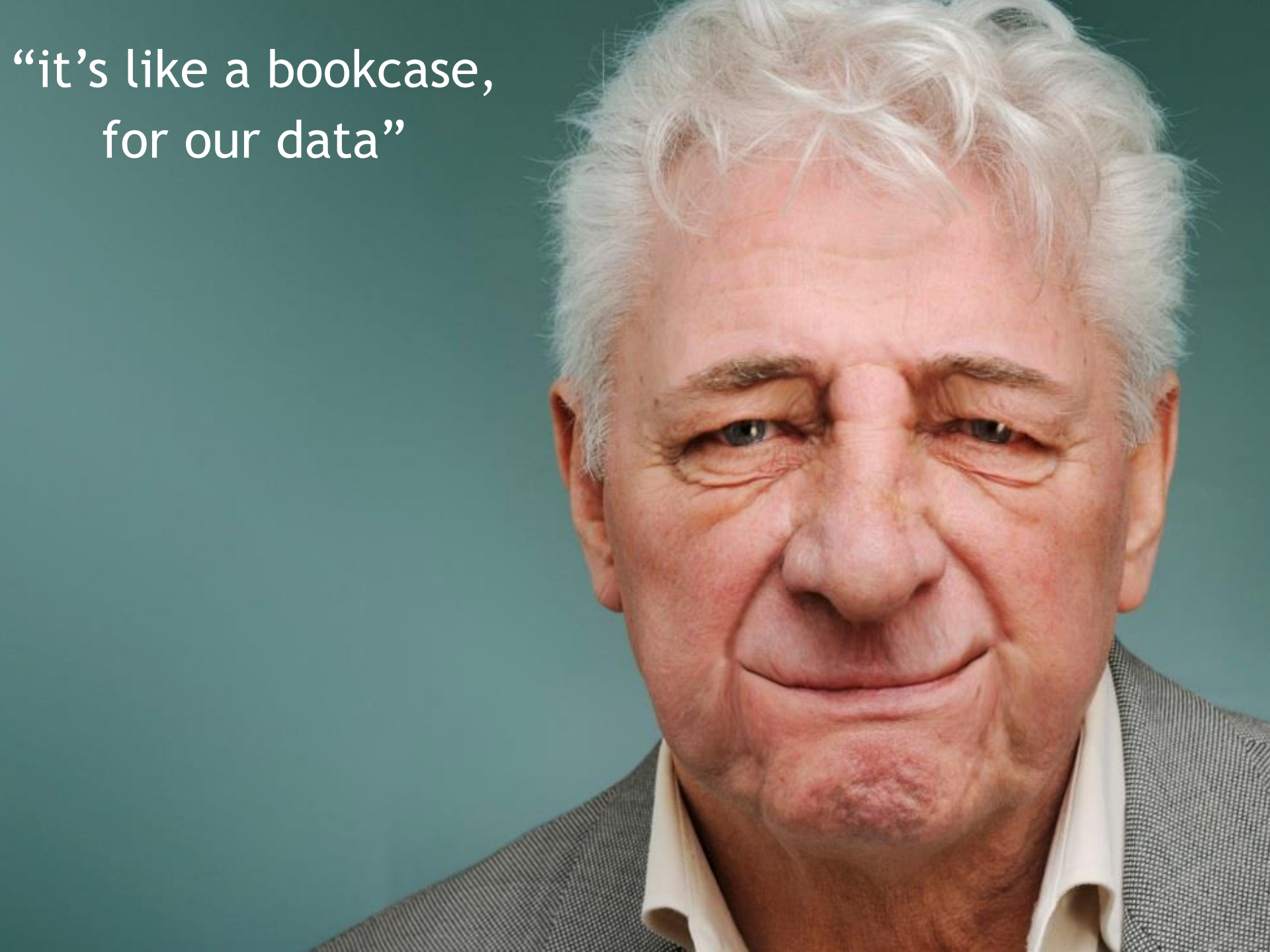
Relationships

Space Management

Area of carpet to replace

No. of mattresses to replace

Locations for maintenance items …….


“it’s like a bookcase,
for our data”

clients Practical demonstration of collaboration…

I need 4 volunteers

TM

Thank you