CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

COBie

Briefing 4: COBie UK 2012
Why do we need COBie ?

Nicholas Nisbet

AEC3 UK Ltd
buildingSMART UKI
Advisor to UK Government BIM Task Group

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Three answers

Sharing:

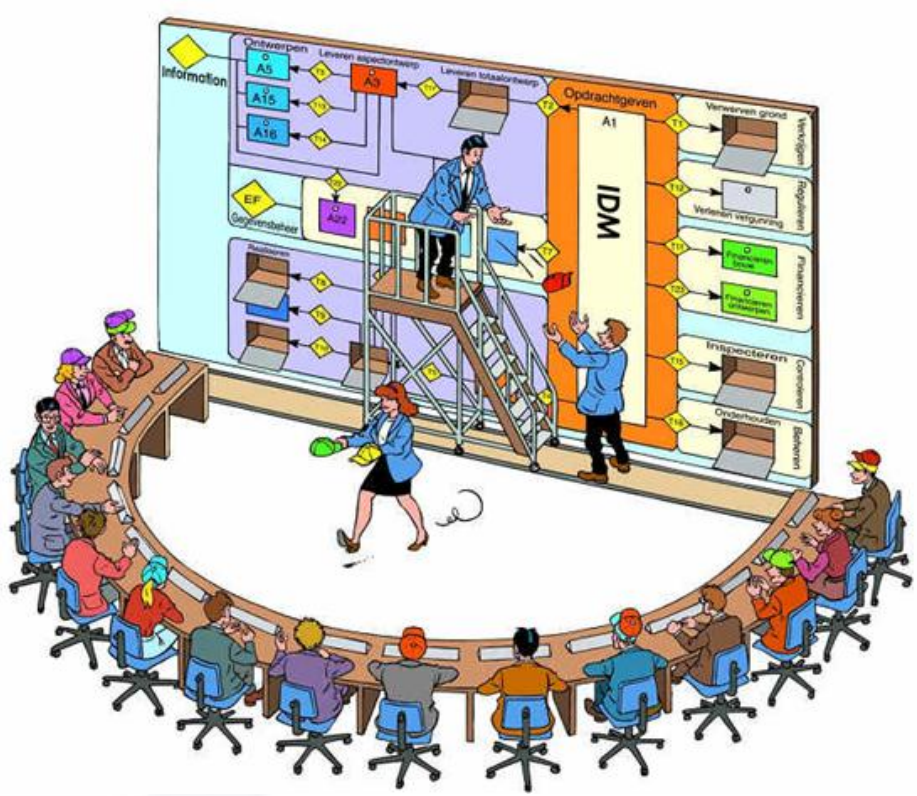
- **Strategic:**
- **Interoperability**
- One format, many paths

Structured

- **Management:**
- **Checkability**
- One input, many checks

Information

- **Authoring:**
- **Re-usability**
- One input, many outputs



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Strategy

Why do we need COBie ?

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UK Government BIM Strategy

“Government as a client can derive significant improvements in cost, value and carbon performance through the use of open sharable asset information”

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UK Government BIM Strategy Criteria

Valuable: the overall aim is to maximise client value

Understandable: the approach is to be presented in an understandable learning package for all 44,000 government asset procurers.

General: the approach is equally applicable to buildings and infrastructure, whether large and small.

Non Proprietary: All requirements are non-proprietary as to applications and as to the required formats of the deliverables.

Competitive: Wherever possible there are at least two solutions or methods available so as to minimise market influence in terms of anti competitive clauses.

Open: Wherever possible, low-cost methods are to be made available to allow all stakeholders to participate, irrespective of size and experience, so as to minimise barriers to involvement.

Verifiable: all contractual expectations are documented with transparent and testable measurement of pass / fail.

Compliant: Measurement of WLC/Carbon/Sustainability/etc are to published GB, EU and ISO standards

Implementation: self funding by the industry

Timescale: the approach is phased in over 5 years

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Why does the owner want data, anyway?

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	Purpose	Detail	BSI Pas 55 references
P01	**Registration**	Registration of assets to support accurate audit and reporting. This includes GIS, land and address identification for the facility. It includes spaces and zoning. including stacking or sectoring, and components and systems and typing.	4.5.1a, 4.4.6, 4.6.6, 4.5.1.3
P02	**Use and utilisation**	Documentation of the intended use, capacity and utilisation of the Facility to support comparisons of actual use and utilisation and portfolio management. It also supports improved briefing for future projects. Includes data for any soft-landings usage review	4.5.1b, 4.5.1 i, 4.5.1.4
P03	**Operations**	Information necessary for the normal operations of the building to support the facility operators and the owner to anticipate costs of operations.	4.5.1 i, 4.5.1.2, 4.6.1
P04	**Maintenance and repair**	Information on the recommended maintenance tasks including planned preventative maintenance to support the facility operators the owner to anticipate costs of maintenance.	4.5.1c, 4.5.1.2, 4.5.1.5, 4.5.2
P05	**Replacement**	Information on the reference or expected replacement service life and costs should be available to the facility operators and to the owner to anticipate costs of maintenance.	4.5.1.7
P06	**Assessment and re-use**	Information on factors to support the management of the end of use stage, whether resale, tenancy release or demolition.	4.5.1d, 4.5.1.6
P07	**Impacts**	Economic and environmental (but not social) impacts	4.5.1 iii
P08	**Business case**	Information to support the on-going evaluation of the business case for ownership of the facility, as required during the design development gates. Continuously review is the primary driver for the intermediate 'Drops'.	4.5.1
P09	**Security and surveillance**	Information to support the management of the security and surveillance of the facility, excluding sensitive parameters.	4.4.7
P10	**Regulation and Compliance**	Information to help ensure the health and safety (H&S and CDM) of the users of the facility, such as known issues and sub-optimal configurations.	4.5.1 iii, 4.6.2, 4.4.8

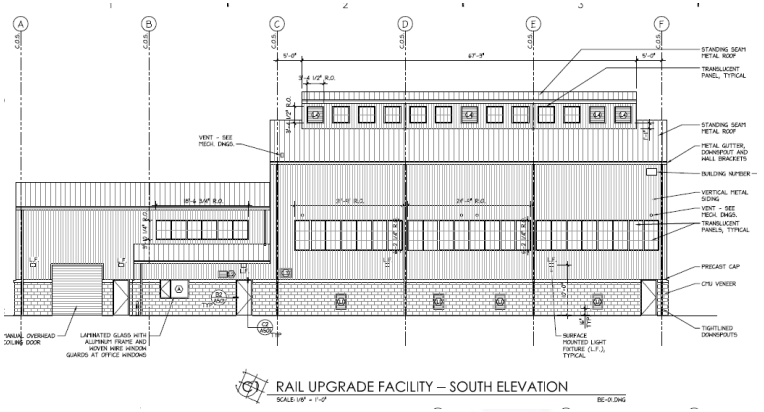
COBie

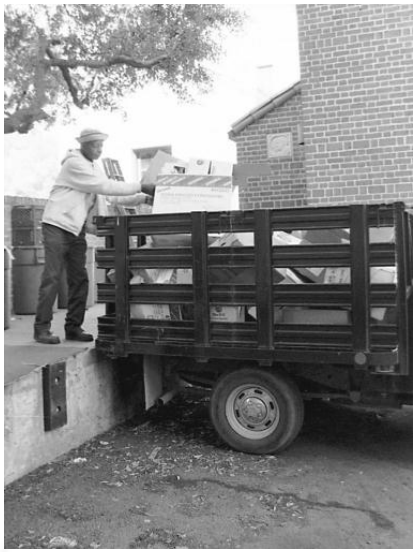
- Construction to Operation of Buildings – information exchange
- COr Blimey, It's only Excel.
- Standard representation for life cycle management of facilities

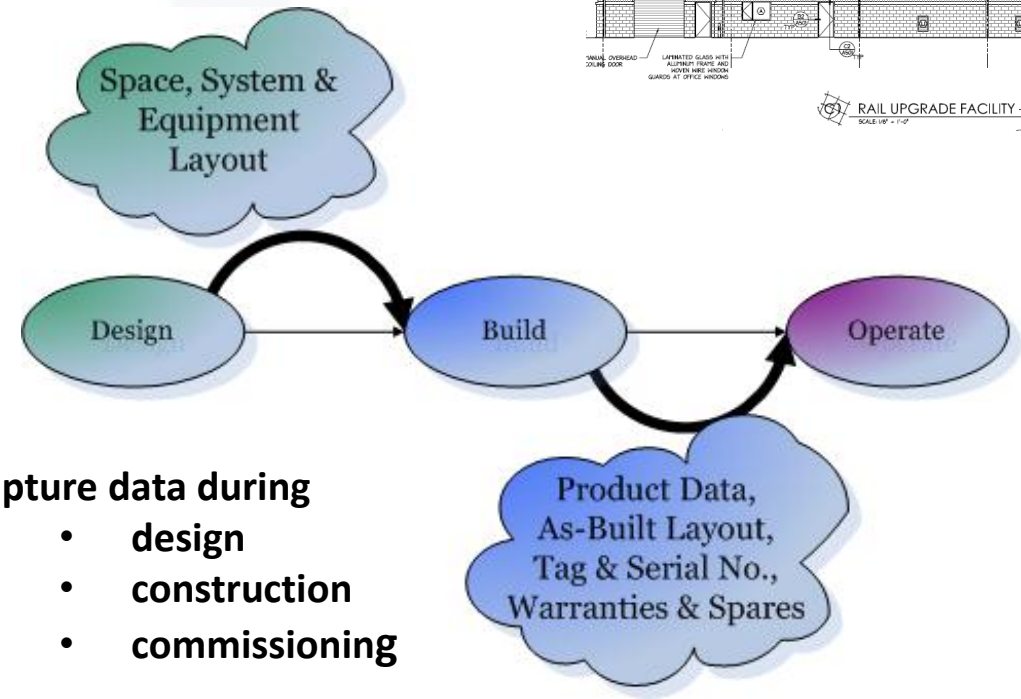
AEC 3

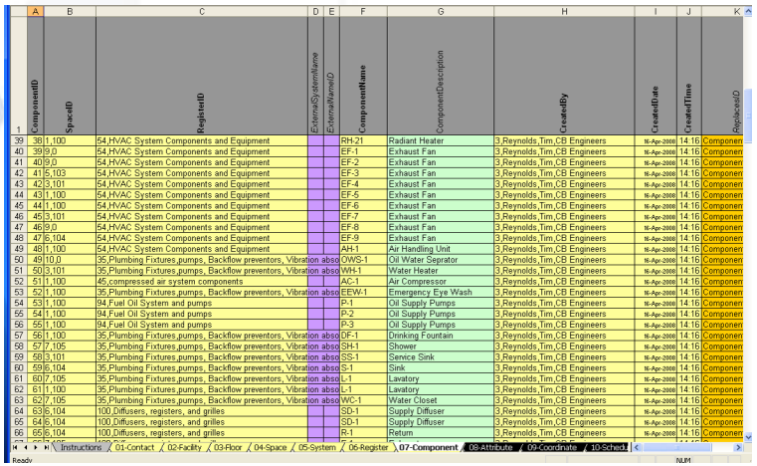
easy to use

- spreadsheet
- each party adds only their part
- interoperable with IFC









	A	B	C	D	E	F	G	H	I	J	K
1	CompanyID	SpaceID	RegisterID	ExternalSystemName	ExternalNameID	ComponentName	ComponentDescription	CreatedBy	CreatedDate	CreatedTime	ReplacedID
39	38	1,100	54,HVAC System Components and Equipment			RH-21	Radiant Heater	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
40	39	9,0	54,HVAC System Components and Equipment			EF-1	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
41	40	9,0	54,HVAC System Components and Equipment			EF-2	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
42	41	5,103	54,HVAC System Components and Equipment			EF-3	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
43	42	3,101	54,HVAC System Components and Equipment			EF-4	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
44	43	1,100	54,HVAC System Components and Equipment			EF-5	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
45	44	1,100	54,HVAC System Components and Equipment			EF-6	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
46	45	3,101	54,HVAC System Components and Equipment			EF-7	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
47	46	9,0	54,HVAC System Components and Equipment			EF-8	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
48	47	6,104	54,HVAC System Components and Equipment			EF-9	Exhaust Fan	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
49	48	1,100	54,HVAC System Components and Equipment			AH-1	Air Handling Unit	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
50	49	10,0	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			OWS-1	Oil Water Seprator	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
51	50	3,101	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			WH-1	Water Heater	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
52	51	1,100	45,compressed air system components			AC-1	Air Compressor	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
53	52	1,100	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			EEW-1	Emergency Eye Wash	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
54	53	1,100	94,Fuel Oil System and pumps			P-1	Oil Supply Pumps	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
55	54	1,100	94,Fuel Oil System and pumps			P-2	Oil Supply Pumps	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
56	55	1,100	94,Fuel Oil System and pumps			P-3	Oil Supply Pumps	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
57	56	1,100	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			DF-1	Drinking Fountain	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
58	57	7,105	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			SH-1	Shower	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
59	58	3,101	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			SS-1	Service Sink	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
60	59	6,104	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			S-1	Sink	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
61	60	7,105	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			L-1	Lavatory	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
62	61	1,100	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			L-1	Lavatory	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
63	62	7,105	35,Plumbing Fixtures,pumps, Backflow preventors, Vibration abso			WC-1	Water Closet	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
64	63	6,104	100,Diffusers, registers, and grilles			SD-1	Supply Diffuser	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
65	64	6,104	100,Diffusers, registers, and grilles			SD-1	Supply Diffuser	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component
66	65	6,104	100,Diffusers, registers, and grilles			R-1	Return	3,Reynolds,Tim,CB Engineers	16-Apr-2008	14:16	Component

Instructions | 01-Contact | 02-Facility | 03-Floor | 04-Space | 05-System | 06-Register | 07-Component | 08-Attribute | 09-Coordinate | 10-Sheet1

Ready NUM

capture data during

- **design**
- **construction**
- **commissioning**

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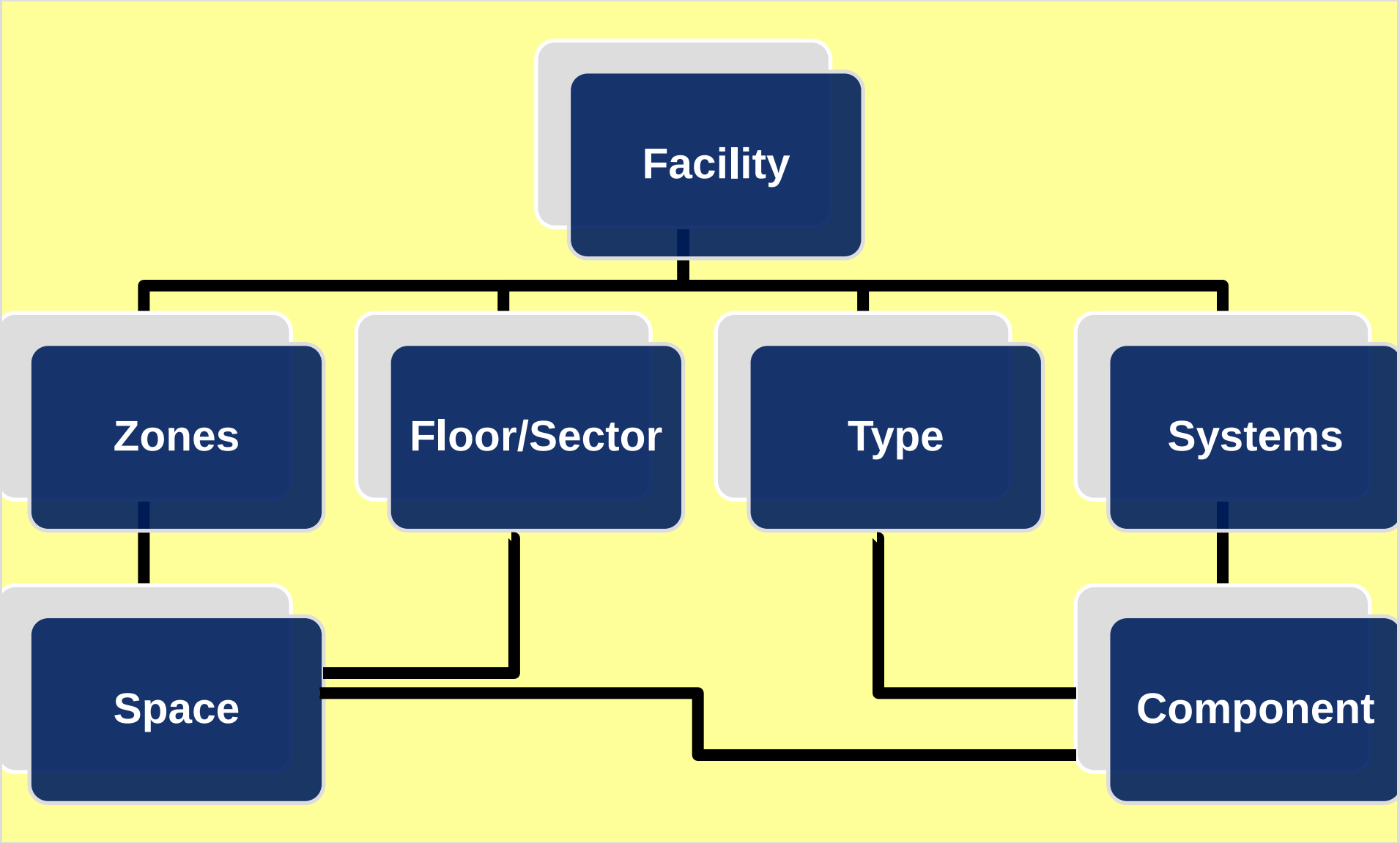
COBie – The elevator diagram



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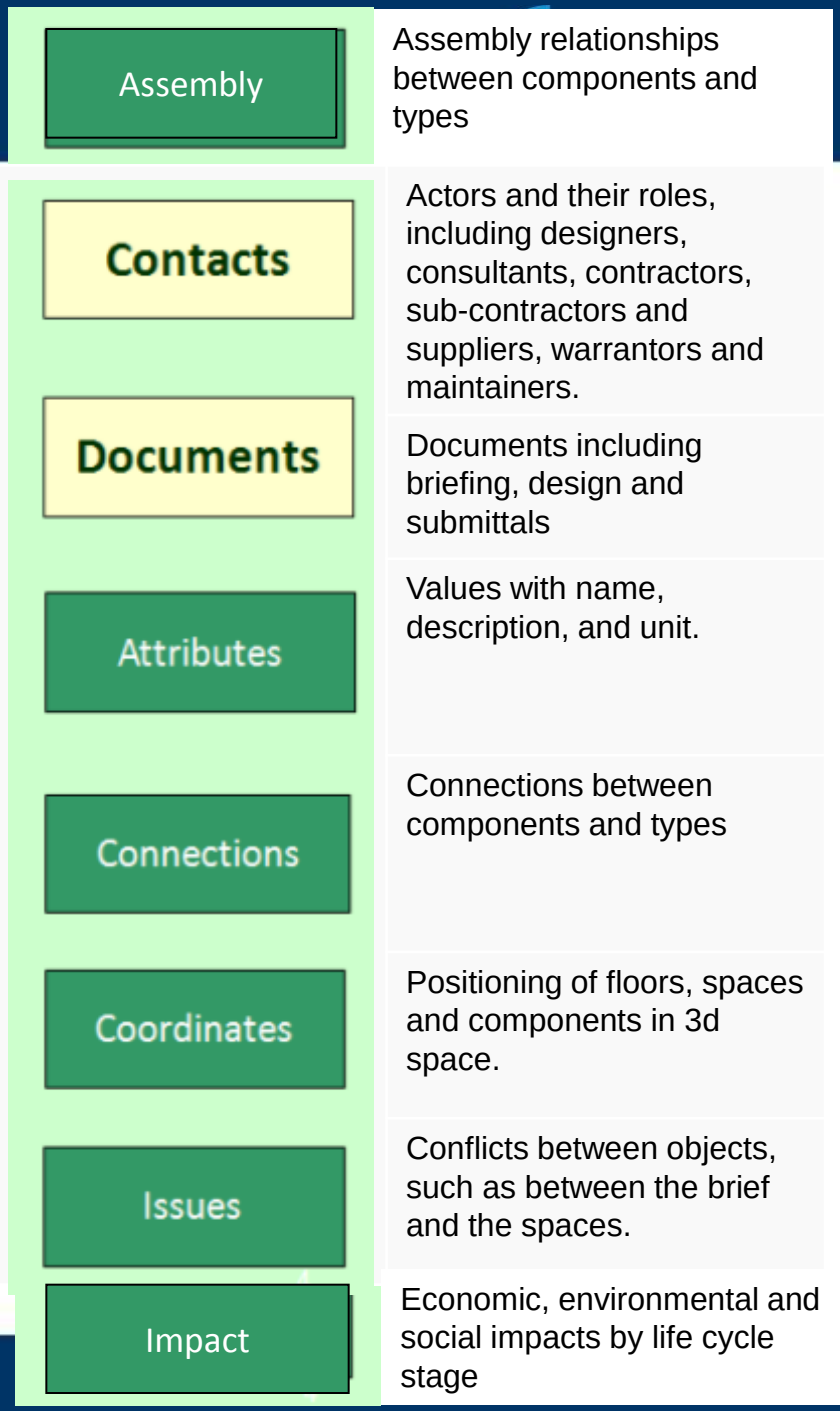
COBie – Supplementary

Supplementary sheets list:

- **Attributes and measures**
- **Impacts (cost and carbon)**

- **Connections**
- **Assembly**
- **Coordinates**

- **Project contacts**
- **Document references**
- **Issues and H&S**



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Management

How do we know we are getting it right ?

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COBie Quality

Name :	**Application _fromCOBie2.ifcxml.xsl v2012-02-08 : Project StandardCell : Name Conclusion**
Status :	**EXCELLENT COMPLIANCE**
Identifer :	**Conclusion**
Date and Time :	**2012-04-05 16:37:22**
Definition :	Quality and Compliance Assessment of Conclusion ((average)) Percent indicating the ease of management of the handover information by the owner operator. (Assets exclude the facility fabric, accessories and distribution runs).

Detailed Approvals and Issues

Identifier :	Description :	Status :	Level :	Qualifier :
Classification of Spaces	Quality and Compliance Assessment of Classification of Spaces (3/3) Percent indicating the ease of management of the spaces through functional classification.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Number of Spaces	Quality and Compliance Assessment of Number of Spaces (3) Number indicating the ease of management of a useful number of spaces.	GOOD COMPLIANCE	buildingSMART FM-10/COBie	3.0 Number
Average Spaces per Zone	Quality and Compliance Assessment of Average Spaces per Zone (3/1) Number indicating the ease of management of the spaces through their zones.	ADEQUATE COMPLIANCE	buildingSMART FM-10/COBie	3.0 Number
Unique names for Systems, Zones, Floors and Spaces	Quality and Compliance Assessment of Unique names for Systems, Zones, Floors and Spaces (10/10) Percent indicating the ease of management of the clearly named groups.	EXCELLENT COMPLIANCE	COBie	100.0 Percent
Classification of Types	Quality and Compliance Assessment of Classification of Types (12/12) Percent indicating the ease of management of the asset types through contracting classification.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Asset Types not proxied	Quality and Compliance Assessment of Asset Types not proxied (12/12) Percent indicating the ease of management of the asset types through their well-specified types.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Average Asset Components per Type	Quality and Compliance Assessment of Average Asset Components per Type (22/12) Number indicating the ease of management of the assets through their types.	ADEQUATE COMPLIANCE	buildingSMART FM-10/COBie	1.8 Number
Unique names for Asset Types	Quality and Compliance Assessment of Unique names for Asset Types (12/12) Percent indicating the ease of management of the clearly named asset types.	EXCELLENT COMPLIANCE	COBie	100.0 Percent
Classification of Internal and External Doors and Windows	Quality and Compliance Assessment of Classification of Internal and External Doors and Windows (5/5) Percent indicating the ease of management of the external doors and windows. (IsExternal true/false property)	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Asset Components not proxied	Quality and Compliance Assessment of Asset Components not proxied (18/22) Percent indicating the ease of management of the asset components using well specified objects.	GOOD COMPLIANCE	buildingSMART FM-10/COBie	81.8 Percent
Asset Components having Type	Quality and Compliance Assessment of Asset Components having Type (22/22) Percent indicating the ease of management of the asset components through defined types.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Average Asset Components per System	Quality and Compliance Assessment of Average Asset Components per System (35/5) Number indicating the ease of management of the asset components through their systems.	GOOD COMPLIANCE	buildingSMART FM-10/COBie	7.0 Number
Asset Components (other than doors and windows) assigned to Spaces	Quality and Compliance Assessment of Asset Components (other than doors and windows) assigned to Spaces (17/17) Percent indicating the ease of management of the asset components through their assigned spaces.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	100.0 Percent
Unique names for Asset Components	Quality and Compliance Assessment of Unique names for Asset Components (22/22) Percent indicating the ease of management of the clearly named asset components.	EXCELLENT COMPLIANCE	COBie	100.0 Percent
Number of Contacts	Quality and Compliance Assessment of Number of Contacts (5) Number indicating the ease of management of a useful number of contacts and object history.	EXCELLENT COMPLIANCE	buildingSMART FM-10/COBie	5.0 Number

End of Approvals and Issues

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COBie Continuity

Name	CreatedBy	CreatedOn	TypeName	Space	Description
TFT Monitor:TFT Monitor:TFT Monitor:211812	jjohnston@brydenwood.co.	2012-01-19T12:27:24	TFT Monitor	L0-01A	TFT Monitor:TFT Monitor:TFT Monitor:211812
Mirror:Mirror:Mirror:211825	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Mirror	L0-01A	Mirror:Mirror:Mirror:211825
TFT Monitor:TFT Monitor:TFT Monitor:211790	jjohnston@brydenwood.co.	2012-01-19T12:27:24	TFT Monitor	L0-02B	TFT Monitor:TFT Monitor:TFT Monitor:211790
Mirror:Mirror:Mirror:211826	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Mirror	L0-02B	Mirror:Mirror:Mirror:211826
Generic Int DD:1810 x 2110mm:1810 x 2110mm:211798	jjohnston@brydenwood.co.	2012-01-19T12:27:24	1810 x 2110mm	L0-C01	Generic Int DD:1810 x 2110mm:1810 x 2110mm:211798
Generic Int D Cell Door:790 x 2110mm 3:790 x 2110mm 3:211814	jjohnston@brydenwood.co.	2012-01-19T12:27:24	790 x 2110mm 3	L0-02B	Generic Int D Cell Door:790 x 2110mm 3:790 x 2110mm 3:211814
Generic Int D Cell Door:790 x 2110mm 3:790 x 2110mm 3:211815	jjohnston@brydenwood.co.	2012-01-19T12:27:24	790 x 2110mm 3	L0-01A	Generic Int D Cell Door:790 x 2110mm 3:790 x 2110mm 3:211815
Plumbing SVP 1:Plumbing SVP 1:Plumbing SVP 1:211824	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Plumbing SVP 1	L0-C01	Plumbing SVP 1:Plumbing SVP 1:Plumbing SVP 1:211824
WC Pan:510 x 510mm:510 x 510mm:211788	jjohnston@brydenwood.co.	2012-01-19T12:27:24	WC Pan 510 x 510mm	L0-01A	WC Pan:510 x 510mm:510 x 510mm:211788
Wallgate ALS180 Basin:470w x 300d:470w x 300d:211813	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Wallgate ALS180 Basin 470w x 3(	L0-01A	Wallgate ALS180 Basin:470w x 300d:470w x 300d:211813
WC Pan:510 x 510mm 2:510 x 510mm 2:211807	jjohnston@brydenwood.co.	2012-01-19T12:27:24	WC Pan 510 x 510mm	L0-02B	WC Pan:510 x 510mm 2:510 x 510mm 2:211807
Wallgate ALS180 Basin:470w x 300d:470w x 300d:211808	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Wallgate ALS180 Basin 470w x 3(	L0-02B	Wallgate ALS180 Basin:470w x 300d:470w x 300d:211808
Cell Bed family:Cell Bed family:Cell Bed family:211786	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Cell Bed family	L0-01A	Cell Bed family:Cell Bed family:Cell Bed family:211786
Cell Desk:Desk Whitewood:Desk Whitewood:211787	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Desk Whitewood	L0-01A	Cell Desk:Desk Whitewood:Desk Whitewood:211787
Cell Locker:Cell Locker:Cell Locker:211789	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Cell Locker	L0-01A	Cell Locker:Cell Locker:Cell Locker:211789
Safer Seat:Safer Seat:Safer Seat:211791	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Safer Seat	L0-01A	Safer Seat:Safer Seat:Safer Seat:211791
Safer Seat:Safer Seat:Safer Seat:211803	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Safer Seat	L0-02B	Safer Seat:Safer Seat:Safer Seat:211803
Cell Bed family:Cell Bed family:Cell Bed family:211804	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Cell Bed family	L0-02B	Cell Bed family:Cell Bed family:Cell Bed family:211804
Cell Desk:Desk Whitewood:Desk Whitewood:211805	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Desk Whitewood	L0-02B	Cell Desk:Desk Whitewood:Desk Whitewood:211805
Cell Locker:Cell Locker:Cell Locker:211806	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Cell Locker	L0-02B	Cell Locker:Cell Locker:Cell Locker:211806
Basic Wall:Generic Ext - 150mm:211792	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-01A , L0-02B	Basic Wall:Generic Ext - 150mm:211792
Basic Wall:Generic Ext - 150mm:211793	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-01A , L0-02B	Basic Wall:Generic Ext - 150mm:211793
Basic Wall:Generic Ext - 150mm:211794	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-01A	Basic Wall:Generic Ext - 150mm:211794
Basic Wall:Generic Ext - 150mm:211795	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-01A , L0-01A	Basic Wall:Generic Ext - 150mm:211795
Basic Wall:Generic Ext - 150mm:211796	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-02B , L0-02B	Basic Wall:Generic Ext - 150mm:211796
Basic Wall:Generic Ext - 150mm:211797	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-02B	Basic Wall:Generic Ext - 150mm:211797
Basic Wall:Generic Ext - 80mm:211799	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 80mm	L0-01A	Basic Wall:Generic Ext - 80mm:211799
Basic Wall:Generic Ext - 80mm:211800	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 80mm	L0-01A	Basic Wall:Generic Ext - 80mm:211800
Basic Wall:Generic Ext - 80mm:211801	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 80mm	L0-02B	Basic Wall:Generic Ext - 80mm:211801
Basic Wall:Generic Ext - 80mm:211802	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 80mm	L0-02B	Basic Wall:Generic Ext - 80mm:211802
Basic Wall:Generic Ext - 340mm 2:211809	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 340mm 2	L0-01A , L0-02B	Basic Wall:Generic Ext - 340mm 2:211809
Basic Wall:Generic Ext - 150mm:211829	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-01A	Basic Wall:Generic Ext - 150mm:211829
Basic Wall:Generic Ext - 150mm:211830	jjohnston@brydenwood.co.	2012-01-19T12:27:24	Basic Wall:Generic Ext - 150mm	L0-02B	Basic Wall:Generic Ext - 150mm:211830
Safer Cell 7 Bay FF:1275x1200h:1275x1200h:211810	jjohnston@brydenwood.co.	2012-01-19T12:27:24	1275x1200h	L0-01A	Safer Cell 7 Bay FF:1275x1200h:1275x1200h:211810
Safer Cell 7 Bay FF:1275x1200h:1275x1200h:211811	jjohnston@brydenwood.co.	2012-01-19T12:27:24	1275x1200h	L0-02B	Safer Cell 7 Bay FF:1275x1200h:1275x1200h:211811
Wallgate ALS80 Basin:470w x 300d:470w x 300d:211813	Administrator@unknown.cc	2012-01-18T07:24:41	n/a	L0-01A	Wallgate ALS80 Basin:470w x 300d:470w x 300d:211813
Wallgate ALS80 Basin:470w x 300d:470w x 300d:211808	Administrator@unknown.cc	2012-01-18T07:24:41	n/a	L0-02B	Wallgate ALS80 Basin:470w x 300d:470w x 300d:211808

Instruction | Contact | Facility | Floor | Space | Zone | Type | **Component** | System | Assembly | Connection | Spare | Resource | Job | Impac

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COBie Completeness

UK demand matrix

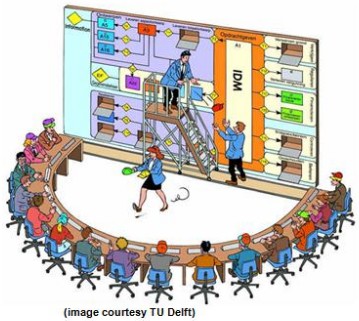
Name	CreatedBy	CreatedOn	Category	FloorName	Description	ExtSystem	ExtObject	ExtIdentifier	RoomTag	UsableHeight	GrossArea	NetArea
fcSpace	CIC 1 : Brief	CIC 1 : Brief	CIC 1 : Brief	CIC 2 : Concept	CIC 1 : Brief		IfcSpace		CIC 6 : Handover	CIC 1 : Brief	CIC 1 : Brief	CIC 3 : Design Development

Name	SheetName	RowName	Value	Unit	ExtSystem	ExtObject	ExtIdentifier	Description	AllowedValues
OccupancyNumber	Space	*	CIC 1 : Brief	each		IfcPropertySingleValue	Pset_SpaceOccupancy	Number of people required for the activity assigned to this space.	
OccupancyType	Space	*	CIC 1 : Brief	n/a		IfcPropertySingleValue	Pset_SpaceOccupancy	Occupancy type for this object. It is defined according to the presidir	
Benefit	Space	*	CIC 1 : Brief	client		IfcPropertySingleValue	BS_BusinessCase_UK	Beneficial measure	n/a
Utilisation	Space	*	CIC 1 : Brief	percent		IfcPropertySingleValue	BS_BusinessCase_UK	Planned Availability	
InteriorOrExteriorSpa	Space	*	CIC 1 : Brief	n/a		IfcSpace		InteriorOrExteriorSpace	n/a
CeilingCovering	Space	*	CIC 2 : Concept	n/a		IfcPropertySingleValue	Pset_SpaceCommon	Label to indicate the material or finish of the space ceiling. The label	
FloorCovering	Space	*	CIC 2 : Concept	n/a		IfcPropertySingleValue	Pset_SpaceCommon	Label to indicate the material or finish of the space flooring. The lab	
WallCovering	Space	*	CIC 2 : Concept	n/a		IfcPropertySingleValue	Pset_SpaceCommon	Label to indicate the material or finish of the space walling. The labe	
GrossVolume	Space	*	CIC 3 : Design Development	cubicmeters		IfcQuantityVolume	BaseQuantities	Gross volume enclosed by the space, including the volume of constru	
NetVolume	Space	*	CIC 3 : Design Development	cubicmeters		IfcQuantityVolume	BaseQuantities	Net volume enclosed by the space, excluding the volume of construc	
FinishCeilingHeight	Space	*	CIC 3 : Design Development	millimeters		IfcQuantityLength	BaseQuantities	Height of the suspended ceiling (from top of flooring to the bottom	
FinishFloorHeight	Space	*	CIC 3 : Design Development	millimeters		IfcQuantityLength	BaseQuantities	Height of the flooring (from base slab without flooring to the floorin	
GrossPerimeter	Space	*	CIC 3 : Design Development	millimeters		IfcQuantityLength	BaseQuantities	Gross perimeter at the floor level of this space. It all sides of the spa	
Height	Space	*	CIC 3 : Design Development	millimeters		IfcQuantityLength	BaseQuantities	Total height (from base slab without flooring to ceiling without suspe	
NetPerimeter	Space	*	CIC 3 : Design Development	millimeters		IfcQuantityLength	BaseQuantities	Net perimeter at the floor level of this space. It excludes those parts	
GrossCeilingArea	Space	*	CIC 3 : Design Development	squaremeters		IfcQuantityArea	BaseQuantities	Sum of all ceiling areas of the space. It includes the area covered by	
GrossWallArea	Space	*	CIC 3 : Design Development	squaremeters		IfcQuantityArea	BaseQuantities	Sum of all wall (and other vertically bounding elements, like columns	
NetCeilingArea	Space	*	CIC 3 : Design Development	squaremeters		IfcQuantityArea	BaseQuantities	Sum of all ceiling areas of the space. It excludes the area covered by	
NetWallArea	Space	*	CIC 3 : Design Development	squaremeters		IfcQuantityArea	BaseQuantities	Sum of all wall (and other vertically bounding elements, like columns	
Concealed	Space	*	CIC 3 : Design Development	boolean		IfcPropertySingleValue	Pset_SpaceCommon	Concealed	true , false, unk

AEC 3

COBie Templates and Checking

The UK Responsibility Matrix



(image courtesy TU Delft)

Nicholas Nisbet
November 2012
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Outcome: life cycle

StandardCell

Operations, Maintenance, and Support Information

Design-Based Planning Submittal

Construction Project: StandardCell

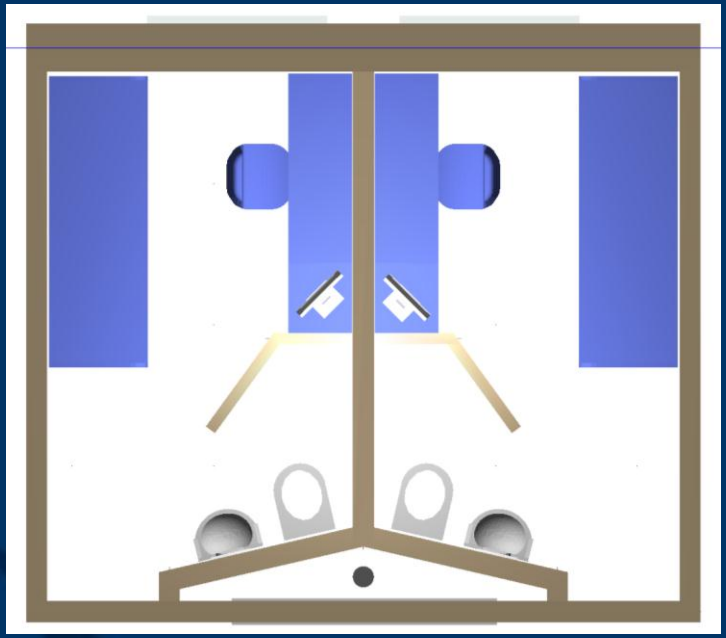
Submittal Delivery Date: 2012-11-08T07:54:45

Prepared by: AEC3 UK Ltd

Facility	Facility Content							
	System Content							
	System	Component	Component Content				Annual System Hours	Annual Facility Hours
			Task	Task Content	Annual Task Hours	Annual Component Hours		
StandardCell	Circuit 1	Mirror Mirror Mirror 211825	Mirror Electrical testing	6 mins 1 yearly: Check earthing	0.10			
			Mirror Maintenance Schedule	6 mins 1 weekly: Clean and check for tampering	5.00	5.10		
		Mirror Mirror Mirror 211826	Mirror Electrical testing	6 mins 1 yearly: Check earthing	0.10			
			Mirror Maintenance Schedule	6 mins 1 weekly: Clean and check for tampering	5.00	5.10		
		TFT Monitor TFT Monitor TFT Monitor 211790	TFT Monitor Electrical testing	6 mins 1 yearly: Check earthing	0.10			
			TFT Monitor Maintenance Schedule	6 mins 1 weekly: Clean and check for tampering	5.00	5.10		
		TFT Monitor TFT Monitor TFT Monitor 211812	TFT Monitor Electrical testing	6 mins 1 yearly: Check earthing	0.10			
			TFT Monitor Maintenance Schedule	6 mins 1 weekly: Clean and check for tampering	5.00	5.10	20.40	
	External envelope 1	Safer Cell 7 Bay FF 1275x1200h 1275x1200h 211810	1275x1200h Maintenance Schedule	6 mins 1 weekly: Clean and check seals	5.00			
			1275x1200h Security Inspection	3 mins 3 monthly: Check for tampering and impose pressure test	0.20	5.20		
		Safer Cell 7 Bay FF 1275x1200h 1275x1200h 211811	1275x1200h Maintenance Schedule	6 mins 1 weekly: Clean and check seals	5.00			
			1275x1200h Security Inspection	3 mins 3 monthly: Check for tampering and impose pressure test	0.20	5.20	10.40	
	FFE	Cell Bed family Cell Bed family Cell Bed family 211786	Cell Bed family Maintenance Schedule	6 mins 1 weekly: Cell Bed family	5.00	5.00		
		Cell Bed family Cell Bed family Cell Bed family 211804	Cell Bed family Maintenance Schedule	6 mins 1 weekly: Cell Bed family	5.00	5.00		
		Cell Desk Desk Whitewood Desk Whitewood 211787	Desk Whitewood Maintenance Schedule	3 mins 1 weekly: Inspect for damage and repair if necessary	2.50	2.50		
		Cell Desk Desk Whitewood Desk Whitewood 211805	Desk Whitewood Maintenance Schedule	3 mins 1 weekly: Inspect for damage and repair if necessary	2.50	2.50		

Summing: **Time** **or Cost** **or Carbon** **or Energy**

By: **System** **or Zone** **or Type** **or Floor**



Inputs

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COBie: Space

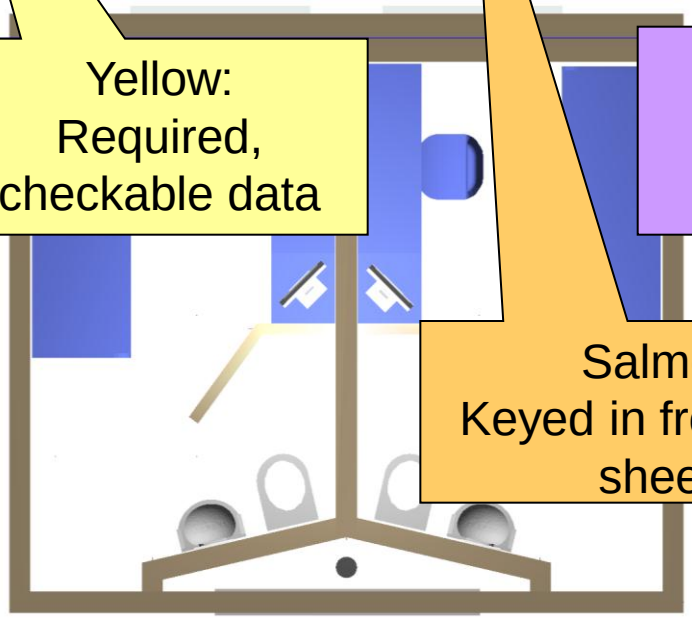
Name	CreatedBy	CreatedOn	Category	FloorName	Description	ExtSystem	ExtObject	ExtIdentifier	RoomTag	UsableHeight	GrossArea	NetArea
L0-01A	jjohnston@brydenwood.co.uk	2012-01-19T12:27:24	F D376 : Detention secure facilities pri	Level 0	Cell 1	Autodesk Revit Architecture 2012	IfcSpace	3cBcy7GEj	Cell 001	2500	7.615	7.615
L0-01B	jjohnston@brydenwood.co.uk	2012-01-19T12:27:24	F D376 : Detention secure facilities pri	Level 0	Cell 2	Autodesk Revit Architecture 2012	IfcSpace	3cBcy7GEj	Cell 002	2500	7.615	7.615
L0-C0	nn@aec3.com	2012-01-20T10:01:14	F32 : Corridors	Level 0	Corridor 01		IfcSpace		Corr 001	2700	3.000	3.000

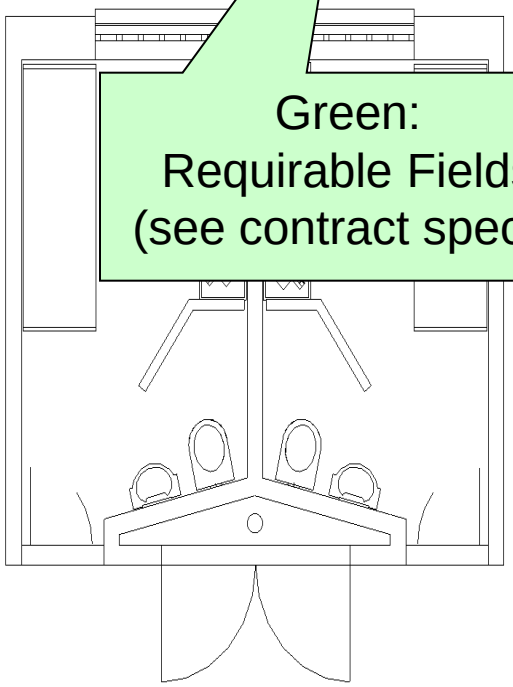
Yellow:
Required,
checkable data

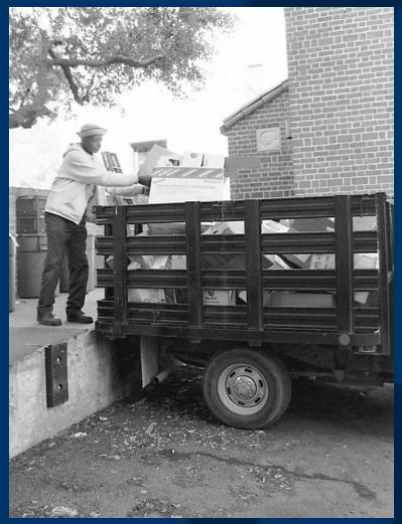
Salmon:
Keyed in from other
sheets

Purple:
Required if linked
with applications

Green:
Requirable Fields
(see contract specs)







Lyle and I thank you

For more information:

- *Google "buildingSMART COBie"*
- *Search YouTube for "COBie"*
- *www.bimtaskgroup.org COBie-UK-2012*

United Kingdom
Great Kingshill, Bucks HP15 6HP
T +44 149 471 4933
M +44 781 616 8554
email nick.nisbet@aec3.com

Germany
D-80634 München
Tel +49 89 1870 3223
Fax +49 89 1870 3224
email thomas.liebich@aec3.de

Graphisoft & ArchiCAD

Implementing Protocols and Open Standards

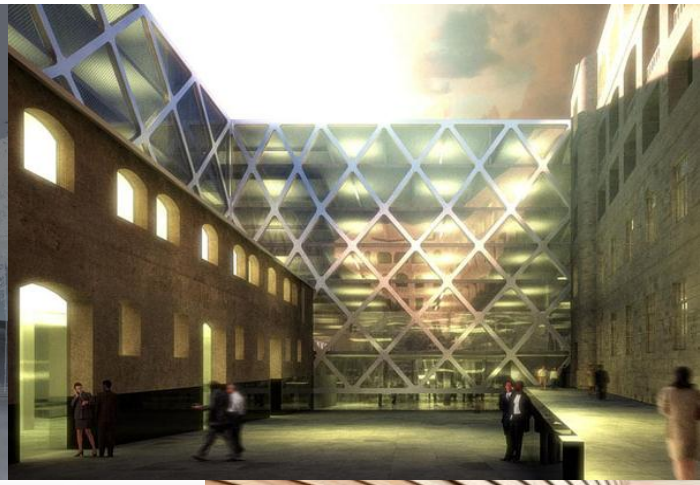
Adrian Girling

11th July 2013

GRAPHISOFT®

GRAPHISOFT ArchiCAD

Creative, productive and enjoyable design experiences for architects



GRAPHISOFT

Protocols & Open Standards

Graphisoft is committed to open standards

- IFC
- COBie
- OPEN BIM network

OPEN BIM

GRAPHISOFT®

Open BIM Collaboration

ArchiCAD

IFC

An

OPEN

Solution

SOLIBRI

Model Checking

DDS-CAD

Autodesk Revit MEP

AutoCAD MEP

MagiCAD

MEP

et EnergyPlus

GRANLUND SOFTWARE RIUSKA

Energy

NEMETSCHEK Allplan

NEMETSCHEK Scia

TEKLA Structures

Tricalc

FEM-Design

Autodesk Revit Structure

ETABS

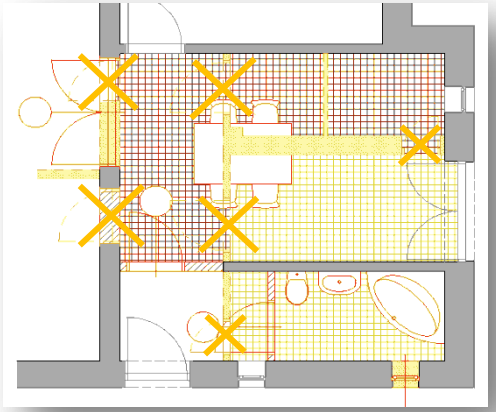
AXISVM

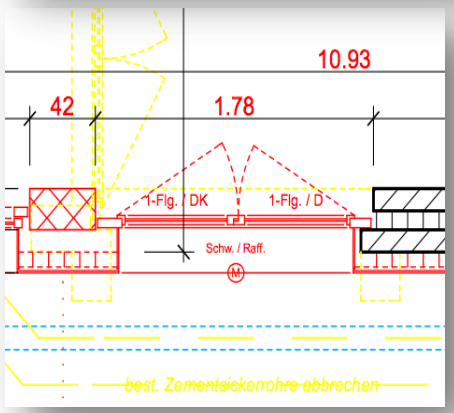
SAP2000

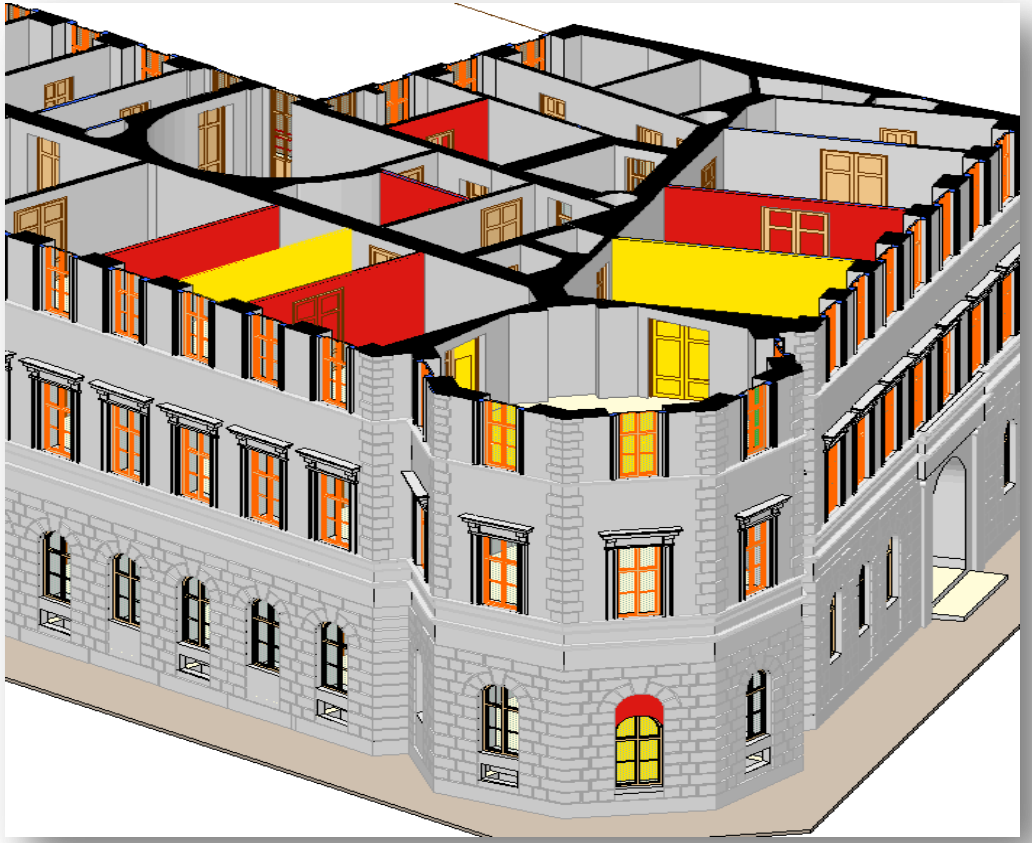
Structural

Why ArchiCAD:

BIM Product of the Year 2011 & 2012







- **Award winning renovation, refurbishment and retrofit facilities.**

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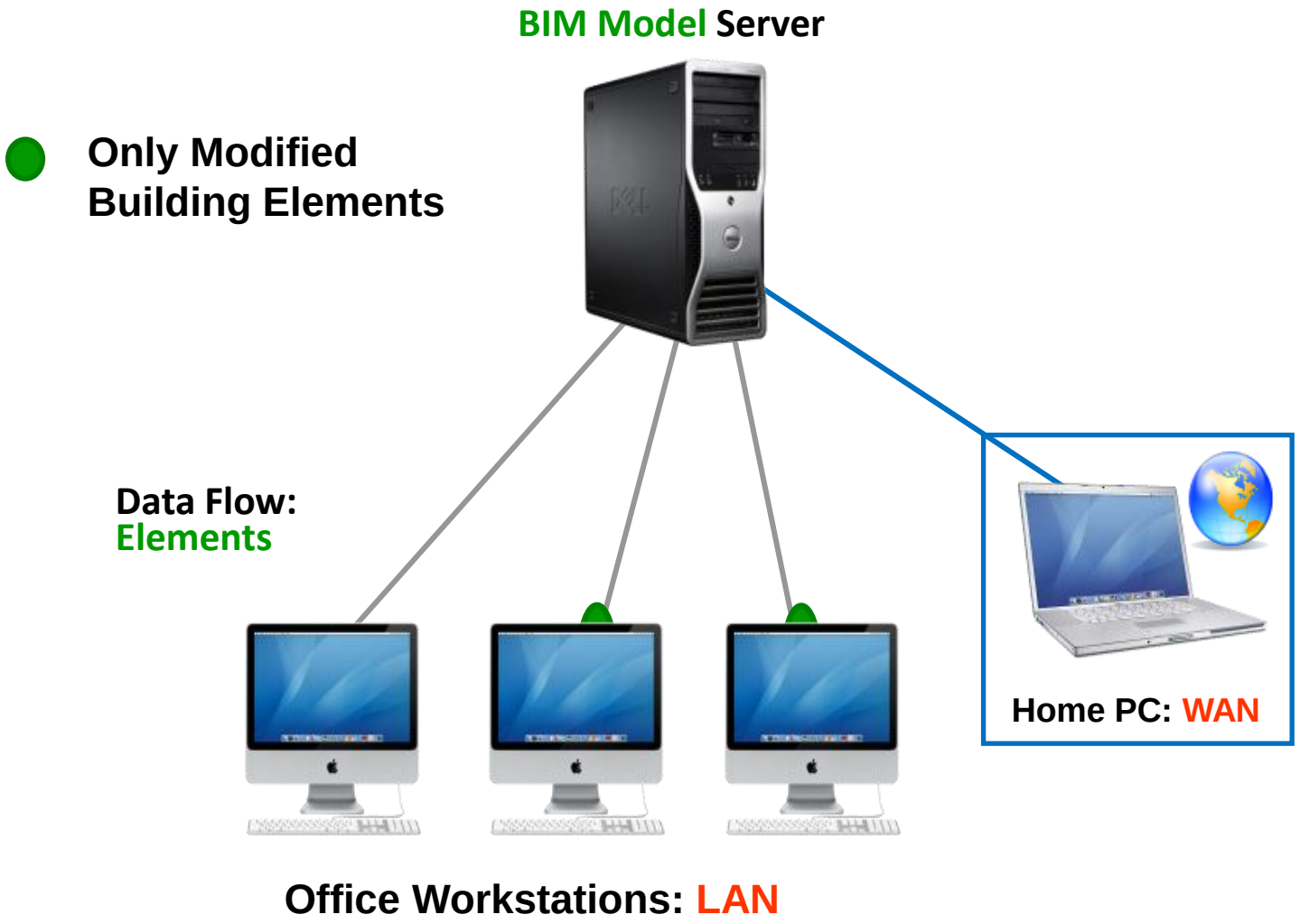
Why ArchiCAD: Teamwork



- **Smooth large team, multiple office capability using Delta-Server™ Technology.**

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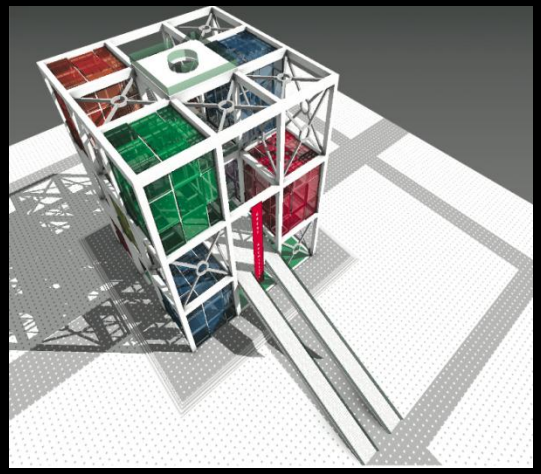
Why ArchiCAD:

BIMx

The Ultimate BIM Communication Tool



- Navigate
- Display BIM Data
  - Material Quantities
  - Measure Dimensions
  - Show Structures

- **BIMX Cloud integrated model-sharing service for tablet and smart phone.**

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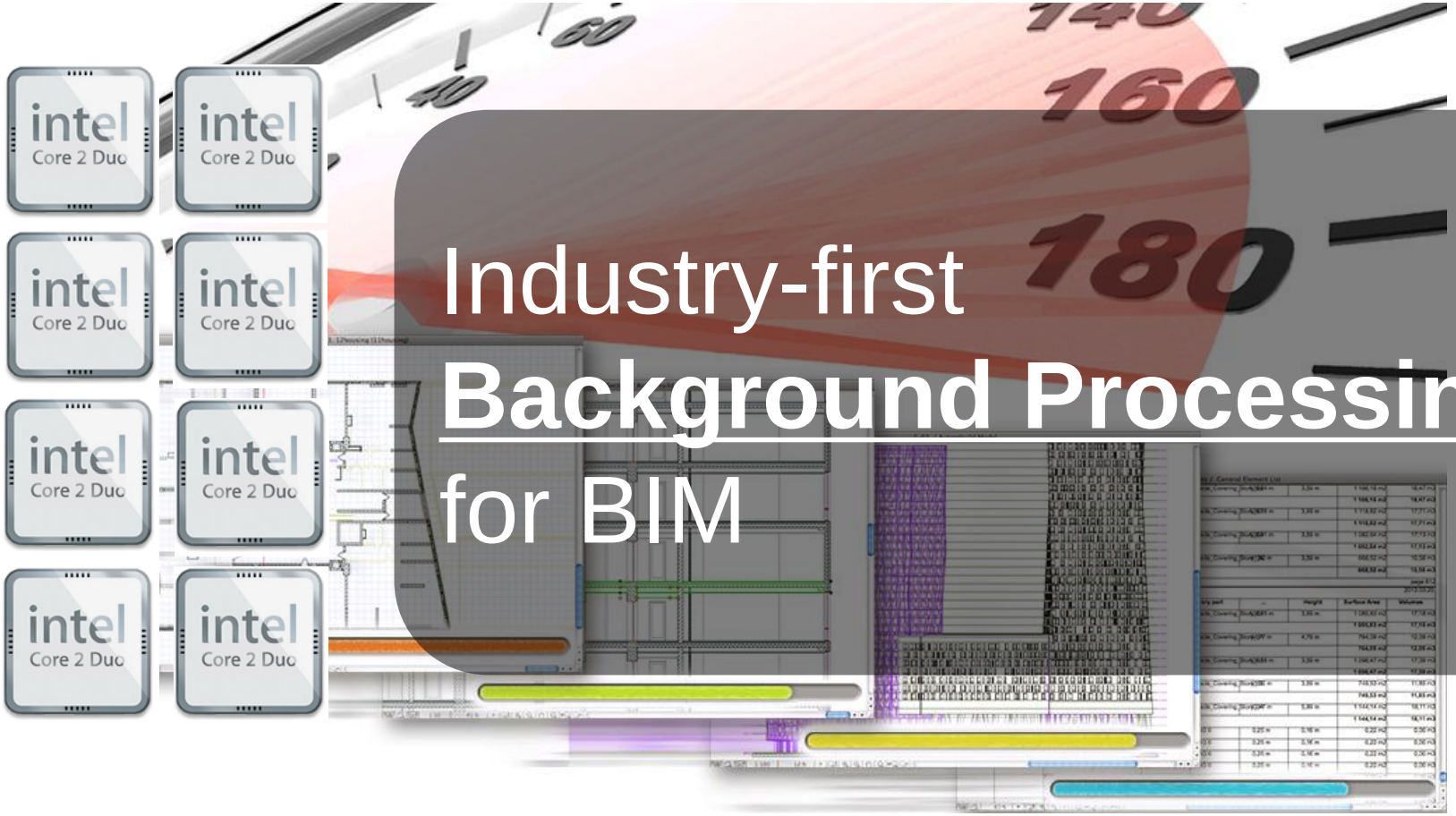
Why ArchiCAD: Performance



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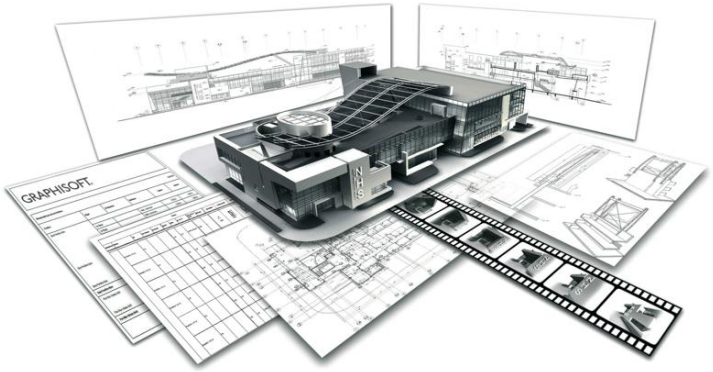
Summary

- Open Standards
  - IFC & COBie
- ArchiCAD is an OPEN BIM Platform
  - 3D modelling and documentation for Architects
- ArchiCAD Pilot Scheme



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Thank You

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