



quantum

Quality management for building performance

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Senior BIM Communicator

Quality management within building commissioning

Data Management and Building Information Modelling

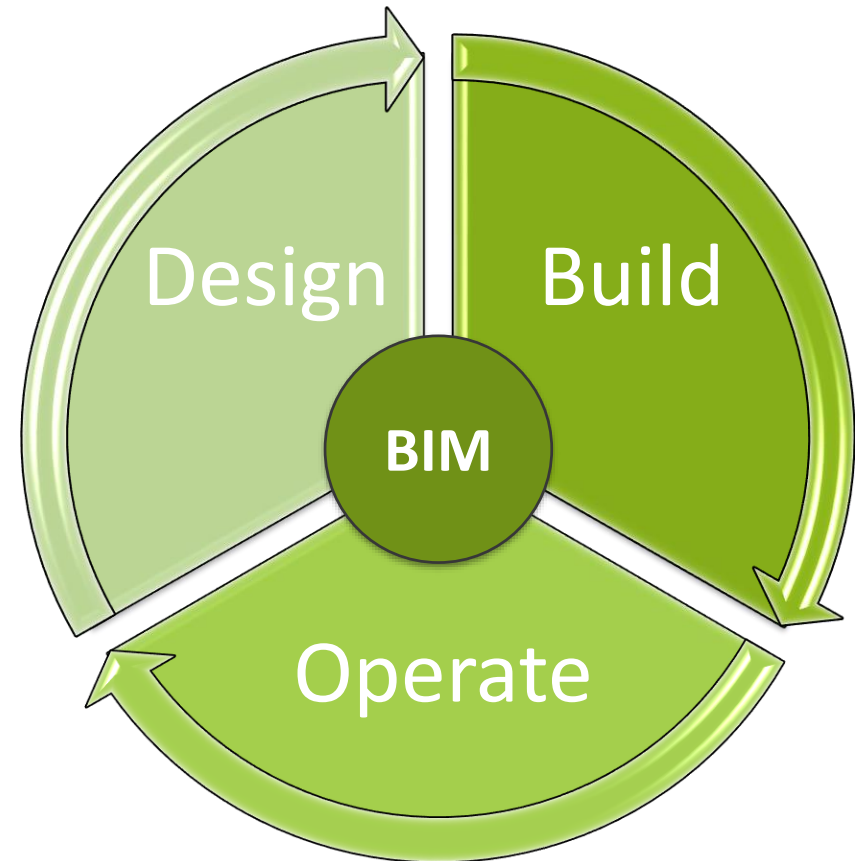


Building Information Modelling (BIM):

Integrated **process** built on coordinated, reliable information

Used to:

- Create coordinated, digital design information and documentation;
- Predict performance, appearance, and cost; and
- Deliver the project faster, more economically, and with reduced environmental impact.



Building Information Modelling (BIM)

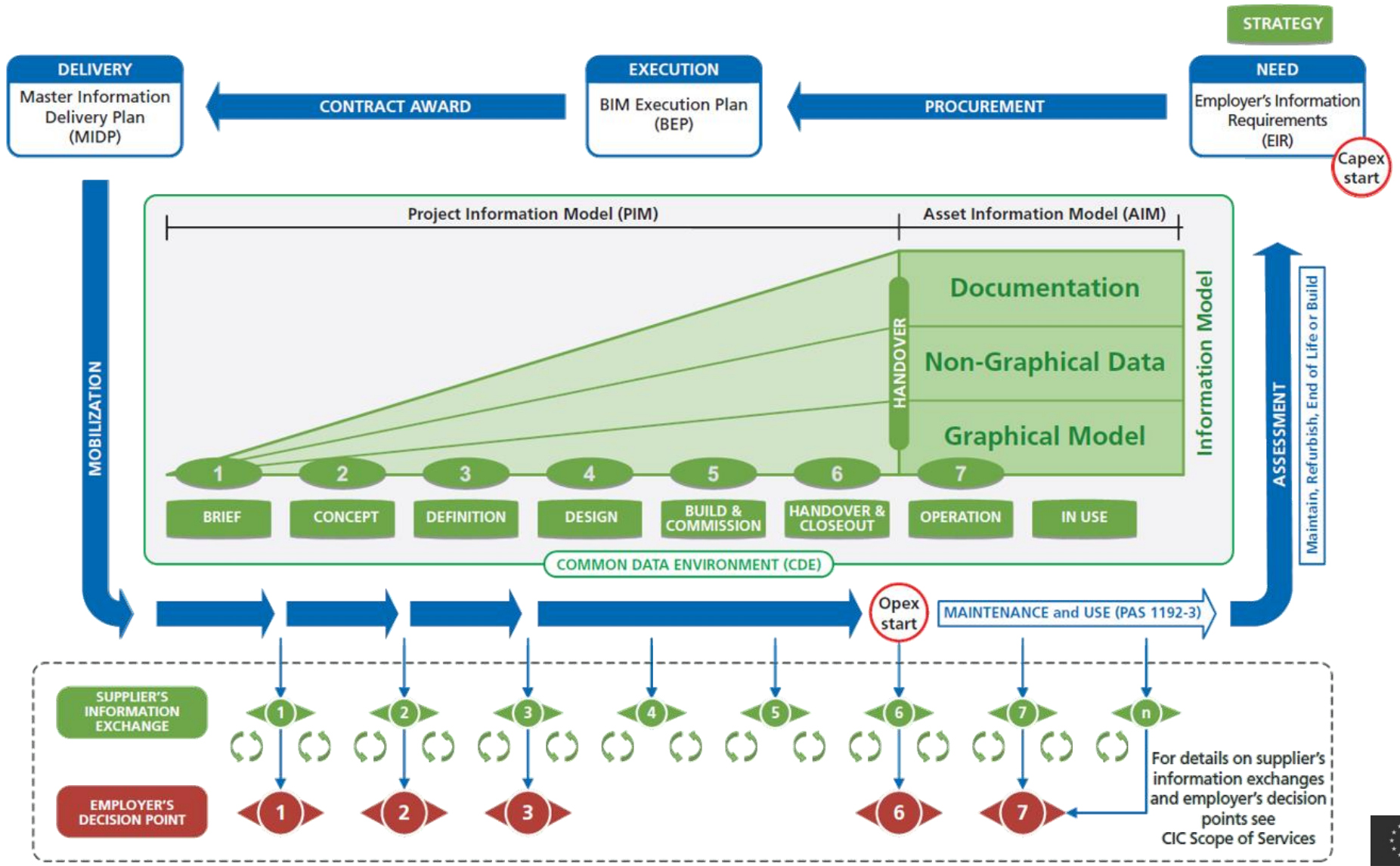
- It's not just 3D CAD
- It's not just a new technology application
- It's not next generation, it here and now!

BIM is essentially **value creating collaboration** through the entire life-cycle of an asset, underpinned by the **creation, collation and exchange of shared 3D models** and **intelligent, structured data** attached to them.

BETTER INFORMATION MANAGEMENT



Quality management within building commissioning



PAS1192-2:2013

One of the key **[BIM] Level 2** requirements is the exchange standard of COBie and PDF, as well as copies of the native files.



Graphical Models

Name	Category
OvenType01	Pr_40_70_24_08 : Built-in electric ovens
ToiletPanType01	Pr_40_20_93_86 : WC and washbasin combined units
BathType01	Pr_40_20_06_08 : Baths
ShowerType01	Pr_40_20_06_79 : Shower enclosures
WashHandBasinType01	Pr_40_20_96_81 : Sinks
SinkType01	Pr_40_20_96_45 : Kitchen sinks
ExtractorHoodType01	Pr_60_65_94_46 : Kitchen extractor hoods
ShelfType01	Pr_35_90_28_97 : Wood trim boards
WorkSurfaceType02	Pr_40_50_21_45 : Kitchen worktops
WorkSurfaceType01	Pr_40_50_21_45 : Kitchen worktops
AlcoveCupboardType01	Pr_40_30_78 : Shelves and storage units
AlcoveCupboardType01	Pr_40_30_78 : Shelves and storage units
KitchenUnitType06	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType03	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType04	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType02	Pr_40_30_78_43 : Kitchen bench cupboards

Non-graphical Information



Documentation

COMMON DATA ENVIRONMENT (CDE)



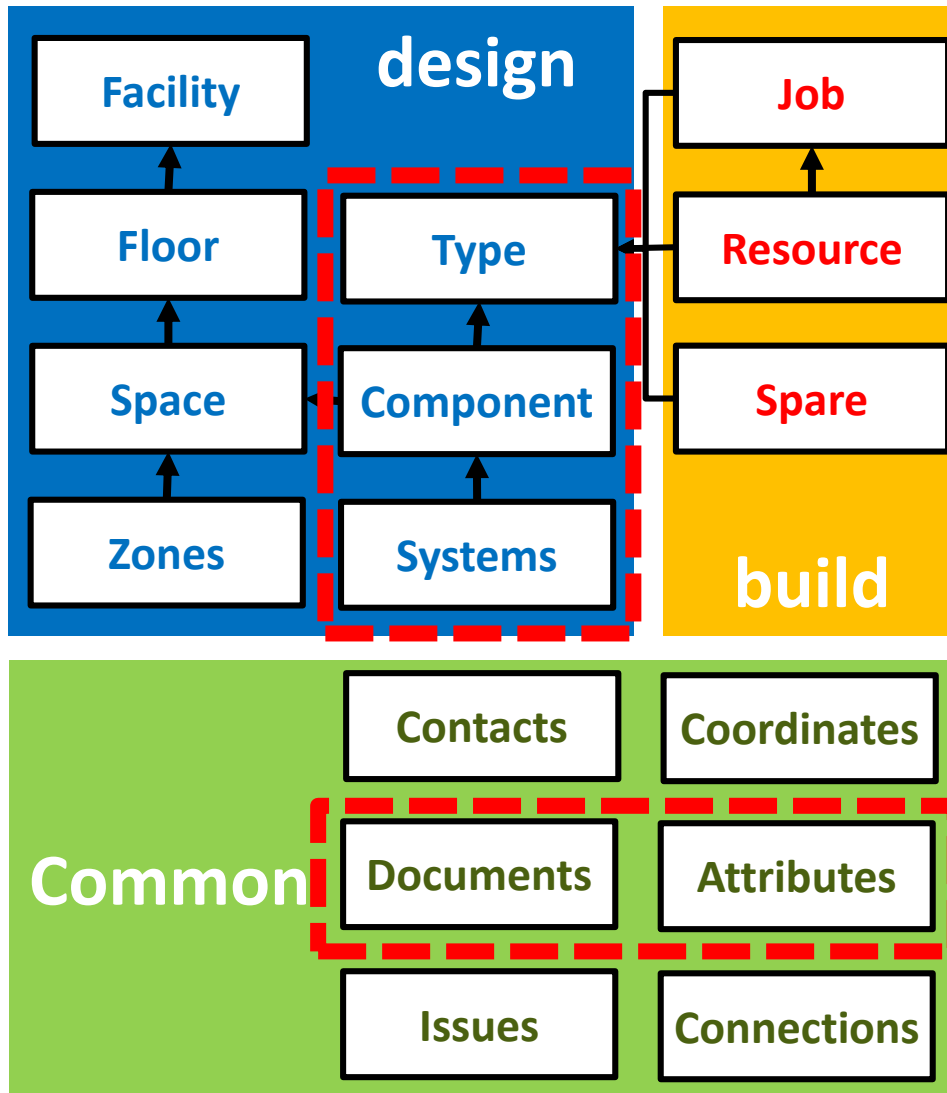


Name	Category
OvenType01	Pr_40_70_24_08 : Built-in electric ovens
ToiletPanType01	Pr_40_20_93_86 : WC and washbasin combined units
BathType01	Pr_40_20_06_08 : Baths
ShowerType01	Pr_40_20_06_79 : Shower enclosures
WashHandBasinType01	Pr_40_20_96_81 : Sinks
SinkType01	Pr_40_20_96_81 : Kitchen sinks
ExtractorHoodType01	Pr_40_30_94_46 : Kitchen extractor hoods
ShelfType01	Pr_40_30_28_97 : Wood trim boards
WorkSurfaceType02	Pr_40_30_28_45 : Kitchen worktops
WorkSurfaceType01	Pr_40_50_21_45 : Kitchen worktops
AlcoveCupboardType01	Pr_40_30_78 : Shelves and storage units
AlcoveCupboardType01	Pr_40_30_78 : Shelves and storage units
KitchenUnitType06	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType05	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType04	Pr_40_30_78_44 : Kitchen overhead cupboards
KitchenUnitType02	Pr_40_30_78_43 : Kitchen bench cupboards



Model View Definition Facility Management handover view





Type:

- Manufacturers Information
- Warranty Duration & details

Component:

- Location, Installation, Asset Tag

Systems:

- What components are in each system

Attributes:

- Assessment Details
- Performance

Documents:

- Manufactures documentation
- Warranty Documents
- Test records.





Table 16 COBie.System Worksheet Notes

Column	Column Name	Constraints/Notes
A	Name	Compound Value must be unique in this worksheet
B	CreatedBy	Value must be found in referenced Foreign Key List
C	CreatedOn	ISO date/time info added/updated or default "1900-12-31T23:59:59"
D	Category	Value must be found in referenced Foreign Key List
E	ComponentNames	Value must be found in referenced Foreign Key List
F	ExternalSystem	Provided only by automated export from software system
G	ExternalObject	Provided only by automated export from software system
H	ExternalIdentifier	Provided only by automated export from software system
I	Description	Default value must equal 'n/a'

Unique
on 'contacts'
YYY-MM-DD
on 'Picklist'
on 'components'
Automatic
Automatic
Automatic
n/a or Text

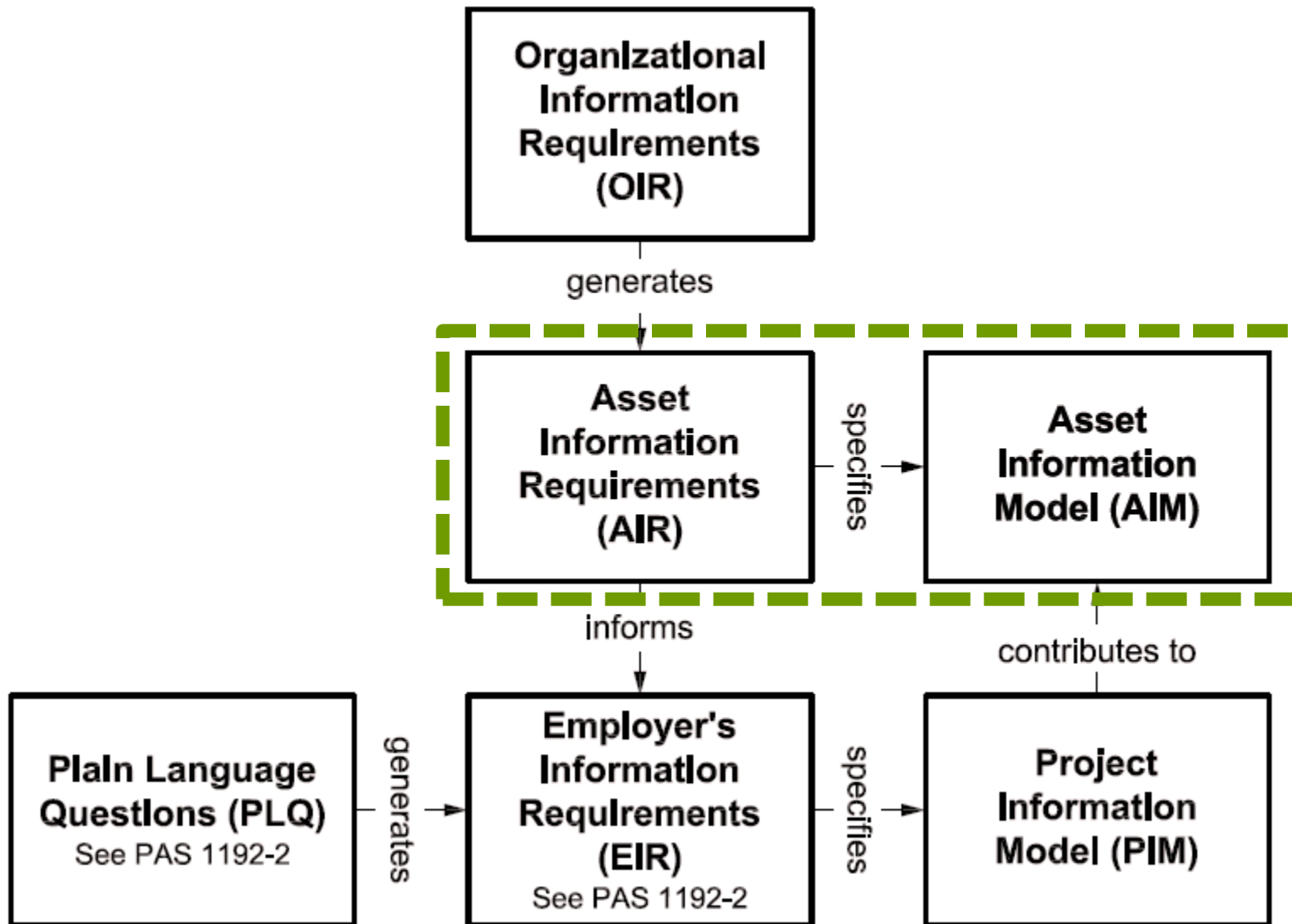


Table 30 COBie.Document Worksheet Notes

Column	Column Name	Constraints/Notes
A	Name	Compound Value must be unique in this worksheet
B	CreatedBy	Value must be found in referenced Foreign Key List
C	CreatedOn	ISO date/time info added/updated or default "1900-12-31T23:59:59"
D	Category	Value must be found in referenced Foreign Key List
E	ApprovalBy	Value must be found in referenced Foreign Key List
F	Stage	Value must be found in referenced Foreign Key List
G	SheetName	Value must be found in referenced Foreign Key List
H	RowName	Row name must be found in referenced table
I	Directory	Value must be provided or 'n/a'
J	File	Value must be provided or 'n/a'
K	ExternalSystem	Provided only by automated export from software system
L	ExternalObject	Provided only by automated export from software system
M	ExternalIdentifier	Provided only by automated export from software system
N	Description	Default value must equal 'n/a'
O	Reference	Default value must equal 'n/a'

Commissioning01
Info@BRE.co.uk
 2017-04-27T12:00:00
 Report
Info@BMS.org
 CIC 5: Build
 System
 HeatingSystem01
 C:\7001\Reports
 7001-BRE-ZZ-ZZ-RP..
 n/a
 n/a
 n/a
 n/a
 n/a





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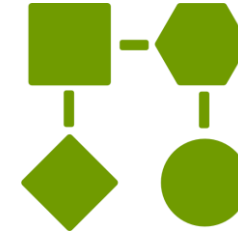


Ref	CATEGORY	PERFORMANCE ATTRIBUTE DATA												
		Electrical				Mechanical					Environmental			
		Rated Voltage	Degree of Protection	Rated Current	Number of Phases	Rated Power	Temperature Range	Flow Rate	Heating / Cooling Capacity	Sound Generation	Pressure	Global Warming Potential (GWP)	Embodied Energy	Volatile Organic Compounds (VOCs)
25	Specialty maintenance Equipment													
26	Mechanical Equipment													
	Boiler	Y	Y	Y	Y	Y			Y		Y	Y		Y
	Heat Exchanger	Y		Y	Y			Y	Y		Y	Y		Y
	Chiller	Y		Y	Y		Y		Y		Y	Y		Y
	Evaporative Cooler	Y		Y	Y	Y	Y		Y		Y	Y		Y
	Evaporator	Y		Y	Y	Y		Y	Y		Y	Y		Y
	Cooled Beam	Y		Y		Y		Y	Y		Y	Y		Y
	Cooling Tower	Y		Y	Y	Y					Y	Y		Y
	Pump	Y		Y	Y	Y		Y	Y	Y	Y	Y		Y
	Fire Suppression Terminal										Y	Y		
	Air To Air Heat Recovery	Y		Y		Y	Y			Y		Y		
	Unitary Equipment	Y		Y	Y	Y	Y	Y	Y		Y	Y		Y



Summary:

Building Information Modelling is a **process** used to structure information in order to represent an asset and its information digitally



By specifying a schema such as IFC, information about an asset can be produced consistent structure that can be both **validated** and **verified**

COBie, a subset of IFC, is already **able to record the systems being commissioned** as well as their associated documents.





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Thank you

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