

BIM and it's role in Facilities Management

By

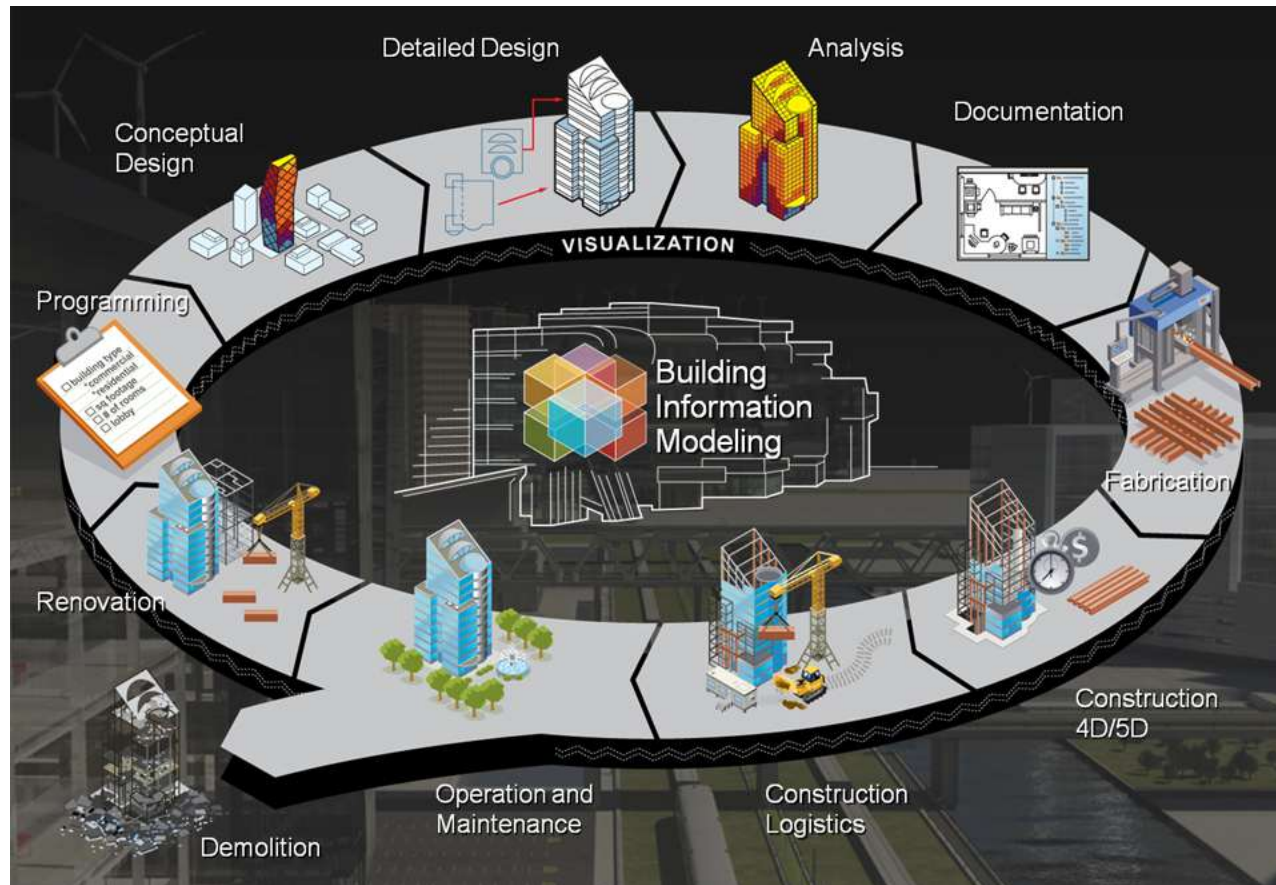
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Overview

- **What is Building Information Modeling**
- **BIM in Design**
- **BIM in Construction**
- **BIM in Facilities Management**
- **Summary**
- **Questions**

What is Building Information Modeling



BIM is a collaborative process that helps to get the right information to the right person at the right time.

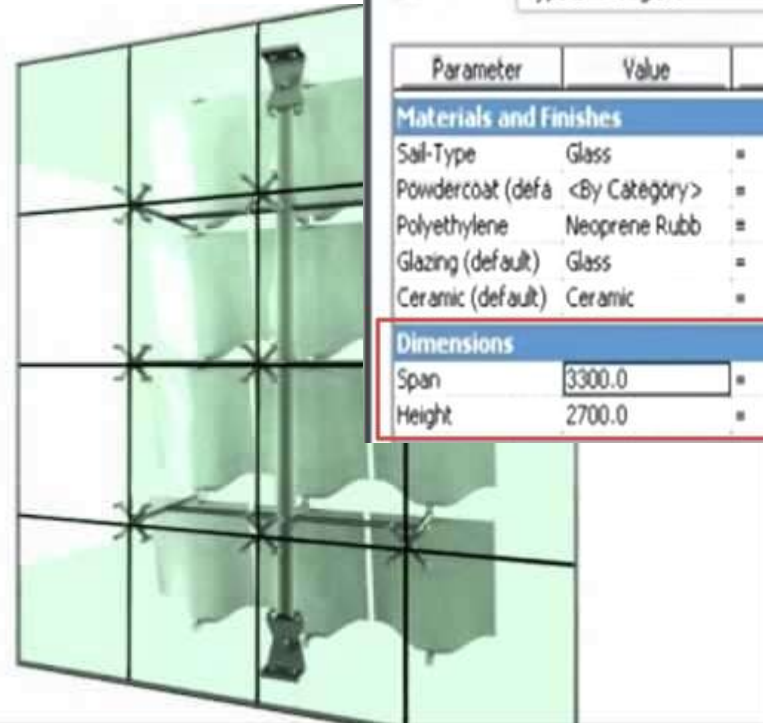
BIM IN DESIGN

Parametric Design

Database Parameters

Quicker Design Iteration process

Improved Efficiency in Design



Family Types

Name: Type 2 - Plexiglass

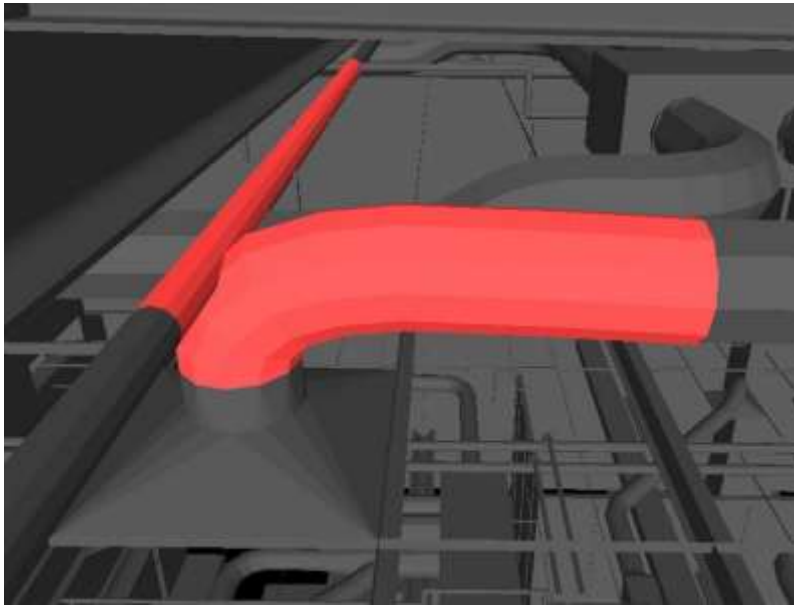
Parameter	Value	Formula
Materials and Finishes		
Soil-Type	Glass	=
Powdercoat (defa	<By Category>	=
Polyethylene	Neoprene Rubb	=
Glazing (default)	Glass	=
Ceramic (default)	Ceramic	=
Dimensions		
Span	3300.0	=
Height	2700.0	=

Clash detection

Co-ordinated models

Clashes are Detected

Resolve Issues before they reach site

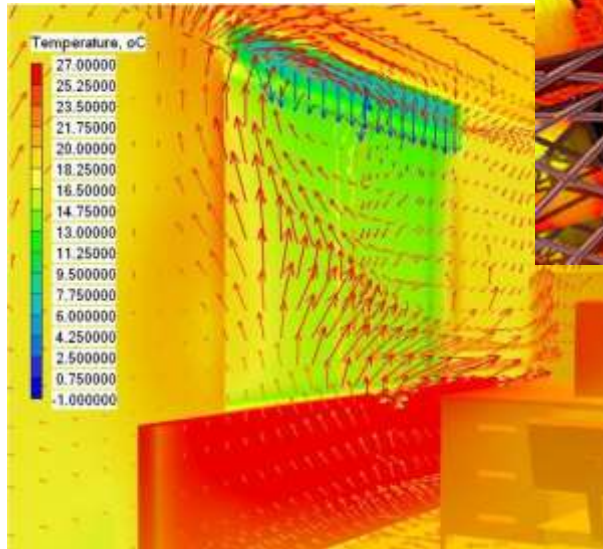
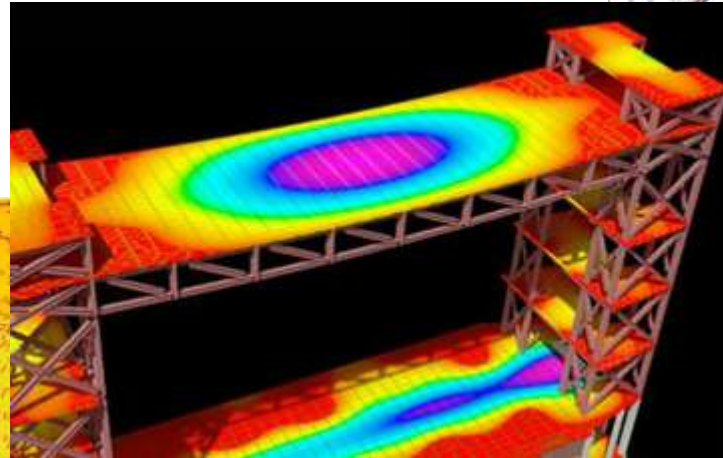
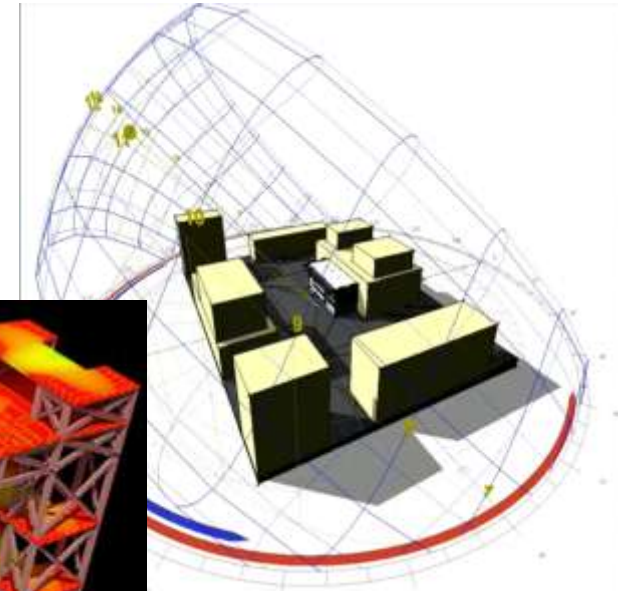


Building Analysis

Simulated Environment

Intelligent parameters

Driving greener building practises



Visualisations

Photorealistic

Virtual Reality

Help communicate design decisions



Real or Fake?

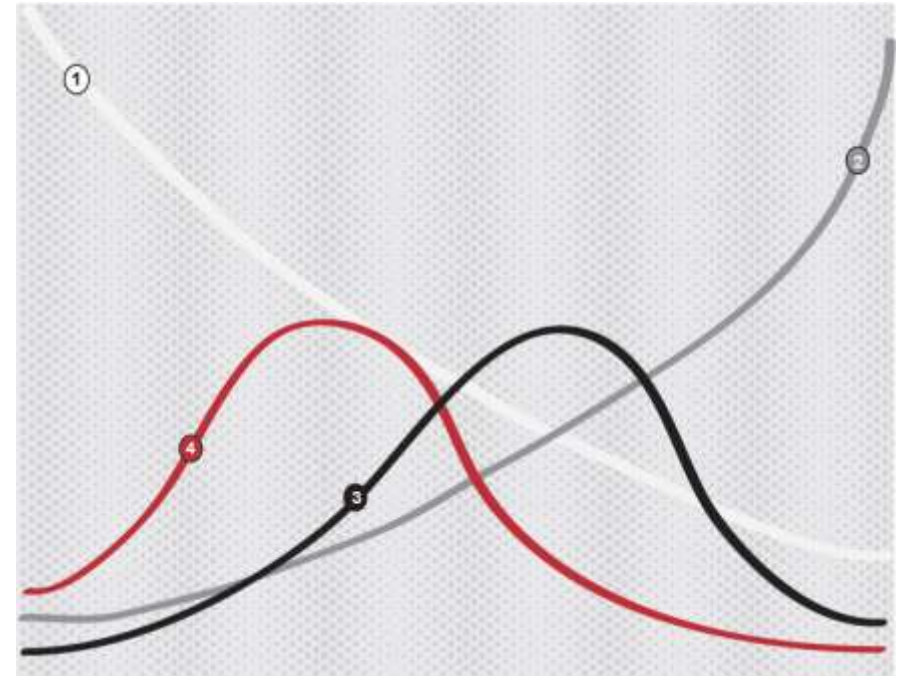


Integrated Project Delivery

Collaborative Process

Lower cost through earlier decisions

McLeamy Curve

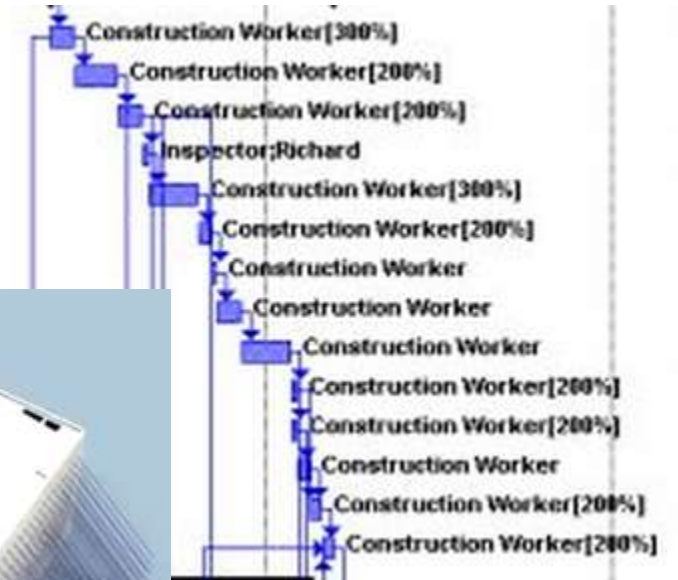
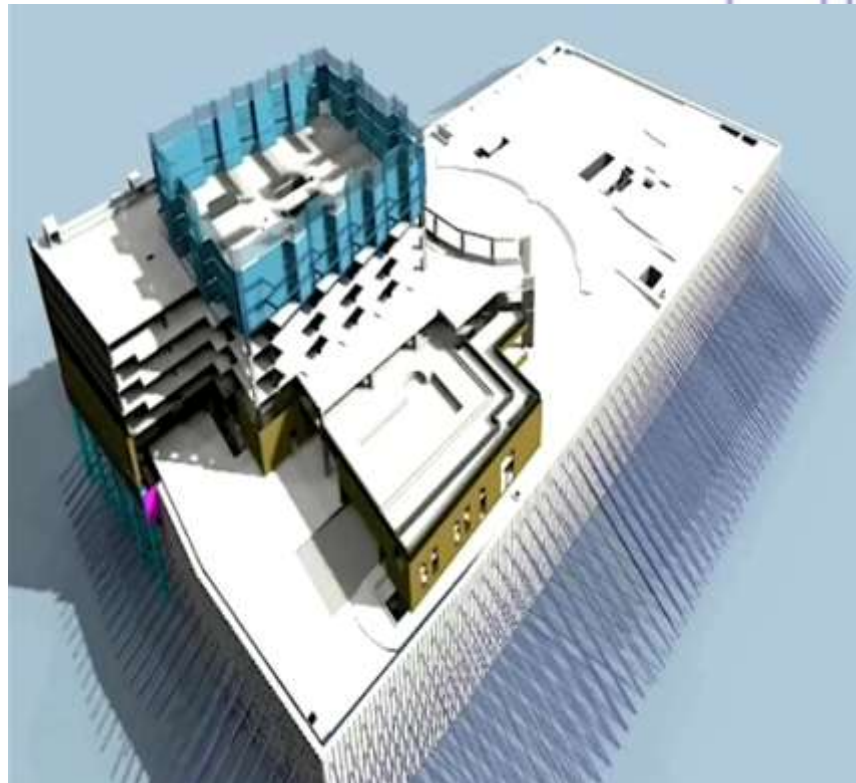


- ① ability to impact cost and functional capabilities
- ② cost of design changes
- ③ traditional design process
- ④ Integrated Project Delivery Process

BIM IN CONSTRUCTION

4D - Scheduling

Check Gantt Chart
Equipment Placement
Improve project team understanding

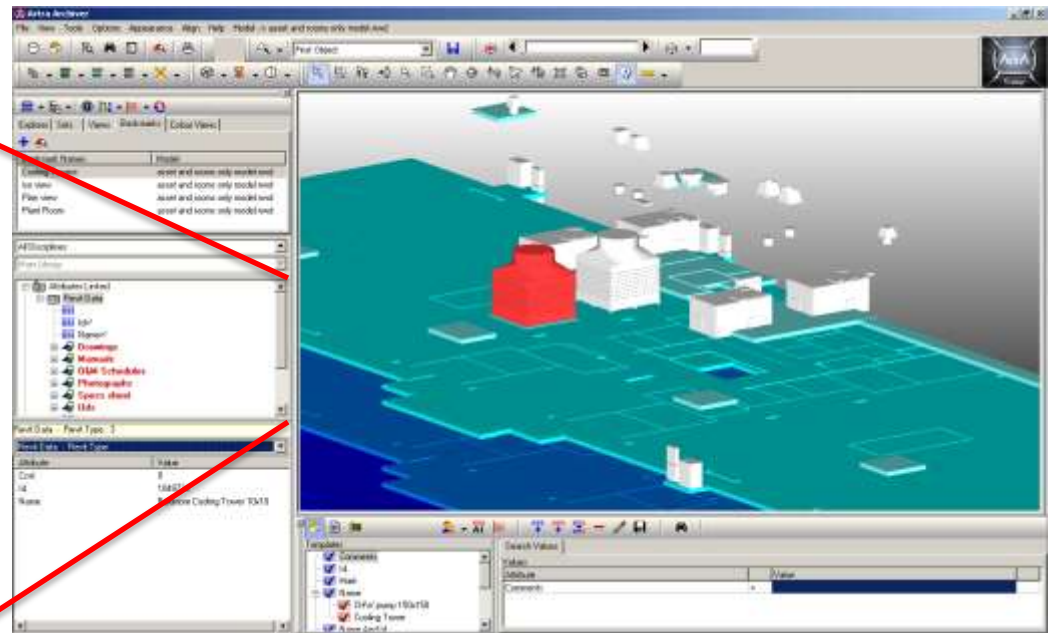
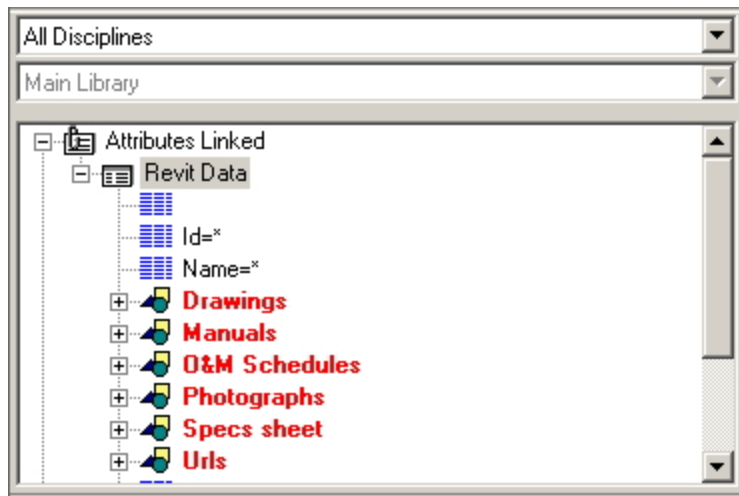


Commissioning

Attach information to the equipment

Thematic reporting

Drive down cost of compilation

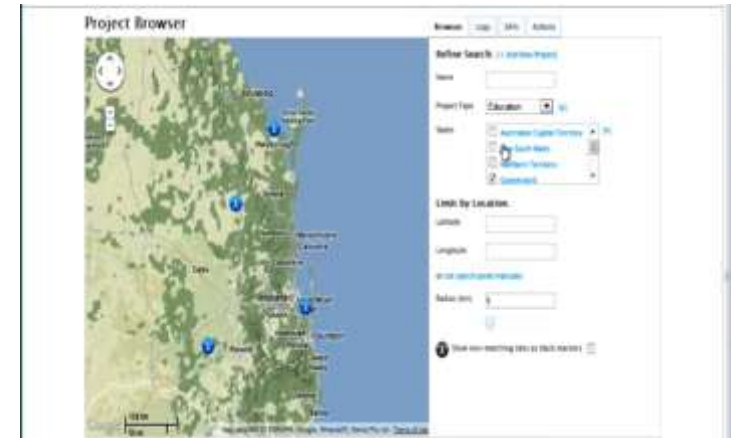


Material tracking

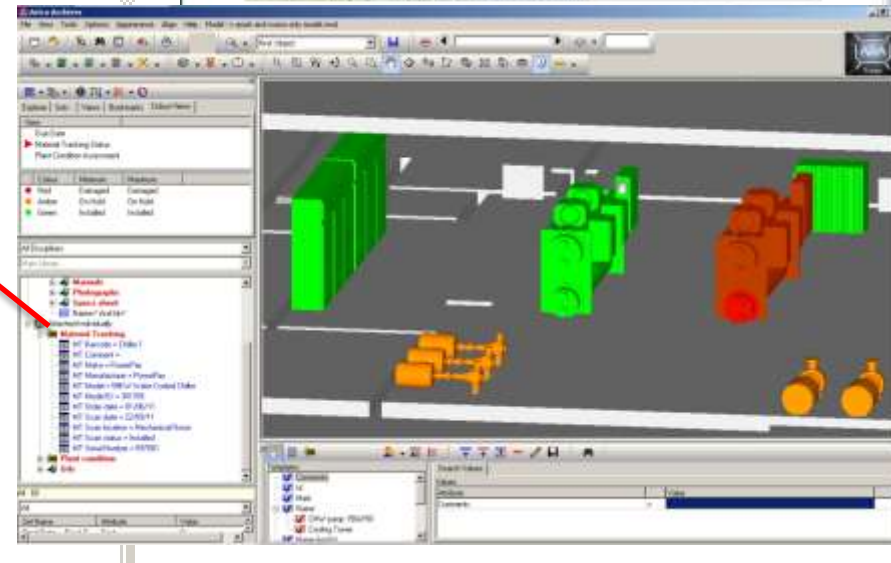
Barcode RFID Tracking

Geographic Information System

Thematic reporting



- Material Tracking**
- MT Barcode = Chiller 1
- MT Comment =
- MT Make = PowerPax
- MT Manufacturer = PowerPax
- MT Model = 59KW Water Cooled Chiller
- MT Model ID = 381765
- MT Order date = 01/06/11
- MT Scan date = 22/09/11
- MT Scan location = Mechanical Room
- MT Scan status = Installed
- MT Serial Number = 597001

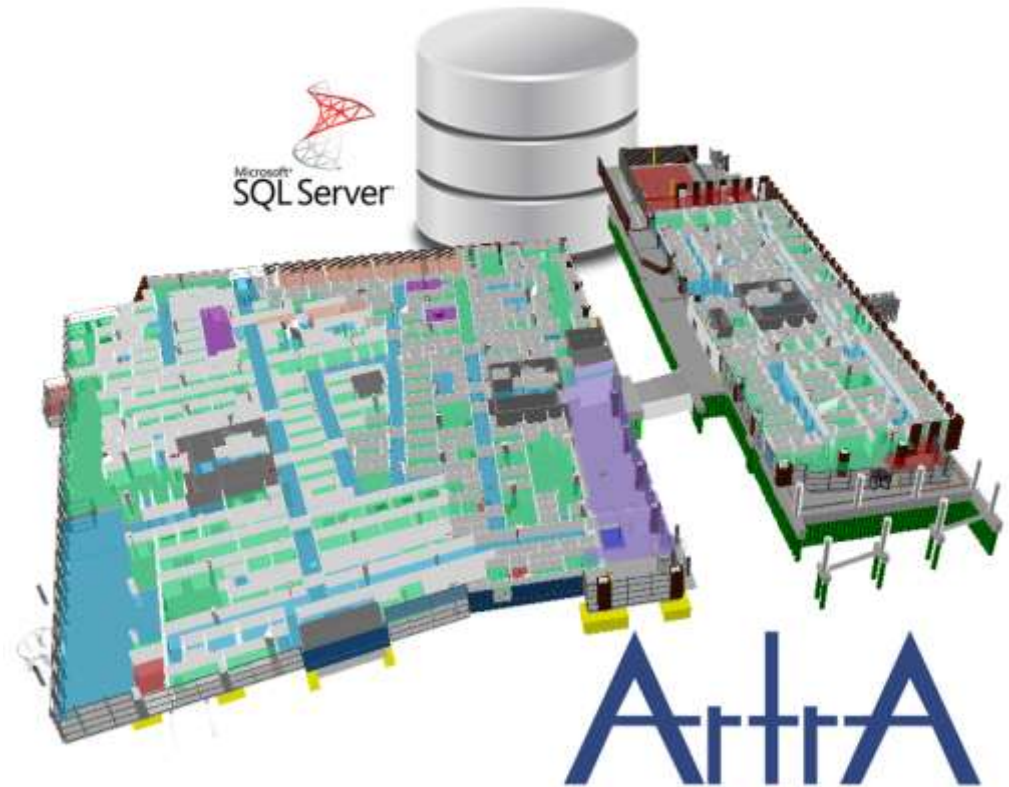


Field BIM

Sign offs

Site Photographs

Documentation on the go



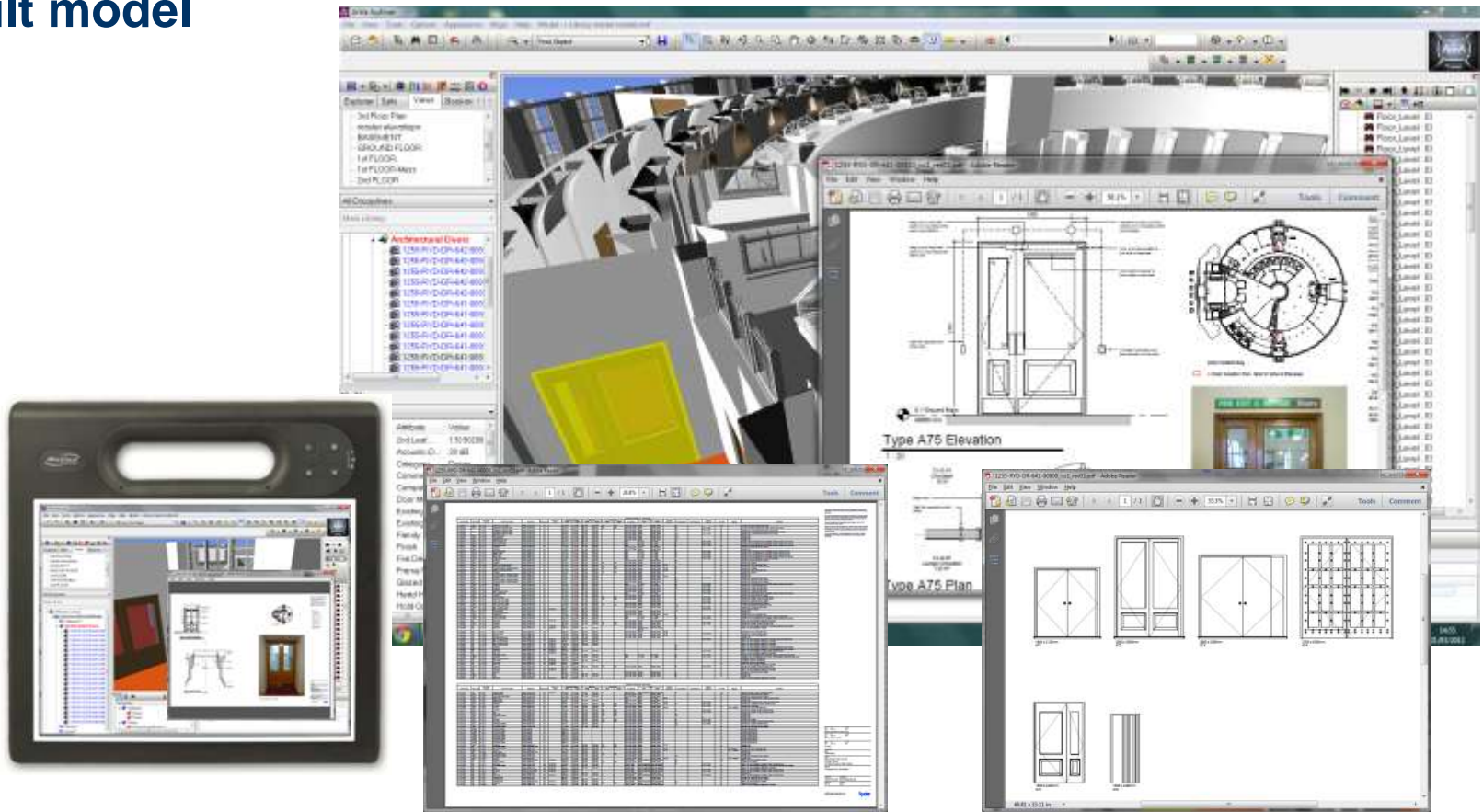
BIM IN FM

Documentation

No more lost drawings

Take everything with you

As-built model

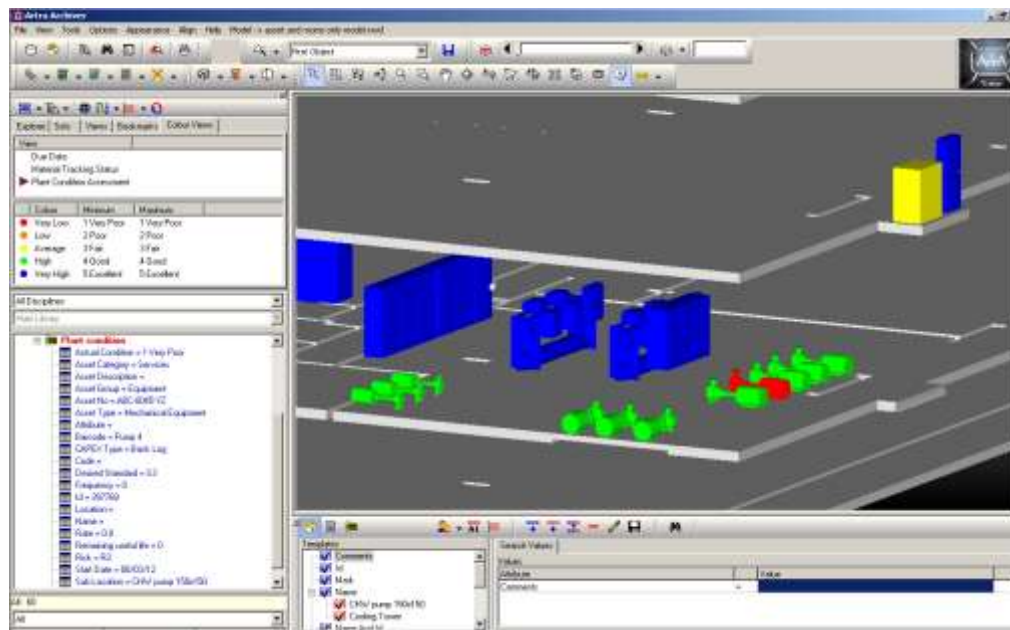


Condition Assessments

Field BIM

Lower administrative cost

Improved visibility



Plant Condition Assessment

	Colour	Minimum	Maximum
●	Very Low	1 Very Poor	1 Very Poor
●	Low	2 Poor	2 Poor
●	Average	3 Fair	3 Fair
●	High	4 Good	4 Good
●	Very High	5 Excellent	5 Excellent

All Disciplines
Main Library

Plant condition

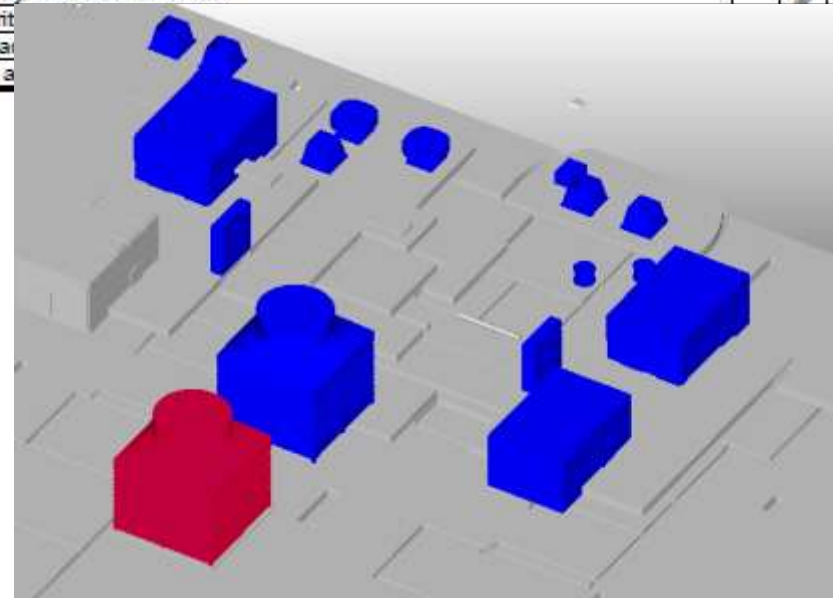
- Actual Condition = 1 Very Poor
- Asset Category = Services
- Asset Description =
- Asset Group = Equipment
- Asset No = ABC-0045-YZ
- Asset Type = Mechanical Equipment
- Attribute =
- Barcode = Pump 4
- CAPEX Type = Back Log
- Code =
- Desired Standard = S3
- Frequency = 0
- Id = 397768
- Location =
- Name =
- Rate = 0.0
- Remaining useful life = 0
- Risk = R2
- Start Date = 08/03/12
- Sub Location = CHW pump 150x150

Preventative Maintenance

- Maintenance Scheduling
- Shutdown Process
- Equipment Requirements
- Track Maintenance History

- Cooling tower checklist**
- Asset No = ABC-0005-YZ
 - Check belt tension and adjust -m = 15/06/12
 - Check bleed-off valve -m = 25/07/12
 - Check drift eliminators -q = 25/07/12
 - Check fan for cracks, weights and vibration -q = 25/07/12
 - Check fan screens, louvers and fans, -clean -m = 04/09/12
 - Check operating level in pan adjust float valve -m = 15/06/12
 - Check water distribution system and spay -m = 13/03/12
 - Check water quality for contamination -r = 14/03/12
 - Clean and flush pan -qn = 26/03/12
 - Clean pan strainer -m = 26/03/12
 - Comment =
 - Inspect and clean protective finish -a = 23/02/12
 - Lubricate fan shaft bearings -1000h/q = 21/06/11
 - Name = Cooling Tower 2
 - Sliding motor base - inspect and grease -an = 21/06/11

7.2.8 COOLING TOWERS				
MAINTENANCE OPERATION	FREQUENCY			
	MONTHS			
	1	3	6	12
Subject tower to a general visual inspection.	<input type="checkbox"/>			
Check condition and operation of ball valve.	<input type="checkbox"/>			
Check fan thermostat.	<input type="checkbox"/>			
Check and clean sprays and distribution deck.	<input type="checkbox"/>			
Clean strainer.	<input type="checkbox"/>			
Check bleed rate.	<input type="checkbox"/>			
Lubricate all gears and bearings.		<input type="checkbox"/>		
Check rotation of fan and clean inlet.		<input type="checkbox"/>		
Check for corrosion and apply treatment as necessary.		<input type="checkbox"/>		
Prior to cleaning the water cooling system, take water sample and have analysed.		<input type="checkbox"/>		
Drain basin and clean distribution deck, fill the basin.		<input type="checkbox"/>		
Check security of all bolts and nuts.		<input type="checkbox"/>		
Check security of fan blades.		<input type="checkbox"/>		
Clean fan blades.		<input type="checkbox"/>		
Clean down a		<input type="checkbox"/>		

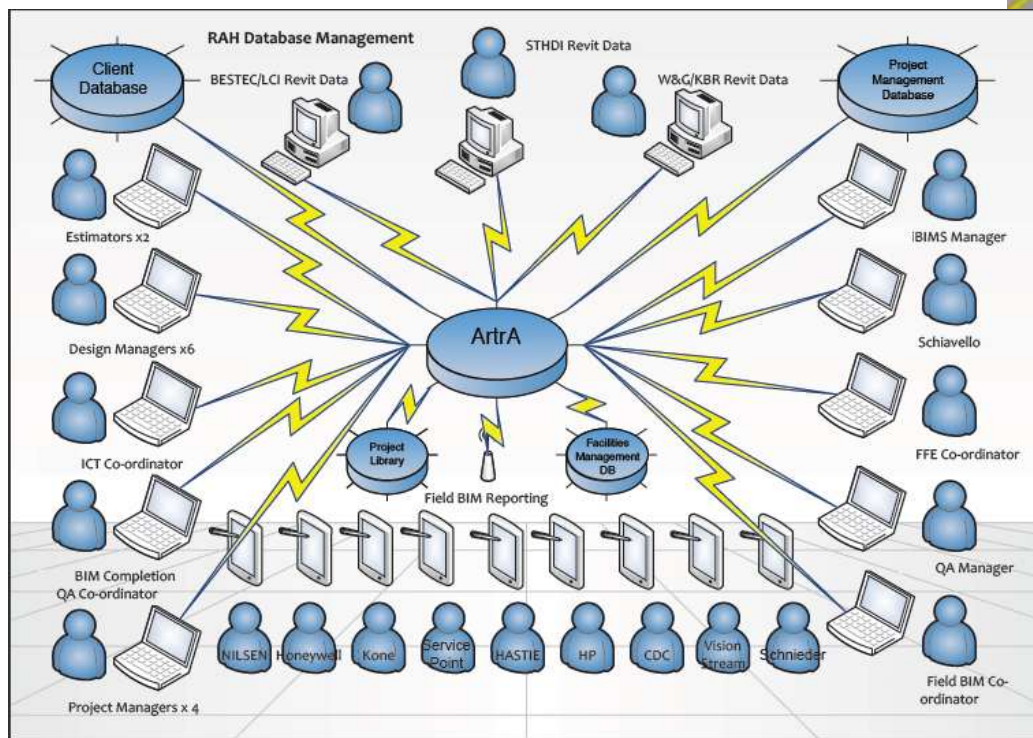
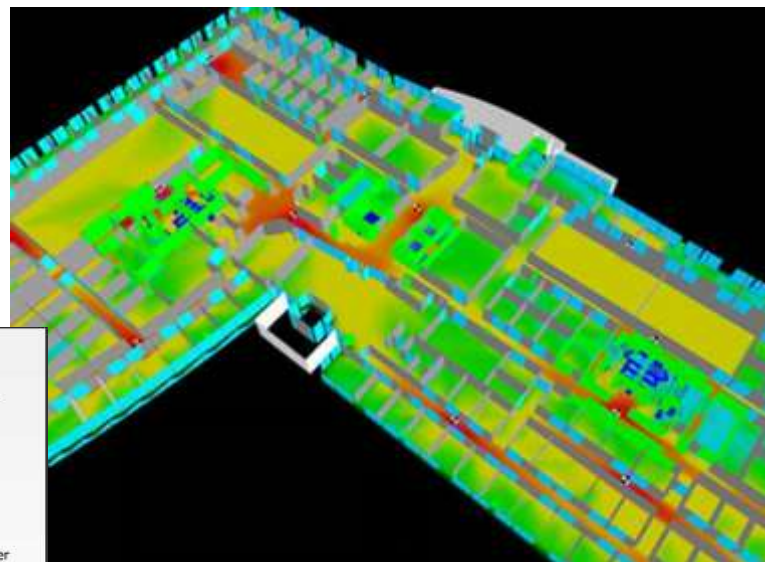


Building Automation

Integrate with FM databases

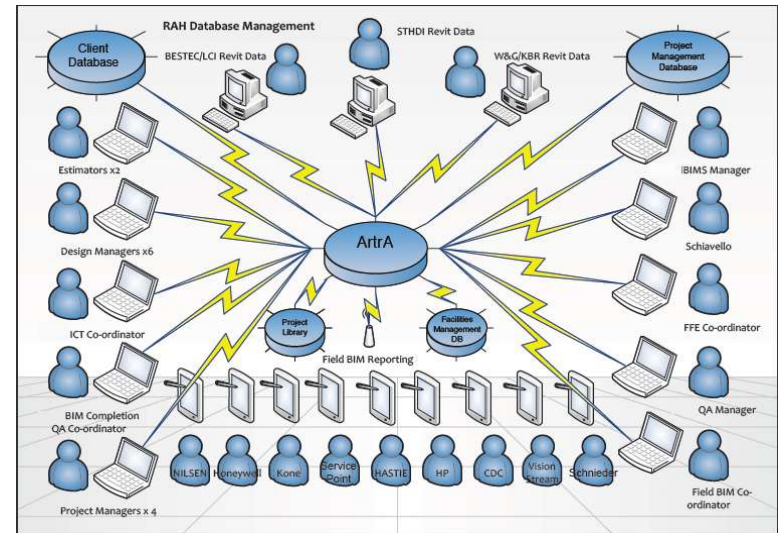
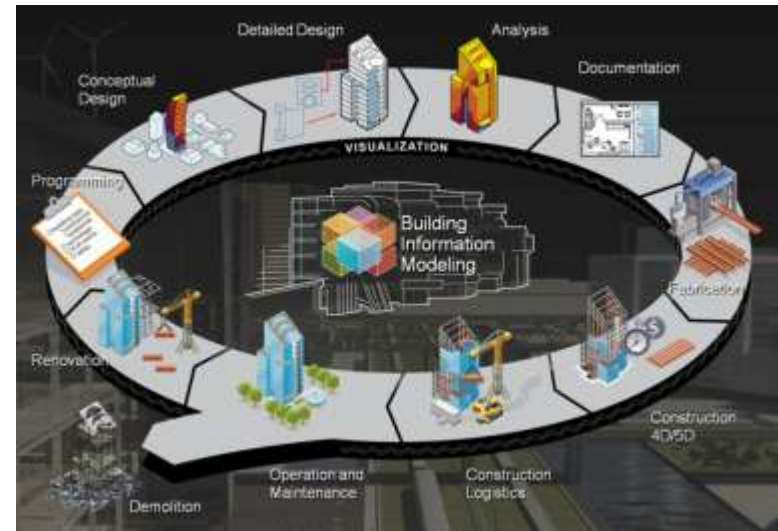
Connect to Equipment controllers

Access BMS through BIM



Summary

- **BIM Mandate**
- **Improved ROI**
- **Collaborative process**
- **Holistic approach**



Questions?

