



MAXIMO & 3D BUILDING INFORMATION MODELLING

PRESENTED BY:

David Lestani
Principal Solution Architect







In this session:

Today we will discuss:

- Why is BIM successful in Design and Construction?
- What opportunities are available to support Operations and Maintenance?
- How can your organization make a start to implement BIM in operations?

Who is COSOL?



We are a global provider of end-to-end asset management solutions that enable asset-intensive organizations to get the best from their people, process, systems and data.

Structure: COSOL Ltd (Publicly Listed - ASX:COS)

In Business: 22+ years

Offices: USA and Australia

People: 400+ professionals globally

Certified: IBM Gold Partner

Industries:



NATURAL RESOURCES



ENERGY & WATER

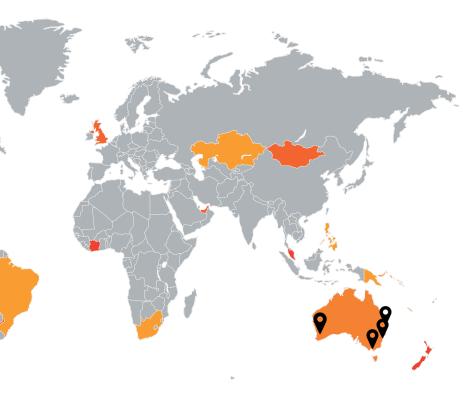


PUBLIC INFRASTRUCTURE



GOVERNMEN

& DEFENSE



A bit about me



DAVID LESTANI

Principal Solution Architect - COSOL

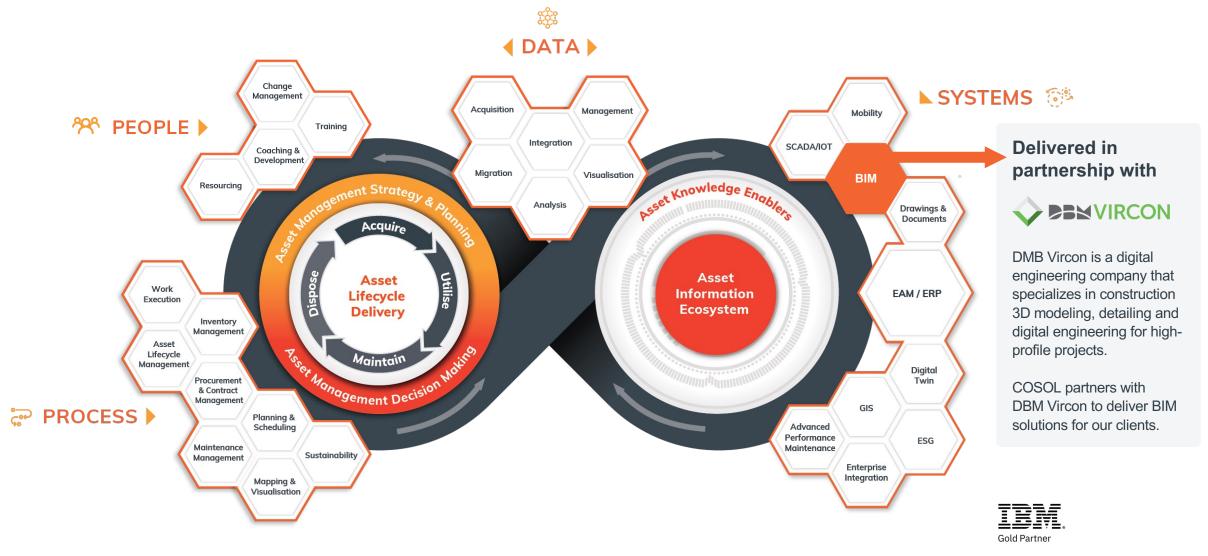
- From Australia and currently residing in Denver Colorado
- 20+ years experience within asset management bringing location technologies together with asset management
- Qualifications in Information Management, Surveying and GIS
- Working with IBM Maximo since version 4



What we do



We help clients achieve asset and operational efficiency across the asset management framework:





BIM'S SUCCESS

IN DESIGN & CONSTRUCTION

What is Building Information Modelling (BIM)



'A digital representation of physical and functional characteristics of a facility.'

A shared knowledge resource for information about a facility forming a reliable basis for decisions during its life-cycle.

Defined as existing from earliest conception to demolition.

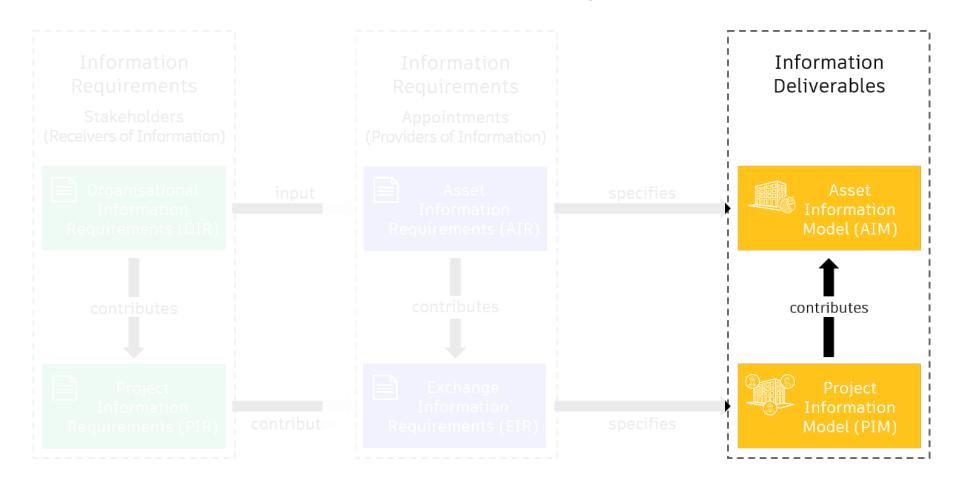


The importance of BIM



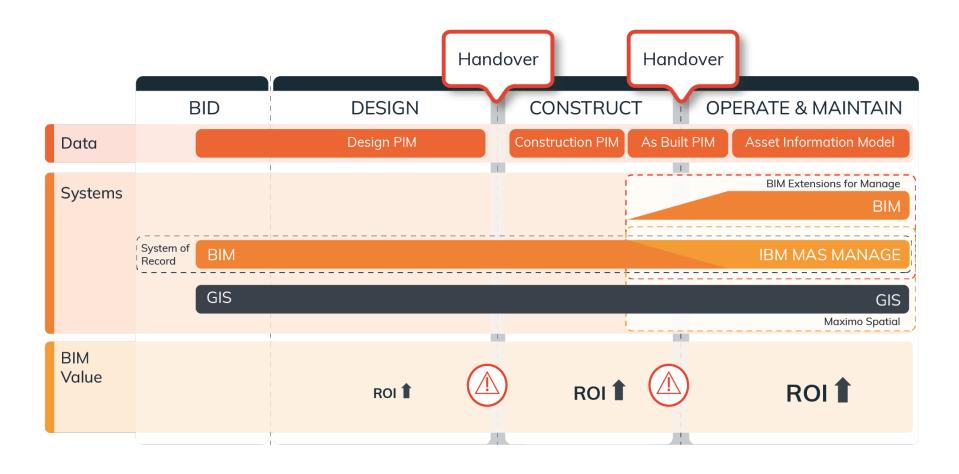
BIM is now mandated in many countries for large projects

The international standard for information flow according to ISO 19650:



BIM over the Asset Lifecycle





Benefits of BIM



Architecture and Design phase

Key Benefits:

Collaboration:

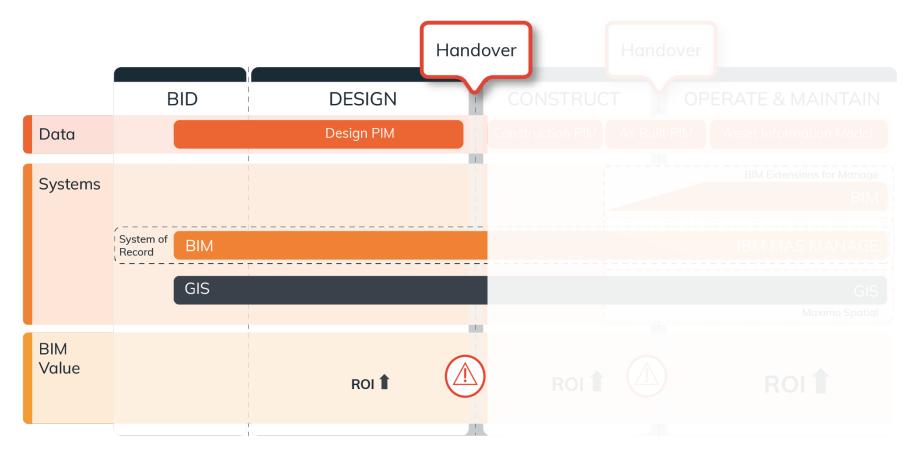
Between design teams and external parties

Constructability

Determining if it can be built

Cost estimation

Establishing the build cost



Benefits of BIM

COSOL

Construction phase

Key Benefits:

Collaboration:

Work sequencing and trade coordination

Project Management

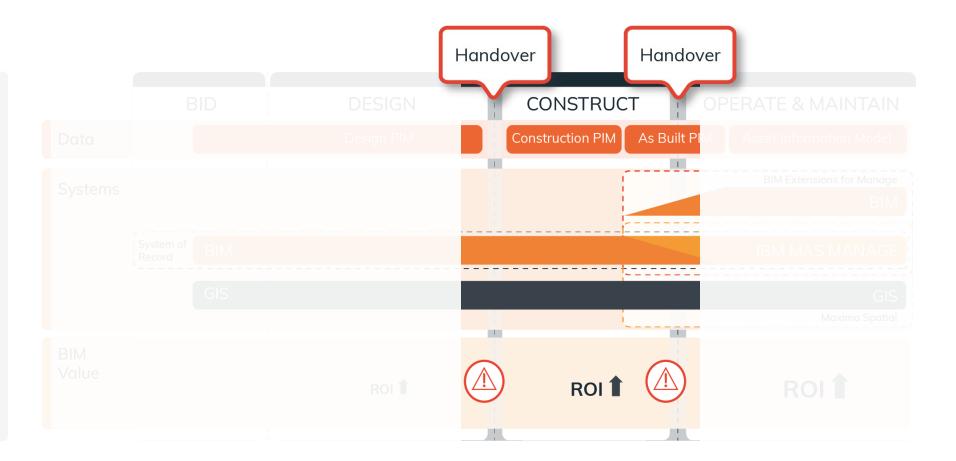
Cost control, reporting and billing

Quality Control

Minimize defects

Commissioning

As-built data capture





WestConnex Tunnel - part of Australia's largest road project



BIM BLOCKERS

FOR OPERATIONS & MAINTENANCE

BIM in Operations & Maintenance



What we are seeing

Large projects involving BIM digital assets are usually burdened by the following:



Contract scope



Understanding of O&M use cases



Quality of the models



Available expertise

BIM in the perfect world





Design Team Models Coordinated







Model



Coordinated **Documentation**



Managed

Handover



Federated Model



Reporting



Delivery Team Interface



Status Tracking



Managed Handover



As Built Model



DESIGN

CONSTRUCTION

OPERATIONS





OPPORTUNITIES

FOR OPERATIONS & MAINTENANCE

A		C	D	E	F	G	н	
Asset - Name/Tag ACS4SS40096	set - Discipline ECTRICAL	Asset - Asset Type (Summary)	Asset - Asset Type (Name		Asset - Parent Asset MCS4SS4009	Work Breakdown - Project (Summary) WO38 - Rozelle Interchange		Systemization 1.4.2 - LV ROO
AC\$45540096 AC\$45540106	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc ACS - Automatic Change-Over Switc		Automatic Change-OverSwitch Automatic Change-OverSwitch	MCS4SS4009 MCS4SS4010	WCGB - Rozelle Interchange		1.4.2 - LV ROO
AC\$4\$\$40116	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-OverSwitch	MCS4SS4011	WO38 - Rozelle Interchange		1.4.2 - LV ROO
AC\$4\$\$40126	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS4SS4012	W C/GB - Rozelle Interchange		1.4.2 - LV ROO
AC\$4\$\$40136	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS4013	W CK3B - Rozelle Interchange	1.4 - COMMISSIONING ZONE 4	1.4.2 - LV ROO
AC\$45550014	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	LV54555001	W CK3B - Roz elle Interchange		1.5.2 - LV RO O
AC\$45550016	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS45S5001	WCGB - Rozelle Interchange		1.5.2 - LV ROO
AC\$4\$\$50024 AC\$4\$\$50026	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc ACS - Automatic Change-Over Switc		Automatic Change-OverSwitch Automatic Change-OverSwitch	LV54SS5002 MCS4SS5002	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.5.2 - LV ROO 1.5.2 - LV ROO
AC\$45550026 AC\$45550036	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-OverSwitch	MCS4SS5002 MCS4SS5003	W CX38 - Rozelle Interchange		1.5.2 - LV ROO
AC\$4\$\$50046	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS5004	WCX38 - Rozelle Interchange		1.5.2 - LV ROO
AC\$4\$\$50056	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS5005	WO38 - Rozelle Interchange		1.5.2 - LV ROO
AC\$45550066	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS45S5006	WO38 - Rozelle Interchange	1.5 - COMMISSIONING ZONE 5	1.5.2 - LV ROO
AC\$45550076	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS45S5007	WO38 - Rozelle Interchange		1.5.2 - LV ROO
AC\$4\$\$50086	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS4SS5008	WO38 - Rozelle Interchange	1.5 - COMMISSIONING ZONE 5	152-LVR00
ACS4SSS0096	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-OverSwitch	MCS4SS5009	WO38 - Rozelle Interchange	1.5 - COMMISSIONING ZONE 5	
AC\$4\$\$60014 AC\$4\$\$60016	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc ACS - Automatic Change-Over Switc	ACS	Automatic Change-OverSwitch Automatic Change-OverSwitch	LV545S6001 MCS4SS6001	WO38 - Rozelle Interchange WO38 - Rozelle Interchange	1.6 - COMMISSIONING ZON 1.6 - COMMISSIONING Z	
AC\$45560024	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	LVS4556002	WO38 - Rozelle Interchange	16 - COMMISSIONING	
AC\$45560026	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-OverSwitch	MCS45S6002	WO38 - Rozelle Interchange	1.6 - COMMISSIONII	
AC\$4\$\$60036	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS6003	WO38 - Rozelle Interchange	1.6 - COMMISSION	
AC\$4\$\$60046	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS6004	WCX38 - Rozelle Interchange	1.6 - COMMISSION	
ACS4SS70014	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	LV54SS7001	WCGB - Rozelle Interchange	1.7 - COMMISSIO	
AC\$4\$\$70016	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS4SS7001	WCGB - Rozelle Interchange	1.7 - COMMISSIO	
ACS4SS70024 ACS4SS70026	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	LV545S7002 MCS4SS7002	W C/GB - Roz elle Interchange W C/GB - Roz elle Interchange	1.7 - COMMISSION 1.7 - COMMISSION	
ACS4SS70026 ACS4SS80014	ECTRICAL ECTRICAL	ACS - Automatic Change-Over Switc ACS - Automatic Change-Over Switc	ACS ACS	Automatic Change-Over Switch Automatic Change-Over Switch	MCS4SS7002 LVS4SS8001	W CX3B - Rozelle Interchange	1.8 - COMMISSION	
AC\$45580016	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over Switch	MCS4SS8001	WO38 - Rozelle Interchange	1.8 - COMMISSIONING	
AC\$4\$\$80024	ECTRICAL	ACS - Automatic Change-Over Switc		Automatic Change-Over-Switch	LV54SS8002	WO38 - Rozelle Interchange	1.8 - COMMISSIONING ZO	
AC\$4\$\$80026	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS4SS8002	WO38 - Rozelle Interchange	1.8 - COMMISSIONING ZONE	
AC\$4\$\$90014	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-OverSwitch	LV54SS9001	WCGB - Rozelle Interchange	1.9 - COMMISSIONING ZONE 9	w00
AC\$4\$\$90016	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	MCS4SS9001	W CK3B - Rozelle Interchange	1.9 - COMMISSIONING ZONE 9	1.9.2 - LV ROO
AC\$45590024	ECTRICAL	ACS - Automatic Change-Over Switc	ACS	Automatic Change-Over Switch	LV54559002	WO3B - Rozelle Interchange		1.9.2 - LV ROO
AC\$45590026 ACT4020101A	ECTRICAL NTILATION	ACS - Automatic Change-Over Switc	ACS ACT	Automatic Change-OverSwitch	MCS45S9002 XCP4020002	WOOR Rozelle Interchange		1.9.2 - LV ROO
ACT4020101A ACT4020102A	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT	Damper Actuator Damper Actuator	XCP4020002 XCP4020002	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.5.3 - VENTILA 1.5.3 - VENTILA
ACT4020103A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020104A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WCX38 - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020105A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	W CK3B - Rozelle Interchange		1.5.3 - VENTILA
ACT4020106A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	W CK38 - Rozelle Interchange	1.5 - COMMISSIONING ZONE 5	1.5.3 - VENTILA
ACT4020107A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020108A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020109A ACT4020110A	NTILATION NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4020002 XCP4020002	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.5.3 - VENTILA 1.5.3 - VENTILA
ACT4020110A ACT4020111A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WCK38 - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020112A	NTILATION	ACT - Damper Actuator	ACT .	Damper Actuator	XCP4020002	WO3B - Rozelle Interchange		1.5.3 - VENTIL
ACT4020113A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange	1.5 - COMMISSIONING ZONE 5	1.5.3 - VENTILA
ACT4020114A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020115A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020116A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020002	WCGB - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020901A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WCX3B - Rozelle Interchange		1.5.3 - VENTILA
ACT4020902A ACT4020903A	NTILATION NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4020001 XCP4020001	WCX38 - Rozelle Interchange		1.5.3 - VENTILA 1.5.3 - VENTILA
ACT4020903A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020905A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020906A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WCK3B - Rozelle Interchange		1.5.3 - VENTILA
ACT4020907A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WO38 - Rozelle Interchange		1.5.3 - VENTILA
ACT4020908A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	W CX3B - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020909A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4020001	WO38 - Rozelle Interchange		1.5.3 - VENTIL/
ACT4020910A ACT4020911A	NTILATION NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4020001 XCP4020001	WO38 - Rozelle Interchange		1.5.3 - VENTILA 1.5.3 - VENTILA
ACT4020911A ACT4020912A	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT	Damper Actuator Damper Actuator	XCP4020001 XCP4020001	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.5.3 - VENTIL/ 1.5.3 - VENTIL/
ACT4650301A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WO38 - Rozelle Interchange		123 - VENTILA
ACT4650302A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WCX38 - Rozelle Interchange		1.2.3 - VENTIL/
ACT4650303A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WCX3B - Rozelle Interchange		1.2.3 - VENTIL/
ACT4650304A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WCX38 - Rozelle Interchange		1.2.3 - VENTIL/
ACT4650305A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WCGB - Rozelle Interchange		1.2.3 - VENTIL/
ACT4650306A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	WO38 - Rozelle Interchange		1.2.3 - VENTILA
ACT4650307A	NTILATION	ACT - Damper Actuator	ACT ACT	Damper Actuator	XCP4650002	WOOB - Rozelle Interchange		1.2.3 - VENTILA
ACT4650308A ACT4650309A	NTILATION NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT	Damper Actuator Damper Actuator	XCP4650002 XCP4650002	WO38 - Rozelle Interchange WO38 - Rozelle Interchange		1.2.3 - VENTILA 1.2.3 - VENTILA
ACT4650310A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002 XCP4650002	WCK38 - Rozelle Interchange		1.2.3 - VENTIL
ACT4650311A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	W CK3B - Rozelle Interchange		1.2.3 - VENTIL
ACT4650312A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650002	W CX3B - Rozelle Interchange	1.2 - COMMISSIONING ZONE 2	1.2.3 - VENTIL
ACT4650701A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	W CK3B - Rozelle Interchange		1.2.3 - VENTILA
ACT4650702A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WO38 - Rozelle Interchange		1.2.3 - VENTILA
ACT4650703A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WO38 - Rozelle Interchange		1.2.3 - VENTILA
ACT4650704A ACT4650705A	NTILATION NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WOOR Rozelle Interchange		1.2.3 - VENTIL/ 1.2.3 - VENTIL/
ACT4650705A ACT4650706A	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4650001 XCP4650001	W CX38 - Rox elle Interchange W CX38 - Rox elle Interchange		1.2.3 - VENTILA 1.2.3 - VENTILA
ACT4650706A ACT4650707A	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT	Damper Actuator Damper Actuator	XCP4650001 XCP4650001	W CX38 - Rozelle Interchange		1.2.3 - VENTIL/
ACT4650708A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WO38 - Rozelle Interchange		123 - VENTIL
ACT4650709A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WCX38 - Rozelle Interchange	1.2 - COMMISSIONING ZONE 2	1.2.3 - VENTILA
ACT4650710A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WCGB - Rozelle Interchange		1.2.3 - VENTILA
ACT4650711A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4650001	WCX3B - Rozelle Interchange		1.2.3 - VENTILA
ACT4650712A ACT4VF1001A	NTILATION	ACT - Damper Actuator	ACT ACT	Damper Actuator	XCP4650001	WCX38 - Rozelle Interchange		1.2.3 - VENTIL
ACT4VF1001A ACT4VF1001B	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4VF1001 XCP4VF1001	W C/38 - Roz elle Interchange W C/38 - Roz elle Interchange		1.1.3 - VENTILA 1.1.3 - VENTILA
ACT4VF1001B ACT4VF1001C	NTILATION	ACT - Damper Actuator ACT - Damper Actuator	ACT	Damper Actuator Damper Actuator	XCP4VF1001 XCP4VF1001	WCGB - Rozelle Interchange WCGB - Rozelle Interchange		1.1.3 - VENTILA 1.1.3 - VENTILA
ACT4VF1001D	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4VF1001	W CK38 - Rozelle Interchange		1.1.3 - VENTILA
ACT4VF1002A	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4VF1002	WCX38 - Rozelle Interchange		1.1.3 - VENTILA
ACT4VF1002B	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator	XCP4VF1002	WO38 - Rozelle Interchange	1.1 - COMMISSIONING ZONE 1	1.1.3 - VENTILA
		ACT - Damper Actuator	ACT	Damper Actuator	XCP4VF1002	WCX38 - Rozelle Interchange		1.1.3 - VENTILA
ACT4VF1002C	NTILATION				XCP4VF1002	W CK3B - Rozelle Interchange	1.1 - COMMISSIONING ZONE 1	1.1.3 - VENTIL/
ACT4VF1002D	NTILATION	ACT - Damper Actuator	ACT	Damper Actuator				
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ACT4VF1003A ACT4VF1003B	NTILATION NTILATION NTILATION	ACT - Damper Actuator ACT - Damper Actuator ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator	XCP4VF1001	WO38 - Rozelle Interchange WO38 - Rozelle Interchange	1.1 - COMMSSIONING ZONE 1	1.1.3 - VENTILA
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ACT4VF1003D ACT4VF1003B ACT4VF1003C ACT4VF1003C	NTILATION NTILATION NTILATION NTILATION NTILATION	ACT - Damper Actuator	ACT ACT ACT	Damper Actuator Damper Actuator Damper Actuator Damper Actuator	XCP4VF1001 XCP4VF1001 XCP4VF1001	W CCSB - Roz elle Interchange W CCSB - Roz elle Interchange W CCSB - Roz elle Interchange W CCSB - Roz elle Interchange	1.1 - COMMISSIONING ZONE 1 1.1 - COMMISSIONING ZONE 1 1.1 - COMMISSIONING ZONE 1	1.1.3 - VENTILA 1.1.3 - VENTILA 1.1.3 - VENTILA
ACT4VF1003D ACT4VF1003A ACT4VF1003B ACT4VF1003C	NTILATION NTILATION NTILATION NTILATION	ACT - Damper Actuator	ACT ACT	Damper Actuator Damper Actuator Damper Actuator	XCP4VF1001 XCP4VF1001 XCP4VF1001 XCP4VF1002 XCP4VF1002	WCGB - Roz elle Interchange	1.1 - COMMISSIONING ZONE 1 1.1 - COMMISSIONING ZONE 1 1.1 - COMMISSIONING ZONE 1 1.1 - COMMISSIONING ZONE 1	1.1.3 - VENTILA 1.1.3 - VENTILA
ACT4VF1002D ACT4VF1003A ACT4VF1003B ACT4VF1003C ACT4VF1003D ACT4VF1004A	NTILATION NTILATION NTILATION NTILATION NTILATION NTILATION	ACT - Damper Actuator	ACT ACT ACT ACT	Damper Actuator Damper Actuator Damper Actuator Damper Actuator Damper Actuator	XCP4VF1001 XCP4VF1001 XCP4VF1001 XCP4VF1002 XCP4VF1002	W OC38 - Roxelle Interchange	1.1 - COMMISSIONING ZONE 1	1.1.3 - VENTILA 1.1.3 - VENTILA 1.1.3 - VENTILA 1.1.3 - VENTILA

Reasons to use BIM in O&M



Automate the creation of the Asset Register

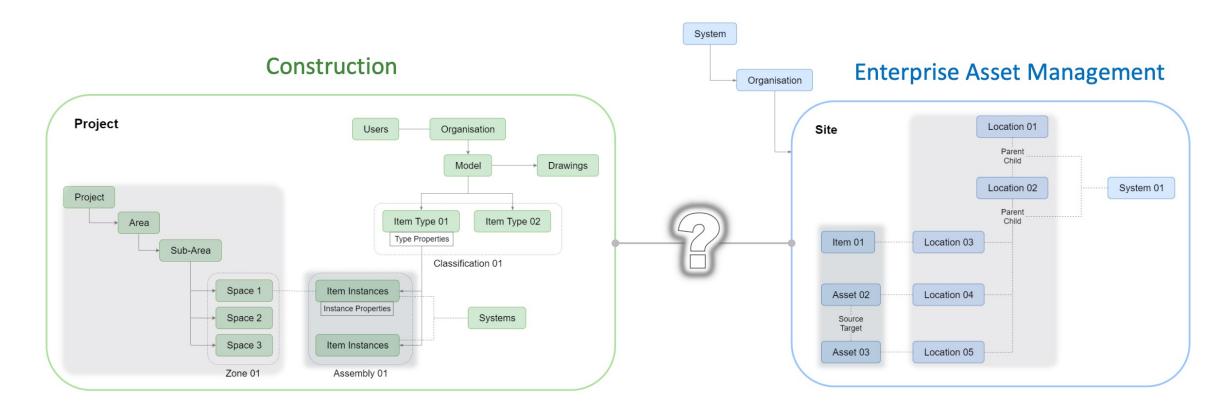
- Create Location Hierarchies, Location Systems and Assets
- Integration Approaches:
 - Asset and Location custodianship in BIM
 - Location custodianship in BIM with Asset custodianship in Maximo
- Use of modern integration tools and the Maximo Integration
 Framework
- Improves Commissioning and Defect Management

< Actual example of an asset register supplied to us in a spreadsheet

Terminology



Mapping PIM to AIM – move from Construction to Operations



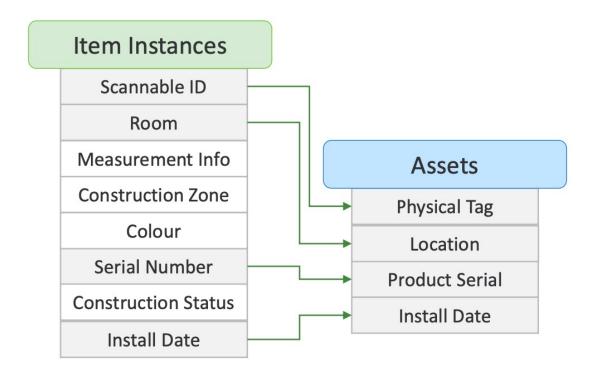
Spaces = Locations

Instances = Assets



Model Conditioning – Mapping to EAM





Considerations:

- PIM is not AIM
- Post processing of models
- Model viewer alignment to asset classifications
- O&M to have input on data structures and models i.e. model break-up and naming conventions
- Ongoing digital operations plan AIM as a digital asset

Ghost

Reasons to use BIM in O&M

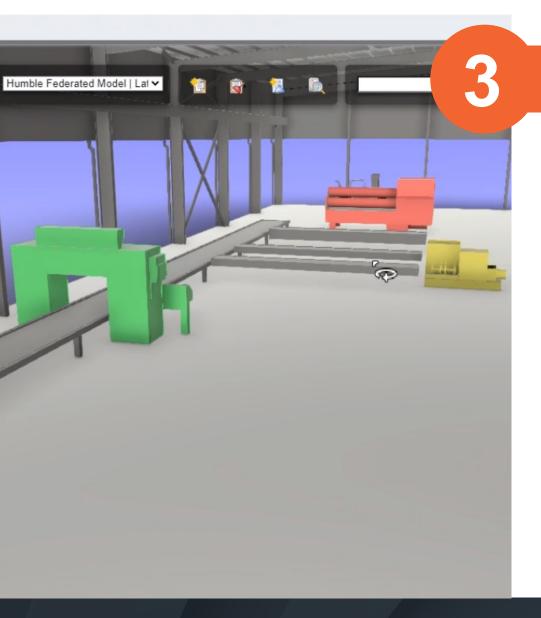


Improve Maintenance Planning

- Creation of work packages
- View historic work trends
- Site access and tools
- Test procedures

Reasons to use BIM in O&M





Inform Repair or Replace decisions

- Thematic display of work orders
- Thematic display of condition data or health scores
- Traffic-light color coding
- Redline markup defects



Reasons to use BIM in O&M



Visualize Asset Performance

- BIM combined with the IBM Maximo Application Suite:
 - Maximo Manage
 - Maximo Monitor
 - Maximo Health
 - Maximo Predict
- The road to "Digital Twin"

BIM from a user's perspective

Maintenance Planner







I can now see and interrogate work orders by location so that similarities can be easily identified and grouped into efficient work packages.

I can also **visually interrogate work sites** to make sure worker health and safety measures are accommodated."

BIM from a user's perspective









I can now **see patterns** in high frequency, as well as high priority work orders.

This helps us **identify the root causes** and allow us to adjust our preventive maintenance plans."



)

BIM from a user's perspective

Maintenance Engineer







I can test alternative work methods
before going onsite which minimizes
downtime and improves my First-Time Fix
Rate performance.





IMPLEMENTING BIM AND THE ROAD TO DIGITAL TWIN

The foundations needed for BIM





Adopt practice Digital Engineering organization-wide

or

Partner with a specialist provider to provide ongoing model management and curation



Use ISO 19650

Apply this standard for working with BIM artefacts



Standardize BIM requirements in contracts

Prepare standard
contract
specifications for the
delivery of BIM and
include in all new
projects



Management Plan

Establish a BIM Management Plan



Define Data Ownership

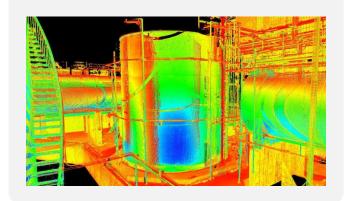
Define data ownership through a Common Data Environment

Steps to adopt



Choose your path based on what digital assets you have, or don't have

Existing assets with no BIM



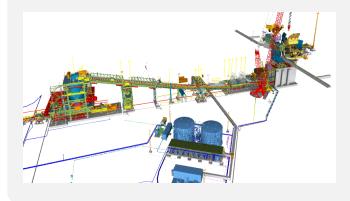
- Undertake laser scan and back modelling to develop BIM artefacts.
- Back model from existing 2D plans if considered current.

Existing assets with non-integrated BIM



- Review Asset Information Model for consistency with IBM Maximo.
- Condition model for O&M use cases.

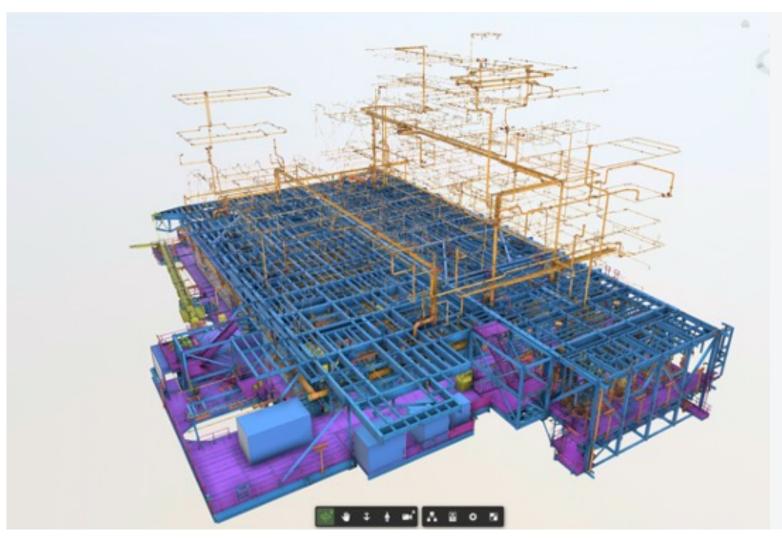
New Construction with BIM & Digital Engineering practices established



- BIM standards are part of the contract specifications
- O&M use cases are enabled

Thank you





"We have seen evidence of savings in the realm of \$500m over a four-year period for one of our Oil and Gas sector clients as a result of improved operational and asset management processes after integrating a foundational model into their Enterprise Asset Management (EAM) system."



Q&A



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