

BIM

facilitates

Facility Management



David Fung

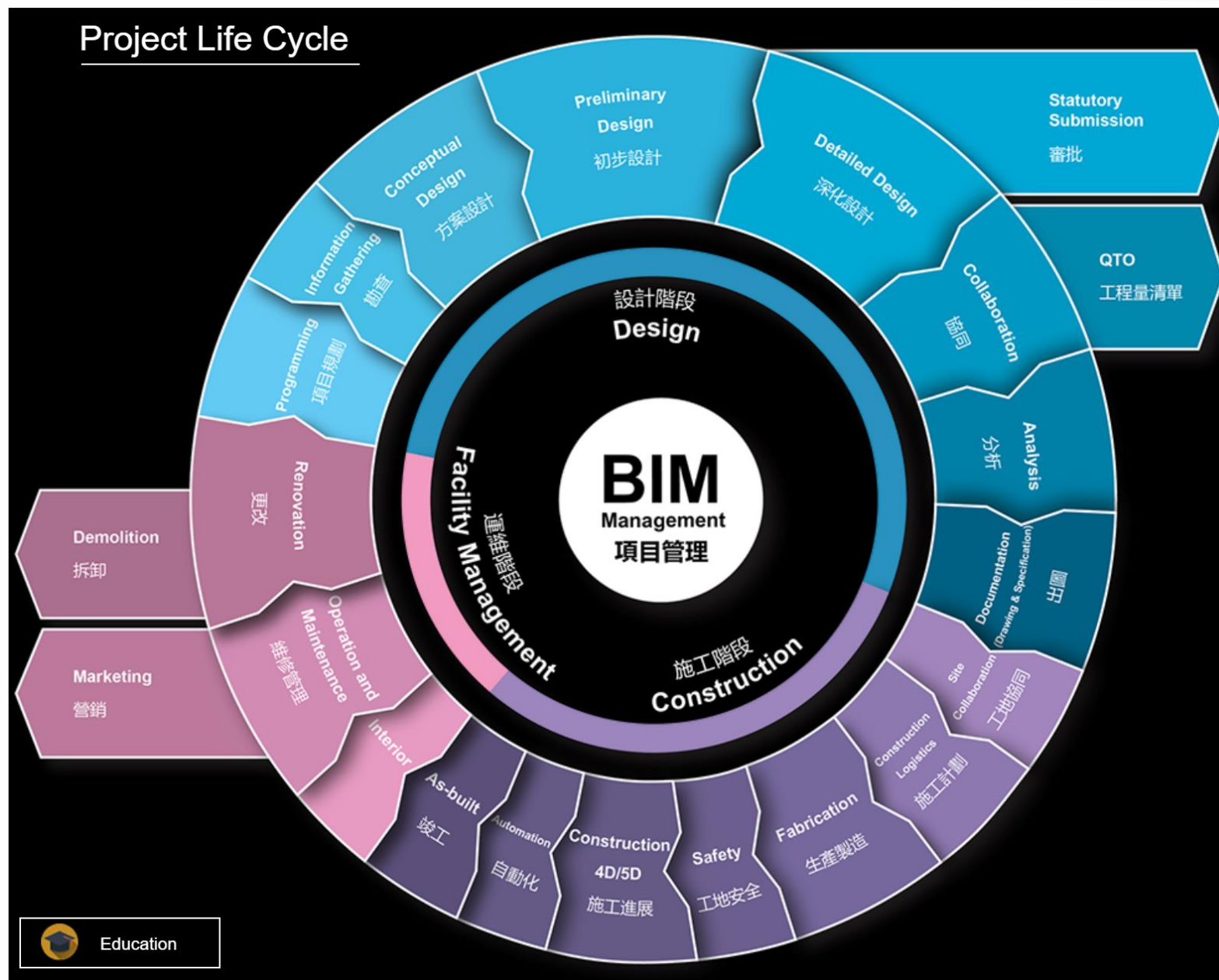
Registered Architect, HKIA

Managing Director, A.C.I.D.

Immediate Past HKIBIM Chairman

Assistant Professor, Department of Architecture Chu Hai College

1. Existing FM system Deficiency (Textual Information)
2. BIM – Locational Information
3. BIM Object (Asset) information
- 4. Misunderstanding of BIM Information vs FM Information through COBie**
5. Translation process from BIM to FM workflow – Middleware approach
6. Case Study - HIM



Work Order Tracking

Go To Reports Start Center Profile Sign Out ? Help

Find: Select Action

Work Order Plans Related Records Actuals Safety Plan Log Failure Reporting

Work Order: 70090 For Training Only-Steam Leak on coil Site: REFINERY

Location: Class: WORKORDER

Asset: Work Type:

Parent WO: GL Account:

Classification: Department:

Description: Zone/Facility:

Unit/Bldg:

Failure Class:

Problem Code:

Planner:

MOC Number:

Attachments: Status: WAPPR

Work Status:

Status Date: 8/31/09 3:25 PM

Inherit Status Changes? ☒

Accepts Charges? ☒

Is Task? ☐

MOC Required?

DOT Documentation Required?

OQ Covered Tasks?

EHS Permit Required?

Click on the detailed menu arrow by Location

Job Details Asset Details Priority

Job Plan: PM: Safety Plan: Contract:

Asset Up? ☒ Warranties Exist? ☐ SLA Applied? ☐ Charge to Store? ☐

Asset Location Priority: Priority: Priority Justification: Risk Assessment:

Scheduling Information Follow-up Work

Target Start: Actual Start: Target Finish: Actual Finish: Scheduled Start: Duration: Scheduled Finish: Time Remaining:

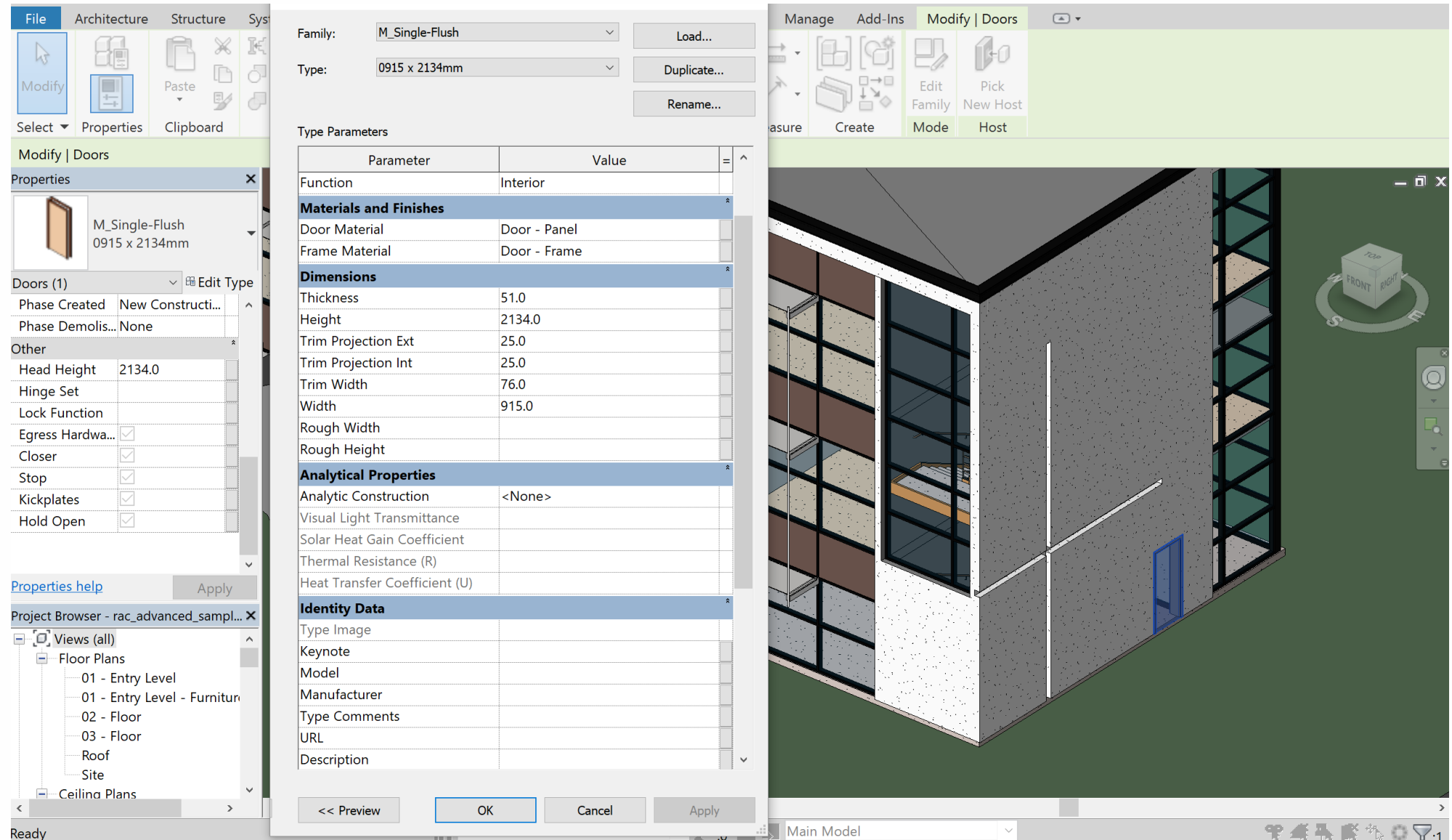
Originating Record: Originating Record Class: Has Follow-up Work? ☐ Interruptible? ☐

Responsibility

Who Entered it? BERTRAN Who Reported it: Reported Date: 8/31/09 1:29 PM On Behalf Of: Phone:

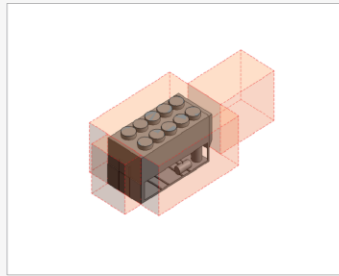
Supervisor: Operations/Engineering: Lead Person/Craft: Crew: Work Group:

Owner: Owner Group: Service Group: Service:

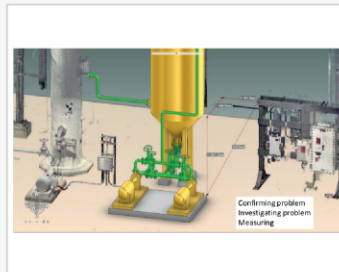


BIM (Revit)

Construction Phase

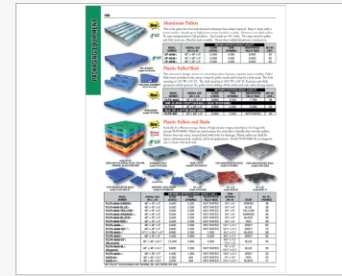


LOD 500 Model



- 1 Overall dimension
- 2 Shape
- 3 Connector
- 4 Do not over model, FIM

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Trade Catalogue

LABORATORY SCHEDULE

ITEM	Material	Quantity	Unit	Remarks
1	Concrete	100	m³	For foundation
2	Reinforcement	100	m³	For foundation
3	Brick	100	m³	For wall
4	Mortar	100	m³	For wall
5	Plaster	100	m³	For wall
6	Paint	100	m³	For wall
7	Roofing	100	m³	For roof
8	Insulation	100	m³	For roof
9	Windows	100	m³	For window
10	Doors	100	m³	For door

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CoBie

FM (Maximo)

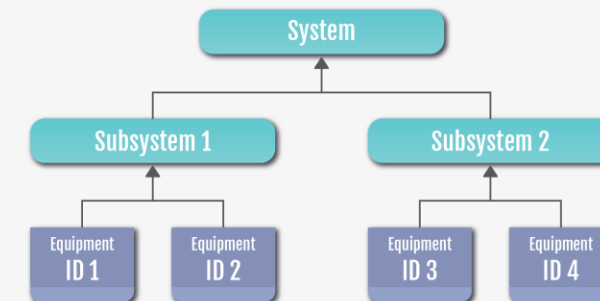
Inventory List

EQUIPMENT INVENTORY LIST

PHYSICAL CONDITION									
Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Actual value	Down payment	Date purchased or leased	Loan term in years
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/15/2010	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
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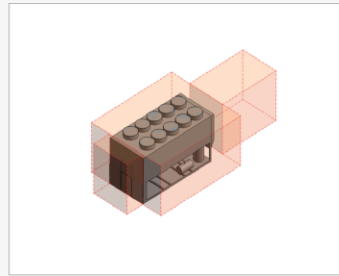
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System Hierarchy

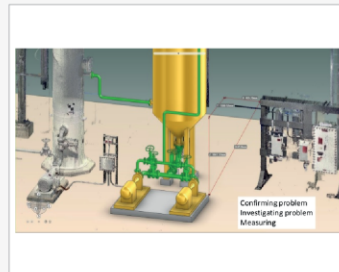


BIM (Revit)

Construction Phase

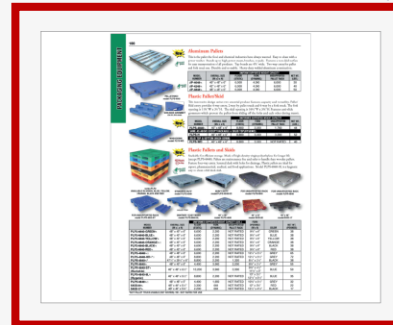


LOD 500 Model



- 1 Overall dimension
- 2 Shape
- 3 Connector
- 4 Do not over model, FIM

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Trade Catalogue

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ITEM	Material	Description	Quantity	Unit	Notes
1	Concrete	Foundation	100	m³	
2	Reinforcement	Foundation	100	m³	
3	Concrete	Foundation	100	m³	
4	Reinforcement	Foundation	100	m³	
5	Concrete	Foundation	100	m³	
6	Reinforcement	Foundation	100	m³	
7	Concrete	Foundation	100	m³	
8	Reinforcement	Foundation	100	m³	
9	Concrete	Foundation	100	m³	
10	Reinforcement	Foundation	100	m³	

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CoBie

- 1 Extensive Input
- 2 What information goes of what field? Same Name? Who Input?

FM (Maximo)

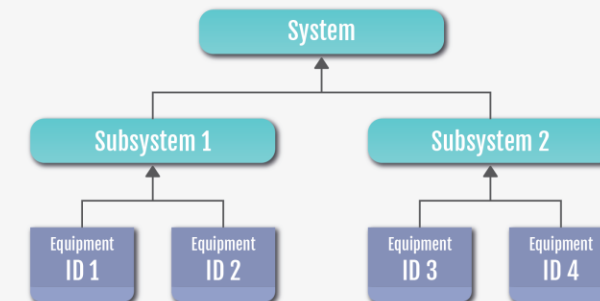
Inventory List

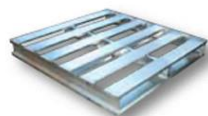
EQUIPMENT INVENTORY LIST

PHYSICAL CONDITION									
Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Actual value	Down payment	Date purchased or leased	Loan term in years
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789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5

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System Hierarchy





Aluminum Pallets

This is the pallet the food and chemical industries have always wanted. Easy to clean with a power washer. Stands up to high-power steam, brushes, or pads. Features a non-skid surface for easy transportation of all products. Top boards are 4 3/4" wide. Two-way entry for pallet and fork truck use. Durable and re-usable. Heavy-duty welded aluminum construction.

MODEL NUMBER	OVERALL SIZE (W x D x H)	UNIFORM SUPPORTED WEIGHT CAPACITY			NET WT. (LBS.)
		FLOOR (STATIC)	FORK (DYNAMIC)	UNSUPPORTED PALLET RACK	
AP-4048%	40" x 48" x 6"	6,000	4,000	6,000	30
AP-4248%	42" x 48" x 6"	6,000	4,000	6,000	40
AP-4848%	48" x 48" x 6"	6,000	4,000	6,000	50



PALLET/SKID model PLPS-4840



NON-SKID GROMMET ON PLPS-4840



WASHDOWN model PLPS-WD

Plastic Pallet/Skid

This innovative design unites two essential product features; capacity and versatility. Pallet/Skid entry provides 4-way entry, 2-way by pallet truck and 4-way by a fork truck. The fork opening is 11 3/4" W x 3 3/4" H. The skid opening is 10 1/2" W x 3 3/4" H. Features anti-slide grommets which prevent the pallets from sliding off the forks and each other during transit.

MODEL NUMBER	OVERALL SIZE (W x L x H)	UNIFORM SUPPORTED WEIGHT CAPACITY			NET WT. (LBS.)
		FLOOR (STATIC)	FORK (DYNAMIC)	UNSUPPORTED PALLET RACK	
PLPS-4840%	40" x 48" x 6"	8,800	2,200	1,760	44
SAME AS ABOVE EXCEPT RACKABLE & SOLID TOP (HYGENIC)					
PLPS-H	40" x 48" x 6"	8,800	3,300	3,300	52
SOLID TOP & BOTTOM (WASH-DOWN)					
PLPS-WD	40" x 48" x 6"	8,800	3,300	NOT RATED	40



Plastic Pallets and Skids

Stackable for efficient storage. Made of high-density virgin polyethylene for longer life (except PLPS-4840). Pallets are maintenance free and safer to handle than wooden pallets. Feature four-way entry. Serrated deck with holes for drainage. Plastic pallets are ideal for export, pharmaceutical, medical, and food applications. Model PLPS-4840-9L is a hygienic easy to clean solid deck skid.



STANDARD DUTY model PLPG-4848



HEAVY DUTY model PLPG-4848-HD



FOR UNSUPPORTED RACK model PLPB-4840



FOR UNSUPPORTED RACK model PLPR-4840

series PLP2 AVAILABLE IN GREEN, BLUE, YELLOW, ORANGE, BLACK AND RED



FOR UNSUPPORTED RACK model PLPR-4840-ST



SANITARY / EASY WASH model PLPS-4840-9L



48" x 48" model PLPS-4848



40" x 48" model SKID-20



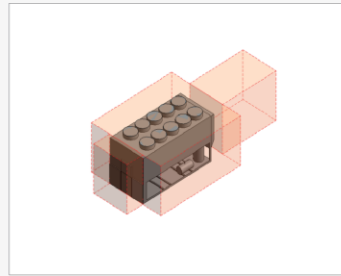
40" x 48" model SKID-17

MODEL NUMBER	OVERALL SIZE (W x L x H)	UNIFORM SUPPORTED WEIGHT CAPACITY (LBS.)			FORK OPENINGS (W x H)	COLOR	NET WT. (POUNDS)
		FLOOR (STATIC)	FORK (DYNAMIC)	UNSUPPORTED PALLET RACK			
PLP2-4840-GREEN%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	GREEN	38
PLP2-4840-BLUE%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	BLUE	38
PLP2-4840-YELLOW%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	YELLOW	38
PLP2-4840-ORANGE%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	ORANGE	38
PLP2-4840-BLACK%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	BLACK	38
PLP2-4840-RED%	48" x 40" x 6"	6,600	2,200	NOT RATED	9 3/4" x 4"	RED	38
PLPG-4848%	48" x 48" x 6"	6,600	2,200	NOT RATED	12 1/2" x 3 1/2"	GREY	65
PLPG-4848-HD%	48" x 48" x 6"	8,800	2,200	NOT RATED	12 1/2" x 3 1/2"	GREY	72
PLPB-4840%	47 1/4" x 39 1/2" x 6"	8,800	2,200	1,320	8 1/2" x 3 1/2"	BLACK	38
PLPR-4840%	48" x 40" x 6"	4,400	3,960	2,200	8 1/4" x 3 1/4"	GREY	55
PLPR-4840-ST% (Rackable)	40" x 48" x 6 1/2"	13,200	3,960	3,300	9 3/4" x 4 1/2" 11 5/8" x 3"	BLUE	50
PLPS-4840-9L% (Hygienic)	40" x 48" x 5 1/2"	8,800	2,200	NOT RATED	13" x 3 1/2" 12 1/8" x 3 1/2"	BLUE	35
PLPS-4848%	48" x 48" x 5"	4,400	1,650	NOT RATED	10 3/4" x 3 1/2"	GREY	32
SKID-20%	48" x 40" x 5 1/2"	3,300	660	NOT RATED	12" x 3 3/4"	RED	22
SKID-17%	48" x 40" x 5 3/4"	2,200	660	NOT RATED	12 1/2" x 4 1/8"	BLACK	17

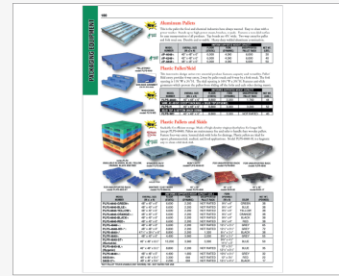
*NOT PALLET TRUCK USABLE (NOT SHOWN) / NR - NOT RATED FOR USE

BIM (Revit)

Construction Phase



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LOD 500 Model



- 1 Overall dimension
- 2 Shape
- 3 Connector
- 4 Do not over model, FIM

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Trade Catalogue

ITEM	Material	Quantity	Unit	Remarks
1	Concrete	100	m³	For foundation
2	Reinforcement	10	kg	For foundation
3	Brick	1000	no	For wall
4	Mortar	10	m³	For wall
5	Plaster	10	m²	For wall
6	Paint	10	kg	For wall
7	Roofing	10	m²	For roof
8	Insulation	10	m³	For roof
9	Window	10	no	For wall
10	Door	10	no	For wall

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ID

CoBie

- 1 Extensive Input
- 2 What information goes of what field? Same Name? Who Input?

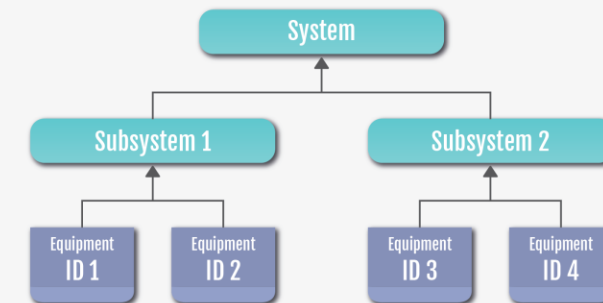
FM (Maximo)

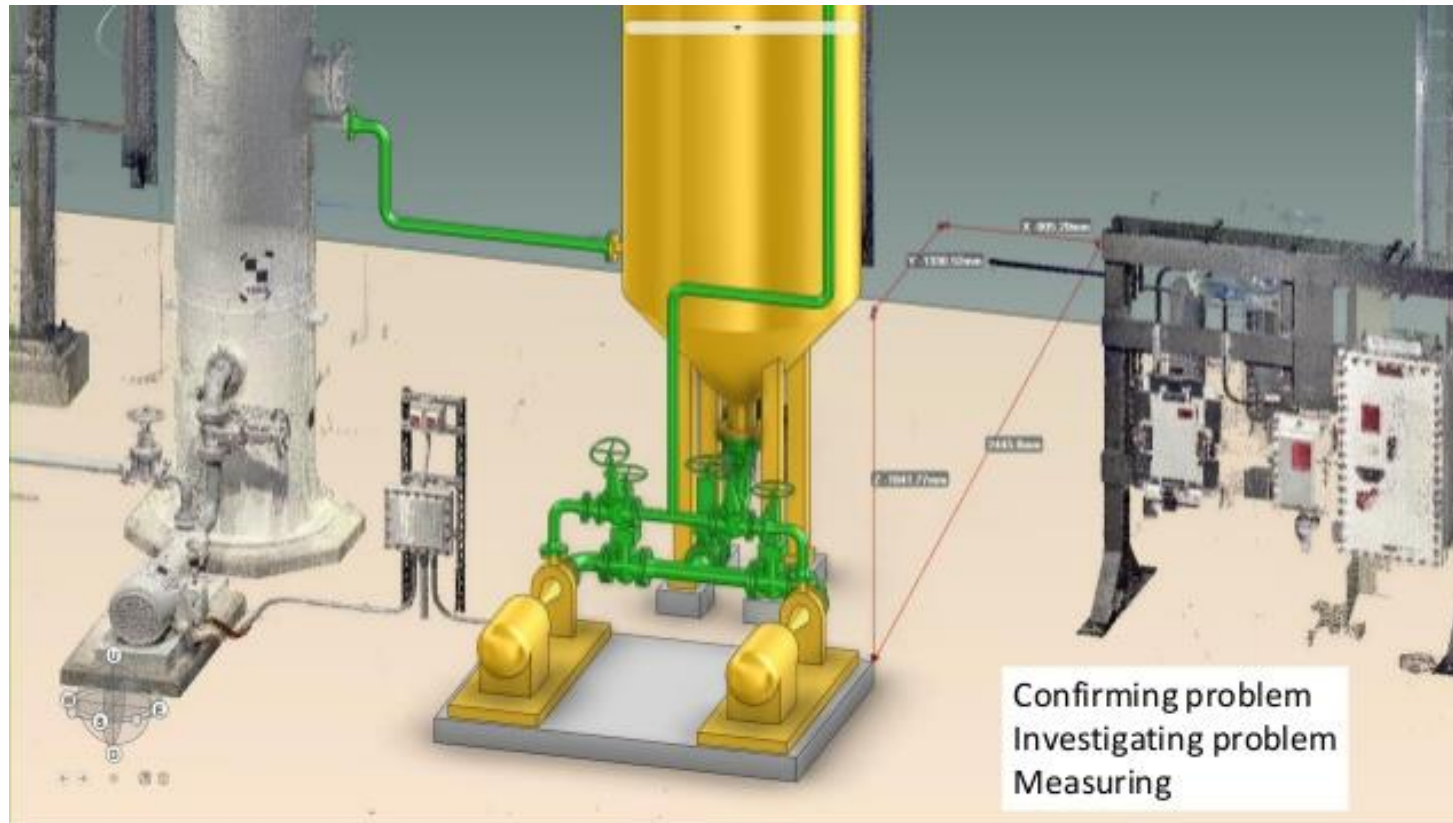
Inventory List

EQUIPMENT INVENTORY LIST

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Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Actual value	Down payment	Date purchased or leased	Loan term in years	Loan rate	
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	1/15/2010	5	10.00%	
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013	5	10.00%	
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5	10.00%	
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System Hierarchy

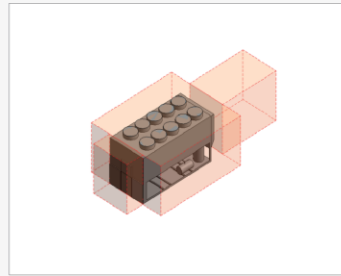




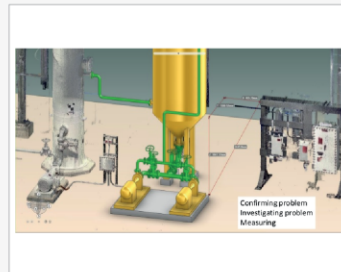
1. Overall dimension
2. Shape
3. Connector
4. Do not over model, FIM

BIM (Revit)

Construction Phase

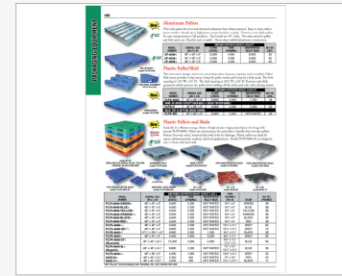


LOD 500 Model



- 1 Overall dimension
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Trade Catalogue

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4	Mortar	100	m³	For wall
5	Plaster	100	m³	For wall
6	Paint	100	m³	For wall
7	Roofing	100	m³	For roof
8	Insulation	100	m³	For roof
9	Windows	100	m³	For window
10	Doors	100	m³	For door
11	Flooring	100	m³	For floor
12	Roofing	100	m³	For roof
13	Insulation	100	m³	For roof
14	Windows	100	m³	For window
15	Doors	100	m³	For door
16	Flooring	100	m³	For floor
17	Roofing	100	m³	For roof
18	Insulation	100	m³	For roof
19	Windows	100	m³	For window
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21	Flooring	100	m³	For floor
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23	Insulation	100	m³	For roof
24	Windows	100	m³	For window
25	Doors	100	m³	For door
26	Flooring	100	m³	For floor
27	Roofing	100	m³	For roof
28	Insulation	100	m³	For roof
29	Windows	100	m³	For window
30	Doors	100	m³	For door
31	Flooring	100	m³	For floor
32	Roofing	100	m³	For roof
33	Insulation	100	m³	For roof
34	Windows	100	m³	For window
35	Doors	100	m³	For door
36	Flooring	100	m³	For floor
37	Roofing	100	m³	For roof
38	Insulation	100	m³	For roof
39	Windows	100	m³	For window
40	Doors	100	m³	For door
41	Flooring	100	m³	For floor
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43	Insulation	100	m³	For roof
44	Windows	100	m³	For window
45	Doors	100	m³	For door
46	Flooring	100	m³	For floor
47	Roofing	100	m³	For roof
48	Insulation	100	m³	For roof
49	Windows	100	m³	For window
50	Doors	100	m³	For door
51	Flooring	100	m³	For floor
52	Roofing	100	m³	For roof
53	Insulation	100	m³	For roof
54	Windows	100	m³	For window
55	Doors	100	m³	For door
56	Flooring	100	m³	For floor
57	Roofing	100	m³	For roof
58	Insulation	100	m³	For roof
59	Windows	100	m³	For window
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78	Insulation	100	m³	For roof
79	Windows	100	m³	For window
80	Doors	100	m³	For door
81	Flooring	100	m³	For floor
82	Roofing	100	m³	For roof
83	Insulation	100	m³	For roof
84	Windows	100	m³	For window
85	Doors	100	m³	For door
86	Flooring	100	m³	For floor
87	Roofing	100	m³	For roof
88	Insulation	100	m³	For roof
89	Windows	100	m³	For window
90	Doors	100	m³	For door
91	Flooring	100	m³	For floor
92	Roofing	100	m³	For roof
93	Insulation	100	m³	For roof
94	Windows	100	m³	For window
95	Doors	100	m³	For door
96	Flooring	100	m³	For floor
97	Roofing	100	m³	For roof
98	Insulation	100	m³	For roof
99	Windows	100	m³	For window
100	Doors	100	m³	For door

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CoBie

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FM (Maximo)

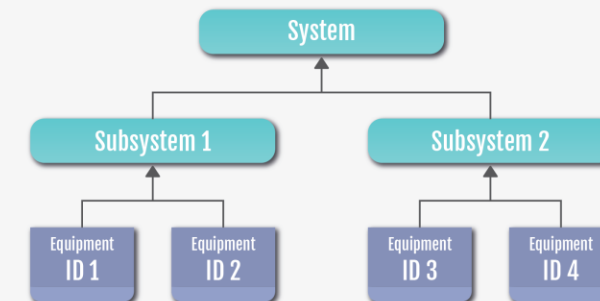
Inventory List

EQUIPMENT INVENTORY LIST

PHYSICAL CONDITION									
Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Actual value	Down payment	Date purchased or leased	Loan term in years
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
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789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
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456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
123	Make Model	Main branch	Good	local	5	\$50,000.00	\$5,000.00	5/15/2010	5
456	Make Model	Main branch	Excellent	local	5	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5

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System Hierarchy

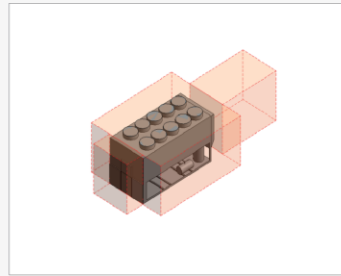


LUMINAIRE SCHEDULE

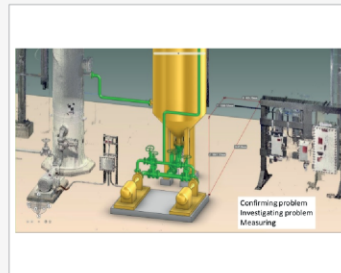
TYPE	FIXTURE CATEGORY NAME	DESCRIPTION	LAMPS	MOUNTING	FIXTURE VOLTAGE	LAMP WATTAGE	MANUFACTURER PART NUMBER	REMARKS	QUANTITY
200	Recessed Recessed Flat Lens	2'x2' 277V, TB 3-17V, T-84R	3 Lamps	Recessed	277V	17	Similar T1948-517-811-UMV		5
201	Recessed Recessed Flat Lens	2'x4' 277V, TB 3-32V, T-84R	3 Lamps	Recessed	277V	32	Metolux 2292-2324-UMV-L6726-CBB1-U		184
202	Recessed Recessed Flat Lens	2'x4' 277V, TB 3-32V, DR1V	3 Lamps	Recessed	277V	32	Metolux 2393-2324-UMV-L6726-CBB1-U	OP-24V-U Dry Wall Frame Kit	4
203	Recessed Recessed Parabolic Loure	2'x4' 277V, TB 3-32V, T-84R, 1800L-6000000	3 Lamps	Recessed	277V	32	Metolux 3293-2324-UMV-L6726-CBB1-U		30
204	Surface Recessed Flat Lens	1'x4' 277V, TB 3-32V	3 Lamps	Surface	277V	32	Metolux V6-2324-UMV-CBB1-U		7
205	Surface Recessed Strip	4' 277V, TB 2-32V, SURFACE STRIP	2 Lamps	Surface	277V	32	Metolux 66-232-UMV-CBB1-U		8
206	Surface Recessed Strip	4' 277V, TB 2-32V, SURFACE STRIP 1/2	2 Lamps	Surface	277V	32	Metolux 66-232-UMV-CBB1-U	W/96-4FT-8 Min Guard	3
207	Surface Recessed Strip	4' 277V, TB 2-32V, SURFACE INDUSTRIAL STRIP	2 Lamps	Surface	277V	32	Metolux W-232-UMV-CBB1-U		1
208	Wall Mounted Fluorescent Linear Return	2' 277V, TB 1-17V, GUBE	1 Lamp	Wall Mount	277V	17	Metolux BN-117-UMV-CBB1-U		3
209	Recessed Pot Fluorescent Down Light	8" 277V, DT 1-32V, SPEC	1 Lamp	Recessed	277V	32	Parabolic 68042E		8
400	Suspended HD	277V, MH 1-230V, RUSP HD	1 Lamp	Suspended	277V	335	Lithmark FMAS		41
600	Wall and Ceiling Mounted Bi-nitrol Edt	DE GAST EGT, OSUNO, 1 3000, V APP	1 Lamp	Wall or Cel	120V	3	Sure-Uflex C0816		1
601	Wall and Ceiling Mounted Bi-nitrol Edt	DE GAST EGT, OSUNO, 1 3000, V+E APP	1 Lamp	Wall or Cel	120V	3	Sure-Uflex C0816		1
602	Wall and Ceiling Mounted Bi-nitrol Edt	DE GAST EGT, OSUNO, 2 3000, E APP	1 Lamp	Wall or Cel	120V	6	Sure-Uflex C0816		6
603	Wall and Ceiling Mounted Bi-nitrol Edt	DE GAST EGT, OSUNO, 3 3000, E APP	1 Lamp	Wall or Cel	120V	3	Sure-Uflex C0816		2
604	Wall and Ceiling Mounted Bi-nitrol Edt	DE GAST EGT, OSUNO, 3 3000, V+E APP	1 Lamp	Wall or Cel	120V	3	Sure-Uflex C0816		1

BIM (Revit)

Construction Phase

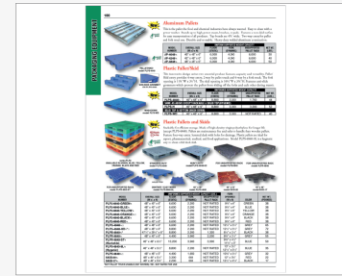


LOD 500 Model



- 1 Overall dimension
- 2 Shape
- 3 Connector
- 4 Do not over model, FIM

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Trade Catalogue

ITEM	DESCRIPTION	QUANTITY	UNIT	PRICE	TOTAL	REMARKS
1	Concrete	100	m³	100	10000	
2	Rebar	100	m	100	10000	
3	Formwork	100	m²	100	10000	
4	Brick	100	m³	100	10000	
5	Mortar	100	m³	100	10000	
6	Plaster	100	m²	100	10000	
7	Paint	100	liters	100	10000	
8	Roofing	100	m²	100	10000	
9	Insulation	100	m³	100	10000	
10	Windows	100	m²	100	10000	
11	Doors	100	m²	100	10000	
12	Flooring	100	m²	100	10000	
13	Wallpaper	100	m²	100	10000	
14	Lighting	100	m²	100	10000	
15	Sanitaryware	100	m²	100	10000	
16	Electrical	100	m²	100	10000	
17	Plumbing	100	m²	100	10000	
18	Painting	100	m²	100	10000	
19	Roofing	100	m²	100	10000	
20	Insulation	100	m³	100	10000	

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CoBie

- 1 Extensive Input
- 2 What information goes of what field? Same Name? Who Input?

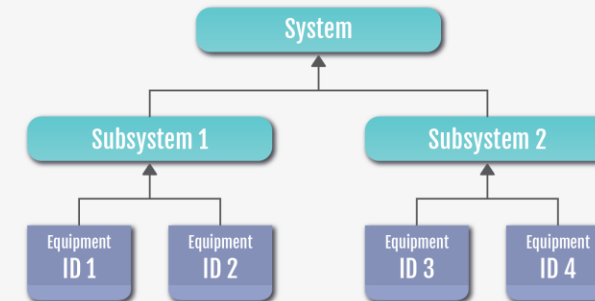
FM (Maximo)

Inventory List

EQUIPMENT INVENTORY LIST

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456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013	5
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
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789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5
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789	Make Model	East coast	Fair	local	6	\$50,000.00	\$10,000.00	8/20/2007	5

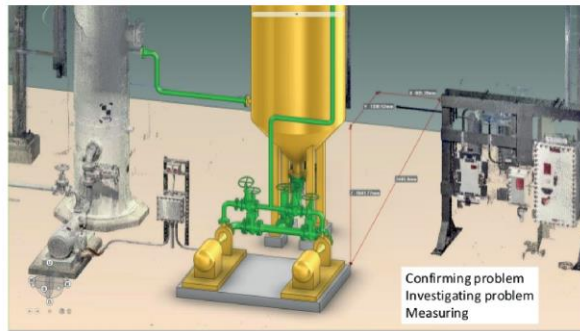
System Hierarchy



EQUIPMENT INVENTORY LIST

PHYSICAL CONDITION										
Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Initial value	Down payment	Date purchased or leased	Loan term in years	Loan rate
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/20/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/20/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/20/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/20/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/20/2007	5	5.00%

Mobile Viewer (e.g. EcoDomus)



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EQUIPMENT INVENTORY LIST

PHYSICAL CONDITION										
Asset or serial number	Item description (make and model)	Location	Condition	Vendor	Years of service left	Initial value	Down payment	Date purchased or leased	Loan term in years	Loan rate
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789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/30/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/30/2007	5	5.00%
123	Make Model	Main branch	Good	local	5	\$30,000.00	\$5,000.00	1/15/2010	4	10.00%
456	Make Model	Main branch	Excellent	local	3	\$5,000.00	\$5,000.00	5/1/2013		
789	Make Model	East coast	Fair	local	6	\$50,000.00	\$20,000.00	8/30/2007	5	5.00%

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Inventory List

ID

EMSD BIM-AM Standards and Guidelines v1.0

Electrical & Mechanical Services Department



Building Information Modelling for Asset Management (BIM-AM) Standards and Guidelines

Version 1.0
Nov 2017

1



Click to Open

ASD BIM Guide and Facilities Upkeep

Building Information Modelling (BIM) Guide for Facilities Upkeep

(Version 1.0)

Objective

The primary purpose of this Guide is to provide a common reference on the adoption of BIM in As-built Modelling for Facilities Upkeep in building projects including capital works projects, entrustment works, subvented capital works projects and works that are undertaken by private parties with project estimates more than \$30 million and will be handed back to ArchSD for maintenance according to Development Bureau Technical Circular (Works) No. 7/2017 or the latest version.

Disclaimer

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Users are responsible for making their own assessments and judgement of all information contained in or in connection with this Guide and are advised to seek independent verification as to its accuracy, currency or completeness. The department accepts no liability for any use of the said information and data or reliance placed on it. The department does not accept any responsibilities for any special, indirect or consequential loss or damages whatsoever arising out of or in connection with the use of this Guide.

The Architectural Services Department reserves the right to omit, edit or update the Guide at any time in its absolute discretion without any prior notice.

2.4. Names and Codes of E&M Systems and Routing

No.	System Name	System Code	Routing Name	Routing Code
1	Lift and Escalator	LAE	Trunking for Lift and Escalator	LAE
			Cable Tray for Lift and Escalator	
2	LV Switchboard	LVS	Trunking for LV Switchboards	LVS
			Cable Tray for LV Switchboards	
3	Emergency Generator	EMG	Trunking for Emergency Generator	EMG
			Cable Tray for Emergency Generator	
4	HVAC	HVAC	Primary Air Duct	PAD
			Exhaust Air Duct	EAD
			Fresh Air Duct	FAD
			Supply Air Duct	SAD
			Return Air Duct	RAD
			Transfer Air Duct	TAD
			Smoke Extraction Duct	SED
			Make Up Air Duct	MAD
			Condensate Drain Pipe	CDP
			Chilled Water Return Pipe	CHWR
			Chilled Water Supply Pipe	CHWS
			Condensing Water Supply Pipe	CDWR
			Condensing Water Return Pipe	CDWS
			Chemical Dosing Pipe	CHDP
			Make-up Water Pipe	MWP
			Heating Hot Water Supply Pipe	HHSP
			Heating Hot Water Return Pipe	HHRP
5	Boiler System	BLR	Boiler Pipes	BLR
6	Filtration Plant	FP	Filtration Plant Pipes	FP
			Return Pipes	RP
			Overflow Pipe	OP
			Supply Pipe	SP

1	2	3	4	5	6	7
District Code (Refer to Section 2.1)	Building Code (Refer to Section 2.2)	Building level	Room Code	System Code (Refer to Section 2.4)	Equipment Code (Refer to Section 2.5)	Number
<= 3 characters	<= 5 characters	3 characters	3 to 4 characters	3 to 5 characters	3 to 4 characters	3 characters
KT -Kwun Tong	EMSDN -EMSD HQS (NEW)	B02 -Basement 2 B2M -Basement 2 Mezzanine B01 -Basement 1 000 -Ground Floor 001 -1st Floor 002 -2nd Floor 003 -3rd Floor	MR01 -Meeting Room 01 MR02 -Meeting Room 02 AHUR -AHU ROOM	BLR - Boiler System BA – Burglar Alarm FP – Filtration Plant	AHU -Air Handling Unit FCU - Fan Coil Unit	001 002 003 004 005 006

The following attributes are applicable to all equipment. Consultants or contractors are advised to propose additional attributes with substantiation for any equipment with substantiation where deemed necessary.

Shared Parameter with Revit Category of "Common" have to be applied to Mechanical Equipment, Electrical Equipment, Electrical Fixtures, Pipe Accessories, Duct Accessories, Specialty Equipment, Fire Alarm Devices, and Lighting Fixtures.

Among the common attributes, some attributes are defined as EMSD specific fields. Contractors should liaise with the subject officer(s) of EMSD to acquire and input the correct content of the EMSD specific fields as listed below.

Parameters	EMSD specific fields	Mandatory/ Optional/ Dependent	Description	Revit Category	Type/Instance	Discipline	Type of parameter	Group	Examples
EMSD.Common.Asset Code	N	M	Long form Equipment No.	Common	Instance	Common	Text	Data	KT-EMSDN-001-MR01-HVAC-FCU-001
EMSD.Common.Equipment No.	Y	M	EMSD CCS(SAP) Equipment No.	Common	Instance	Common	Text	Data	19876000
EMSD.Common.Equipment Type	N	M	Equipment Type	Common	Type	Common	Text	Data	Constant Air Volume (CAV)
EMSD.Common.Equipment Location	N	M	Equipment Location	Common	Instance	Common	Text	Data	AHU ROOM
EMSD.Common.Equipment Description	N	M	Description of the Equipment	Common	Type	Common	Text	Data	LG/F AC-2
EMSD.Common.Brand	N	M	Brand name of the Equipment	Common	Type	Common	Text	Data	
EMSD.Common.Documentation	N	M	The reference Link of the documents (T&C Records, O&M Manual, Catalogues, Certificates.....)	Common	Type	Common	URL	Data "Project Name"\30_O&M Documentation\UPS\Battery System
EMSD.Common.Floor	N	M	Floor of the Equipment	Common	Instance	Common	Text	Data	1st Floor
EMSD.Common.Manufacturer	N	M	Manufacturer of the equipment	Common	Type	Common	Text	Data	ABC Company
EMSD.Common.RFID Tag No.	N	M	RFID Tag No. of the equipment	Common	Instance	Common	Text	Data	
EMSD.Common.Asset Relationship	N	M	Asset Relationship of the equipment	Common	Instance	Common	Text	Data	
EMSD.Common.Grouped Equipment ID	N	M	Grouped Equipment ID of the equipment	Common	Instance	Common	Text	Data	

All LV Switchboard equipment should have the attributes stated above and attributes specific to its system.

The following attributes are specific to LV Switchboard equipment.

Parameters	Description	Revit Category	Type/Instance	Discipline	Type of parameter	Group	Examples
EMSD.LV.Switchgear No.	Switchgear No.	Electrical Equipment	Instance	Common	Text	Data	SLPCSB01
EMSD.LV.Type of Circuit	Type of Circuit	Electrical Equipment	Type	Common	Text	Data	Incomer/Bus-section/Sub-main(Normal)
EMSD.LV.Rating	Rating (A) of the switchboard	Electrical Equipment	Type	Electrical	Current	Electrical Engineering	2500
EMSD.LV.Make	Made by which company	Electrical Equipment	Type	Common	Text	Data	Schneider Electric
EMSD.LV.Nos. of Pole(s)	1-pole/ 2-pole/ 3-pole/ 4-pole	Electrical Equipment	Type	Electrical	Number of Poles	Electrical Engineering	4-pole
EMSD.LV.Outgoing Circuit	Outgoing Circuit	Electrical Equipment	Type	Common	Text	Data	Cable
EMSD.LV.Size	Size of the Switchboard	Electrical Equipment	Type	Common	Text	Data	400mm
EMSD.LV.Type	Type of the Cables	Electrical Equipment	Type	Common	Text	Data	Amoured XLPE
EMSD.LV.Rating of switchgear	Rating(A) of the switchgear	Electrical Equipment	Type	Electrical	Current	Electrical Engineering	728
EMSD.LV.Length	For bus-bars only(per piece) (mm)	Electrical Equipment	Type	Common	Length	Data	500
EMSD.LV.Capacitor Bank No.	Bank No. of the Capacitor	Electrical Equipment	Type	Common	Text	Data	C1
EMSD.LV.Date of Last PITC	Date of Last PITC	Electrical Equipment	Instance	Common	Text	Data	11.01.2014
EMSD.LV.Largest Rating	Largest Rating (A) of Switchboards	Electrical Equipment	Type	Electrical	Current	Electrical Engineering	2500
EMSD.LV.Cubicle Make	Cubicle Make	Electrical Equipment	Type	Common	Text	Data	Fair-rack
EMSD.LV. Make(optional)	Make(optional)	Electrical Equipment	Type	Common	Text	Data	BICC / PIRELLI

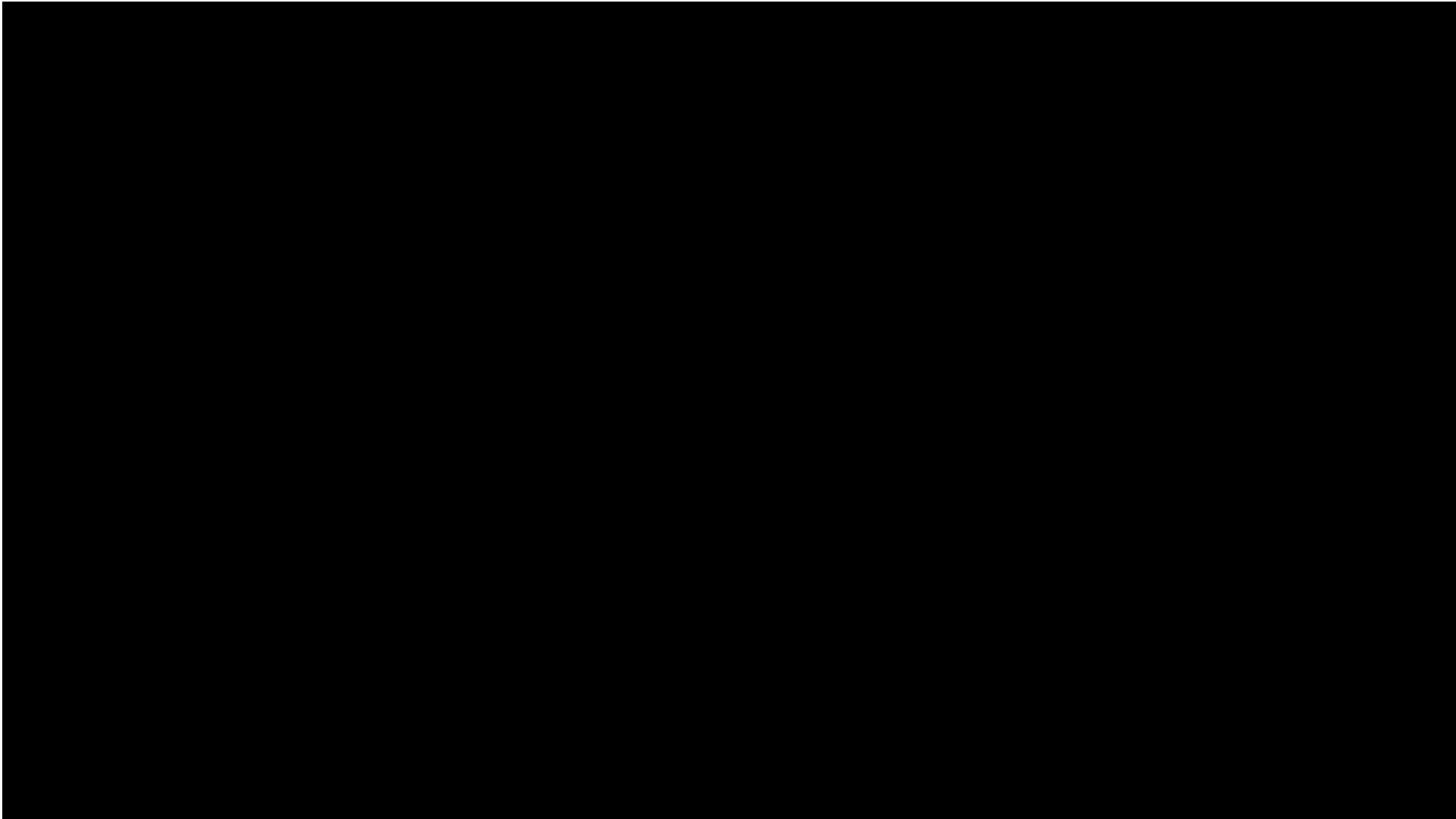
Legends : ✓ - Required
✗ - Not required

Item	Element	Graphic Model Element	Non-graphic information	3D Animation	BIM Object from original manufacturer	Photo record (other than 360° photos)	Other Modelling Requirements	Other Supporting Information
		Level of Development (LOD)	Level of Development (LOD)					
1.0	Excavation							
1.1	Elements under this trade	350	500	✗	✓ (if available)	✗		
2.0	Concrete Work							
2.1	Elements under this trade	350	500	✗	✓ (if available)	✗		
3.0	Brickwork and Blockwork							
3.1	Elements under this trade	350	500	✗	✓ (if available)	✗		
4.0	Masonry							
4.1	Elements under this trade	350	500	✗	✓ (if available)	✓		

PSB Standard Parameters in As-built Model

Item	Project Parameter	Data type	Mandatory	Remarks	Explanatory Note
1	PSB_LocCode	13 characters	Yes	Data format refer to ArchSD's ACTION System's Property Register.	This field is for PSB officer to assign location code(s) to represent whole property/individual building/structure/ floor(s) or individual room(s). Such as QA00200152000
2	PSB_Floor	3 characters	Yes	Typical data format refer to 'Floor code table'	This floor level shall be customized project parameter, say B5F (basement), LGF (lower ground floor), 0GF (ground floor), UG1 (upper ground floor), M1F (1/F mezzanine floor), M2F (2/F Mezzanine floor), 99F, LRF (lower roof floor, 0RF (roof floor), URF (upper roof), etc.)
3	PSB_ElementNo	5 digits	Yes	from 00001 to 99999	This element number shall be referring to LocCode-Floor-Element1-Subelement1 only.
4	PSB_Element1	textual	Yes	The value shall refer to Elemental Code Relation table and its code table.	Element 1 shall only be used to input information of major object, such as door, window, wall, etc. Parts or components belong to door and windows, waterproofing system, shall be input to Element 2 to Element 5 with manufacturer/ catalogue information.
5	PSB_Sub-element1	textual	Yes	The value shall refer to Elemental Code Relation table and its code table.	
6	PSB_Component1	textual	Yes	The value shall refer to Elemental Code Relation table and its code table.	
7	PSB_Attribute1	textual	Yes	The value shall refer to Elemental Code Relation table and its code table.	
8	PSB_Remarks1	textual			

BIM – FM Information



Ecodomus bim bas for facility management and work orders

EcoDomus User: [Igor Starkov](#), [EcoDomus](#) System Role: System Admin Client: [Airport_Demo](#) Facility: [Tower Building](#) 7/8/2012 HELP LOG OUT

Dashboard Locations Assets Reports Settings

Dashboard

Navigation

- North East
 - Dulles International Airport
 - Tower Building
 - Radar Building
 - Transmitter Building
 - Generator Building

Map Satellite

Google

Report a map error

Search

Asset Name Equal to

Space Name Equal to

Search

Recent

Facility	Description
Tower Building	Tower Building

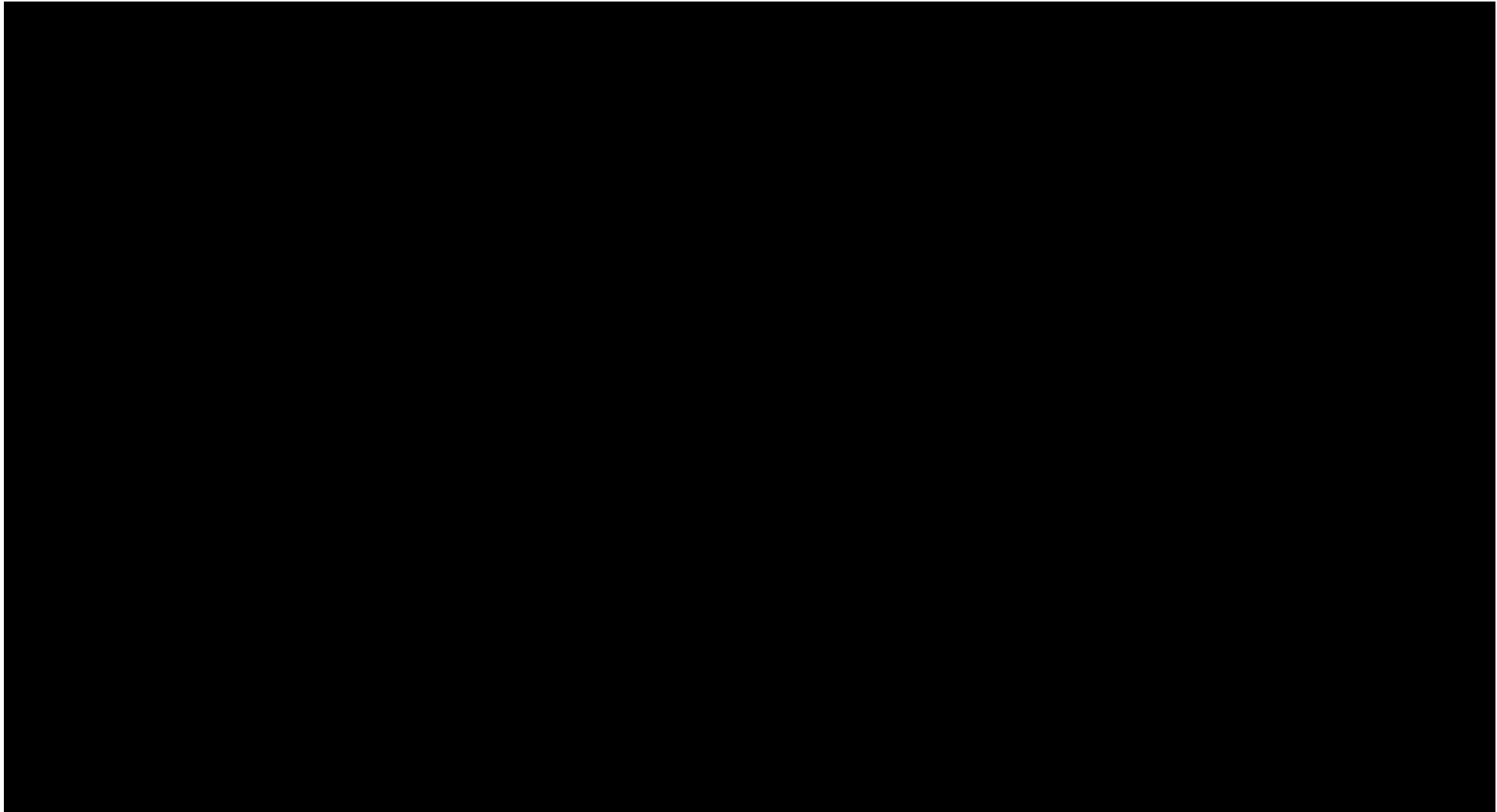
Assets	Description	Facility
AHU-2	Air Handling Unit	Tower Building
Public - 1.6 gpf	Public - 1.6 gpf	Tower Building
PPE1	225A	Tower Building

Space	Description	Facility
103	Pump Room	Tower Building
101	Tower Building 1	Tower Building

Inbox

Entity	Action	Changed By	Date	Facility Name	System
AHU-2	Updated	Igor Starkov	7/8/2012 3:11:19 PM	Tower Building	EcoDomus
103	Updated	Igor Starkov	7/8/2012 3:10:51 PM	Tower Building	EcoDomus

FM – underground train station



HIM – Heritage Information Modelling

THANK YOU !