



IL BIM COME STRUMENTO DI CONCERTAZIONE DELLE DECISIONI

Angelo Ciribini*

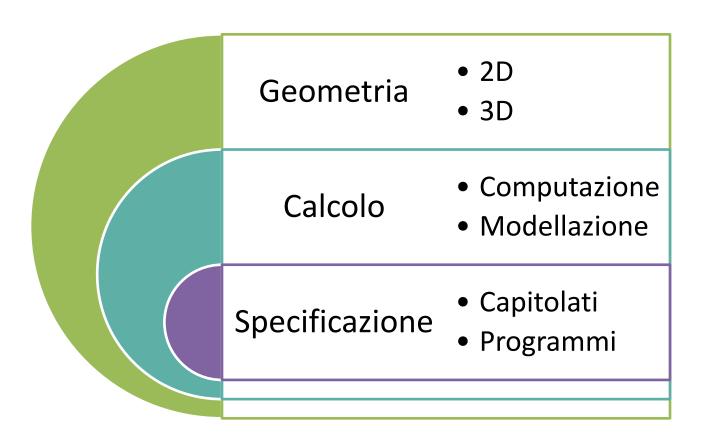
Firenze, 15 Gennaio 2014







^{*} con L. Silvestrini, M. Bolpagni, S. Mastrolembo, M. Paneroni



IL BUILDING INFORMATION MODELLING

Non è solo un MODELLO TRIDIMENSIONALE... E' anche un DATABASE!

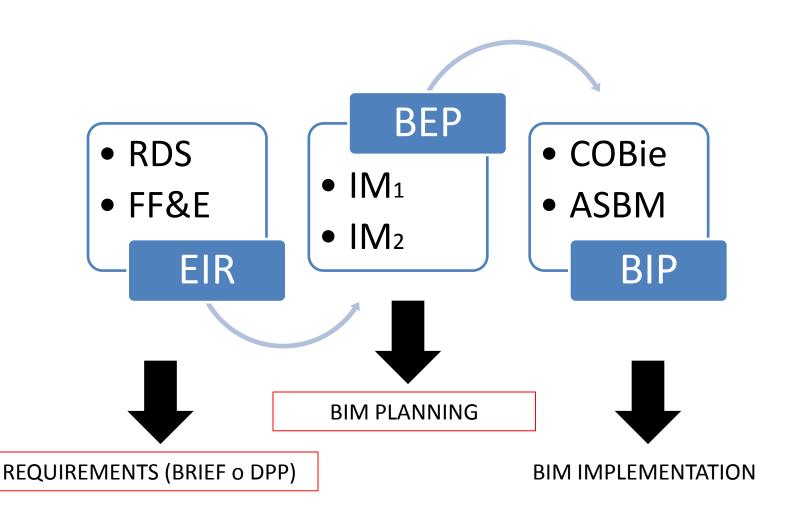


ARMADIETTO	LOD 100	LOD 200	LOD 300	LOD 400
Produttore				Hamilton Sorter
		*****	Madalas Caramada	
OmniClass Title OmniClass Code		Modular Casework	Modular Casework 23.40.35.14.11	Modular Casework 23.40.35.14.11
Titolo OmniClass	Cabinets	Cabinets	23.40.33.14.11 Cabinets	25.40.55.14.11 Cabinets
Tipo	Cabinets	600 x 400 x 900	600 x 400 x 900	600 x 400 x 900
Descrizione		000 X 400 X 900	1 Door 1 Drawer Base Cabinet	1 Door 1 Drawer Base Cabinet
Descrizione assieme			Fixed Casework	Fixed Casework
Altezza		0,9	0,9	0,9
Depth Limit		0,5	0,5	23,88
Larghezza		0,40	0,40	0,40
Profondità		0,60	0,60	0,60
Certification		0,00	0,00	GREENGUARD Children & Schools Certified
Codice assieme				E2010200
Construction Details				http://www.hamiltonsorter.com/bim_cad.asp
Manufacturer Address				3158 Production Drive, Fairfield, OH 45014-4228
Manufacturer Fax			1	800-503-9963
Manufacturer Phone				513-870-4400
Manufacturer Phone - Toll Free		1		800-503-9966
Manufacturer Website				http://www.hamiltonsorter.com
MasterFormat Section Number				12 30 00
MasterFormat Section Title				Casework
Conteggio	2	2	2	2
Weight				192
Weight Units				lbs.
Width Limit				11.87
Wood Thickness				0,75
Model Code Depth				23,62
Model Code Width				15,74
Overall Depth				24,00
Overall Height				35,43
Overall Width				12,00
Shelf Elevation				16,22
Livello	0 - Piano Terra	0 - Piano Terra	0 - Piano Terra	0 - Piano Terra
Copyright				2009, ARCAT Inc.
Door Material				
Drawn By				
Expected Lifespan (Years)				0
Famiglia				Hamilton-Sorter_Modular-Casework_Base-Cabinet_1-Door-1-Drawer
Famiglia e tipo				
Fase di creazione				Hamilton-Sorter_Modular-Casework_Base-Cabinet_1-Door-1-Drawer: 600 x 400 x 900
				Hamilton-Sorter_Modular-Casework_Base-Cabinet_1-Door-1-Drawer: 600 x 400 x 900 Stato di Progetto
Fase di demolizione				
Fase di demolizione Frame Material				Stato di Progetto
				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html
Frame Material Green Building-LEED Handle Style				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A
Frame Material Green Building-LEED				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html
Frame Material Green Building-LEED Handle Style				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A
Frame Material Green Building-LEED Handle Style Handle Style 2				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_22938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures 0
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material Nota Chiave				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A linterior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_22938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures 0
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material Nota Chiave				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A linterior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07
Frame Material Green Building-LEED Handle Style 2 Handle Style 2 Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmmiClass				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A linterior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07
Frame Material Green Bullding-LEED Handle Style P Handle Style 2 Handle Style 2 Handle Style 2 Handle Style 2 Maintenance Schedule (Months) Material Nota chiave Numero Omniclass Panel Thickness				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures O Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11
Frame Material Green Building-LEED Handle Style Handle Style 2 Handle Style 2 Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmniClass Panel Thickness Product Data				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23-40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag 09
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Materiall Panel Thickness Product Data Product Proporties Revision Sales Information				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures O Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag 69 mag 99
Frame Material Green Building-LEED Handle Style Handle Style 2 Handle Style 2 Handle Style 2 Handware Finish Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmniClass Panel Thickness Product Data Product Data Revision Sales Information Sales Information Sales Information				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag-09 http://wwww.arcat.com/arcatcos/cos12/arc32938.html mag-09 http://wwww.arcat.com/arcatcos/cos12/arc32938.html
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Finish Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmniClass Panel Thickness Product Data Product Properties Revision				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures O Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag 69 mag 99
Frame Material Green Building-LEED Handle Style Handle Style 2 Handle Style 2 Handle Style 2 Handware Finish Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmniClass Panel Thickness Product Data Product Data Revision Sales Information Sales Information Sales Information				Stato di Progetto Nessuno Inttp://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures 0 Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag 09 http://www.hamiltonsorter.com/content_contact_us_a.asp http://www.arcat.com/s/g/clients/hamsort.html?coid-32938 http://www.hamiltonsorter.com/modesae.good.coix.coiebse/fmc_McBit242429.asp
Frame Material Green Building-LEED Handle Style Handle Style 2 Hardware Frisit Installation Phase Maintenance Schedule (Months) Material Nota chiave Numero OmniClass Panel Thickness Product Data Product Properties Revision Sales Information Specification Specification Specification				Stato di Progetto Nessuno http://www.arcat.com/green/clients/leed_data_32938.html Hamilton Sorter - Handles - Vertical with lock : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Hamilton Sorter - Handles - Horizontal : Crescent Silver 117A Interior Fixtures O Hamilton Sorter - Particle Board - Melomine Laminate - Cafelle 7933T-07 23.40.35.11.11 http://www.arcat.com/arcatcos/cos32/arc32938.html mag 09 http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/arcatcos/cos12/arc32938.html http://www.arcat.com/sec/dicents/hamsort.html?coid-32938

Migliorare la Redditività

Capitalizzare la Conoscenza

Mitigare il Rischio



Committente

Definisce i Vincoli (Space Programme)



Progettisti

Sviluppano il Modello Informativo (Authoring)



Committente/Organismo di Ispezione

Controllano il Modello Informativo (Checking)

LE INFORMAZIONI

Building Program & Project Meta Data

Physical Properties of BIM Objects & Elements

GeoSpatial and Spatial Location of

Objects & Elements

Manufacturer Specific Information Requirements

Specifications

Estimating

Value Engineering Requirements (BIM Use Case)

Energy Analysis Requirements (BIM Use Case)

Sustainable Material LEED or Other Requirements

Project Environmental & Site Conditions

Program/Space Compliance or Validation

Code Compliance/ Occupant Safety Requirements

Phases Time Sequencing & Schedule Requirements

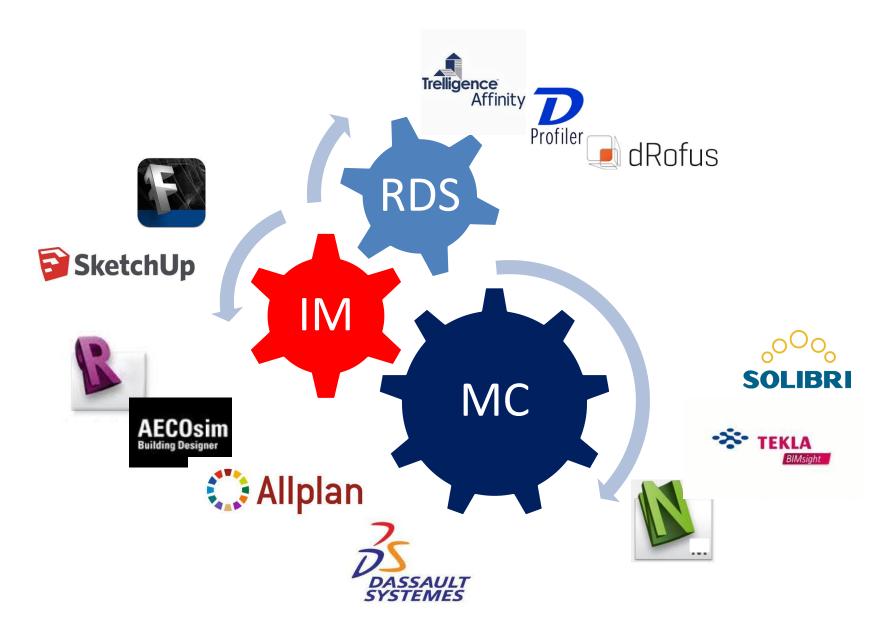
Construction Logistics & Sequencing

Building Commissioning Requirements

Facilities/Asset Management

(Organization Specific Standards)

Note/Remarks



nuffieldtrust Can NHS hospitals do more with less?

Research stommary tower Humand Salty Williams

January 2012.

Fonte: NHS



Fonte: Autodesk

informa Planning & Design Series presents

Building Information Modelling

in Healthcare

26-27 March 2013 | Royal on the Park, Brisbane









The Northern NHS
FACILITIES MANAGEMENT TRAINING
ADVISORY GROUP

Present a one-day conference on:

THE FUTURE OF NHS CAPITAL PROJECTS B I M

to be held on

FRIDAY, 19 OCTOBER 2012

BROCKHOLES
The Lancashire Wildlife Trust,
Preston New Road, Preston, Lancashire



Health Building Note 15-01: Accident & emergency departments

Planning and design guidance

April 2013





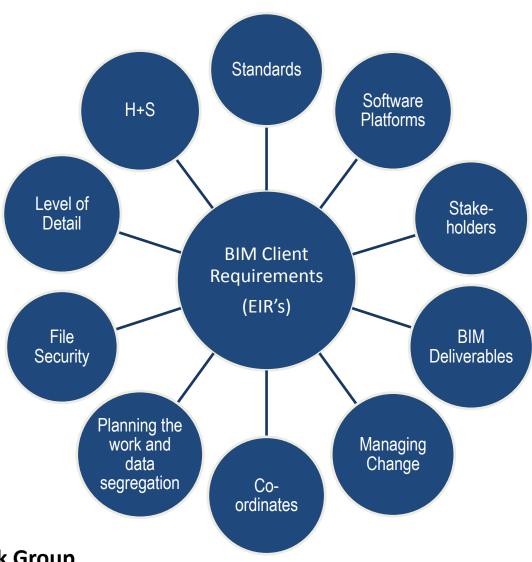


Design technology

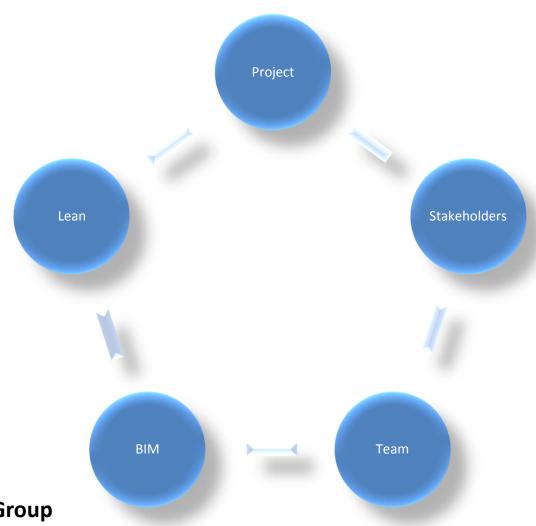
- 16.27 Changes in technology are enabling new design methods and solutions.
- 16.28 Building information modelling (BIM) is contributing to the development of integrated three-dimensional space design, which allows collaborative working to ensure integrated construction design and embeds asset information into a coordinated computer model for the ongoing management of buildings, post-completion.
- 16.29 Construction Operations Building information exchange (COBie) is a means of sharing mainly non-graphical information about a building or asset. It combines relational datasets to provide linked spreadsheets of information and is used as the standard means of reporting BIM data.
- 16.30 ADB integrates with most current modelling tools used by the design team.
- 16.31 Additionally, simulation is being used more in the early stages of design as a way of understanding the flow of patient numbers and the impact of changes in processes, disruptive technologies and different design options. It should be



Fonte: buildingSMARTalliance



Fonte: BIM Task Group



Fonte: BIM Task Group



Fonte: BIM Task Group

Dimensioni		*					
Larghezza	400.0						
Top Draw Opening Model	0.0						
Shelf Elevation Model	235.0	I DATI	Dunanines				
Shelf Elevation	412.1	IUAII	Proprietà				
Open Door Width	400.0						
Model Width	400.0			Hamilton-Sorter_Mo	odular-Casework	_Base-	
Model Depth	609.6		Cabinet_1-Door-1		l-Drawer		
Altezza	900.0			Left MCBF122429			
Drawer Width	393.7			Deit inicol in a			
Drawer Box Depth	584.2		Arredi fissi ((1)	~	🔠 Modifica ti	
Door Top	197.4			(1)			
Door Opening Placement	0.0		Vincoli			*	
Profondità	609.6		Top Draw	er Opening	0.0		
Centre Gap	1.6						
Dati identità	4			zing Information	If smaller sizes a	re neeaea,	
Special Size			Special Siz	ze Width	0.0		
Lock Code			Special Siz	ze Denth	0.0		
Commenti					i		
Contrassegno			Overall Wi	idth	400.0		
Fasi	1-		Overall De	epth	609.6		
Fase di creazione	Fase 4		Door Oper		0.000°		
Fase di demolizione	Nessuno			ning	! •		
Altro	1220.7		Livello		P03		
Dati identità			Host		Livello : P03		
Weight Units		lbs.	Offset		0.0		
Weight		192.000000	Sposta co	n l'oggetto più vicino			
Warranty		Limited Lifetime Warranty				*	
Version		2.3	Costruzione			100	
URL		http://www.hamiltonsorter.com/modcase_product			0.0		
Revision		05/2009	Shelf Adju	ıstability			
OmniClass Title		Modular Casework	Lock Optic	on			
OmniClass Code		23.40.35.14.11	Testo		<u> </u>	*	
Modello		As Specified in 12 35 50	Codice WE	D.C.			
Manufacturer's Notes					<u> </u>		
Produttore		Hamilton Sorter	Materiali e 1	finiture		*	
Descrizione		1 Door 1 Drawer Base Cabinet	Material		Hamilton Sorter	- Particle B	
Certification		GREENGUARD Children & Schools Certified	Dimensioni			*	
Codice assieme		E2010200	Larghezza		400.0		
Nota chiave				Opening Model	0.0		
Commenti sul tipo							
Descrizione assieme		Fixed Casework		ation Model 	235.0		
Contrassegno tipo			Shelf Eleva		412.1		
Costo			Open Doo	or Width	400.0		
Numero OmniClass		23.40.35.11.11	~~~	~ ~ ~ ~ ~ ~			
Titolo OmniClass		Cabinets					

MEDICAL EQUIPMENT AND BIM



BY MICHAEL LINEHAN AND BRANDON ANDRESS

Advancing the planning process with building information modeling

s medical technologies become more complex, construction and renovation projects are testing the

Hybrid imaging suites, robotic surgery operating rooms (ORs), and automation for method of digital design that allows knowlpharmacies and clinical laboratories all present their own set of technical, financial, tractor and hospital throughout the design smicrural and logistical challenges.

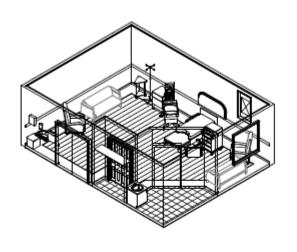
Because of the unique demands these systems present, selecting a qualified medi-rate on a central model, with each member cal equipment planner - one with forwardthinking technologies at his or her fingertips
Changes can be realized simultaneously by - is critical to success.

A quantum leap

Caining attention in the world of medical mente of a health care facility's design seam. equipment planning is building informa-tion modeling (BIM). A quantum leap from traditional architectural planning, BIM is a edge-sharing among the design team, conand construction process.

BIM allows the design team to collaboworking independently and collectively. each team member and coordinated with

I PRESUPPOSTI





GE Healthcare-Mat	ernal/Infant Ca	re
Project number	MIC-LND	
Date	09.JAN.13	A-3
Drawn by	DMH	
Checked by	DMH	Scale

Fonte: GE

revit capabilities

HTKL was an early adopter of Building Information Modeling (BIM) process. Using AutoDesk's Revir* software platform allows us to create precise virtual building models for better informed design decisions, coordination, and quality. Revit's three dimensional, parametric, database driven engine is extremely powerful. Unlike a simple 3D model on a computer, the virtual building model contains a great deal more information about the building's shape, materials and characteristics, and interaction with its environment.

experience with Revit

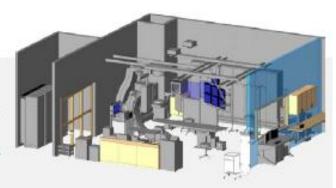
HTKL began using Revit Architecture in 2003 and has subsequently implemented both Revit Structure and Revit MEP. In addition to numerous smaller projects, RTKL has been pushing the envelope in the use of BIM on large-scale projects. We currently have multiple projects over 1 million square feet. Benefits from using AutoDesk Revit include:

- Correlates with Attainia's Equipment IDs
- Over 1800 Revit 3D libraries (objects) built
- Integration with HTKL template rooms & designs
- Facilitates design process

proven results

Already, BIM has documented improved productivity because of easier retrieval of information. This translates into a more rapid design and document production cycle. In addition, the construction manager and design team can use Revit to check and run quantities for better pricing.

We've also found that using a BIM technology (Revit) leads to improved communication among the design team, project stakeholders, and user groups, which facilitates a faster understanding of design intent through improved visualization.



Plus, better coordination of MEP/structural systems and reduced field installation conflicts, mean fewer change orders and RPI's. This clarity of understanding allows for faster client and regulatory approval processes. In fact, our numbers show that BIM projects are completed with a 30% efficiency gain.



new Royal Adelaide Hospital Project Schedule 18 - Design Specifications **Functional Brief** South Australian Department of Health

I PRESUPPOSTI

Fonte: NRAH

Il Dualismo

Direzione Generale

Direzione Sanitaria

RUP

La Dualità

Rischio

Conoscenza

Forme Contrattuali

Partenariato

Integrazione

Collaborazione

Governo dei Processi

Oggetti

Spazi

Percorsi

Soluzioni Progettuali

Committenza

Esecutori

Gestori

BUILDING INFORMATION MODELING (BIM) EXECUTION PLAN



New University Hospital Project Including Hospital Tower, Thermal Energy Plant, and Material Management Building Dallas, Texas

DEVELOPED BY:



BIM Execution Planning

Fonte: SMC



BIM Execution Plan (BEP)







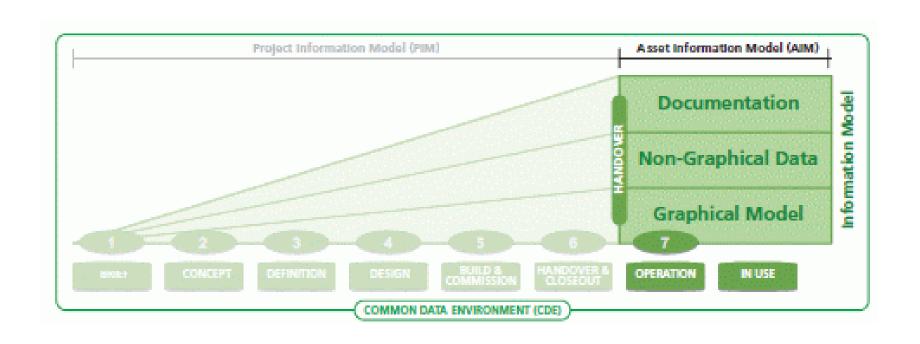
Fonte: JV HYLC



BIM Execution Planning

Fonte: BM

BIM Execution Planning



Fonte: BSI

BIM Execution Planning

2.3. Model Responsibility Matrix

HOLDER

Model Progression Specification

The MPS defines Model Level of Development and Model Element Authors at each phase. A.k.a.: "Model Responsibility Matrix." See MPS Definition for Levels of Development descriptions at each phase. Draft is to be completed /updated by Project Team.

Color Key	Model Element Author (MEA)	Abbreviation	Level Of Development (LOD)	Purpose				
	Architect	AR	LOD 100	Conceptual				
- 5	Structural Engineer	SE	LOD 200	Schematic (DO (Approximate)				
- 3	Mechanical Engineer	ME	LOD 300	Construction (Precise) Fabrication & Installation				
	Civil Engineer	CE	LOD 400					
	General Contractor	cc	LOO 500	As-Built				
- 6	Trade Contractors	TC	TOD 600	Facility Management				
	Level Of Detail	LOD		(*COC*60) is Hinder Construction Created Level of Developments				
	Model Element Author	MEA						
	File Format	FF						

Model Component System	Component.	Design Development			Construction Documents			Const	ruction		As-Buiks		
	•	1.00	MEA	fF.	100	MEA	FF	1.00	MEA	FF	100	MEA	FF
Civil	Site Utilities	200	CE	OWG	300	CE	RVT / OWG	300	GC	RVT / DWG	500	cc	BVT DWG
	Hardscaping	200	CE	OWG	300	CE	RVT /	300	GE	RVT / DWG	300	cc	RVT DWG
	Landscaping	200	CE	OWG	300	CE	RVT) DWG	300	GC	RVT.I DWG	300	CC.	RVT
Structure	Foundations	200	SE	WY	300	SE	m/T	300	GE.	RVT / DWG	500	cc	RVT DWG
Precast	200	SE	RVT	300	SE	RVT	400	TC:	DWG	500	cc	RVT DWG	

Fonte: Holder

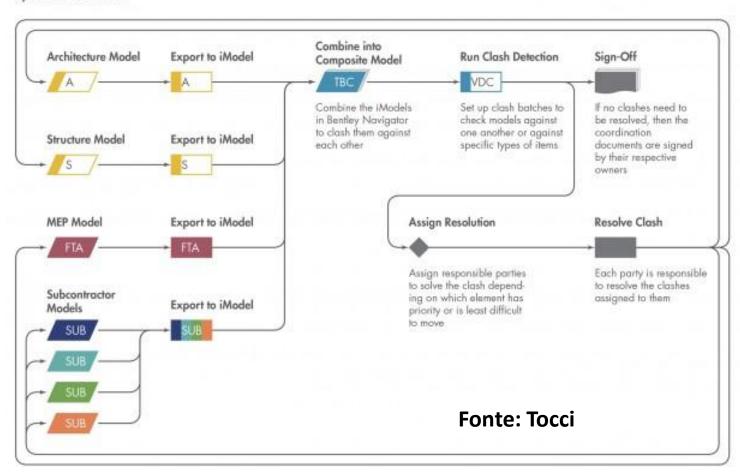
BIM Execution Planning

§ 4.3 Model Element Table Identify (1) the LOD required for each Model Element at the end of each phase, and (2) the Model Element Author (MEA) responsible for developing the Model Element to the LOD identified. Insert abbreviations for each MEA identified in the table below, such as "A – Architect," or "C – Contractor." NOTE: LODs must be adapted for the unique characteristics of each Project.						SCHEMATIC SCHEMATIC DESIGN		DESIGN		COMSTRUCTION DOCUMENTS		M *0	
Mosfel Elements Utiliza	ng CSI	Uniformat's	1.00		1.00	MEA	1.00	MEA	LOD	MEA	Lop	MEA	LOD
A SUBSTRUCTURE	A10	Foundations	A1010	Standard Foundations	100	SOM	200	WSP	500	usp	500	TC	
			A1020	Special Foundations	-	-	-	-	-	-	-/	-	1
			A1030	Slab on Grade	100	SOM	200	WSP	300	WSP	500	TC	1
	A20	Basement	A2010	Basement Excavation					1		1		1
		Construction	A2020	Basement Walls	100	SOM	300	SOM	300	SOM	500	TC	(
B SHELL	1310	Superstructure	B1010	Floor Construction	200	SOM	300	SOM	100	SOM	500	TE	
			B1020	Roof Construction				1.50	400	SOM	500	TZ	
	B20	Exterior	B2010	Exterior Walls				2.75	-		1		
		Enclosure	B2020	Exterior Windows		Lie Park		7	-	1			>
			B2030	Exterior Doors		1	1			-21	1		V .

Fonte: WSP & SOM

BIM Execution Planning

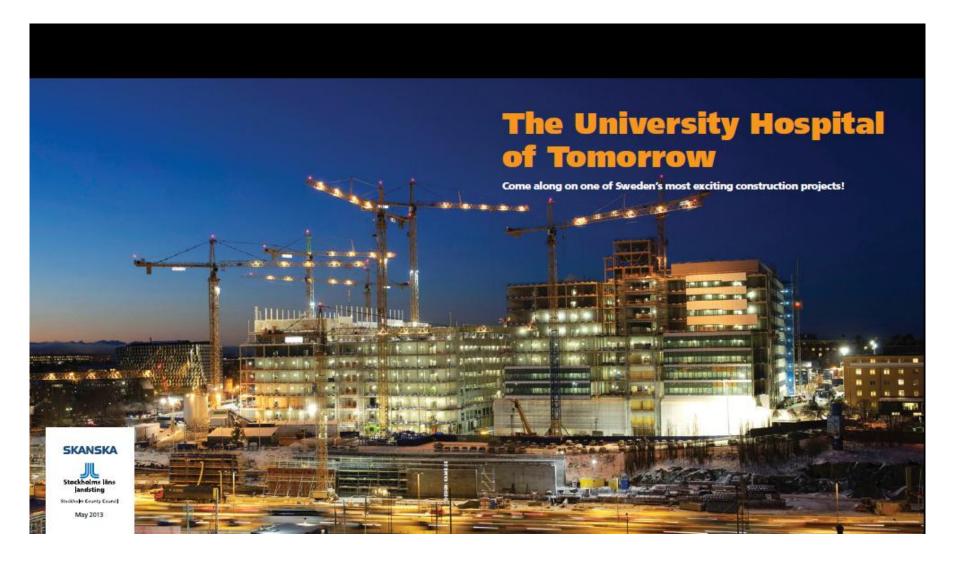
Systems Coordination



I CASI DI STUDIO

NYA KAROLINSKA Universitetssjukhuset Solna (SKANSKA)





CHILDREN HOSPITAL OF CHICAGO (MORTENSON CONSTRUCTION)



World's tallest children's hospital pushes BIM to the extreme

The Building Team for the 23-story Lurie Children's Hospital in Chicago implements an integrated BIM/VDC workflow to execute a complex vertical program. David Barista, Editor-in-Chief May 01, 2013 The design and construction of the hospital's 42-foot-high, 60,000-sf mechanical floor was coordinated using BIM/VDC. All MEP subcontractors were co-located with the construction management team during the project in a highly collaborative environment. When clashes or other issues arose, the entire team would gather and come up with a workable solution. Rendeing: Courtesy Mortenson Standing on the 10th floor of the sparkling new Ann & Robert H. Lurie Children's Hospital of Chicago is not exactly a glamorous experience. Compared with walking the hospital's double-height glass lobby, which features two magical lifesize whale sculptures suspended from the ceiling, or the 11th-floor Crown Sky Garden, with its expansive views of the city and lakefront, the 10th floor seems relatively mundane. But standing there in the 42-foot-high space talking with the Building Team members that led the construction of the 1.25 million-sf, 288-bed project over a six-year period, it's easy to see that the two-story mechanical floor is among their greatest sources of pride on the project.





Sykehuset i Vestfold HF

Prosjekt:

Tønsbergprosjektet

Konseptbeskrivelse – BIM og industrialisert byggproduksjon

Rev. 0.5, 16.04.2013

O Sykehuset I Vestfold HF, 2013

Cide 4









BIM-strategi for Helse Sør-Øst

ROYAL ADELAIDE HOSPITAL (JV HYLC)





Chris Penn - BIM Manager new Royal Adelaide Hospital



ALTA BATES SUMMIT MEDICAL CAMPUS (DPR)

"The use of BIM at the Alta Bates Summit Medical Center project has become more than just a benefit " it has become a necessity." - Nathan Wood, Project Engineer, DPR Construction

- Create and use constructible data to plan and manage their BIM process
- Satisfy the stringent seismic design requirements set forth by California's Office of Statewide Healthcare Planning and Development (OSHPD)
- Operate more effectively on a congested urban site
- Use Tekla and Trimble's integrated solutions to ensure what happens during coordination happens in the field and to capture true site information
- Conduct constructability analysis of MEP, a congested rebar design and structural steel CIP Concrete planning, quantity take-off and pour management

UN MODELLO DI SIMULAZIONE DEL COMPORTAMENTO UMANO NEGLI EDIFICI

Davide Simeone



IL TRIAL DI UNIBS* AL S. GERARDO (MONZA)

AIA E202 DEFINTIONS

MODEL ELEMENT:

Component, System or Assembly within a BIM

MODEL ELEMENT AUTHOR:

Party responsible for model elements (Architect, Contractor, Mechanical, ecc.)

MODEL USER:

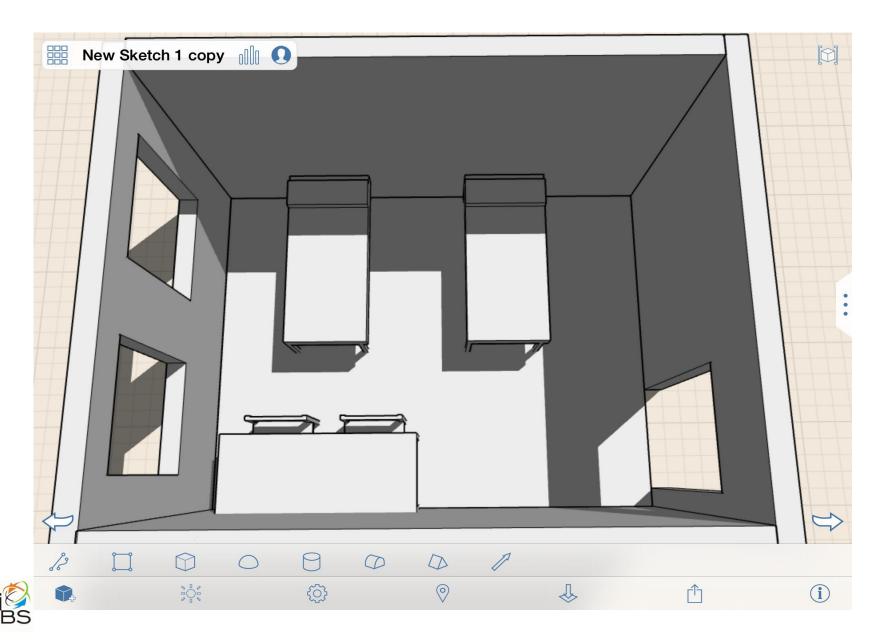
Individual or Entity allowed to use the model for Analysis, Estimating, or Scheduling.

*A. Ciribini, L. Silvestrini, M. Bolpagni, S. Mastrolembo, M. Paneroni

LOD (Detail & Development)

- **100** Conceptual. The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.
- **200** Generic Placeholders. The Model Element is graphically represented within the Model as a generic system, object, or assembly with approximate quantities, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
- **300** Specific Assemblies. The Model Element is graphically represented within the Model as a specific system, object or assembly accurate in terms of quantity, size, shape, location, and orientation. Non-graphic information may also be attached to the Model Element.
- **350** Specific Assemblies. The Model Element is graphically represented within the Model as a specific system, object or assembly accurate in terms of quantity, size, shape, orientation, and interfaces with other building systems. Non-graphic information may also be attached to the Model Element.
- **400 Detailed Assemblies.** The Model Element is graphically represented within the Model as a specific System, object or assembly that is accurate in terms of size, shape, location, quantity, and orientation with detailing, fabrication, assembly, and installation information. Non-graphic information may also be attached to the Model Element.

LOD 100



LOD 200





Armadio

ARMADIO

LOD 100

LOD 200

LOD 300

Produttore					Spec-Rite Designs LLC
OmniClass Title					Spec-ritte Designs Elec
OmniClass Code					
Titolo OmniClass		Cabinets	Cabinets	Cabinets	Cabinets
		Cabinets			0.500000011
Tipo			870 x 550 x 2400	870 x 550 x 2400	870 x 550 x 2400
Descrizione				Casework as Specified in 12 35 50	Casework as Specified in 12 35 50
Descrizione assieme				Fixed Casework	Fixed Casework
Altezza			2,40	2,40	2,40
Depth Limit					
Larghezza			0,87	0,87	0,87
Profondità			0,55	0,55	0,55
Certification					
Codice assieme					E2010200
Construction Details					http://www.specritedesigns.com/specialty_cabinets.aspx
Manufacturer Add	ress				1054 Central Industrial Dr., St. Louis, MO 63110
Manufacturer Fax					314-771-4597
Manufacturer Pho	ne				
Manufacturer Pho	ne - Toll Free				877-249-6864
Manufacturer Wel	osite				http://www.specritedesigns.com/
MasterFormat Sec					
MasterFormat Sec					
Conteggio		1	1	1	1
Weight		_	_	_	
Weight Units					
Width Limit					
Wood Thickness					
Model Code Depth					
Model Code Width					
Overall Depth					
Overall Height					
Overall Width					
Shelf Elevation					
Livello		0 - Piano Terra	0 - Piano Terra	0 - Piano Terra	0 - Piano Terra
Copyright					2010, ARCAT, Inc.
Door Material	1				Spec-Rite Body Color - Light Beige
					Robert S. Weygant. CSI, CDT, SCIP
	(Years)				0
					Casework_Spec-Rite-TallCabinet_TB-SolidDoubleDoor
					Casework_Spec-Rite-TallCabinet_TB-SolidDoubleDoor: 870 x 550 x 2400
					Stato di Progetto
	e				Nessuno
					Spec-Rite Body Color - Light Beige
	D				http://www.arcat.com/green/clients/leed_data_43944.html
					ARCAT - Steel, Stainless - 28 Ga
dule (Months)					0
					12 35 50
					23.40.35.11.11
					00.01
					http://www.arcat.com/arcatcos/cos43/arc43944.html
					http://www.arcat.com/bim/bim_info.pl?fn=Spec-Rite
					nttp.// www.arcat.com/bin/bini_mro.pr:mr-spec-rate
	I		I .	1	

LOD 400

http://www.specritedesigns.com/local_rep.aspx http://www.arcat.com/sdspecs/htm/12350you.htm

http://www.specritedesigns.com/

Cartongesso PC.02

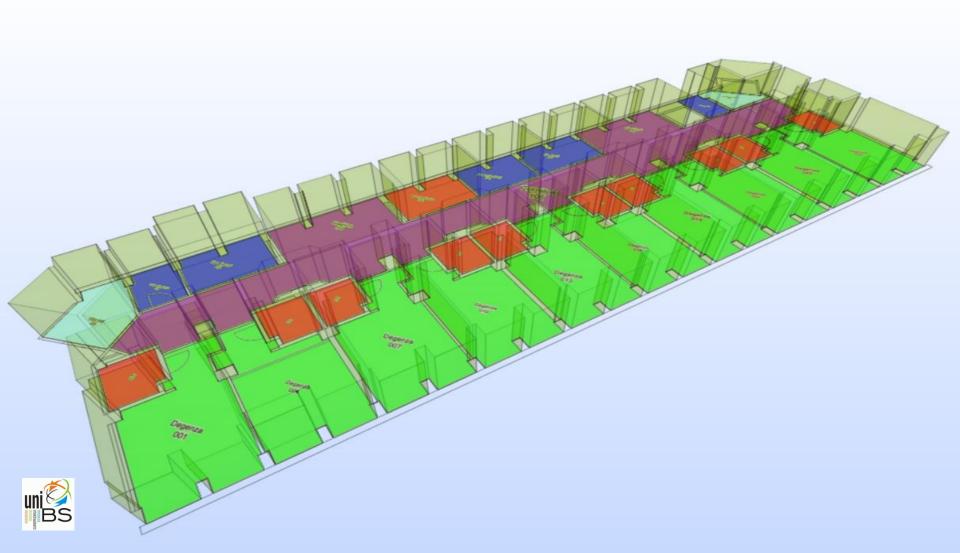


CARTONGESSO PC.02	LOD 100	LOD 200	LOD 300	LOD 400
Produttore				
Tipo		PC.02	PC.02	PC.02
Descrizione			Plasterboard Gypsum Cellular Paperboard Core Plasterboard Gypsum	Plasterboard Gypsum Cellular Paperboard Core Plasterboard Gypsum
Famiglia	Muro di base	Muro di base	Muro di base	Muro di base
Famiglia e tipo			Muro di base: PC.02	Muro di base: PC.02
Area				16.59 m ²
Larghezza		0,13	0,13	0,13
Volume		2.07 m ³	2.07 m³	2.07 m ³
Lunghezza		5,30	5,30	5,30
Assorbimento				0,10
Coefficiente di scambio termico (U)				0.5040 W/(m ² ·K)
Conteggio	2	2	2	2
Costo				12.00
Fase di creazione				Stato di Progetto
Fase di demolizione				Nessuno
Forma montante				С
Funzione				Interno
<u>182 %</u>				http://www.nationalbimlibrary.com
				12/06/2029
				5.22 kJ/K
				Acciaio, Zincato
				Acciaio, Zincato
				12.00
				U
				1.9842 (m²-K)/W
				1

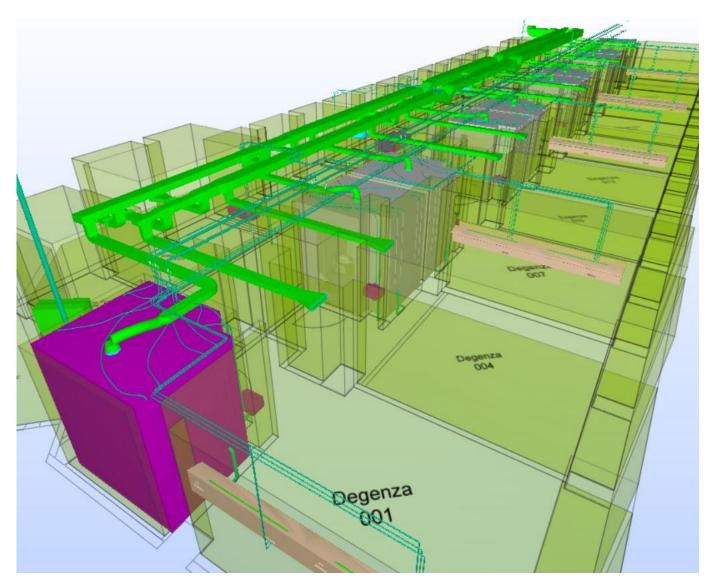
a pavimento e soffitto NBSRef 25-05-65:Layers 0:0

Non portante 01.00

SPACE PROGRAMMING



MODEL CHECKING





MODEL CHECKING





