CM1910 - Who Needs a BIM Manager?

Paul Morrison
Technical Director
PROCAD Consultants

Twitter: **@procad_bim**

Eric Bernier
President
Zenit Consultants

Welcome to the course

This is a 90 minute lecture

Please put cellphones and mobile devices to silent mode

Please save questions for the end.

Please fill out your surveys.

DISCLAIMER

This all comes from personal and professional experience

This is a BIM managment course.
our concepts are based on REVIT workflows

BIM ≠ REVIT

No smoke and mirrors

Different companies may require different strategies

Different projects and deliverables may require different strategies

QUESTIONS

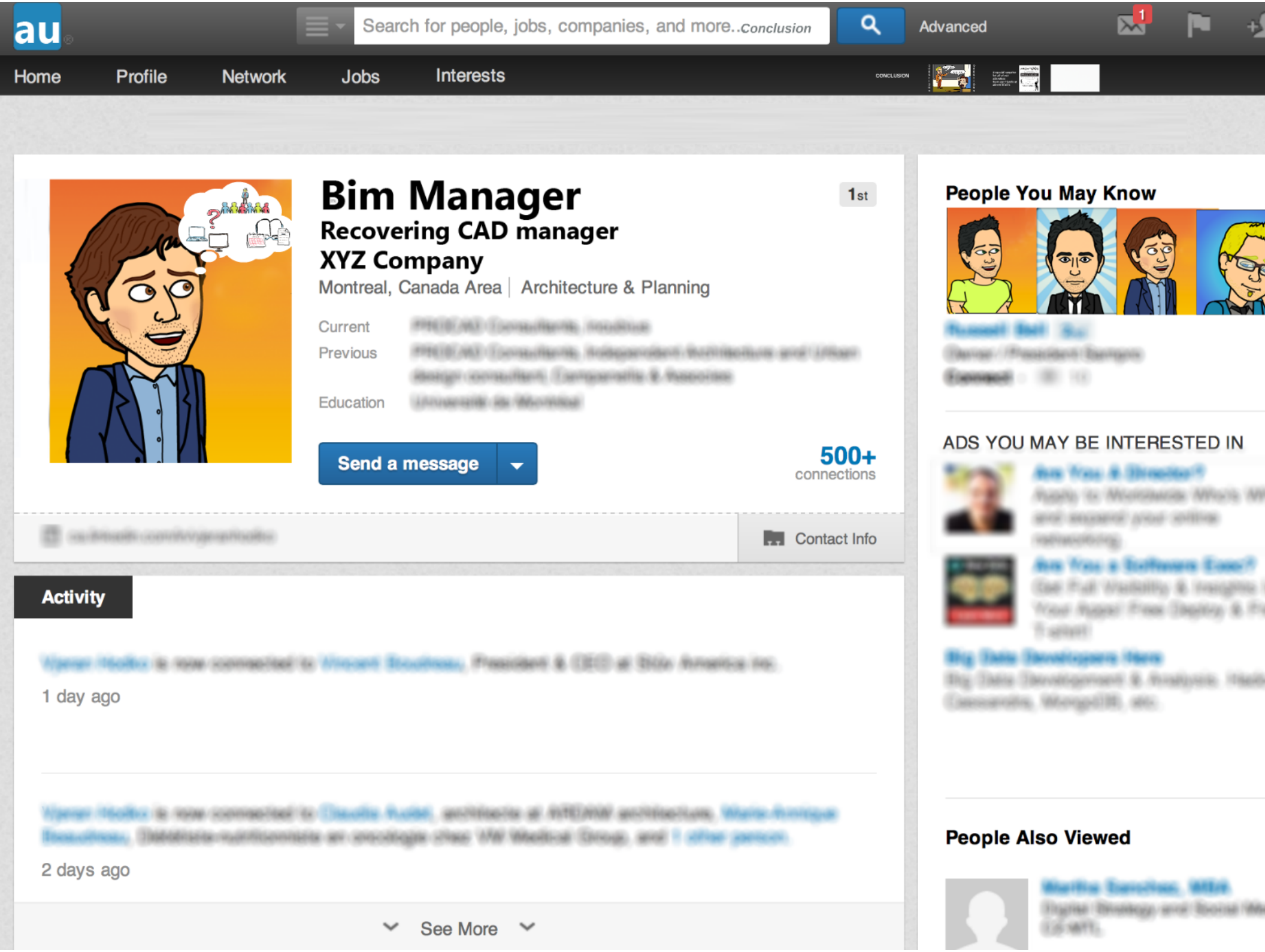
How many of you use Revit now? Starting soon?

What version did you start with Revit?

Who here is currently a BIM manager? Volunteer? Volun-told?

How many of you have a BIM protocol? BEP? BDP?

What field do you represent? Arch? MEP? Manufacturing? Structure?


au
Search for people, jobs, companies, and more..Conclusion
Advanced
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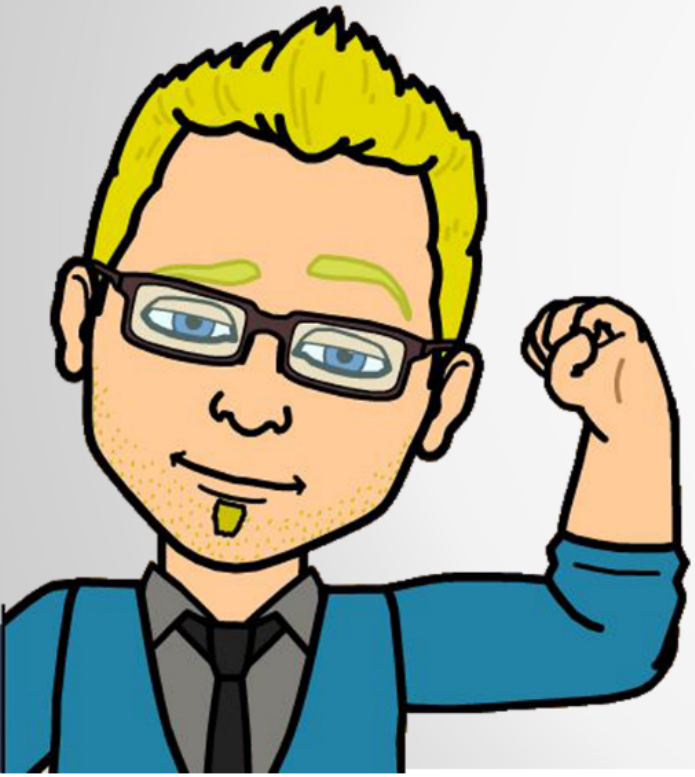
Network
Jobs
Interests
Bim Manager
Recovering CAD manager
XYZ Company
Montreal, Canada Area | Architecture & Planning
1st
Current
Previous
Education
Send a message
500+
connections
Contact Info
Activity
1 day ago
2 days ago
See More
People You May Know
ADS YOU MAY BE INTERESTED IN
People Also Viewed

Paul Morrison ACE

Technical Director and
ATC manager
PROCAD CONSULTANTS



Paul Morrison ACI, ACE
ATC Manager
Technical and training Director at PROCAD Consultants
Montreal, Canada

- Architectural Technician
- 8+ years of experience in the AEC industry.
- 6 years of BIM managment experience
- been an Autodesk Certified Instructor (ACI) for almost 3 years
  Autodesk Certified Evaluator (ACE)
- Autodesk Autocad Certified Professional
- Autodesk Revit Architecture Certified Professional
- attended Autodesk University since 2009
- personally implemented over 70 offices from CAD to Autodesk Revit in a Bilingual environment.

Responsible for
Consultation, Training, Technical support, and BIM Integration services.
Implementation, Project setup, On site Coaching, and BIM management

Hobbies
Automotive and Motorcycle enthusiast, photography, Video Editing, Guitar

Eric Bernier ACI

President, BIM Strategist

Zenit Consultants

Eric Bernier ACI
President Zenit Consultants
BIM Strategist
Montreal, Canada

- Architectural Technologist since 1997
- Project manager at McGill University
- Has Implemented and work with Revit in many Architectural and Engineering firms in Québec
- Revit user since 2002 and Official Autodesk Trainer since 2007
- Revit Implementation expert (2008 in Waltham, MA)
- Revit Instructor for L'Université du Québec à Montréal (UQAM)
- Autodesk Certified Instructor (2012)
- BIM User-group Co-President (250 members)
- BIM Manager of a 1.4M sqft Hospital project
- President of Zenit Consultants, 4 employees (BIM managers)

Responsible for
Consultation, Training, Technical support, and BIM Integration services.
Implementation, Project setup, On site Coaching, and BIM management

Hobbies
Harley enthusiast, Owner of Martial Arts School, B Belt Jiujitsu, Kobudo

Course Description

This BIM management class is designed for CAD and BIM managers, project managers, and other technical and management professionals who want to obtain the relevant knowledge and skills that are required to set up a company BIM deployment plan and BIM project execution plan and protocol. We explore everything from making the transition from CAD to BIM to defining roles and structuring teams. We also touch on common issues that arise in all BIM projects and show how crucial it is to have someone there to take care of them.

OBJECTIVES

- Explain the true role of a BIM manager
- Describe BIM processes and explain the benefits
- Describe issues associated with starting a BIM project
- Use knowledge and skills to create a company BIM deployment plan and BIM project execution plan

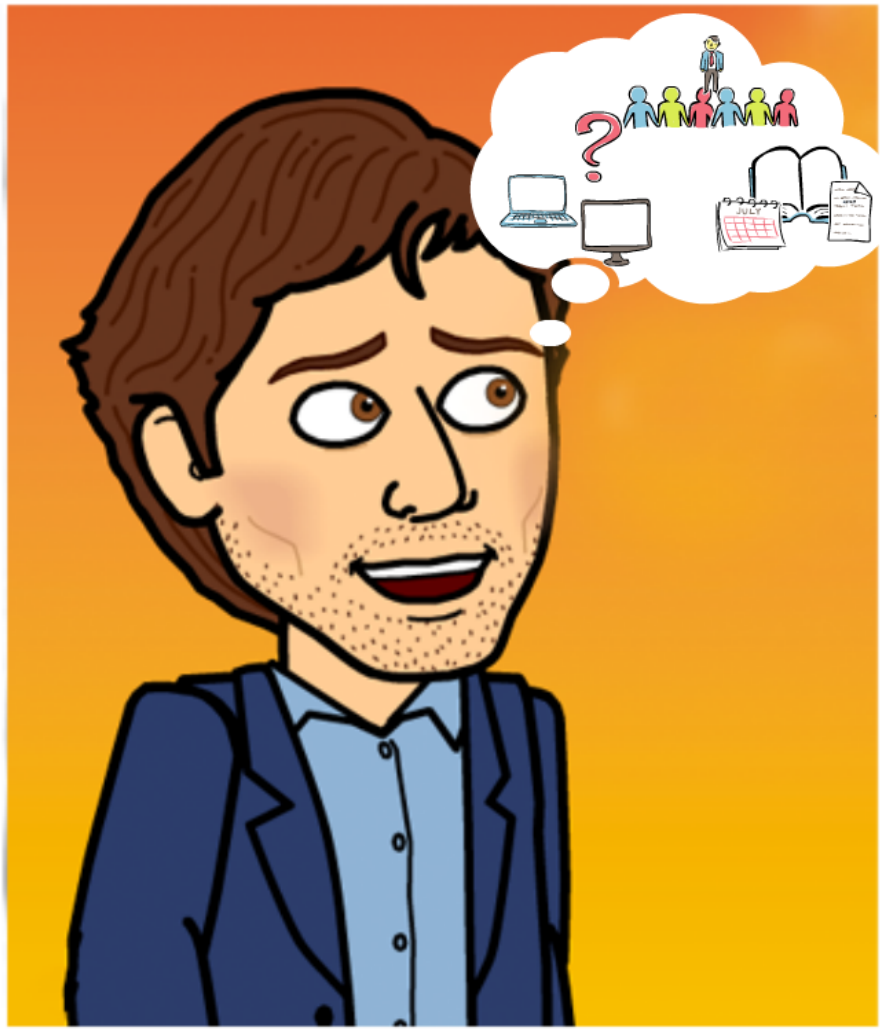
The Audience level of expertise for this lecture is intermediate, which by definition means

[1]in·ter·me·di·ate *adjective* \ˌin-tər-ˈmē-dē-ət\

: occurring in the middle of a process or series

: relating to or having the knowledge or skill of someone who is more advanced than a beginner but not yet an expert

http://www.merriam-webster.com/dictionary/intermediate



Bim Manager

Recovering CAD manager

XYZ Company

Montreal, Canada Area | Architecture

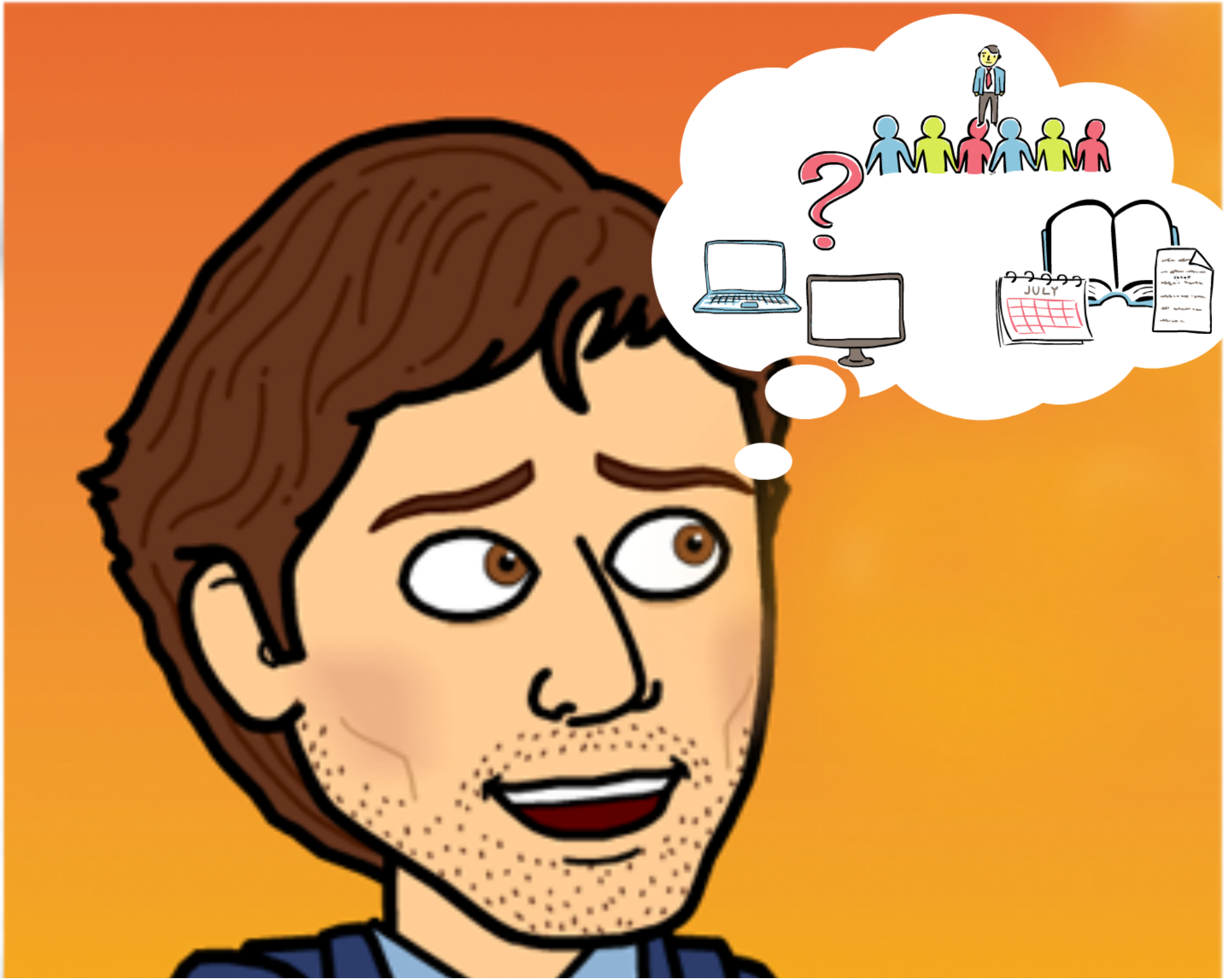
Current [redacted]

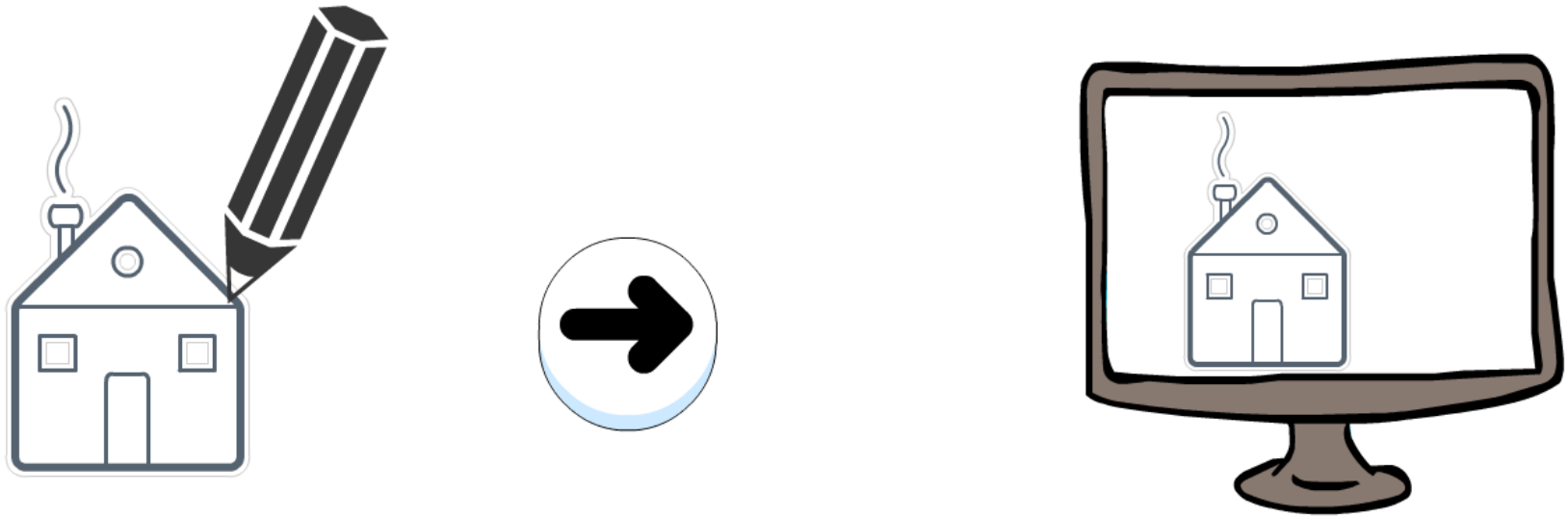
Previous [redacted]

[redacted]

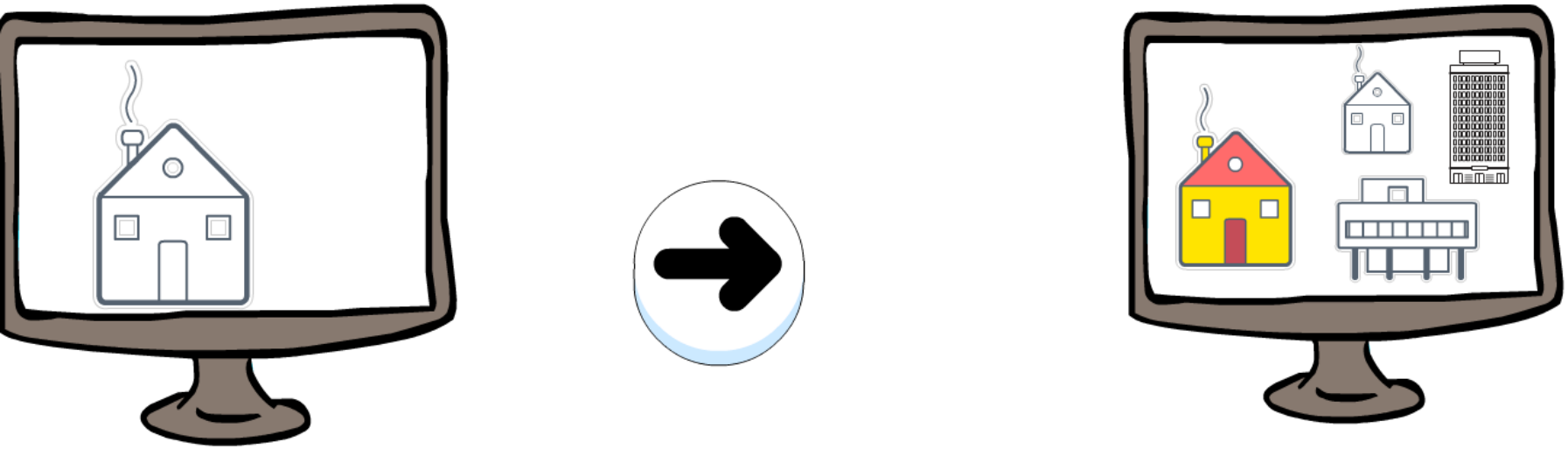
Education [redacted]

Send a message


JULY



CAD transition



BIM transition

Explaining the True Role of a BIM Manager

Common responsibilities overlooked or ignored when Implementing BIM

- Management and mastery of BIM tools
- Plan and Oversee product version migrations of BIM tools
- Evaluate New BIM Technology and software for future integration considerations
- Decisions concerning BIM technologies and IT infrastructure.
- Develop, Implement, apply and document a set of BIM standards
- Creation, configuration, and maintenance of company libraries
- Plotter support
- Support for electronic file creation such as PDF, DWF, IFC, DWG, DXF, FBX, STL
- Setting up the project structure.
- Data exchange formats
- Create and manage a BIM committee
- Document workflows
- Assigning Responsibilities/limits
- Evaluate modeling Strategies for Family, project, and conceptual levels
- Monitor personnel competence
- Communicate with Autodesk and Resellers
- Internal and continuing training
- Orientation for new employees
- Research and development
- Coordination and clash detection
- Networking and participation in user groups

BIM Process and benefits

“The first rule of any technology used in a business is that automation applied to an efficient operation will magnify the efficiency. The second is that automation applied to an inefficient operation will magnify the inefficiency.”

…Bill Gates

Autodesk Revit = Automation

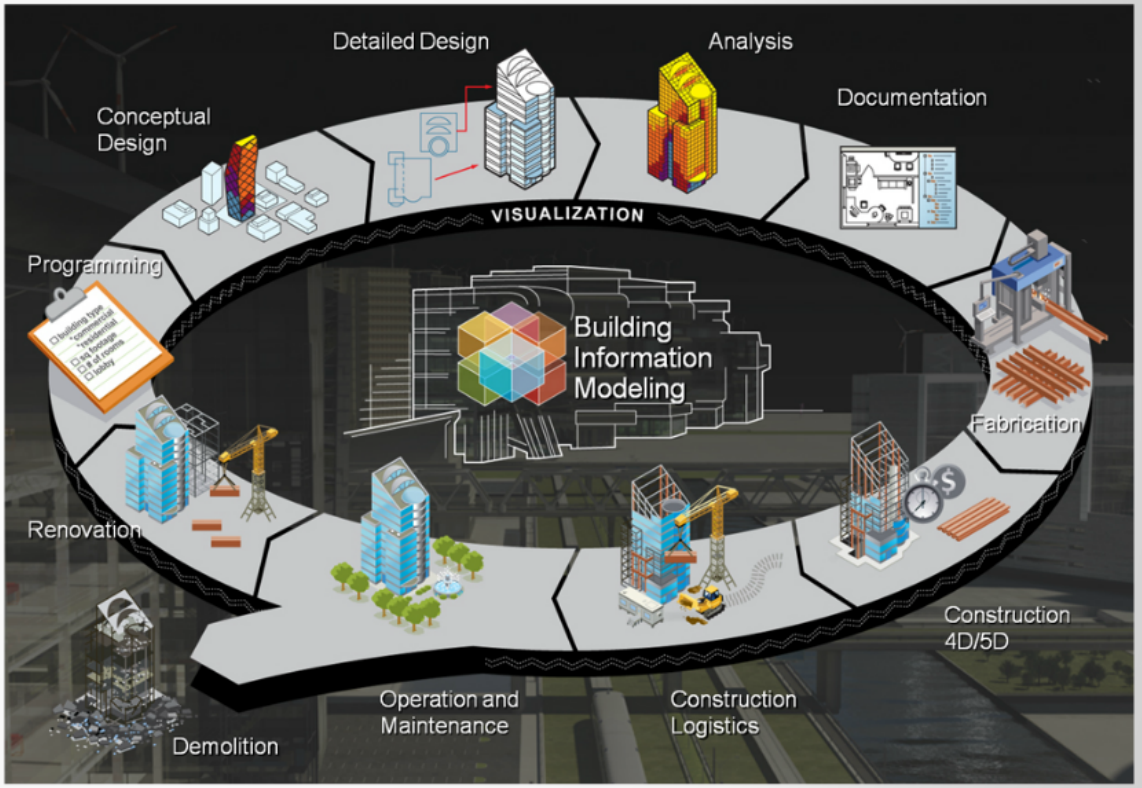
How it should work.....

3D
- Plans, sections, elevations, Modeling, and visualization

4D Time
- Phases
- Schedules
- Life cycle up to demolition

5D Cost

What actually gets done?



How it should work..... What actually gets done?

STEPS	SHOULD	ACTUALLY
Programming	• Kick off • BEP	• No meetings • No BEP
Conceptual	• Vasari • Sketch up	• Revit • Fast track
Detailed Design	• Revit	• Revit
Analysis	• Studies, Leed	• Analysis?
Documentation	• keynotes, DB	• Text, CAD
Fabrication	• Manufacturer	• Fabrication?

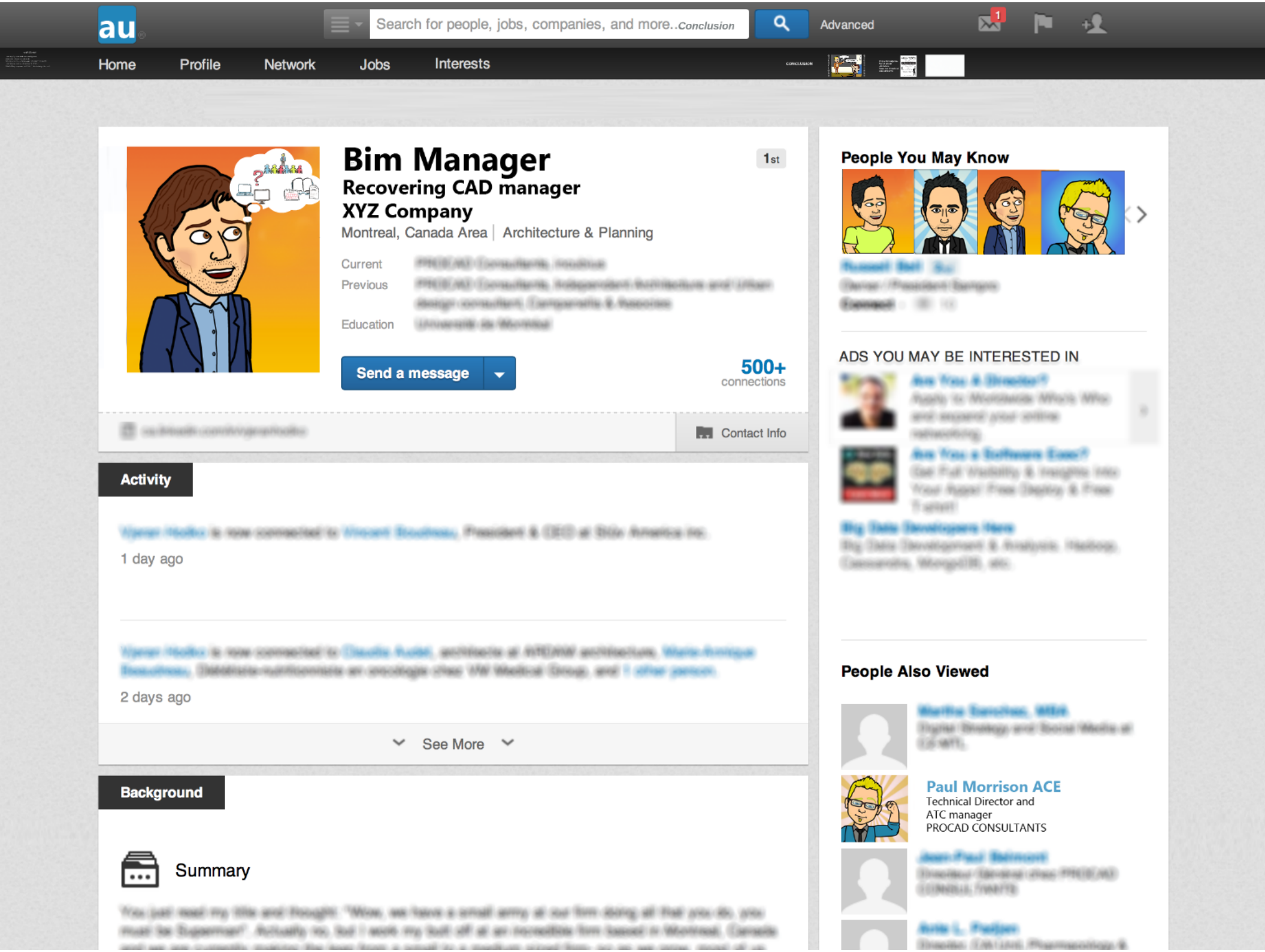
How it should work..... **What actually gets done?**

STEPS	SHOULD	ACTUALLY
4D/5D	• Navisworks	• Addendums
Logistics	• MS project	• Project manager
Maintenance	• Handover	• CAD
Renovation	• Continuation	• Business as usual

Where BIM is not a good fit?

- Fast track projects

Prefabrication : Difficult or Impossible
Analysis is not usually possible
Clash detection is limited


au
Search for people, jobs, companies, and more..Conclusion
Advanced
Home
Profile
Network
Jobs
Interests
Bim Manager
Recovering CAD manager
XYZ Company
Montreal, Canada Area | Architecture & Planning
1st
Current
Previous
Education
Send a message
500+
connections
Contact Info
Activity
1 day ago
2 days ago
See More
Background
Summary
People You May Know
ADS YOU MAY BE INTERESTED IN
People Also Viewed
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Most endorsed for...

18 Issues

18 Associated

15 with starting

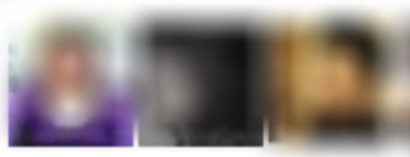
13 a

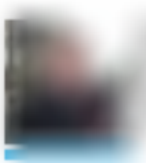
11 BIM project

9

9

6





Describe issues associated with starting a BIM project.

- ✔ Owners on board
- ✔ Training

Describe issues associated with starting a BIM project.

Team selection

- *Project Manager*
- *BIM Director*
- *BIM Manager*
- *BIM champion*
- *Content creator*
- *Room coordinator*
- *Output creator*
- *General Users*

Describe issues associated with starting a BIM project.

Resisting change

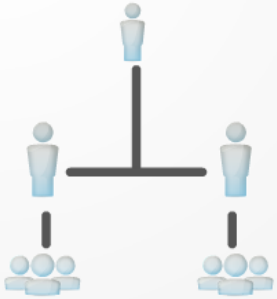
Describe issues associated with starting a BIM project.

IT considerations

- *User stations*
- *Network infrastructure*
- *Servers*
- *Support*

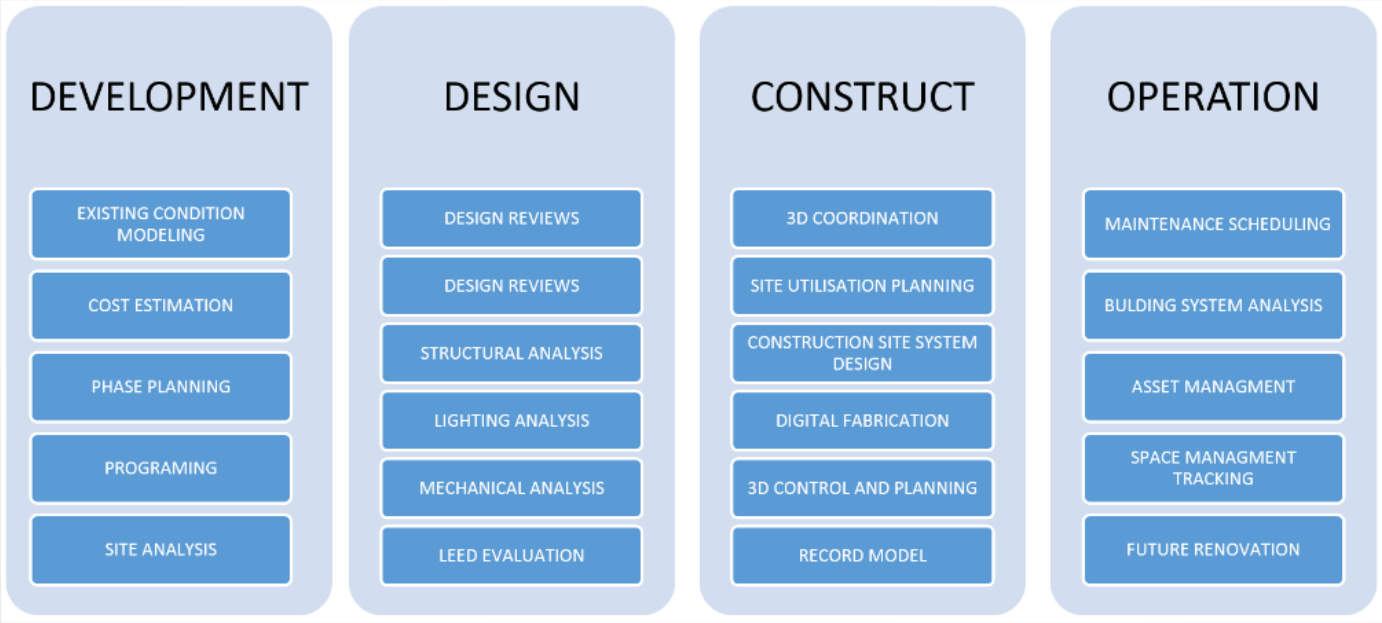
Describe issues associated with starting a BIM project.

Implementation



Describe issues associated with starting a BIM project.

✓ Uses



Describe issues associated with starting a BIM project.

- ✓ ***Kickoff meeting***
- ✓ ***BIM Committee***

Describe issues associated with starting a BIM project.

Leap of faith

THE TRAINING *All members should rely on the Best practices and skills learned in training.*

THE TOOLS *You have that great template and amazing families ready.*

THE PEOPLE *you have chosen the dream team, everyone has their place to shine*

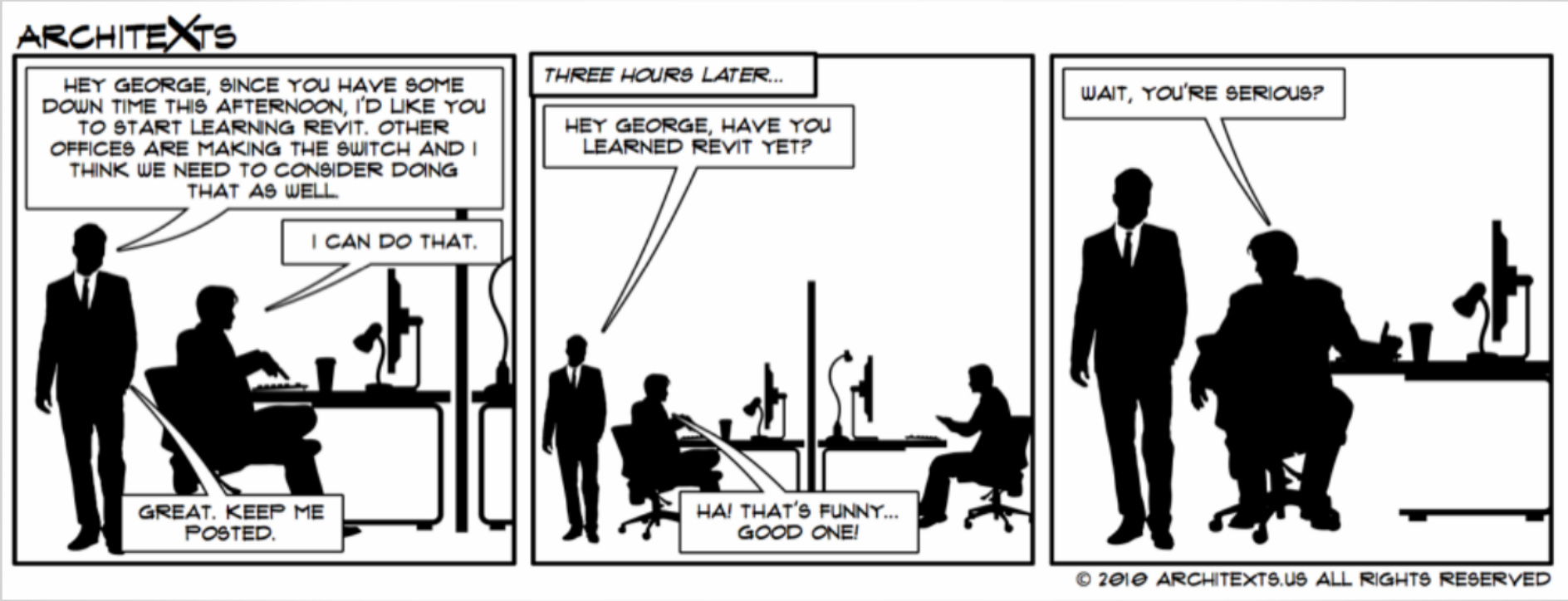
THE PLAN*. Your BEP, and BDP are the road map. Destination success And in the odd occasion you hit a detour don't be afraid to contact and Leverage support from resellers and consultants if required.*

BIM Deployment and Execution plan

“The general who wins the battle makes many calculations in his temple before the battle is fought. The general who loses makes but few calculations beforehand”

... Sun Tzu

BIM Deployment and Execution plan



What is a BIM Deployment plan?

Steps:

- Find a project.
- Size of the army
- Choose the right people
- Existing CAD Standards to Revit Standards
- Training
- Revit standard manual

Revit Standard Manual :

- Organisation chart, Flow charts…
- Naming conventions
- Texts, tags, dimensions, titleblock, legends, schedules standards
- Workset, Phasing and Design options conventions
- Door and Window types
- Keynoting, Shared parameters, materials…

What is a BIM Execution plan?

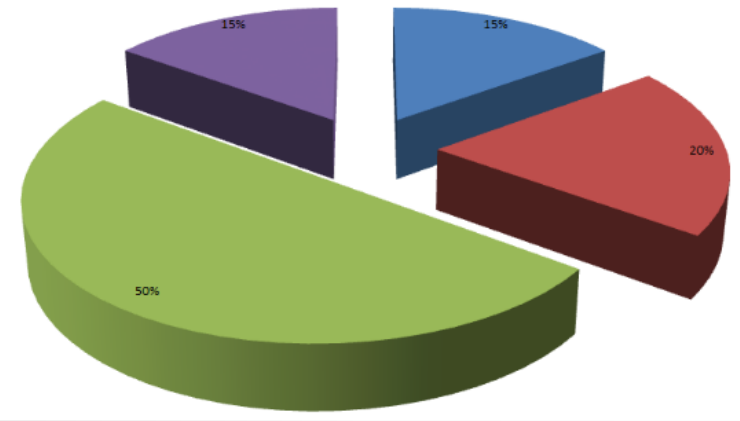
Definition :

The BEP is a detailed plan that allows us to define the way that the project will be executed and controlled having BIM in mind. It establishes modeling standards, common strategies and leads us to achieve our BIM goals defined by all professionals in the project.

What is a BIM Execution plan?

Project specific; this is a document containing strategies, standards and collaboration solutions for every consultants using BIM on the project.

4 Different sections



Source : Contech BIM Projects 2013,Qc

- What? : Project objectives and Goals
- Who? : The key players on the project
- How? : Strategies
- Which Tools? : Computers and Softwares

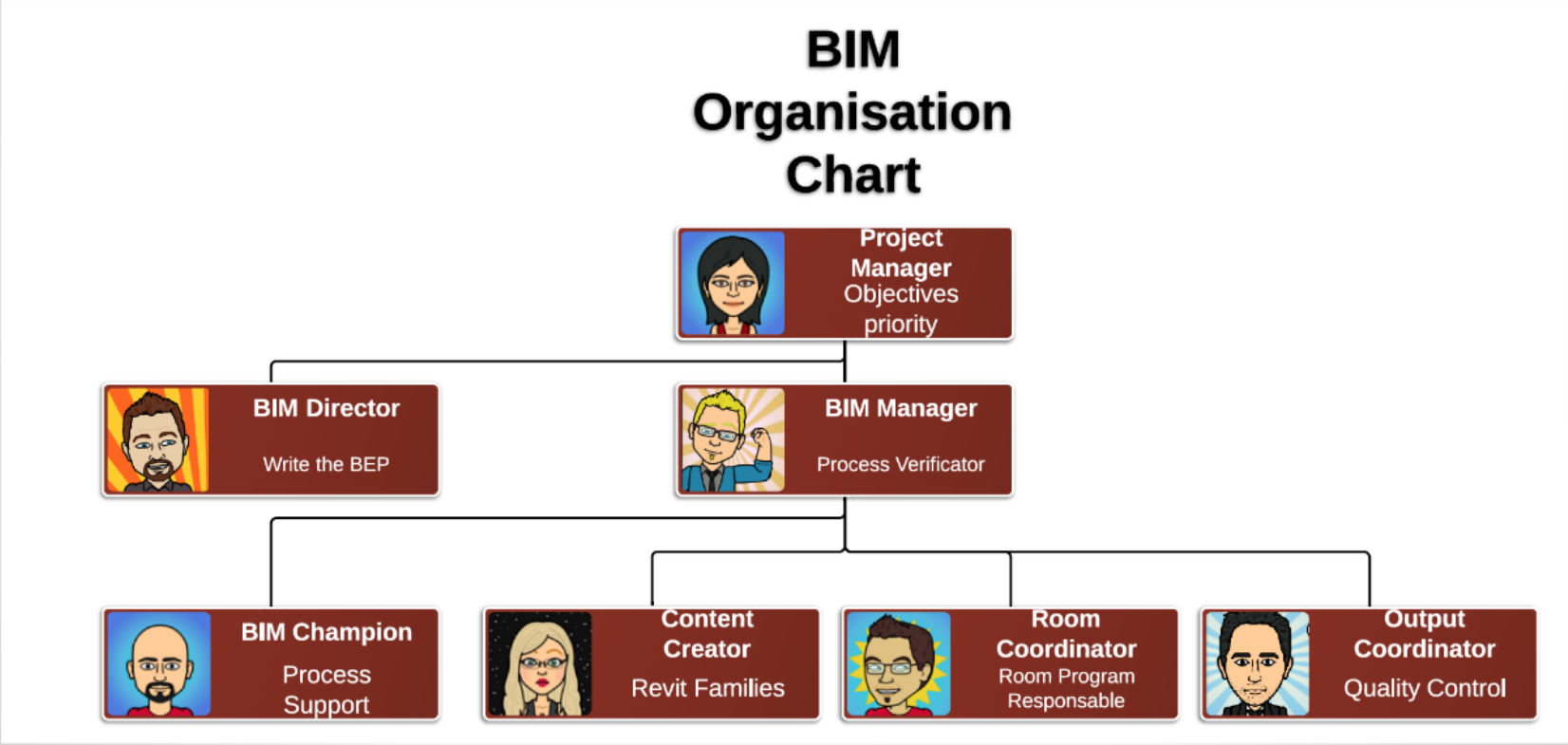
What ?

- Project Description
- BIM Objectives
- Deliverables
- Schedule

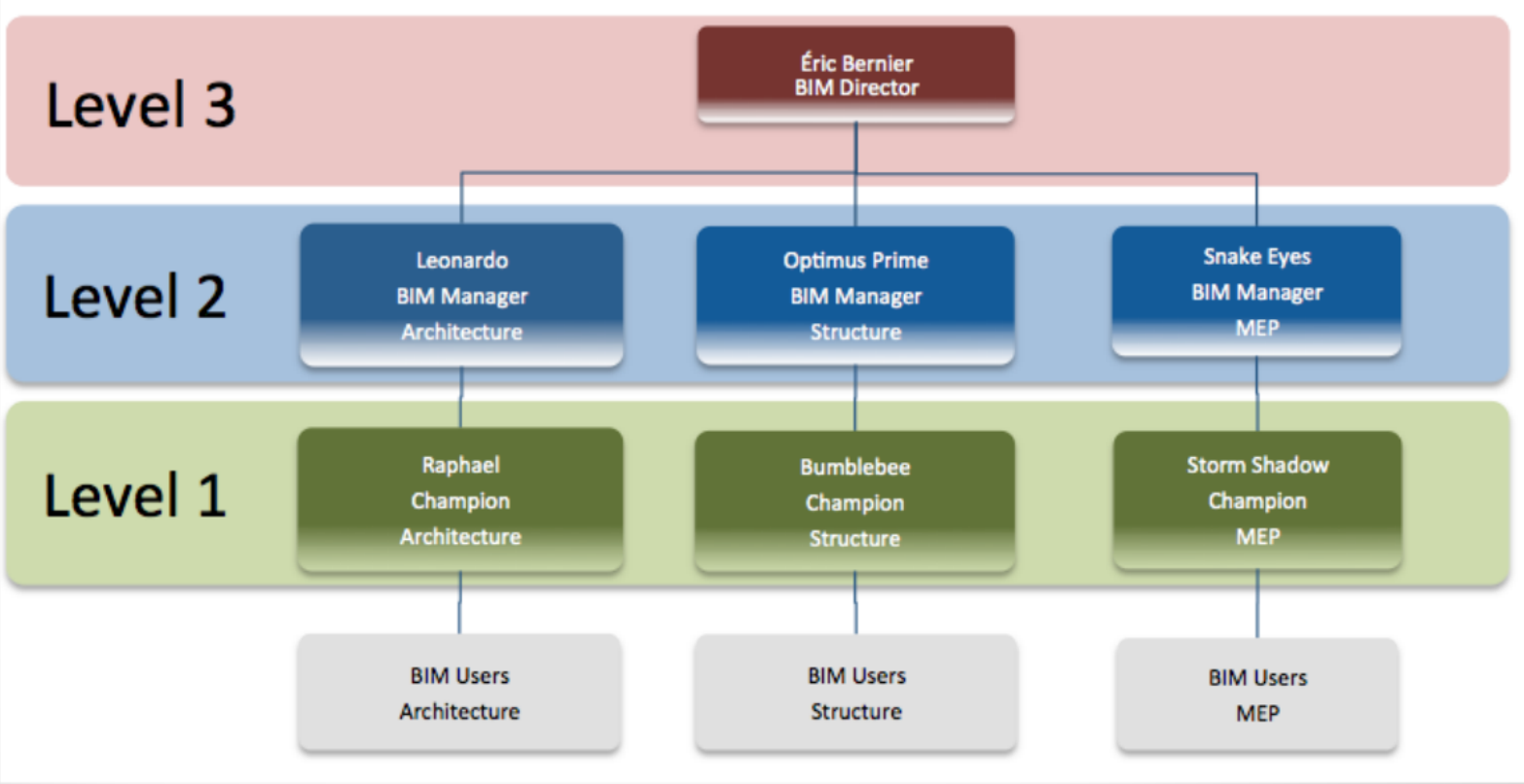
Phase	Objectives	ARC	STR	MEC	ELE	PLB
3D **Modeling**	Use Revit to generate all 2d delivrables.	☒	☒	☒	☒	☒
	Use Revit to produce all automatic material schedules.	☐	☐	☐	☐	☐
	Incorporate 3D views in the 2D delivrables.	☒	☒	☒	☒	☒
3D **Annotation**	Use Design Review for internal coordination between Engineers and Architects.	☐	☐	☐	☐	☐
	Use DWF as a unique format.	☐	☐	☐	☐	☐
	Use Revit for clash detection for same discipline.	☒	☒	☒	☒	☒
	Use Revit for clash detection between discipline.	☒	☒	☒	☒	☒
4D **Sequences**	Phases are linked to calendar and visualise sequence in Navisworks.	☐	☐	☐	☐	☐
	Use Phases simulation to analyse different options.	☐	☐	☐	☐	☐
5D **Cost**	Put a cost on all construction elements in Revit to generate cost estimations.	☐	☐	☐	☐	☐
6D **Maintenance**	Use Revit models to support operations and maintenance activities.	☐	☐	☐	☐	☐

Who?

Roles and responsabilities.
BIM Organisation Chart



Who?
Support levels



How?

Modeling Strategies

- Where to split the model
- Linking Strategies
- Data organisation
- Access rights
- Files
- Parameters
- Best Practice

How?

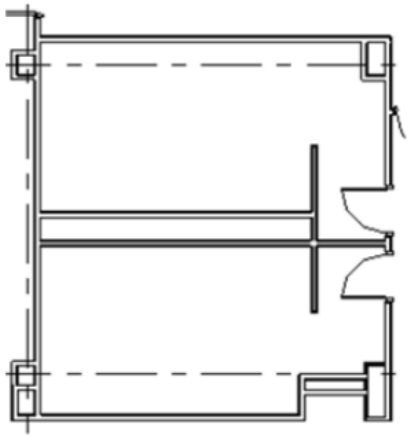
Collaboration Strategies

- Naming conventions
- Worksets
- Grids , Levels and Grids
- Sheet numbering
- BIM Meeting Schedules

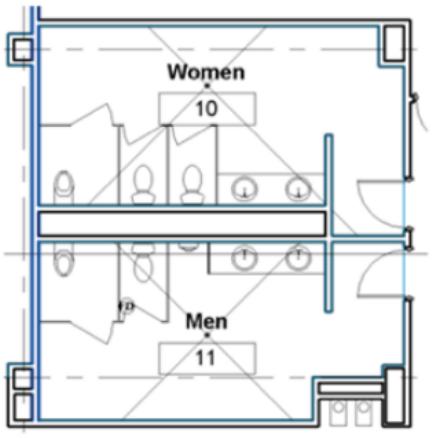
How?

Visualization Strategies

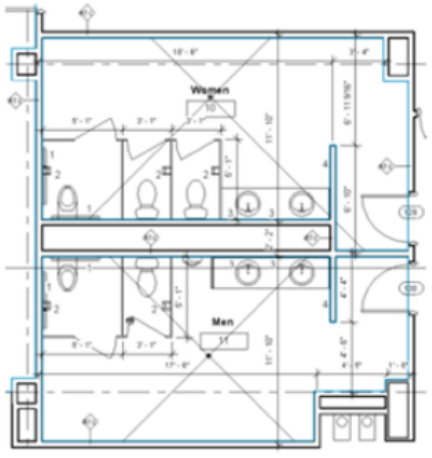
- View Templates
- Title blocks
- LOD



Level 100 Floor Plan



Level 200 Floor Plan



Level 300 Floor Plan

Which tools?

- Hardware
- RAM
- CPU Speed
- Cores
- Softwares
- Plugins
- Enhancements
- Network

Model / Processor	Dell Precision T7500 Six Core Intel Xeon X5690 3.46GHz,12M L3,6.4GT/s
OS	Windows 8 Professional w/64-Bit media French
RAM	48Gb 1333MHz DDR3 SDRAM ECC 6X8GB
Discs	256GB Solid State Drive (SSD)
DVD	16XDVD/Rom w/ CyberLink PowerDVD
Video Card	NVIDIA Quadro 4000 2Gb w/ Dual Monitor

Which tools?

Revit Resources Matrix

Revit Ressources Schedule **Updated : December 3rd**

TEAMS	Bold : BIM Comity rep	Position	Projet	Basic	Families: Basic	Families: Advanced	Phases	Design Options	Workset	Details	Massing	Roof and Structure	Site	Schedules	Version
	Expert / Acquired / R Refresh Required / PM Project Manager course / To Acquire														
BLUE	**Éric Bernier**	BIM Project Manager	Hospital, Shool												2014
BLUE	**Leonardo DaVinci**	Architect, Artist, Engineer,	Hospital												2014
BLUE	James Anderson	Architect	Hospital	R									R		2014
BLUE	Arthur Waite	Arch Tech	Hospital												2014
BLUE	Rudy Kipling	Arch Tech	Hospital					R					R	R	2014
BLUE	Georges Marshal	Arch Tech	Hospital												2014
BLUE	James Wolfe	Architect	Hospital	R			R		R				R		2014
BLUE	Elizabeth Conway	Arch Tech	Hospital		R				R						2014
BLUE	Dannielle Dewall	Arch Tech	Hospital	R	R				R					R	2014
BLUE	Kiana Bernier	Interior Designer	Hospital												2014
BLUE	Kim Chan	Architect	Hospital												2014
BLUE	Louis Seagram	Architect	Hospital						R						2014
GREEN	**Michelangelo**	Architect, Artist, Engineer,	School												2014
GREEN	**Donnatello**	Architect	School	PM											2014
GREEN	Michele Ruthledge	Project Manager	School	PM											2014
GREEN	Cynthia Juarez	Tech en aménagement	School												2014
GREEN	Michael Mann	Tech en aménagement	Residential												2014
GREEN	April O'Neil	Tech en aménagement	Residential	R											2014
GREEN	**Raphael**	Architect	Residential												2014
DREAM	**Paul Morrisson**	BIM Project Manager	aboratory, Residential												2014
DREAM	Philip Coulson	Tech. Arch.	Laboratory												2014
DREAM	Melinda May	Tech. Arch. Senior	Laboratory	R											2014
DREAM	**Grant Ward**	Tech. Arch.	Laboratory												2014
DREAM	Leo Fitz	Tech. Arch.	Laboratory					R							2014
DREAM	Jemma Simmons	Tech Arch	Laboratory	R											2014
DREAM	Skye Bennet	Tech Arch	Laboratory												2014
DREAM	Maria Hill	Tech Telecom	Laboratory								R				2014
DREAM	Nick Fury	Office Linebacker	Laboratory												2014

Model review matrix

MODEL MANA

DECEME

			MODEL SIZE				QUALITY CONTROL					
			Current size		Size after cleaning		Warnings		Elements		Purge	
PM	Project	Model	Size (MB)	Comparison previous date	Size (MB)	Comparison after cleaning	Warnings	Comparison previous date	Number of Elements	Comparison previous date	Number of Elements to purge	Comparison previous date
Eric Bernier	Hospital	01234_Arch_Block_A	215		185	14%	413		28345		470	
		01234_Arch_Block_B	321		281	12%	401		24324		645	
		01234_Arch_Shell	75		69	8%	93		15666		151	
		01234_Site	10		10	0%	5		655		12	
	School	10154 School_Shell	60		58	3%	28		16767		200	
		10154 School_Interior	175		155	11%	46		28282		315	
		10154 School_Site	15		14	7%	46		545		15	
Paul Morrison	Laboratory	04321_Arch_RD	165		155	6%	413		33434		355	
		04321_Arch_Genome	185		135	27%	401		31876		253	
		04321_Structure	95		92		401		28787		122	
		01234_Arch_Shell	78		69	12%	93		19876		57	
		01234_Site	12		10	17%	5		456		18	
	10266	10154 House_Shell	79		62	22%	28		9876		318	
		10154 House_Interior	82		80	2%	46		22876		333	
		10154 House_Site	17		15	12%	46		323		8	

Model issue matrix

No	Date	Model	Subject	Category	Priority	Severity	Question or problem	By	Answer or solution
Ex	2013-12-03	Shell	Ex:Walls, Rooms, Materials	Question or Problem	High, Middle, Low	Critical, Major, Minor	Ask a question or expose a problem here	Querrant	Answer here
AU-001	2013-12-03	Interior	Rooms	Problem	High	Major	Room # NCC-1701E is missing in my schedule even if I can see it on my plan	William R.	Possible reasons why it is missing : Have you checked the F

View templates & filters

View Templates Names	Number of view using it	Wall Accessories	Elevator	Faraday partitions	Working - Section	Building Section	Sanitary	Elect & Telecom	Temporary for Coordination	Elevation - Exterior	Elecation - Interior	Elevation - all but Corridor	Faraday Windows	Wall protections	Radiant heating panels	Electrical panels	Ceiling height - 2440mm	Plumbing	Gray hidden lines	Electrical outlets	Wall guards	Fire protection 0H to 3H	Electrical symbols	Ventilation	TOTAL
Sections and Elevations																									
Section 1-100	16				■																■				2
Section 1-50	25			■	■																■				3
Sections - Stairs	13				■			■																■	3
Elevations - General	3																								0
Ceilings																									
Ceilings 1-50	135							■	■		■				■			■						■	6
Ceilings 1-100	135							■	■		■						■	■						■	6
Ceilings Coordination	16							■	■		■														3
PLANS																									
General 1-50	135																								0
General 1-100	135	■			■	■			■									■							5
Corrdination 1-100	135															■							■		2
F1_F2_F3	16				■			■								■									3
Zoom Bedrooms 1-50	16																								0
Zoom Conference 1-50	3			■	■	■	■			■	■	■	■			■			■		■			■	12
Plans Finishes 1-50	16				■											■			■						3
Plans Furniture 1-200_Stat_NivD	16				■											■					■				3
Plans Fire Protection	16				■											■					■	■			4
Plans STC	16															■									1
Working Plan - Bedrooms	3	■									■					■			■						4
Working Plan - Stairs	7													■		■									2
Working Plans - 1-50	9													■		■									2
Working Plan Fire Protection	9															■									1
ZZ_Worksets	9		■													■									2
TOTAL		2	1	2	9	2	1	5	4	1	5	1	1	2	1	12	1	3	3	0	5	1	1	4	67

How to get there?

- **BIM Kick-off meeting**
- Origin system (Origin to Origin or shared coordinates).
- Grids and levels
- LOD
- Worksets
- Architecture and plumbing issues
- Architecture and Electricity (for Caseworks and furniture)
- Columns
- Phases
- What have to be scheduled
- Costs?
- Revisions and Printing
- Clash detection and coordination
- And so on!

CONCLUSION

A special surprise for all of our attendees from our friends at ARCHITEXTS

ARCHITEXTS

The comics featured during today's presentation came from Architexts, a webcomic about architectural professionals.

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QUESTIONS

QUESTIONS

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