BIM IS NOT SOFTWARE

IN IT'S PLACE, WHERE SOFTWARE FITS IN THE FRAMEWORK

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- MYTH
- BIM IS NOT SOFTWARE
- THEN WHAT IS BIM?
- KEY TAKEAWAYS

KEY LEARNINGS

- THE DIFFERENCE BETWEEN BIM & SOFTWARE
- WHAT IS NEEDED TO IMPLEMENT BIM.
- HOW TO DETERMINE WHAT SOFTWARE CAN ASSIST WITH BIM.
- WHERE TO START WITH IMPLEMENTATION

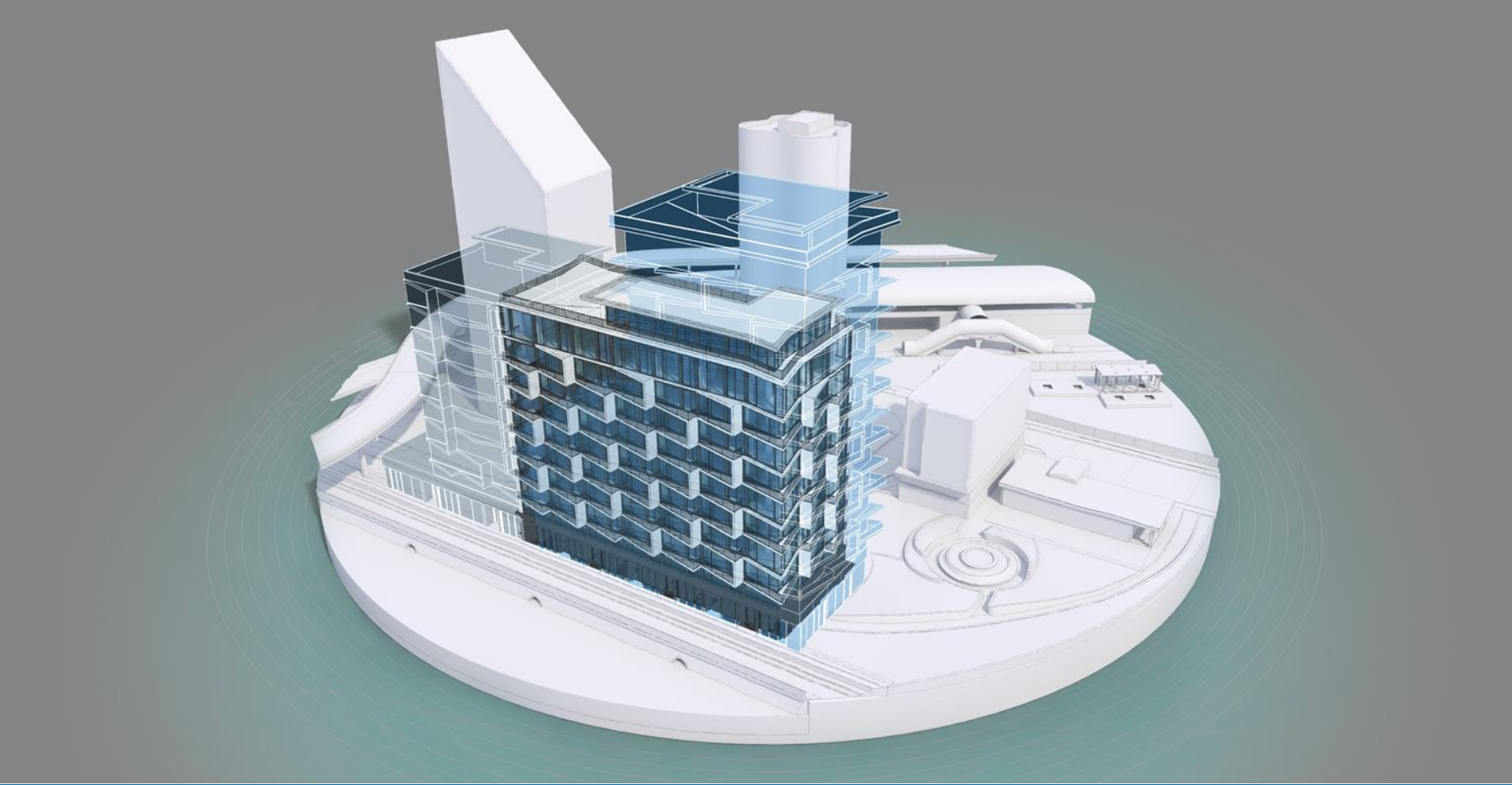
01

INTRODUCTION

Dispelling the myths and understanding the real differences

Myth:

"BIM is Software"



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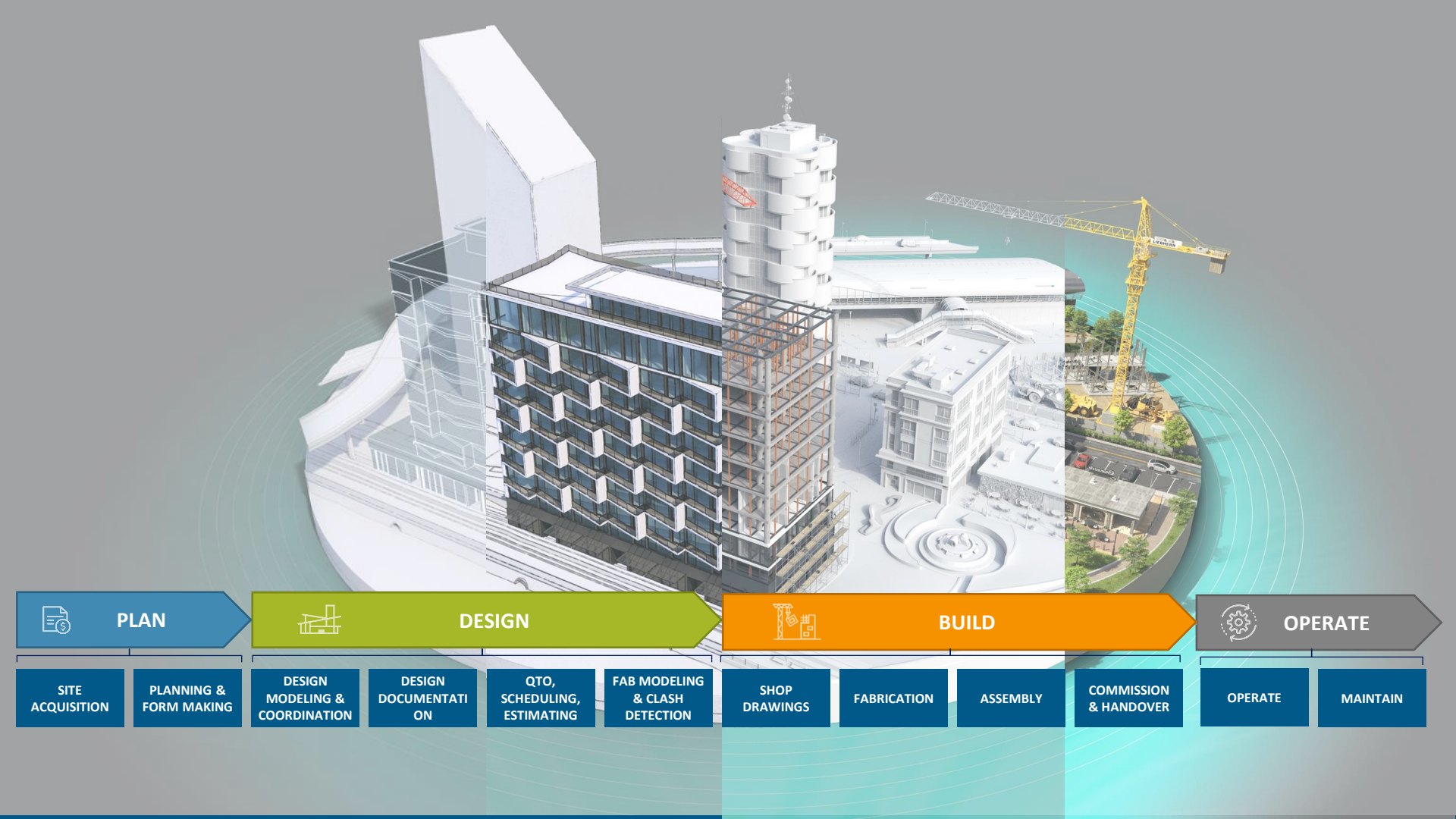
PIA PRETORIA INSTITUTE FOR ARCHITECTURE A REGION OF SAIA

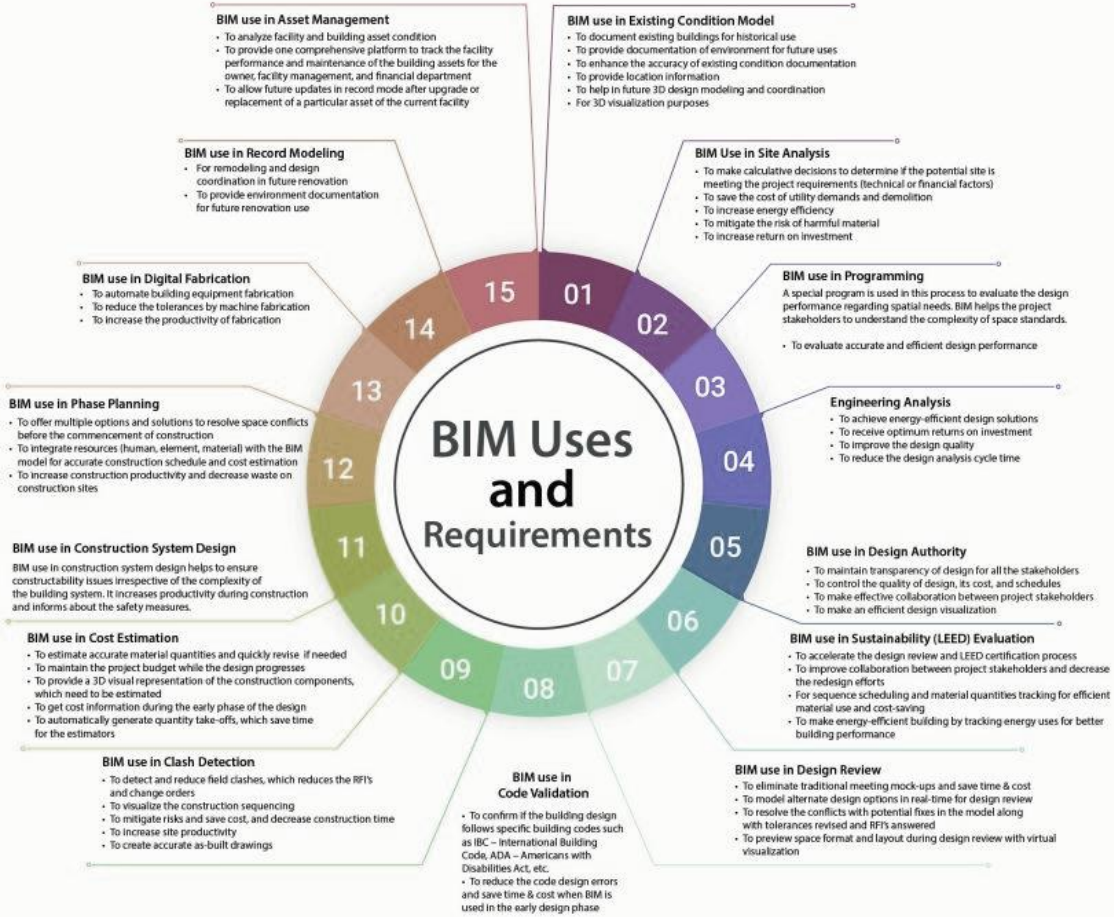
Myth:

"BIM is Software"

02

BIM ≠ SOFTWARE


PLAN
DESIGN
BUILD
OPERATE
SITE ACQUISITION
PLANNING & FORM MAKING
DESIGN MODELING & COORDINATION
DESIGN DOCUMENTATION
QTO, SCHEDULING, ESTIMATING
FAB MODELING & CLASH DETECTION
SHOP DRAWINGS
FABRICATION
ASSEMBLY
COMMISSION & HANDOVER
OPERATE
MAINTAIN


BIM use in Asset Management
• To analyze facility and building asset condition
• To provide one comprehensive platform to track the facility performance and maintenance of the building assets for the owner, facility management, and financial department
• To allow future updates in record mode after upgrade or replacement of a particular asset of the current facility
BIM use in Existing Condition Model
• To document existing buildings for historical use
• To provide documentation of environment for future uses
• To enhance the accuracy of existing condition documentation
• To provide location information
• To help in future 3D design modeling and coordination
• For 3D visualization purposes
BIM use in Record Modeling
• For remodeling and design coordination in future renovation
• To provide environment documentation for future renovation use
BIM Use in Site Analysis
• To make calculative decisions to determine if the potential site is meeting the project requirements (technical or financial factors)
• To save the cost of utility demands and demolition
• To increase energy efficiency
• To mitigate the risk of harmful material
• To increase return on investment
BIM use in Digital Fabrication
• To automate building equipment fabrication
• To reduce the tolerances by machine fabrication
• To increase the productivity of fabrication
BIM use in Programming
A special program is used in this process to evaluate the design performance regarding spatial needs. BIM helps the project stakeholders to understand the complexity of space standards.
• To evaluate accurate and efficient design performance
BIM use in Phase Planning
• To offer multiple options and solutions to resolve space conflicts before the commencement of construction
• To integrate resources (human, element, material) with the BIM model for accurate construction schedule and cost estimation
• To increase construction productivity and decrease waste on construction sites
Engineering Analysis
• To achieve energy-efficient design solutions
• To receive optimum returns on investment
• To improve the design quality
• To reduce the design analysis cycle time
BIM use in Construction System Design
BIM use in construction system design helps to ensure constructability issues irrespective of the complexity of the building system. It increases productivity during construction and informs about the safety measures.
BIM use in Design Authority
• To maintain transparency of design for all the stakeholders
• To control the quality of design, its cost, and schedules
• To make effective collaboration between project stakeholders
• To make an efficient design visualization
BIM use in Cost Estimation
• To estimate accurate material quantities and quickly revise if needed
• To maintain the project budget while the design progresses
• To provide a 3D visual representation of the construction components, which need to be estimated
• To get cost information during the early phase of the design
• To automatically generate quantity take-offs, which save time for the estimators
BIM use in Sustainability (LEED) Evaluation
• To accelerate the design review and LEED certification process
• To improve collaboration between project stakeholders and decrease the redesign efforts
• For sequence scheduling and material quantities tracking for efficient material use and cost-saving
• To make energy-efficient building by tracking energy uses for better building performance
BIM use in Clash Detection
• To detect and reduce field clashes, which reduces the RFI's and change orders
• To visualize the construction sequencing
• To mitigate risks and save cost, and decrease construction time
• To increase site productivity
• To create accurate as-built drawings
BIM use in Code Validation
• To confirm if the building design follows specific building codes such as IBC – International Building Code, ADA – Americans with Disabilities Act, etc.
• To reduce the code design errors and save time & cost when BIM is used in the early design phase
BIM use in Design Review
• To eliminate traditional meeting mock-ups and save time & cost
• To model alternate design options in real-time for design review
• To resolve the conflicts with potential fixes in the model along with tolerances revised and RFI's answered
• To preview space format and layout during design review with virtual visualization
BIM Uses and Requirements
01
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BIM Tools

Parametric Design
Documents
kubity
4D Simulation
BIM on Construction Site
FOR Projects
CDE
SYNCHRO SOFTWARE
Communication
Modelling
ARCHICAD
Tekla
SOLIBRI
Novapoint
VR / AR
DDD
Issue Managers
Clash Detection
Data Management
Gamefication
grasshopper

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FAB MODELING & CLASH DETECTION
SHOP DRAWINGS
FABRICATION
ASSEMBLY
COMMISSION & HANDOVER
OPERATE
MAINTAIN

03

WHAT IS BIM?

Think of:

“We get to build it twice”

ARCHITECT
CIVIL ENGINEER
STRUCTURAL ENGINEER
BUILDING OWNER
HVAC ENGINEER
FACILITIES MANAGER
CITY
CONSTR. MANAGER
ARCHITECT
CIVIL ENGINEER
STRUCTURAL ENGINEER
BUILDING OWNER
BIM
BUILDING INFORMATION MODELING
HVAC ENGINEER
FACILITIES MANAGER
CITY
CONSTR. MANAGER

04

KEY TAKEAWAYS

SUMMARY

- BIM is a process, not a software
- BIM involves collaboration and data integration from various sources
- BIM software is a tool used to support the BIM process, but there is not just 1 tool.
- Implementing BIM requires a shift in mindset and a willingness to adopt new technologies and processes.
- To address economical, social and environmental needs, BIM as a process can guide the direction.

WHERE TO START WITH BIM

1. Set clear goals and objectives:
   Before starting BIM, it's important to define clear goals and objectives for the project. This will help ensure that the BIM process is aligned with the project's requirements and that everyone involved is working towards the same goal.

2. Identify project stakeholders & their roles:
   BIM is a collaborative process that involves input from various stakeholders within the construction project.

3. Choose the right BIM Software:
   There are a variety of BIM software available; choosing the one that best aligns with the goals and objectives is critical.

4. Develop a BIM Execution Plan:
   A BIM Execution Plan outlines how the BIM process will be executed on a project.

5. Train your Team:
   Implement BIM requires a shift in the way teams work together, so it's important to provide adequate training and support for everyone involved. Team skills and knowledge plays a big part in the effectiveness of a BIM delivery.

Q & A

THANK YOU

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