



MARCH 8 - 9

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Turner & Townsend

# BIM Best Practices to Apply and Obstacles to Avoid

A Client-Led Approach, with Eoin Kiely

March 8, 2023



# Today's discussion

## Agenda

- 1 Introductions
- 2 What Is BIM?
- 3 Digital Delivery
- 4 Lessons Learned
- 5 Q&A



**Eoin Kiely**  
**Associate Director**  
**Digital Asset**  
**Advisory Lead**

## Objectives

1

To demonstrate the different types/challenges in BIM

2

To share the benefits of a Client-Led Approach

3

To understand the importance of a full project lifecycle and Data

4

To identify risks and issues for future projects

# Turner & Townsend



## The Americas

1,126  
people  
30  
offices

## UK

2,992  
people  
16  
offices

## Europe

450  
people  
19  
offices

## Asia

712  
people  
18  
offices



## Africa

308  
people  
10  
offices

## Middle East

555  
people  
6  
offices

## Australia and New Zealand

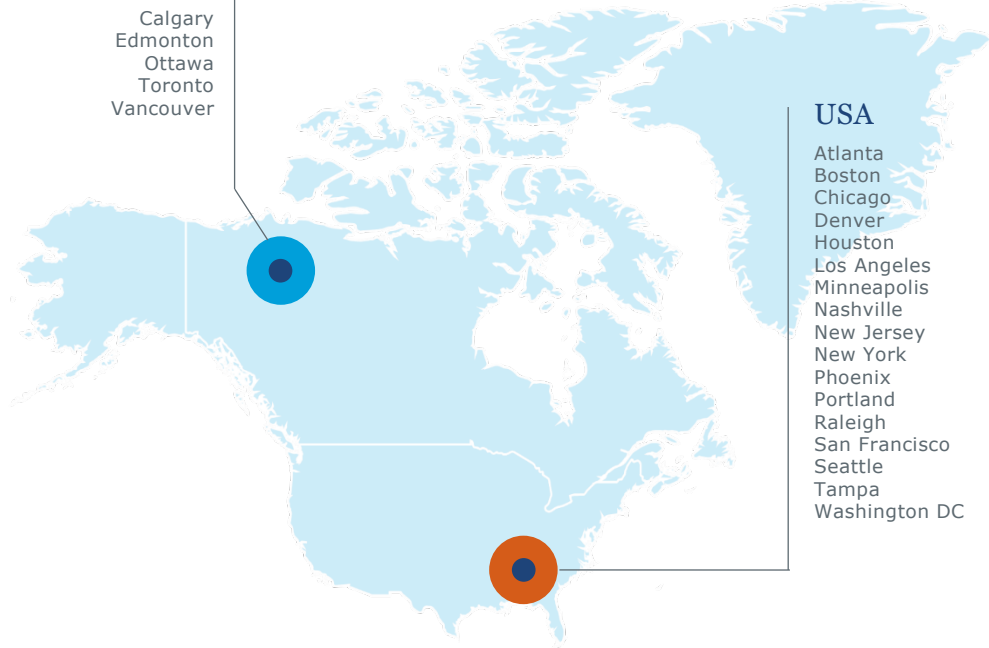
646  
people  
13  
offices

## Canada

Calgary  
Edmonton  
Ottawa  
Toronto  
Vancouver

## USA

Atlanta  
Boston  
Chicago  
Denver  
Houston  
Los Angeles  
Minneapolis  
Nashville  
New Jersey  
New York  
Phoenix  
Portland  
Raleigh  
San Francisco  
Seattle  
Tampa  
Washington DC



# Turner & Townsend

## Program strategy and set up

Setting up for success – building the right capabilities and execution plan to drive clear program outcomes.



## Program management

Looking at the big picture, driving better overall outcomes, and having real confidence your program is under control.



## Project management

On-site, in-person Owner's representation, holding stakeholders accountable for project success through effective planning, the right team and rigorous controls.



## Cost and commercial management

Driving and safeguarding your commercial interests from start to finish.



## Procurement

Developing and delivering procurement and supply chain strategies that get the best results from the market.



## Controls and performance

Applying robust and proactive controls from a clear baseline to deliver confidence in program and project performance.



## Safety, health and quality

Embedding the strategies and culture that support effective operations and maintain a safe and healthy environment.



## Technology and data

Unlocking the potential of technology, data and information modeling to drive performance, support great decision-making and create collaborative working environments.



## Consultancy

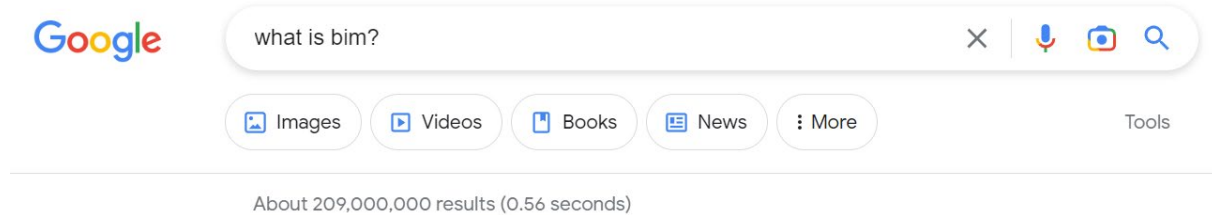
Independent advice to help make your business and investments a success.



*What IS BIM?*

# What IS BIM?

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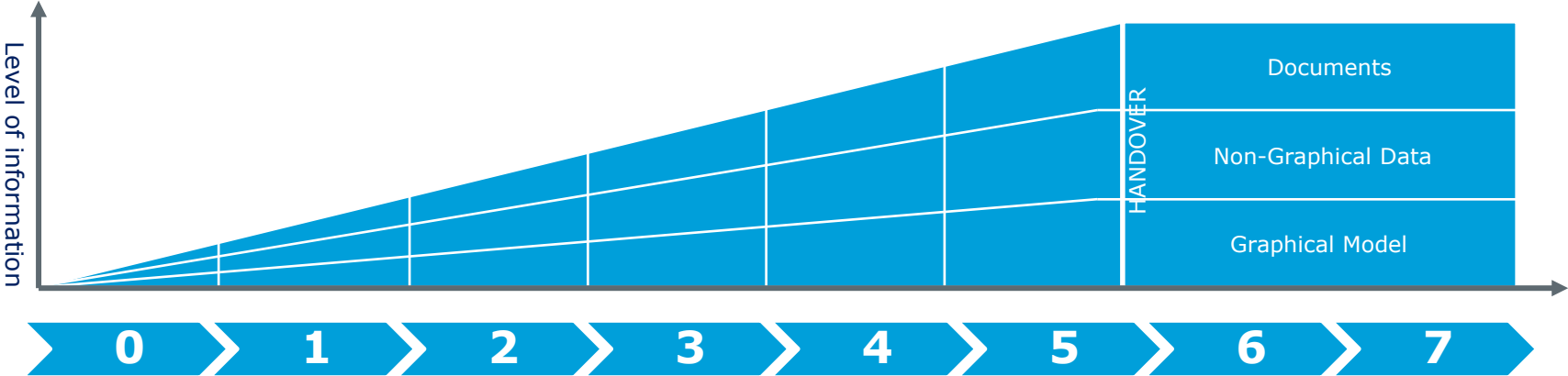


“**Building Information Modeling (BIM)** is the foundation of digital transformation in the architecture, engineering, and construction (AEC) industry. As the leader in BIM, Autodesk is the industry's partner to realize better ways of working and better outcomes for business and the built world.” (Autodesk)

“**BIM** is a process supported by various tools, technologies and contracts involving the generation and management of digital representations of physical and functional characteristics of places. Building information models (BIMs) are computer files (often but not always in proprietary formats and containing proprietary data) which can be extracted, exchanged or networked to support decision-making regarding a built asset.” (Wikipedia)

“**BIM** is a process for creating and managing information on a construction project throughout its whole life cycle. As part of this process, a coordinated digital description of every aspect of the built asset is developed, using a set of appropriate technology. It is likely that this digital description includes a combination of information-rich 3D models and associated structured data such as product, execution and handover information.” (NBS)

# Agree on priorities



Auditable trail of data and decisions	3D coordination and clash detection	4D modelling	5D Cost and quantity
6D Asset data management	Design completion, progress and certainty	Design Management	Field management tracking
Model verification	Possession and permit to work	Project controls information platform	Visualization, communication and reviews

# What IS BIM?

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Design coordination and supply chain collaboration is failing clients. BIM is not achieving full value



Major programs are not delivering an asset fit for operation



Client's do not have an asset information model to drive digital adoption and optimize decision making though the lifecycle

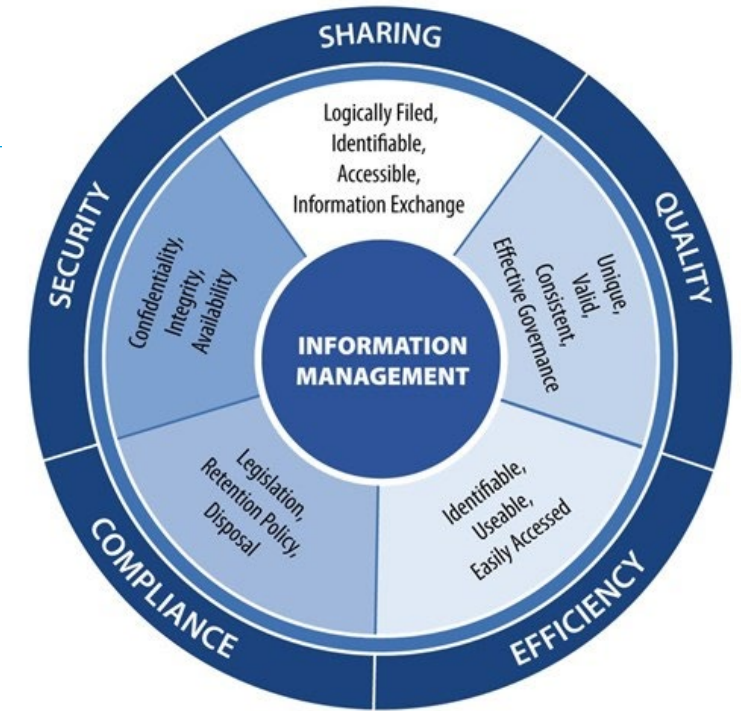
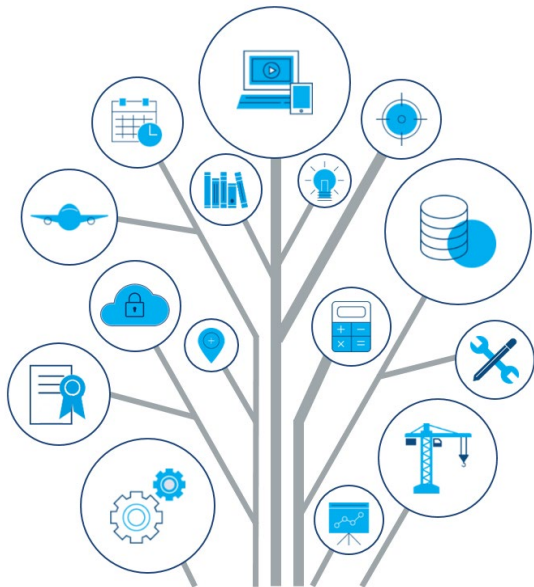




# The I in BIM

## Information Management

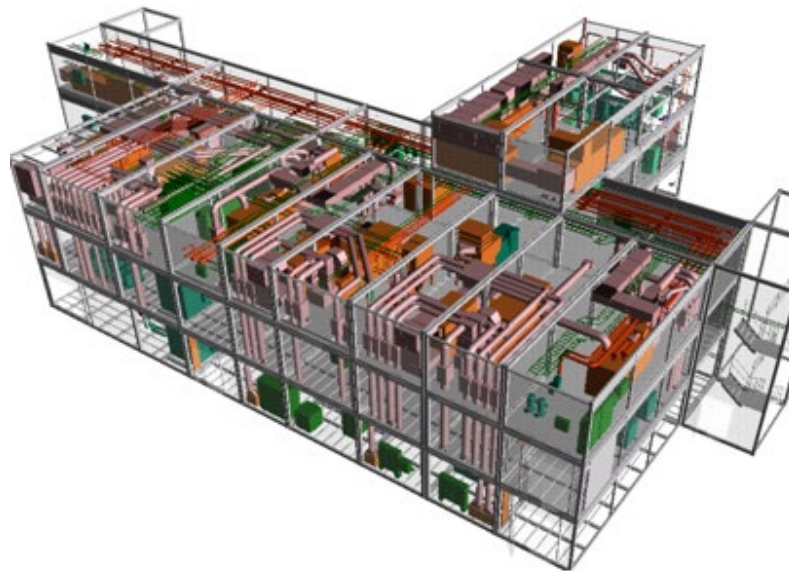
*Proper information management provides clients confidence that all project team members are complying with the protocols for the process of collecting, storing, managing, sharing and maintaining information in all its forms throughout the whole lifecycle.*



## Building Information Modelling

*BIM is a way of digitalizing the built environment from early design to operations. It incorporates physical, commercial, environmental, and operational data on every element of the design of an asset. It is a process that enhances client understanding of how the asset will work and feel, and how it fits together rather than simply what it looks like.*

# The Evolution of Drawings



Microsoft Excel - Ralphyd

File Edit View Insert Format Tools Data Window Help Adobe PDF

Type a question for help

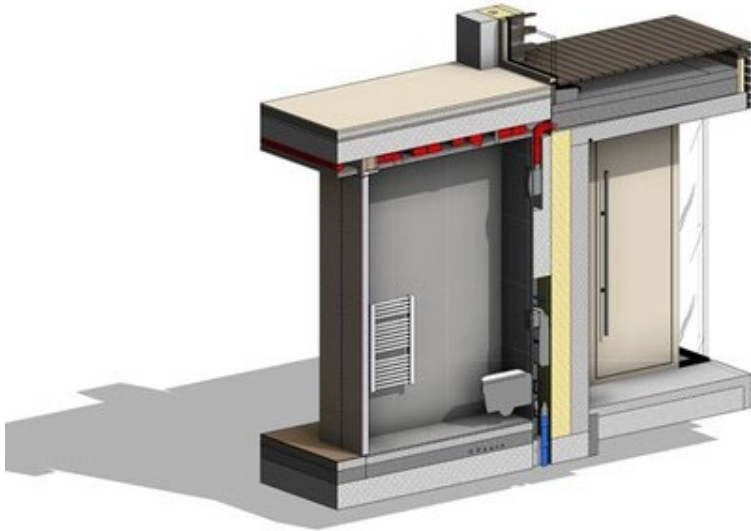
100% Arial

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3	Door 103B	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100B	Door Type D1	ICDoor	000-01-2		000-01-2	2009-03-01
4	Door 103C	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100C	Door Type D1	ICDoor	000-01-3		000-01-3	2009-03-01
5	Door 101A	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100A_101	Door Type D1	ICDoor	000-01-4		000-01-4	2009-03-01
6	Door 102A	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100B_102	Door Type D1	ICDoor	000-01-5		000-01-5	2009-03-01
7	Door 103A	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100A	Door Type D1	ICDoor	000-01-6		000-01-6	2009-03-01
8	Door 104A	lperdig@e.com	2009-11-04 11:09:38	Hardware Items	100A_104	Door Type D1	ICDoor	000-01-7		000-01-7	2009-03-01
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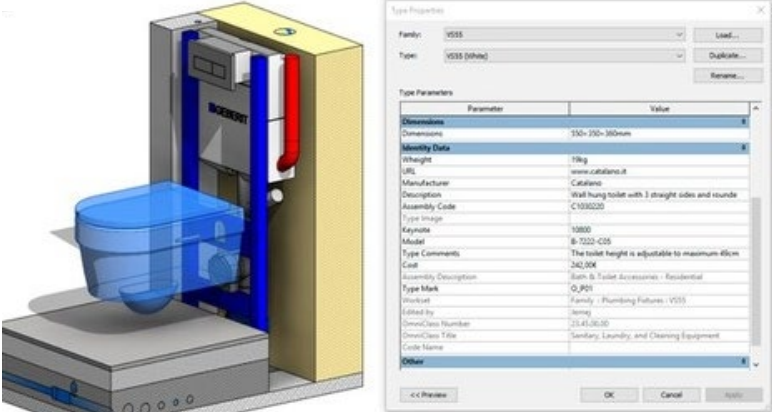
M | M | Instruction / Contact / Feeds / Job / Space / Zone / Type / Component / System / Assembly / Source / Resource / Job / Impact / Document / Attribute / Coordinate |

# BIM Model Definition

## Geometry



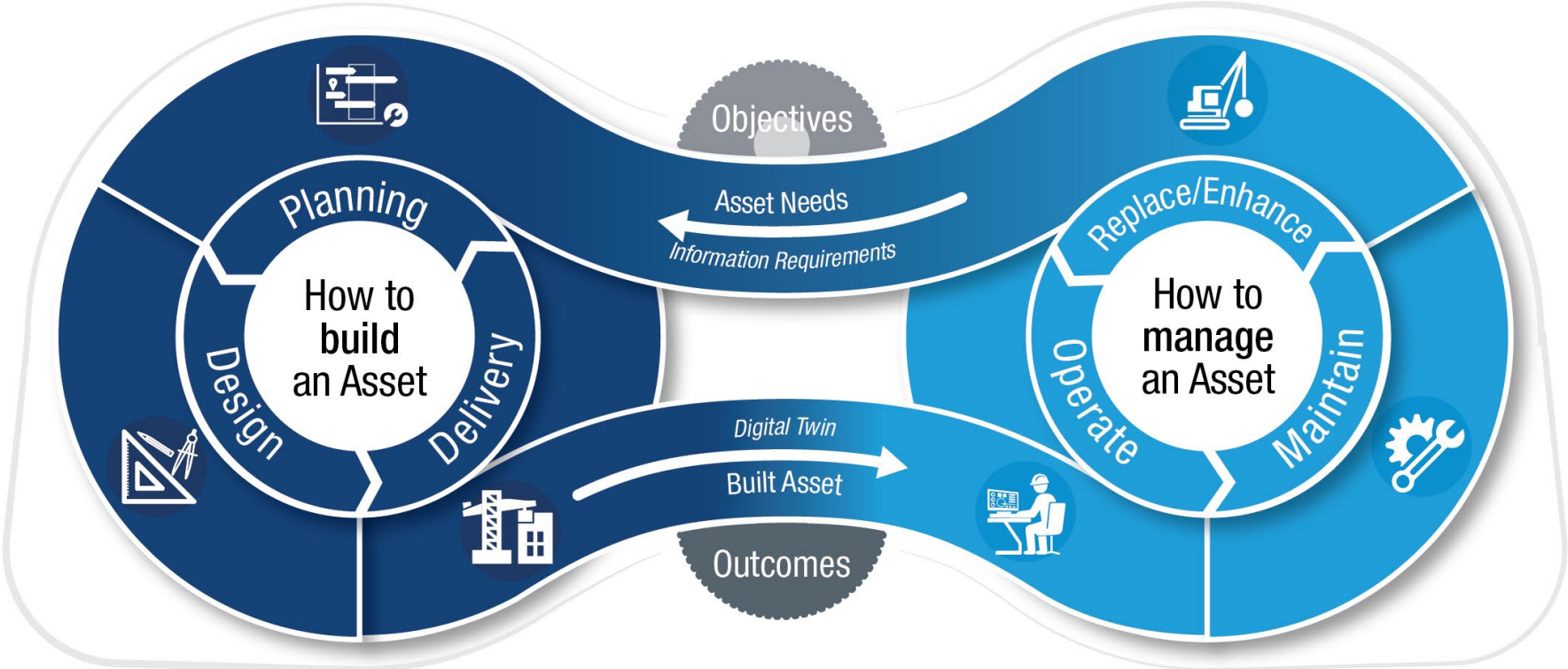
## Non-geometry/data



vir: arhiv KošorokGartner



# Delivery Binoculars







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**Delivering digitally**



## A Client-Led Approach

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*"We want BIM!"*

*"We have BIM in the contract"*

*"The GC is defining BIM"*

*"We are using the Architects BEP"*

*"We are using a Digital Twin"*

# A Client-Led Approach

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The average building lifecycle:

1 year to Design

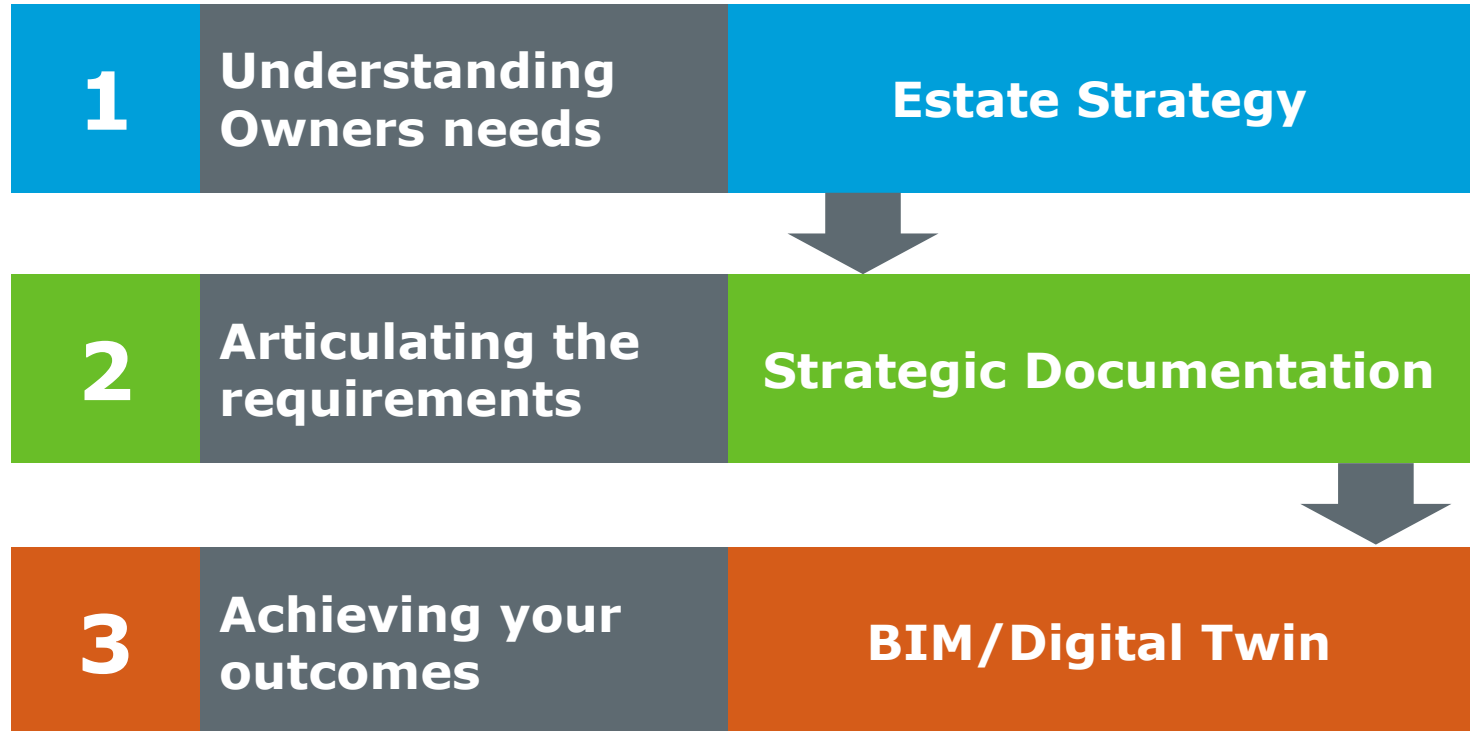
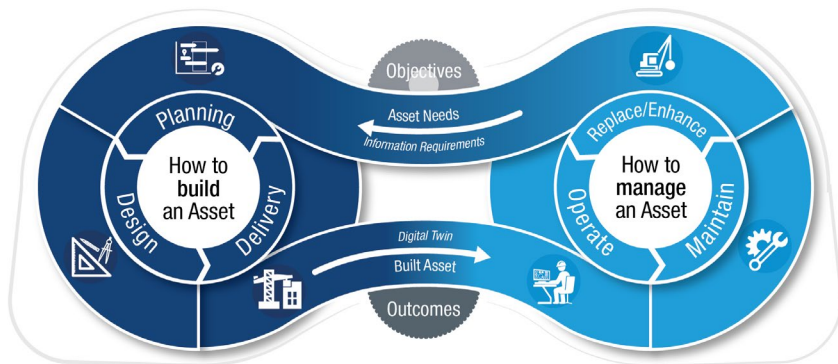
2-5 years to Construct

10-50 years in Operation



# A Client-Led Approach

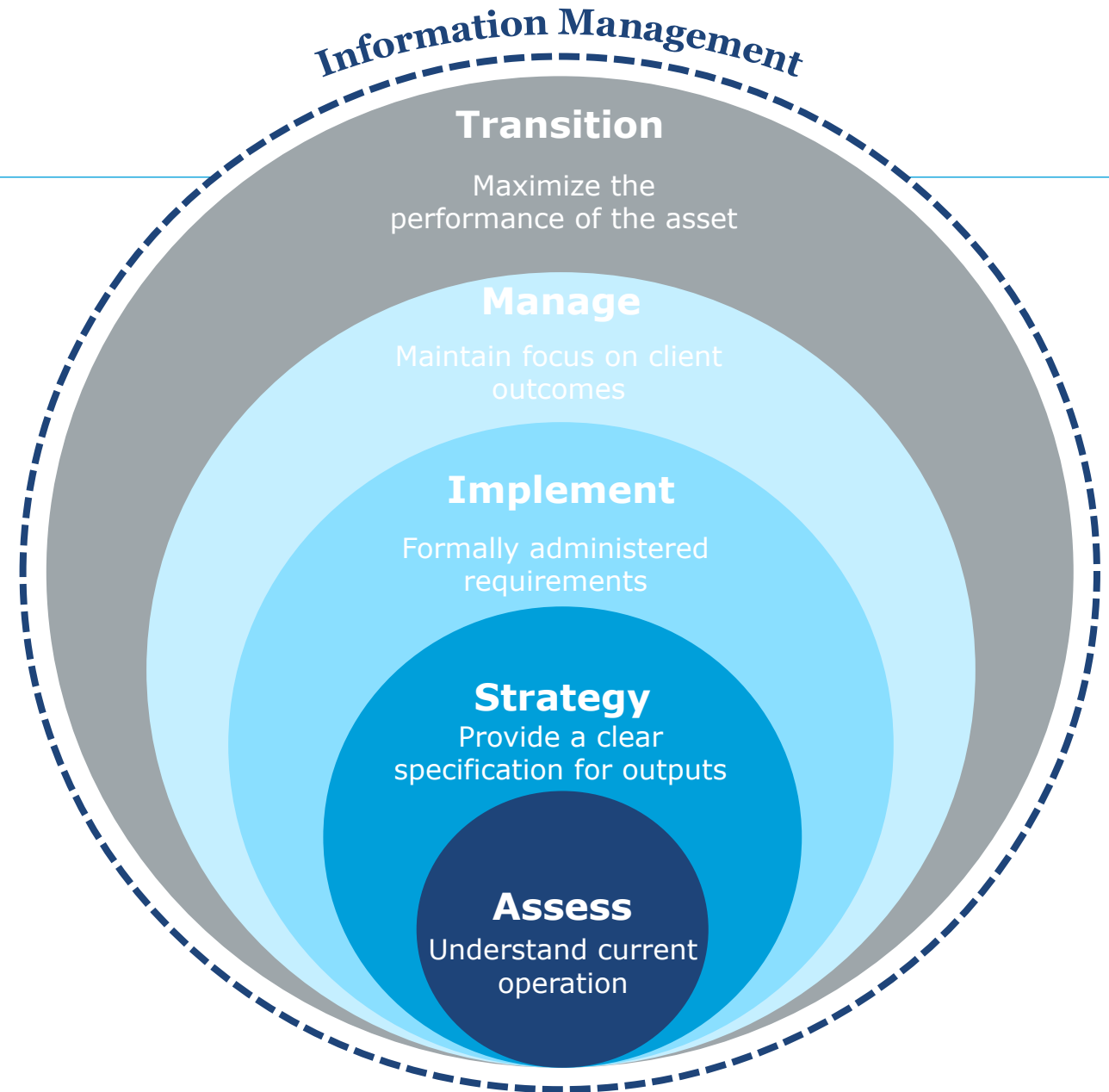
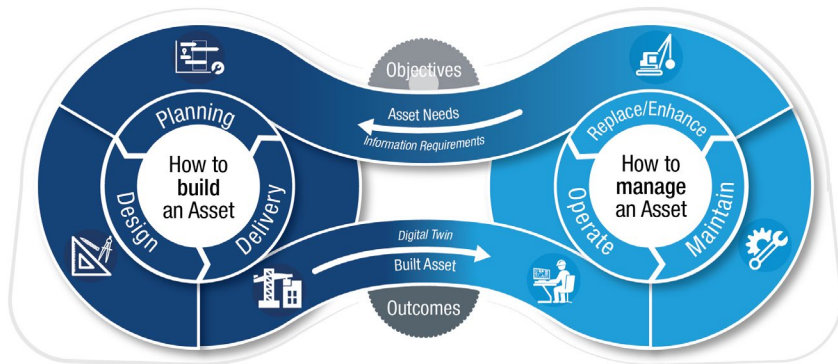
Start with the end in mind!





# A Client-Led Approach

Start with the end in mind!







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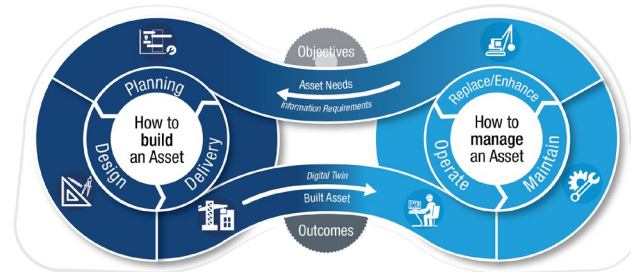
**Lessons learned**



# Cultural change for the **Client/Owner**



- Commit to the BIM process
- Consider information/asset management at concept
- Provide a Common Data environment
- Own your Data
- Understand obligations
- Appoint a team with the appropriate capability
- Consider consistency of data
- Consider changes in procurement methods

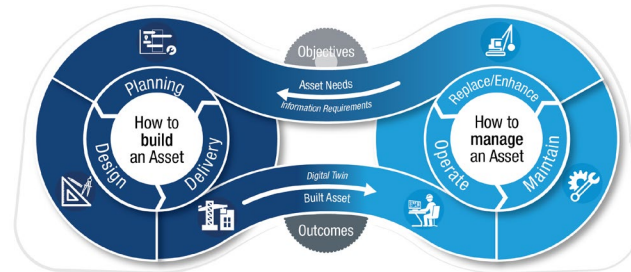


- Appoint a team without considering BIM protocols or contractual agreements
- Assume existing teams have the ability to undertake all required BIM uses
- Change information requirements during key project phases
- Leave decisions on asset management until later project stages

# Cultural change for the Project team



- Establish a BIM Execution Plan, shared contract
- Earlier engagement and decision making
- Actively share work in progress information
- Validate model geometry and data
- Deliver information according to set standards
- Think of other inputs not just their own outputs



- Working in silos
- Create information which conflicts with the model
- Create ad hoc models that don't comply with an agreed data structure
- Revert to traditional processes in times of stress
- Retain or not share information
- Create models to communicate at milestones rather than to inform throughout



# Lessons Learned

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- Early engagement in a BIM process is critical
- We just ‘want BIM’ – its not that simple; everyone needs understand the requirements
- The **operational team** needs to be included for the data they want to capture or how they are going to us it
- Clear **roles and responsibilities** for all deliverables and client requirements
- Design team has been appointed on a standard scope – then Client wishes to introduce BIM
- **The I in BIM is important**, Data requirements need to be in place (EIR, BIM execution planning, protocols, and more)
- Design team attempt to revert back to 2D processes mid-stream
- Plan for the use in operations

*But what is a  
Digital Twin?*

*Q & A*



Turner & Townsend Inc  
285 Madison Avenue  
22nd Floor  
New York, NY 10017  
USA

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t: +1 (212) 370 7321  
e: [eoin.kiely@turntown.com](mailto:eoin.kiely@turntown.com)  
[www.turnerandtownsend.com](http://www.turnerandtownsend.com)

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