

CitA
BIM GATHERING



Building Capabilities in Complex Environments

CitA BIM Gathering 2017, Croke Park, November 23rd & 24th, 2017



Chapter/Section title or break page



Content

- **Introduction**
- **BIM**
- **Lean**
- **Project Management**
- **Conclusion**
- **Questions**



Introduction

Certificate in BIM & Lean Construction Management Online - Course



Ralph Montague - 'BIM for Lean Construction'



BIM

BIM - What is it about?

All about **Information – Built Infrastructure
Is Information important?**

Information is Value – it is an Asset

**Reliable, digital quality, accurate, confidence,
accessible, searchable, useful**



BIM

Paper based Documentation



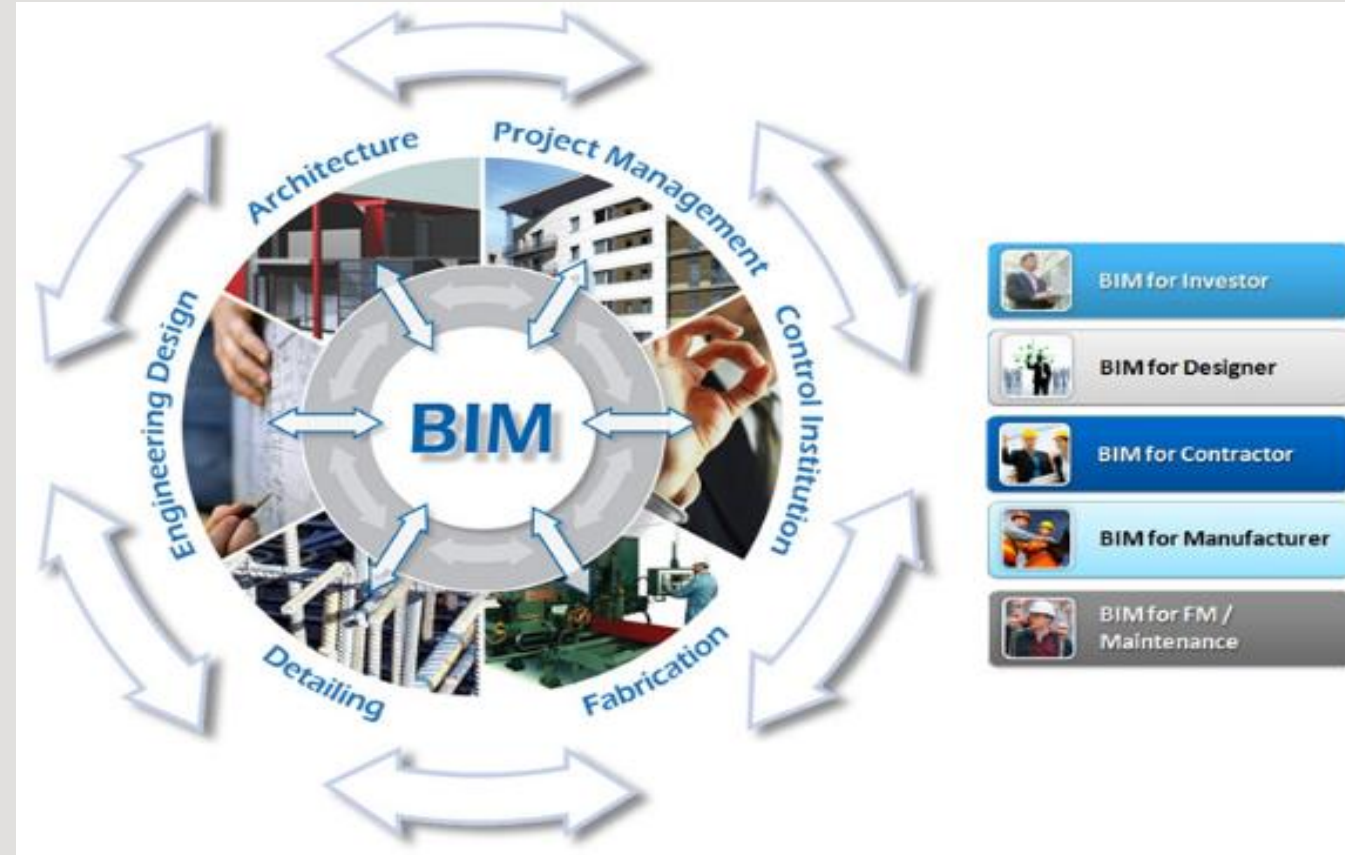


BIM

Digital Information - Common data Environment

Digital Strategy ISO 55000 or PAS 55 in place

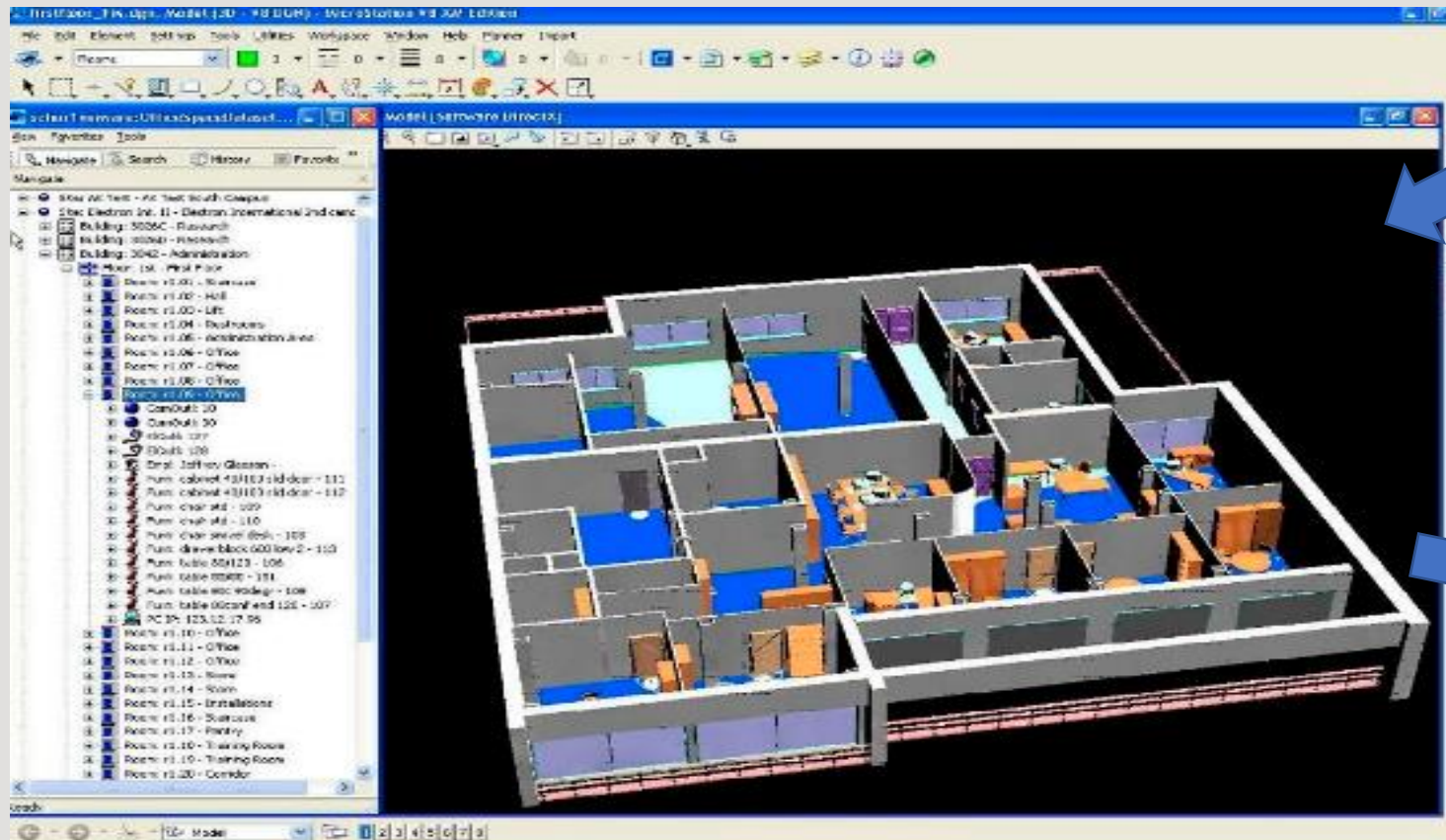
PAS 1192 - 2





BIM

Object based modeling





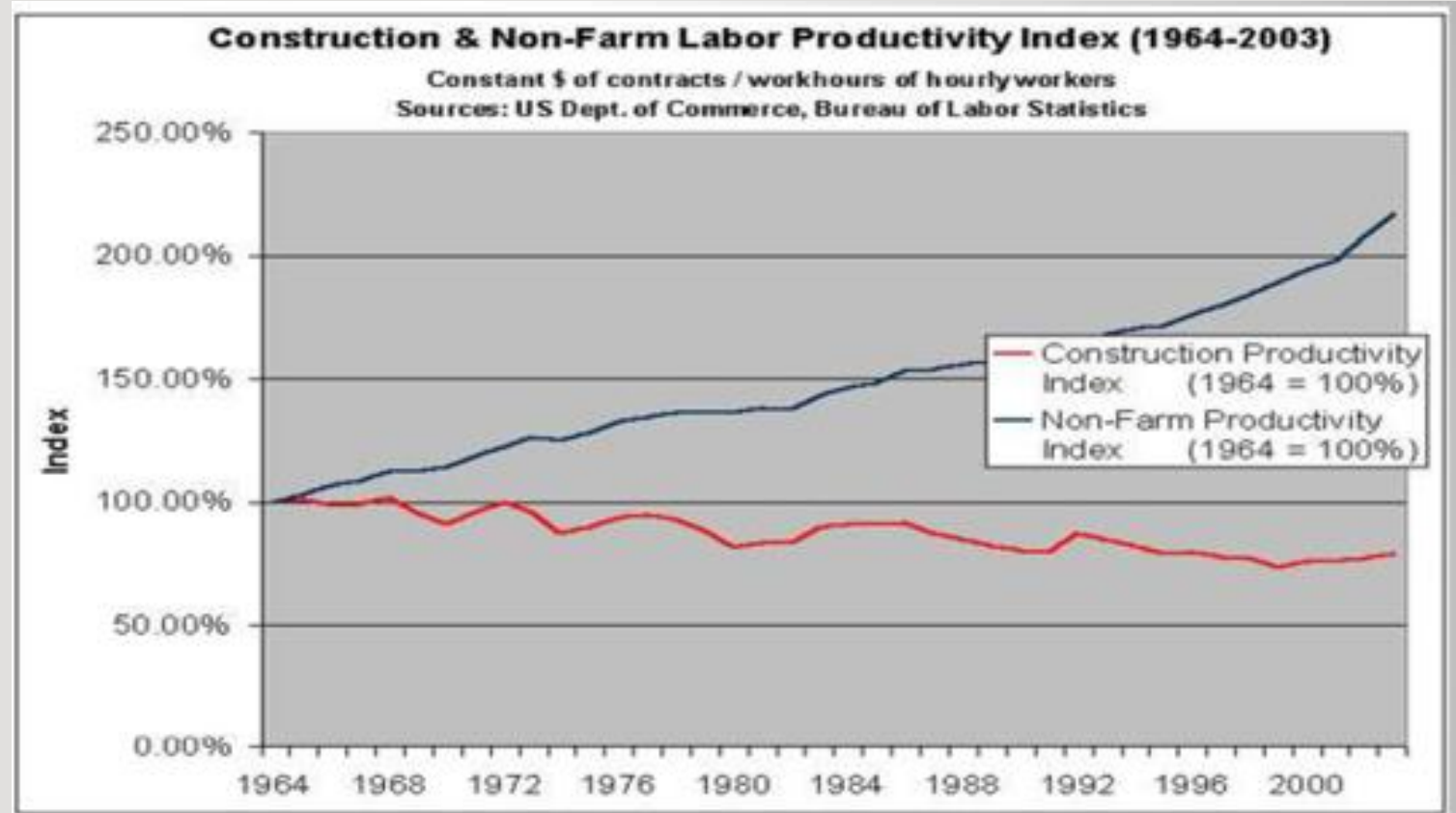
Lean Construction Features of Construction Projects

Today Industry



Key Factors Impacting Poor Cost & Schedule [McKinsey]

Poor Organization	Missed Connections
Inadequate Communication	Poor Short Term Planning
Flawed Performance Management	Insufficient Risk Management
Contractual Misunderstandings	Limited Talent Management



US Construction vs non-farm productivity 1964–2004



Lean Principles

Lean Definition

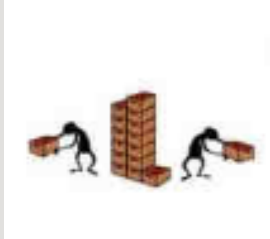
“The endless transformation of waste into value from the customer’s perspective”

Source: Womack and Jones, (1996), *Lean Thinking*

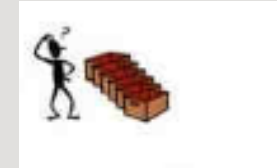


Lean Principles

What is waste – Tim Woods



- **Transport**; unnecessary material movement
- **Inventory**; excessive work in process inventory
- **Motion**; unnecessary and awkward movement
- **Waiting**; delay for an upstream activity to complete
 - **Overproduction**; making more just in case
- **Over-processing**; beyond what the customer needs
 - **Defects**: scrap and fixing errors
- **Skills Under-use**; note the talent that is available





Lean Tools

- **Putting the customer first**
- **Adding value in what we do**
- **Tools to investigation problems or waste**
 - **Value stream mapping**
 - **Visual management**
 - **5 whys**
 - **A3 report**
 - **5 s**
 - **Last planner System**
- **Tools that enable improvement**
 - **Making Improvement happen – Kaizen**
 - **Lean Project Delivery System**
 - **Constraint Log**



Waste

Waste (No value)

- Re-work
- Disconnected Workflows
- Poor Communication
- Misunderstanding
- Abortive Works
- Waste Material
- Delays
- Cost Overruns
- Disputes
- Inefficiencies Labour





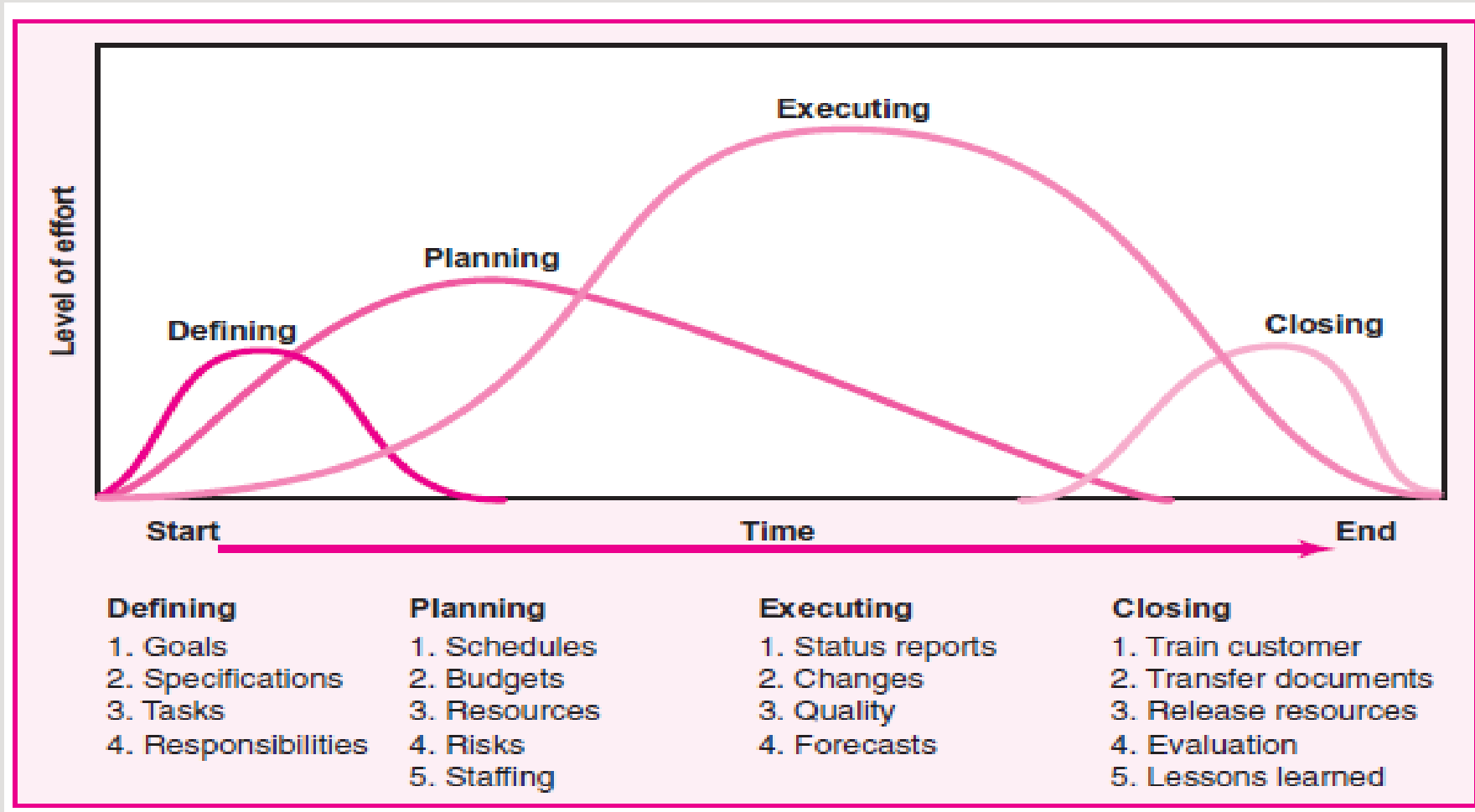
Reflection





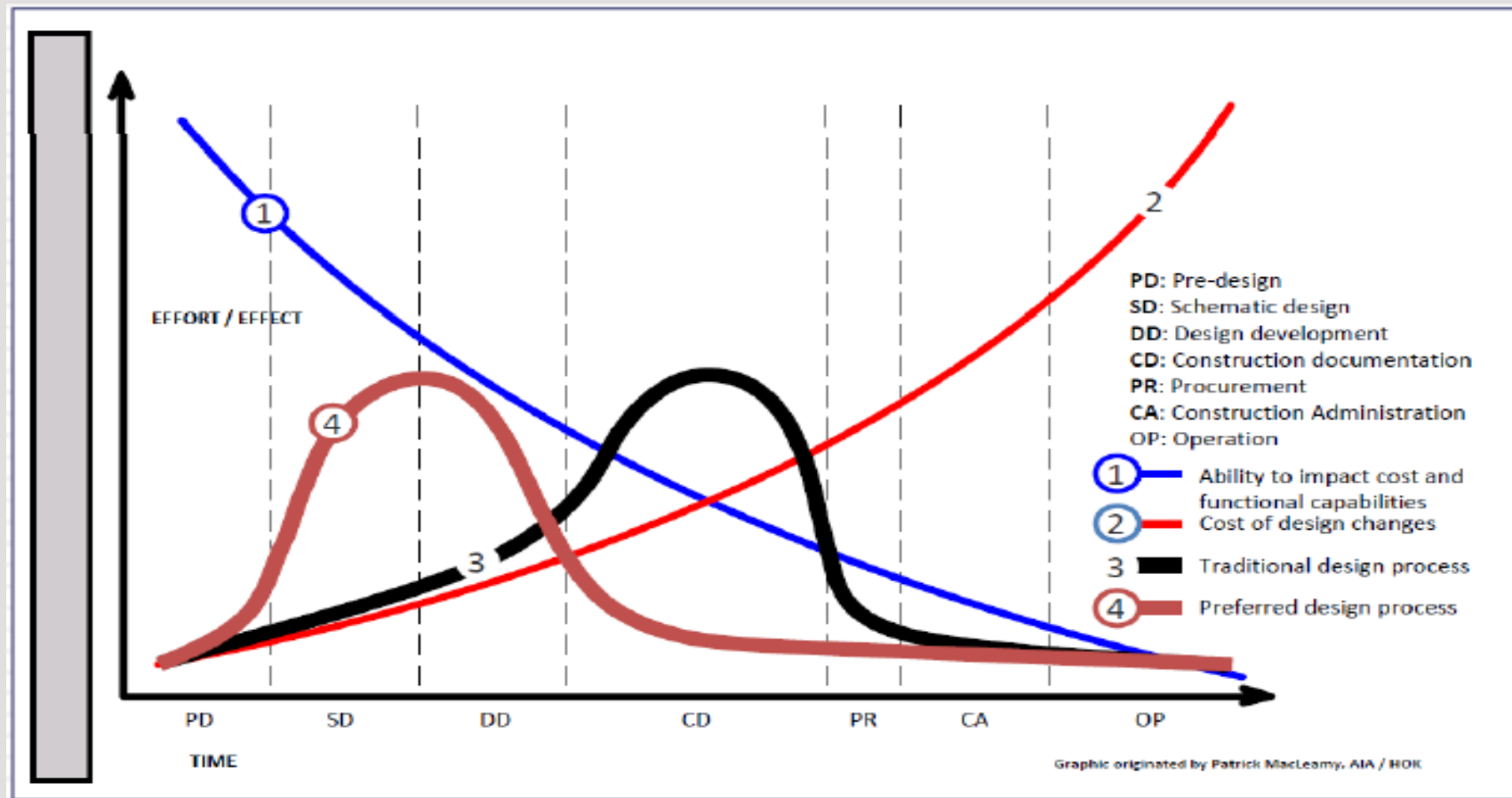
The Project Life Cycle

Project Management – The Managerial Process 5th Edition



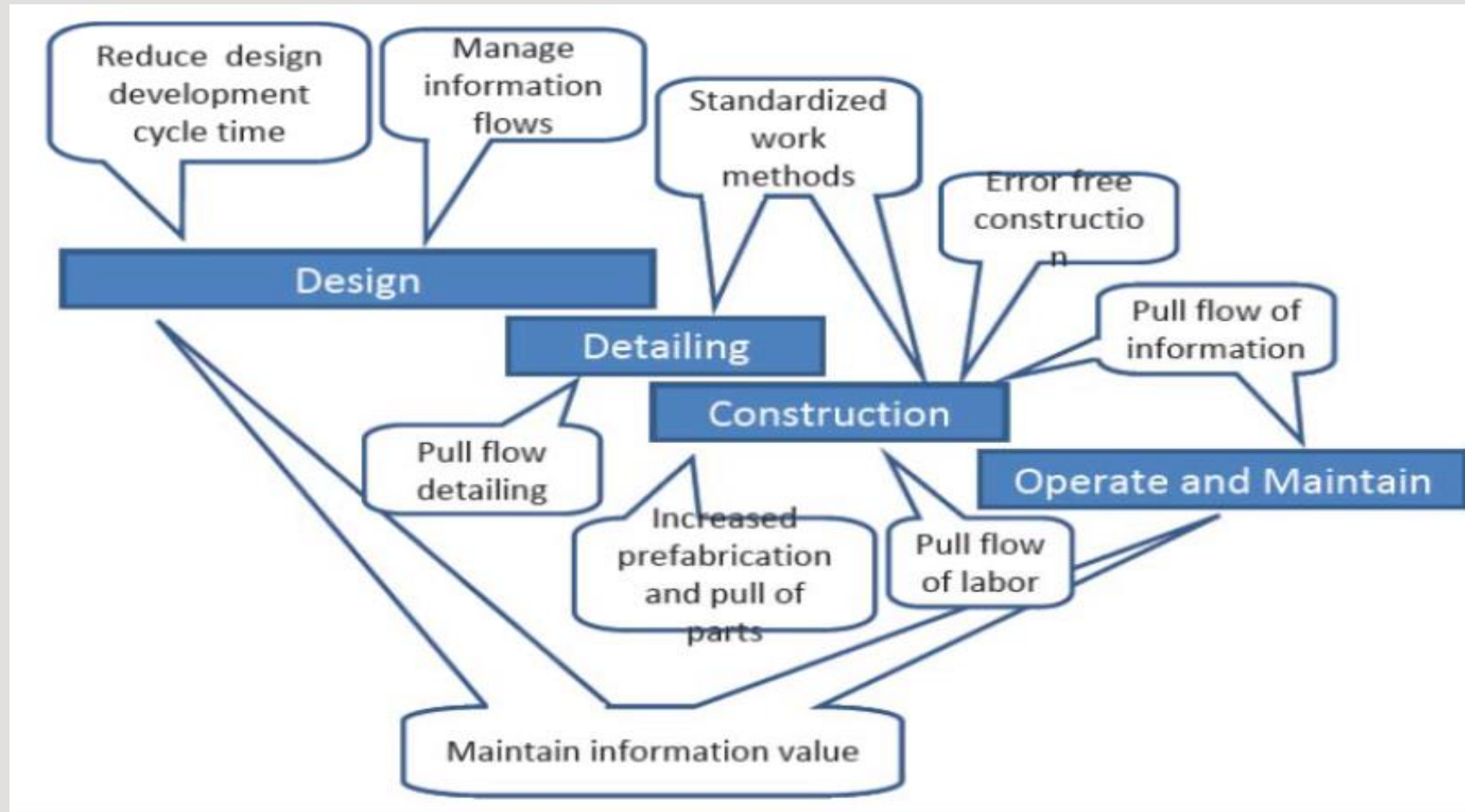


The cost of decisions mapped along the timeline of a typical construction project.





Interactions between Lean and BIM





Project Management

Planning Implementation

- Plan
- Design
- Constructed
- Operated



Organisational Culture, Leadership and Management Support



Certificate in BIM and Lean Construction Management (Online)

Module

- Project Planning
- BIM
- Lean Construction
- Project Implementation
- Project Management Simulation





Conclusion

BIM & Lean Integrated Practices in Project Management

Lean is a project management approach that links in the core principles of BIM





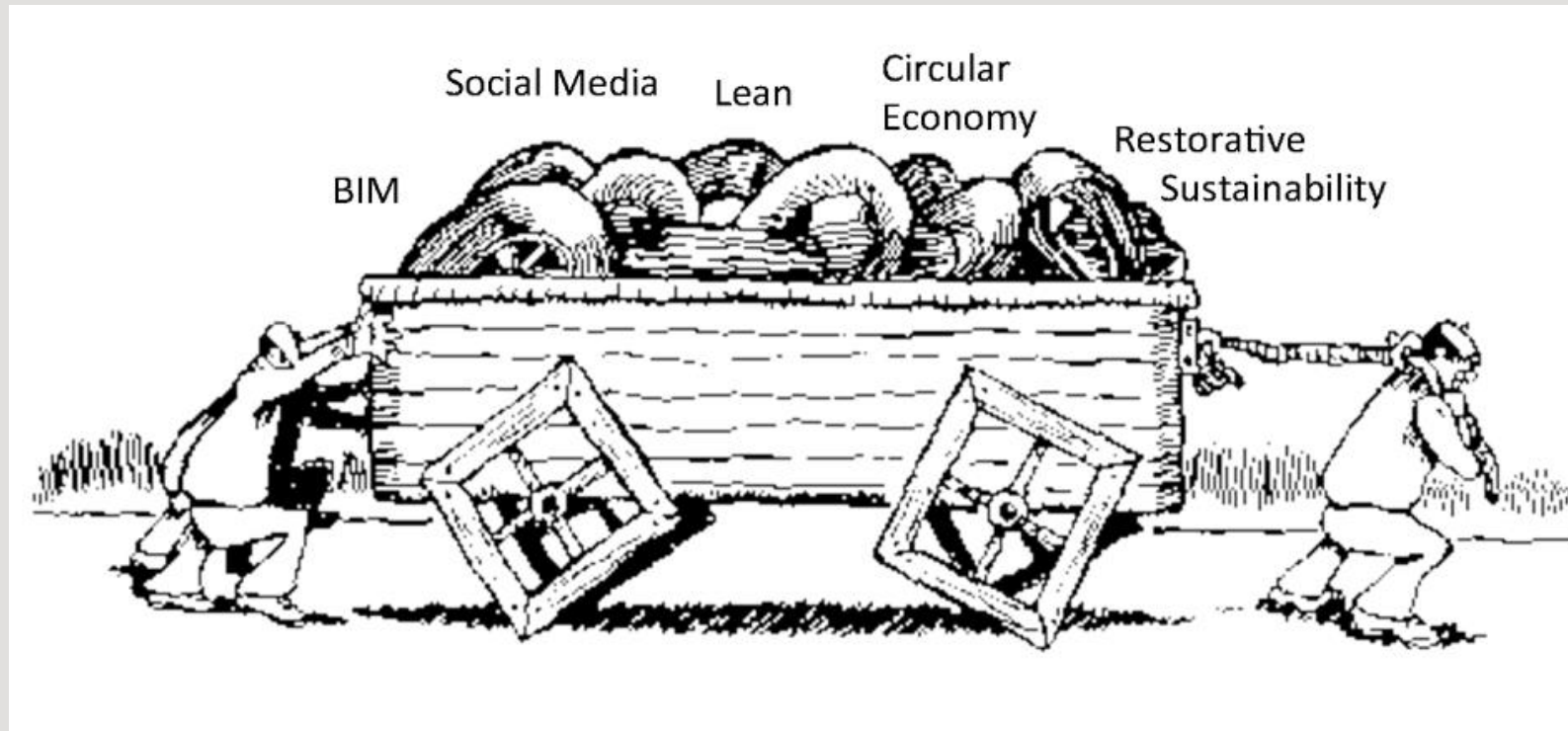
Conclusion

BIM, like lean construction forces us to focus on end game first, understanding client value and pulling that value through design, construction and operation.





- Improving construction is a monumental challenge but we have new tools – we just need to use them



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Thank you



Dr David Collery - Lecture at IT Sligo