



GeoBIM



Working in One Spatial World

A Keynote Address By
Dana Kennish “Deke” Smith, FAIA

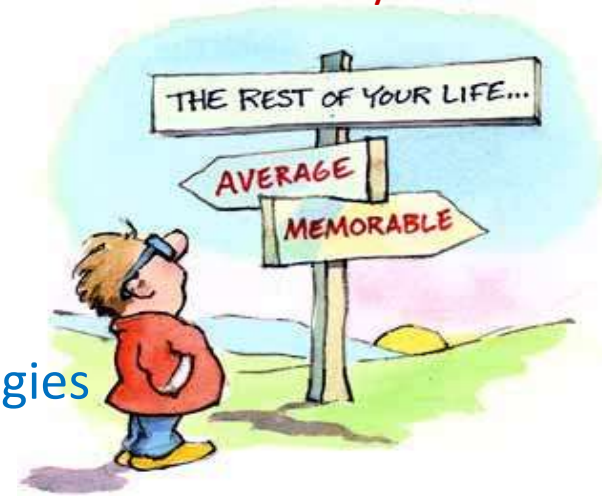
DKS
Dana Kennish Smith
Information Consulting

Overview of GeoBIM Session

- We are going to take you from the management of a **single space** to managing an **entire city**
- This is the only session where we will truly talk about what goes on **inside a facility or structure**
- We will address the entire **life-cycle** of a facility from **inception onward**
- We will look from the **owners viewpoint** as well as the practitioner – the **architect, engineer, contractor and operators viewpoint**
- We will address the work of the Open Geospatial Consortium (OGC) as it relates to **indoor wayfinding** and the relationships to BIM.

GeoBIM Terminology

- **Asset Management** - is a systematic process of deploying, operating, maintaining, upgrading, and disposing of assets cost-effectively
- **Sustainable** - The ability to continue a defined behavior indefinitely
- **TCO** – Total Cost of Ownership
- **ROI** – Return on Investment
- **ICT** – Information and Communication Technologies
- **GIT** – Geospatial Information Technologies
- **VDCO** - Virtual Design, Construction, and Operations
- **BIM** – Building Information Model / Modeling / Management
 - **CIM** – Civil Engineering Information Modeling
 - **IMM** – Infrastructure Model Management
 - **BrIM** – Bridge Information Modeling

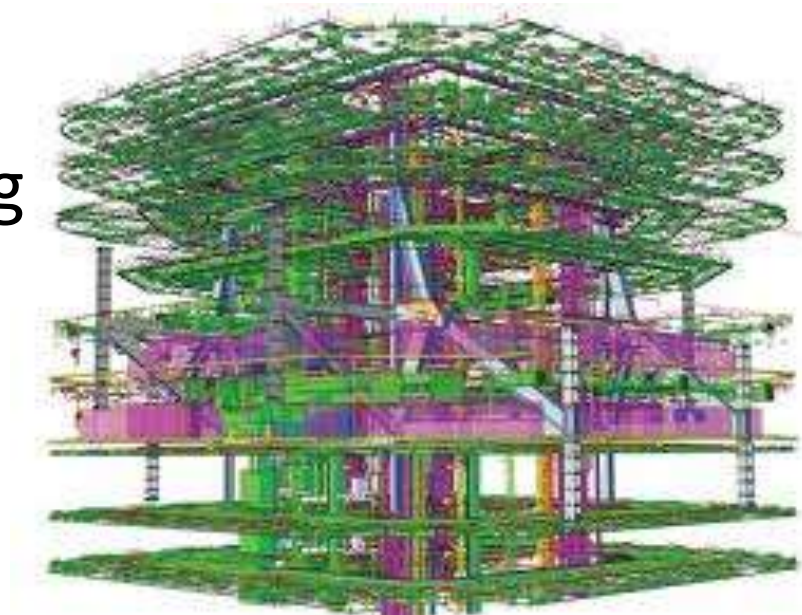


What Is BIM?

Building Information Model (BIM) is a **digital representation of physical and functional characteristics** of a facility. A BIM is a **shared knowledge** resource for information about a facility forming a **reliable basis for decisions** during its life-cycle; defined as existing from earliest conception to demolition.

Modeling – The act of creating the model

Keyword is **Information**

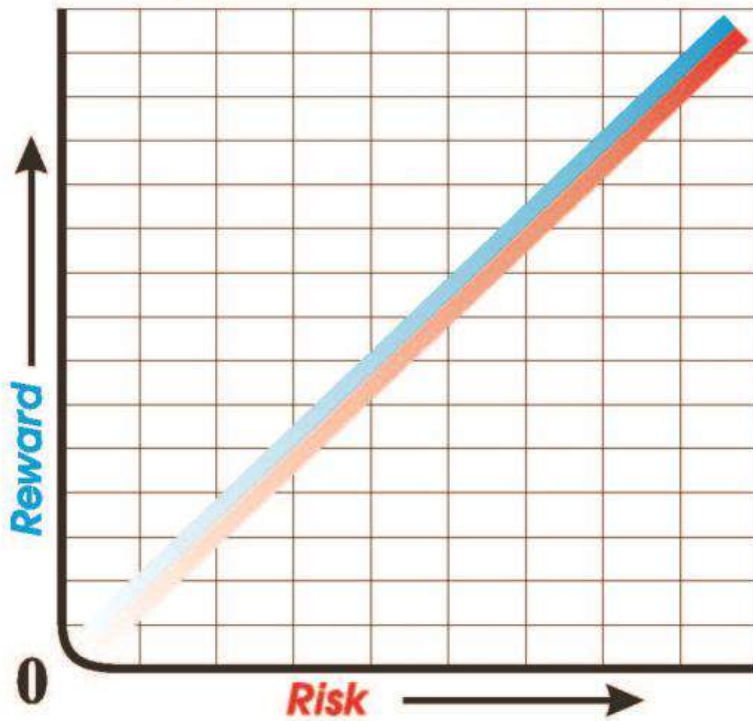


GeoBIM

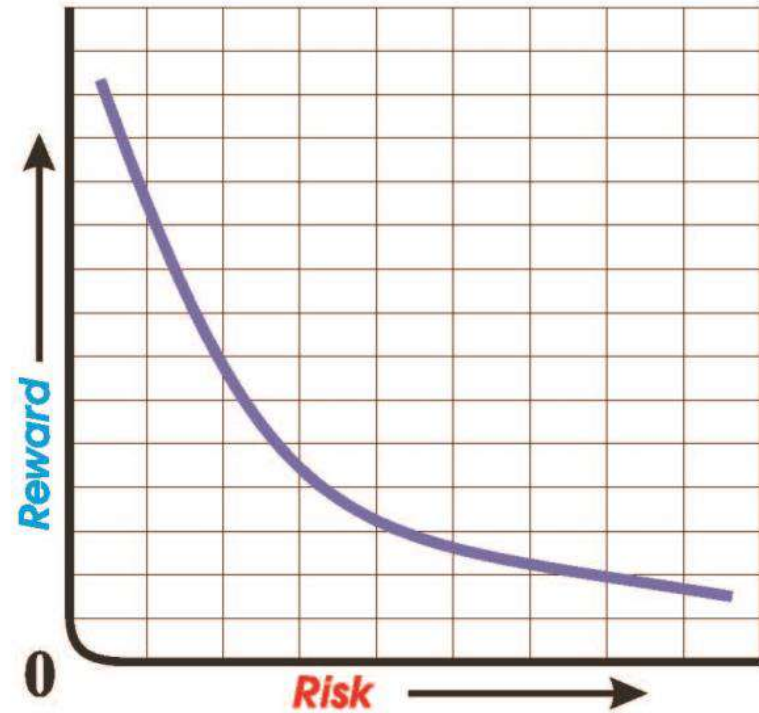
- The goal is to **reduce risk to owners** by building facilities and structures **virtually** before building them physically.
 - Anticipate and resolve issues using simulation
 - Better management of physical assets
- **Spatial Information** – there should only be one environment – we have two because computers could not deal with the significant quantities of data needed.

It is all about Risk

Risk vs. Reward (General Business)



Construction's Risk vs. Reward



It Is All Spatial – Just a Matter of Scale

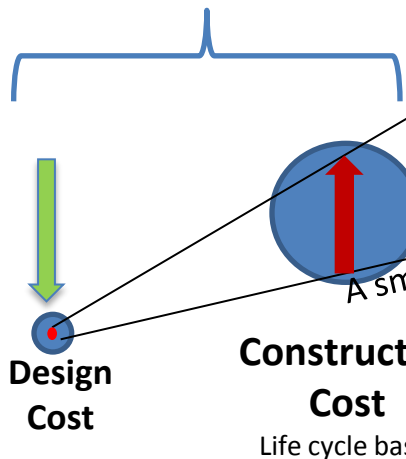


Change In Culture

Goal: Shift \$
from
Op Ex to Cap Ex

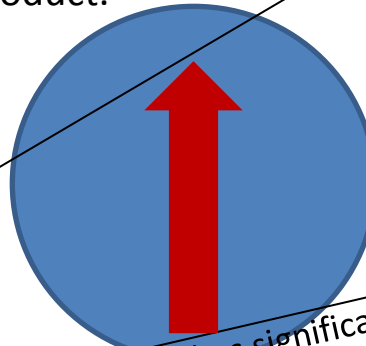
Should not expect significant
reduction in cost

Value engineered and life cycle based
decisions



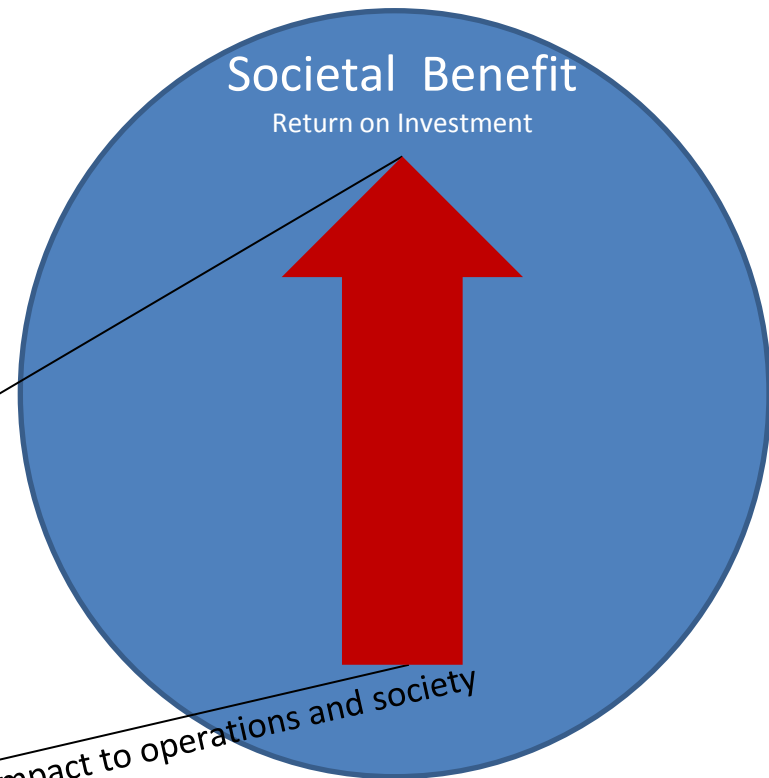
**Reduced
operating costs**

directly benefits society
by providing more
product.



Operational Cost

over the life of the project annually



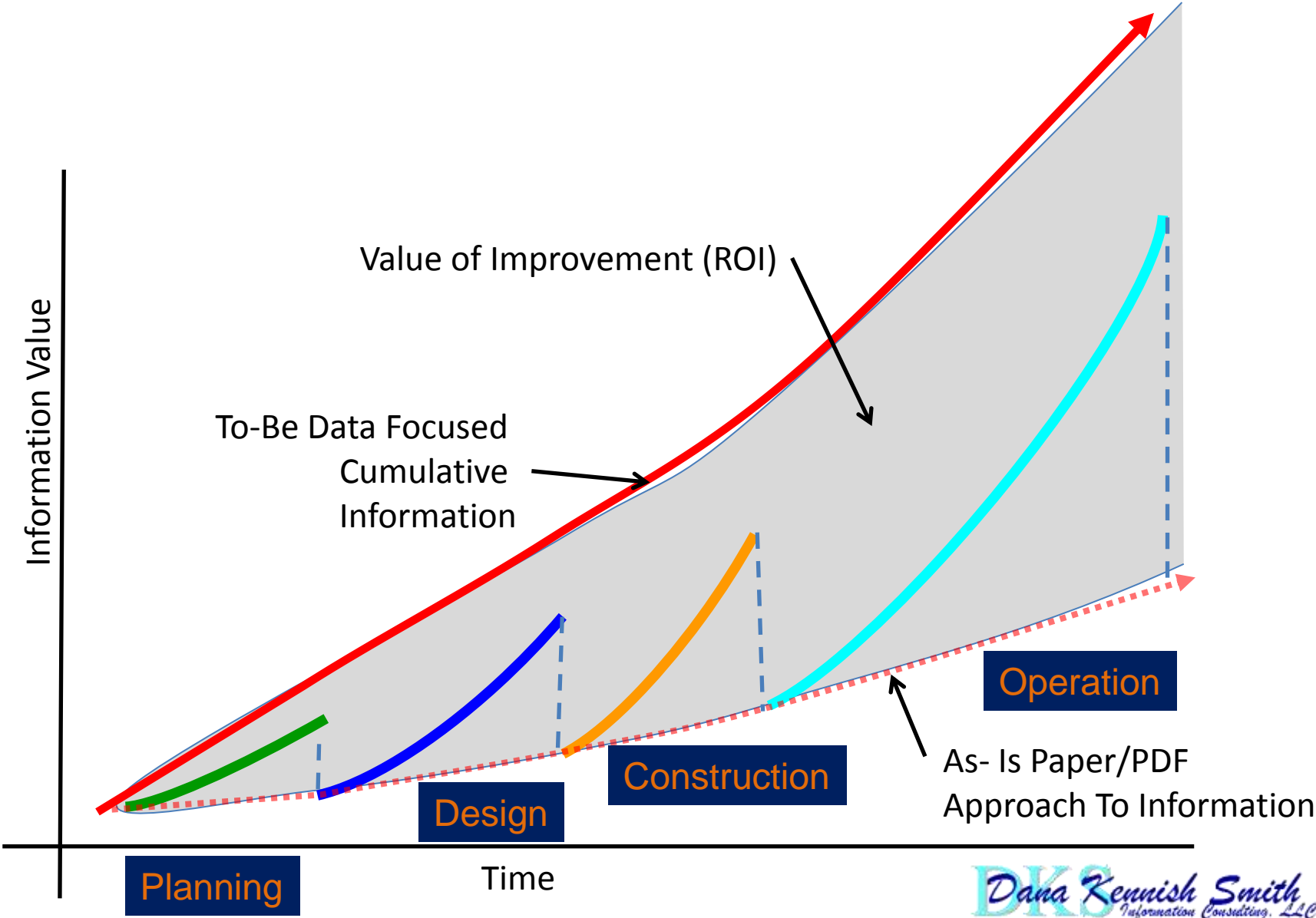
Societal Benefit
Return on Investment

Societal Cost Impact

Long term and significant

A small improvement in design has significant impact to operations and society

Moving To An Information Mind Set



Information Hand Offs



Teamwork – but what kind?



- Michael Phelps, a **swimmer** on a swim team is far different than Blair Brown a right side hitter on a **volleyball** team.
- Facilities Industry needs to work as a high performance team



Building Trust – The missing Pieces

- **Metadata**

- Who – What – When – Why



- **Information Assurance**

- Memory – Object – Physical

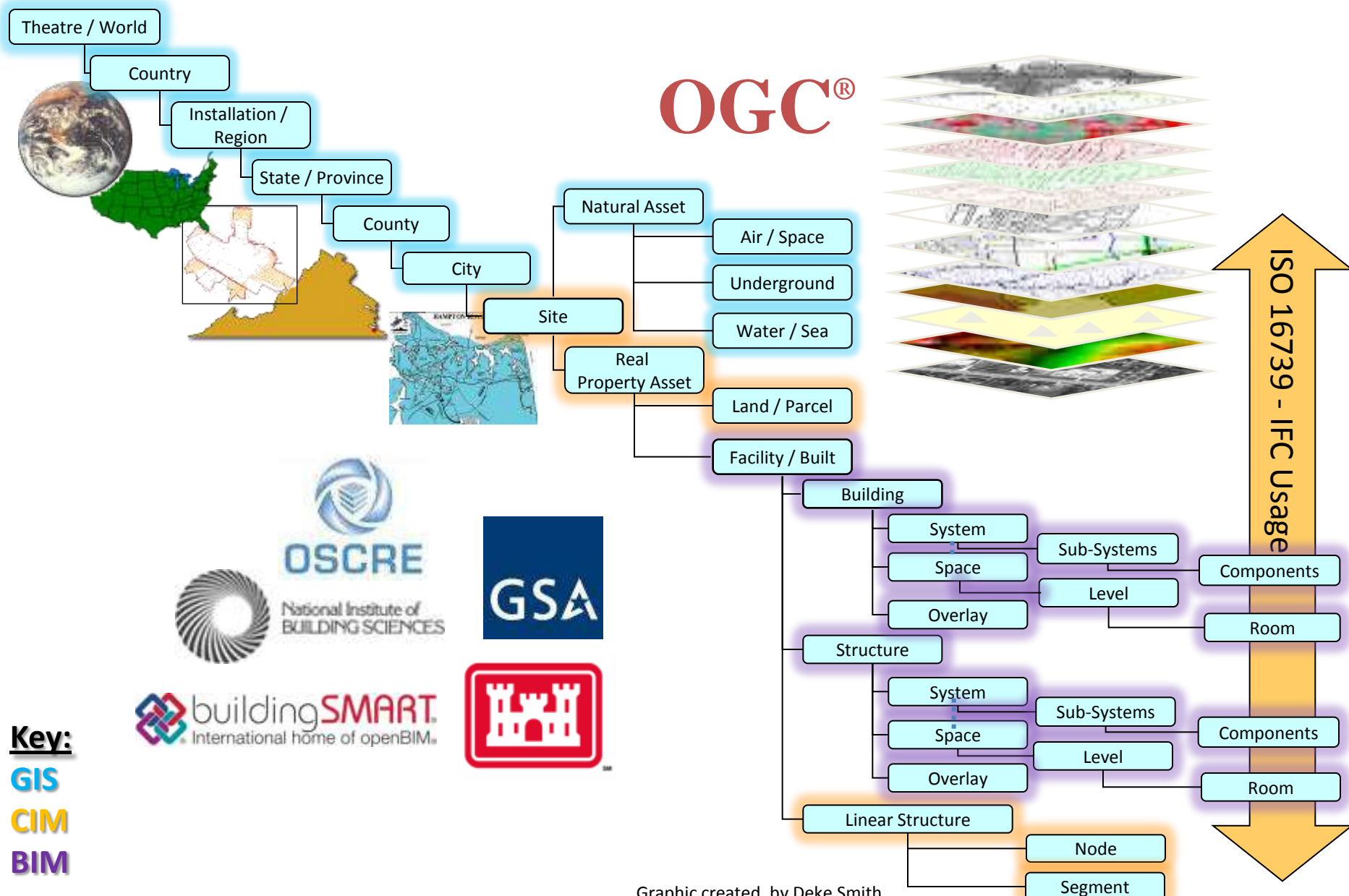


- **Transactional**

- Who did what when?

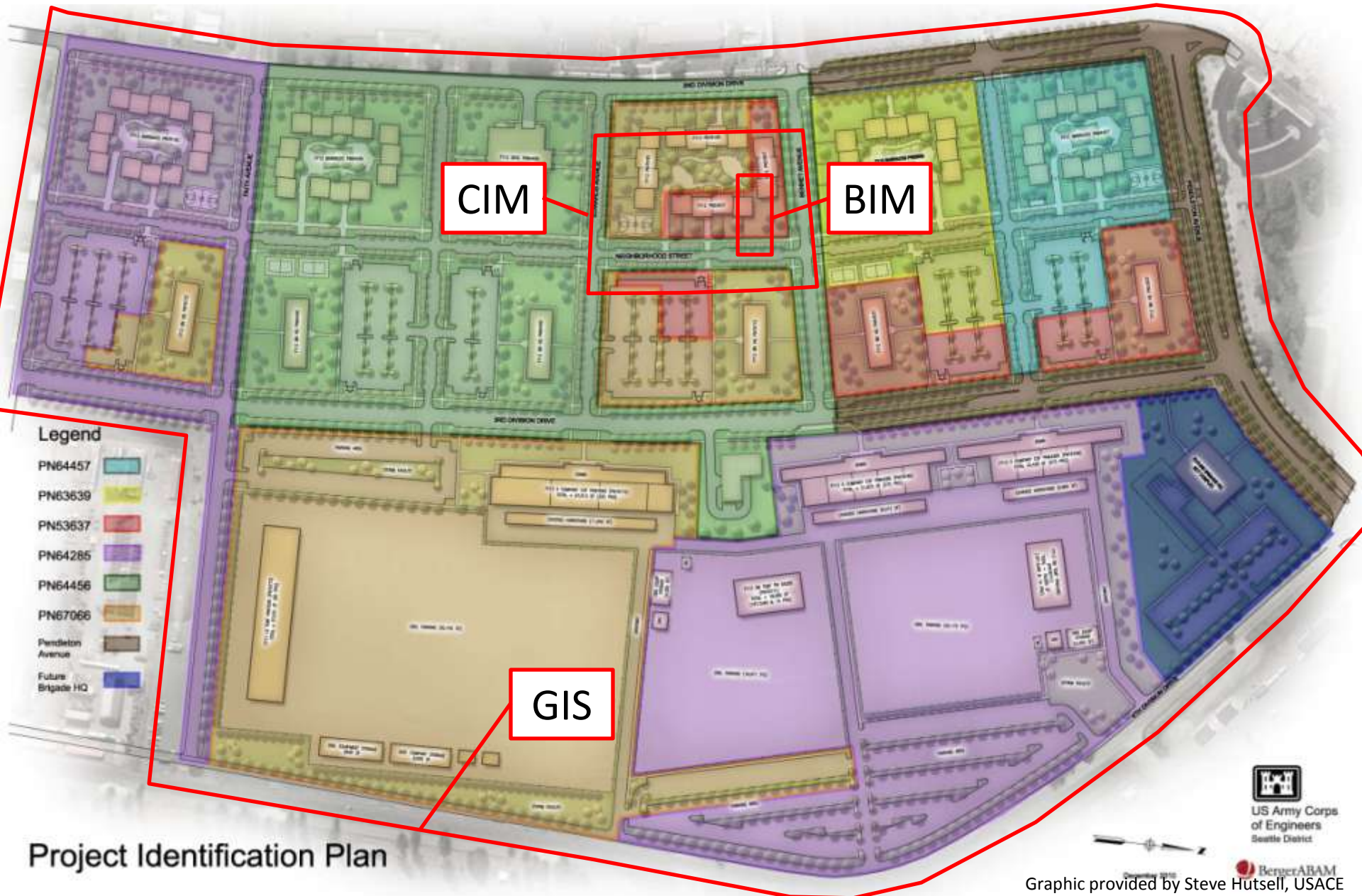


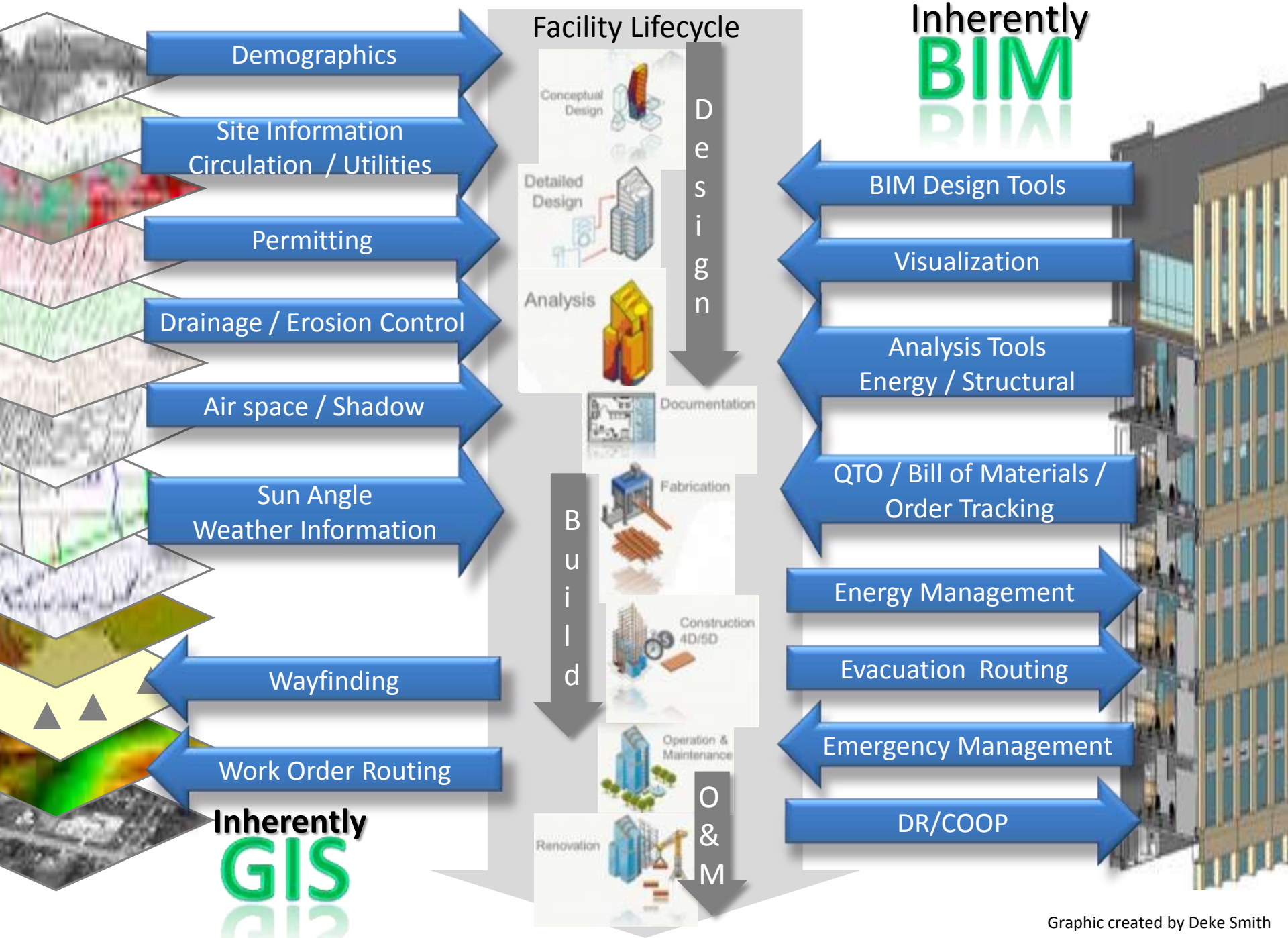
Information Hierarchy – GIS-CIM-BIM Relationship



Graphic created by Deke Smith

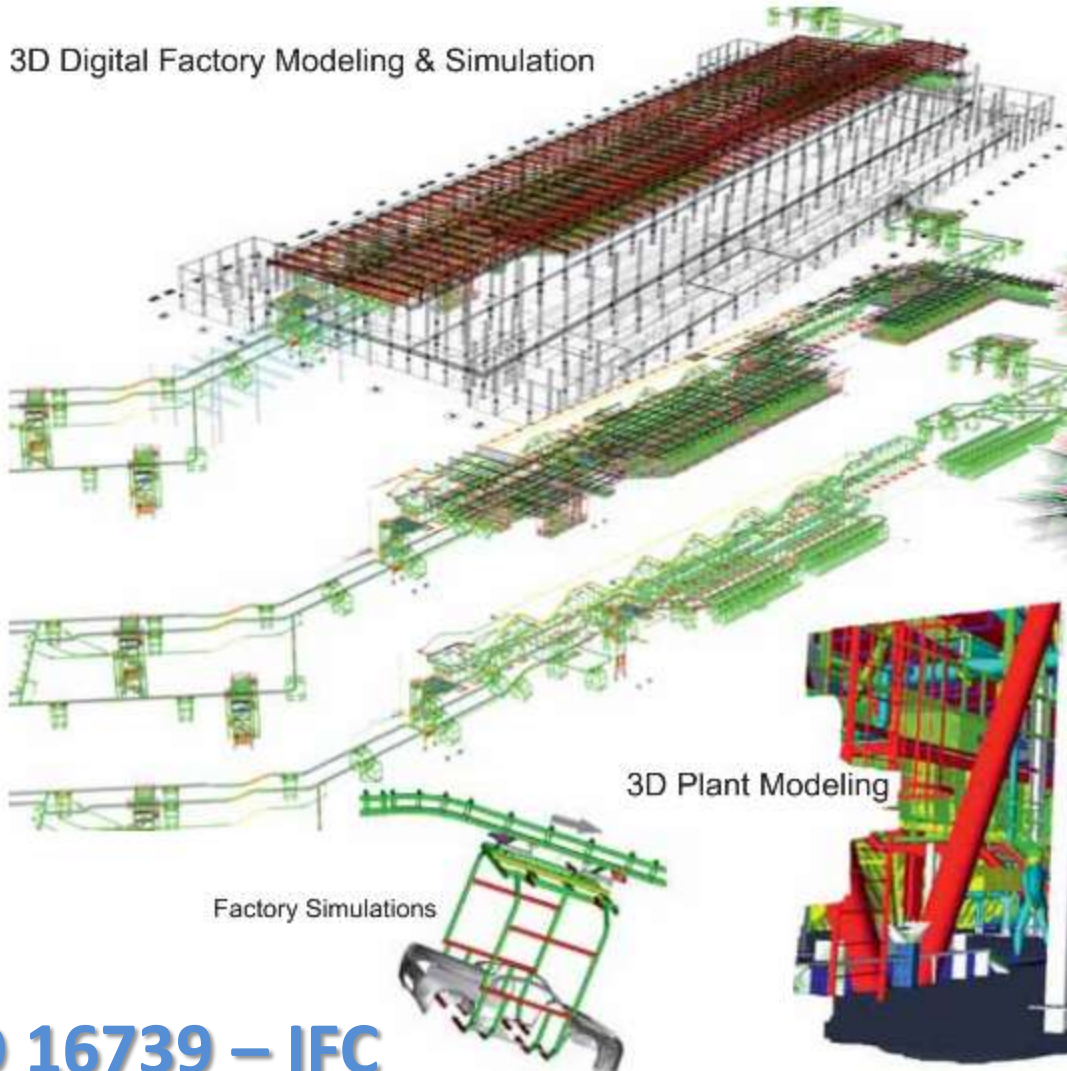
Relationships



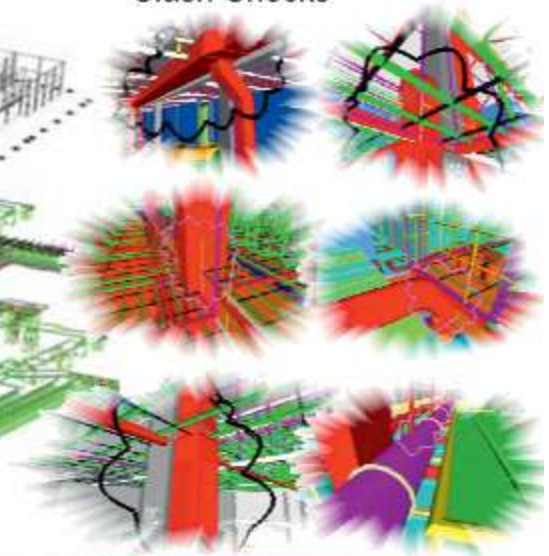


Industrial Plant Design vs. Facilities

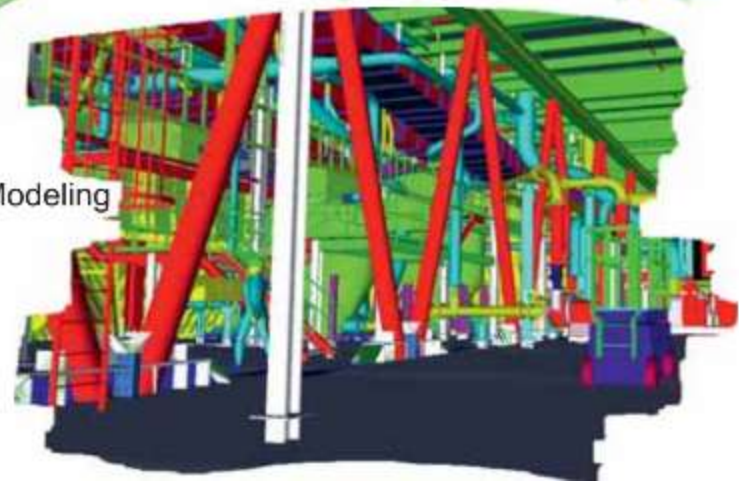
3D Digital Factory Modeling & Simulation



Clash Checks



3D Plant Modeling



Factory Simulations



ISO 16739 – IFC
ISO 15926 - iRing

Applicable to All Sizes of Facilities

Technical Specifications

Building Information Modeling(BIM)



IMM / BIM Integrated Airport 3D model showing Underground, Ground & Above Ground 3D data with GPS location & Intelligent Information System

Thank You

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