



Introduction to BIM

Universidad Politécnica de Cartagena eUT+ EUROPEAN UNIVERSITY OF TECHNOLOGY

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E I
C M

E.T.S. de Ingeniería de Caminos, Canales y Puertos y de Ingeniería de Minas

Resources
Processing
Manufacturing
Distribution
Use
End of life

LIFE CYCLE ASSESSMENT

A1, A2, A3, A4, A5, B1-B5, B6-B7, C1, C2, C3, C4, D

Universidad Politécnica de Cartagena

Østfold University College

ctcon Centro Tecnológico de la Construcción

evozon

UNIVERSITATEA TEHNICĂ DIN GIULIENBURGA



Summary :

- What is BIM?
- BIM in the Lifecycle of a BUILDING
- Uses of BIM
- BIM dimensions
- Benefits of BIM
- BIM Software
- Common Data Environment (CDE) - BIM Software



What is BIM?

Building Information Modelling (BIM) is at the centre of a digital transformation of the construction sector and the built environment.

BIM is the acronym used to define “**Building Information Modelling**”. But what does BIM mean? There are several definitions in the bibliography that can help us understand the concept of this digital tool that is used to manage project data and information of buildings. Among them, the definition of Eastman et al. (2011), in the Encyclopedia of Sustainable Technologies (2017), that defines BIM as:

“a **collaborative way for multidisciplinary information (including 3D Models) storing, sharing, exchanging, and managing** throughout the entire building project **lifecycle** including planning, design, construction, operation, maintenance, and demolition phase”.



What is BIM?

Some common connotations of multiple BIM terms are resumed by Succar (2009) in figure 1.

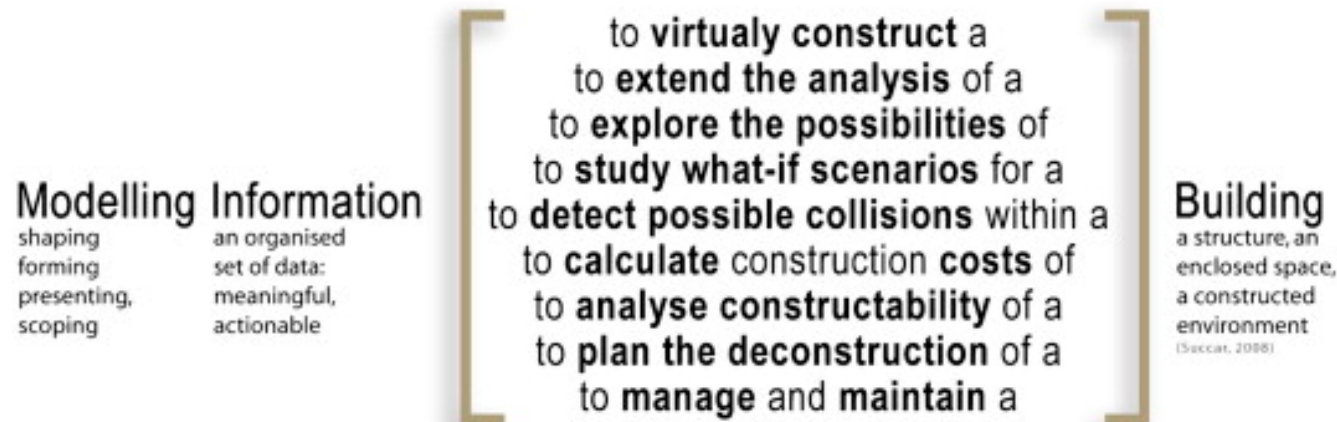


Figure 1: Common connotations of multiple BIM terms (Succar, 2009)

The best way to understand the BIM concept is by participating in it!



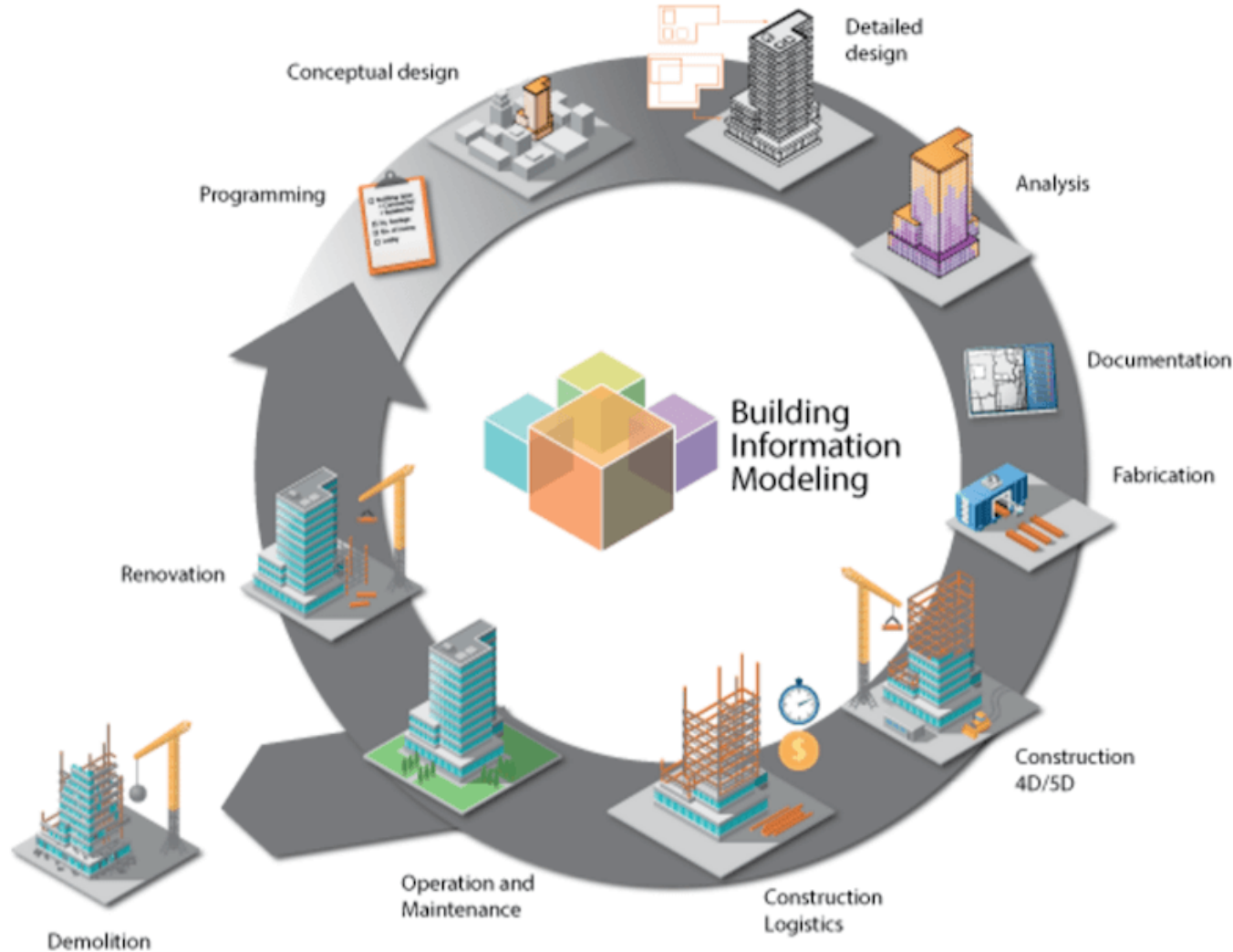
What is BIM?



The presentation video of the BIMVET3 project (<https://youtu.be/Fx1z2fLenzM>) summarizes this concept, and briefly answers the initial question "what is BIM"?



BIM in the Lifecycle of a BUILDING





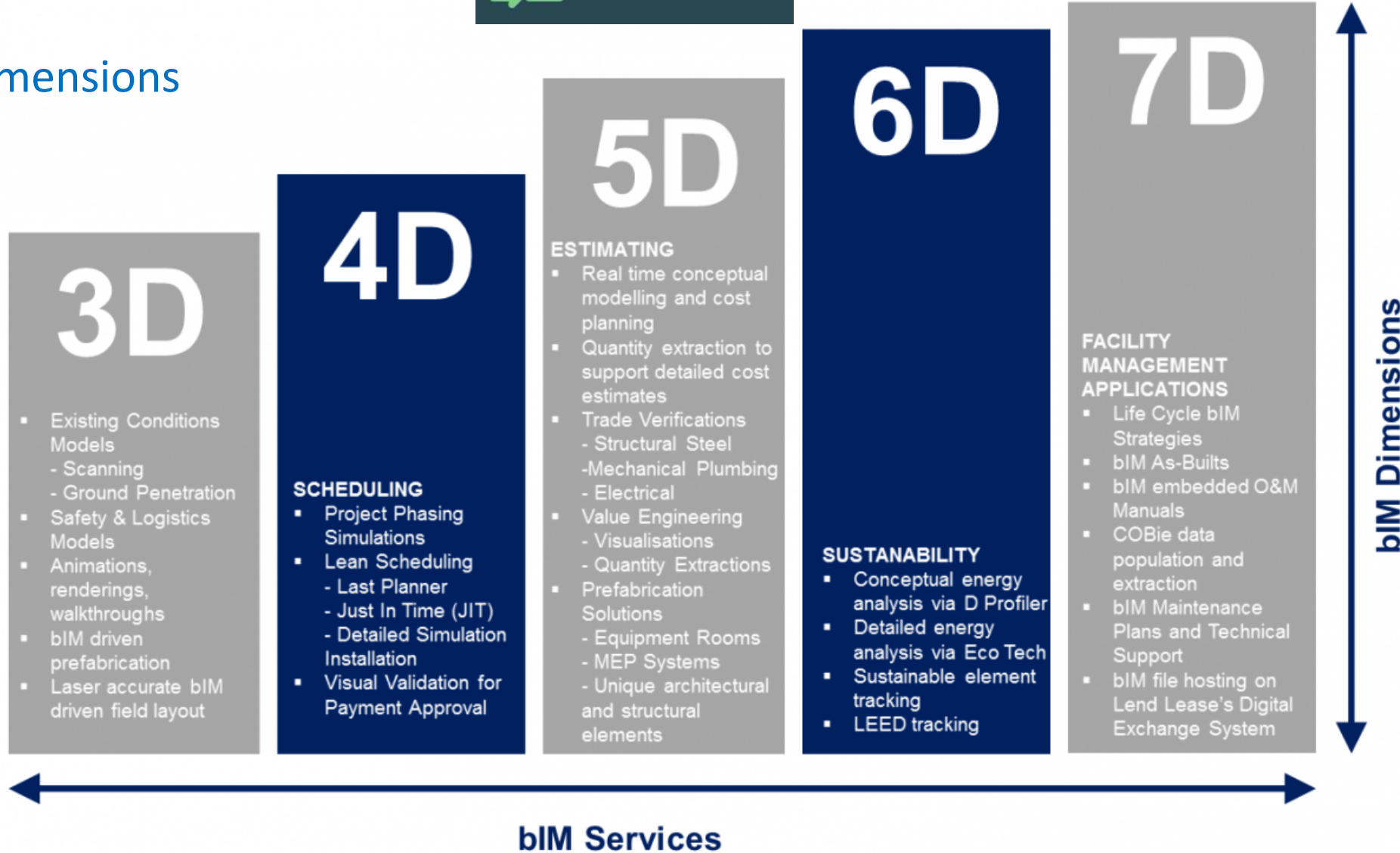
BIM-LCA

Uses of BIM

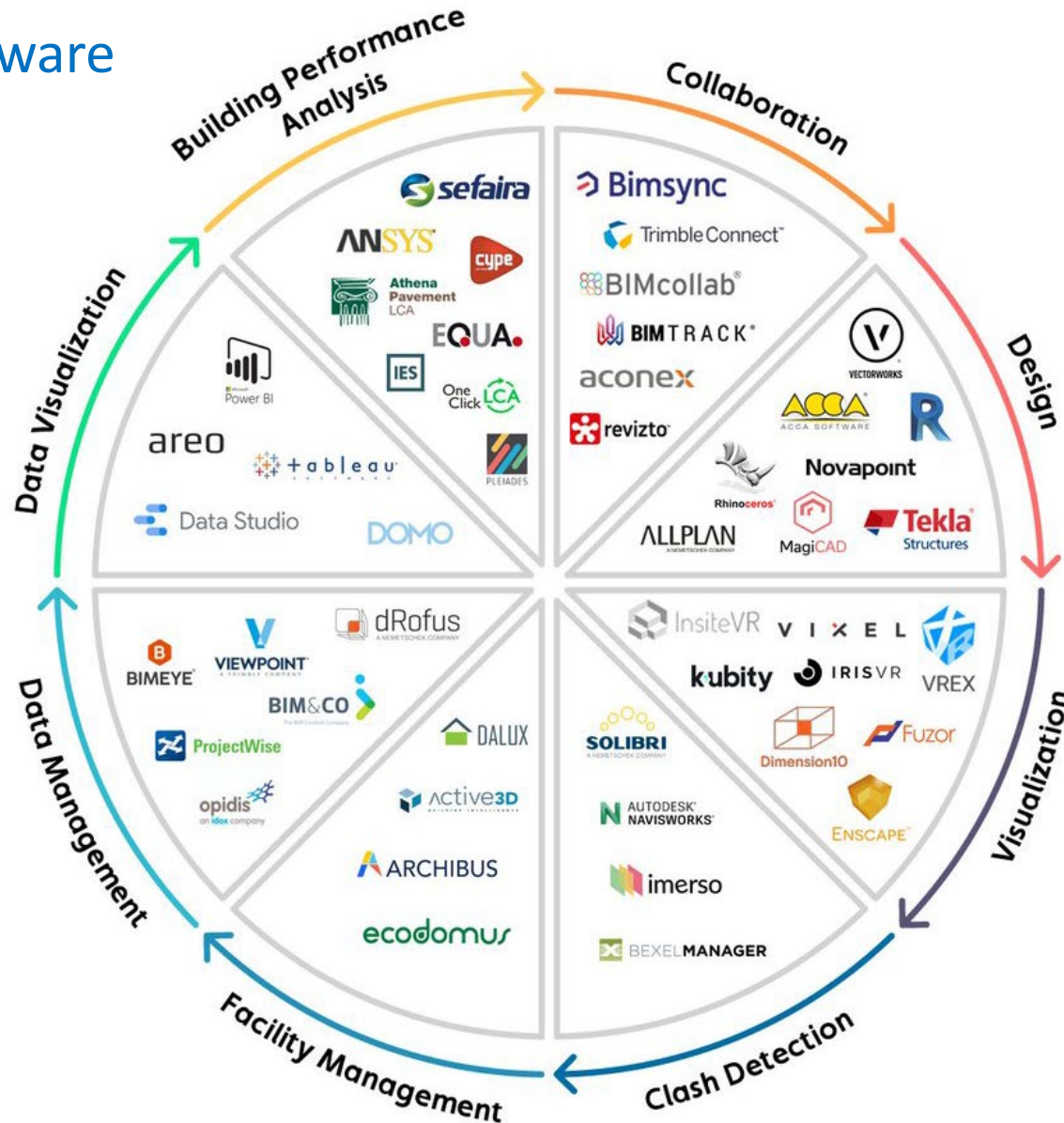


BIM-LCA

BIM Dimensions



Mapping of the BIM Software



BIM Software for modelling BIM 3D geometry

Revit

One of the most used BIM modeling software in the industry. Made for architectural design, MEP, structural design, detailing, engineering, and construction. Available alone or as part of the AEC Collection. Compatible with Microsoft Windows only.



Check

Tekla Structures

Tekla is a building information modeling software able to model structures that incorporate different kinds of building materials, including steel, concrete, timber and glass. Tekla allows structural drafters and engineers to design a building structure and its components using 3D modeling, generate 2D drawings and access building information.



Check

ArchiCAD

ArchiCAD is a complete design suite with 2D and 3D drafting, visualization and other building information modeling functions for architects, designers and planners. A wide range of software applications are integrated in ARCHICAD to cover most of the design needs of an architectural office.



Check

Civil 3D

Civil 3D is creative software used by Civil engineers and Architect professionals to plan, design, and manage civil engineering projects. It is a solution that creates civil engineering design and documentation that supports CAD and BIM workflows.



Check

Allplan

It is an all-in-one building information modeling software that gives architects and engineers full control over their designs and the ability to create building designs and structural models with creativity, freedom and flexibility



Check

Rhinoceros

Rhino is a universal building information modeling software solution that gives architects and engineers full control over their projects and the ability to produce building designs and construction models with creativity, freedom, and flexibility.



Check

Novapoint

Novapoint is a platform for designing and documenting infrastructure and terrain projects. It allows civil engineers to effectively design all aspects of modern roads, railways, tunnels, bridges, water and sewer.



Check



Mapping of the BIM Software

BIM Software for disciplinary/multidisciplinary coordination

Navisworks Manage

Navisworks is a comprehensive project review solution that supports 4D and 5D simulation, coordination, analysis, and communication of design intent and constructability.



Check

Solibri

Is a BIM Quality Assurance and Quality Control software. Providing out-of-the-box tools for BIM validation, compliance control, design process coordination, design review, analysis and code checking.



Check

Trimble Quadri

Trimble Quadri is a common, centrally shared model solution for GIS & BIM data. It is a model server for infrastructure projects, supporting all phases and disciplines involved. Providing an object-, network-, and process-oriented model platform.



Check

Bexel Manager

BIM management software where all analysis are integrated into a single model and single solution. Bexel has functionalities for implementing 3D 4D 5D 6D level of BIM in your project.



Check



Common Data Environment - CDE



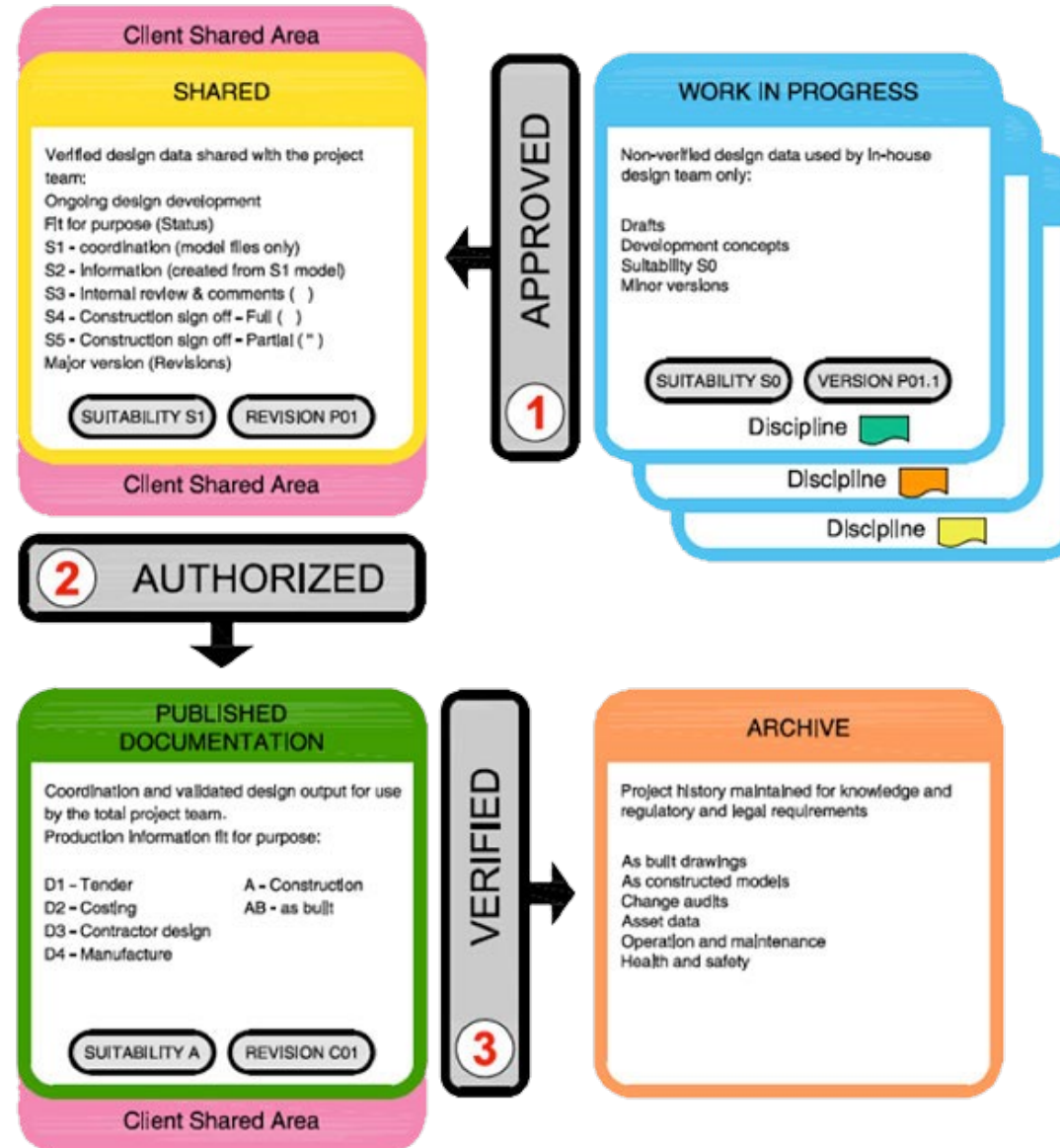
TRADITIONAL INFORMATION SHARING



COMMON DATA ENVIRONMENT (CDE)



Common Data Environment – CDE – Shared folders and files



Mapping of the BIM Software

BIM 360

BIM 360 is an advanced cloud-based Common Data Environment from Autodesk. A unified platform connecting your project teams and data in real-time, from design through construction, supporting informed decision-making and leading to more predictable and profitable outcomes



Check

Viewpoint for Projects

A cloud based document and information management solution for sharing, controlling and collaborating on project information with dispersed project teams. Viewpoint for Projects CDE will allow users customers to deliver level 2 BIM projects.



Check

Microsoft SharePoint

SharePoint is a web-based collaborative platform that integrates with Microsoft Office. Commonly used in bigger enterprises.



Check

Choosing right Common Data Environment

Trimble Connect

Trimble Connect is an open collaboration tool make project information traceable, transparent, and accessible to help users to build better. Allows users to view, share, and access project information from anywhere, at anytime.



Check

Bentley ProjectWise

Project collaboration software. It helps project teams to manage, share and distribute engineering project content and review in a single platform. While ProjectWise can manage any type of CAD, BIM, geospatial and project data, it integrates with Bentley applications, and other products including Autodesk software and Microsoft Office.



Check

Allplan Bimplus

Is an open BIM platform for all disciplines to collaborate efficiently in building projects. BIM model data, information, documents and tasks are managed centrally over the complete building life cycle.



Check





That's all

Thanks for your attention