



# Using **BIM / Digital Engineering** to de-risk and improve the entire **Project Lifecycle Management**





## Holger de Groot

National Director of BIM, MArch, PGDipArch

As National Director of BIM for the Australian region, my role is to **Supervise and Guide** Digital Practice Leaders at HDR. I am responsible for **Implementing** and advising leadership on the corporate Digital Practice **BIM Strategy**, interacting with **Various Disciplines** and advising on BIM matters at all levels.



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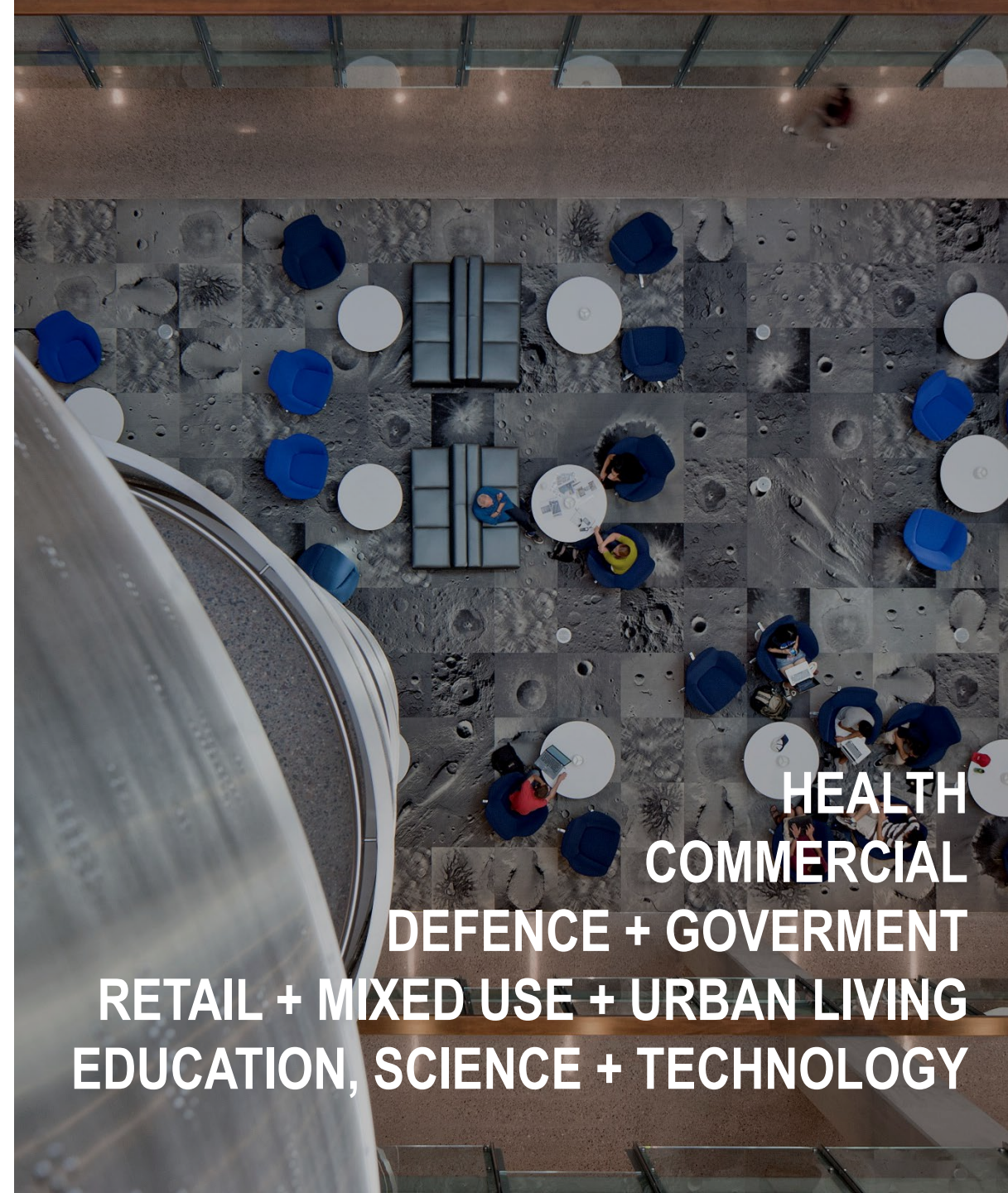
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# HDR Profile

HDR is a creative firm for **architecture and engineering** with experience spanning **over 40 years in the Australian market**.

With more than **10,000 employees worldwide** in more than **200 offices around the globe**, we have access to highly informed best practice, innovative future-thinking and top talent from around the world, allowing us to contribute world-class intellect, expertise and specialist knowledge to our projects.



**HEALTH  
COMMERCIAL  
DEFENCE + GOVERNMENT  
RETAIL + MIXED USE + URBAN LIVING  
EDUCATION, SCIENCE + TECHNOLOGY**

# HDR

## Global Presence

GLOBAL  
**225**  
OFFICES

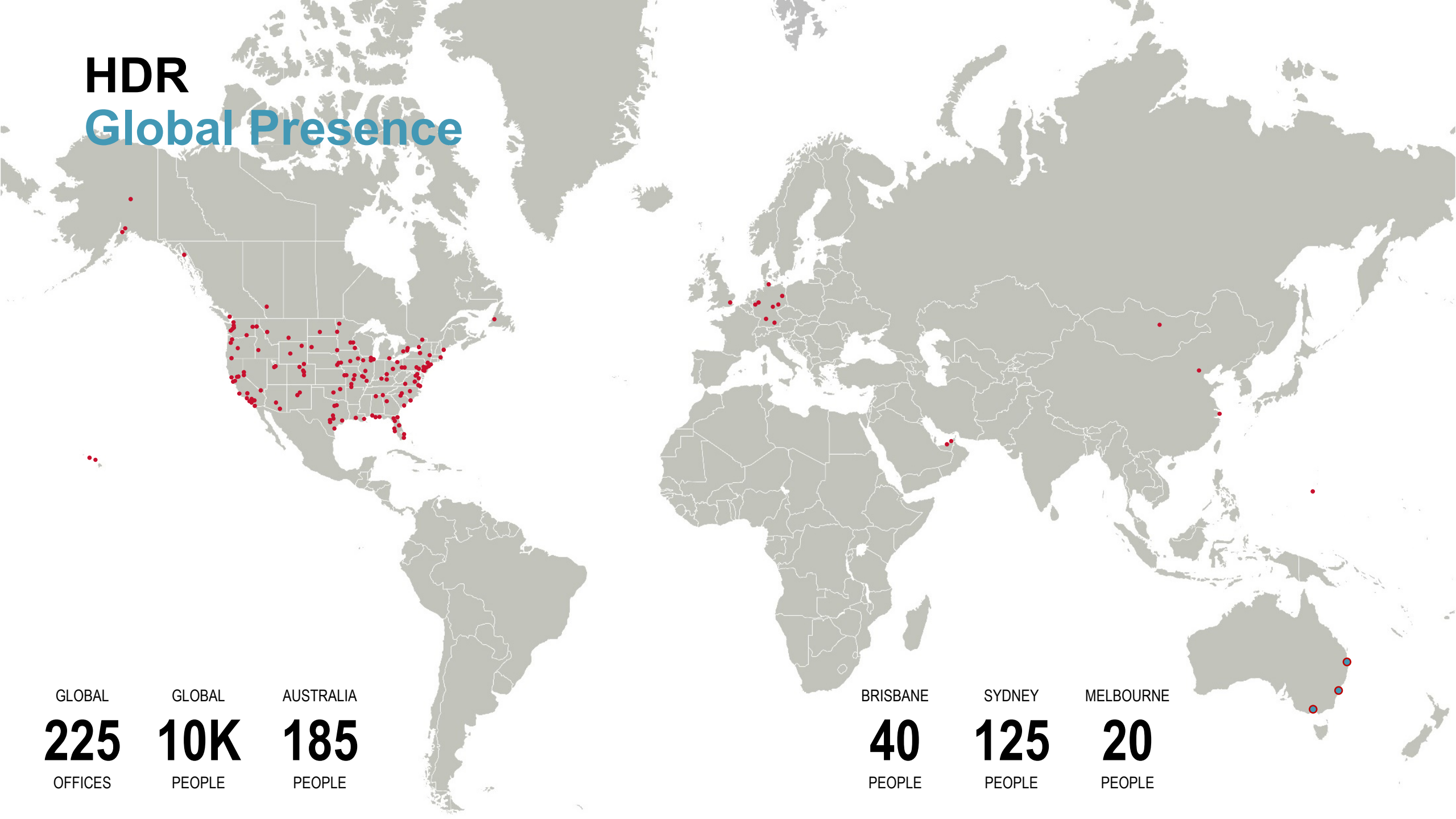
GLOBAL  
**10K**  
PEOPLE

AUSTRALIA  
**185**  
PEOPLE

BRISBANE  
**40**  
PEOPLE

SYDNEY  
**125**  
PEOPLE

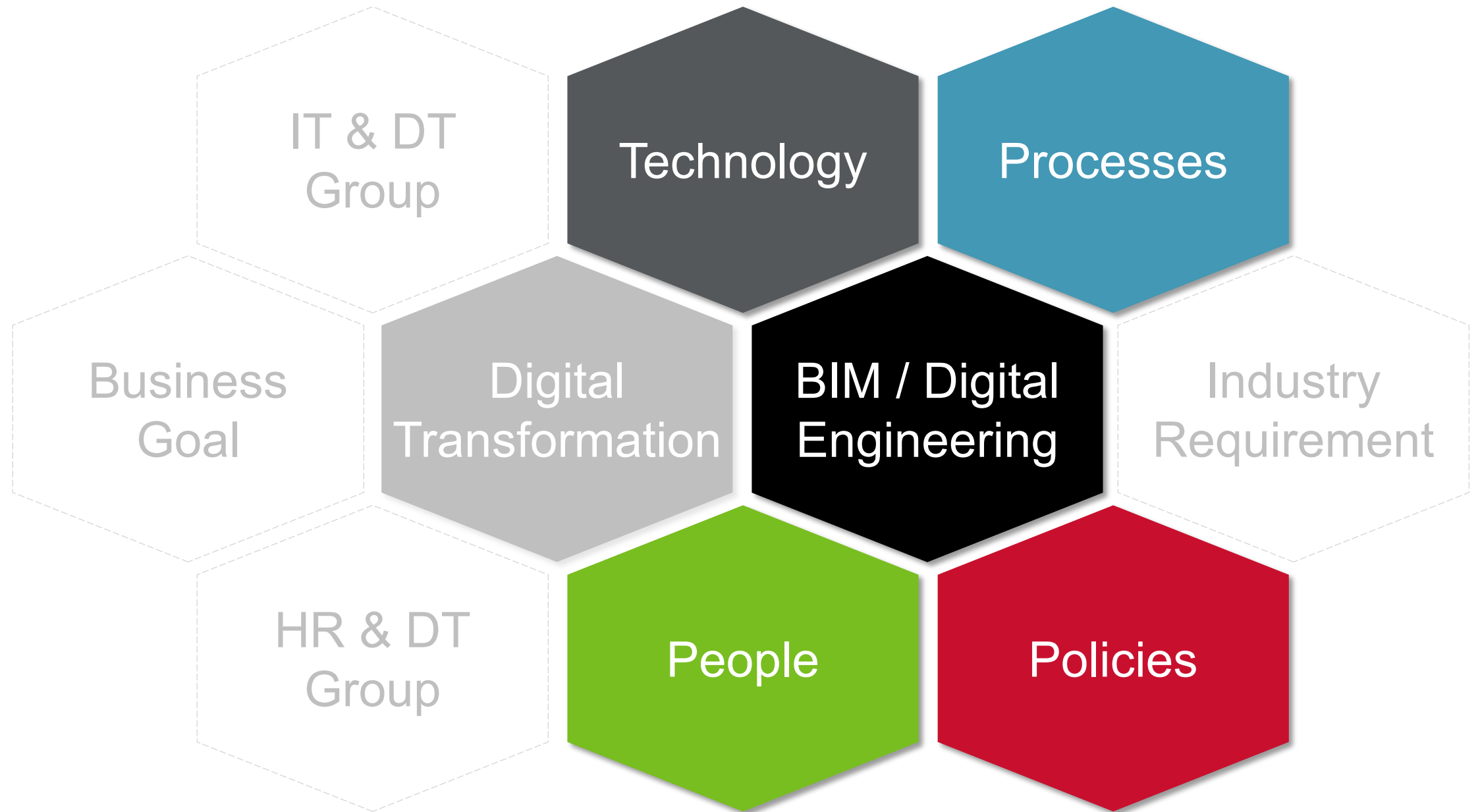
MELBOURNE  
**20**  
PEOPLE



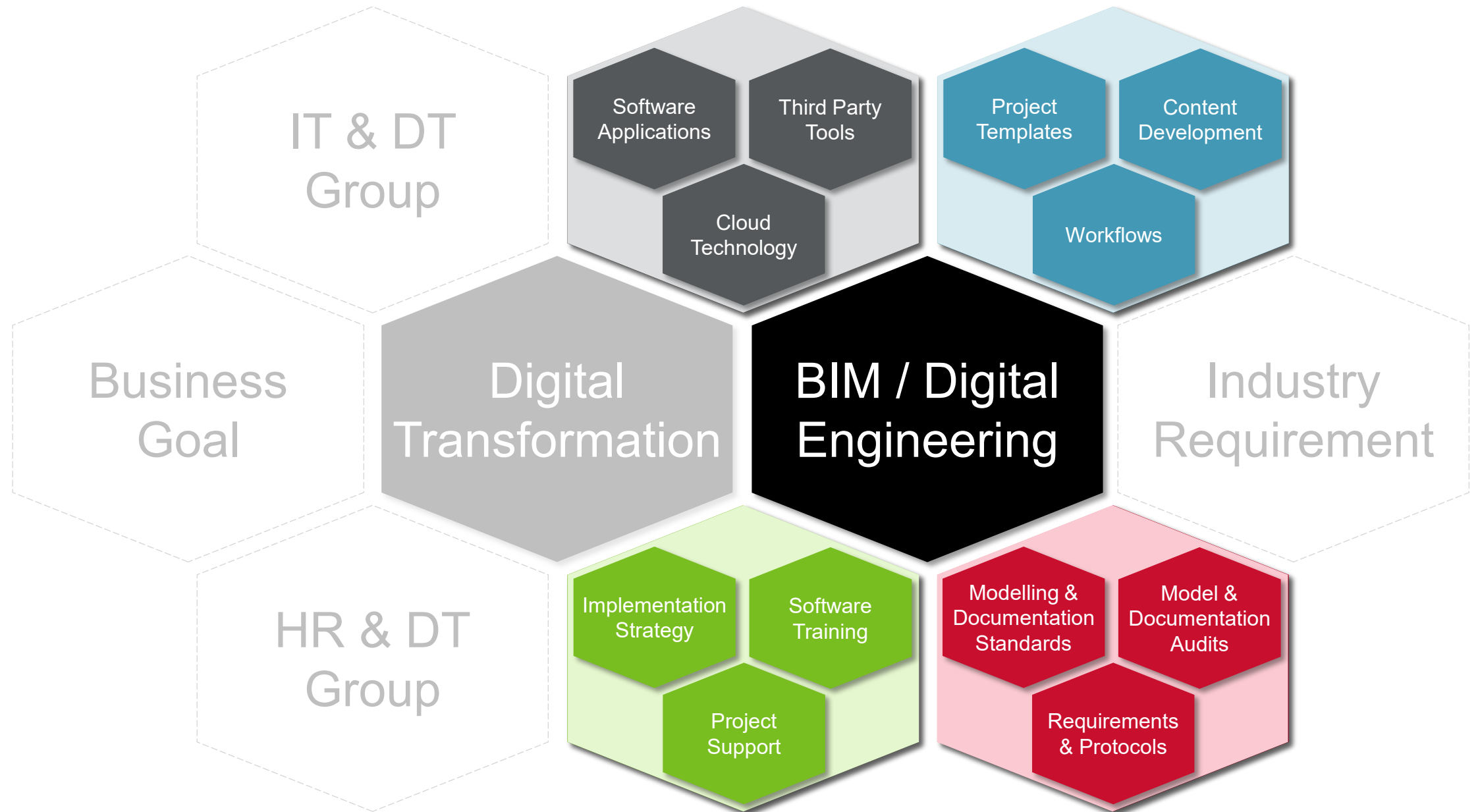


A man in a dark suit stands with his back to the camera, his hands clasped behind him. He is looking at a wall that is entirely covered with a dense pattern of interlocking gears of various sizes. The gears are rendered in shades of gray and white, creating a complex, mechanical texture. The floor is a light blue-gray color with a subtle wood grain pattern. The overall image conveys a sense of complexity, engineering, and the interconnectedness of systems.

# BIM and Digital Engineering



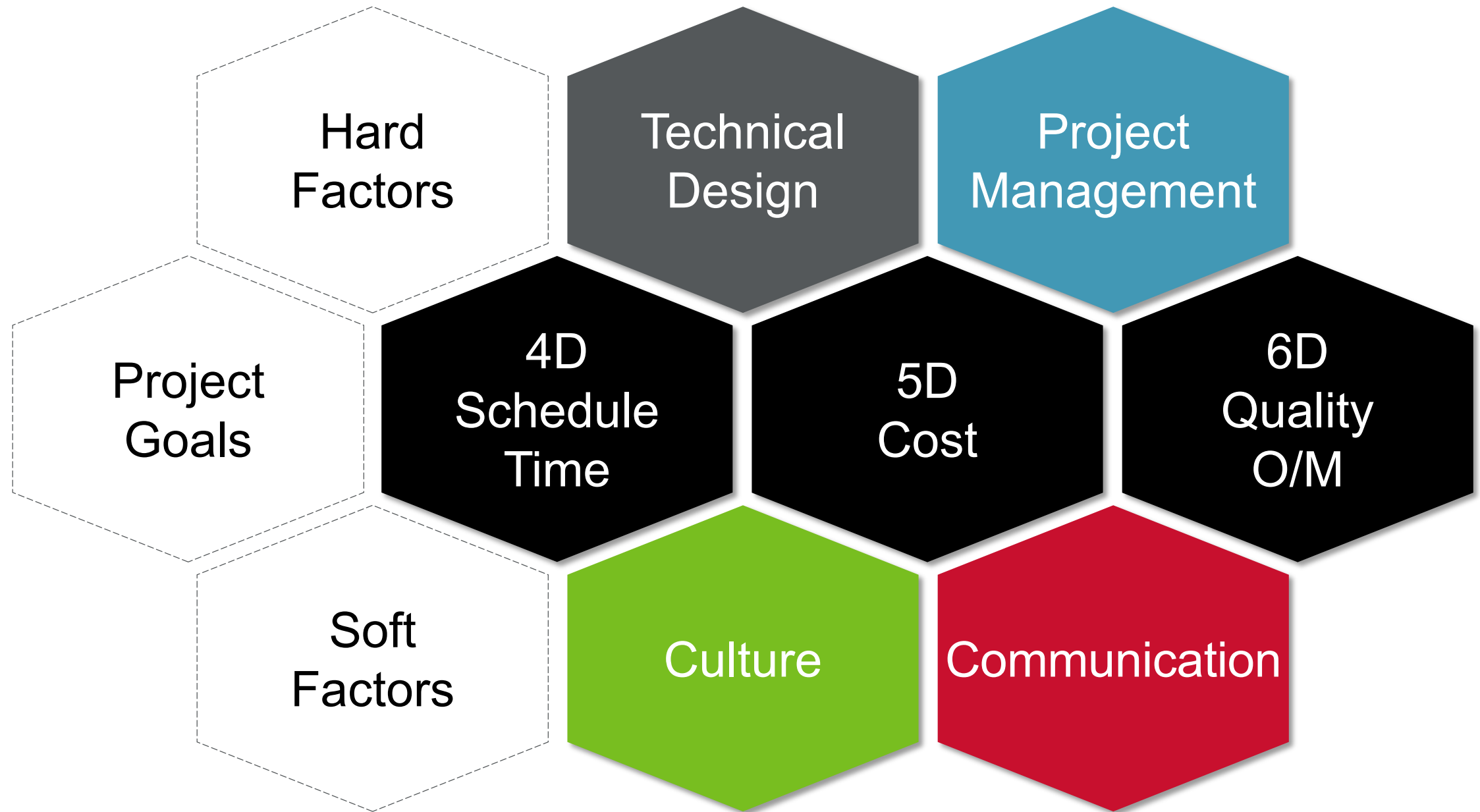


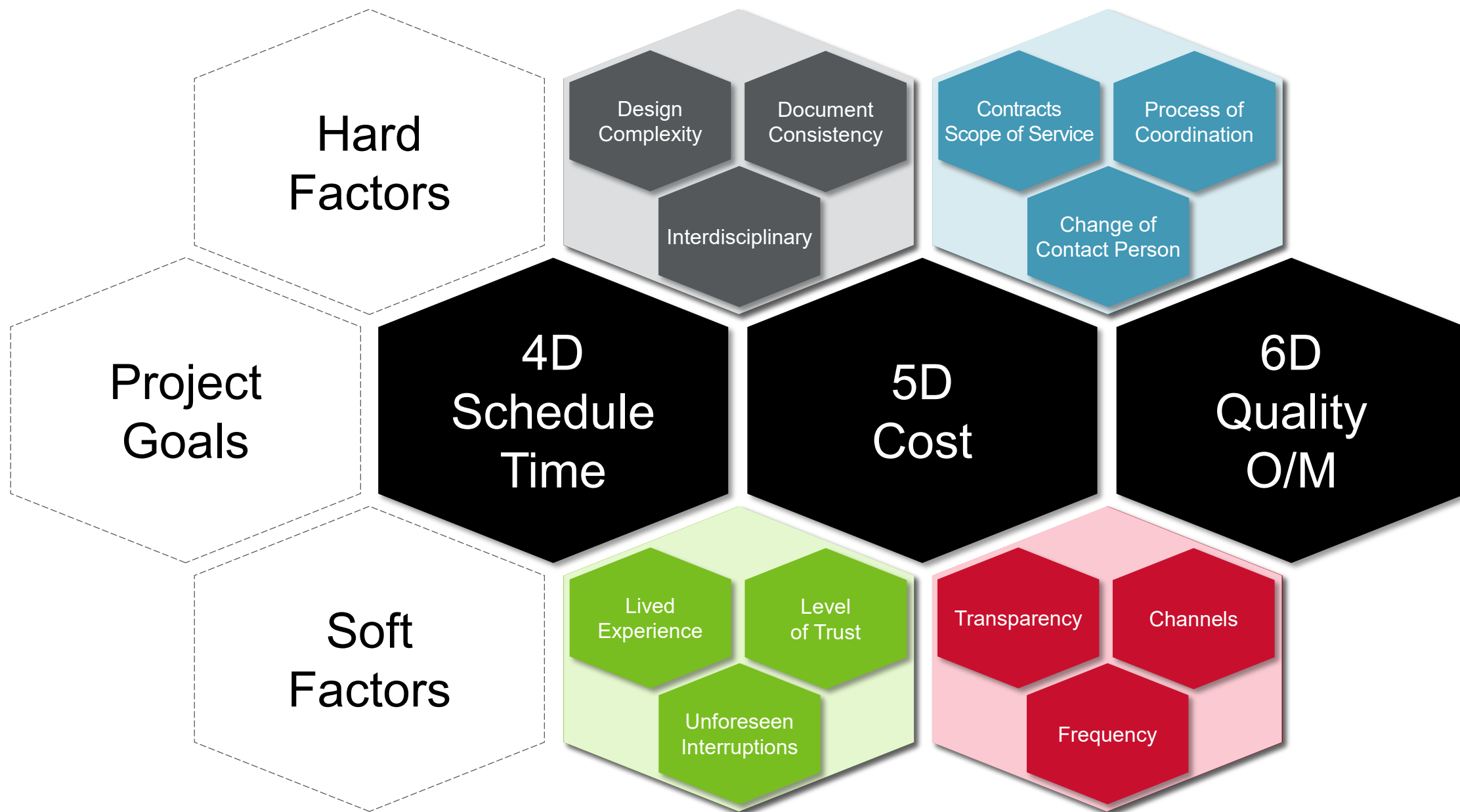




# Project Goals and Challenges



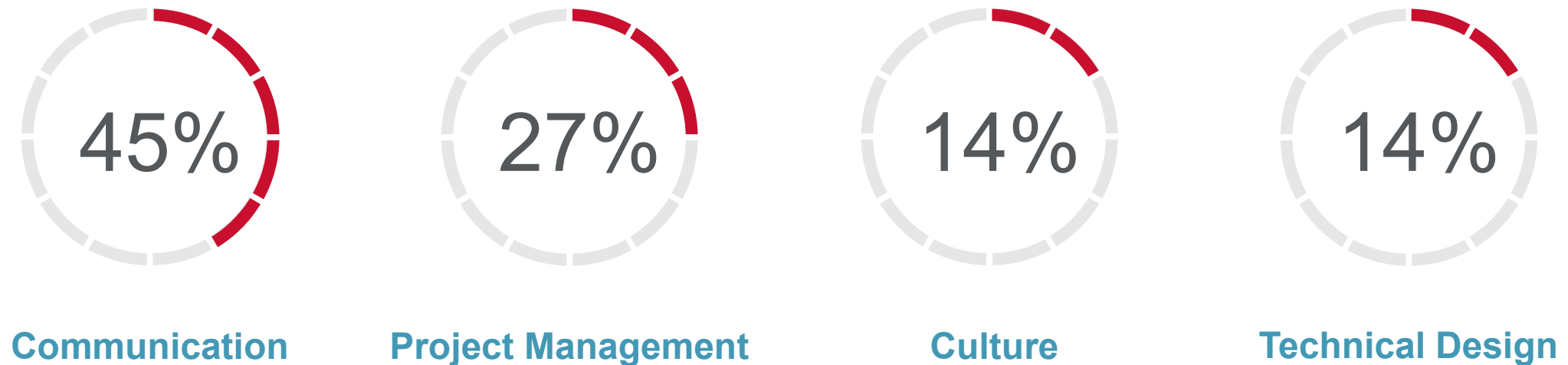






# What is the biggest Challenge?

Communication is the centre of all project processes. The purpose of communication is information transfer.



The data is based on a scientific survey which was undertaken by the Institute of Construction Management and Digital Engineering (ICoM) in 2017, involving project leaders in the field of Architecture, Engineering and Construction as well as Infrastructure and Civil Engineering.



# Project Lifecycle Management

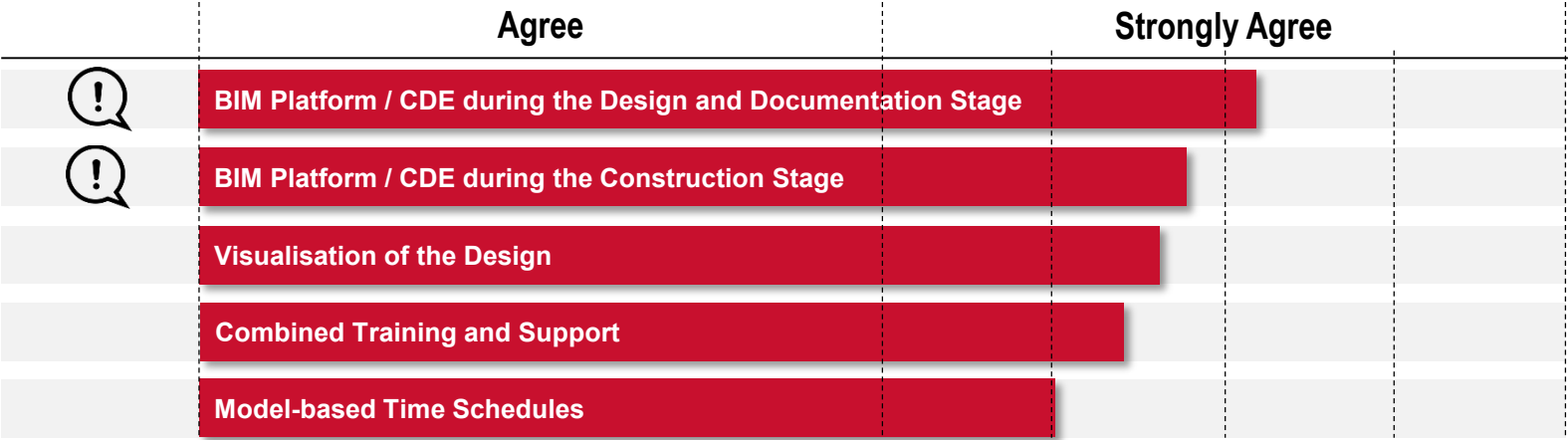


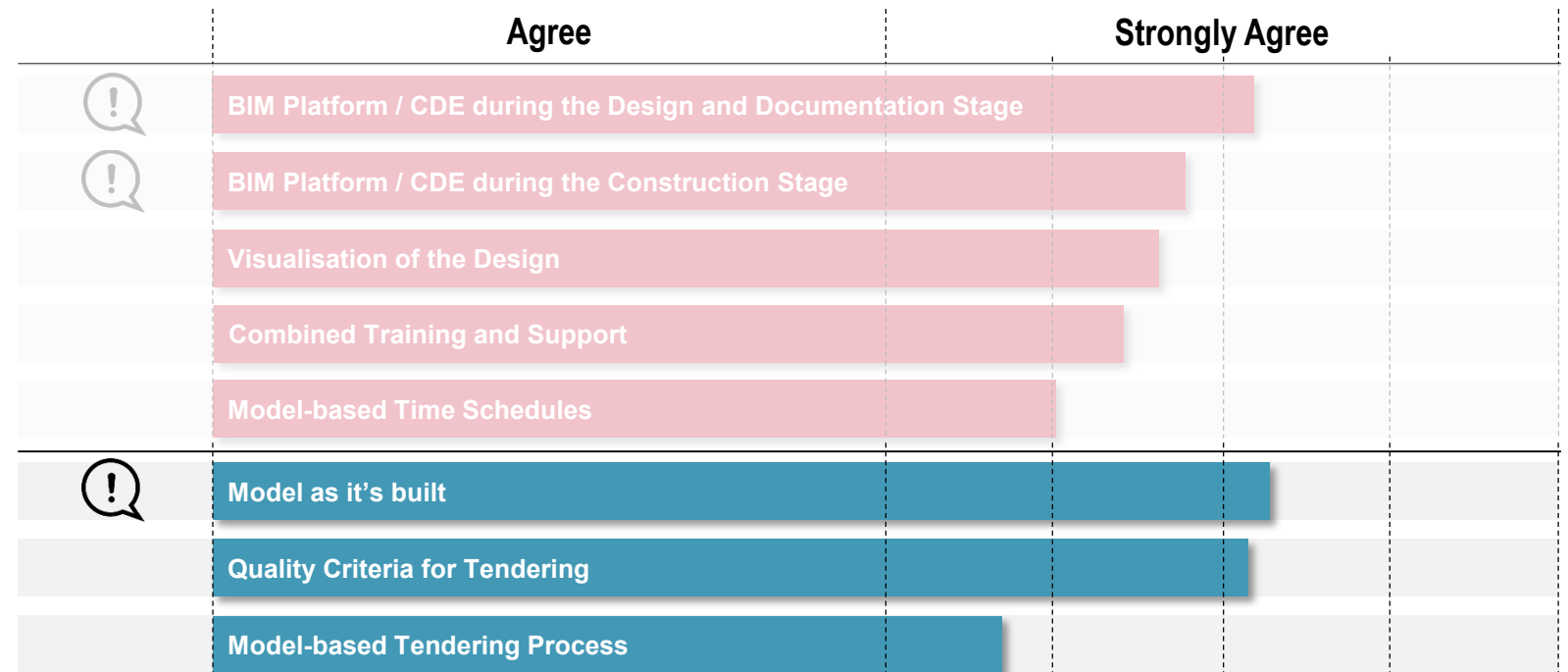
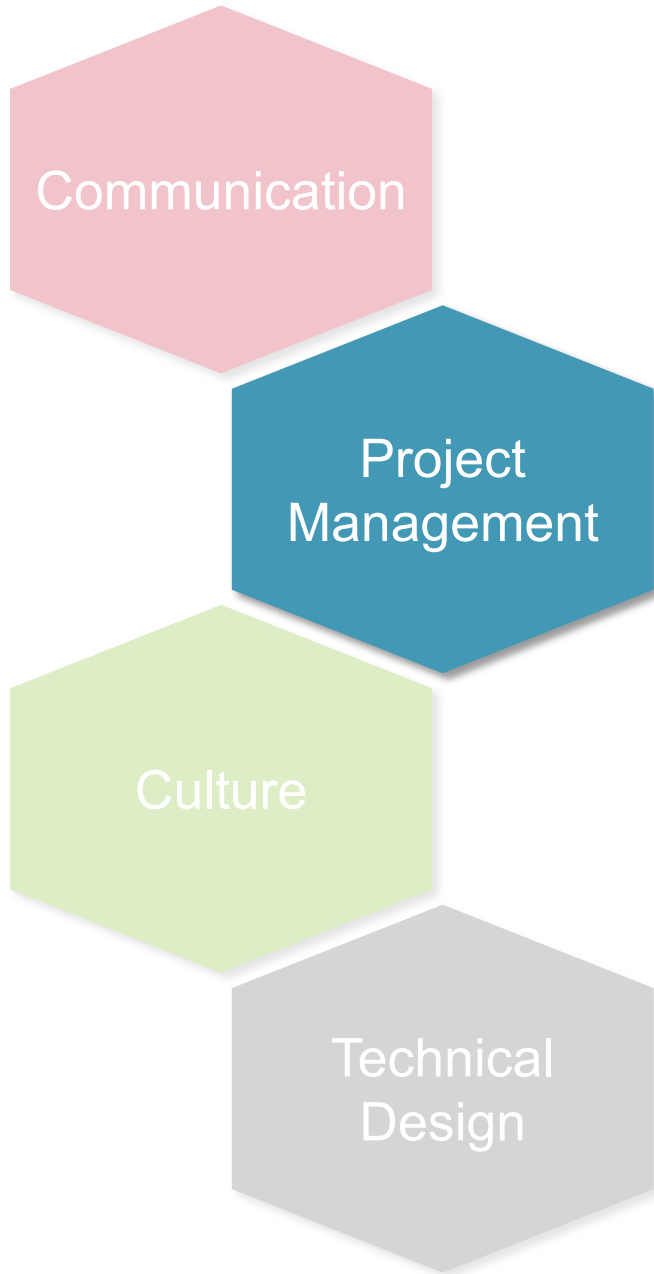
Communication

Project Management

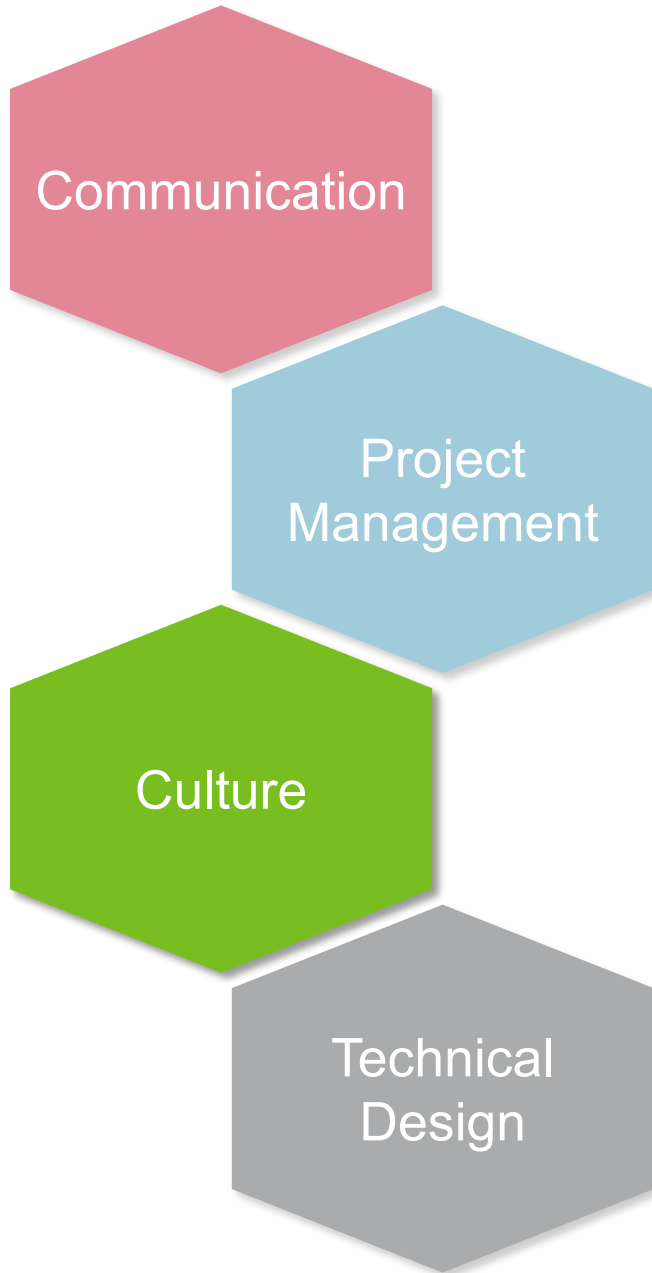
Culture

Technical Design

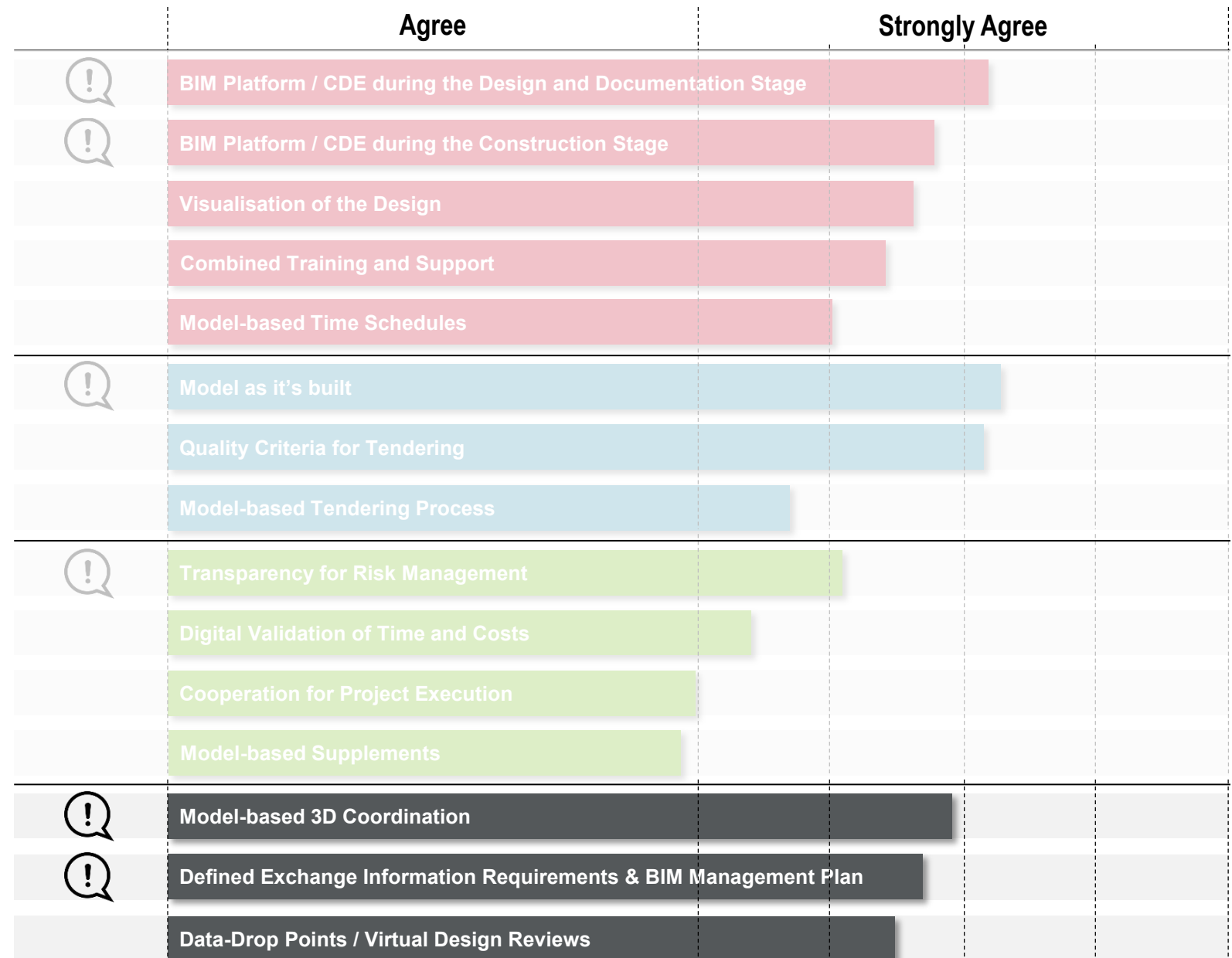
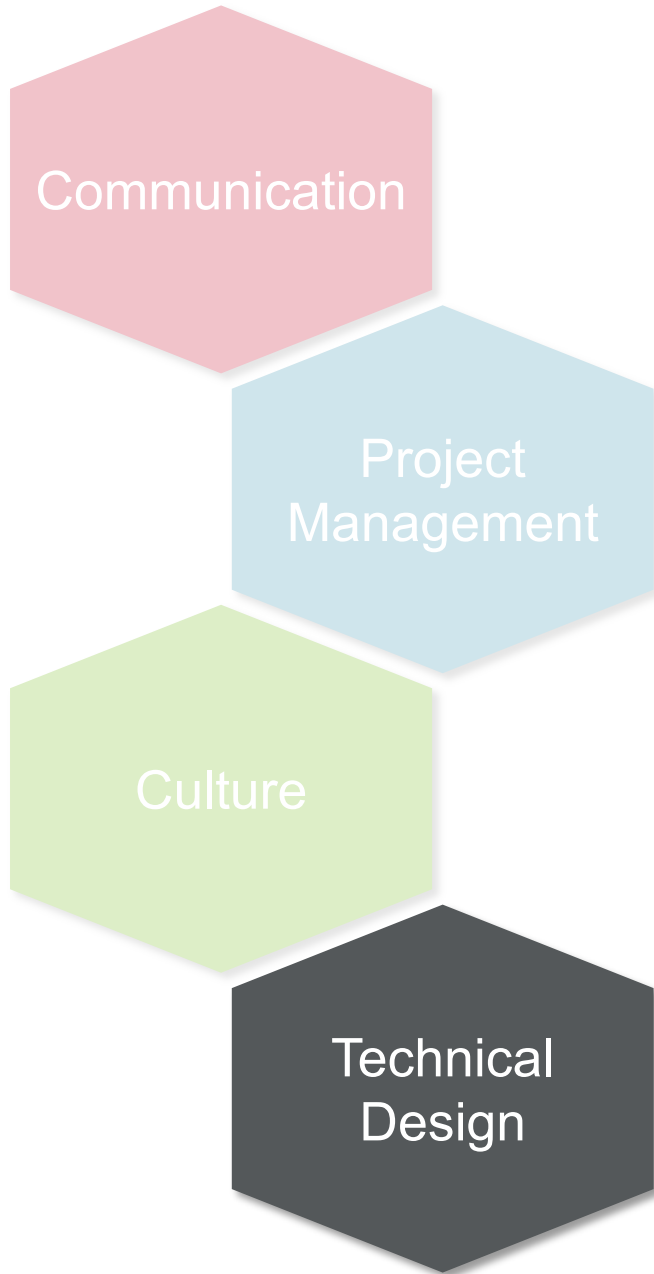








	Agree	Strongly Agree		
!	BIM Platform / CDE during the Design and Documentation Stage			
!	BIM Platform / CDE during the Construction Stage			
	Visualisation of the Design			
	Combined Training and Support			
	Model-based Time Schedules			
!	Model as it's built			
	Quality Criteria for Tendering			
	Model-based Tendering Process			
!	Transparency for Risk Management			
	Digital Validation of Time and Costs			
	Cooperation for Project Execution			
	Model-based Supplements			



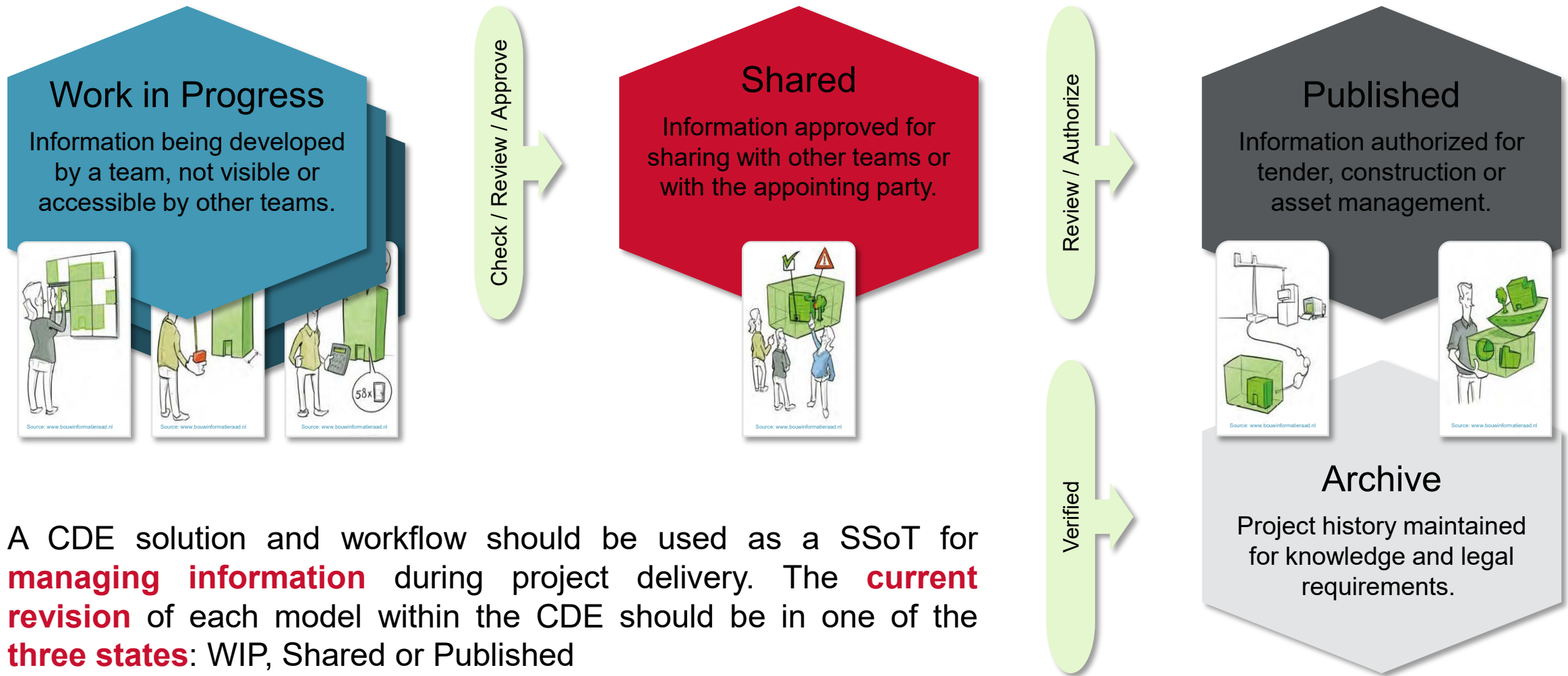


A close-up photograph of a network patch panel. Several Ethernet cables are plugged into the ports. In the foreground, a blue RJ45 connector is visible, with a yellow cable behind it. To the right, a white cable with a beige RJ45 connector is plugged in. Below that, an orange cable with an orange RJ45 connector is visible. The background is a soft, out-of-focus green.

**Common Data Environment**

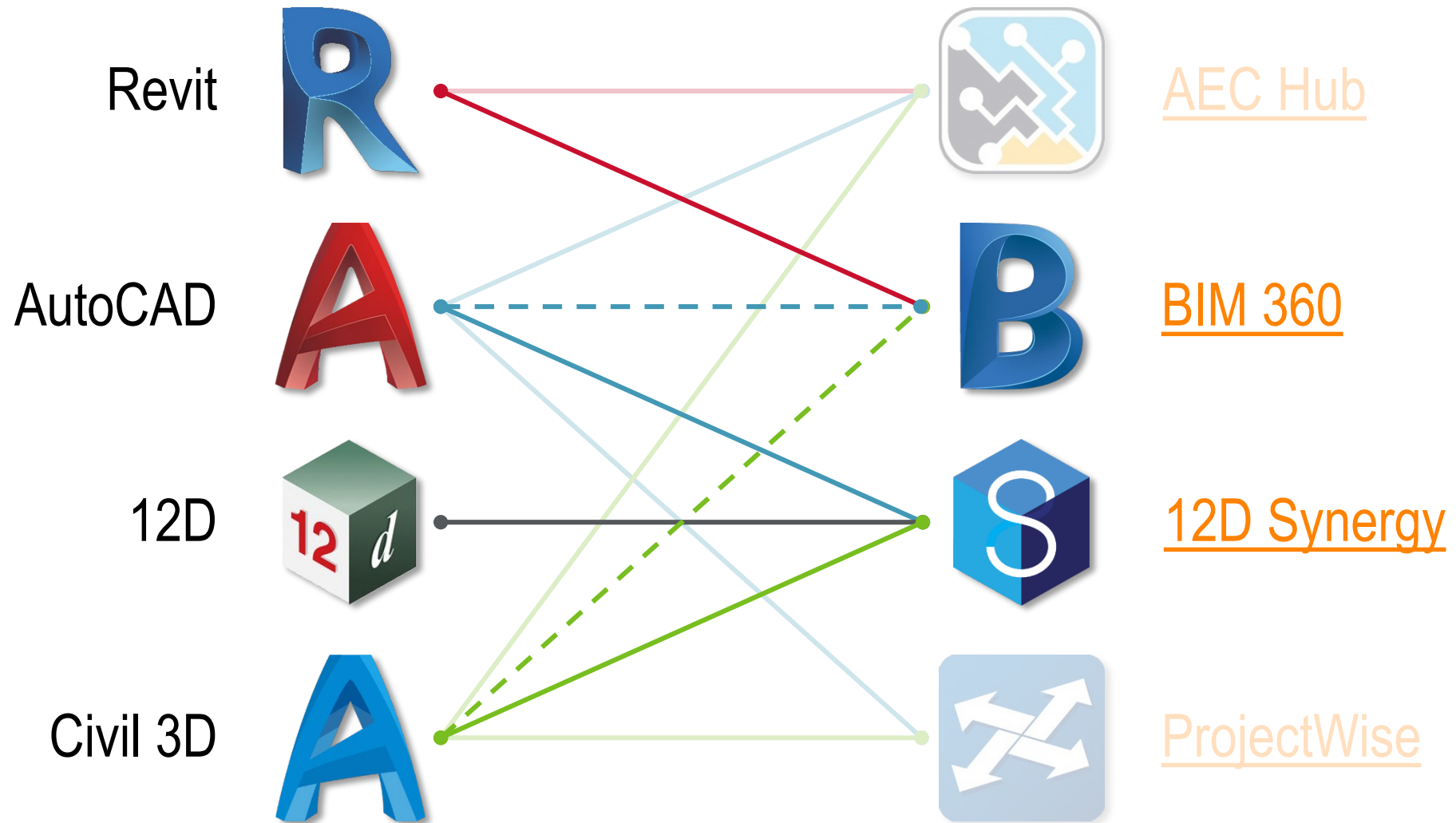
# Common Data Environment - Single Source of Truth

18



# Common Data Environment - Software Solutions

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# Common Data Environment - Cloud-based Collaboration

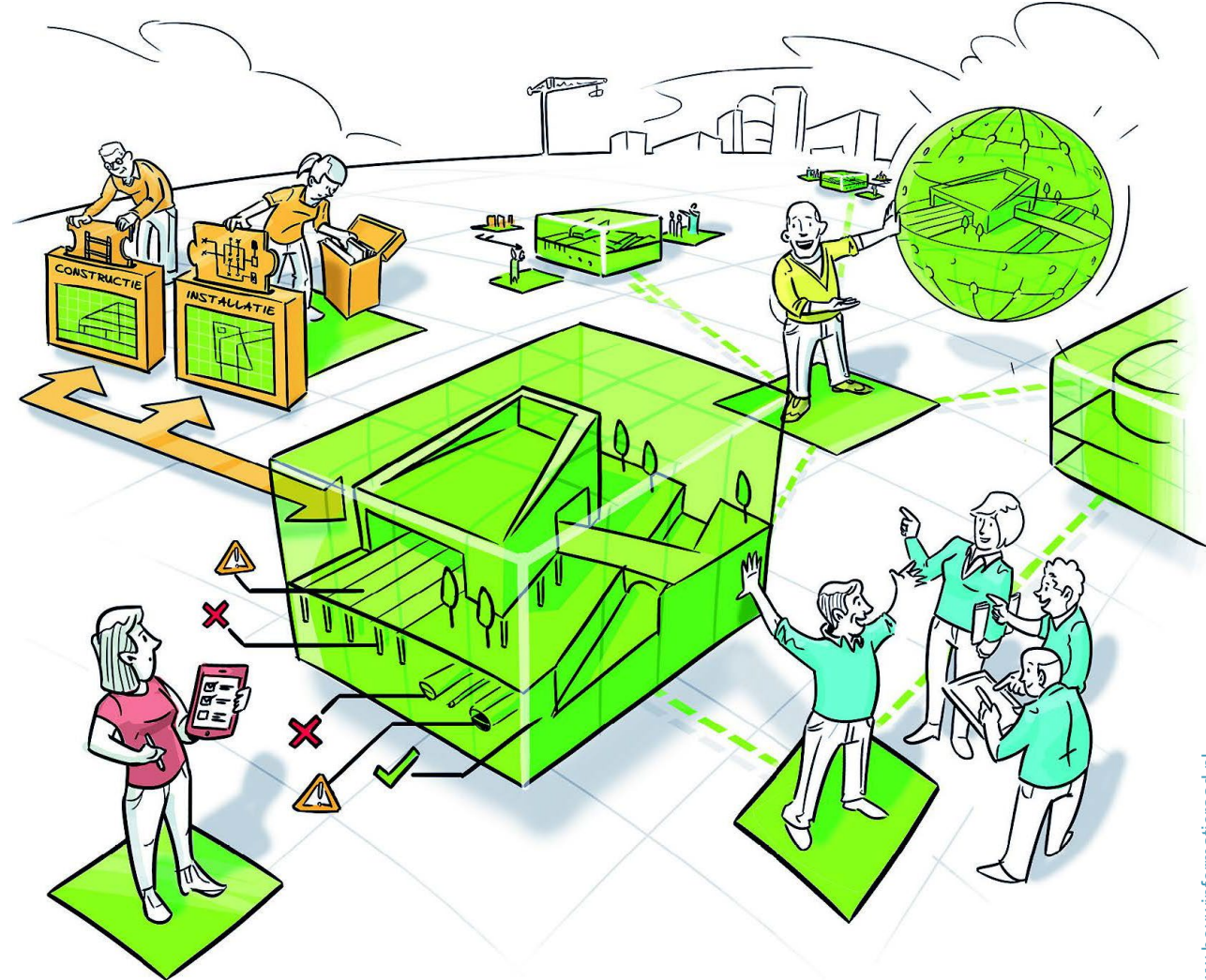
Enables BIM processes and the desire for **connectivity**.

Helps you to **improve communication** with extended project stakeholders.

Helps you to **reduce project errors** and to minimise data friction.

Allows you to **work from anywhere** to boost productivity.

Allows you to reduce costs by **co-locating project teams** virtually.



## BIM Supporting Documents



# BIM Supporting Documents for Collaboration

## Client / Owner

## BIM Consultant

To identify the true requirements of the user and make sure the asset solution has the right qualities and capabilities.

### Project BIM Brief

*Exchange  
Information  
Requirements*



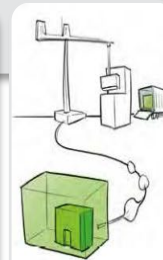
Source: www.bouwinformaaraad.nl

## Contractor

## BIM Manager / Coordinator (Project)

To allocate the responsibilities and key deliverables associated to each element of the Project Information Model.

### Level of Development Matrix



Source: www.bouwinformaaraad.nl

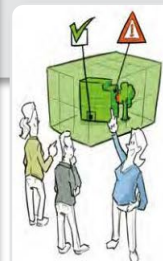
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## Consultant

## BIM Manager / Coordinator (Discipline)

To plan and organize the work, mobilize the right resources, coordinate and control development.

### BIM Management (Execution) Plan



Source: www.bouwinformaaraad.nl



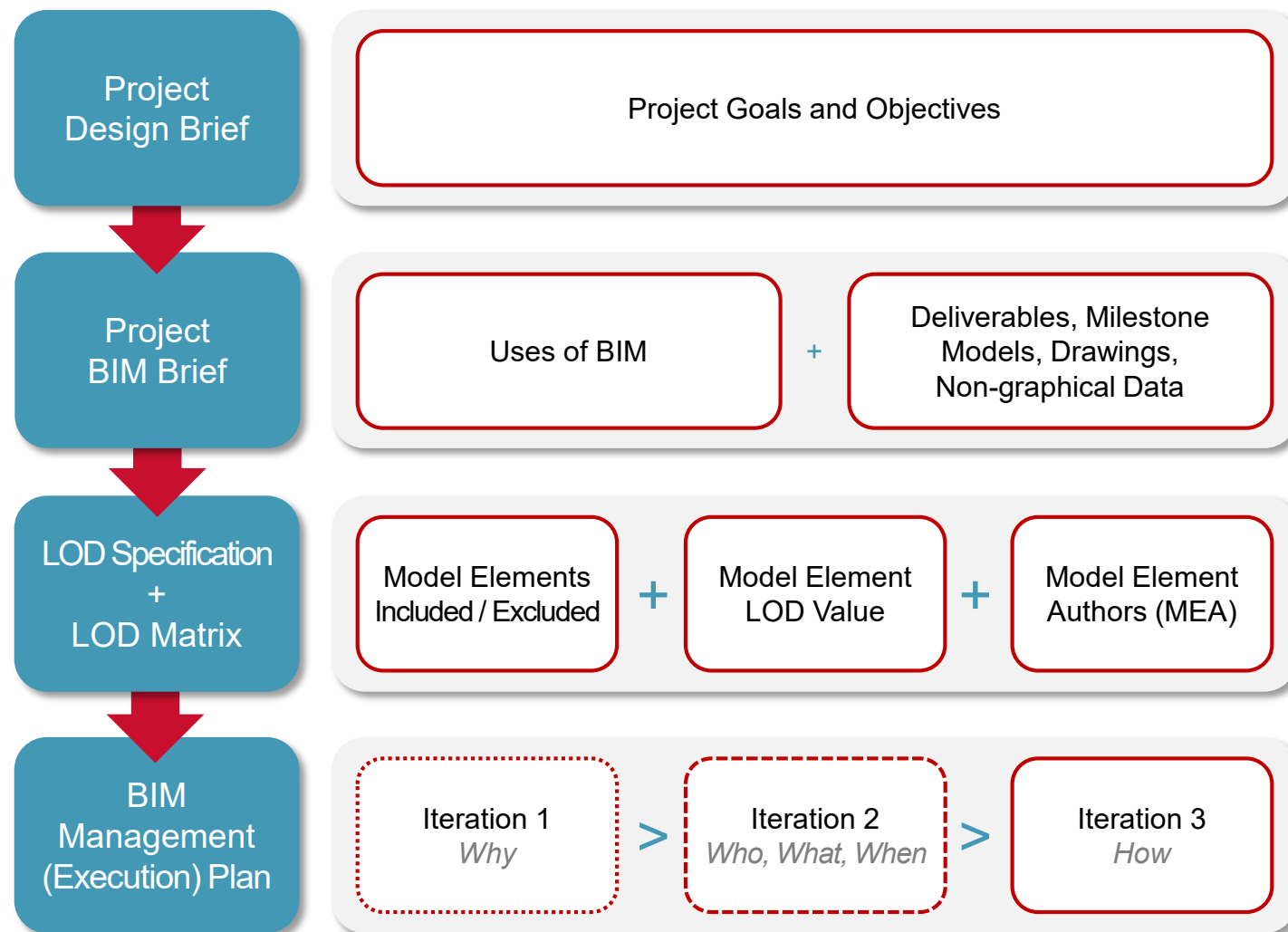
# BIM Supporting Documents for Collaboration

A Project Design Brief needs to be provided for example as part of the **tender package**.

Changing **Uses of BIM** during the project changes the **Scope of Service** and has contractual implications.

Contains the allocated **responsibility** and the key deliverables **associated to each element** of the Project Information Model.

BMP is a **living document** and shall be continually developed and refined throughout the project's lifecycle.





## Lessons Learned

# Lessons Learned

## Communication is the Key

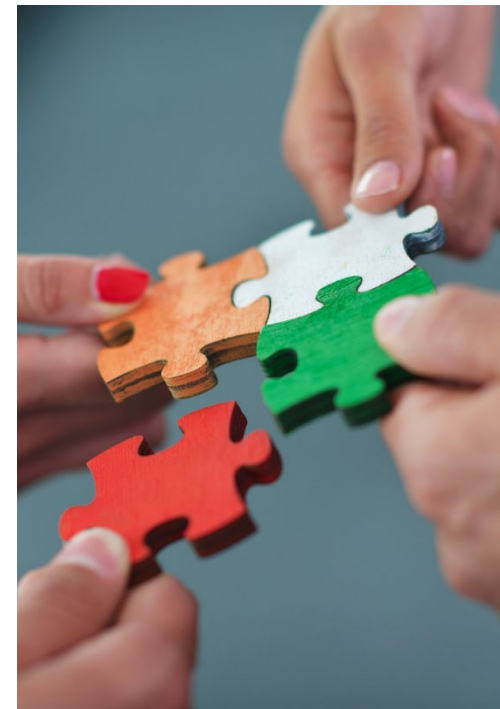
A level of transparency in communication will not only improve the entire project lifecycle management, but it can also make a project run more efficiently.

## Common Data Environment

A CDE is critical to drive collaboration, providing the ability to create, share, and manage project information among internal and external teams.

## BIM Supporting Documents

A BMP is a living document, helping all project members to manage their responsibilities and expectations through effective communication.







Thank you.



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