Mervyn Richards OBE

mervyn.richards1@ntlworld.com
Mobile: 077689 77340

Presentation © MR1 Consulting Ltd

MR1

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

Mervyn Richards OBE

(MR1 Consulting Ltd)

Directors BIM Breakfast Briefing 2.

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

HMG BIM Strategy

(BIM Level 2)

Directors BIM Breakfast Briefing 2.

Government as Client

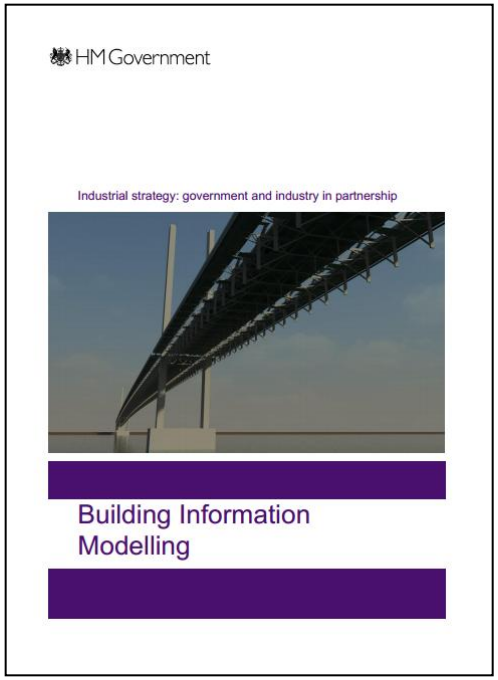
- Has accepted that the Construction Industry does not deliver value.
- Previous publication-
  - Sir John Egan
  - Sir Michael Latham
  - Andrew Wolstenholme OBE
- Have all stated waste at 25-30% in the built process.
- Government as client will no longer pay for the waste.

MR1

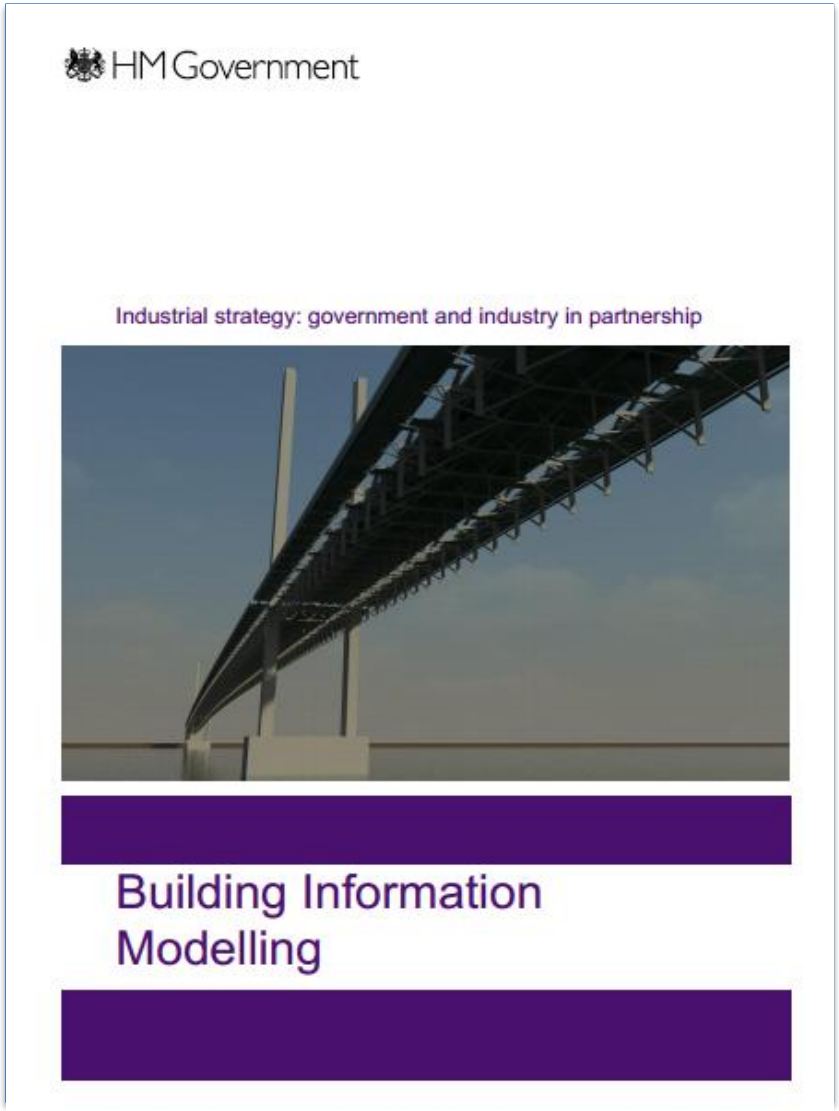
Introduction

Recommendation 3.11: That the industry should work, through a collaborative forum, to identify when the use of BIM is appropriate (in terms of the type or scale of project), what the barriers to its more widespread take-up are, and how those barriers might be surpassed, leading to an outline protocol for future ways of working.

Recommendation 6.14: That Government should mandate the use of Building Information Modelling methodology for central Government projects with a value greater than £50 million.



Industrial Strategy



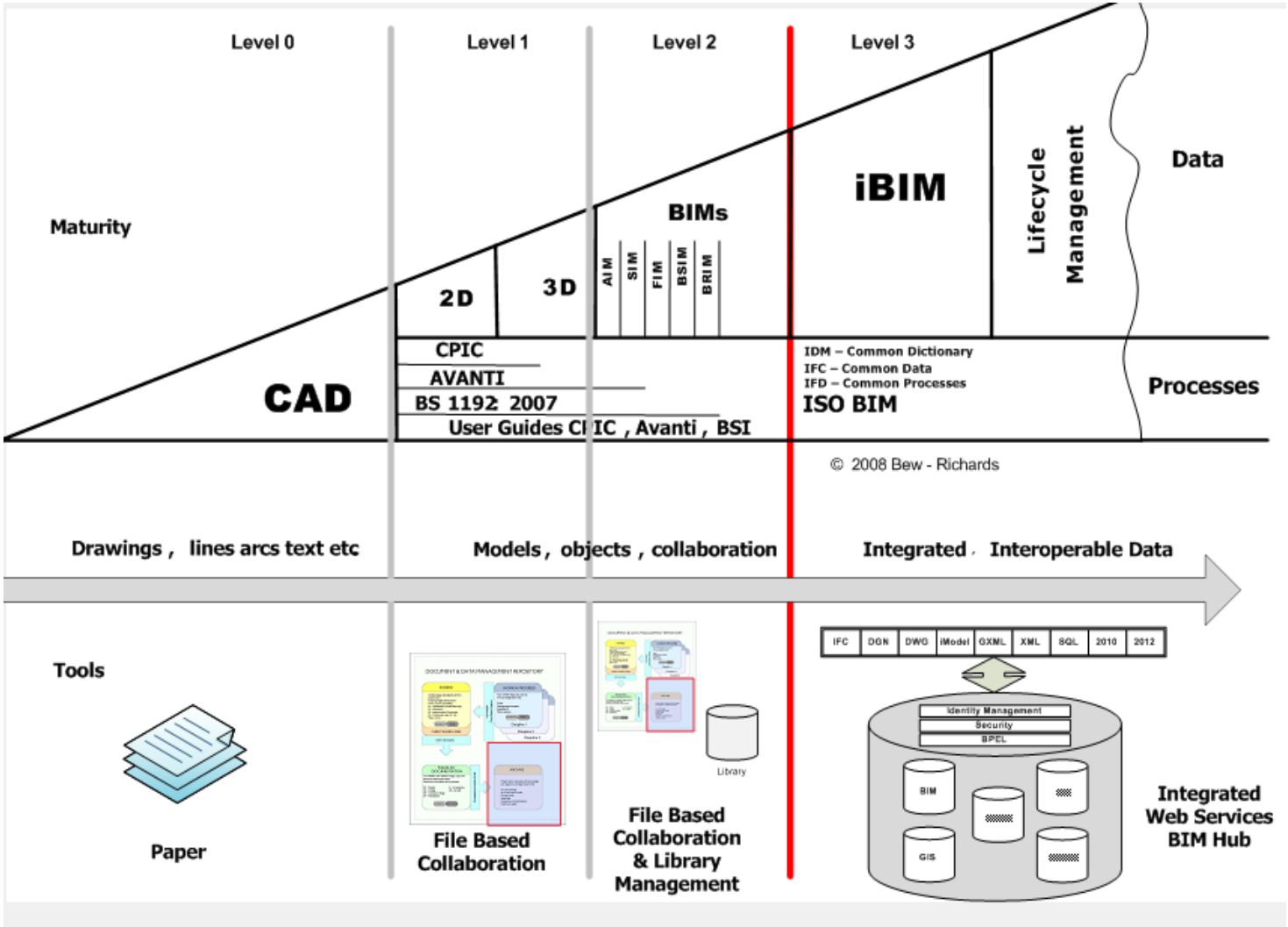
- Continue Level 2
- Growth - Deliver Level 3
- Lead the Future

Government has supplied the Documentation

- PAS1192-2 2013 builds on the BS1192:2007 as a means of delivering the employers requirements and the employers information requirements for any type of project.
- The main purpose of the PAS is to ensure that the employer and those tendering for projects fully understand the needs of the project delivery.
- No Surprises.

MR1

What is BIM?


Level 0
Level 1
Level 2
Level 3
Maturity
CAD
2D
3D
BIMs
AIM
SIM
FIM
BSIM
BRIM
iBIM
Lifecycle Management
Data
Processes
CPIC
AVANTI
BS 1192: 2007
User Guides CPIC , Avanti , BSI
IDM – Common Dictionary
IFC – Common Data
IFD – Common Processes
ISO BIM
© 2008 Bew - Richards
Drawings , lines arcs text etc
Models , objects , collaboration
Integrated , Interoperable Data
Tools
Paper
File Based Collaboration
Library
File Based Collaboration & Library Management
IFC
DGN
DWG
iModel
GXML
XML
SQL
2010
2012
Identity Management
Security
BPEL
BIM
GIS
Integrated Web Services BIM Hub

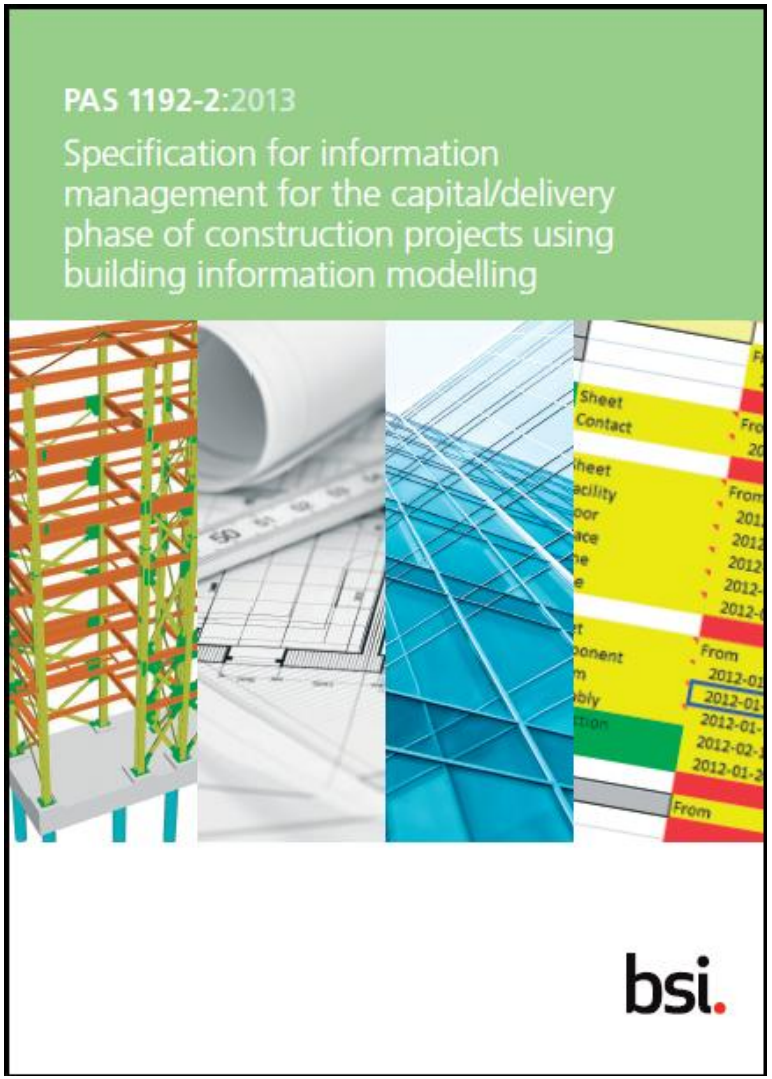
CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

PAS 1192:2

(Publically Available Specification)

Overview PAS1192-2:2013



MR1

The PAS defines the process

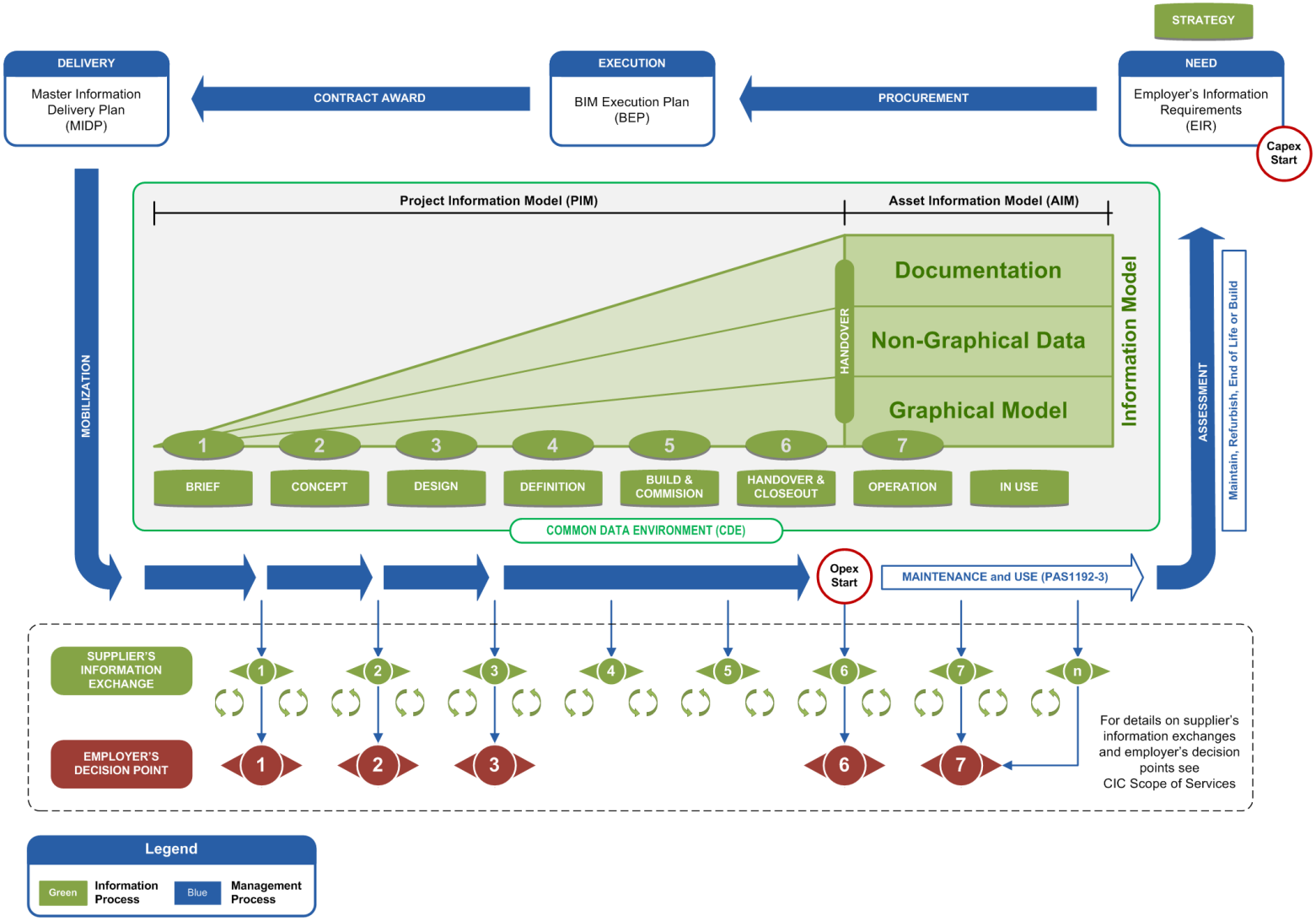
- It also covers process and procedures for public project delivery:
  - BIM Protocol
  - Digital Plan of Work
  - Employers Information Requirement
  - BS1192:2007 (Common Data Environment)
  - CIC The Role of Information Management
  - CIC Professional Indemnity for BIM
- COBie UK 2012 information delivery templates
- and

MR1

Information Management

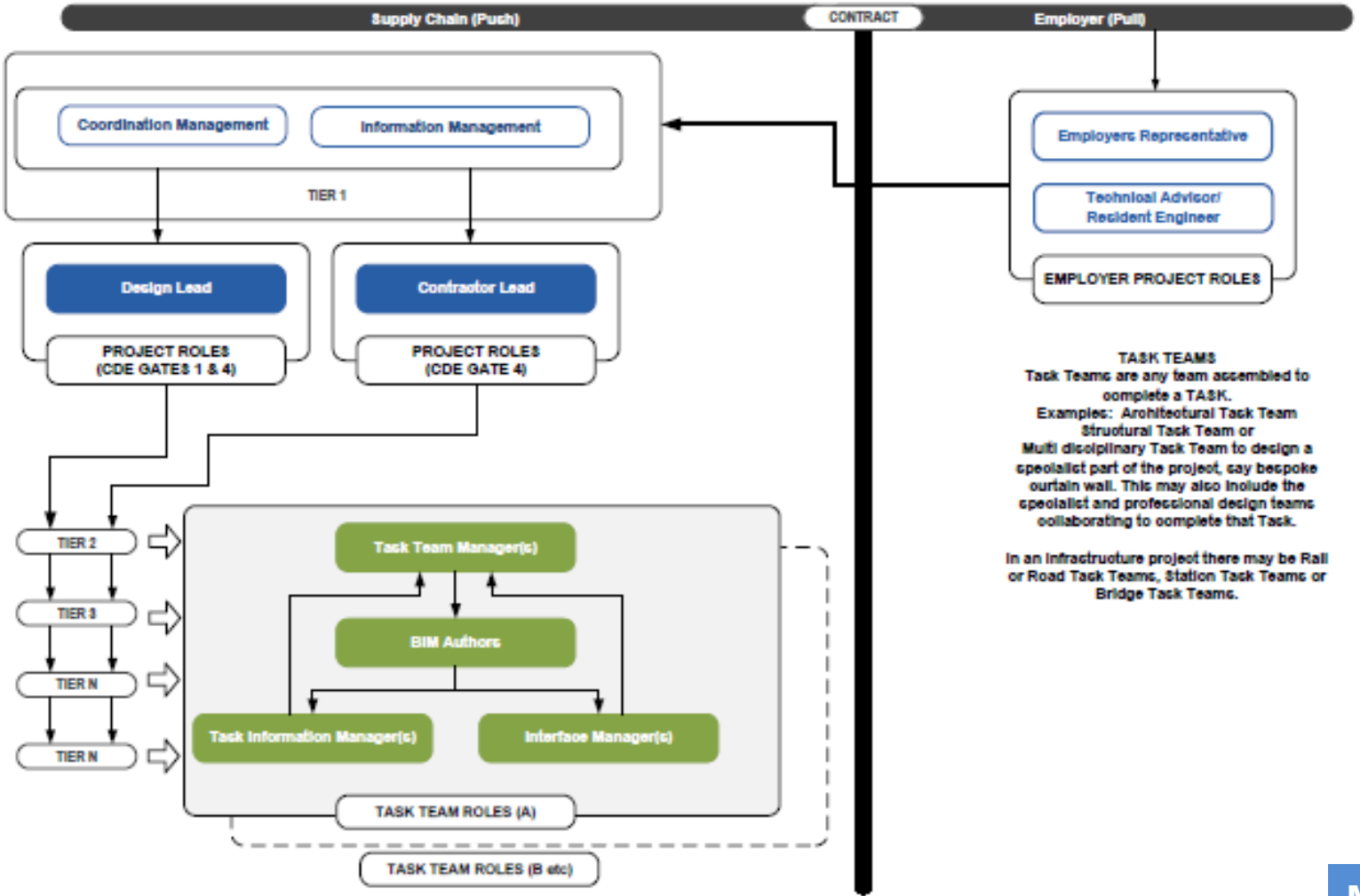
- CPIx Protocol
- A series of templates for IT assessment
- BIM Assessment
- Resource assessment and
- The Generic Pre and Post BIM Execution Plan are available on
- www.cpic.org.uk

Collaboration and Lifecycle Management



MR1

Roles and Responsibilities



MR1

Roles and Responsibilities

- Information Manager (Client Side)
- Project Information Management (Supply Side)
- Task Information Management (Disciplines or Task)

MR1

Roles and Responsibilities

- **An Project Information Manager (Supplier)** ensures that there is a consistent approach to project modelling (2D or 3D) and CAD issues and practices across the project. He/she also coordinates the project needs for IT solutions, coordinates the agreed project CAD ‘standard and method’ and updates to the procedures, and also ensures compliance with those standards and methods. This role should be responsible to the Project Delivery Manager.
- **The Lead Designer** manages the design, including information development and approvals. The Lead Designer confirms the design deliverables of the design team, establishes the zone strategy and ownership, and establishes the structural grid and floor levels. The Lead Designer signs and approves the documentation for detail design coordination and prior to passing to ‘shared’. In small and medium- size projects, a Lead Designer could be the same person as the Design Coordination Manager.
- **The Task Team Manager** is responsible for the production of design output that facilitates the production of such elements of the design that relate to that task. Tasks are often discipline-based, so the Task Team Manager is usually a discipline head, responsible to the Lead Designer.
- **An Task Information Manager** ensures that there is a consistent approach to project modelling (2D or 3D) and CAD issues and practices across the project. He/she also coordinates the project needs for IT solutions, coordinates the agreed project ‘standard and method’ and updates to the procedures, and also ensures compliance with those standards and methods. ensures that all CAD models, documents, extracts and drawings are delivered to the project using agreed IT solutions, and according to the agreed project CAD ‘standard and method’ and procedures. Also ensures that all agreed reviewing, checking and approving methods have been completed before sharing information across the team. This role should be responsible to the project Information Manager (Supplier).
- This role should be responsible to the Project Delivery Manager.
- **An Interface Manager** should be appointed for each task. In a spatial sense, if more space is required – for example, the staircase – the Staircase Interface Manager will have to discuss the need for increasing the staircase area, and negotiate with the Interface Manager(s) for each of the floors served by the staircase to discuss the impact of making further space available. Other forms of interface may be in fabrication to between different suppliers providing components that interface with one another. The Interface Manager will be responsible to both the Task Team Manager and the Lead Designer.

MR1

Outline Scope of Services for Information Management

- Common Data Environment Management
- Establish a Common Data Environment including processes and procedures to enable reliable information exchange between Project Team Members, the Employer and other parties
- Establish, agree and implement the information structure and maintenance standards for the Information Model
- Validate compliance with information requirements and advise on non-compliance
- Maintain the Information Model to meet integrity and security standards in compliance with the employer's information requirement
- Manage Common Data Environment processes and procedures, validate compliance with them and advise on non-compliance

MR1

Project Information Management

•Initiate, agree and implement the Project Information Plan and Asset Information Model covering: information structure across roles e.g. software platforms (all levels of supply chain) appropriate to meet Employer requirements and Project Team resources
•responsibility for provision of information at each Stage
•level of detail of information required for specific Project Outputs e.g. Planning, Procurement, FM Procurement
•the process for incorporating as-constructed, testing, validation and commissioning information
•Enable integration of information within the Project Team and co-ordination of information by Design Lead
•Agree formats for Project Outputs
•Assist Project Team Members in assembling

MR1

Collaborative working

Collaborative working, information exchange and project team management

- Support the implementation of the Project BIM protocol
- Liaise with and co-operate with Project Team Members and the Employer in support of a collaborative working culture
- Assist the Project Team Members in establishing information exchange processes, including: define and agree procedures for convening, chairing, attendance and responsibility for recording “information exchange process meetings”

MR1

Collaborative working

•Participate in and comply with project team management procedures and processes including: risk and value management
•performance management and measurement procedures
•change management procedures including adjustments to budgets and programme
•attendance at project and design team meetings as required
•agree and implement record keeping, archiving and audit trail for Information Model
•Additional Services:
•Provide the services to host the Common Data Environment

MR1

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

What is BS 1192and the Common Data Environment?

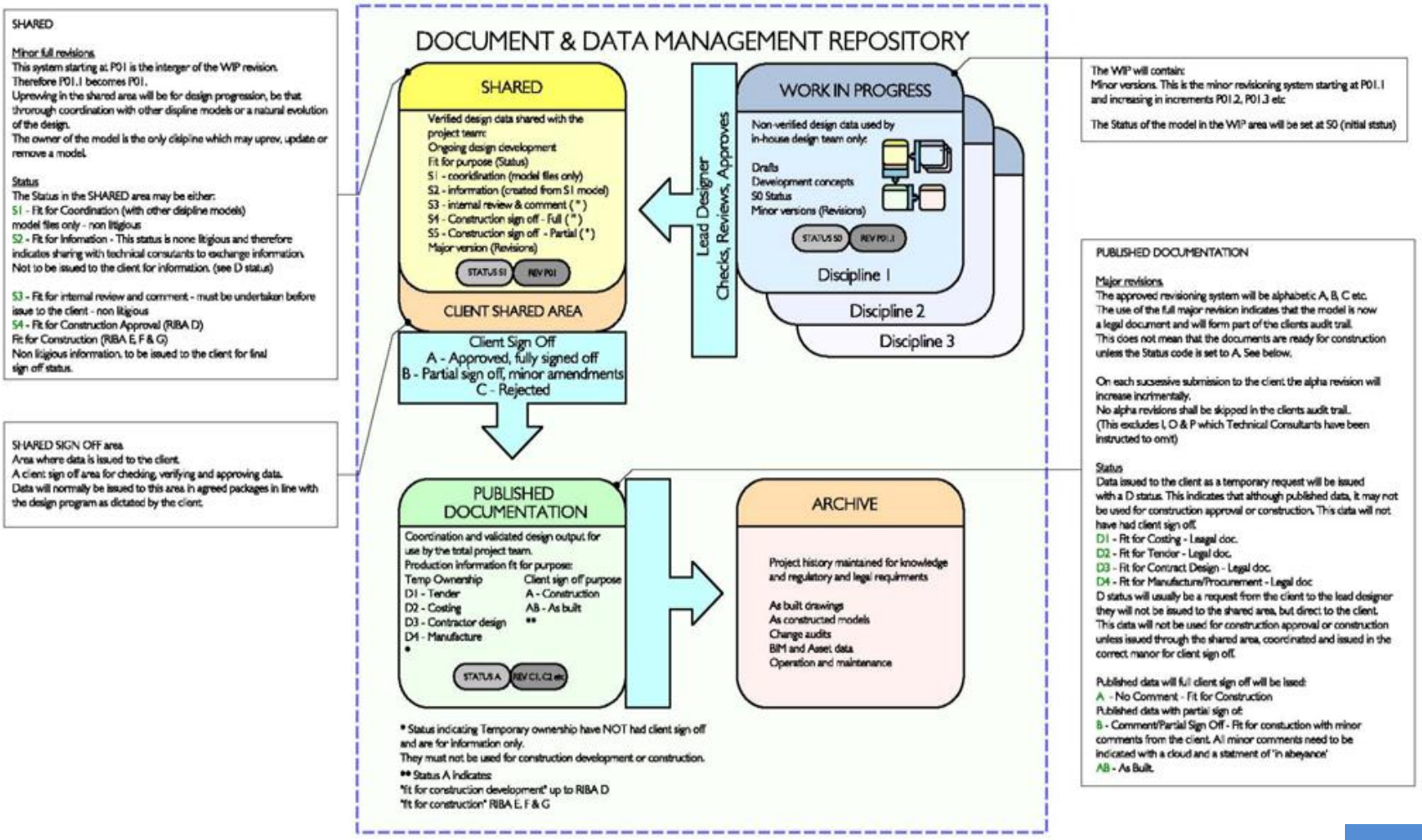
(Code of (Best) Practice)

BS1192:2007

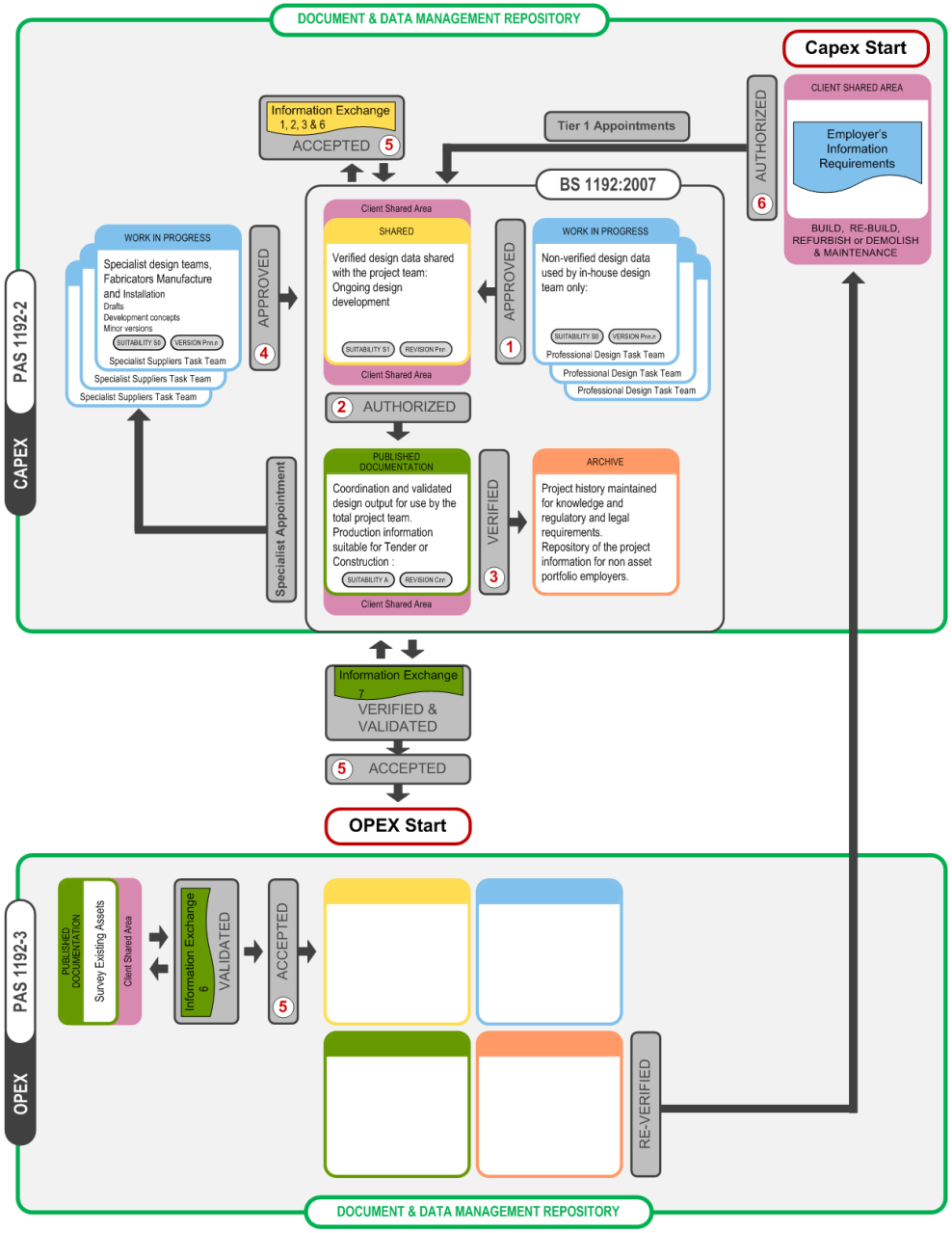
- What is the Common Data Environment?
- What are the Standards Methods and Procedures
- At the core of BS1192-2007 is a process that ensures that all information is checked, approved and authorized to eliminated abortive work in the total design process and rework at the site.
- It ensures that information is fit for purpose and is correct; if information shared by the teams is incorrect then all information derived from it will also be incorrect.
- It also provides a CLASH AVOIDANCE process as apposed to the clash detection methods usually suggested.
- Clash detection is a none lean process that increases time and cost consumption. Not recommended.

MR1

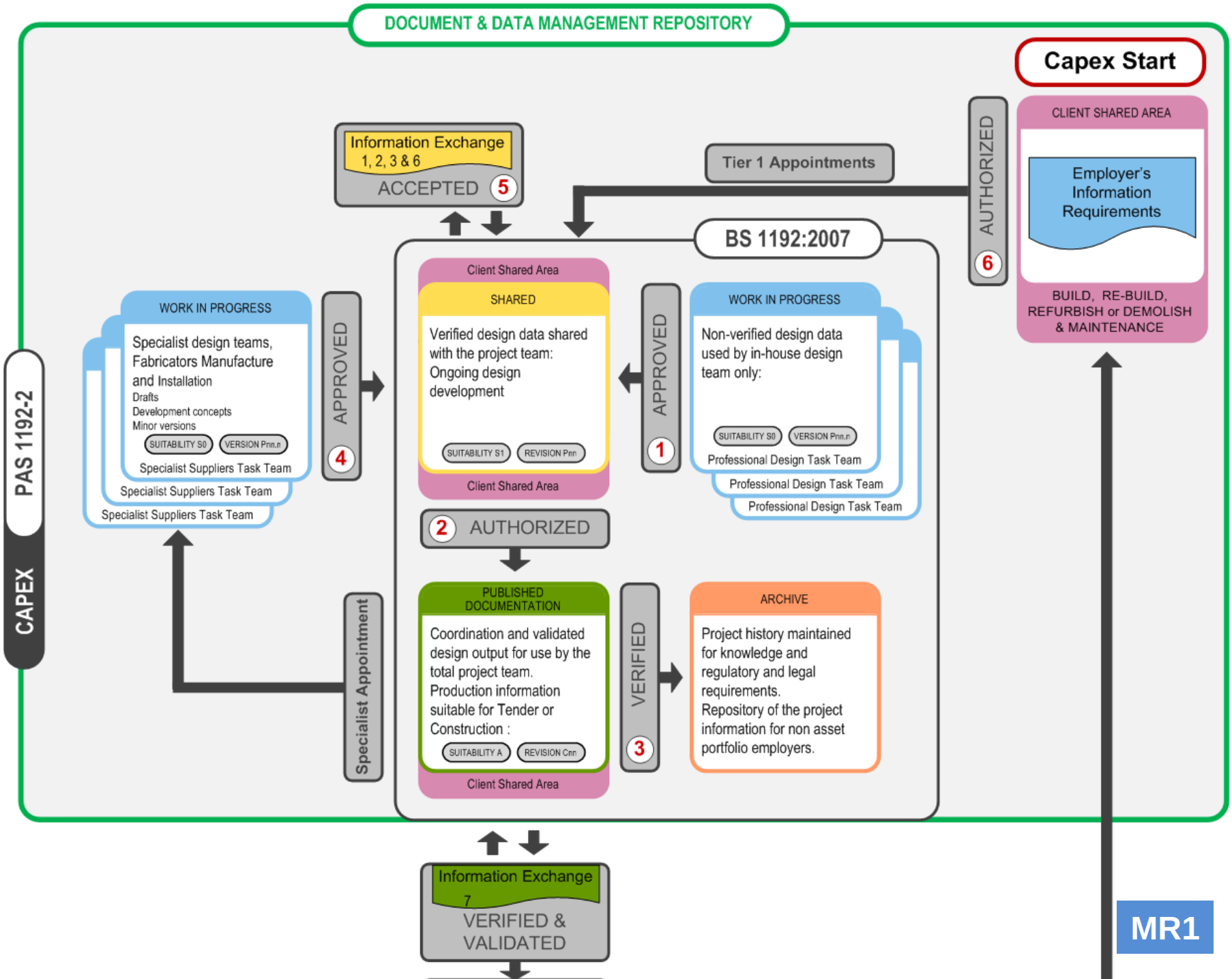
Common Data Environment



MR1


DOCUMENT & DATA MANAGEMENT REPOSITORY
Capex Start
CLIENT SHARED AREA
Employer's Information Requirements
BUILD, RE-BUILD, REFURBISH or DEMOLISH & MAINTENANCE
AUTHORIZED
6
Information Exchange 1, 2, 3 & 6
ACCEPTED 5
Tier 1 Appointments
BS 1192:2007
PAS 1192-2
CAPEX
WORK IN PROGRESS
Specialist design teams, Fabricators Manufacture and Installation
Drafts
Development concepts
Minor versions
Specialist Suppliers Task Team
APPROVED
4
Client Shared Area
SHARED
Verified design data shared with the project team: Ongoing design development
APPROVED
1
WORK IN PROGRESS
Non-verified design data used by in-house design team only:
Professional Design Task Team
2 AUTHORIZED
Specialist Appointment
PUBLISHED DOCUMENTATION
Coordination and validated design output for use by the total project team. Production information suitable for Tender or Construction :
VERIFIED
3
ARCHIVE
Project history maintained for knowledge and regulatory and legal requirements. Repository of the project information for non asset portfolio employers.
Information Exchange 7
VERIFIED & VALIDATED
5 ACCEPTED
OPEX Start
PAS 1192-3
OPEX
PUBLISHED DOCUMENTATION
Survey Existing Assets
Client Shared Area
Information Exchange 6
VALIDATED
ACCEPTED
5
RE-VERIFIED
DOCUMENT & DATA MANAGEMENT REPOSITORY

MR1


DOCUMENT & DATA MANAGEMENT REPOSITORY
Capex Start
CLIENT SHARED AREA
Employer's Information Requirements
BUILD, RE-BUILD, REFURBISH or DEMOLISH & MAINTENANCE
AUTHORIZED
6
Tier 1 Appointments
Information Exchange
1, 2, 3 & 6
ACCEPTED
5
BS 1192:2007
PAS 1192-2
CAPEX
WORK IN PROGRESS
Specialist design teams, Fabricators Manufacture and Installation
Drafts
Development concepts
Minor versions
SUITABILITY S0
VERSION Pnn.n
Specialist Suppliers Task Team
Specialist Suppliers Task Team
Specialist Suppliers Task Team
APPROVED
4
Client Shared Area
SHARED
Verified design data shared with the project team: Ongoing design development
SUITABILITY S1
REVISION Pnn
Client Shared Area
APPROVED
1
WORK IN PROGRESS
Non-verified design data used by in-house design team only:
SUITABILITY S0
VERSION Pnn.n
Professional Design Task Team
Professional Design Task Team
Professional Design Task Team
2
AUTHORIZED
Specialist Appointment
PUBLISHED DOCUMENTATION
Coordination and validated design output for use by the total project team.
Production information suitable for Tender or Construction :
SUITABILITY A
REVISION Cnn
Client Shared Area
VERIFIED
3
ARCHIVE
Project history maintained for knowledge and regulatory and legal requirements.
Repository of the project information for non asset portfolio employers.
Information Exchange
7
VERIFIED & VALIDATED
MR1

BS1192:2007

- The Common Data Process S1-S4

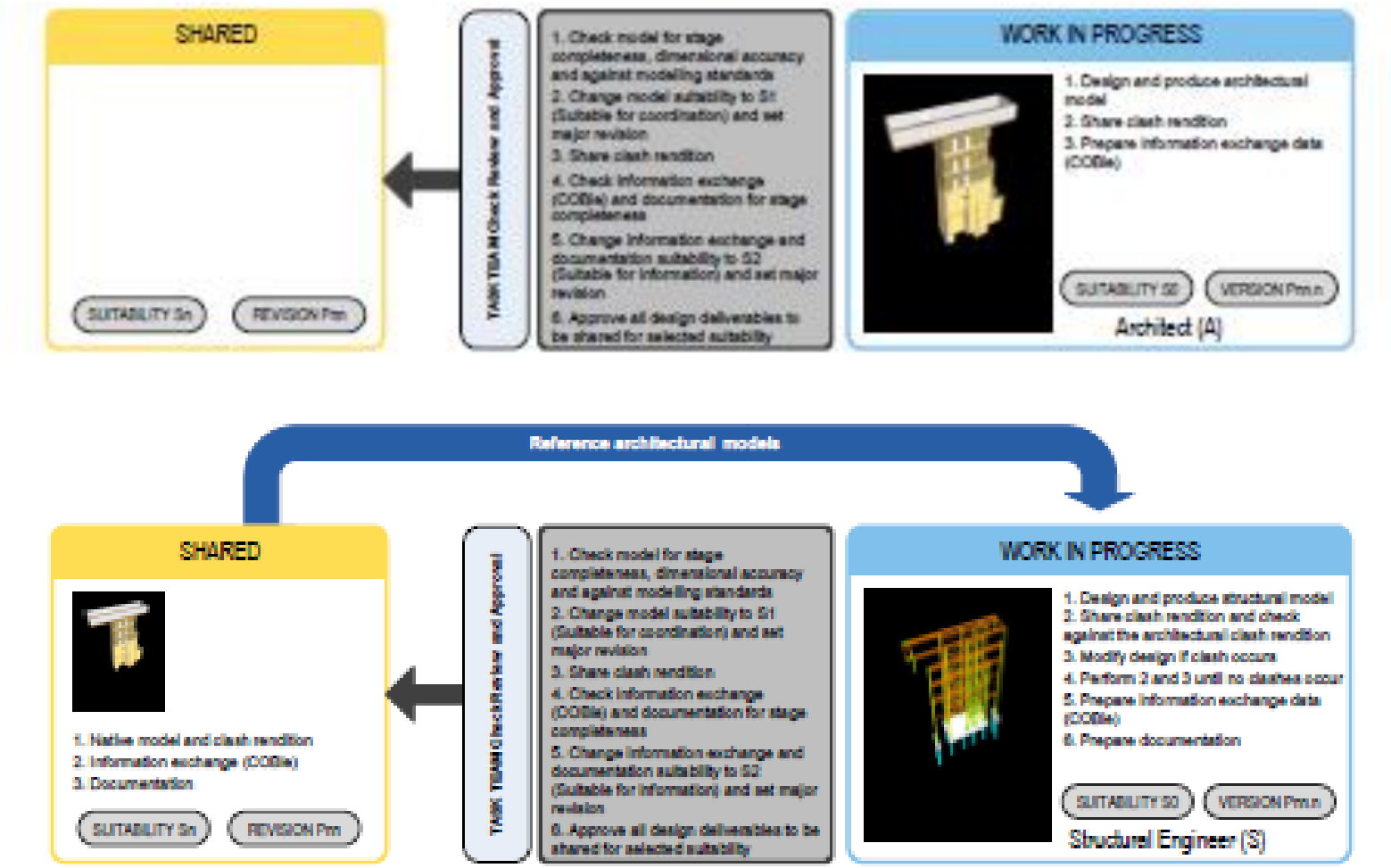
MR1

Common Data Environment

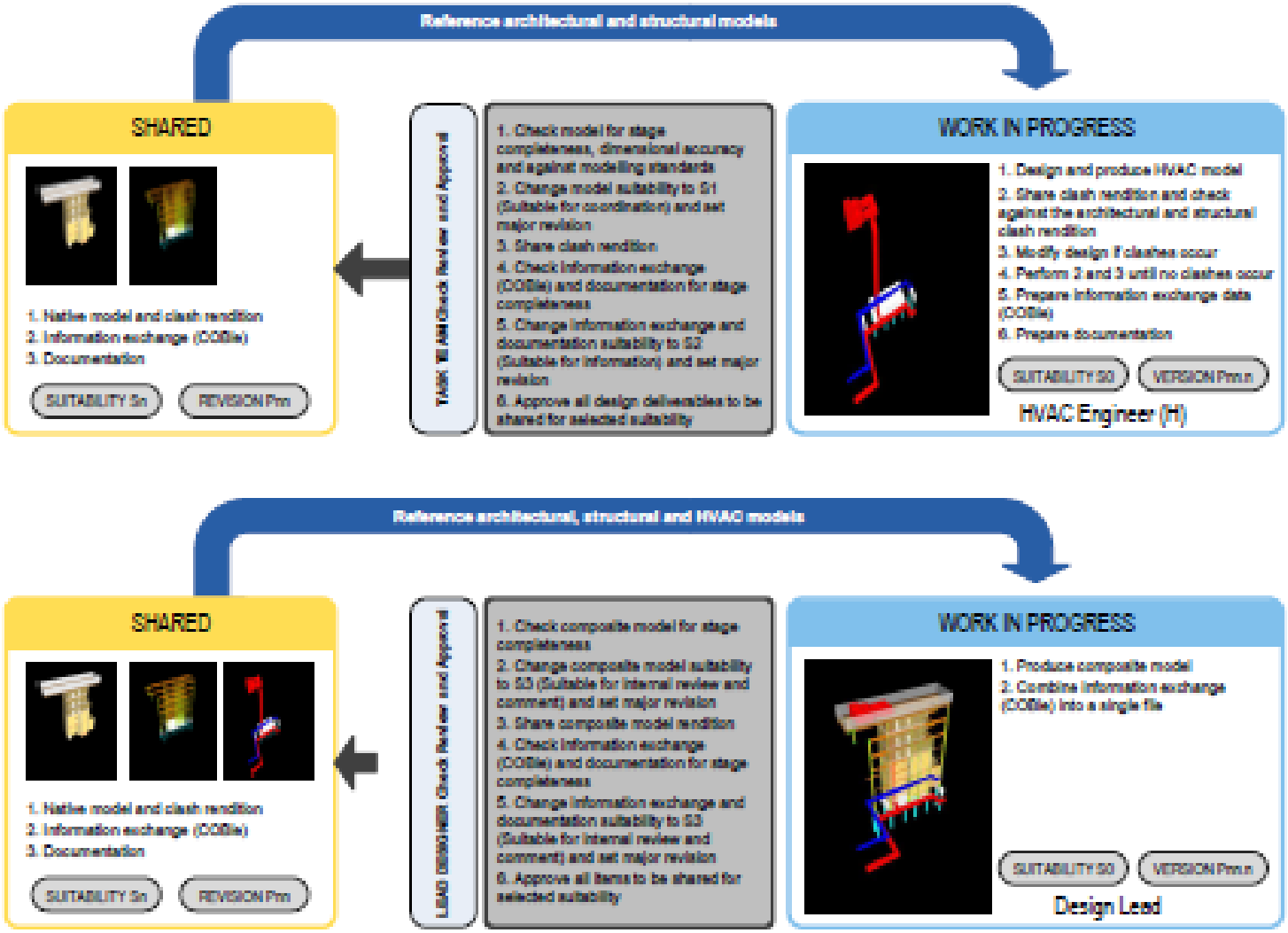
- The process is simple and the procedures create a disciplined approach to the delivery of design and construction information.
- The process is equally capable of managing the development and sign off process for any additional information that needs to be coordinated across the construction production documentation and data.

MR1

Clash Avoidance PAS 1192-2



Clash Avoidance PAS 1192-2



CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

What is the relationship between BS 1192:2007 and PAS1192:2

BS1192 and PAS1192

- The BS1192-2007 is a Code of (Best) Practice. It is a tried and tested process and procedure to reduce cots and remove waste.
- PAS1192-2 is a Publically Available Specification. It puts forward a specification for a new way of working.
- Afetr it has been used and tested it will be redrafted as A Code of (Best) Practice.

PAS1192-2013

- Extends and modifies specific elements within the BS1192.
- Defines the new set of documentation that must be used to deliver the Employers Information requirements.
- Specifies the additional management procedures required to deliver the EIR.
- Satisfies the contractual requirements of Level 2 BIM.

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

Why all the acronyms?

Acronyms

- Simply because when keep saying the same thing it is easier to use acronyms that writing the statement.
- Task Information Delivery Plan is easier as TIDP.
- Master Information Delivery Plan is easier as MIDP.
- BIM Execution Plan is easier as BEP

Acronyms

- Why so many?
- Because the overall requirements to answer questions has required a defined and fully understandable set of documents and processes.
- The tight definition has required greater detail.
- To say ‘plans’ is not enough to convey which plan at what time.
- ‘Extranet’ does not adequately explain the Common Data Environment (CDE)

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT

Beyond “level 2” BIM does PAS 1192:2 help ?

The Future

- Level 2 is not complete.
- PAS1192-3 for asset Management and FM is currently under draft.
- We do not believe that processes and procedures for level two will change as we move into level 3.
- The way in which they are delivered will change.
- We need a whole set of new software capability that will still need support from a process.
- BIM will evolve as we move forward.
- The one certainty is that change will happen it’s the timing that we are uncertain of.

CONSTRUCTING EXCELLENCE
in the built environment

GRAPHISOFT.

Questions?