



ISO 19650

Curriculum Overview





*Agents for
Digital Transformation*

In collaboration with **BIMCrew**

BIMCrew Consultancy:

“Our vision is to enable Owner, General-Contractor and Sub-Contractor Organisations in BIM & Digital Adoption. Our services include setting up the BIM Department, Technology & Equipment Sales, Staffing, Corporate Training, BIM - VDC - Project controls - Reality Capture -Digital Twin services and B2B Events.”

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BIM

DON'T STRESS ABOUT IT

LEARN

TO MANAGE IT™

Enhance your learning with **award-winning** BIM courses

- ✓ Understand your role in the information management process.
- ✓ Learn how to apply BIM according to ISO 19650 in the real-world.
- ✓ Written by Paul Shillcock, a leading authority on BIM and author of ISO 19650-2.
- ✓ Interactive activities and contextual lessons advance you quicker than watching videos.
- ✓ Make learning fit your schedule with 10-15 minute lessons that can be taken anytime.
- ✓ Available on any device – learn online or offline using our mobile app.
- ✓ Earn CPD certificates and digital badges as you learn.



ISO 19650 curriculum

Leveraging our knowledge and understanding of the relevant international standards, Operam Academy are best placed to turn them into something that's practical and useable in real life, based upon the key stages of the information process.

Each course includes a course introduction, course summary and assessment.

Navigate to each course by clicking on the course thumbnails



BIM: What's it all about?

The aim of this course is to provide a shared understanding of Building Information Modelling (BIM) that will be adopted throughout the curriculum – whether you are new to the concept or you have a pretty good idea of what BIM is all about.

This course cuts through the hype and challenges your preconceptions about BIM. You will learn and reflect on the three different perspectives that people have when thinking of BIM. As such, the course is a highly recommended starting point for everyone.

1 It's All About the Information

By the end of this lesson, you will be able to:

- Discuss how access to the right information, at the right time, can enable people to undertake their role effectively
- Recognize the relationship between a physical asset and its digital twin, known as the virtual asset
- Explain the three main components and the benefits digital information can offer compared to unstructured information such as documents and tables.

2 The Collaborative Approach to the Exchange of Information

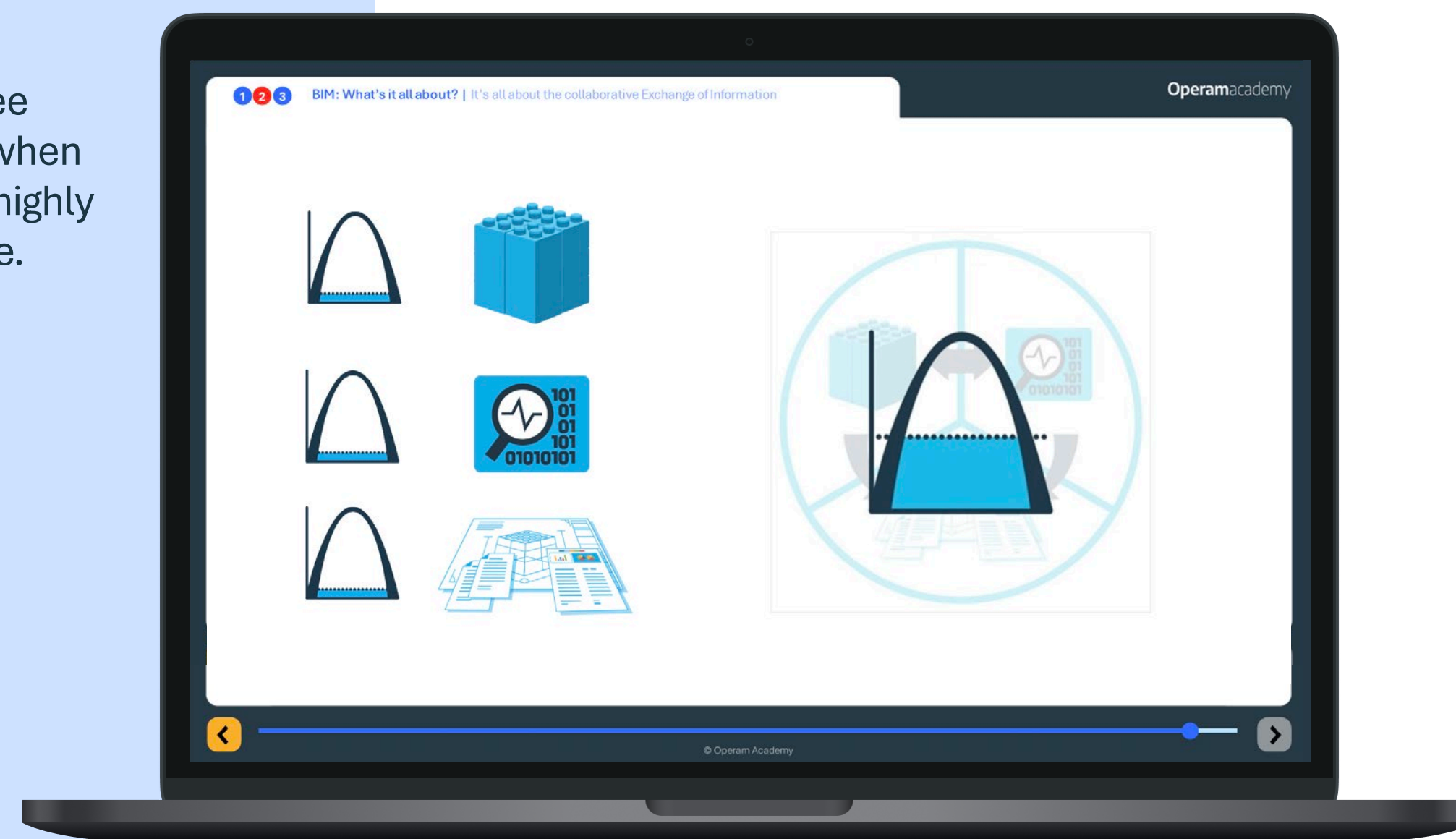
By the end of this lesson, you will be able to:

- Discuss how we can ensure that the right people, get the right information, at the right time, by the providers and receivers of information working collaboratively.
- Define why, when, how and what information needs to be exchanged.

3 The Collaborative Approach to the Production of Information

By the end of this lesson, you will be able to:

- Recognize how teams can adopt a collaborative approach to the production of information.
- Describe how we ensure that information is produced in the most effective and efficient way.



0.5 hrs
CPD

Information Management Overview

The aim of this course is to give you an overview of what's meant by the term Information Management and the industry standards that support it.

This course introduces you to the management of information during the delivery and operational phase of assets and the Information Management Process defined within the ISO 19650 series. You will learn about each step of the process, the activities within them, and those responsible for their implementation.

- 1

Drivers for Change

By the end of this lesson, you will be able to:

 - Recognize some of the current strains on national infrastructure.
 - Describe the concepts behind a digitally built environment.
 - Recall the benefits of a digitally built environment to citizens, organizations and nations.
- 2

Information Management in Context

By the end of this lesson, you will be able to:

 - State the relationship between organizational, asset, project and Information Management and the role standards play in supporting them.
 - Recall the standards within the ISO 19650 series and the relationship between them.
 - Describe how the ISO 19650 series relates to the asset life cycle.
- 3

Information Management Function

By the end of this lesson, you will be able to:

 - Recall the various parties within the Information Management Function and describe the relationship between them.
 - Recall the various teams within the Information Management Function and list the parties within them.
 - Outline the need for each team to nominate an Information Manager.

- 4

Information Management Process

By the end of this lesson, you will be able to:

 - Recall the eight steps of the Information Management Process and describe the purpose of each.
 - Give examples of the different types of trigger events.
 - State the correct path to be used based on the type of trigger event and starting point.



1 hr
CPD

Information Management Process

The aim of this course is to walk you through each of the activities within the Information Management Process, as defined within the ISO 19650 series.

This course combines the activities within ISO 19650-2 and ISO 19650-3 into a single process covering an assets delivery and operational phase. You will learn about each activity within each step of the process, their relationship with each other and those responsible for their implementation.



1 Starting the IM Process

By the end of this lesson, you will be able to:

- Recall the activities to be undertaken at the start of the Information Management process.
- Describe the collective purpose of and outline the key outputs from the activities within step one of the Information Management process.

2 Procurement Phase

By the end of this lesson, you will be able to:

- State the relationship between organizational, asset, project and information management and the role standards play in supporting them.
- Describe the collective purpose of and outline the key outputs from the activities within steps two and three of the Information Management Process.

3 Planning Phase

By the end of this lesson, you will be able to:

- Recall the activities to be undertaken during the planning phase of the Information Management Process.
- Describe the collective purpose of and outline the key outputs from the activities within steps four and five of the Information Management Process.

4 Production Phase

By the end of this lesson, you will be able to:

- Recall the activities to be undertaken during the production phase of the Information Management Process.
- Describe the collective purpose of and outline the key concepts from the activities within steps six and seven of the Information Management Process.

5 Completing the IM Process

By the end of this lesson, you will be able to:

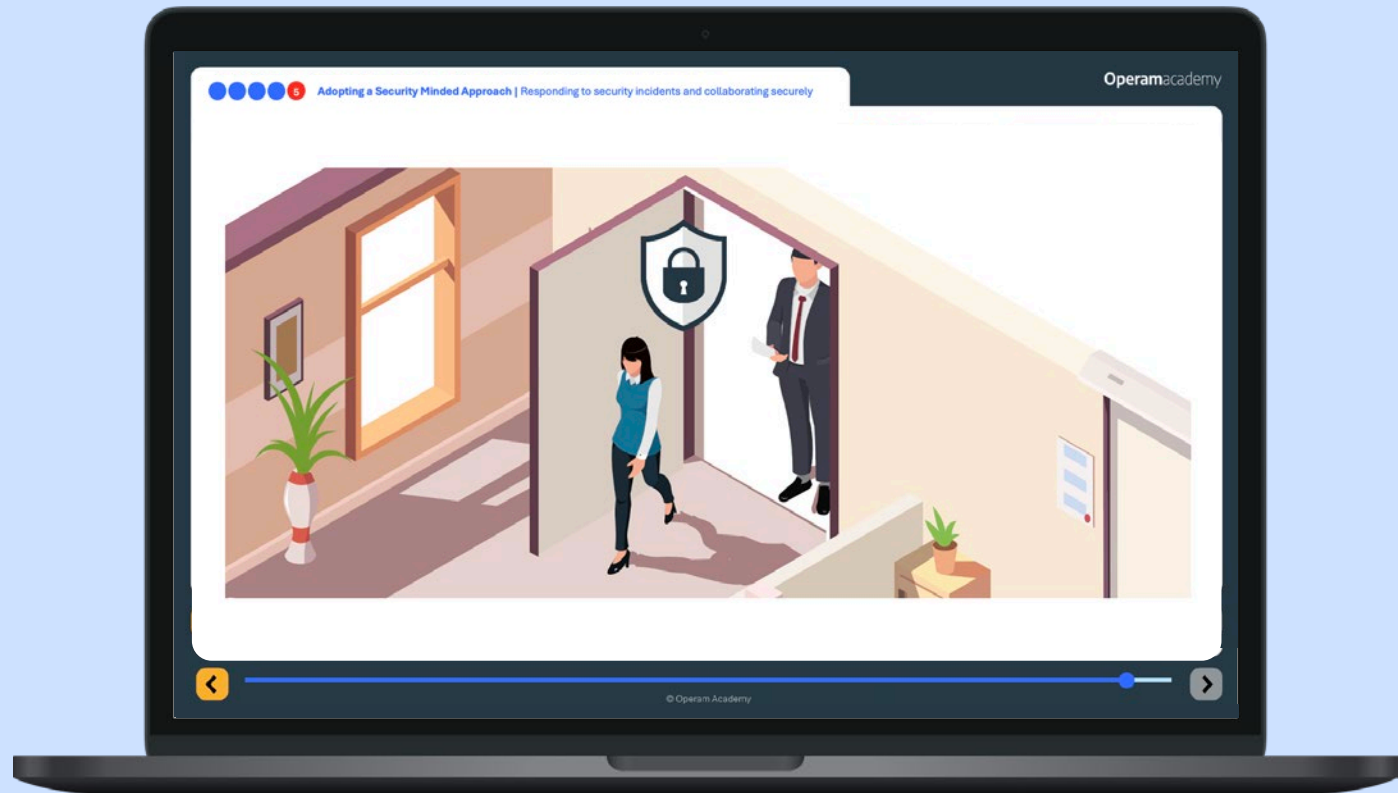
- Recall the activities to be undertaken to complete the Information Management Process.
- Describe the collective purpose of and outline the key concepts from the activities within step eight of the Information Management Process.

1.5 hrs
CPD

Adopting a Security Minded Approach

The aim of this course is to provide you with a comprehensive understanding of how to embed security considerations into every stage of project delivery and Information Management.

This course covers the principles of security governance and strategy, the development of Security Management Plans, and the practical steps for safeguarding sensitive information. You will learn how to identify and assess security risks, and implement measures that protect assets, people, and data throughout the project lifecycle.



1 The Importance of a Security-Minded Approach

By the end of this lesson, you will be able to:

- Explain the significance of digital information within the built environment and evaluate its associated vulnerabilities.
- Identify and categorise the characteristics of sensitive information and explain the reasons it requires protection.
- Justify the importance of fostering a security-minded culture across organizations and projects.

2 Assessing Sensitivity and Determining Security Needs

By the end of this lesson, you will be able to:

- Analyse information and assets to determine when a security-minded approach is necessary.
- Prioritize assets and information by assessing and classifying their sensitivities as part of a triage process.
- Evaluate risks and recommend appropriate security measures based on the sensitivity assessment.

3 Security Governance and Strategy

By the end of this lesson, you will be able to:

- Summarize how to set up a governance framework for security with clear roles, responsibilities, and leadership.

- Show how to identify, assess, and monitor threats and vulnerabilities, keeping strategies current across the organization.
- Explain how to maintain a security strategy aligned with objectives, adapting to risks, and integrating measures into daily processes.

4 Security Management Planning

By the end of this lesson, you will be able to:

- Construct a security management plan that applies security policies, assigns responsibilities, and adapts to evolving risks.
- Evaluate requests for sensitive information and third-party access, and apply safeguards to minimise security risks.
- Review and verify the effectiveness of Security Management Plans, identifying areas for improvement.

5 Responding to Security Incidents and Collaborating Securely

By the end of this lesson, you will be able to:

- Formulate an incident response plan aligned with organizational and regulatory requirements.
- Analyze key components of a security incident management plan to enhance organizational response and preparedness.
- Evaluate security measures and procedures for sharing and managing sensitive information with appointed parties.

1.5 hrs CPD

Requirements for Information

The aim of this course is to provide you with a fundamental understanding of how the Requirements for Information can be defined and clearly communicated to the providers of information.

This course covers the different types of Information Requirements, the relationship between them and the criteria by which they are defined. You will also learn the methods by which the level of information need can be established to ensure the minimum amount of information needed is required.



1 Introduction to information requirements

By the end of this lesson, you will be able to:

- Describe what Information Requirements are and when they are used, within the wider broader context of the construction industry supply chain.
- Describe why Information Requirements need to be clearly defined.
- Be able to differentiate between an Asset Information Model and a Project Information Model.

2 Information Requirements Criteria

By the end of this lesson, you will be able to:

- Describe what a good Information Requirement looks like, and determine its structure.
- Determine whether a requirement meets the six best-practice criteria for Information Management Requirements.
- Relate to others the benefits of using a structured approach when writing Information Requirements.

3 Information Requirement Types

By the end of this lesson, you will be able to:

- Differentiate between the different types of Information Requirements used to establish the different diverse needs of stakeholders.
- Describe the high-level relationship between each type of Information Requirement.
- Describe how Exchange Information Requirements are used to specify which organizational, asset and project information requirements are to be delivered during an appointment.

4 Level of Information Need

By the end of this lesson, you will be able to:

- Outline the risks of producing ‘too much’ or ‘too little’ information and the benefits of getting the level of information need ‘just right’.
- Describe what the level of information need is and how requirement owners should determine the level of information need for each asset.
- Relate the advantages and disadvantages for of the different methods of defining the level of information.

1 hr
CPD

Organizational Information Requirements

The aim of this course is to give you a deeper understanding of the industry best practice for the definition and communication of Organizational Information Requirements.

This course focuses on the need for information from the various functions and stakeholders within an organization. You will also learn about the support this information can provide in terms of asset performance and the security of sensitive assets.



1 Introduction to Organizational Information Requirements

By the end of this lesson, you will be able to:

- Describe an organization from an information management perspective.
- Describe the different elements of organizational information.
- Illustrate how organizational information supports organizational effectivity.

2 Organizational Information Functions

By the end of this lesson, you will be able to:

- Identify the functional components of an organization, and how those components relate to Organizational Information Requirements.
- Relate how Organizational Information Requirements help the successful operation of the enterprise.
- Describe how Organizational Information Requirements relate to asset information models and enterprise business systems.

3 Organization Stakeholder Involvement

By the end of this lesson, you will be able to:

- Describe the structure and benefits of scenario-based requirements capture and how these can be used to define Organizational Information Requirements.

- Use a scenario-based requirement statement as source material to inform an Organizational Information Requirement.

4 Support for Asset Performance

By the end of this lesson, you will be able to:

- Discuss how Organizational Information Requirements can align the interests of those who design and construct an asset with those who subsequently operate and use it.
- Recall the three steps to establishing Information Requirements to support asset performance for current and future projects.
- Describe the need for information that asset owners and operators may have during the delivery and operational phase of assets to support asset performance.

5 Support for the Security of Sensitive Assets

By the end of this lesson, you will be able to:

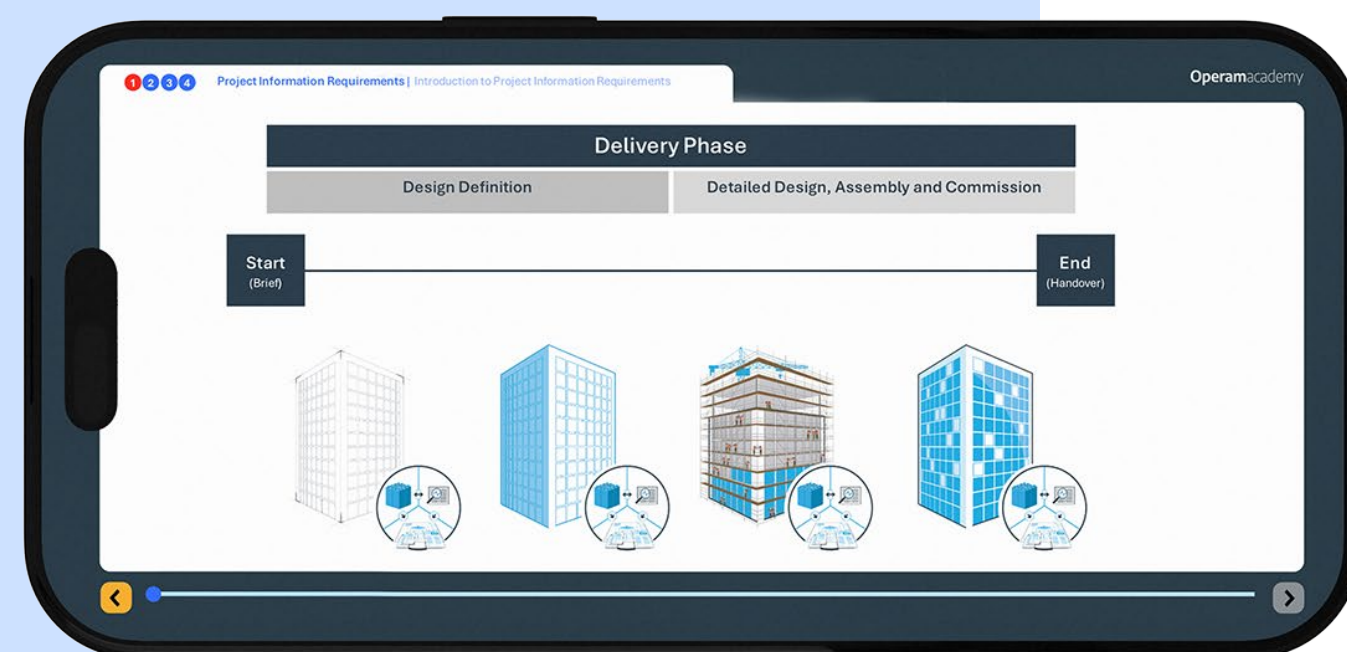
- Describe the different information security risks to assets and organizations.
- Be able to describe what a sensitive asset is.
- Recall the four steps to adopting a security-minded approach to Information Management.

1.5 hrs CPD

Project Information Requirements

The aim of this course is to give you a deeper understanding of the industry best practice for the definition and communication of Project Information Requirements.

This course focuses on the requirements for information during the delivery phase of assets and how the project information model can provide the answers to the questions that need to be answered to make informed decisions. You will look at how information is needed to support the design and construction of assets and how all these requirements are communicated during each appointment via a schedule of Exchange Information Requirements



1 Introduction to Project Information Requirements

By the end of this lesson, you will be able to:

- Summarize what a Project Information Requirement is.
- Explain at a high level how a Project Information Model is progressively developed.
- Describe how this information supports project success.

2 Support for the Delivery of Assets

By the end of this lesson, you will be able to:

- Discuss the relationship between decisions, questions and answers in relation to Project Information Requirements and the Project Information Model.
- Give examples of the various approaches and forms of information to answer questions within the Project Information Requirements.
- Explain how a Project Information Model supports the delivery phase of an asset.

3 Support for the Design & Construction of Assets

By the end of this lesson, you will be able to:

- Recall that the Project Information Model is progressively developed as two key deliverables.
- Describe the purpose of, and the difference between the Design Intent Model and Virtual Construction Model.
- Relate the Design Information Requirements and Construction Information Requirements to their respective deliverables.

4 Exchange Information Requirements

By the end of this lesson, you will be able to:

- Describe the purpose of Exchange Information Requirements and how they differ from other types of information requirement.
- Explain the relationship between Exchange Information Requirements and different types of appointment.
- Describe the different ways Exchange Information Requirements may be used for any given project.

1 hr
CPD

Tender Preparation

The aim of this course is to introduce you to the activities and outputs relating to the preparation of an invitation to tender prior to the appointment of a delivery team.

This course focuses on the activities to be undertaken during the preparation of an invitation to tender. You will also learn how to prepare the requirements for each tender response and the criteria by which tender responses will be evaluated.



1 Introduction to the Information Management Function

By the end of this lesson, you will be able to:

- Identify the appointing party's role in the preparation of tenders.
- Recall the benefits of preparing an invitation to tender that is fit for purpose.
- Correctly describe how an effective tender will reduce risk and increase predictability on projects.

2 Information Procurement Process

By the end of this lesson, you will be able to:

- Discuss the importance an appointing party's role plays in the Information Procurement Process.
- Recall the three stages of the Tender Preparation Phase of the Information Procurement Process.
- Describe the options that an Appointing Party has to help them fulfil their Information Management responsibilities.

3 Pre-Appointment Activities

By the end of this lesson, you will be able to:

- Recall the pre-appointment activities that need to be undertaken at the start of a project.
- List the project Information Management documents that need to be produced for inclusion within each appointment.

- Describe the items to be considered when preparing each project Information Management document.

4 Tender Response Requirements

By the end of this lesson, you will be able to:

- Describe why tender response requirements are needed and how these differ to requirements for information.
- Discuss the various items that an Appointing Party should consider asking tenderers to provide within the Tender Response.
- Recall how an Appointing Party can use the tender response requirements to make an informed selection at the tender stage.

5 Preparing an Invitation to Tender

By the end of this lesson, you will be able to:

- Recall the activities that need to be undertaken when preparing an invitation to tender.
- List the items that need to be included within each invitation to tender.

1.5 hrs
CPD

Tender Response & Appointments

The aim of this course is to introduce you to the activities and outputs relating to the preparation of the delivery team's response to an invitation to tender.

This course focuses on the activities to be undertaken during the preparation of a tender response. You will also learn how to assess a delivery team's capability and capacity and about the structure of the appointment documentation.



1 Introduction to Tender Response & Appointments

By the end of this lesson, you will be able to:

- Distinguish between the role of the Lead Appointed Party and the delivery team in the Information Procurement Process.
- Recall the benefits to the delivery team of planning the execution and delivery of information effectively.

2 BIM Execution Plan

By the end of this lesson, you will be able to:

- Explain the purpose of the BIM Execution Plan as part of a tender response.
- Define the elements which make up a BIM Execution Plan.
- Plan a BIM Execution Plan as part of a tender response.

3 Capability & Capacity Assessment

By the end of this lesson, you will be able to:

- Discuss the importance of assessing a delivery team's capability and capacity and describe the difference between the two in relation to delivery teams assessments.
- Recall the three steps to undertaking a Capability and Capacity Assessment.
- Describe the purpose and contents of a Delivery Team Mobilization Plan.

4 Information Delivery Planning

By the end of this lesson, you will be able to:

- State the detailed planning activities involved in the Information Delivery Planning stage following the award of an appointment.

5 Appointments

By the end of this lesson, you will be able to:

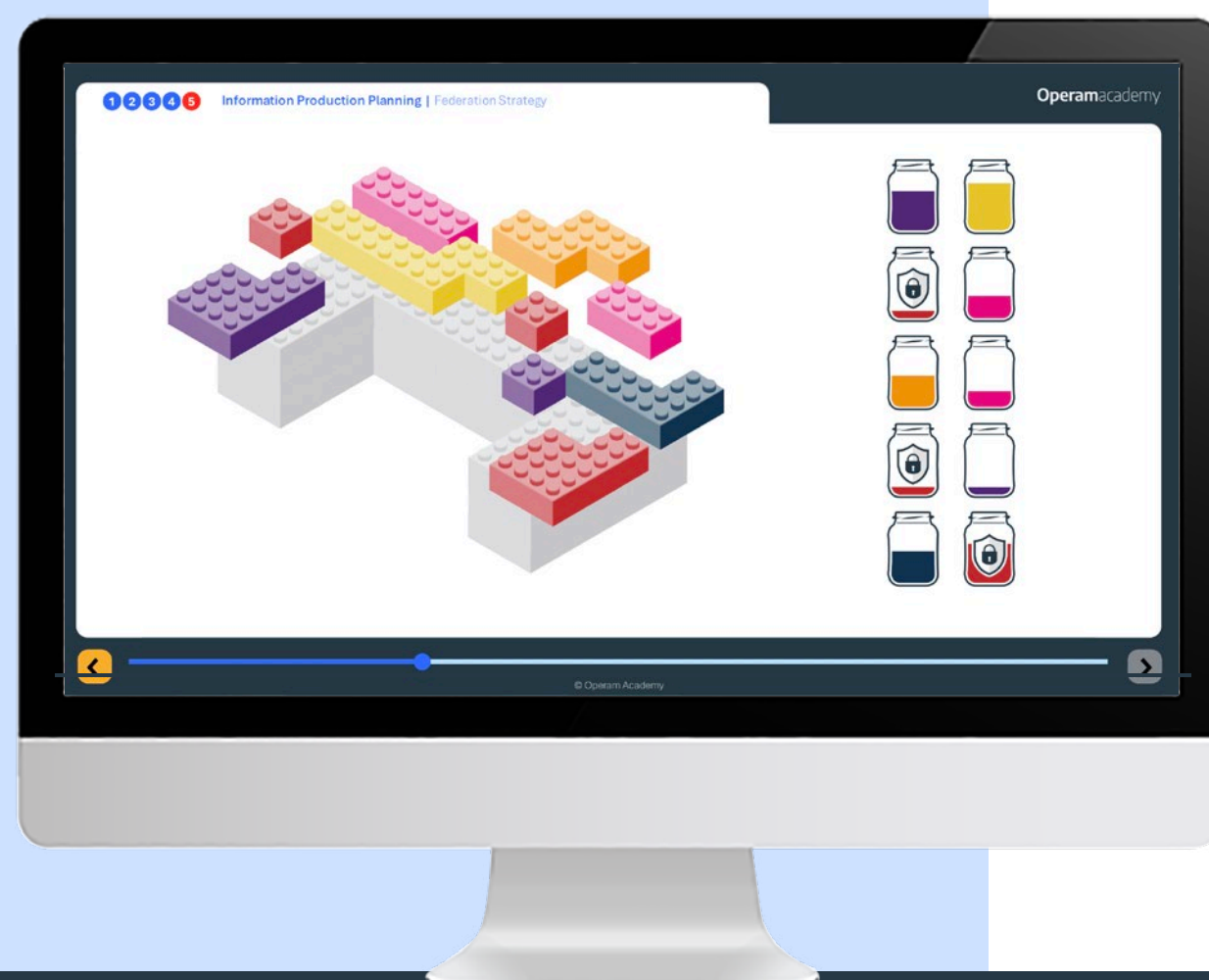
- Identify the structure of an appointment from an Information Management perspective.
- Recognize which Project Information Management documents form part of an appointment, which are appended to the Project Information Protocol and which are referenced with the various schedules.
- Differentiate between the documents which constitute a Lead Appointed Party Appointment and an Appointed Party Appointment.

1.5 hrs
CPD

Information Production Planning

The aim of this course is to introduce you to the activities relating to the preparation and execution of Information Production Planning prior to commencing an appointment.

This course focuses on the planning activities for defining the Project's Information Standard and production methods and procedures. you will also learn best practice for establishing the most effective approach to the Production of Information.



1 Introduction to Information Production Planning

By the end of this lesson, you will be able to:

- Describe what Information Production Planning is, and why it is an important part of the process.
- Discuss the four key aspects of planning the Production of Information.

2 Information Standards

By the end of this lesson, you will be able to:

- Describe the benefits of an Information Standard in relation to the collaborative production of information.
- Explain how Information Standards facilitate the search and retrieval, use and re-use, spatial coordination and presentational consistency of information produced on a project.

3 Production Methods & Procedures

By the end of this lesson, you will be able to:

- Describe the approach to identifying the most effective information production method for a given activity in a particular scenario.
- Define how methods relate to the production and use of information.
- Recall the different approaches to documenting procedures and the considerations when documenting each task.

4 Shared Resources

By the end of this lesson, you will be able to:

- Describe what Shared Resources are, with examples of potential outputs.
- Define the principles of ownership of Shared Resources, for any given project or appointment.

5 Federation Strategy

By the end of this lesson, you will be able to:

- Explain what a Federation Strategy is.
- Understand the purpose of a Federation Strategy and the breaking down of information.
- Define the requirements needed to establish a Federation Strategy.

1.5 hrs
CPD

Information Delivery Planning

The aim of this course is to introduce you to the activities relating to the preparation and execution of an Information Delivery Plan during an appointment.

This course focuses on the planning activities for planning the delivery of information and the assignment of responsibility to parties and teams. You will also learn the best practice for ensuring the timely delivery of information during an appointment.

1 Introduction to Information Delivery Planning

By the end of this lesson, you will be able to:

- Recognize the similarities between the Information Management function and the Project Management function.
- Recall how the concept of the 'iron triangle' can support the Information Delivery Planning activities.

2 Responsibility Assignment

By the end of this lesson, you will be able to:

- Recall the activities needed to support the effective planning for the delivery of information.
- Describe the respective outputs from each activity and their relationship with each other.
- List the recommended information to be included within the high level and detailed responsibility matrix.

3 Task Information Delivery Planning

By the end of this lesson, you will be able to:

- Explain why Task Information Delivery Planning is essential to the success of the appointment.
- Recall the recommended methods for estimating the time and resources a task team will need to produce the information they are responsible for.
- List the recommended information to be included within a Task Information Delivery Plan.

4 Master Information Delivery Planning

By the end of this lesson, you will be able to:

- Define the purposes for which the Master Information Delivery Plan serves during an appointment.
- Recall how to identify the critical path and the terms associated to with it.
- Describe the importance of baselining the Master Information Delivery Plan before inclusion within an appointment.



1 hr
CPD

Collaborative Production of Information

The aim of this course is to introduce you to the activities relating to the progressive development of an information model, based upon the collaborative approach to the production of information.

This course focuses on the creation, sharing and delivery of information when adopting a collaborative approach to the production of information. You will also learn how upstream planning activities enable teams to produce information effectively.



1 Introduction to the Collaborative Production of Information

By the end of this lesson, you will be able to:

- Identify the similarities between the production of analogue and digital information.
- Recognize the issues relating to teams adopting a siloed approach.
- Recall the three steps needed to ensure that information is produced effectively and efficiently.

2 Creating Information

By the end of this lesson, you will be able to:

- Recall the three production activities within the 'create' step.
- Define the tasks to be undertaken as part of each production activity.
- Describe the difference between clash avoidance and clash detection.

3 Sharing Information

By the end of this lesson, you will be able to:

- Recall the three production activities within the 'share' step.
- Define the tasks to be undertaken during each production activity.
- Describe when information is to be shared with other task teams.

4 Delivering Information

By the end of this lesson, you will be able to:

- Recall the four production activities within the 'deliver' step.
- Define the tasks to be undertaken as part of each production activity.
- Outline the three steps to adopting a collaborative approach to the production of information and the production activities within each step.

1 hr
CPD

The Common Data Environment

The aim of this course is to provide you with a fundamental understanding of the shared repository teams need to collaborate, known as the Common Data Environment (CDE).

This course focuses on the production workflow needed for the collaborative production of information. You will also learn the role the Common Data Environment plays in enabling the production workflow to be implemented effectively.



1 Introduction to the Common Data Environment (CDE)

By the end of this lesson, you will be able to:

- Describe what a CDE is, and what it isn't.
- Describe the benefits of a CDE.
- Define how working in a CDE helps support a collaborative approach to the production of information.

2 Information Containers & The CDE Workflow

By the end of this lesson, you will be able to:

- Illustrate the concept of an information container and the different states in which a container can exist.
- Identify the controls in place for each state, and the tasks required to be undertaken before transitioning between states.
- Describe how containers support a CDE workflow.

3 Container Attributes

By the end of this lesson, you will be able to:

- Define what a container attribute is, and why it is needed.
- Describe why each information container must have a unique ID within a CDE.
- Determine the difference between container revisions and status, and how they relate to each other, and the CDE workflow.
- Describe how containers need a classification framework.
- Define how the Archive/Journal creates an auditable record of all information produced within the CDE.

4 The CDE Solution

By the end of this lesson, you will be able to:

- Explain how a CDE solution is not a single system but a variety of integrated IT systems.
- Give examples of the functionality needed within a CDE solution as a set of functional requirements.
- Recall the additional concept of a distributed CDE solution, whereby task teams have the ability to generate information within a local environment before copying containers to a CDE.

Health and Safety Information

The aim of this course is to provide you with a fundamental understanding of how structured Health and Safety Information can improve safety outcomes across the asset lifecycle.

This course focuses on the principles, processes, and practicalities of making a shift from paper-based compliance to proactive, structured, and collaborative Health and Safety Information Management.



1 The Role of Health and Safety Information

By the end of this lesson, you will be able to:

- Explain why structured Health and Safety Information matters across the asset life cycle.
- Describe the purpose and structure of a Health and Safety Risk Register.
- Distinguish between health and safety management and Information Management practices.

2 Describing Health and Safety Risks

By the end of this lesson, you will be able to:

- Explain how products, activities, and locations help contextualise health and safety risks.
- Assess health and safety risks based on likelihood, consequence, and overall level.
- Describe the structure and purpose of a Health and Safety Information Schema.

3 The Health and Safety Information Cycle

By the end of this lesson, you will be able to:

- Describe the four stages of the Health and Safety Information Cycle.
- Explain how risks are identified and how Health and Safety Information is used.
- Outline how Health and Safety Information is shared and generalized.

4 Embedding Health and Safety Information Management Practices

By the end of this lesson, you will be able to:

- Describe how Health and Safety Information Requirements are embedded within Organizational, Asset, Project, and Exchange Information Requirements.
- Explain the responsibilities of the Appointing Party in setting standards, procedures, and expectations for Health and Safety Information production.
- Outline the key actions delivery teams must take to produce, structure, and coordinate Health and Safety Information within the Information Model.

1 hr
CPD

Operam Academy BIM certification

You work hard to keep up with the latest industry standards. Yet your qualifications and job title may not fully express your range of professional skills, experience, and expertise.

With our BIM certification for individuals, you can provide verifiable credentials to your clients, colleagues, and employers.



Complete a course and get a CPD Certificate

As a member of the CPD Certification Service, our BIM courses are independently certified against the universally accepted continuing professional development guidelines.

Upon completion of each course, you will receive a CPD certificate which you can use to provide documented evidence to your employer or professional body.

- ✓ Access independently certified learning material.
- ✓ Keep your knowledge and skills up to date.
- ✓ Meet ongoing commitments to professional bodies.



Complete the curriculum and become an Information Management Practitioner

We are dedicated to helping you to achieve your professional goals and to stand out from the crowd. That's why we've partnered with Credly to provide you with a digitally enabled, verifiable version of your BIM certification.

Digital badges can be added to your email signature or digital CV and posted on social media sites such as LinkedIn, Facebook, and Twitter. When the badge is clicked, a description of your BIM certification and what you did to earn it is shown on Credly's Acclaim platform.

- ✓ Anyone can verify your BIM Certification by clicking on your badge.
 - ✓ Display your hard work and validate your expertise.
 - ✓ Each badge gives details about the knowledge and skills you've acquired.
- Earners of Operam Academy's Information Management Practitioner badge have a fundamental understanding of 'BIM according to ISO 19650'. They are familiar with the concepts and principles for the effective management and collaborative production of information. Holders of this BIM certification can describe the key activities within the Information Management Process, the parties responsible for undertaking each activity and the enabling technologies that support them.
- To earn this badge, you must:**
- ✓ Complete all self-led learning courses within Operam Academy's ISO 19650 Curriculum.
 - ✓ Attain a pass mark of at least 80% in each course assessment.



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Questions?

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19 December 2025