

BUILDING INFORMATION MODELLING (BIM)

PROSPECTIVE LEAD APPOINTED PARTY'S BIM EXECUTION PLAN (BEP)

Worked Example – illustrative completed response

for

CLEEVES RIVERSIDE QUARTER – PHASE II (a) SITE ACTIVATION WORKS

CLEEVES RIVERSIDE QUARTER, NORTH CIRCULAR ROAD, LIMERICK CITY

on behalf of

LIMERICK TWENTY THIRTY DAC

Template / Worked Example (Illustrative)

This is an illustrative worked example of a completed BIM Execution Plan template, prepared to show the type and level of response expected from a prospective Lead Appointed Party. All party names, personnel, software, versions, dates and figures are fictional and for illustration only and do not represent any actual appointment, organisation or individual.

Pre-appointment, the Project Team must prepare a BEP as part of the tender response. Post-appointment, the BEP is to be updated and confirmed. The BEP must include project-specific and appropriate responses to the Exchange Information Requirements (EIR) in all sections.

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PREPARED BY:

ARCDox | Enabling & Supporting BIM

6 Fern Road | Sandyford | Dublin D18 FP98 | Ireland

Tel +353 1 4371200 · www.arcdox.com · mail@arcdox.com

ArcDox Ltd. t/a ArcDox | Directors: **Ralph Montague** BArch MRIAI · **Patrick Slattery** Dip Con Tech

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Illustrative example – fictional parties and figures. Prepared to demonstrate a completed BEP.

1 Introduction

1.1 Purpose of Document

This BIM Execution Plan (BEP) demonstrates how Shannon Civil & Infrastructure Ltd, as prospective Lead Appointed Party (main contractor) for the Cleeves Riverside Quarter – Phase II (a) Site Activation Works, proposes to meet the Appointing Party's Exchange Information Requirements (EIR). It describes our approach, capability, capacity and competence to deliver information to ISO 19650 across the detailed design, construction and handover stages.

Shannon Civil & Infrastructure Ltd will carry out the role of Project Information Manager for the construction and handover stages. This pre-appointment BEP will be developed into a confirmed post-appointment BEP at the BIM kick-off meeting, and maintained as a live document through to handover, when it will form part of the project record.

1.2 Scope

This BEP responds to the EIR for the full scope of the Site Activation Works: demolition and site clearance; surface water, wastewater and water infrastructure (including SuDS, attenuation and connections to Uisce Éireann networks); utilities and telecommunications routes (including ESB Networks infrastructure and public lighting); flood defence measures (including raising the North Circular Road to 5.7 m AOD and riverside defences); and road and public-realm works. It is structured to align with the EIR and the minimum BEP structure of EIR Appendix M.

1.3 Standards

We will deliver information in accordance with I.S. EN ISO 19650-1:2018, I.S. EN ISO 19650-2:2018 and the Irish National Annex to I.S. EN ISO 19650-2, together with ISO 19650-4 (information exchange), ISO 19650-5 (security-minded approach), ISO 7817 (information need), ISO 16739 (IFC4) and Uniclass 2015, as set out in the EIR.

2 Project Information

2.1 Project Details

Item	Detail
The Appointing Party	Limerick Twenty Thirty DAC (LTT)
Client / Third Party	Limerick City and County Council; receiving asset owners include Uisce Éireann and ESB Networks
Project Name	Cleeves Riverside Quarter – Phase II (a) Site Activation Works
Site Location	Cleeves Riverside Quarter, North Circular Road, Limerick City
Project Description	Infrastructure-led enabling works to activate the CRQ regeneration site on the northern bank of the River Shannon, comprising drainage/SuDS, water and foul connections, utilities and telecoms, flood defence and road and public-realm works.

2.2 Project Scope

Item	Detail
Contract / Delivery Type	Public Works Contract PW-CF2 (Design & Build); the Contractor develops the detailed design from the Engineer-led Single Point Design Team employer's requirements.
Project Phasing	Detailed design and construction of the Phase II (a) Site Activation Works, delivered in coordinated work packages across the CWMF construction and handover stages.
Approximate Quantum	Site-activation infrastructure package (extent as per the employer's requirements and tender drawings).

3 Team Structure

3.1 Project Team and Organisational Structure

Shannon Civil & Infrastructure Ltd is the Lead Appointed Party and holds the Project Information Manager function for the construction and handover stages. Detailed design is delivered by our appointed design supply chain (task teams), each with a Task Team Manager and a Task Team Information Manager who report to our Project Information Manager.

Organisation	Role on Project	Discipline / Scope
Shannon Civil & Infrastructure Ltd	Lead Appointed Party / Project Information Manager	Construction, coordination, handover, asset information
Treaty Design Engineers	Lead Designer (Task Team)	Civil, drainage / SuDS, roads, flood defence (structural)
Geo-Shannon Ltd	Task Team	Geotechnical and geoenvironmental
Lumen Utilities Design	Task Team	Electrical, ESB, public lighting and telecoms
Riverbank Landscape Architects	Task Team	Landscape and public realm

3.2 Task Teams and Reporting Lines

Task Team	Task Team Manager	Task Team Information Manager	Reports to
Civil / Lead Design	A. Kelly (Treaty Design Engineers)	C. Ní Bhriain	Project Information Manager
Geotechnical	D. Walsh (Geo-Shannon)	D. Walsh	Project Information Manager
Electrical / Utilities	P. Doyle (Lumen)	P. Doyle	Project Information Manager
Landscape	E. Murphy (Riverbank)	E. Murphy	Project Information Manager

4 Roles and Responsibilities

4.1 Information Management Roles and Responsibilities

Role	Responsibility	Held by
Project Information Manager	Establishes and runs the information management function; CDE administration; review and approval; audits.	M. O'Brien (Shannon Civil & Infrastructure Ltd)
Task Team Managers	Manage discipline information production and delivery to the TIDP.	Each task team
Task Team Information Managers	Apply the information standard, naming, classification and QA within their team.	Each task team
Digital Coordinator	Federation, clash and interface detection, issue management.	R. Hayes (Shannon Civil & Infrastructure Ltd)
Asset Information Coordinator	Coordinates COBie / asset data capture and validation.	M. O'Brien (Shannon Civil & Infrastructure Ltd)

Responsibilities align with the Responsibility Matrix in EIR Appendix E. The Project Information Manager does not assume design responsibility, which remains with the task teams.

4.2 Agreed Responsibility Matrix across the Supply Chain

Responsibilities are agreed across the supply chain using the codes Produce (P), Verify (V), Coordinate (C), Approve (A), Accept (AC) and Inform (I). The matrix below is an extract; the full matrix is maintained with the TIDPs.

Activity	Lead Designer	Task Teams	Digital Coordinator	PIM
Produce discipline information	P	P	–	–
Verify / check before sharing	V	V	–	–
Federate and coordinate	–	I	C	A
Review and approve for issue	–	–	–	A
Validate asset information	V	P	–	C

5 Information Management Strategy

5.1 Information Management Approach (ISO 19650)

We will implement the ISO 19650-2 information management process: a single project CDE, a federated information model built from discipline information containers, defined information states, and a produce–check–review–approve–authorise workflow before any information is shared or published. The approach is set out in this BEP and enacted through the MIDP/TIDP and the project information standard.

5.2 Information Container Naming Convention (Irish National Annex)

All information containers will be named in accordance with the Irish National Annex to I.S. EN ISO 19650-2, using the fields: Project, Subproject or phase, Element or system, Spatial zone, Level, Information type, Originator, Project role, Number —

with status, purpose of issue and revision held as metadata. Example container reference:

CRQ-SA-DR-XX-XX-M3-C-SCI-0001 (Cleeves – Site Activation – Drainage – model – Civil – originator SCI), Status P1, Revision 0.

5.3 Status, Revision and Purpose Codes

Status (suitability), purpose-of-issue and revision codes will follow the Irish National Annex and the project information standard, configured in the CDE. Work-in-progress containers carry preliminary status; information is issued as Shared for coordination/comment and Published when authorised. Revisions are incremented on each issue and superseded versions retained in the Archive state.

5.4 Classification (Uniclass 2015)

Uniclass 2015 will be applied consistently across models, drawings, schedules and asset data, principally using the Systems (Ss), Products (Pr), Elements/Functions (EF) and Spaces/Locations (SL) tables, with the Entities (En) table for the overall asset. Classification is embedded in container templates and verified at QA.

5.5 Information Production Methods and Procedures

Production methods and procedures (PM&P) — modelling conventions, container breakdown, shared resources, templates and checks — are defined at mobilisation, tested (see the Mobilisation Plan) and recorded in the project information standard. Each task team produces to these PM&P to ensure consistent, coordinated and reusable information.

5.6 Information Review and Approval

Information passes through a task team check and verification, then Lead Appointed Party review, before being shared or published through the CDE. Approval is recorded in the CDE with the appropriate status code. Information that fails check or review is returned with comments and not progressed until resolved.

5.7 Information Auditing

The Project Information Manager will undertake periodic information audits covering naming, metadata, classification, model quality, coordination and asset information completeness, increasing in frequency around exchange and stage-gate milestones. Audit findings are logged and tracked to closure.

6 Common Data Environment (CDE) Strategy

6.1 CDE Platform and Configuration

We propose to use Autodesk Construction Cloud (ACC) as the project CDE, or to work within the Appointing Party's nominated CDE if directed. The CDE is configured with a project-specific folder structure aligned to the information states, the container breakdown and role-based access, and is administered by the Project Information Manager.

6.2 Information States and Workflow

State	Use
Work in Progress (WIP)	Information under development within a task team; not visible to others.
Shared	Checked, reviewed information shared for coordination, comment or information.
Published	Authorised information issued for use / construction.
Archive	Superseded and record information retained for audit.

Containers transition between states only through the defined check–review–approve workflow; the states are not bypassed and email is not used for formal exchange.

6.3 Folder Structure, Access and Permissions

Access is role-based and least-privilege: task teams have write access to their own WIP and read access to Shared information; only the Project Information Manager authorises publication. Permissions are set at mobilisation and maintained throughout the project. The folder structure mirrors the information container breakdown and the information states.

6.4 Formal Information Exchanges

All formal information exchanges occur through the CDE. Information issued outside the CDE is not considered controlled. Exchanges are made at the frequencies and milestones set out in the MIDP and recorded with status and purpose-of-issue metadata.

7 Information Delivery Planning

7.1 Master Information Delivery Plan (MIDP)

We will maintain a project MIDP, compiled from the task team TIDPs, identifying each information deliverable, its responsible task team, format, level of information need and delivery and review dates aligned to the project milestones. The extract below is indicative; the full MIDP is issued and maintained through the CDE.

Information Deliverable	Stage	Format	Indicative Issue	Responsible
Existing-conditions / survey model	Detailed Design	IFC4 + native	DD	Lead Designer
Drainage & SuDS design model	Detailed Design	IFC4 + native	DB / Tender	Lead Designer
Road & earthworks model	Detailed Design	IFC4 + native	DB / Tender	Lead Designer
Flood defence (5.7 m AOD) model	Detailed Design	IFC4 + native	DB / Tender	Lead Designer
Utilities & telecoms model	Detailed Design	IFC4 + native	DB / Tender	Lumen Utilities Design
Federated coordination model & clash report	Construction	NWD / BCF	CN (periodic)	Digital Coordinator

Information Deliverable	Stage	Format	Indicative Issue	Responsible
As-constructed models & COBie data	Handover	IFC4 / COBie	HO	Lead Appointed Party

7.2 Task Information Delivery Plans (TIDP)

Each task team prepares and maintains a TIDP listing its information containers, responsibilities, level of information need and delivery dates. TIDPs are aggregated into the MIDP by the Project Information Manager and updated as the design and construction programme develops.

7.3 Delivery and Review Milestones

CWMF Stage	Information Milestone
DD – Detailed Design	Detailed design models and reports developed from the employer's requirements
DB – Design & Build / Tender	Coordinated design models, specifications and tender information
TN / CN – Construction	Construction and coordination information; progressive asset data
HO – Handover	Verified as-constructed models, AIM and COBie data

8 Level of Information Need (LOIN) Strategy

Information will be produced to the Level of Information Need set out in EIR Appendix H — sufficient to satisfy each information purpose and no more. Geometrical detail, alphanumeric data and documentation increase progressively by stage, as summarised below.

Stage / Purpose	Geometrical	Alphanumeric	Documentation
DD – design development	Indicative sizing, routes and levels	Key parameters, classification	Design reports, basis of design
DB / Tender – coordination & tender	Coordinated, dimensionally reliable	Specification-level attributes	Specifications, schedules
Construction	Construction-ready detail	Manufacturer / installed data	Method, QA records
Handover	As-constructed	Asset attributes (COBie)	O&M, warranties, certificates

9 Digital Coordination Strategy

9.1 Federation Strategy

Discipline models are produced as separate information containers segregated by discipline and spatial zone, and federated by the Digital Coordinator into a coordination model on a common origin. Federation does not alter authorship: each task team remains responsible for its own containers.

9.2 Digital Coordination Process

Coordination runs on a regular cycle aligned to the MIDP: task teams share checked models, the Digital Coordinator federates and runs clash/interface detection, and

issues are reviewed at coordination meetings and tracked to closure in the CDE using BCF.

9.3 Clash and Interface Detection

Clash and interface detection is undertaken in Navisworks and Solibri against an agreed clash matrix (e.g. drainage vs utilities, utilities vs road formation, flood defence vs services). Hard clashes are prioritised; tolerances and interface zones are agreed at mobilisation. Each issue is assigned an owner and due date and closed out before the next exchange.

9.4 Coordination Deliverables

Coordination deliverables comprise the federated model, clash/interface reports, the BCF issue log and coordination meeting records, issued through the CDE at the frequencies set out in the MIDP.

10 Model Production Strategy

10.1 Authoring Platforms by Discipline

Discipline	Authoring Tool (illustrative)	Exchange
Civil / drainage / roads / earthworks	Autodesk Civil 3D	IFC4, LandXML, native
Structural / flood defence	Autodesk Revit	IFC4, native
Geotechnical	Civil 3D / ground model tools	IFC4, AGS, native
Electrical / utilities / telecoms	Revit / Civil 3D	IFC4, native
Landscape / public realm	Civil 3D / Revit	IFC4, native
Coordination & clash	Navisworks, Solibri	NWD, BCF

10.2 Coordinates, Levels and Model Origin

All models use a common, agreed coordinate system referenced to the Irish Transverse Mercator (ITM) grid and Malin Head datum, with a shared project origin/base point fixed at mobilisation from the survey control. Flood defence levels are modelled to the 5.7 m AOD protection level. Project Participants will not redefine project coordinates without approval from the Project Information Manager.

10.3 Model Segregation Strategy

Models are segregated by discipline and by spatial zone / work package to keep containers manageable, support concurrent working and enable efficient federation. The container breakdown is defined in the project information standard and reflected in the CDE folder structure.

10.4 Model Content by Discipline

Discipline	Key Model Content
Civil	Surface water, foul and water networks; SuDS and attenuation; road geometry, pavements and earthworks; setting-out.
Structural / flood defence	Flood defence walls and embankment, raised road structures, ancillary structures.

Discipline	Key Model Content
Geotechnical	Ground model, made-ground / contamination zones, foundation and earthworks parameters.
Electrical / utilities	ESB ducting and substations, public lighting, telecoms / ICT ducting and chambers.
Landscape	Public realm surfaces, planting, street furniture, active-travel links.

10.5 Model Quality and Production Methods

Models are produced to the agreed PM&P and checked for geometric accuracy, correct origin/coordinates, classification and metadata before sharing. Models contain only the content required for the relevant information purpose and avoid extraneous or duplicate geometry.

11 Software, Interoperability and IT Solutions

11.1 Software Versions

Function	Software (illustrative)	Version	Open Format
Civil authoring	Autodesk Civil 3D	2025	IFC4, LandXML
Structural authoring	Autodesk Revit	2025	IFC4
Coordination / clash	Autodesk Navisworks Manage	2025	NWD, BCF
Model checking	Solibri	v9.13	IFC4, BCF
CDE	Autodesk Construction Cloud	Cloud	–

A single agreed version will be fixed for the project at mobilisation; versions are not changed mid-project without agreement through change control.

11.2 Exchange and Open Data Formats (IFC4)

IFC4 is the primary open exchange format, supported by LandXML for alignments/surfaces and BCF for coordination issues. Native files are issued where requested. COBie is used for structured asset data. IFC exports are validated before issue for completeness, coordinates, classification and metadata.

11.3 Software Interoperability

Interoperability between Civil 3D, Revit and the coordination tools is tested per exchange purpose during mobilisation (see the Mobilisation Plan); workarounds are recorded and agreed. Where a translation risks data loss, the exchange method is agreed in advance with the receiving party.

11.4 Hardware and IT Infrastructure

Task teams operate hardware meeting the software vendors' recommended specifications, with adequate connectivity for CDE access. Configurations are tested at mobilisation to confirm performance with project-scale federated models.

11.5 Reliance on Data

Models and information are issued for the stated purpose and status only. Recipients must not rely on WIP information or on information for purposes other than that for which it was issued. Survey and third-party data are verified before use.

12 Information Exchange and Delivery Procedures

12.1 Information Exchange Frequency and Formats

Formal exchanges occur through the CDE at the milestones and frequencies in the MIDP (typically a coordinated exchange each design/coordination cycle and at each stage gate), in IFC4 plus native and, for asset data, COBie.

12.2 Design Stage Deliverables

At design stages we deliver discipline and federated models, clash/interface and coordination reports, design reports, drawings and specifications, at the LOIN required for each purpose.

12.3 Construction Deliverables

During construction we deliver detailed design and construction information, coordination information, progressively developed asset information and as-constructed information, in line with the Construction BEP and MIDP.

12.4 Information Validation

All information is validated before issue: models for coordinates, classification, metadata and completeness; asset data for compliance with the AIR and COBie structure. Validation evidence is retained in the CDE.

12.5 Information Acceptance

Information is submitted for acceptance only when it satisfies the EIR, the information standard and the required LOIN. Information that does not meet the acceptance criteria is returned with comments for correction and re-issue.

12.6 Information Retention

Superseded information is retained in the Archive state, and the authorised information set is retained for handover as the project record, in accordance with the EIR.

13 Asset Information Strategy

13.1 Asset Information Approach

Asset information is developed progressively to support the receiving asset owners (LTT, Limerick City and County Council, Uisce Éireann and ESB Networks), captured against maintainable assets and validated before handover, in accordance with EIR Section 4 and Appendix D.

13.2 Asset Classification and Maintainable Assets

Maintainable assets (e.g. SuDS components, pumping/attenuation equipment, flood defence structures, gullies/manholes, lighting, ESB and telecoms chambers) are classified using Uniclass 2015. We will develop and maintain the project-specific maintainable-asset schedule in the Responsibility Matrix for agreement with the Appointing Party and asset owners.

13.3 Asset Information Requirements and Attributes

Each maintainable asset carries the mandatory attributes required by the AIR (identifier, type, classification, location, manufacturer/installed data and O&M/warranty references where applicable), plus any additional attributes agreed with the receiving owners.

13.4 Asset Information Responsibility Matrix (AIRM)

Asset Type	Producer	Verifier	Receiving Owner
Drainage / SuDS	Lead Designer / Shannon Civil & Infrastructure Ltd	Shannon Civil & Infrastructure Ltd	LCCC / Uisce Éireann
Water & foul connections	Lead Designer / Shannon Civil & Infrastructure Ltd	Shannon Civil & Infrastructure Ltd	Uisce Éireann
Flood defence	Lead Designer / Shannon Civil & Infrastructure Ltd	Shannon Civil & Infrastructure Ltd	LTT / LCCC
Electrical / ESB / telecoms	Lumen / Shannon Civil & Infrastructure Ltd	Shannon Civil & Infrastructure Ltd	ESB Networks / LCCC

13.5 COBie and Structured Asset Information

Structured asset data is delivered in COBie, populated progressively (design team to tender, construction team to completion) for the required COBie tables in EIR Appendix D. Data is exported from the models and validated against the AIR before handover.

13.6 Asset Information Validation

Asset information is validated for completeness, correct classification, valid attributes and picklists, and consistency with the models, before acceptance. Incomplete data is returned for correction.

13.7 As-Constructed Information and Asset Information Model (AIM)

As-constructed models and data are verified against site records and surveys, federated into the Asset Information Model and delivered with the O&M information at handover.

14 Quality Assurance Procedures

14.1 Quality Control and Quality Assurance

Each task team is responsible for the QA of its own information through a documented check before sharing. Shannon Civil & Infrastructure Ltd coordinates QA across the team and undertakes periodic information audits, aligned with EIR Appendix K.

14.2 Model and Asset Information Validation Procedures

Validation covers naming, metadata, classification, coordinates, model quality, coordination status and asset data completeness. Checks are automated in the CDE and checking tools where possible, with results recorded and non-conformances tracked to closure.

15 Information Security Procedures

15.1 Security Approach and Access Controls

We adopt a proportionate, security-minded approach aligned with ISO 19650-5 and EIR Appendix L. Access is role-based and need-to-know; sensitive information relating to utilities, flood defence and critical infrastructure is handled with appropriate restrictions within the CDE.

15.2 Information Sharing and Incident Management

Information is shared only through the CDE; uncontrolled channels are not used. Back-up, business continuity and incident-response arrangements are in place, and any information security incident is reported and managed in line with the project security requirements.

16 Health and Safety

Design and construction information supports the management of health and safety under the Safety, Health and Welfare at Work (Construction) Regulations, including design risk information and the provision of model-based information to the PSDP/PSCS. Significant residual risks are recorded and communicated through the information deliverables and the safety file.

17 Handover Strategy

Prior to practical completion we prepare a Handover Information Plan identifying the remaining information deliverables, asset information status and validation activities. At handover we deliver the verified as-constructed models and federated AIM, the asset registers / COBie data, and the O&M manuals, warranties, certificates and commissioning records, accepted against the EIR acceptance criteria (EIR 4.12–4.13 and Appendix M.20).

18 Project Implementation, Mobilisation and Risk

18.1 Project Implementation Plan

Our Project Implementation Plan confirms the delivery team, capability and capacity, the information standard, the PM&P and the MIDP/TIDP, and is established at the BIM kick-off meeting and maintained through delivery.

18.2 Mobilisation Plan

Resources, IT (including the CDE), shared resources and production methods are mobilised and tested before production begins, with a readiness sign-off, as set out in our BIM Mobilisation Plan (submitted separately).

18.3 Delivery Team Capability and Capacity

The capability and capacity of Shannon Civil & Infrastructure Ltd and its task teams to deliver to ISO 19650 is demonstrated in our BIM Capability & Capacity Assessment (submitted separately), including relevant infrastructure experience and resource availability against the programme.

18.4 Delivery Team Risk Register

Information delivery risks are managed in our delivery team Risk Register (submitted separately). Indicative key risks include:

Risk	Mitigation	Owner
Utilities / drainage interface clashes	Early federation and clash detection; agreed interface zones	Digital Coordinator
Coordinate / origin misalignment (ITM / Malin)	Fix shared origin from survey control at mobilisation; validate on federation	Lead Designer
Asset data (COBie) incomplete at handover	Apply AIRM; capture progressively; validate against AIR	Lead Appointed Party

19 BEP Review, Approval and Revision

This BEP is reviewed by the Lead Appointed Party and the Appointing Party Information Manager, with comments resolved before approval. It is maintained as a live document, updated following major project, team, software or information-management changes, and the latest approved version is retained in the CDE. Compliance with the approved BEP is mandatory for all Project Participants.