
Thurles Inner Relief Road

Exchange Information Requirements

May 2026



Comhairle Contae Thiobraid Árann
Tipperary County Council



An Roinn Iompair
Department of Transport

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1. Guidance on using this Template

These requirements are to be addressed by Lead Appointed Party and Appointed Parties in a project BIM Execution Plan (BEP), and this will inform the production and delivery of a Project Information Model (PIM).

The PIM is the project information required to be delivered by the Project Delivery Teams in addition to the physical asset itself.

2. Document Scope and Purpose

The purpose of the Exchange Information Requirements (EIR) is to outline Appointing Party information requirements for information across the full project lifecycle.

This version of the EIR is a **DRAFT** version, to be completed between the appointed Consultant and Tipperary County Council as appropriate. Where sections are indicated as TBC (To be Completed), the Consultant's BIM Manager shall agree those sections of the requirements with the TCC Project Manager.

3. Project Information Standards (PIS)

This document provides supplementary information and clarifications for the implementation of BIM on the Thurles Inner Relief Road.

3.1 Key Project Information

Table 1 Key project Information

Term	Description
Project Name	Thurles Inner Relief Road
Project Number	NN003
Appointing Party (client)	Tipperary County Council
Appointing Party Information Manager	TBC
Lead appointed Party (LAP)	TBC
LAP Information Manager	[Insert Here]
Appointed Party(ies)	TBC
Description (Works)	This Project provides a relief road to Thurles, County Tipperary. The Thurles Inner Relief Road (TIRR) comprises a new single carriageway of approximately 1.1Km in length. The new road will be a single carriageway incorporating segregated footpaths and cycleways as well as a 50m span tied Bow String Arch crossing of the River Suir.
Survey Grid	IRENET95 / Irish Transverse Mercator (ITM).
Form of Appointment	COE1
Project Stage Commencement	TAF Stage 3

3.2 Organisation Structure and Commercial Relationships of the Project Team

Table 2 Organisational Structure

Organisation Name	Scheme Role (Lead Appointed Party / Third Party / Appointed Party)	Project Role	Form of Contract
Tipperary County Council	Client	Client	N/A
Department of Transport	Approving Authority	Funding	N/A
Consultant	LAP	Technical Consultant	PW-CF3

3.3 Project directory

Table 3 Appointing Party Team

Function	Task Team (Discipline)	Organisation	Name	Email Address
Project Information Manager	Information Management	Tipperary County Council	TBC	[Insert Here]
Project Manager	Project Management	Tipperary County Council	Oliver Tierney	Oliver.Tierney@tipperarycoco.ie
BIM Manager		Lead Appointed Consultant	TBC	TBC

3.4 IM Strategic Purpose

TCC's strategic objectives are to leverage digital processes to achieve measurable improvements in project delivery and whole lifecycle asset value. All project participants shall align their activities to achieve the following:

- 1. Design Certainty and Coordination:** Utilise the federated Project Information Model (PIM) as the single source of truth for design. This ensures all design information is fully coordinated to eliminate clashes, manage interfaces and minimise errors.
- 2. Construction Efficiency and Safety:** Leverage the PIM for clash detection, 4D construction sequencing, and direct from model setting out ("Desk to Digger"). The objective is to reduce on site rework, improve programme predictability, and enhance health and safety management through the visualisation and mitigation of risks.
- 3. Enhanced Stakeholder Communication:** Use the Visualisation Model, project animations, and Virtual Reality (VR) model to clearly and effectively communicate design intent to all project stakeholders.
- 4. Commercial Transparency:** Employ the PIM to support transparent and efficient commercial management through the Contract. This includes the assessment of progress for payment.
- 5. Whole Lifecycle Asset Management:** Ensure the progressive development of a structured, data rich PIM that is validated and delivered as the project progresses, also linked to the materials approval process. The PIM, at project handover, is to be delivered as a fully compliant Asset Information Model (AIM), suitable for direct integration with the Client's asset management systems.

3.5 Applicable Standards

The applicable information management standards are listed below.

Industry Standards

The following standards shall be used in relation to this project:

- BS EN ISO 13567-1:2017 - CAD Overview and principles.
- BS EN ISO 13567-2:2017 - CAD Concepts, format and codes used in construction documentation.

- I.S. EN ISO 19650-1:2018 - Organisation and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling - Part 1: Concepts and principles.
- I.S. EN ISO 19650-2:2018 - Organisation and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling - Part 2: Delivery phase of the assets.
- ISO 19650-3:2020 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. – Part 3: Operational phase of the assets.
- I.S. ISO 19650-4:2022 Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling Part 4: Information exchange.
- I.S. ISO 19650-5:2020: Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM). Information management using building information modelling. Part 5: Security-minded approach to information management.
- I.S. ISO 19650-6:2025: Organization and digitization of information about buildings and civil engineering works, including building information modelling (BIM) - Information management using building information modelling. Part 6: Health and safety information.
- BS ISO 7817-1:2024 Building information modelling - Level of information need Part 1: Concepts and principles.
- BS ISO 29481-1:2017 Building information models- Information delivery manual Part 1 : Methodology and format.
- ISO 22341:2021 Security and resilience — Protective security — Guidelines for crime prevention through environmental design;
- Industry Foundation Class;
- International Cost Management Standard (ICMS).

3.6 Appointing Party Key Programme Decisions Points

The overarching framework for decision points is specified in the Transport Appraisal Framework (TAF) and the Infrastructure Guidelines (IG) published by DoT and DEPRND.

The Brief of Service describes the project stages and the Client's Programme. Approval/decision/hold points in accordance with the current editions of the DPENDER 'Infrastructure Guidelines, DoT 'Transport Appraisal Framework' (TAF), DoT 'National Investment Framework for Transport in Ireland' (NIFTI), Project Managers Manual for National Roads Projects, CWMF, as well as any statutory approval processes shall be observed and adhered to without additional cost to the Client.

The scheme may also be subject to suspension/termination by the Client at any time, subject to these reviews/approvals, or other reasons.

3.7 Information Container Standards

The LAP shall agree the naming convention with the Client. To conform with the I.S. EN ISO 19650-2:2018 clause 5.1.7 the information container identification shall adopt the container coding given in NA.5 I.S EN ISO 19650-2.

3.8 Federation Strategy

Project information shall be appropriately segregated in an asset and system-based approach in accordance with the project functional breakdown.
The Lead Appointed Party shall develop a federation strategy for the Project Information Model. The Post-appointment BIM execution plan shall detail how the models and data will be segregated into manageable files and contain a list of the expected models on the project and how they relate to the systems or assets on the project.

The Information Model shall be segregated into containers corresponding to each of the commission Stages. The LAP shall ensure that all information compiled and prepared for the scheme for each Stage of the commission is available to the Client at the end of the Stage.
The Asset information shall form a section of the Safety File, and shall include a [full Digital Twin Representation](#) of the asset, to be handed over to the Client prior to issue of the Final Certificate for the Works.

3.9 Information Exchange Formats

Table 4 Information Exchange Formats

Information Type	Native Format	Exchange Format
Information / 3D Models	dwg, dgn	.ifc .STEP
Project Information (Federated) Models	nwd, i.dgn	
2D CAD (authoring)	dwg, dgn, dxf	.dwfx
Drawings	dwg, dgn	Pdf, .dwg
Documents	Doc, docx	Pdf, odt
Semi structured Data	Xls, xlsx	Csv,pdf,ods,xml,bcf.ags
Presentations	Ppt, pptx	Pdf, odp
GIS Data	Shp, shx,dbf,prj, tab,	.gdb, web URLs
Aerial and satellite imagery	Jpeg,	Jpeg
Pointcloud	Las, pts, ptx, pod, xyz, ptd	e57
Video Files	Avi, mp4	
Alignment File	IFCAalignment, LandXML,	
Terrain Data	LandXML, MX Genio	
[Insert Here]		

3.10 Information Exchange Process

All Shared or Published Status information in the CDE shall be exchanged by the Project Team via formal transmittals. Links to CDE information containers shall be used as the main method for sharing information. The Lead Appointed Party shall implement the necessary procedures to ensure information models are produced in the appropriate exchange formats, co-ordinates and units to ensure interoperability between native software applications avoiding data drop off.
The Lead Appointed Party shall implement the necessary processes and workflows in accordance with the processes outlined in ISO 19650-2 and in accordance with their internal Quality Assurance procedures to ensure design information is shared frequently and timely between Task Teams.

The submission of deliverables shall comply with the periods for the Service stages as outlined in Schedule B to the Tender.

3.11 Modelling and Drawing Standards & Practices

The LAP shall agree the CAD standards with the Client.

3.12 CDE and Collaboration

The LAP shall be responsible for the management and maintenance of a single project wide CDE to be used by all Appointed Parties.

TCC currently operate the Autodesk AEC Collection which includes Autodesk Construction Cloud (ACC). The current subscription is limited to the AcadCivil3D, Autodesk Docs, Insight and Forma products. It is intended that TCC will use ACC as their permanent Common Data Environment (CDE) for Capital Works going forward, however the LAP may propose an alternative. The LAP can be provided with access to this system for this Scheme, however they will have to use their own license subscriptions for access to this and for further ACC products such as Design Collaboration, Model Coordination, Cost Management etc. The LAP shall be responsible for the management and maintenance of the CDE. Where the LAP proposes a different CDE he shall provide full access for at least 3 TCC users and 2 DoT users, which shall be included in the LAP's fee. The Consultant shall be responsible for transferring all of the Information onto the TCC CDE, ACC at the end of each Stage of the commission. For the avoidance of doubt, the Consultant shall be responsible for the costs of the delivery, operation and maintenance of the CDE.

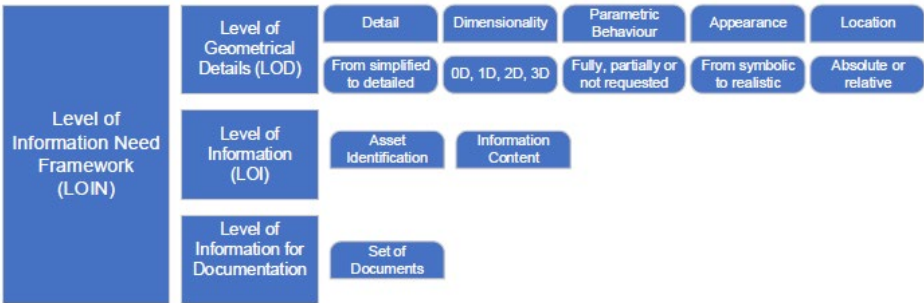
The LAP shall discuss the provision of the CDE with the Client for his acceptance.

Deliverables that require approval by the Client, NDEPR or DoT shall be uploaded to the CDE and be accessible to the relevant parties. The BIM Execution Plan (BEP) shall describe the process for progress of deliverables from Work in Progress through to Approved status.

3.13 Level of Information Need (LOIN)

The following sections stipulates the Level of Information Need framework that the LAP shall apply to produce all information deliverables. It comprises the Level of Geometrical Detail (LOD), the Level of Information (LOI) and the Level of Information Need for Documentation.

The Appointing Party and Lead Appointed Party shall develop the LOIN required in collaboration with all parties to reflect the needs to fulfil different purposes at each milestone.



The Lead Appointed Party shall outline their proposal for Level of Information Need in the BEP for each

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stage prior to commencement of work.

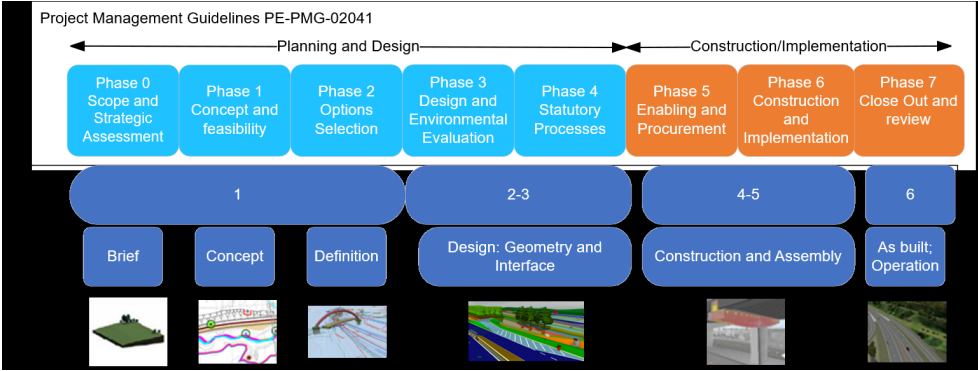
The LAP shall provide a digital [twin-representation](#) of the physical asset to the Client at the completion of the Works. The Digital [twin-representation](#) shall identify all elements of the Asset including materials used, in the form of materials certificates, Declarations of Performance, CE marking, test certificates, specification, location within the project and source.

The purpose of the Digital [Twin-representation](#) is to facilitate future maintenance and replacement of elements as necessary.

Level of Information Need Framework (ISO 7817, 2024)

3.13.1 Level of Geometric Details (LOD)

The Level of Geometric Detail shall be sufficient to convey the Design Intent and proposals for the given TAF Stage from Department Gateway approvals through to construction. Sufficient detail shall be developed to allow an accurate cost estimate to be made for each Stage. A Digital [Twin-representation](#) shall be prepared for the handover stage of the asset containing all relevant information for the maintenance and operation of the asset as noted above.
[Section 8.1 of TII Publication GE BIM 00101 describes the Level of Geometric Information required for each Phase of a project. For the purposes of BIM requirements, the TII project Phases correspond to the RLR Stages contained in the Infrastructure Guidelines.](#)



[GE BIM-00101 Fig 8.2, Level of Geometrical Information](#)

[Appendices I and K of that document also provides further information on the Level of Detail.](#)

3.13.2 Level of Information (LOI)

TBC

3.13.3 Level of Information for Documentation

The Lead Appointed Party shall refer to the condition of contract, the Project Requirements and any other relevant industry standards for the appropriate descriptions of the contents, quantity, quality and granularity of documents to be supplied to the Appointing Party.

3.14 Tender Response Requirements

Tender Response requirements for this project are included in the Instructions to Tenderers and

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Suitability Assessment Questionnaire supplied.

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3.15 4D and Digital Rehearsals

4D modelling shall be implemented for project planning, co-ordination and communication of construction sequencing. The typical use cases shall be :

- Method statement development and implementation - supporting the preparation and validation of construction methodologies.
- De-risking complex activities - identifying and addressing potential sequencing conflicts before execution.
- Programme optimisation - enhancing scheduling accuracy and efficiency through simulation.
- Site communication and tracking of completed work – Improving coordination and reporting of progress.
- Constructability reviews - visualising construction sequences to refine methodologies and execution strategies.
- Operational feasibility assessments - demonstrating that planned construction activities are achievable.
- Temporary works coordination - enhancing the planning and integration of temporary structures and supports.
- Stakeholder engagement - using visualisations to communicate complex engineering challenges effectively.

As part of post- appointment activities the LAP shall outline their approach to 4D processes in the BIM execution plan (BEP). As a minimum BEP shall outline:

- The way that 4D will support the use cases stated;
- The technology and tools selected for 4D modelling;
- Resources, roles, and responsibilities for implementing 4D;
- Technical methodology for integrating schedule data with graphical models.

3.16 Training and Competence

3.16.1 Competence

LAP shall conduct project specific supply chain competency assessments and provide an overview and summary of the outcomes.

3.16.2 Training

Training requirements are contained in the Suitability Assessment Questionnaire and the Service Requirements.

4. Production and Exchange of Information

4.1 Design assurance, Coordination process and Clash Detection

Lead Appointed Party shall ensure that all deliverables are produced to the standard required under the planning approvals, the Infrastructure Guidelines, TII Publications and the Service Requirements. The Consultant shall implement an accredited Quality Assurance System which shall be subject to regular audits, including the activities related to this project.

4.2 Production, review, approval and authorisation of information.

The Lead Appointed Party shall ensure that the production review and approvals of information are compatible with the requirements of the Infrastructure Guidelines, TAF Stages, TII publications and any other statutory requirements. The Consultant shall ensure that the required quality of information is provided at all stages. The Client shall not carry out proof reading of any documentation.

5. Information Security

The LAP shall ensure that all data held is protected from cyber theft or breach. In particular the LAP shall hold the role of a Data Holder in accordance with the GDPR regulations and shall take all measures that data is held securely and only used for the purposes required. The LAP shall comply with the TCC policies in relation to Data Protection.

All Project commercial information produced shall be held securely with access limited to the Client and the Consultant. Documentation relating to any contractual disputes arising during any Works contracts shall be held separately.

6. Cyber Security

The Lead Appointed Party shall employ cyber security measures for all data related to the project.

Appendix A Acronyms and abbreviations

Acronym	Definition
AIR	Asset Information Requirements This defines the information that is required, and the managerial and technical aspects of producing this information, for the operation of an asset to meet the OIR.
AIM	Asset Information Model Set of structured and unstructured Information Containers relating to the operational phase of a project.
BEP	BIM Execution Plan Plan that explains how the information management aspects of the Appointment will be carried out by the Delivery Team. NOTE 1: The BIM execution plan focuses on the delivery team's proposed approach to information management and their capability and capacity to manage information.
BIM	Building Information Modelling Use of a shared digital representation of a built asset to facilitate design, construction and operation processes to form a reliable basis for decisions.
CDE	Common Data Environment A workflow to control the single source of information for any given project or asset. Used to manage the collection and dissemination of all relevant approved project/ asset information. Used in combination with a digital storage solution, information is shared collaboratively in a logical and accessible way to help all key parties readily gain access to information, use consistent naming conventions, avoid duplication and retain ownership.
CWMF	Capital Works Management Framework Is a structure that has been developed to deliver the Republic of Ireland Government's objectives in relation to public sector construction procurement reform. It consists of a suite of best practice guidance, standard contracts and generic template documents that form the four pillars that support the Framework
DBP	Digital Build Project Project led by Technological University Dublin (TU Dublin) to unite all construction and built environment stakeholders to drive integrated, interoperable digital data adoption across the industry to innovatively improve efficiency, productivity, and international competitiveness on a sustainable basis in Ireland.

Acronym	Definition
IMI	Information Management Initiative Led by the Construction Leadership Council (CLC) the initiative aspires to become an industry-led and government-supported programme to progressively transform information management practices across the built and natural environment sector [1]
IM	Information Management The same definition as BIM. Note: in the context of this EIR, BIM and IM represent the same meaning.
IFC	Industry Foundation Class Open data formats
LOD	Level of Geometrical Detail Description of graphical content for Geometrical Models.
LOI	Level of Information Description of non-graphical content for Geometrical Models and Alphanumerical Information Containers.
MIDP	Master Information Delivery Plan Plan incorporating all relevant Task Information Delivery Plans (TIDP).
OIR	Organisational Information Requirements This specifies what information is required to achieve an organisations strategic objectives in relation to business operation, asset management, portfolio planning etc. The OIR may be developed from an ISO 55001 asset management system.
OGP	Office of Government Procurement Plays a leading role in public procurement reform as part of the Department of Public Expenditure, Infrastructure, Public Service Reform and Digitalisation.
PIR	Project Information Requirements This specifies the information that is required related to a specific project; consisting of the relevant information from the OIRs and AIRs.
PIM	Project Information Model Composite information model created from separate Geometrical Models. It can embed, or be linked to, non-graphical data of modelled assets. Note: In the context of this EIR Federated Model and PIM has the same meaning.
TIDP	Task Information Delivery Plan Schedule of Information Containers and delivery dates, for a specific Task Team.
TII	Transport Infrastructure Ireland Is a state agency in Ireland, dealing with road and public transport infrastructure.

Acronym	Definition
3D Exchange Models	Geometrical Models containing 3D representations of the scheme's assets, divided as per an agreed breakdown structure. The main objective of 3D Exchange Models is to facilitate the exchange and sharing of geometrical asset information between Project Team members and other project's stakeholders. They are normally supplied in open data formats and/or industry- wide proprietary formats to minimise interoperability issues and reduce risks associated with obsolescence.
Alphanumeric Information Containers	Information Containers holding non-graphical content that can be expressed using characters, digits and symbols, or tokens such as mathematical symbols and punctuation marks, and are normally structured in a tabular/matrix format. These are mainly used to record relevant attributes/data associated with infrastructure assets.
Clash Avoidance	Process of proactively preventing spatial coordination overlaps and interface issues associated with the Design, employing robust interdisciplinary collaboration techniques. This process is applied prior to Clash Detection.
Clash Detection	Process of identifying if elements of the Design are over overlapping both spatially and chronologically, and if so, where and how these interferences occur. Modern software offers tools to automate this process.
Geographical Information System (GIS)	Framework comprising computer-based tools and applications that provides the ability to capture and analyse spatial and geographic data.
Geometrical Models	Information Containers used to represent physical infrastructure assets, comprising information expressed using shape, size, dimension, and location.
Information Container	Named persistent set of information retrievable from within a file, system or application storage hierarchy. Information Containers can comprise directories, folders, files, layers and symbols.
Information Exchange	Information delivered to the Appointing party at a pre-defined milestone/point in the project, which satisfies the EIR.
Information Management Deliverables	Resources, documentation and content prepared to support the effective management of information in a project in accordance with the I.S. EN ISO 19650 series.
Level of Geometrical Detail Schedule	Schedule detailing the required LOD to be applied to relevant Geometrical Models at specific Information Exchanges.
Level of Information for Documentation	Description of the content for project documentation such as drawings, text documents, schedules and photos.
Mobilisation Plan	Plan that details the approach, timescales and responsibilities for the configuration and deployment of the necessary infrastructure and

Acronym	Definition
	resources associated with the production and delivery of the Project Information.
Task Team	A person or group of people performing a specific task – for example the drainage team or the subcontractor who is designing/constructing the vehicle restraint systems.
Uniclass	Uniclass 2015 is a unified classification system for the construction industry covering all sectors of the industry. There are tables for civil and infrastructure projects covering road and rail, power and water. For the building sector there are tables including codes for university campuses, hospitals, schools, residential and office buildings. The codes are also there to cover landscape, structure and building services.

