



BIM - LEVEL 1 EIR GUIDANCE

NHS Scotland

1 Introduction

1.1 Information Requirements

Building Information Modelling (BIM) Level 1 maturity uses a mixture of 2D or 3D CAD to a standardised data structure and format. Regardless of Level of BIM Maturity, all projects will require raw data for a Boards asset registry and Computer Aided Facilities Management (CAFM) system. At Level 1 the exchange of information is likely to be digital ink (such as 2D and 3D CAD drawings) generated from 2D or 3D CAD systems. The data set is the same, however the difference is in how it is produced, for example at BIM Level 2 the digital information outputs are derived or 'cut' from separate discipline 3D parametric models.

NHSScotland Boards still require information to populate the national estates & asset management system and local CAFM Systems. In order to produce Asset Register data sets, the supply chain will be asked to provide the Meta data. This may be in the form of room schedules, spreadsheets and product data sheets and in some instances will require a manual process.

In reality the differences between BIM level 1 and BIM Level 2 are very subtle. BIM level 1 still requires the disciplined management of information within a central digital place known as a Common Data Environment (CDE). Level 1 still requires NHSScotland Boards to define their information requirements, which are key components of core BIM Level 1 standards such as BS 7000-4:2013 Design Management and BS 8563-1 *Briefing for design and construction. Code of practice for facilities management* and. The later standard sets out the minimum content that is expected within the Employers / Exchange Information Requirements (EIR).

This includes:

- Information Management
- Commercial Management
- Security Management
- Competence assessment
- Schedule of Plain Language Questions (PLQs).

Note: If working at Level 2, PAS 1192:2 extends the scope of the EIR, providing its contents, structure and what it should contain. Your starting point here should be the NHS Level 2 EIR template.

While PAS 1192:2 is not a Level 1 standard, it does provide a good reference point and background reading to understanding the EIR.

The Scottish Government BIM Policy Note ([SPPN 01/2017](#)) states that bodies within scope of the public Finance Manual, including NHSScotland, must assess projects above £2,000,000 for BIM using the [SFT BIM Grading tool](#) and comply with the results. In reality, Level 1 NHSScotland projects are likely to be under this threshold and could be as simple as a single room refurbishment.

This may also mean that that projects do not require a full [Scottish Capital Investment Manual \(SCIM\)](#) process such as a SCIM business case for example however, would need to meet internal governance procedures. Therefore, it is important that the Level 1 Plain Language Questions (PLQs) are appropriate for the project.

The Level 1 EIR document comprises of three main sections, Technical, Management and Commercials, together with associated appendices, each outlining the project delivery requirements and forming the basis for the development of the responding BIM Execution plans.

2 Technical

This section establishes technical information requirements, including software, data exchange formats and Level of Information Need. All responses and agreed protocols shall be recorded in the BIM Execution Plan (BEP).

2.1 Software Platforms

It is important that the Board doesn't dictate design and analysis software solutions to the supply chain, however it is essential that native 2D and 3D CAD file formats are openly shared and that all inherent 3D model geometry data is exportable to a readable file format e.g. Microsoft Excel for data/information review and validation purposes.

2.2 Data Exchange Format

This section lists out the Boards required data exchange formats, which will include a wide range of file types. It is important that the information received from the supply chain is in a commonly accessible electric file format so that it can be viewed, and edited regardless of the platform it was authored in. This information will help inform the development of the supply chains Master Information Delivery Plan (MIDP).

At BIM Level 1 the exchange of information is likely to be a mix of paper and CAD, however all projects still require raw data. The Data set is the same, the difference is how it is produced.

2.3 Levels and Coordinates

To ensure accurate design stage spatial coordination and construction site setting out the supplier shall establish a common project coordinate system in line with BS1192:2007+A2:2016, Annex A, for adoption by all parties.

2.4 Level of Information Need

Level of Information Need is used to describe the extent and granularity of each information deliverable required at agreed project work stage in order to answer or inform a relevant requirement. It describes, graphical and non-graphical information as well as spatial positioning and relationships.

Unlike 'Level of Definition' that describes the amount of graphical and non-graphical data of an element at a particular stage or work, Level of Information Need can be described in a much broader sense. The Level of Information Need requirements are scheduled in the supply chains Responsibly Matrix. The Responsibly Matrix is focused on the exchange of information, rather than just geometric information and will consider CAD and project document deliverables.

While CAD information is produced 'full size' it is usually issued and exchange in an electric format (Such as .PDF or a native CAD file format), with the level of detail determined by the scale of the output. It is important to remember that the amount of information to be supplied should be adequate to help the decision making process and therefore, different output scales will be required at different times for different purposes. While a 1:500 block plan may be sufficient at an early stage of the project to help understand massing, Boards may require floor plans at scale 1:50 during the design and development stages to help understand internal spatial requirements and room layouts.

It is also important to consider the data exchange format. This may be PDF, dwg, Json, COBie or CSV for example.

2.5 Training

This section outlines any specific training requirements to be undertaken in connection with project systems, including any training to be delivered by the supplier for or on behalf of the Employer as part of their appointment. At BIM level 1 this is likely to be minimal.

3 Management

This section establishes the management standards, protocols and processes to be implemented throughout the project delivery stages. Methodical responses to the EIR shall be recorded in the BIM Execution Plan (BEP).

3.1 Applicable standards

In line with industry best practice and to ensure a consistent approach to BIM Level 1 implementation and delivery across all NHSScotland Boards, relevant BIM Level 1 core standards shall be adopted by the Lead Designer and its supply chain on project. Any relevant standards which emerge during this project are to be reviewed by the project team and adopted where beneficial.

3.2 Responsibility Matrix / Roles and responsibilities

Clearly communicate the allocation of roles associated with the management of project information. BS 7000:4 Table 1 highlights functions and titles to should consider.

3.3 Planning the Work and Data Segregation

BS 1192:2007+A2:2016 covers key topics such as CDE setup & management, status codes, naming conventions, volumes, systems, levels, geospatial setup, quality management.

3.4 Security

This section communicates NHSScotland Boards specific security measures required in order to manage sensitive data and information. Details should also be sought in terms of security in relation to the suppliers CDE.

You should consider what information is deemed to be sensitive and should be controlled appropriately with restrictions within the CDE. The list within the EIR Level 1 template should be amended and updated to suit the projects specific requirements.

3.5 Coordination and Clash Detection

The purpose of this section is to define the required co-ordination process, together with requirements for quality control.

3.6 Collaborative processes

This section defines how where and when project information will be shared and also any specific requirements around the archiving of information.

3.7 Health and Safety

As an organisation, NHSScotland expects the utilisation of BIM to support the project Health & Safety / CDM management process as required under the Construction (Design and Management) Regulations 2015. BIM provides greater opportunities to identify “foreseeable risk” much earlier, and continuously, throughout a project’s lifecycle, and to communicate the risks more clearly for use by others. PAS 1192-6:2018 ‘Specification for collaborative sharing and use of structured Health and

Safety Information using BIM' aims to integrate Health and Safety information into BIM models, processes and applications.

3.8 Systems performance

This section outlines an Employer-side IT system limitations and/or hardware requirements that the supply chain need to consider when developing their BEP. It is important that the relevant NHSScotland I.T. staff are consulted early to advice on any limitations such as model file size for example.

3.9 Compliance plan

The Lead Designer or Contractor shall establish requirements on how the integrity – and quality – of the model(s) and other data sources will be maintained. NHSS Boards should seek proposals within the supply chains BEP for CAD Quality assurance/control procedures, data validation processes and details of how long the information shall be managed for.

4 Commercial

4.1 Data Exchanges for Estates Asset Management System (EAMS)

This section defines the data exchange and information requirements for the Boards Estate Asset Management System (EAMS). You need to consider the format that you need assets information in and how will the information be delivered into your CAFM environments. You should describe your systems/databases and information formats you use, so that the supplier can meet compliance.

4.2 Clients Strategic Purposes

This section defines the details of the expected purposes for information provided.

4.3 Competence Assessment

It is important that the BEP be submitted by the Lead Designer /Contractor on behalf of their whole supply chain and should demonstrate sufficient capabilities to demonstrate capacity and competence to meet with the boards EIR.

It is therefore particularly important that those undertaking assessment and procurement on behalf of the board pay particular attention not just to the tier 1 supply chain but also to the individual resource assessments from the lower tiers. It is important that the Lead Designer /Contractor cascades information requirements especially those relating to BIM during their tender process. In practice this is often poorly managed and a price is still the overriding selection criteria. The Lead Designer /Contractor should make sufficient time for proper reviews for capability and experience and more importantly resolve any issues prior to appointment.