BIM for heritage technical guidance –

HBIM information requirements template suite (HIRS)

Asset Information Requirements (AIR) – Heritage (HIR\_AIR\_V1)

Asset data specification for structured data sets and the application of digital data management and Building Information Modelling (BIM) for heritage asset management

#  Project name: Click or tap here to enter text.

Project code: Click or tap here to enter text.

 Created in collaboration with:



Asset Information Requirements – Heritage

How to use this document

This document provides a framework and guidance for establishing project/organisation-specific asset information requirements (AIR) specifically for application in a heritage context, and for heritage asset management. The guidance should be applied to all projects to ensure consistent data management across the organisation.

This guidance is aligned with BS EN ISO 19650-1:2018 *Organisation and Digitisation of Information about Building and Civil Engineering Works, including Building Information Modelling (BIM) – Information Management using Building Information Modelling*,and PAS 1192-3:2014 *Specification for Information Management for the Operational Phase of Assets using Building Information Modelling*, but pays particular attention to conservation practice and UK consent procedures.

This document is intended to be generic, for use by the whole heritage sector, and to be modified to meet the specific requirements of individual projects or organisations.

This document template provides a framework for completing your own AIR.

Guidance for completing each section is indicated with *italic red text* and should be removed once you have completed your document. All non-italic red text should be reviewed, overwritten, edited or removed according to individual needs.

Before using this document, BIM for Heritage: Developing an Asset Information Model (Historic England 2019) should be read.

A glossary of Building Information Modelling (BIM) abbreviations and terminology is provided at the back of this template document.

Asset information requirements explained

Asset Information Requirements (AIR) – *information requirements in relation to the operation of an asset.* (ISO 19650-1:2018)

AIR should be compiled to provide the information necessary to meet the established organisational information requirements (OIR) – *see* HIR\_OIR\_V1(Historic England 2019)*.* They define the data and information that is required in an asset information model (AIM) to support the needs of the asset management system and other organisational functions.

Development of AIR is a considerable task that requires time and effort to complete. Taking sufficient time to develop robust AIR will significantly improve the process of developing an AIM for a historic asset, but will require significant initial input of information and legacy data.

Collaborative, workshop-style sessions are recommended at an early stage to discuss project aspirations and information requirements and to establish the detailed information that will answer the questions raised in the OIR.

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Asset Information Requirements – Heritage

# Scope

This document has been produced by the Appointing Party x to set out the asset information requirements (AIR) in the form of data, documents and geometry required in the development of an asset information model (AIM) to enable facility and asset management teams to operate and maintain Asset Name x effectively.

*The name of the Appointing Party and the asset should be inserted where indicated.*

This AIR document should be read in conjunction with the full suite of documents comprising:

Organisational information requirements (OIR) xxxxxxxxxxxx

Exchange information requirements (EIR) xxxxxxxxxxxx

*Document references should be inserted where indicated.*

The AIM developed in response to this AIR should provide a central source of validated information about the asset, to be accessed by all project stakeholders. It should be managed within the context of the overarching asset management system and using an established common data environment (CDE) solution and workflow.

The AIM should be used within the asset management system for retrieval of data to inform asset management activities. In the event of a new conservation, repair, maintenance or capital investment project, this AIR will inform the EIR – *see* HIR\_EIR\_V1 (Historic England 2019).

Processes should be established to respond to changes in the AIR as a result of, or during, project works.

PAS 1192-3:2014 identifies a range of activities that may require data to be retrieved from the AIM. In a heritage context, the following activities will require data to be retrieved:

* Deciding to manage heritage asset information using a BIM approach
* Planned or reactive maintenance work to a heritage asset
* Minor works or repairs to a heritage asset
* Developing proposals for major works, restoration or renovation projects
* Evaluating performance of an asset
* Change in regulations relating to the asset
* Change in organisational requirements for the asset
* Change in owner, operator or maintainer

# Information Management Process

The following sections have been considered and defined in order to communicate the information management process (IMP) developed in accordance with PAS 1192-3:2014.

## 2.1 Information governance

Roles and responsibilities for information management have been determined and provided in xxxxxxxxxx.

*Roles and responsibilities should be established and provided in a separate annexe, or within information exchange templates (see section 2.4). Insert the relevant name of the documentation where indicated.*

*Guidance on responsibilities for information management processes is available in Annex D, Table D.1, PAS 1192-3:2014.*

## 2.2 Common data environment

The Appointing Party *x* has selected the following CDE within which the AIM will be managed: xxxxxxxxx.

*Insert the name of the Appointing Party and reference to, or details of, the chosen CDE such as organisational sharepoint, existing asset management system or, BIM document management software such as Viewpoint for Projects (*[*https://viewpoint.com/en-gb/products/viewpoint-for-projects*](https://viewpoint.com/en-gb/products/viewpoint-for-projects)).

## 2.3 Classification

The Appointing Party x has selected the following classification system for structuring asset information within the AIM: xxxxxxxxx.

*Insert the name of the Appointing Party and reference to, or details of, the chosen classification system such as Uniclass 2015 (*[*https://www.thenbs.com/our-tools/uniclass-2015*](https://www.thenbs.com/our-tools/uniclass-2015)*) or the organisation’s own classification system.*

***Note the following***

*The specified AIR and resulting data and information will need to be structured using an agreed classification system.*

*Data may be structured using an agreed classification system or using the structure of the file and data store software that is used.*

*PAS 1192-3:2014 states that while the choice of classification system should meet industry standards it should where possible also take account of the organisation’s specific requirements.*

*Further guidance on classification systems is provided in BIM for Heritage: Developing an Asset Information Model (Historic England 2019).*

## 2.4 Information exchange

Information and data exchanges should be delivered using the following specified format: xxxxxxxxx.

*Insert reference to, or details of, the chosen information exchange format such as COBie (*[*https://www.thenbs.com/knowledge/what-is-cobie*](https://www.thenbs.com/knowledge/what-is-cobie)*), with added conservation parameters, or an organisational information and data exchange template spreadsheet.*

The information and data exchange template includes information from the data categories/maintainable assets and roles and responsibilities matrix.

*The information and data exchange template document should be given a reference number and provided here - xxxxxxxxxxx.*

Data exchange timings/data drops

*Include a list of all the sections that are included in your template. As already noted, alternative COBie spreadsheets may be used.*

* *xxxxxxxxxxx*

## 2.5 Data validation process

The process for data validation is defined as follows: xxxxxxxxx.

*Data validation processes should be determined by the individual organisation and inserted where indicated. These processes may include the use of Red, Amber, Green (RAG) reports.*

# Information Requirements

## 3.1 Data categories/maintainable assets

*Assets that will require maintenance will need information to be recorded about them. A list of maintainable assets should be developed and agreed by the client, estate and facilities management teams. It should be categorised using established classification systems such as Uniclass 2015 or a bespoke organisational classification system.*

*Establishing a list of maintainable assets can be difficult at the outset of a new build project, but it will be easier for existing assets such as heritage assets.*

*The maintainable assets list may begin as a simple framework that is developed as time goes on. The list might initially include the main external/building fabric components (particularly for heritage ruins), with fixtures, fittings, plumbing and M&E items where applicable added at a later date.*

Table 1 – examples of NRM mapping to asset type



## 3.2 Data attributes / Conservation parameters

*The particular pieces of information that make BIM for heritage different from traditional BIM are the ‘conservation’ data parameters (or data attributes) that are collated and added to the AIM.*

*Parameters required to meet specific heritage asset management activities and organisational functions should be established.*

*Within the overall asset information and data exchange template (whether bespoke or COBie) conservation parameters should be listed against the maintainable assets list and a schedule of the parameters required for individual assets should be made.*

*A range of parameters is provided in Table 2 that includes examples developed by conservation professionals and may be used as a reference. However, each organisation should develop its own parameters based on asset management activities and organisational requirements and enter them into the information and data exchange template (see Annexe A). These might include some or all of the examples in Table 2.*

Table 2 - Example heritage parameters that might be used in the information and data exchange template







# Other Sources of Information

The following documents should be read before using this document:

*BIM for Heritage: Developing a Historic Building Information Model* (Historic England 2017)

*BIM for Heritage: Developing an Asset Information Model* (Historic England 2019)

It should be used in conjunction with the full suite of HBIM Information Requirements (HIRs) templates:

Organisational Information Requirements (OIR) – Heritage (HIR\_OIR\_V1) (Historic England 2019)

Exchange Information Requirements (EIR) – Heritage (HIR\_EIR\_V1) (Historic England 2019)

# Glossary

|  |  |
| --- | --- |
| AIR | Asset Information Requirements, define the data and information required throughout the asset lifecycle |
| AIM | Asset Information Model, information model relating to the operation phase of a building’s lifecycle |
| Appointed Party | Provider of information concerning works, goods or services |
| Appointing Party | Receiver of information concerning works, goods or services from a lead Appointed Party. |
| Asset | The historic building, monument, structure or object |
| CDE | Common Data Environment, the framework used to support interdisciplinary collaboration through BIM that specifies a single source of information for the project, used to collect, manage and disseminate project information through strictly controlled processes |
| COBie | Construction Operations Building information exchange, a data-exchange format that supports the exchange of information about new and existing buildings and infrastructure throughout their life cycle |
| Conservation parameters | Data/information that are required to carry out heritage asset management activities and recorded as part of the BIM process. |
| Data attributes | A piece of data forming a partial description of an object or entity |
| EIR | Exchange Information Requirements, pre-tender document setting out the information requirements in relation to an appointment |
| HBIM | Historic Building Information Modelling |
| IMP | Information Management Process |
| Maintainable Asset | An asset that requires maintenance |
| M&E | Mechanical & Electrical |
| NRM | New Rules of Measurement |
| OIR | Organisational Information Requirements establish and categorise the information requirements to meet the needs of an organisations asset management system |
| Organisation | An organised group of people with a particular purpose, such as a business, government department or charity e.g. a heritage trust |
| RAG | Red Amber Green |