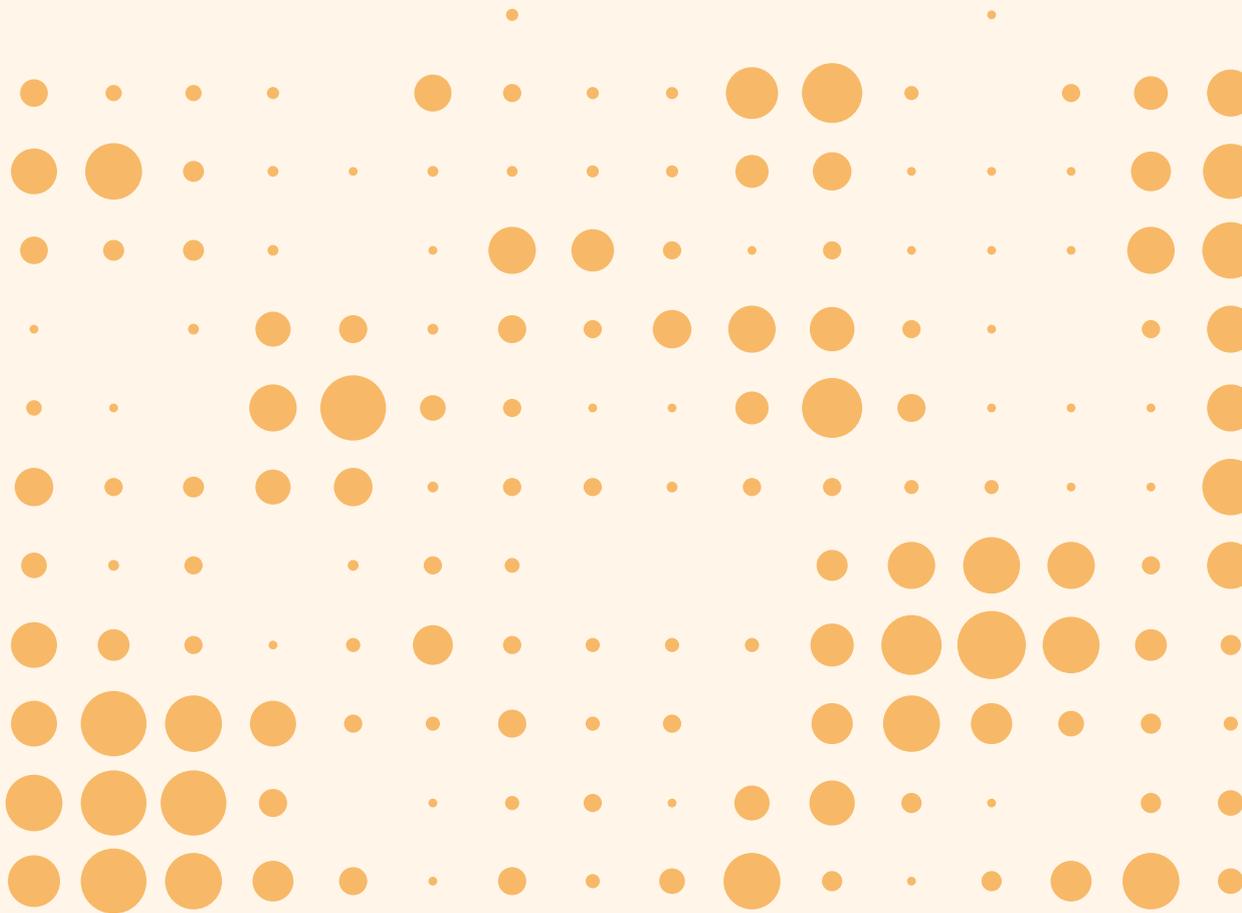


Information management according to BS EN ISO 19650

Guidance Part E

Tendering and appointments



Edition 1

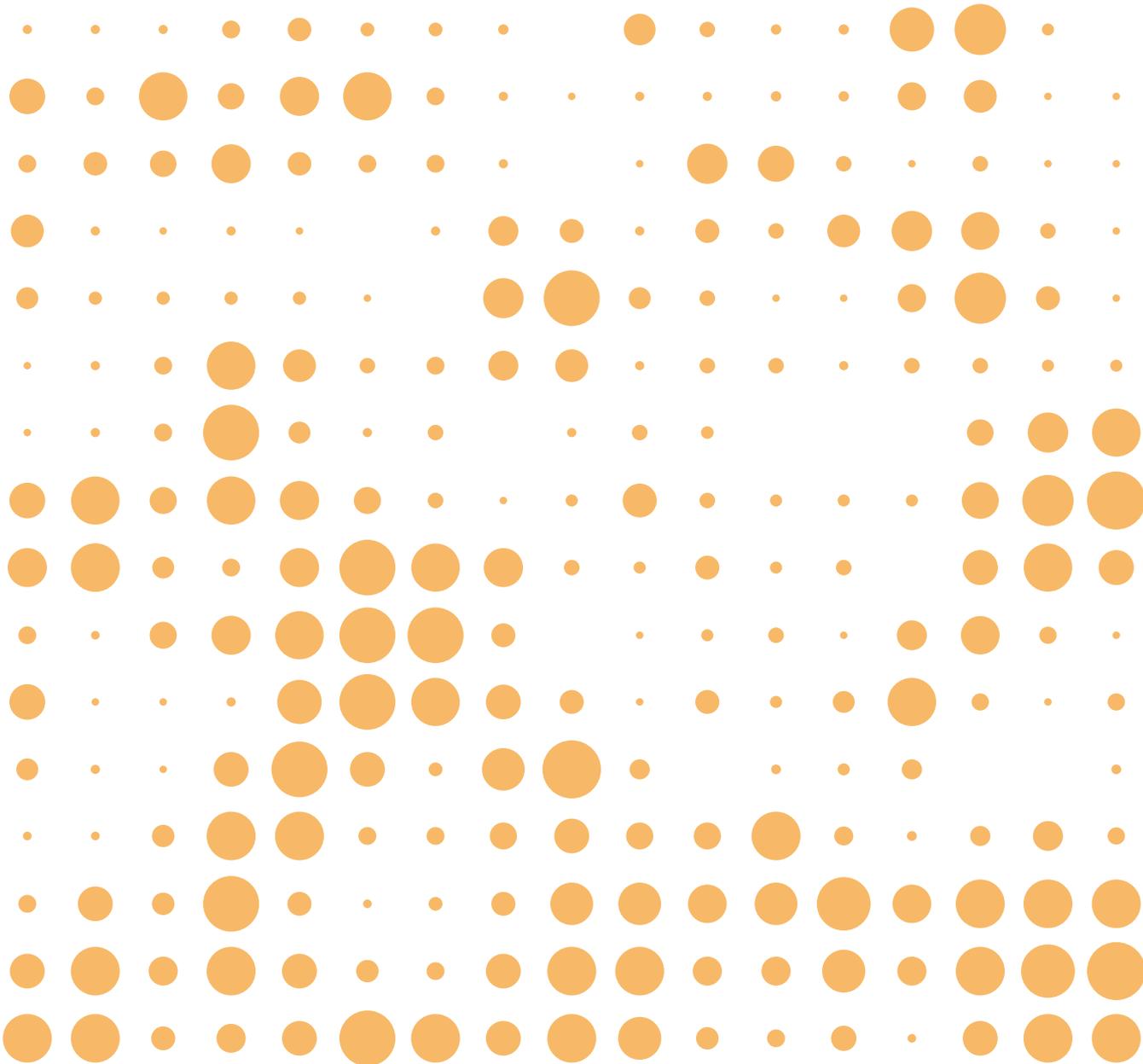
Published by

UK BIM
FRAMEWORK

bsi.

cdbb
Centre for Digital Built Britain

UKBIM
ALLIANCE
Enabling Digital Transformation



Editions

Edition 1 September 2020

First release as Guidance E. Note this guidance text first appeared in ISO 19650 Part 2 guidance edition 3

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The contents of this guidance are for general information purposes only.

Any data or analysis from this guidance must be reported accurately and not used in a misleading context. If using any information from this report, then its source and date of publication must be acknowledged.

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Message from the UK BIM Alliance Chair

Author: Dr Anne Kemp OBE
Chair - UK BIM Alliance



The UK BIM Framework provides the fundamental step towards digital transformation of the UK's built environment industry. The Framework is based on the ISO 19650 series, which first developed out of the UK's former BIM Level 2, but incorporates and anticipates global and future digital perspectives.

The UK BIM Framework embraces and assists in the implementation of the standards for managing information for the whole life of assets of the built environment. The Framework anticipates the potential for integration across portfolios. The Framework provides extensive Guidance which continues to be developed, including the addition of supplementary tools and materials to enable a firm basis for the evolving National Digital Twin Programme.

This Guidance has been developed to help industry to implement the concepts and principles of the ISO 19650 series upon which the UK BIM Framework is based. It has been continually updated to keep track of the publication of the different parts of ISO 19650, and to reflect lessons learnt as further experience is gained in its implementation.

The key parts of ISO 19650 are now all in place, allowing us to realize information management throughout the whole life of built environment assets. It provides for traditional ways of working entailing exchange of information via files, but also caters for shifts towards data exchange. The key is being specific about what information is required and how it is to be delivered. This needs forethought around what should

be the "end in mind" and consideration from an organizational, whole life perspective. This then informs the detailed requirements right down to appointment level.

The work behind developing this Guidance has been considerable. I would like to thank Sarah Davidson and David Churcher for their tireless commitment in continuing to bring this work together - I so enjoy working with you both. Secondly, I would like to thank the many authors who have contributed so generously to the writing of the Guidance - and been so patient in the criticisms and changes that have been required of them. Finally, I would like to thank the many people who have spared time to review and feedback on the Guidance - the Focus Groups in particular, but also those who have contacted us separately. Without this feedback we would not be able to incorporate the wide-ranging experience and testing which is occurring around the industry.

We welcome your continued feedback and shared experiences. You can provide this via guidancefeedback@ukbimframework.org.

Acknowledgments

This guidance represents the collaborative efforts of the following people and organizations

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About BS EN ISO 19650

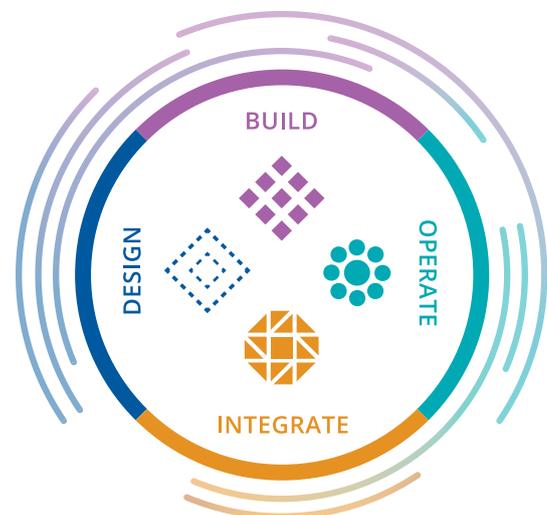
The BS EN ISO 19650 series of standards (herein after referred to as the ISO 19650 series) is an international standard of good practice. It defines information management principles and requirements within a broader context of digital transformation in the disciplines and sectors of the built environment (including construction and asset management industries). Its implementation in the UK is supported by UK National Forewords in ISO 19650 Parts 1 and 2, and a UK National Annex in ISO 19650 Part 2.

The ISO 19650 series replaces some of the existing British Standards and Publicly Available Specifications relating to information management using building information modelling (BIM). It is part of a landscape, or ecosystem, of national and international standards supporting information management processes and technical solutions. It considers all information whether it is a construction programme, a record of a meeting, a geometrical model or a contract administration certificate.

Building information modelling (BIM) plays a key part in the management of information because it provides a methodology that helps us to structure information so that technology can process it.

Structuring information using industry standards helps to improve interoperability. This means that information can be joined-up by both people and technology, which then enables us to extract more valuable knowledge from it. Using the same information structures throughout industry generates consistency, repetition and predictability. This brings real efficiency gains for businesses and provides the data architecture for the connected future..

Standards within the ISO 19650 series are available at www.bsigroup.com. Visit www.ukbimframework.org to see how the ISO 19650 standards plus other standards within the UK BIM Framework map to the design, build, operate and integrate process



Abbreviations and acronyms

This guidance includes a number of abbreviations and acronyms as set out in Table 1.

Table 1: Abbreviations and acronyms

Abbreviation or acronym	Term
BEP	BIM execution plan
BIM	Building information modelling
EIR	Exchange information requirements

About this guidance document (executive summary)

The guidance framework supports the UK implementation of the ISO 19650 series. This guidance document (guidance E) sits within an overall guidance framework as shown in Figure 1:

Guidance E is written to support the implementation of each published ISO 19650 standard.

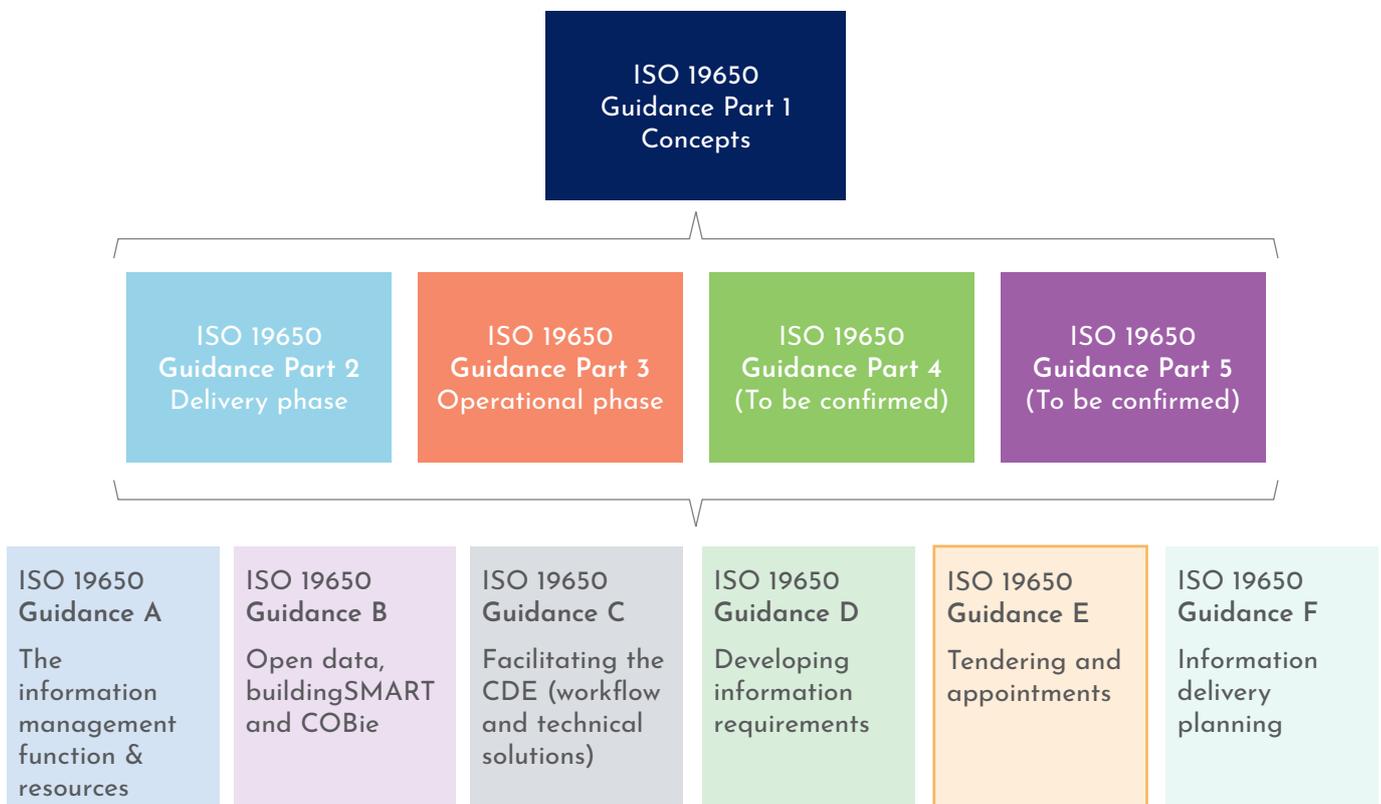


Figure 1: ISO 19650 guidance framework

Who is this guidance written for?

This guidance is for individuals and teams involved in the tendering and appointment process on behalf of the appointing party, lead appointed party and the appointed parties.

Who is this guidance of particular interest to and why?

This guidance is of interest to the appointing party, the lead appointed party and each of the appointed parties to establish the delivery teams' BIM execution plan (BEP) in accordance with the information management approach. This guidance will be updated in due course to consider other tender and appointment resources referred to in the ISO 19650 series.

Key takeaways

- The BEP supports the tender, appointment and information delivery activities by providing evidence to the appointing party that the prospective delivery team can manage project information in line with the information requirements.
- The BEP presents one of the tools that the appointed delivery team will use to produce, manage and exchange project information during the appointment alongside other resources.
- In the process of finalizing the appointment for the lead appointed party, the BEP is revisited and updated to ensure it supports production of the detailed responsibility matrix and master information delivery plan.

As with all guidance supporting the UK BIM Framework, we invite comment and feedback on this guidance E at guidancefeedback@ukbimframework.org

1.0 About the BIM execution plan

1.1 Introduction

To satisfy the requirements of ISO 19650-2, a BIM execution plan (BEP) must be provided by a prospective lead appointed party in their tender response (see ISO 19650-2 clause 5.3.2). In accordance with ISO 19650-2 the BEP is one of several resources developed by the lead appointed party on behalf of the delivery team to convey the information management approach.

Delivery team capability and capacity, mobilization planning, risk assessment and information delivery planning are dealt with as separate resources.

How all this information is presented to the appointing party is up to the lead appointed party, unless the appointing party has given any firm instructions.

The resulting BEP is a succinct resource that is supplemented by additional resources to be used by the prospective delivery team if appointed.

Readers familiar with PAS 1192-2 will understand that the BEP under that standard was a single document that included all resources mentioned above.

1.2 Purposes of the BIM execution plan

The BEP has two different purposes in supporting the tender, appointment and information delivery activities:

1. To provide **evidence** to the appointing party that the prospective delivery team can manage project information in line with any information requirements provided to them. This is referred to in ISO 19650-2 as the “(pre-appointment) BEP”
2. To provide a **delivery tool** that the appointed delivery team will use to produce, manage and exchange project information during the appointment alongside other resources.

Consequently, although there is only one BEP for each delivery team there may be two early versions of it. The first version being the (pre-appointment) BEP and the second version offering an update so that it can fulfil its purposes as an appointment resource and one of the delivery team’s tools for information management.

1.3 Commencing the development of a BIM execution plan

In developing the (pre-appointment) BEP, the prospective lead appointed party should be aware of three different scenarios:

1. A template is provided by the appointing party as a shared resource, see ISO 19650-2 clause 5.1.6 a) to support the tender and appointment process
2. There is no template BEP provided but the appointing party indicates the contents required to support its evaluation criteria - see ISO 19650-2 clause 5.2.3
3. The appointing party is silent concerning the BEP and therefore the prospective lead appointed party has to respond with a (pre-appointment) BEP in accordance with ISO 19650-2 clause 5.3.2.

The appointing party may choose to adopt scenario 1 or 2 so that they can better assess and compare prospective delivery teams' proposals.

It is recognized that the scenario may exist where the appointing party does not issue exchange information requirements (EIR) or other information management resources thereby contravening ISO 19650. In this scenario it is advised that the prospective lead appointed party considers developing a BEP which anticipates the EIR (or other information management resources) to support a positive outcome for the project and appointing party.

It should be emphasized to the appointing party that in doing so the project is not following ISO 19650 and that action should be taken to resolve this in collaboration with the delivery team.

1.3.1 (Pre-appointment) BEP process

A simplified illustration of the (pre-appointment) BEP is included as part of Figure 2:



Figure 2: Simplified process leading up to the (pre-appointment) BIM execution plan

Refer to the ISO 19650-2 resources map for the overall perspective.
See [ISO 19650 Guidance Part A](#)

Note: The same lead appointed party may be appointed multiple times throughout the life of a project (for example, in a two-stage design and build scenario or where a single organization is appointed for differing scopes of services). In any of these scenarios, the (pre-appointment) BEP activity will be repeated but this should be proportionate to the changes necessary to reflect the different nature of the appointments.

1.3.2 Format of the (pre-appointment) BEP

ISO 19650-2 is not prescriptive about the format of the BEP and therefore it could take the form of, for example, a single word-based document or an interactive tool. The same document or tool could include several other tender response resources alongside the (pre-appointment) BEP.

As noted earlier, the format of the BEP may be pre-determined by the appointing party. This may come in the form of a template which would be an example of a shared resource (ISO 19650-2 5.1.6) or as a list of headings to structure the BEP.

If no requirement has been set by the appointing party, then it is up to the prospective lead appointed party to determine the format of the BEP, ideally in collaboration with their delivery team.

1.3.3 Contents of the (pre-appointment) BEP

ISO 19650-2 recommends the contents of the (pre-appointment) BEP in clause 5.3.2 and sets out the key considerations in establishing the delivery team's BEP. This is done using the term 'shall consider'. This is in contrast to ISO 19650-2 clause 5.4.1 which stipulates the contents of the BEP contained in the appointment itself using the instruction 'shall'.

ISO 19650-2 clause 5.3.2 recommends that the (pre-appointment) BEP covers seven different key information management considerations. These are as follows:

- A) Provide the details of individuals undertaking the information management function. This is to offer assurance that the function will be fulfilled through adequately competent people. It also encourages the early consideration as to how this function will be resourced. More detailed insight into the information management function is set out in ISO 19650 Guidance Part A.
- B) Proposed information delivery strategy. ISO 19650- 2 Clause 5.3.2 b) sets out what this should contain:
 - The approach to meeting the EIR.
 - The prospective lead appointed party should consider and work through each information requirement and respond to the level of information need, acceptance criteria and delivery dates set by the appointing party in accordance with ISO 19650-2 clause 5.2.1
 - Objectives and goals to produce collaborative information.
 - Organizational structure and commercial relationships of the delivery team.
 - The split of the delivery team into task teams.
 - The relationship between appointed parties and task teams might be a straightforward one-to- one, or might be more complicated (multiple appointed parties forming a multi-disciplinary task team, or one appointed party providing several task teams) refer to Figure 2 in [ISO 19650 Guidance Part 2](#) for project delivery.

C) The proposed federation strategy to be adopted by the delivery team. See [ISO 19650 Guidance Part 1: Concepts section 6.3.1](#) for details.

D) The delivery team's high-level responsibility matrix.

This matrix will list all appropriate elements within the information model and stipulate a responsible party and the deliverable required for each element. For example, an element of the information model might be the cost model, the deliverables associated with this element would be order of cost estimates and cost plans and the responsible party would be the prospective quantity surveyor.

E) Proposed additions/amendments to the project's information production methods and procedures (if there are any).

The (pre-appointment) BEP gives an opportunity for the delivery team to propose any additional methods and procedures that they require or would recommend over and above what is specified by Page the appointing party.

For example, the appointing party may not have considered information production methods and procedures for the capture and delivery of existing asset information for a refurbishment project. The (pre-appointment) BEP may set out proposed methods for this including security protocols.

F) Proposed additions/amendments to the project's information standard (if there are any).

The (pre-appointment) BEP gives an opportunity for the delivery team to propose any addition to the information standard that they require or would recommend over and above what is specified by the appointing party.

This could be, for example, a room and space referencing system.

G) Proposed schedule of software, hardware and IT infrastructure.

For example identifying a schedule listing the software versions, hardware and IT to be used by the delivery team. This is important to enable collaboration and interaction between the task teams, delivery teams and the appointing party. This is a fundamental consideration for wider interoperability.

1.4 The delivery team's BIM execution plan

In the process of finalizing the appointment for the lead appointed party, the (pre-appointment) BEP is revisited and updated as required. This might involve the review of how the content is presented relating to the project's information standard, the project's information production methods and procedures and the proposed federation strategy.

Any agreed alterations to the project's information standard should now be reflected in that project wide resource. The federation strategy should be aligned with the agreed project's information production methods and procedures and developed as necessary, to ensure it supports production of the detailed responsibility matrix and master information delivery plan.

There may be other delivery team information production methods and procedures which are consistent with but go beyond the project wide information production methods and procedures which need to be set out in the delivery team's BEP.

The BEP should be updated to confirm:

- The responsibility and the names of individuals who will undertake the information management function
- The schedule of software, hardware and IT infrastructure that the delivery team will use
- The delivery team's information delivery strategy (as required)
- The delivery team's high-level responsibility matrix (as required).

Note that these changes may be necessary for several reasons, such as time elapsed to complete the tendering process or contract type, or changes to the arrangement of task teams in the delivery team, or changes to the appointed parties.

This delivery team's BEP must be confirmed between:

- The appointing party and the lead appointed party (ISO 19650-2 clause 5.4.6), and
- The lead appointed party and each of the appointed parties (ISO 19650-2 clause 5.4.7).

As the BEP is a formal appointment resource it will need to be subject to a change management process throughout the duration of the appointment. For example, as more appointed parties join the delivery team.

See the ISO 19650-2 resources map contained in [ISO 19650 Guidance A](#) to assist in the development of the structure of a BEP.

1.5 Checklist of actions/key points to consider

- ✓ The BEP is developed by the lead appointed party on behalf of its delivery team and ideally in collaboration with its delivery team.
- ✓ If you are a lead appointed party, develop the (pre-appointment) BEP as part of your tender response.
- ✓ If you are a (prospective) appointed party brought on board during the lead appointed party's tender period, contribute your ideas and knowledge to the development of the (pre-appointment) BEP.
- ✓ Consider the points a) to g) in ISO 19650-2 clause 5.3.2. Additional considerations for your BEP can be included - these might be stipulated by the appointing party, the nature of the project or by your own corporate policies and procedures.
- ✓ Review and confirm the BEP during the period between your appointment being indicated by the appointing party and the contract being signed and ensure that it meets the requirements of ISO 19650-2 clause 5.4.1.
- ✓ Keep your delivery team's BEP up to date throughout your appointment, using change management processes.

2.0 Summary

ISO 19650 Guidance E has provided further insight into the BIM execution plan, one of the tendering and appointment resources.

It should be referred to by practitioners and those implementing the ISO 19650 series across a project, within an appointment or within an organization.

Please note that the ISO 19650 series is still new, albeit based on former UK standards. As experience of implementing the ISO 19650 series is gained over the coming months and years, this guidance will be updated to reflect both this experience and any comments/feedback received from users. It will also be updated to include guidance about additional resources such as the information standard.

Please do let us have your feedback by emailing us at guidancefeedback@ukbimframework.org.

Please also remember that standards within the ISO 19650 series are available at www.bsigroup.com.

Visit www.ukbimframework.org to see how the ISO 19650 standards plus other standards within the UK BIM Framework map to the design, build, operate and integrate process.

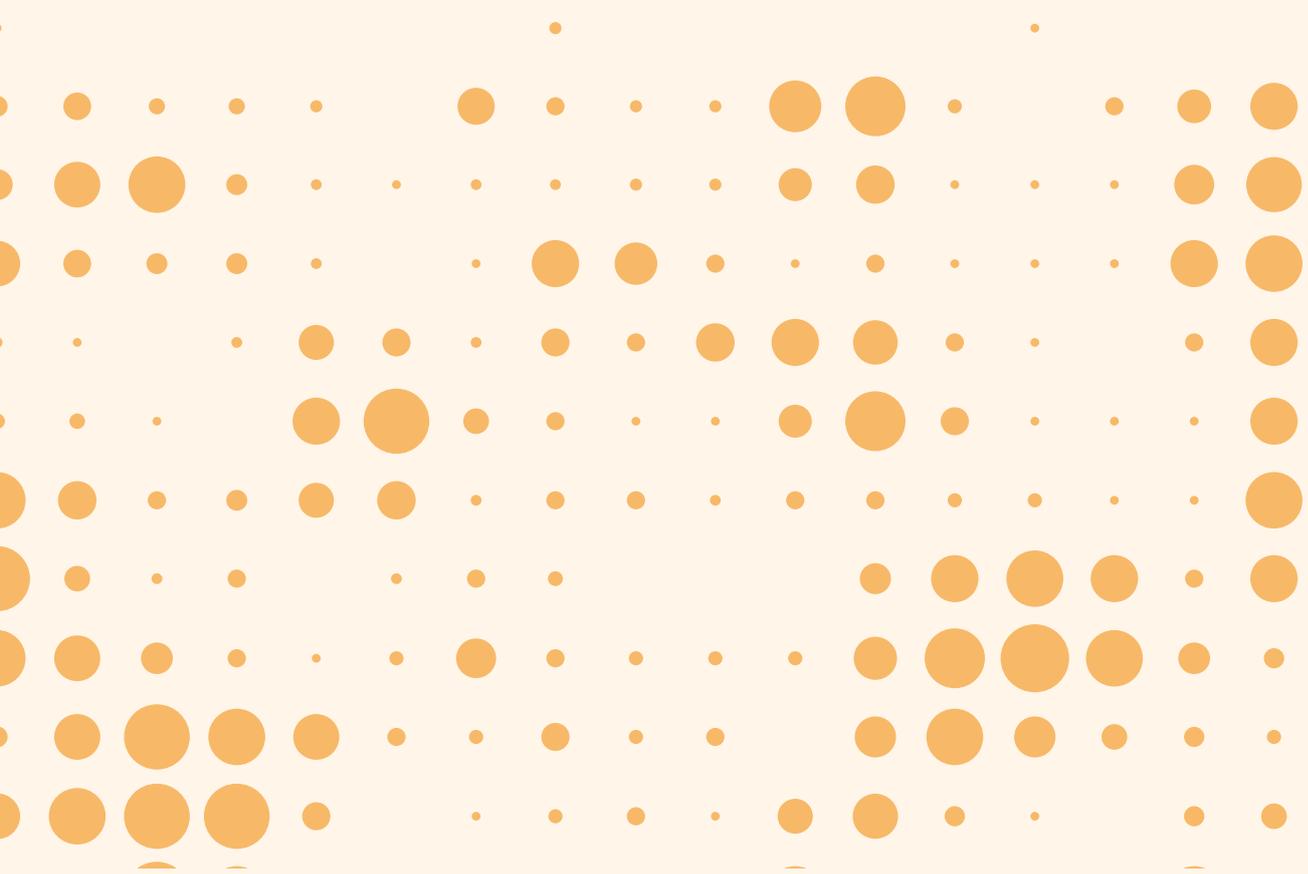
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The Centre for Digital Built Britain is part of the Construction Innovation Hub programme, funded by UK Research and Innovation through the Industrial Strategy Challenge Fund.

