



Cabinet Office

Government Soft Landings

Section 3 - Functionality and Effectiveness



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3.0 Functionality & Effectiveness (the Social Post Occupancy Evaluation (POE) measure)

3.1 Overview

The most important aspect of any project brief is the establishment of the key business outcomes required for short, medium and long term.

It is easy for projects to become focussed on the immediate capital expenditure, focussed on construction as a means of achieving the end result and focussed on programmed outputs whereas what really matters to the client are the performance outcomes of the project i.e., how well it meets their business need.

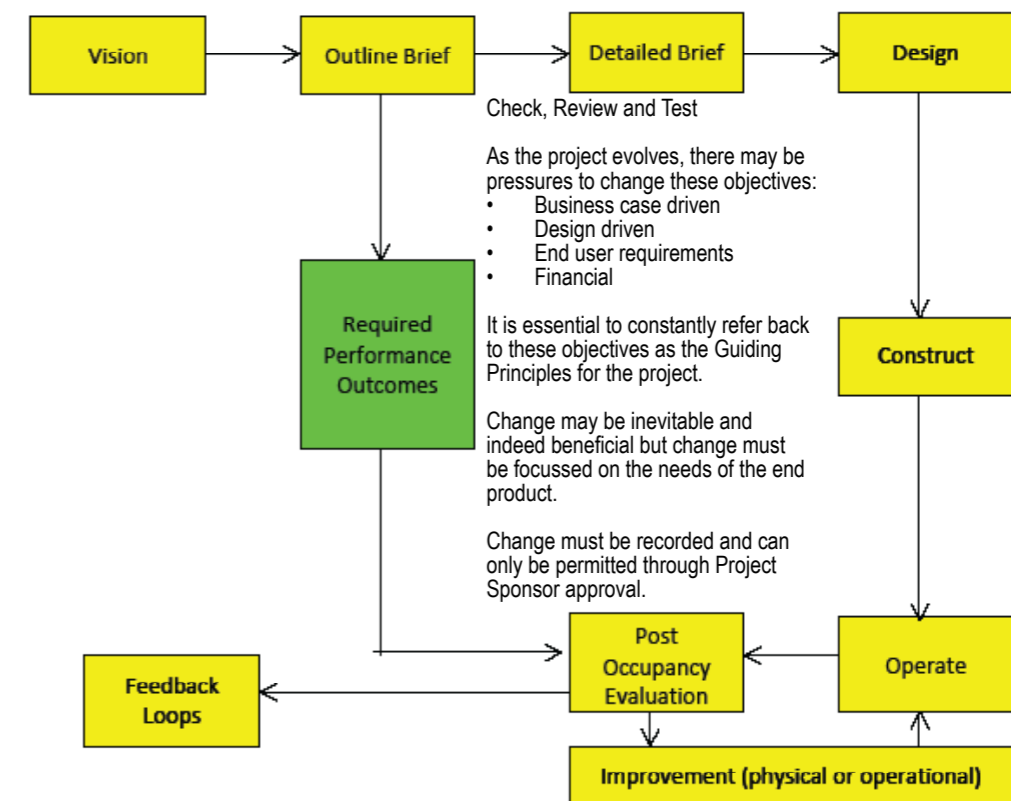
The GSL Champion has a very important role in Functionality and Effectiveness and in supporting the identification of the requirements for this element of the project.

A well considered and clearly defined Project Brief must capture the required outcomes for Functionality and Effectiveness. All projects must consider Post Occupancy Evaluation and performance studies as part of the brief building.

GSL establishes the need for clearly defined targets, and ownership and rigour in managing this process. It builds in the need for end user and operator input through the GSL Champion and supports the concept of key stakeholder engagement, departmental feedback from similar projects and the use of industry benchmarking.

GSL reinforces the value of Post Occupancy Evaluation (POE) in assessing the quality and performance of the finished product; physical assets, ease of operation and potentially workplace productivity.

Figure (i) – Functionality from Vision Statement through to POE



The objective of this focus area is to ensure that we provide buildings that have comfortable, manageable and maintainable environments that are conducive to occupant productivity. This requires clarity about the proposed operation of the facility and requirements of those who work in it; permanent, part-time and visitors. This will vary significantly between departments and projects. The measures may need to look into the conceptual ideas about work environments; these may stretch beyond the physical boundaries of the building itself eg the impact of the surrounding environment. Productivity is influenced not only by the asset created but also by the business management and these factors need to be considered.

Information to inform decisions about Functionality & Effectiveness may come from a variety of sources including:

- Pure conceptual brief, developed by the Project Sponsor and the professional team, supported by specialist Consultants as appropriate (generally Architects, Designers and Space Planners).
- Feedback from similar projects/departments.
- Engagement with existing employees, when dealing with refurbishment/re-modelling projects.

Significant Factors that influence Functionality and Effectiveness include:

- **Comfort:** Temperature, Air quality, Lighting, Noise, Control of the foregoing factors.
- **Workplace facilities:** Meeting rooms, Conference facilities, Desk space, ITC equipment, Furniture, Remote working capability, Storage.
- **Amenity:** Access and egress, Catering, Washrooms, Cleanliness, Social interaction, Reception/Visitors, Health and Well being
- **Impression and impact:** Effective use of space, Look and Feel, Health and Safety

On completion of the project, there is the potential to assess the success in delivering the objectives using Post Occupancy Evaluation (POE). One POE is to take place by the end of Year One, another in Year Two and one in Year Three. Changes in use that affect the performance of the building and project outcomes need to be monitored by the facilities management team during Operation and must be part of these evaluations.

The results of the surveys should be used as feedback for the specifying, design and construction teams via the GSL Champion.

They should also be fed back into the department and where working with BIM they are to be identified under the Impacts tab within Construction Operations Building

There is a requirement for a workplace standard of 10 sq m or less per Full Time Employee in Central Government Departments that have been newly procured or had a major refurbishment.

Information Exchange (COBie) in the Asset Information Model.

3.2 The Project Stages

3.2.1 Project Stages 0 – Strategy, 1 Brief and 2 Concept

The outputs for this stage might be the following:

- High level performance outcomes identified for the investment and translated into project brief
- Opportunities and risks schedule to be generated by the GSL Champion in conjunction with project team using lessons learnt from previous projects
- An occupancy survey that is commissioned by the Project Sponsor and managed by the GSL champion to inform the project brief
- Portfolio and existing estates benchmarks
- The vision for the operation of the facility. BS 8536:2010 gives recommendations for facility management briefing to ensure that design takes account of the expected performance of the facility in use.

This information will need to be in a format that is appropriate to be reviewed at the information exchanges with the client. These objectives need to be reflected in the procurement strategy and briefing documentation provided to the design and construction team.

The British Standard: BS 8536: 2010 Facility Management briefing: Code of Practice can support the development of this part of the requirements.

3.2.2 Project Stage 3 – Definition

The output for this stage is a brief that supports the final proposals and design solutions within the constraints of the budget and programme. Careful consideration needs to be given to ensuring that these requirements are looked at as part of the operational costing and business benefit approach. This should be embedded into the design brief and procurement requirements.

The GSL Champion needs to be actively engaged and consulted as part of this to develop solutions that address the needs and skills of the operators and end users.

A commentary needs to be provided on the proposal to deliver the required performance outcomes;

- how they were developed,
- what work still needs to be undertaken on them,
- how the effectiveness of the proposals will be assessed after construction.

The British Standard: BS ISO 15686-5: 2008. Buildings and constructed assets. Service life planning; life cycle costing.

3.2.3 Project Stages 4 – Design, 5 – Build and Commission

It should be clear how the required performance outcomes have been considered and delivered by the construction team proposals. Any changes to the original required outcomes need to be approved by the Project Sponsor. Changes need to be considered in conjunction with the Facilities Management Plan

There will need to be an interim review to ensure that the outcomes are being addressed, especially as further detailed design elements such as specialist contractor design and value engineering exercises are undertaken. The Project Manager has the responsibility to continue to manage this process and deal with any changes in conjunction with the GSL Champion and Project Sponsor where needed.

This information needs to be delivered and recorded at BIM Drop 3.

3.2.4 Project Stages 6 - Handover and Close-Out

In conjunction with Project Manager and FM Provider the GSL Champion should be reviewing operational data from the construction team eg balancing and regulating results, commissioning results, controls testing results, asset data, operating

and maintenance manuals and seeking to identify any shortcomings that might impact upon functionality and effectiveness.

During this stage the GSL Champion in conjunction with the FM Provider should seek to identify any corrective actions needed for delivery of the functionality and effectiveness performance outcomes and raise them with the Project Manager.

Examples of POE reports can be found in the Sci-Network report. Post Occupancy Evaluation; an insight into current POE-related policies and practices by European public authorities to drive sustainable construction and innovation.

Further work to standardise POE for government is under development.

Also see PROBE report and the results of Building Performance Evaluation funded by the Technology Strategy Board.

3.2.5 Project Stage 7 – Operation and End of Life

During this phase the GSL Champion should be working with the project team and FM Provider and initially monitoring “aftercare” to “fine tune” the facility and later in monitoring POE for the first three years after occupation.

The fine tuning is achieved through continued engagement between the designers, constructors and operators to ensure that the operation and maintenance of the building reflects its actual use. This fine tuning will ensure that the required performance outcomes are achieved and designed performance is reached as soon as possible. The speed to reach the planned design performance may in itself be a target.

The objectives of this phase are based around three key questions:

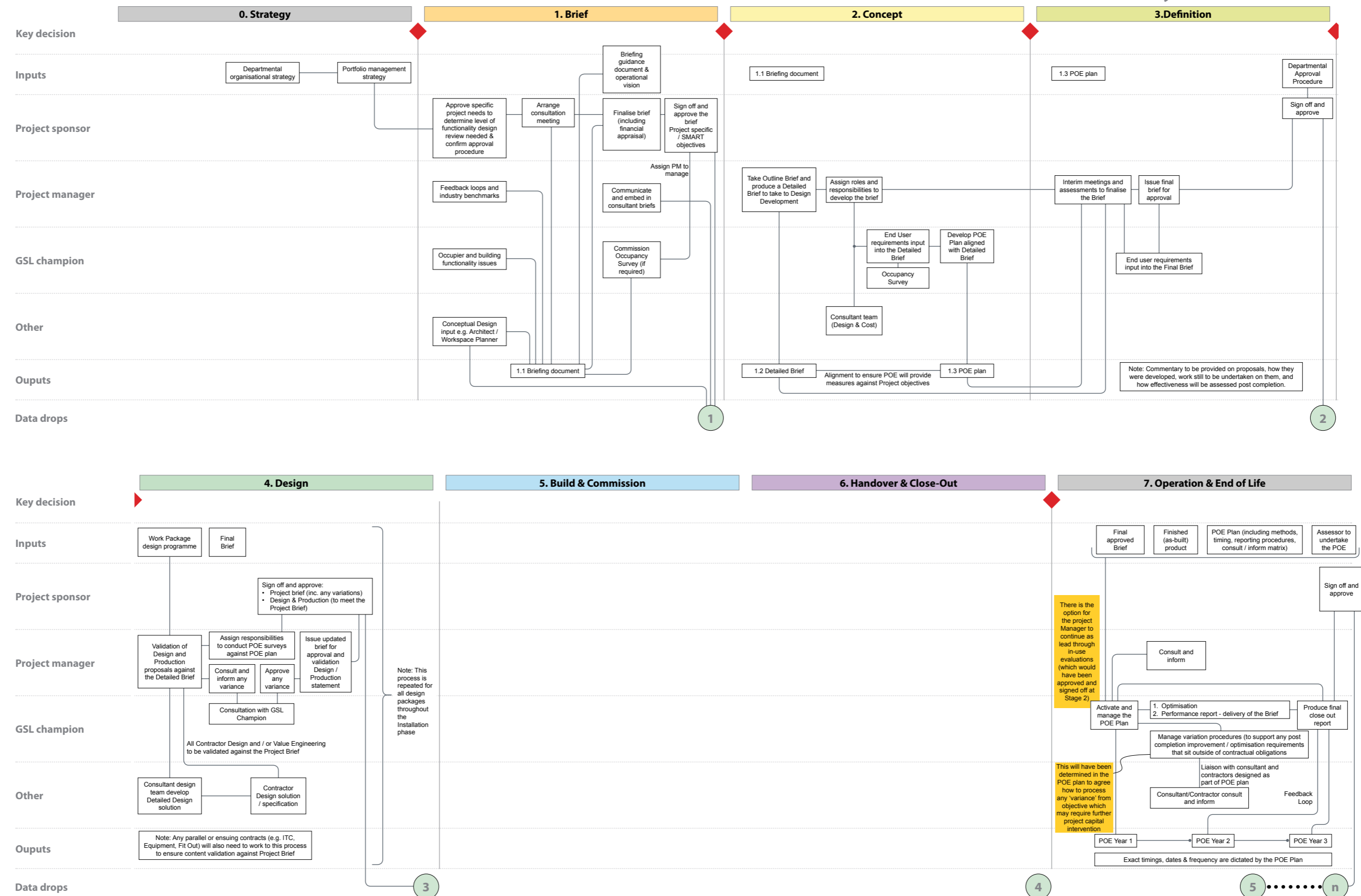
- How well does the asset delivered meet the needs of the end users?
- How well have the project vision and required outcomes been delivered?
- How has this been supported by the FM plan and operational management?

Review of these objectives will be achieved through using the following information:

- Defined POE objectives, adjusted for all variations arising through the design and construct phase
- POE plan. This needs to be established before the Operational phase and it should consider the following:
 - Methodology to be used
 - Timing
 - Reporting Procedures
 - People to be consulted e.g., design team, constructors, end users and managers
 - Budget to implement POE
 - Identification of external impartial support that can support this process

The POE report will document the findings from the evaluation studies. This will be signed off by the Project Sponsor as an agreed record for feedback into similar projects. The reports should be undertaken for up to three years Post Occupancy.

3.3 Process Map – Functionality and Effectiveness



3.4 Developing the Project Brief

Below is a list of useful information that may be referred to in developing the project brief. This is not an exhaustive or exclusive list:

Design Council: <http://www.designcouncil.org.uk/> with specific links into Design Council Cobe (Creating Excellent Buildings). Guidance is provided here on design development. <http://webarchive.nationalarchives.gov.uk/20110118095356/http://www.cobe.org.uk/publications/creating-excellent-buildings>

Design Quality Indicators, managed by the Construction Industry Council; <http://www.dqi.org.uk/website/default.aspx>. This is a structured process aimed at clarifying stakeholders needs through looking at the areas of functionality, build quality and impact. It is designed to ensure that these areas are reviewed and delivered through the design process.

Usable Buildings Trust <http://www.usablebuildings.co.uk> revisiting work originally undertaken by the PROBE Team at building effectiveness; <http://www.usablebuildings.co.uk> (Probe).

BS 8536: 2010 - Facility management briefing, code of practice. This standard gives recommendations for facility management briefing to ensure that design takes account of the expected performance of the facility in use.

BS 12973: 2000 – Value Management. This standard provides a guide to target setting and prioritisation through group stakeholder engagement.

3.5. Post Operational Evaluation (POE) for Functionality and Effectiveness

POE provides an effective tool for supporting learning in addition to helping to identify any corrective measures/ improvements that may be required.

Providing a common structure to project objectives with the GSL Champion will support a more controlled and productive form of POE that can be used to provide continuous learning. The development of a common structure for POE is an area of development for the GSL policy.

The GSL Process Map allocates responsibility to the GSL Champion to develop the POE Plan; timing, format, who and how to implement.

The purpose of POE in the context of Functionality and Effectiveness is to;

Establish how well the asset enables the users and operators to achieve the required performance outcomes.

Identify any corrective action required including fine tuning/further commissioning of engineering control systems.

Act as the information source to optimise the required performance targets with the actual performance as quickly as possible.

The POE should adopt the evaluation methodology already adopted by the department. This should be the method used by the department to meet its requirement to test and optimise the performance of constructed assets. The format should be standardised within the department as a minimum and aligned with the required performance outcomes and targets.

There are many approaches available to test functionality and effectiveness some of which have been shown below;

- Design Quality Indicators
- Building in Use Studies
- PROBE
- BRE Design Quality Method
- Leesman Operational Surveys
- IPD Property Benchmarking Service
- Building Performance Evaluation

Note the above does not attempt to be an all inclusive list.

The choice of POE survey systems should initially be co-ordinated within each department. As GSL and BIM develop, it may be possible to standardise a common approach across all Government Departments. At this stage, GSL does not have a preferred methodology.

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This document is available for download at <http://www.bimtaskgroup.org/reports>

