briefing note
contents

Soft Landings

SOFT LANDINGS
BSRIA User Group Member

Helping people to obtain new and refurbished buildings that perform better in use

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Overview

Soft Landings is a process for a gradual handover of a new or refurbished building, where a period of professional aftercare by the project team is a client requirement, planned for and carried out from project inception onwards, and for up to three years post-completion.

Soft Landings is a complete process that brings together best practice at all stages of a project. It sits alongside any procurement process reinforcing five main areas:

1. Inception and briefing
2. Design development and review
3. Pre-handover
4. Initial aftercare in the 4-6 weeks after handover
5. Extended aftercare, monitoring and feedback over the first three years of occupancy

Soft Landings has been developed to help clients, designers, builders, managers and end users to do this, by focusing the whole design, procurement, construction and commissioning process on improving performance in use.

Background

Soft Landings was initiated by architect Mark Way when at the multi-skilled designers RMJM. It was researched by him in 2002-04 with an industry group supported by the Estates Department at Cambridge University. In 2008-09 Mark, now at CIC and the Darwin Consultancy, worked with the Usable Buildings Trust (UBT), the Building Services Research and Information Association (BSRIA) and an industry group to produce the Framework.

Willmott Dixon has been supporting the soft landings initiative since they were invited to join the project steering group in 2008.

Benefits of Soft Landings

The framework helps build relationships within the design team from the outset and keeps project teams involved beyond practical completion to help fine-tune and de-bug systems and ensure occupiers and Facilities Maintenance (FM) providers/caretakers understand and get best use of their buildings.

The process offers a 'Scope of Service' documents, that can sit alongside, and be incorporated into most existing procurement processes. This results in a closer match between client expectations, design predictions, operational performance and delivering reduced running costs.

This gives the opportunity for facilities managers / caretakers to understand the design of their buildings, and to get the best out of them. There is also an opportunity to fine-tune buildings to meet users' specific needs.

Post-Occupancy Evaluation (POE) studies close the feedback loop and allows common faults to be eliminated. This evidenced-based design offers many opportunities for learning and feedback.

The Soft Landings Process

Soft Landings documentation extends the duties of the team during handover and the first three years of occupation:

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Stage 1: Inception and Briefing
More time for constructive dialogue between the designer, constructor, client and end user and FM provider/caretaker

Stage 2: Design development and review
Brings the entire project team together to review insights from comparable projects and detail how the building will work from the point of view of the manager and individual users, FM provider / caretaker.

Stage 3: Pre-handover
Enables end users to spend more time on understanding interfaces and systems before occupation.

Stage 4: Initial aftercare
Continuing involvement by the client, design and building team benefiting from lessons learned and the occupant satisfaction surveys, that form part of the soft landings POE process

Stage 5: Years 1-3 extended after care and POE
Completing the virtuous circle for future projects, to close the loop between design expectation and the actual performance.

RIBA 2008 Stages	RIBA 2013 Stages	CIC stages 2012	Soft Landings	Soft Landings supporting activities	BSRIA BG 6/2014 *Design Framework* pro-formas
	0 - Strategic definition	0 - Strategic definition			0 - Strategic activities
A Appraisal	1 - Preparation and brief	1 - Preparation and brief	Stage 1. Briefing: identify all actions needed to support the procurement	Define roles and responsibilities	1 - Preparation
B Design brief				Explain Soft Landings to all participants, identify processes and sign off gateways	
C Concept	2 - Concept design	2 - Concept design	Stage 2. Design development: to support the design as it evolves	Review past experience. Agree performance metrics. Agree design targets	2 - Concept
D Design development	3 - Developed design	3 - Developed design	Scheme design reality-check	Review design targets. Review usability and manageability	3a & 3b - Developed design
E Technical design					
F1 Production information F2	4 - Technical design	4 - Technical design	Technical design reality-check(s)	Review against design targets. Involve the future building managers	4a, 4b & 4c - Technical design
G Tender documentation	Information exchanges will vary depending on the procurement route and building contract. Designers can create a bespoke Plan of Work for the client's chosen procurement route in order to set out specific tendering and procurement activities for each stage.		Optional tender stage reality-check	Include additional requirements related to Soft Landings procedures	
H Tender action			Tender award stage reality-check	Include evaluation of tender responses to Soft Landings requirements	
J Mobilisation	5 - Construction	5 - Fabrication design		Confirm roles and responsibilities of all parties in relation to Soft Landings requirements	5 - Construction
K Construction to practical completion					
	6 - Handover and close-out	6 - As constructed	Pre-handover reality-check	Include FM staff and/or contractors in reviews. Demonstrate control interfaces. Liase with move-in plans	6 - Handover
			Stage 3. Pre-handover: Prepare for building readiness. Provide technical guidance		
			Post-handover sign-off review. Ensure all outstanding reality-checked items are complete and system is signed off and operational		
L1 Post-practical completion L2 L3	7 - In Use	7 - In use	Stage 4. Aftercare in the initial period: support in the first few weeks of occupation	Incorporate Soft Landings requirements	7 - In use
				Set up home for resident on-site attendance	
			Stage 5. Years 1 to 3 Aftercare: Monitoring review, fine-tuning and feedback	Operate review processes. Organise independent post-occupancy evaluations	

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Government Soft Landings

Government Soft Landings (GSL), which is based on the BSRIA Soft Landings Framework, will apply to all central government projects from 2016 and is being rolled out by the Building Information Modelling (BIM) Task Group, the same body responsible for implementing the government's BIM policy (BIM is seen as an integral part of GSL). Under GSL, government departments will be required to define a series of high-level outcomes at the very beginning of a project.

The process map adopts the following plan of work:
0 Strategy
1 Brief
2 Concept
3 Definition
4 Design
5 Build and Commission
6 Handover and close-out
7 Operation and end-of-life

The key to GSL is very early client involvement. Government departments need to appoint a project champion to define the outcomes and manage the process. The project champion will ask the client, the project team and the facilities management team to define the project outcomes and set a commissioning and handover strategy including how the building is to be operated.

Project teams will need to spend a small amount of extra time on the GSL process but most of the cost is in the post-handover stage, including paying for the post-occupancy surveys. It is considered that GSL sits alongside BIM, as BIM feeds into Computer Aided Facility Management (CAFM) systems, and helps enable future alterations to completed buildings. As a result, ownership of GSL has moved to the BIM Task Group.

The difference between GSL and BSRIA Soft Landings is that GSL has focused on the integration of BSRIA Soft Landings principles into a BIM work stream, as it becomes adopted as a mandatory process in 2016.

The main points are:

- GSL will be used to reduce cost and improve performance of asset delivery and operation.
- All departments will appoint a GSL Champion to manage the GSL "Golden Thread" on all projects.
- All departments will actively manage aftercare during early operations, supported by the design and construction team.
- Post Operational Evaluation will be used as a collaborative tool to measure and optimise asset performance and embed lessons learnt.
- BIM will be progressively used as a data management tool to assist the briefing process.

Soft Landings for Schools

In 2010, the Soft Landings task group were successful in obtaining Technology Strategy Board funding to carry out a number of case studies. The studies reviewed the applicability of the soft landings framework to projects in the schools sector.

The findings from these studies were presented in the *BSRIA BG 9/2010* report. Willmott Dixon put forward three schools to be included;
- Joseph Leckie School, Walsall
- Hackney City Academy London and
- RSA Academy Tipton.

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A summary of the key findings from this report included:

- Encourage client leadership
- Provide practical support
- Share experiences
- Find the funds (to undertake Soft Landings at the project inception)
- Encourage wider support.

In November 2009, Beyond Buildings: Procuring BSF Sustainability, a report by the Westminster Sustainable Business Forum, recommended that: "Partnership for Schools (PfS) should immediately begin piloting Soft Landings in BSF schools. However, in June 2011 it was decided that the PfS would be axed in March 2012 (to be replaced with the Education Funding Agency).

BREEAM 2014 and Soft Landings

In May 2014, the BREEAM New Construction scheme (the updated environmental assessment and certification scheme for new non-domestic buildings) includes references to Soft Landings activities. Clients and their design teams are able to demonstrate they are achieving key aspects of the criteria of *Management 05 Aftercare*, by adoption of the work steps in the Soft Landings Framework.

How Current WD Process Aligns

Much of the framework reflects best practice and Willmott Dixon processes cover some of the key aspects already. The two areas that requires the most careful consideration are the briefing; and handover / early occupation. These areas are already defined within current processes and the new sustainability health check process will enhance the current practices, however the strategic team will need to enhance the current processes to reflect the Soft Landing requirements particularly where engagement with the supply chain is essential. (i.e. amends to procurement documentation and deeds of appointment)

The extended aftercare is largely an additional element to most current building processes, but the introduction of the Post Occupancy Evaluation studies on every project, which has been adopted by WD on all projects, closes the feedback loop and aligns with the Soft Landings philosophy. Remember this should also involve other key members of the project delivery team so additional roles may need to be defined to make sure soft landings happen and the whole team play their part.

Cost and Benefits

The key questions every client needs to answer are how much will it cost and what the benefits are. This has been the topic of much discussion and differing views. One view is there is an additional cost and others can cite examples where the aftercare and post occupancy survey has reduced energy usage considerably by fine tuning systems and re-calibrating meters. The general feeling is that throughout the, existing, well established design and delivery process, the framework represent best practice and this should be achieved at no additional cost to the project. The enhanced aftercare can be accurately priced to reflect the level of attendance required in terms of labour resources. The POE survey is a fixed and known cost at the outset.

The intangible costs will be incurred where the findings result in additional work being undertaken such as fitting blinds or replacing equipment beyond the 12 months defects period. It has been suggested that a sum of 0.1% of contact value be set aside to cover these aspects. This is controversial as often these are the very items value engineered out to meet the tight budgets.

The benefits also fall into two categories: where buildings are failing to perform as envisaged at design stage, and the aftercare team spend more time fine

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tuning the systems, the resulting reduction in energy can be easily measured. Well designed and well run buildings from the out set will have benefited from the enhanced process and the need for additional work will be reduced, this is more difficult to measure and demonstrate. Anecdotal evidence of what can go wrong has been used to demonstrate the hidden benefits.

References and further information

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