

Document Control

Rev	Date	By	Comments
A	Oct'17	L. Davies	Initial Document
B	Dec 17	UoL	Sign off for release
C	Apr'19	L. Davies	Handover Documentation added
D	Sept 20	UoL	Minor ammendments and Appendices added.

Design Guidance

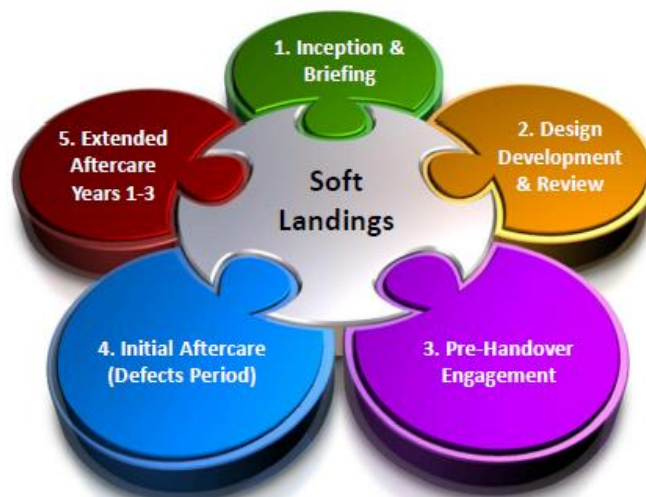
The University are continually striving to improve the project handover process and seamless transition through practical completion, training, occupation and management in use. The project handover is intended to be a collaborative process led by the University's consultant team to appropriately specify the level of service required of the construction team leading up to and post practical completion. The key to a project's success lies in the collaboration and early engagement with key University stakeholders across all disciplines within both the professional consultants and construction teams.

BSRIA Soft Landings identifies the 5 core principles which are to be generally adopted in their entirety to guarantee beneficial use of the soft landings process. The interdependency of these stages, particularly stages 1-4 is integral to the project's success as each stage is predicated on the adoption and implementation of the previous.

For all projects, the key success criteria to a seamless handover and building occupation can be outlined using the following engagement process as defined within the BSRIA Soft Landings design guide:

Stage 1 is imperative to clarifying the duties of team members including the client's representatives for all further stages of the project and to assist management of expectations for performance in use

Stage 5 Construction and commissioning champion to monitor building performance in relation to the operational team's requirements to adjust and further educate the operational teams about building design principles and in use intent of the initial concept philosophies.



Stage 2 is generally 'business as usual' for design, construction and operational teams with greater attention to developing procedures outlined in the inception stage. Reviewing the performance against original expectations and achieving specific outcomes is key

Stage 4 focuses upon the operational team's 'settling in period' through continued liaison with a construction and commissioning champion with the support of the design team representatives also. Assisting with queries and imparting knowledge and collating feedback.

Stage 3 Imparts a much greater involvement of the design, construction and commissioning specialists to fully engage with the operational teams through the commissioning and installation process to strengthen the handover delivery and building's operational readiness.



Under the standard terms of appointment, the University wish for all design consultants (led by the MEP consultant) to adopt the core principles of BSRIA soft landings through stages 1-4. The key tasks to be undertaken at each stage of the project delivery include the following:



- Identify all key project stakeholders and programme workshops within the key project delivery tasks
- Identify project objectives including site, environmental, economic and operational
- Review previous experience and lessons learnt to assist delivery of the University aspirations
- Define expectations for operational, environmental, cost and FM needs of the development
- Set precedents and aspiration targets for the development that may be performance evaluated
- Test outline principles with operational users to inform the development of the emerging design



- Clarify roles for all key project stakeholders in the emerging developed design process
- Test design principles with operational and FM teams in terms of usability and maintainability
- Continued evaluation of the concept design principles against the core project objectives
- Clear definition of construction roles and responsibilities written into the contract tender documents
- Ongoing post contract evaluation of design and construction with all key project stakeholders
- Undertake commissioning and system training reviews with all soft landings key stakeholders



- Undertake operational reviews to ensure the development is 'suitable' for functional occupation
- Develop building readiness sub-programme alongside commissioning, training and handover activities
- Co-ordination of client handover activities such as staff moves, maintenance contracts and fit-out
- Evaluation of the design principles in conjunction with the anticipated early occupation profiles
- Mitigate compressed commissioning through effective pre-handover management and planning
- Develop in conjunction with all key project stakeholders the operational building user guide (BUG)



- Maintain seamless relationships with the key project stakeholders through the move in process
- Conduct further operational training and develop BUG to incorporate user feedback
- Maintain presence on site for ongoing liaison and operational feedback for system fine tuning
- Undertake initial system energy performance review against the design concepts
- Document and monitor issue logs and applicable resolutions to develop the operational experience
- Assist FM teams to understand the operation and maintenance requirements for ongoing adoption



- Ongoing system evaluation and performance monitoring through documenting and reporting
- Undertaking stakeholder questionnaire and post occupancy evaluations
- Year 1 – Primarily used as a 'settling down' period to ensure the design concepts are fully understood
- Years 2-3 – used to fine tune building systems to address operational and performance feedback
- Maintain relationships with key stakeholders to assist with dissemination of lessons learnt
- Document intelligence gained within a 'lessons learnt' summary that can be adopted by all parties



This document is to be read in conjunction with the following additional documents which give details of the approach that the Client and Design team are expected to take on University Projects.

Note the design team will be required to structure the Project Tender Documentation such that the contractor is required to provide all data necessary, undertake all tasks necessary and complete all the information necessary to complete the soft landings process including compilation of full handover documentation.

The following documents are to be read in conjunction with this Guide GD06 and form a part of the process requirements. The design team must ensure that the requirements of these form a part of the tender document process.

- BSRIA BG6 A Design Framework for Building Services
- BSRIA BG26 Building Manuals and Building User Guides
- GD06 Appendix A Building Manual Structure
- GD06 Appendix B Handover Worksheets
- RIBA Plan of Works, Handover, Close Out and In Use

The table on the following page taken from BSRIA soft landings framework aligns activities to key RIBA work stages



RIBA 2008 Stages		RIBA 2013 Stages	CIC stages 2012	Soft Landings	Soft Landings supporting activities	BSRIA BG 6/2014 <i>Design Framework pro-formas</i>
		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	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
F2						
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	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
L2				Stage5. Years 1 to 3 Aftercare: Monitoring review, fine-tuning and feedback	Set up home for resident on-site attendance	
L3					Operate review processes. Organise independent post-occupancy evaluations	

**Handover Documentation**

Upon handover of every project, the University shall be supplied with the following principle documentation and equipment:

- Manual Conforming to the principles of BSRIA BG26 and Appendix A to this guide.
- O&M manual in electronic and hard copy format
- Complete as-built BIM model (where applicable)
- Complete as-built record drawings in both .pdf and .dwg format
- Building user guide
- PPM asset record schedules
- Equipment spares and accessories as required for the specific contract
- Keys and specialist tools associated with the access and maintenance requirements of the installation
- Full training schedule for all systems with a minimum of 2 training sessions per system. A full record of attendees shall be documented, and training shall be recorded with digital files inserted into the O&M

O&M manual

- Manual Conforming to the principles of BSRIA BG26 and Appendix A to this guide.
- The structure of the O&M manual shall follow the pre-determined folder hierarchy as required by the University. This structure is subject to change and therefore the current system, including all Micad referencing methodology shall be obtained prior to production of the employers requirements specification.
- 2 (two) hard copies of the manuals are required, to include record drawings and BIM model as appropriate.
- Manuals and record drawings shall be compiled during the contract and an initial draft copy shall be made available for the first commissioning of the engineering services. (Minimum 21 days before contract completion.)
- Practical completion shall not be given until final copies (without unresolved comments from the Engineer) are provided.
- Prior to Practical Completion, supply final copies.
- All drawings and asset record schedules shall be tagged/ referenced in accordance with the University's Micad system. The current referencing solution shall be obtained from the university estates department.
- PPM Asset schedules shall be produced in line with the University's PPM system specification. Refer to the latest version of the PPM asset schedule document for full details on what is anticipated to be provided on all projects.