

DIRECTORATE OF ESTATES AND FACILITIES

PROCEDURE AND INFORMATION MANUAL

EPM PM20

Construction Project Completion & Handover Procedure

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The purpose of this document is to set out the role of key duty holders at project completion and handover stage of a construction project.

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1.0 Introduction

- 1.1 The purpose of this document is to set out the role of key duty holders at project completion and handover stage of a construction project.

2.0 Client Rep Duties

2.1 RIBA Work Stage 1 Preparation and Brief, Soft Landings Stage 1 Inception and Briefing

- 2.1.1 Facilitate discussions between Design Team and Space Management and Maintenance Team regarding integration at handover of information into systems such as Archibus and Oracle including asset register requirements.

2.2 RIBA Work Stage 2-4, Soft Landings Stage 2 Design Development

- 2.2.1 Arrange on-going consultation workshops between Design Team and UoM Estates & Facilities stakeholders within the aim of the Design Team explaining design development and receiving feedback particularly in relation to systems that will be taken over by stakeholders. Proactively resolve any conflicts that may arise with the design philosophy.
- 2.2.2 Facilitate on-going discussions between Design Team and Space Management and Maintenance Team regarding integration at handover of information into systems such as Archibus and Oracle including asset register requirements.

2.3 RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft Landings Stage 3 Pre-Handover 6-3 months ahead of Handover

- 2.3.1 Develop and agree handover programme with key end-users, key estate functions and project team including contractor. Facilitate monthly site visits (minimum) with Contractor and UoM Estates & Facilities stakeholders who will take over installed systems to help familiarising them with the systems and dealing with any queries or issues that arise. Explain what installations may be affected by extended maintenance and the nature of that maintenance.
- 2.3.2 Check and confirm that the project team are completely conversant with handover requirements and each understand their role towards ensuring that key building systems are operational e.g. lighting, fire alarms and emergency lighting, heating and ventilation and that appropriate fire safety systems including fire extinguishers, escape route signage, assembly points etc. are fully operational and de-snagged as far as possible prior to Handover.

2.4 3 Months ahead of Handover

- 2.4.1 Review testing, commissioning, handover, extended maintenance and completion programme with key end-users, key estate functions and project team including contractor.
- 2.4.2 Ensure that a Defects Management Procedure² is introduced and agreed, so that all

affected parties are fully aware of the process to be adopted for the reporting and attendance to defects that may occur during the defects liability period.

2.4.3 Obtain input from UoM Estates & Facilities stakeholders on preferences for O&M manuals including format and content. Carefully distinguish split of responsibility for ongoing maintenance, including any extended maintenance, of all new assets between Schools and Estates & Facilities and seek sign-off from UoM Estates & Facilities stakeholders of the final version in electronic form at least one month ahead of Handover.

2.4.4 Notify the University's insurers via the Insurance Office that Practical Completion has been achieved.

2.4.5 The procedure shall include reporting defects to the Help Desk during normal working hours; reporting defects outside normal working hours; what constitutes an emergency and a timescale for this to be addressed; a list of defects that need to be corrected within say 7 days and those which can wait until the end of the DLP etc.

2.5 **1 month ahead of Handover**

2.5.1 Review testing, handover, extended maintenance and completion programme with key end- users, key estate functions and project team including contractor.

2.5.2 Ensure that key end users e.g. Heads of School/Division/Function have been fully briefed as to what their responsibilities are once the building/facility has been occupied by their staff. This may include an awareness of:

- What construction work remains to be completed
- What areas may still be in the possession of the principal contractor and therefore not available to the Building Users
- What temporary arrangements are in place to allow for the safe interface between his facility/staff and that of the contractor's areas and staff including temporary emergency arrangements
- Specific contractor's risk assessments and safe systems of work that are in place that affect the normal operation of the building/facility
- Specific risk assessments and safe systems of work that s/he may responsible for the preparation of, as a result of the temporary arrangements that may be in place
- What areas/services are the responsibility of others e.g. Estates (House Services, Maintenance Services etc.)
- The key points of contact for dealing with significant issues that may arise that affect the Building Users (assuming that day to day defects/snagging issues are put through the Help Desk)
- What staff training/instruction is required on systems and systems/installations that the end user may have to use

2.5.3 Agree site base with Principal Contractor for Aftercare stages for a minimum period (3 months to a year).

2.5.4 Ensure that all necessary precautions have been taken and safe systems of work put in place at and following handover and occupation by the Building Users in order to

minimise/control risk associated with any ongoing work of the Principal Contractor.

- 2.5.5 Ensure appropriate safe working arrangements are made with an appointed member of Faculty/School/Division staff before work starts in occupied areas.
- 2.5.6 Ensure that technical and maintenance data for items of "specialist" equipment procured via the building contract but to be maintained by the building occupants, are available to the client at handover.
- 2.5.7 Maintain appropriate contact with the Estates Health and Safety Officer to make him/her aware of particular issues that may affect the occupiers/end users of the building/facility in order that he may liaise with his counterpart in the School/Division. Ensure that s/he remains aware of significant issues within the building/facility that would not normally be dealt with by the Help Desk but are affecting the ability of the Building Users to adequately function.
- 2.5.8 Ensure that the CPM is liaising with the project team to progress the investigation and subsequent action with respect to significant items within the building/facility that are not considered general defects/snagging items.
- 2.5.9 Ensure appropriate notice is given to an appointed member of Faculty/School/Division staff when contractors will be working in an occupied area of the building.
- 2.5.10 Arrange for key Estates functions (e.g. Help Desk, Maintenance Services, Professional Services, House Services etc.) to be fully briefed on the nature of the facility and establish what training and support is required pre and post-handover and what area of the building/facility become the responsibility of the Directorate of Estates (e.g. plant *rooms*, switch *rooms*, circulation areas etc.) that may result in the need for new risk assessments and planned maintenance schedules.

2.6 **Handover**

- 2.6.1 Arrange for Operating and Maintenance Manuals and Health & Safety Files, including the relevant certificates, to be delivered to Client Services Unit.
- 2.6.2 Take receipt of the building keys from the principal contractor and then issue pre-agreed sets to a nominated end user(s) and to an appointed member of estates

2.7 **RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare**

1month post-Handover

- 2.7.1 Work closely with Faculty Estates Team to ensure that there is regular communication of both general defects/snagging items and more significant defects so as to keep Building Users informed of progress.

2.8 **RIBA Work Stage 7 In use, soft landing stage 5 Long-term Aftercare**

2 - 12 months (plus) post-Handover

- 2.8.1 Work closely with Faculty Estates Team to ensure that there is regular communication of both general defects/snagging items and more significant defects so as to keep Building Users informed of progress throughout period of defects liability.

3.0 Consultant Project Manager Duties

RIBA Work Stage 1 Preparation and Brief, Soft Landings Stage 1 Inception and Briefing

3.1 RIBA Work Stage 2-4, Soft landings Stage 2 Design development

- 3.1.2 Facilitate BBI Plan indicating clear and concise requirements for delivering a fully commissioned building including all relevant documentation at completion. Contractors should be asked to detail in their tenders how this will be achieved, the process and methodology, suitable programme allowances and level of resources.

- 3.1.3 Develop a definition of completion:

- All tests and inspections required;
- Commissioning management requirements;
- Contractor to disclose resource requirements during all work stages to ensure resources are dovetailed in with that of the BBI team i.e. a presence on site during/after completion;
- A defects management and reporting process is described;
- The handover strategy requirements;
- Any extended maintenance period;

The need for spares

- 3.1.4 Ensure that the project team develop a Technical and User Guide from the point of view of a typical user and manager of the building that will include consultations with UoM Estates & Facilities stakeholders. The Guide should distinguish warranties and warranty periods particularly where these are extended, and responsibilities for future maintenance. The Guide should include technical and maintenance data for items of "specialist" equipment procured via the building contract but to be maintained by the building occupants. The development of the Guide should be on-going up to the point of one month ahead of Handover when it should be made available to Building Users, ideally incorporated into a Welcome Pack provided by the Faculty Estates Team.

3.2 RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre-handover

6 - 3 months ahead of Handover

- 3.2.1 Ensure that the project team adequately plans for a smooth transition between practical completion, handover and subsequent occupation of the building/facility by the Building Users by adherence to the Project Handover Control Schedule (Appendix A).

- 3.2.2 Ensure that the project team is fully aware of its responsibilities in respect of the building/facility once the Building Users have occupied the building/facility.

3.3 3 months ahead of Handover

Ensure that the project specific BBI document is being followed by the contractor and forewarn Client Rep where there are any variations or failings with the requirements of the BBI Plan as well as implications for the Handover process.

Oversee the development of O&M manuals including maintenance, cleaning and operational strategy by the contractor. Obtain certification of all tests for inclusion in manuals. Ensure as-built drawings are in UoM prescribed format

3.4 **1 month ahead of Handover**

Ensure that the project team fully liaises with relevant Estates staff with respect to the building/facility and its systems/installations and that in particular any matters, that could affect the health safety and welfare of Building Users and Estates staff, have been raised and adequate arrangements are put in place to reduce/control risk.

Review testing, commissioning, handover, extended maintenance and completion programme with Principal Contractor. Understand the Contractor's building readiness and countdown to Handover. Forewarn the Client Rep of any issues such as delays or non-availability of testing and commissioning certificates.

Ensure that the contractor has arranged adequate training and instruction for Estates staff and for Building Users on systems within the building/facility both before and after occupation.

- In collaboration with the Principal Contractor, work closely with Estates staff to ensure that they are adequately briefed, familiarised and trained in systems as designed and installed within the building/facility.

Ensure Design Team respond in good time to technical queries and issues raised by Estates staff.

Provide Client Rep with a Technical and User Guide (from the point of view of a typical user and manager of the building) for passing on to Head of Faculty Estates. The Guide must explain the safe operation and maintenance of systems within the building and also explain what the Aftercare team is there for, where they can be contacted and when. Introduce Building Users to the Guide through delivered sessions, making sure the design intent is well understood, record user queries and themes for future learning and inclusion in the Guide.

3.5 **Handover**

- 3.5.1 Facilitate delivery of as-built BIM model as well as facilitate integration of information into systems such as Archibus and Oracle including asset register requirements.

3.6 **RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare**

1 Month post-Handover

- 3.6.1 Prepare an initial summary project completion report on outstanding work being undertaken by the contractor, defects remaining and a programme to address them.

Issue report to Client Rep.

3.7 RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

- 3.7.1 Update on a monthly basis a summary project completion report on outstanding work being undertaken by the contractor, defects remaining and a programme to address them. Issue report to Client Rep.

4.0 Principal Contractor Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

- 4.1 In collaboration with the CPM and Design Team, work closely with Estates staff to ensure that they are adequately briefed, familiarised and trained in systems as designed and installed within the building/facility.

3 months ahead of Handover

1 month ahead of Handover

- 4.2 Nominate key personnel including contact numbers for both emergency and routine contact. These staff must be familiar with the building/facility and the systems/installations therein and must be able to contact key members of the principal contractor's team (including sub-contractors) to ensure that issues are responded to in an appropriate timescale.

- 4.3 Arrange adequate training and instruction for Estates staff and for end users on systems within the building/facility both before and after occupation. Provide video of training to Client Rep for distribution amongst Estates Staff.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

- 4.4 Respond in good time to queries and issues raised by the Estates Help desk in accordance with procedures agreed prior to Handover

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

- 4.5 Respond in good time to queries and issues raised by the Estates Help desk in accordance with procedures agreed prior to Handover.
- 4.6 When required to attend site, give prior notice to the Client Rep, all in accordance with agreed timescales and procedures, ensure that adequate safety precautions and safe systems of work are in place prior to the carrying out of any remedial works or additional outstanding items.
- 4.7 Respond in good time to queries and issues raised by the Client Rep that relate to more significant warranty/liability issues in respect of the building/facility.
- 4.8 Work collaboratively with the design team in the investigation of defects/warranty issues so that the University and particularly the Building User is not unreasonably inconvenienced by the issue at hand.
- 4.9 At all times, comply with all local rules and arrangements that apply in a building/facility once it has been occupied so as not to unnecessarily disrupt or put Building Users at risk from operations that the Principal Contractor may have to carry out.

5.0 Head of Faculty Estates and Faculty Estates Team Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6-3 months ahead of Handover

- 5.1 Be satisfied that the Client Rep and project team have ensured that key building systems are operational e.g. lighting, fire alarms and emergency lighting, heating and ventilation and that appropriate fire safety systems including fire extinguishers, escape route signage, assembly points etc are provided prior to occupation.

3 months ahead of Handover

If deemed appropriate, nominate/appoint a building/facility manager/co-ordinator for a reasonable period prior to occupation and for a period following occupation (three, six or twelve months dependent upon the size and nature of the project). This individual(s) will work closely with the Client Rep and other members of the project team (both prior to handover and following occupation) and will ensure that s/he is fully conversant with the building/facility and has been fully briefed on outstanding or future works to be completed by the contractor following occupation by the end user.

Become familiar with the building/facility and understand what areas may remain the responsibility of the contractor post-Handover.

5.3 **1 month ahead of Handover**

Act as a primary point of contact between the Client Rep (and the project team) and the Building Users, providing regular communication on the progress of the project.

Work with other Estates service providers to assist in ensuring that operations such as post deliveries, cleaning, waste collection etc. are set up in advance of the occupation of the building.

Act as a supporting role to the Head of School/Division/Function to ensure that they are fully conversant with their responsibilities once the building or facility has been occupied by his staff and that they have been fully briefed by the Client Rep and project team

Inform the Client Rep of significant items that would not normally be treated as defects/snagging. It will be expected that such items are brought to the attention of the project team for investigation and action.

Issue Building Users with a Welcome Pack that includes a Technical and User Guide provided by the Client Rep on the safe operation and maintenance of systems within the building

5.4 **Handover – RIBA Work Stage 7 in use, Soft landing stage 4 Initial Aftercare – 1 month post-Handover**

Focus on settling Building Users into the building identifying any problems and logging usage and change.

RIBA Work Stage 7 in use, Soft landing stage 5 Long-Term Aftercare

2-12 months (plus) post-Handover

6.0 **Client Services Unit Duties**

RIBA Work Stage 1 Preparation and Brief, Soft Landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft Landings Stage 2 Design Development

6.1 Review any derogations and sign off key RIBA Stages

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre-Handover; 6-3 months ahead of Handover

6.2 Ensure each technical team are aware of the handover plan developed by the Client Representative.

6.3 **3 months ahead of Handover**

Liaise closely with the University Project Manager and project team prior to handover and occupation of the building/facility, to ensure that key staff are familiar with systems/installations and key building/facility users etc.

6.4 **1 month ahead of Handover**

Prior to handover, provide advice and support to the Client Rep and project team on what arrangements need to be in place following handover with respect to building systems/installations etc.

6.5 **Handover**

Ensure CSU have all information listed in Client Representative Duties: if not escalate to Senior Management, via Project Monitoring meetings.

6.6 **RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare; 1 month post-Handover**

Visit working building to continue familiarity.

6.7 **RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare**

2-12 months (plus) post-Handover

Carry out a visit to review effectiveness of current operation/any outstanding issues- flag via the Project Monitoring process.

7.0 **Maintenance Services Unit Duties**

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6- 3 months ahead of Handover

3 months ahead of Handover

1 month ahead of Handover

Liaise closely with the Client Rep and project team prior to Handover and occupation of the building/facility, to ensure that key staff are familiar with systems/installations etc. and are adequately trained and therefore are able to respond effectively to requests via the Help Desk. Obtain information on any extended maintenance periods.

Handover

RIBA Work Stage 7 In use, Soft Landing Stage 4 Initial Aftercare

1 month post-Handover

Receive requests from the Help Desk and respond to these as per response times set

out in the defects management procedure.

RIBA Work Stage 7 In use, Soft Landing Stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

Receive requests from the Help Desk and respond to these as per response times set out in the defects management procedure.

Arrange regular communication between Maintenance Services staff and the Faculty Estates Team so as to ensure that Building Users are provided with progress updates in respect of work deemed the responsibility of Maintenance Services.

8.0 Estates Help-Desk Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

3 months ahead of Handover

1 month ahead of Handover

Work with Client Rep to agree procedures for the receipt of requests from the Building Users in respect of building defects and snagging items.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

Pass on requests to the principal contractor (via an established procedure that ensures that contractual arrangements are maintained) or Maintenance Services as appropriate, depending on the nature of the defect.

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

Pass on requests to the Principal Contractor (via an established procedure that ensures that contractual arrangements are maintained) or Maintenance Services as appropriate, depending on the nature of the defect.

9.0 Security Services Unit Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

3 months ahead of Handover

Liaise closely with the University Project Manager and project team prior to handover and occupation of the building/facility, to ensure that key staff are familiar with systems/installations and key building/facility users etc.

1 month ahead of Handover

Provide support to the Head of School/Division/Function on ensuring that his staff occupy the building/facility safely and ensure that they and the building are secure at all times.

Be familiar with the emergency arrangements for the building including the fire alarm systems and emergency exit routes.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

10.0 House Services Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

3 months ahead of Handover

1 month ahead of Handover

Liaise closely with the Client Rep and project team prior to handover and occupation

of the building/facility, to ensure that key House Services staff are trained/instructed with systems/installations and key building/facility users etc.

Ensure that cleaning regimes and other Building Attendant duties etc. are in place once Users are in the building/facility.

Ensure that a system of post-delivery and collection is in place once Users are in the building.

Discuss and make appropriate arrangements with an appointed Faculty/School/Division member of staff any health and safety issues regarding House Services staff working in occupied laboratory or workshop areas.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

11.0 Head of School Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

3 months ahead of Handover

1 month ahead of Handover

Ensure that where deemed necessary staff under his control have been provided with appropriate training and instruction on systems/installations that they may have to use within the building/facility.

Aside from the normal responsibilities as laid down by the University in terms of health and safety arrangements that need to be in place and monitored by Heads of School/Divisions etc. s/he will ensure that risk assessments have been carried out and safe systems of work are in place for all activities associated with any interface issues that may be present due to the ongoing presence on site of contractors. It is expected that this shall be a collaborative exercise with the Client Rep and project team.

As soon as is practicable, raise any health and safety concern that they may have in

respect of any ongoing/outstanding construction work within the building/facility with the Client Rep as soon as is practicable and take any immediate action deemed necessary to protect the staff/students etc. from the consequences of the health and safety concern.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

As soon as is practicable, raise any health and safety concern in respect of any ongoing/outstanding construction work within the building/facility with the Client Rep and take any immediate action deemed necessary to protect the staff/students etc. from the consequences of the health and safety concern.

Ensure that staff, students and visitors to the building/facility are made aware of hazards associated with ongoing/outstanding works and what temporary arrangements may be in place as a result of these works including emergency arrangements and areas that are off limits.

Ensure appropriate safe working arrangements are made before work starts in occupied areas.

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

Act as a primary point of contact between the Client Rep and the Building Users, providing regular communication on the progress of the project on outstanding work being undertaken by the contractor; defects/snagging items; and other matters affecting the daily operation of the building/facility.

Focus on settling Building Users into the building identifying any problems and logging usage and change. During the first 12 months there may well be a need to fine tune systems, particularly lighting controls and hvac systems in order to optimise effective energy-efficient operation and to take account of Building User feedback and changes in use and occupancy.

Between 6 and 12 months of Handover and occupation carry out a post occupancy evaluation of the process (Brief through to Occupation), functionality and technical performance of the building. Persons interviewed shall be the Project Sponsor, Client Rep, CPM and Design Team, House Services Unit Manager and Client Services Unit Manager. Feedback results to participants and all other Stakeholders.

12.0 Other Building Occupant Duties

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre- handover

6 - 3 months ahead of Handover

3 months ahead of Handover

1 month ahead of Handover

Aside from the normal responsibilities as laid down by the University in terms health and safety responsibilities, Building Users will ensure that they are aware of any temporary arrangements and safe systems of work that are in place for all activities associated with any interface issues that may be present due to the ongoing presence on site of contractors.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

Aside from the normal responsibilities as laid down by the University in terms health and safety responsibilities, Building Users will ensure that they are aware of any temporary arrangements and safe systems of work that are in place for all activities associated with any interface issues that may be present due to the ongoing presence on site of contractors.

Not interfere with the contractor's works unless the action is deemed to be one that removes/reduces a significant hazard. This action should not put the member of staff or others at any risk to their safety.

Not enter any areas that are under the control of contractors without express permission and that they must comply with safety requirements in place for the contractors site area.

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

13.0 Environmental Sustainability Advisor (ESA)

RIBA Work Stage 1 Preparation and Brief, Soft landings Stage 1 Inception and Briefing

RIBA Work Stage 2-4, Soft landings Stage 2 Design development

- Review past projects
- Ensure agreed environmental, sustainability, manageability, buildability, usability and maintainability themes are embedded within every element of the project design.
- Consider realistic options in relation to the budget, the available construction

skills and resources needed to turn ideas into a physical reality that suits the needs of occupiers.

- Contribute to consultation and design workshops with individuals within Estates and Facilities who will take over the installed systems. Use feedback. Should elements of the operational demands conflict with the building design philosophy e.g. natural ventilation vs. security; raise warnings and attempt to resolve issues through proactive design solutions.
- Work with MEP to predict future performance (e.g. energy consumption) and work with UoM to set method for measurement post occupation.
- Work with MEP to consider best practice documents like BSRIA 'Controls, usability problems and ways to avoid them'.
- Work with Architect and MEP to ensure construction detailing and subsequent installation are adequate to meet thermal performance (U values, air tightness)
- Work with Architect to obtain sign off on key strategies e.g. transport, waste etc.
- Support PM with incorporating BBI requirements within preliminaries, drawings, specifications, programme, phasing etc.

RIBA Work Stage 5-6 Construction, Handover and Close Out, Soft landings Stage 3 Pre-Handover

6 - 3 months ahead of Handover

3 months ahead of Handover

Monitor that the Contractor follows through on the delivery of agreed environmental, sustainability, manageability, buildability and maintainability items that are embedded in the design. Ensure any development of the design by the Contractors adheres to the requirement that all maintainable plant, controls etc. can be accessed in a fully considered manner. Monitor the Contractors delivery of requirements related to building environmental and other performance deliverables.

1 month ahead of Handover

Complete the environmental sustainability sections and input into other relevant sections of technical and user guides from the point of view of a typical user and manager of the building. Include information on the design intent, the building log book, BREEAM user guide and energy use/metering strategies. Seek UoM sign off of a final issue version. Issue the information to building users in advance of completion and move in.

Attend pre-handover building readiness and countdown to completion meetings.

Advise if there are any issues arising from these meetings that may have an impact on achieving the agreed BBI requirements relating to sustainability.

Review and comment from an environmental sustainability perspective the Contractors building readiness and countdown to completion programme. Raise concerns where it is believed not possible to commission and test the building effectively prior to completion

Witness static testing such as air tightness, roof/cladding leak tests as defined in Works information. Review and actively monitor that all certification associated is produced and documented for inclusion in the O&M manuals.

Ensure the Contractor is actively monitoring defects within the works as they proceed. It is expected the Contractor uses innovative defects management and closure tools and software.

Assist MEP with environmental and energy logging. Review to confirm the responsibilities and routines for data recording. This should be co-ordinated with the building log book and metering strategy.

Participate alongside the UoM Estates and Occupier personnel in training and demonstration sessions provided by the Contractor with the purpose of being the go to person after completion for knowledge associated with environmental sustainability within the building. Feed back issues with the content or attendance at training sessions.

Handover

RIBA Work Stage 7 In use, Soft landing stage 4 Initial Aftercare

1 month post-Handover

Update on a monthly basis a summary project completion report of defects remaining

Roam the building on a regular basis, examine the building in user, observe occupation and spot emerging issues. Make spot checks with instruments if necessary, these also provide opportunities to discuss with individuals their experience of the building, its systems and indoor environment.

Deliver sustainability training material to building users to ensure building are operated as sustainably as possible.

Undertake post occupancy reviews during the Defects Liability Period to ascertain that the Environmental Sustainability Targets and assumptions are met in use.

Participate in a post occupation evaluation workshop and contribute to a report to UoM on the outcomes in relation to the agreed environmental sustainability targets.

Prepare a Sustainability Verification report post-construction to include details of sustainability features, lesson learnt and information on handover.

Update project Environmental Sustainability Plan.

RIBA Work Stage 7 In use, Soft landing stage 5 Long-term Aftercare

2-12 months (plus) post-Handover

For years 2 and 3 attend site every 6 months for an aftercare review meeting. At 6 monthly review meetings provide a report on energy usage vs. targets. At these meeting analyse energy use. (Where scope allows)

Update a Sustainability Verification report post construction to include details of sustainability features, lessons learnt and information on handover (where scope allows)