

Bim4Housing Recommendations on the Essential
Underpinnings for Fire Doors to Strengthen the Golden Thread

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And the experts listed in Appendix 5

Below are recommendations that we, as BIM4Housing, are putting forward as the findings of our subject matter experts. We do not claim these findings to be definitive, but we would hope that they would provide 'accountable' and 'responsible' persons with some of the detail they would require to ensure that risks are mitigated.

Format

The structure of this set of information is designed to be consumed in various ways by different stakeholder groups doing different things. Therefore, information mentioned in one section may be repeated in another, so they can be applied to a particular activity.

Also, we have sought to organize the information to make it more machine-readable so, although the lists could be reduced by combining similar items, this would make them less easily used in applications.

Despite the need to edit and contextualise, we have tried to retain the authentic voice of our experts throughout. This is especially so in the Appendices, where no colloquialism is left unturned.

Terms of use

This document is not intended as an end-result, but as a snapshot of a dynamic, on-going piece of work being developed by Subject Matter Experts who represent the different interest groups.

We hope it is helpful, but it should not be used in isolation, since, as we have learned from our collaboration, no one knows everything. It should therefore be used to supplement other sources of information, all of which should be validated by a responsible person applying it to a project.

Comments and additional contributions are welcome, and a panel of volunteer experts will review suggestions to assess/validate them and augment the guidance as required.

INTRODUCTION

Structure

We have six Working Groups of experts who understand the individual Stakeholder needs of Development, Design, Construction, Manufacturing, Operations and the specialist Advisors who support the whole process. Each Working Group determines the problems they are experiencing that could be alleviated by better information, often from a different Stakeholder group and they collectively establish Workstreams to collaborate and share knowledge to come up with practical solutions.

They have established Workstreams for MMC, Data Standardisation, Sustainability and Fire Safety and the latter has, in turn, established Round Table workshops that bring together SMEs who really understand specific asset types. Outputs from the workshops will feed into the GTI.

(See Appendix 1 for Structure Diagram)

Fire Safety Methodology

It was determined to take individual fire-critical assets and examine impacts and influences through their lifecycle. A series of online discussions were held, along with one-on-one calls and an email gathering of views and inputs. This culminated in a series of Roundtable discussions, each with a clear focus and targeted output. BIM4Housing's expert team was enhanced by guests from the GTI, along with other fire safety specialists throughout.

Phase 1 defined the over-arching questions that need to be answered, for each asset type, to deliver the BIM-plus solution necessary to the effective functioning of the Golden Thread in terms of Fire Safety.

The questions defined are:

- What risks does the asset mitigate?
- To what risks is the asset, itself, susceptible?
- What information is needed about an asset, to ensure it performs as required?
- What tasks/method statements/procedures are required to ensure the asset is installed, commissioned, inspected, and maintained properly?
- What level of competency/training needs to be in place?
- How should product changes be recorded?

Phase 2 sought to answer those questions, offering a definitive guide to the delivery of The Golden Thread through the effective management of required information.

Fire Doors Methodology

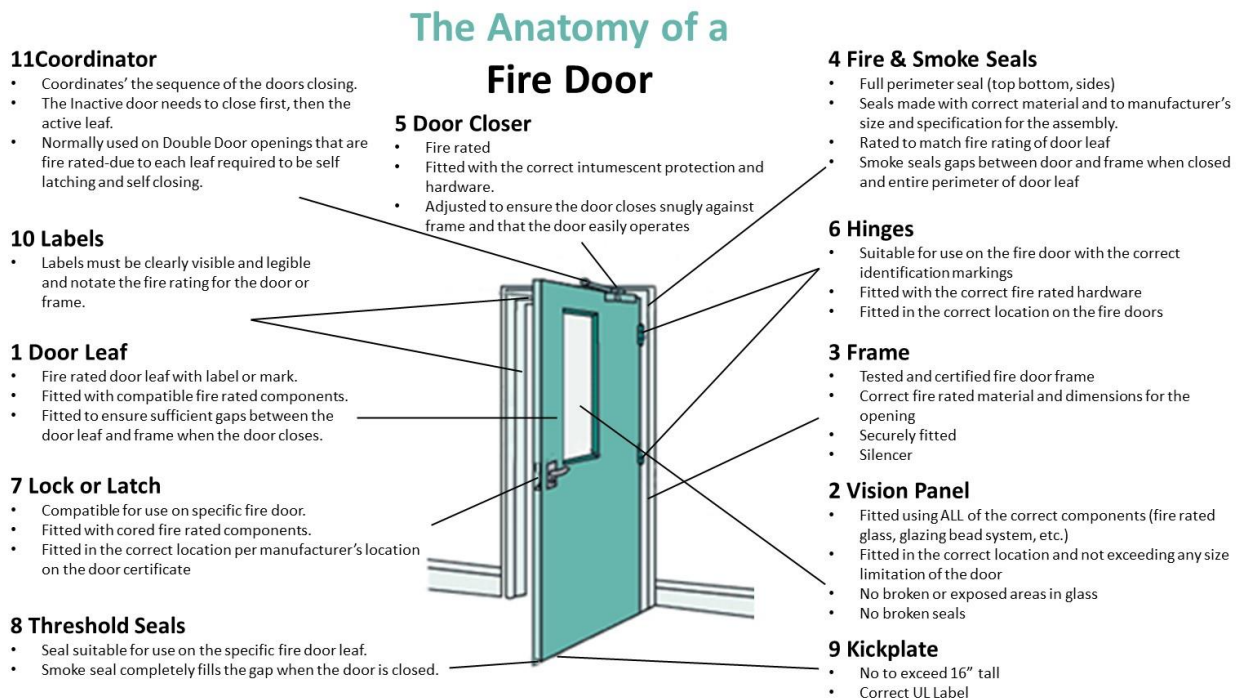
The outputs from a first Roundtable (16th July 2021) were finessed at a second Roundtable (27th July 2021). In each case, significant participant engagement was achieved prior to each event, with each Roundtable having different participants.

What is a Fire Door?

A distinction should be made between “fire doors”, just the door leaf, and “fire door sets”, which are a complete assembly of door, frame, seals, hinges, and other door furniture which have been tested together.

For our purposes, we will be looking at Fire Door Sets, which comprise the following components:

- Door leaf – the door itself
- Door frame – must be compatible with the door leaf
- Smoke seals – fitted around the edges of the door leaf or frame
- Intumescent strips – fitted around the edges of the door leaf or frame
- Hinges – must have a minimum of 3 hinges
- Door closer – a facilitator to ensure the door closes automatically
- Latch/lock - fitted within intumescent protection for fire/smoke resistance
- Threshold seals – closes the gap underneath the door leaf when closed
- Signage - indicating it is a fire door and should be kept shut/locked
- Glazing - glazed panels in fire doors (must be suitably fire resistant and fitted with intumescent glazing seals)
- Air grilles - used where extra ventilation is required
- Additional ironmongery - such as push bars and push pads on some fire doors



FINDINGS

It was determined to look to 'codify' risks to enable teams to coalesce around tackling a problem, run scenarios to simulate what might happen and how collaboration can reduce the risk of them happening.

Two other GTI Working Groups, H&S and Standards, have been working with NBS to extend Uniclass to carry a more detailed set of risks and, those identified here, can form part of that.

Clearly, it is not desirable for the 'Accountable Person' to be absolved of responsibility for not anticipating a risk, simply because it was not on the list of suggested risks- which should be considered a 'steer' not an absolute. However, without that list, it becomes impossible to define and deliver the information needed.

Below are recommendations that we, as BIM4Housing, are putting forward as the findings of our subject matter experts. We do not claim these findings to be definitive, but we would hope that they would provide 'accountable' and 'responsible' persons with the detail they would require to ensure that risks are mitigated.

1a. What risks does a Fire Door mitigate?

- Risk of smoke build-up
- Risk of heat build-up
- Risk of spread of smoke (if smoke seals fitted), risking smoke inhalation and suffocation, along with impaired visibility
- Risk to fire-fighter's access
- The risk of the spread of fire and products of fire (fire, smoke, heat) via cavities in external and internal walls, along with other concealed cavities (such a roof and ceiling voids)
- The risk of spread of fire, smoke, and heat between building compartmentations.
- Risk of speed of fire and smoke spread
- Risk of number of uncontained areas
- Risk of inhibiting safe exit from the building
- Risk of fire brigade not having enough time to attend before fire spread
- Risk of system failure.
- Risk of Injury/harm/loss of life to residents/occupants.
- Risk of smoke damage and subsequence.
- Risk of compromising security, both for the building and individual apartments, when doors don't close properly or are propped open.
- Risk of reduced thermal efficiency
- Risk of degraded acoustics.
- Risk of damage to property, building or structure

1b. To what risks is a Fire Door, itself, susceptible?

- Risk of additional items having been placed into an escape route (such as a sofa), not having been considered at design stage, could provide fuel for a fire and have the potential to counteract the AOV/smoke extraction system
- Risk of incorrect replacement components having been installed
- Risk of human intervention on ancillary assets, such as smoke detectors, impacting on asset performance
- Risk of information on an individual asset being incomplete, inaccurate or absent
- Risk of information on an individual asset not being supplied in both digital and physical format
- Risk that the asset has not been tested against the 'Cause and Effect' document
- Risk of other trades and employees not appreciating the asset's function and so compromising its performance
- Risk of non-appreciation of the differences between performance of assets in compartmentalised areas versus performance of asset's in shared circulation areas
- Risk of vandalism or simply misuse

Materials

- Building movement / shrinkage causing, for example, gaps
- Excessive water damage
- Some Laboratory testing not covering real-life scenarios
- Being blocked
- Being propped open
- Modifications to the door e.g. because it has dropped or that there is a new carpet in the flat, adding a cat flap, new glazing, adding sound-softening strips, ring doorbells
- Where something adjacent to the door is modified e.g. a new floor surface in the corridors that is of a different depth, creating a gap
- Damage or degradation that comprises the integrity of the door, seals, hinges or closure
- Inadequate fire stopping between frame and structure
- Being painted over

Installation

- Refurbishments and upgrades

2. What information is needed about a Fire Door to ensure it performs as required?

(It is important to understand how the information will be used and how the context will vary what information is required. Initially, this was the subject of quite a lot of debate – largely driven by a worry about ‘information overload’. However, with a truly cross disciplinary team of SMEs, it was possible to drill down to understand the detail of why a role would need certain information.

The aim was to collect all the information all stakeholders need against all products and leave it to each role to configure their software applications to see only the information they need for that individual task.)

Requirements

- Type of door
- Age of door (manufacture date / installation date)
- Likely frequency of use
- Nature of its day-to-day operation
- Door location including x,y,z coordinates
- Door relation to Spaces
- Door number
- Fire Doors to be clearly marked as such both sides, to avoid referring to a fire plan to identify doors and ratings
- Tenure of resident (for flat entrance doors)

Specification

- Certification of manufacturing by UKAS accredited body, to provide assurance that what was tested is what is being made
- Global assessment by UKAS accredited body, but not in lieu of test report
- Test report to confirm fire resistance performance to BS 476-22 or BS EN 1634-1, carried out by an UKAS accredited test facility
- Smoke control
- Seals (Intumescent, Brush, Both)
- Test report to confirm control of the passage of cold smoke to BS 476-31.1 or BS EN 1634-3, carried out by an UKAS accredited test facility
- Has the door has been lab tested to meet the standard both sides - and with evidence supplied
- Ironmongery details – CE marked Hinges (need to know there are three hinges), handles, cylinder, locks and latches (need to be CE marked to BS EN 12209), fire rated door viewer, emergency escape (push bars/pull pads).
- Compatibility confirmation of fire door ironmongery and door attachments (by Fire Engineer and door manufacturers)
- Glazing within the door leaf or door set needs to be CE marked indicating the level of fire resistance it provides

- Product Test Data for the linear gaps seal, Fire sealant and build up in line with [BS 8214: 2016](#) (Mastic and expanded foam materials should be approved for use as a linear gap seal successfully tested according to BS 476-20 or BS EN 1366-4.)
 - What construction was the door tested within and does the proposed construction meet or exceed the tested parameters?
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- Door closer type
 - Door closer suitability for size and weight of door
 - Door closer suitability for users
 - Door closer delay, for elderly
 - Door closer method of operation
 - Door closer hold-open devices, “fail” mechanisms
 - Smoke test certificate
 - Smoke control performance
 - Acoustic properties
 - U value properties
 - Security properties
 - Weather proofing properties (if installed externally)
 - Fire Door set manufacturers installation Instructions, including allowable gaps

Materials

- Material of core
- Dimensions of core
- Material of facings
- Dimensions of facings
- Material of edge lippings
- Dimensions of edge lippings
- Materials of frame
- Dimensions of frame
- Door thickness, weight, leaf size
- Details on intumescent strips, smoke seals and any components that form the assembly, to enable those maintaining the asset in coming years to do so safely
- Glazing type and fire rating (should be at least the fire rating of the door unit)

Construction

- If supplied as one unit, if full door set was produced and tested together and has Product certification / Test data for door set to BS 476-22:1987 or BS 1634-1:2014.
- Q Mark Plug
- Is the signage adequate (for a communal door)
- Full and unambiguous installation instructions covering:
 - Gap tolerances between frame and structural opening
 - Gap tolerances between frame and door
 - Gap tolerances between at base of door, with clear instruction for cold smoke control
 - Fixing of frame to walls
 - Suitable products for filling gaps between frame and wall
- Insulation and integrity rating relevant to its immediate location
- Documentation from the fire doors manufacturer
- Manufacturer details and contact information

Installation

- Whether the door was installed correctly (packed and sealed) by a competent person (third party accreditation) with evidence (including name of installer)
- Supervisor competence – Firas, BM Trada, IFC or be named as a competent supervisor in the company UKAS accreditation.
- Installation training, manufacturer training and/or toolbox talk
- Installation records/photos
- Quality Checklists – Fire Door Installation
- Any third-Party Inspection Records (FDIS or Similar where applicable)
- As-Built drawings showing the Fire Strategy drawings indicating the fire performance of compartments, along with a door schedule
- Product model, batch number and any other unique information required to obtain replacement
- Evidence of training provided to the customer (attendance records and ideally a video)
- Details of any automation that has been added to doors (this can be added at install but also retro. E.g. Hold open magnets, fail safe open connections.)
- Details of anything else that has been added that might connect into the fire alarm systems- not all are on sound
- Cause and effect diagram
- Warranty information

Inspection

- Required frequency
- Whether the door has been recently inspected by a competent person (all door furniture: hinges, seals, closers, gaps, glass etc.)
- Does it close correctly and when it should do (closer force, auto closers)?
- Accreditation of inspectors

Maintenance

- A record of any changes to the door, either modification or replacement
- Any issues raised by persons occupying the building
- Maintenance and inspection requirements, both at an industry level and at a manufacturer-specific level, to allow for the need to inform future maintainers of the manufacturers' recommendations
- Maintenance requirements of the doors, including the compatible components that could be purchased as replacements in the future (E.g. for wear and tear / leaking of hinges, letter boxes, strips and seals)
- Accreditation of maintainer
- Maintenance/inspection/defects/repair logs

3. What tasks or procedures are required to ensure a Fire Door is installed, commissioned, inspected, and maintained properly?

(It should be a given that any work on fire safety critical assets should always be undertaken by competent people, probably 3rd party accredited. However, that person must be supported with any information that they might need to reduce the risk of an important step being missed and to provide an auditable record of what tasks were completed. This is common practice in M&E maintenance, where the industry has developed a significant library of standard procedures and tasks lists, along with roles/competency required.

An air-conditioning unit is maintained by a qualified air conditioning engineer, but the engineer is also issued with a check list for them to record what was done.

A similar industry-wide check list for installation, commissioning, handover, maintenance and recycling could be agreed.)

Specification

- Method statements/procedures for fitting to include:
 - Gap tolerances between frame and structural opening
 - Gap tolerances between frame and door
 - Gap tolerances between at base of door, with clear instruction for cold smoke control
 - Fixing of frame to walls
 - Suitable products for filling gaps between frame and wall
- Specification linked to fire strategy of the building to ensure door specified correctly

Installation

- A clear competency regime for installation and record at handover / commissioning of the door set that should include full details of the inspection regime to complete the manufacturer's warranty. This should be commercially and or contractually linked to the installer / supply chain to incentivise the right behaviour.
- Method statements/procedures for repairing all components of door-sets
- Method statements/procedures for inspecting all components of door-sets
- Method statements/procedures for maintaining all components of door-sets
- Details of approved code of practice being adhered at each stage, such as UKAS accreditation
- Evidence of training of those undertaking any work with the ACOP being adhered to.
- Third party accreditations
- Specific product/s system to be used together that are specified in MSDS sheets or systems by manufacturers

- Details of permitted modifications
- Manufacturer-specific installation, commissioning, inspection, maintenance/repair, replacement, and recycling requirements to inform future maintainers of the manufacturers' recommendations.
- Specific method statement to ensure the fitting around the door meeting the fabric meets the same fire resistance as the door
- Appropriate evidence of installation (pre, during and post)
- Certification and O&M manuals

Inspection

- Audit inspections from a third party
- Detailed methodology for inspection:
 - Does the fire door shut fully and tightly into the frame manually and on its own using its self-closing device?
 - Is the self-closing device damaged in any way? (e.g. is the arm secure and functional?)
 - Is the gap between the door leaf and frame less than 4mm?
 - Are the glazed vision panes and the beading around the door undamaged and secure?
 - Is the door leaf and frame in good condition and undamaged?
 - Are there 3 hinges installed, with all screws in place and not painted over?
 - Do the hinges appear to be loose or damaged?
 - Are the door handles secure and undamaged?
 - Are the intumescent strips and smoke seals in good condition (e.g. not missing, damaged or painted over)?
 - Is the appropriate signage displayed on both sides of the door indicating it is a fire door?
 - Are any fire doors being obstructed or left open?

Maintenance

BESA's excellent SFG20 provides a good level of guidance but tasks should also include site-specific requirements and checks should be addressed on each component of a fire door to cover the manufacturer's specific maintenance instructions.

Industry-standard maintenance instructions – extract from BESA's SFG20.

Code	Task	Action
16009.00.T1	Door leaf	<ol style="list-style-type: none"> 1. Visually inspect door leaf. Ensure it sits against the door stop, flush with the frame and is not excessively bowed or deformed. Repair or replace the door if necessary. 2. If the door is veneered or lipped, ensure these items are firmly glued in place. 3. Ensure the door is free from significant damage such as deep dents, deep chips and holes.
16009.00.T2	Door frame	<ol style="list-style-type: none"> 1. Visually inspect the door frame and ensure it is firmly attached. 2. If a planted (screwed or nailed) door stop is present, ensure it is firmly attached. 3. Check door seals are in good condition.
16009.00.T3	Door operability	<p>Check:</p> <ol style="list-style-type: none"> 1. Doors open and close correctly. 2. Hinges and push bars operate correctly. 3. Hinges and push bars are free of metal fragments and oil leakage, which may be signs of wear. 4. The screws are not missing or loose. 5. There is a consistent threshold gap under the door that allows it to swing without touching the floor covering. 6. Where a drop-down smoke seal is fitted to the bottom of the door, ensure that it is not excessively damaged and that it operates when the door is closed. 7. Ensure that the door closers operate correctly, by opening the door to 5 degrees or 75 mm then checking that it closes and engages with the latch. 8. If unlatched, the door closer holds the door in line with the frame and intumescent seal. 9. If electronic hold-open devices are fitted, check that they release the door when required (there should be a release button or switch adjacent). 10. The latch holds the door in place.
16009.00.T4	Glass/glazing	<ol style="list-style-type: none"> 1. Visually inspect glass/glazing for damage and cracking. 2. Check that the glazing beads are well attached to the frame and free from damage. 3. Report any damaged items to the person responsible for repairs and replacement.
16009.00.T5	Fire door obstructions	<ol style="list-style-type: none"> 1. Check that no debris or obstructions are left on either side of the door. 2. Remove any obstruction or debris if found.

(See Appendix 2 for Additional Participant Input)

4. What level of competency/training needs to be in place?

(Industry training courses are critical, but they must be complemented by additional knowledge-transfer from people with many years real experience.

Individual manufacturers have product-specific training which complements the more general training. Such training resources need to be provided in all cases where a product is used – both for new build but also as part of the long-term H&S/O&M information, ideally held as machine-readable data in the Asset information model to ensure maintenance teams have easy access to critical information.)

Installation

- Competency of individual installers demonstrated through certification with a suitable 3rd party accreditation provider. This should include the provision of the manufacturer's fitting instructions
- Specification of which third party accreditations are acceptable (e.g. Trada, Firas, BM Trada, IFC etc.) should be required
- Ongoing demonstrable CPD of installer (not simply the company they work for). For example, operatives installing products should have achieved L2 NVQ Diploma in Wood Occupations (Construction) - Site Carpentry (CSCS blue card) or L2 NVQ Diploma in Associated Industrial Services Occupations - Passive Fire Protection (Construction), both with the mandatory module for Installing Fire Resisting Timber Door sets in the Workplace
- Supervisors should have achieved L3 NVQ Diploma in Wood Occupations (Construction) -Site Carpentry (CSCS gold card), or IFE Level 3 Certificate in Passive Fire Protection or be named as a competent supervisor in the company UKAS accreditation (see <https://essentialsiteskills.co.uk/course-index>)
- Installer should have manufacturer-led product-specific installation training, in addition to any formal UKAS accreditation.
- Manufacturers should offer installation training, either in their own right, or sub-contracted out to a specialist to provide that service
- code of practice should include training materials

Maintenance

- Manufacturer-specific installation, commissioning, inspection, maintenance/repair, replacement, and recycling requirements should be retained to inform future maintainers of the manufacturers' recommendations.
- Mandatory awareness training should be in place for all people working on site and carrying out maintenance in buildings
- Training for the operational team should be required on Standards (BS, CEN etc.) plus to give a basic understanding of how to read drawings, commissioning certs, O&M's,
- BSI Flex 8670 focuses on the competence of individuals and expects that organisations use this core criteria as part of their management of competency (planning, monitoring, reviewing etc.). This also enables the capture of the skills, knowledge, experience, and behaviors necessary to the undertaking of a defined role, function, activity, or task.

(See Appendix 3 for Additional Participant Input)

5. How should product changes be recorded?

(If information is not updated, it isn't information anymore. It is misleading and, possibly, down-right dangerous. If the systems and processes to keep information current are not trusted, then the value of even correct information is compromised.)

Robust Change Management requires an information baseline against which the different states – current, proposed, final and ongoing change – can be measured and reported.

The baseline information should contain the required performance in a machine-readable/actionable form and the Change Management process should enable that to be compared with:

- a) the actual performance of the designed solution (probably generic)*
- b) the performance of the chosen product against the generic*
- c) the performance of an alternative (value engineered?) product*
- d) the record of what was used/installed.)*

Requirements and Suggestions

- A schedule of safety critical elements for the building, to include products specified
- Baseline against which to compare proposed alternative products (Some designers have expressed reluctance to propose (not specify) a specific manufactured product that will satisfy their design due to liability, procurement rules and fees)
- This schedule would be “Locked” at a specific design stage, after which changes to products specified should not occur except for exceptional reasons
- A formal change management system is required to ensure that any unavoidable changes are validated by a ‘responsible’ person e.g. original designer and/or fire engineer
 - There is a well-established change management process in construction called Technical Submissions in which requested changes from the specifications/recommendations, that were created by the designers (and selected manufacturers), need to be formally reviewed and approved. Design-and-Build procurement has affected that process and it should be reestablished in a way that the performance of a proposed product, and its constituent components, is easily compared with the proposed alternative and, if agreed, it is recorded as a Technical Deviation
- Validation of changes would include verifying that the new product met all the requirements for the application with no detriment to the overall design, the details of which should be recorded (Changes in the product may be made between design and procurement, procurement and installation, handover and ongoing maintenance)
- More onus needs to be on the client during the collation of Information Requirements and the updating of design models into ‘as installed’ content suitable for Asset/Facilities Management

- Full Disclosure of the product is needed at handover so that after Work Stage 7, if a manufacturer goes out of business or products change the record is there in perpetuity
- Asset database must be kept up to date with core data for new installs. Installation documents should be held in a centralised digital location. Once BIM/COBie level data is manageable within the asset management system then this will be used as the main source of data.
- BIM, CAFM, Asset and Housing mgt systems must inform the change management process
- H&S files for each building (cradle to grave) must be supplied, recorded and be updated with notification of changes and the implications.
- Warranty information of the existing and the proposed products should be provided to allow proper consideration to be made on the selection of an alternative or replacement. If a product has a shorter life than another, this information should be available to inform selection. Given some of the products will be in locations that are difficult to locate, the longevity of a product could have safety implications.
- Compliance systems should be informed with the information from the AIM
- Asset tagging (barcode) systems and processes should be considered as forming part of the change management process.
- Procurement should be included in the process, recording what was purchased and feeding that into the BIM process to locate where they were installed, or which products they are replacing.
- Specification or design brief for the business (performance and or product) should be recorded in a machine-readable format to enable validation against the Golden Thread.
- Record the compatibility and compliance of any ancillaries and confirm they comply with the test data? (Ironmongery, door access control systems, vision panels, vents)
- Any adjustment, repair, addition to / removal of product, ironmongery or fittings must be recorded and should only be undertaken by a licensed / accredited contractor (this includes and modification to an existing asset)
- The asset information needs to enable comparison but the original performance spec of the AOV and the related information such as Fire Strategy and Cause and Effect should form part of that Technical Deviation process. The FMs must be able to update the Asset Information Model with machine-readable data of the newly installed product
- Recording who has worked on/replaced the component and their entitlement/competence to do so
- Evidence that the component's performance in relation to the part it plays in the system has been considered and is warranted
- Manufacturers must provide a component list (e.g. ironmongery on a door) so if anything breaks, a direct replacement can be used.

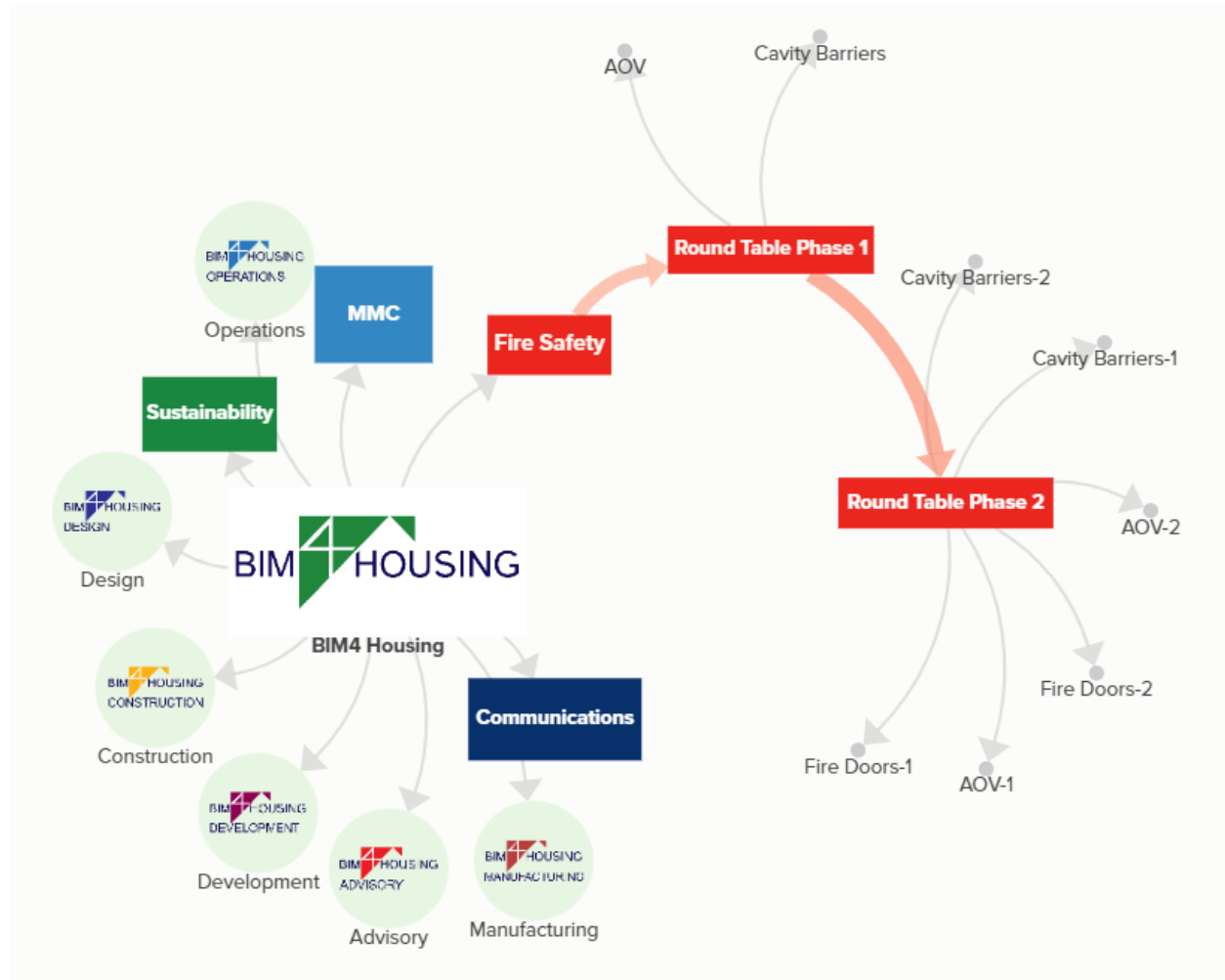
- Removal of certain products/materials must be undertaken by people who are on an approved list, certified by an accreditation body and should require advance notice to all certification holders, with signoff to ensure traceability

(See Appendix 4 for Additional Participant Input)



APPENDIX 1

BIM4Housing Structure



APPENDIX 2

Additional Participant Input Question 3

We need to have a common task model and move to what the military call task performance statement to support competent actors

SFG20 is great, you can codify it and feed this into your management activity. This needs to be done with caution as some manufacturers will stipulate maintenance regimes which are in conflict with (in excess of) SFG recommendations, invalidating warranty.

Interested in intelligent data on fire doors and how we can maintain them with inspections but how we can get access to check doors and utilise sensors etc. to give us off site information in real time.

I feel we are clearly heading for visual inspections under Fire Safety Act 2021 for FEDs, closer, frame etc. I feel this is weak and therefore anything like movement, condition, and overall integrity there should be a full access inspection annually which- as we know how difficult access is - could be dual annual appointment for the FED & LGSR: options are to include tenancy verification, all sorts depending on the org - one access per annum.

APPENDIX 3

Additional Participant Input Question 4

Direct Works, of which many HAs are members and they are working to create a new Standard for competence. There is also the Retrofit academy that seems to be working on this, as is the Fire Industry Association and the Architectural and Specialist Door Manufacturers Association.

There is an Interim Industry Competence Committee working with the HSE and MHCLG . I will ask for their progress and also what coverage this will have as it appears to be going towards the Building Safety Bill & Fire Safety Act in which competency is a requirement for the approval of Appointments by the Accountable Person.

As Architects I'm mindful of how complicated it is to achieve the myriad of performance / aesthetic requirements of doors. For example, certain types of doors such as timber / steel, when combined with Access Control systems, don't achieve security ratings or fire ratings – or at least not that have a test certificate against them. So as Architects we need to upskill ourselves about what the industry can actually deliver – so we design with this knowledge from the beginning.

APPENDIX 4

Additional Participant Input Question 5

Payment for work undertaken contingent on updating “base” record of work carried out, validated by Work Order/in-place code on door/construction

A schedule of safety critical elements should be in place for the building, which would include products specified. This would be considered “Locked” at a specific stage in design, after which changes to products specified should not occur except for exceptional reasons. A formal change management system is required to ensure that any changes, which are unavoidable at times, are fully considered by those qualified to do so. Typically, this would be the original designer and/or fire engineer appointed, and the regulator. The checks would involve verifying the new product met all the requirements for the application with no detriment to the overall design, the details of which should be recorded.

Asset Managers need to be part of the procurement team to be able to own the handed-over building/project. They would then understand the reasons for the original product specifications.

APPENDIX 5

Participants

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Audrey Hesse	Chartered Architect
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Debbie Carlton	Dynamic Knowledge
Dwayne Florant	L&Q
Edward Coster	Clarion
Emma Murphy	Thrive Homes
Gary Bellenger	A2Dominion
Gavin Pierson	Guinness
George Stevenson	ActivePlan
Gordon Warnock	Silva Homes
Ian Smith	Select-Consult
Ian Smith	Pinnacle group
Johnny Furlong	L&Q Group
Kelly Lee	Orbit
Lee Sandham	Salix Homes
Luke Driscoll	Hyde Housing
Patrick Wilson	PW Architects
Pauline Tuitt	L&Q
Peter Brierley	Sovereign
Steve Cook	Willmott Dixon
Steve McAlinden	Thrive Homes
Stewart Kerr	Salix Homes
Will Perkins	SE Controls
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