

# HQM ONE: External Feedback and Outcomes

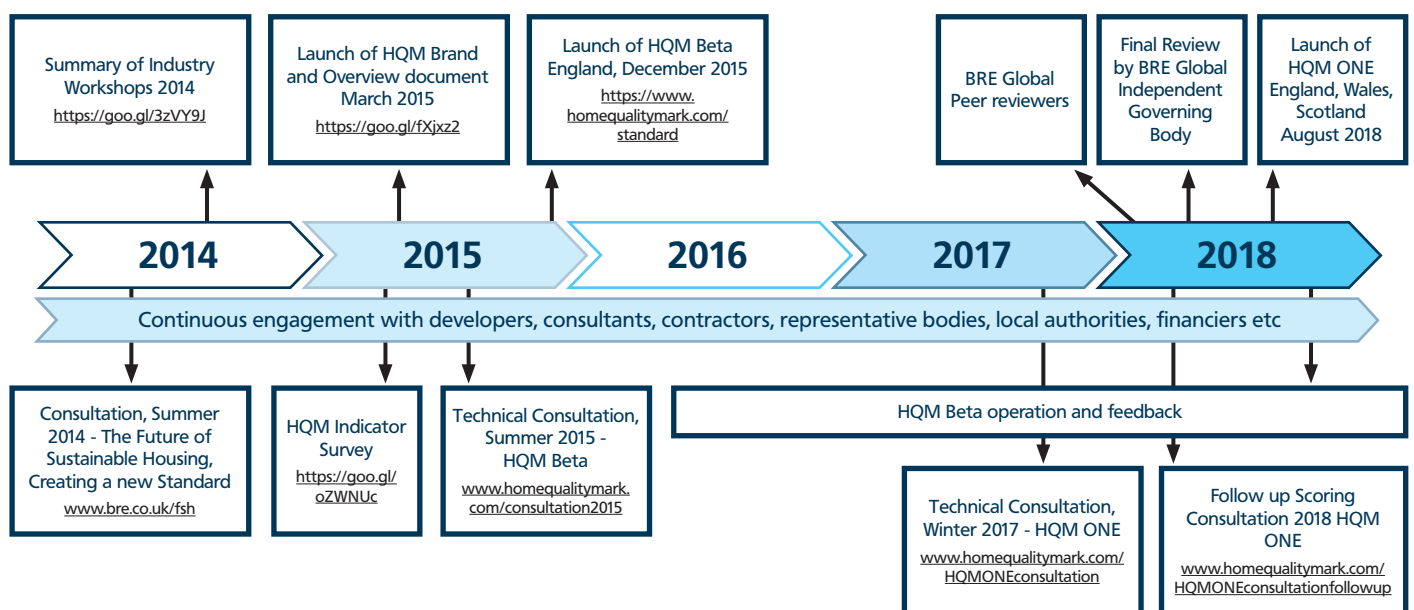
## Introduction

Feedback and consultation has been a key pillar in the development of Home Quality Mark ONE. It is a two-way process and this report summarises the feedback received from stakeholders on the draft version of Home Quality Mark ONE and how we have taken this forward into the final version of the scheme.

We consulted and received feedback in a number of ways, through formal questionnaires, BREEAM organised workshops in person, BREEAM online workshops, face to face meetings, workshops and events organised by partner organisation, construction site and factory visits and through the operation of the beta version via assessor technical queries and other valuable feedback. HQM ONE has also completed a formal process of consultation and approval to UKAS standards through the independent BRE Global Governing Body and Peer Review.

In considering feedback we have worked to ensure a balance between, ensuring robustness, sound science, technical practicality and also value for money in terms of process, cost and benefit.

The latest formal consultation process is part of a long line of consultation and engagement, which includes formal BRE Global processes.



There were five overarching aims in the development of HQM ONE. These were;

- 1) Take forward feedback from the beta version
- 2) Ensure there was a robust "quality base" for the standard
- 3) Create versions tailored for use in Scotland and Wales
- 4) Ensure that the scheme clearly communicated to its users and their customers through the scoring and rating system.
- 5) Update issues to reflect new science and align with other BREEAM schemes where appropriate.

A full overview of the changes between HQM Beta and the final version of HQM ONE are set out in the summary of changes document.

## Summary of Feedback Received

The tables on the following pages sets out in summary form the breadth of feedback received throughout the engagements and consultation process. Outcomes and the context for these are also set out. Individual consultation responses have been grouped into general themes in the interests of keeping this document to a manageable length and no attribution is made for these comments.

These comments are grouped into separate tables covering Overarching Themes, Our Surroundings, My Home, Delivery and the Scoring and Rating System.

## Overarching consultation response themes

| Ref. | Issue       | Feedback received  | Outcome | Context for outcome   |
|------|-------------|--|---------|---|
| 1    | HQM Scoring | There were a number of responses querying changes to credit allocations in various issues throughout the manual.   | Noted   | <p>The credits available for technical categories in HQM are determined by how important they are for delivering sustainable and quality development.</p> <p>These are shaped by the underlying BREEAM weightings that inform credit weightings across key technical categories for other schemes within the BREEAM family based on stakeholder engagement, research and feedback.</p> <p>Specific credit allocations within issues are determined by the value that the criteria have for achieving sustainable, quality outcomes. The feasibility of achieving these outcomes are also considered, to ensure that relative value is being achieved based on the level of effort and investment required, within the control of the developer. For more details on how these weightings were determined, please see the BREEAM briefing paper 'New Methodology for Generating BREEAM Category Weightings' (<a href="https://www.breeam.com/discover/resources/technical/">https://www.breeam.com/discover/resources/technical/</a>).</p> <p>These weightings have been further refined for HQM ONE, based on consultation feedback received during the Beta stage to take account of the scope of coverage for this scheme and to better reflect the priorities for new-build homes, including an increased emphasis on technical criteria that help to deliver high-quality homes.</p>  |
| 2    | HQM Scoring | A number of responses highlighted specific scenarios that may find the achievement of particular credits challenging, or where credit achievement in a particular issue might result in a credit reduction in another issue. | Noted   | <p>It is important to remember that the intention of the HQM is to act as a scheme that recognises homes that have been built to go beyond regulatory minimum requirements, and expresses the benefits of this to consumers. The content of the scheme therefore looks to cover a holistic range of technical topics and offer developers choice as to how to achieve their desired rating. This allows it to recognise homes built in different areas, with different specifications and for different purposes. There will inevitably be some technical elements that are harder or easier to achieve for specific scenarios (i.e. due to location, house type etc.), and some scenarios where achievement of credits against particular issues may result in fewer credits being achievable in other issues.</p> <p>The scheme has been built to account for these scenarios, and it is not expected that a scheme would (or could) be able to achieve maximum credits in all areas. The score requirements for both the star rating and indicator levels reflect this (with 5 star and level 5 requiring achievement of 80% of the total score available).</p> <p>However, a further review of this has been completed for HQM ONE. Where possible, different benchmarks have been used in criteria to recognise improvements for certain areas, relative to the project. For example, recreational space standards for houses in urban locations or apartments part of a block, have been made easier to achieve compared to homes in rural locations.</p> |

| Ref. | Issue                | Feedback received  | Outcome            | Context for outcome   |
|------|----------------------|--|--------------------|---|
| 3    | Minimum Requirements | Generally, responses to the introduced minimum requirements were positive. There were however some concerns raised over the timings associated with these requirements due to how early some requirements need to be met.  | Partially accepted | <p>Stakeholder engagement, feedback and research suggested that having minimum requirements is essential for the integrity and value of HQM. They help to ensure that every assessed home meets a certain level of performance in key areas that all homes should meet before they should be recognised with credits being awarded for going significantly beyond minimum standards. This helps to increase the value of HQM-assessed homes and give consumers confidence about the claims being made by developers.</p> <p>Early consideration is vital in achieving the best outcomes because it gives time to meaningfully shape key decisions that influence processes and outcomes before it becomes costly or difficult to do later on. This is a recurring feature of other schemes within the BREEAM family.</p> <p>However, it is appreciated that early involvement of an HQM assessor is not always possible. Therefore, flexibility has been added to HQM ONE, where it can be assured that the same outcomes are being achieved across certain issues. The new manual does this by signalling the RIBA stage that an activity would typically happen at, rather than as a strict requirement in itself and alternative approaches can be recognised where these achieve the same benefits.</p> |
| 4    | Quality issues       | Responses broadly supported the increased emphasis on criteria that focus on delivering high quality. However, some comments suggested that some of the requirements should be standard practice, others said that they are often not delivered in practice, and that HQM should help with this. | Accepted           | <p>Ensuring HQM ONE recognises and helps deliver a quality product that meets consumers' expectations is essential for achieving HQM's aim of building consumer trust, differentiating and delivering quality and sustainable homes. Three key areas that lead to a quality home are:</p> <ol style="list-style-type: none"> <li>1. Well thought through design and specification</li> <li>2. Construction quality and adherence to design aspirations</li> <li>3. Good customer support</li> </ol> <p>The issues that fall under these three main areas were reviewed, amended and enhanced with a view to bringing increased value to both the end user and the home building industry.</p> <p>The requirement for build quality inspections at key stages throughout construction has been changed to a minimum requirement, due to its importance in delivering quality homes that consumers can trust. There is flexibility to allow for different methods of achieving this minimum requirement depending on what is appropriate for the particular project being assessed.</p>   |
| 5    | Ecology issues       | Several comments were made about how the ecology issues in the Strategic Ecology Framework (SEF) should work for HQM.  | Noted              | <p>The BREEAM UK Strategic Ecology Framework (SEF) has been implemented across HQM and others within the BREEAM family of schemes, as they are updated. This involves development of the assessment issues, and appropriate alignment across BREEAM schemes and built environment lifecycle stages. Stakeholders were consulted separately to ask for feedback on this. The underlying core content is essentially the same for HQM as it is for BREEAM New Construction 2018 but presentationally it has been adapted to communicate requirements in a way that is consistent with HQM's manual.</p> <p>The HQM ONE consultation comments regarding ecology were considered as part of the HQM adaption of the SEF core ecology issues and will be responded to as part of the strategic consultation response for that package of work. See here for more information: <a href="https://www.breeam.com/engage/research-and-development/consultation-engagement/strategic-ecology-framework/">https://www.breeam.com/engage/research-and-development/consultation-engagement/strategic-ecology-framework/</a></p>  |
| 6    | Superseded standards | A number of responses identified superseded standards that were referred to in various technical issues.   | Accepted           | <p>Some respondents highlighted that standards referred to had been superseded. These have been amended throughout the manual.</p>  |

| Ref. | Issue                  | Feedback received   | Outcome            | Context for outcome   |
|------|------------------------|---|--------------------|---|
| 7    | Clarity                | Some responses highlighted grammatical or formatting issues within the manual. Many responses also highlighted areas where there was a lack of clarity in the requirements. | Accepted           | Any grammatical or formatting issues highlighted have been amended in the manual. This also applies to feedback highlighting that this has led to a lack of clarity. We have also completed our own review of the manual to identify any other issues that have required clarification.<br>All guidance notes have also been reviewed and updated and hold a lot of the clarity requested in the feedback. We will continue to monitor clarity through feedback received post-publication of the manual and will reissue the document as appropriate where issues are identified. |
| 8    | Statutory requirements | Some responses queried the relationship of the HQM criteria with other statutory requirements   | Partially accepted | All HQM criteria are designed to reward performance beyond the regulatory minimum. However, where a statutory requirement exists that is more stringent than those in HQM, the statutory level must be met for the credit to be awarded.<br>Further clarification has been added into the manual for issues where this was unclear.   |
| 9    | Online assessment tool | Some responses highlighted issues with the online tool.   | Accepted           | The HQM online assessment tool is being updated to reflect the technical changes, and will also include additional functionality in response to feedback received during the consultation and throughout the operation of the HQM beta stage. The updated tool will be available from the 24th of August 2018.  |
| 10   | Energy                 | Several responses were made regarding future considerations of energy infrastructure and calculation methodologies.   | Partially accepted | Some of the recommendations made have been incorporated into the manual (see specific issue feedback below).<br>All recommendations have been logged and will be kept under review. It has not been possible to incorporate all suggestions at this time due to a lack of standards relating to such technologies, or evidence confirming energy performance. We are however aware of various wider industry discussions around future energy infrastructure and calculation methodologies and will continue to monitor how these might affect HQM.                               |

## Our Surroundings

| Ref.                                      | Issue                         | Feedback received  | Outcome | Context for outcome   |
|---|-------------------------------|--|---------|---|
| <b>Category: Transport &amp; Movement</b> |                               |  |         |   |
| 11  | Public Transport Availability | The criteria for the improved local service will be difficult for small developments (particularly in rural locations), and those developments that already have a very high AI score. | Noted   | While the criteria remain, the number of credits has been reduced and reallocated to issues which developers have more control over.<br>For further details regarding HQM scoring approach, please see ref. item 1 and 2 above. |

| Ref.                      | Issue                         | Feedback received  | Outcome            | Context for outcome   |
|---------------------------|-------------------------------|--|--------------------|---|
| 12                        | Sustainable Transport Options | Feedback suggested that for the electric vehicles charging points criteria, credits should be awarded according to different charging powers, and should account for passive charging provision. It was also not clear how the criteria should be interpreted for private parking scenarios. | Accepted           | The 'Electric vehicle charging points' criteria have been updated. They now split the criteria into private and communal provision requirements.<br>In response to the feedback received, credit allocation has also been revised so that they are awarded according to the charging power. For communal settings, a calculation has been introduced that also accounts for fast charging infrastructure.<br>BRE will continue to monitor potential future changes in regulation in this area.  |
| 13                        | Sustainable Transport Options | It was felt that the car club requirements were too strenuous, particularly including the requirement for hybrid/electric car provision.   | Partially accepted | The criteria relating to the car club has been retained. However they have been restructured to offer credits where the home has access to a car club, with an extra credit available where 60% of the vehicles available from the car club are hybrid/electric vehicles.<br>Whilst we recognise the benefit of having access to a car club, it is important that there is further recognition and incentive for car clubs to offer hybrid/electric vehicles and the supporting infrastructure.   |
| 14                        | Local Amenities               | The lists provided for criteria 1 and 3 are unclear as they are not definitive.  | Accepted           | The lists of 'Key local amenities' and 'Beneficial local amenities' within the criteria have been amended to improve clarity.   |
| <b>Category: Outdoors</b> |                               |  |                    |   |
| 15                        | Recreational Space            | To define Gross Development Area (GDA).  | Accepted           | A definition for GDA has been included.   |
| 16                        | Recreational Space            | Feedback suggested that the growing space criteria were not applicable to individual growing space provision, and that they were overall too stringent, effecting the accessibility of the criteria.   | Accepted           | We recognise the need to acknowledge different growing space provisions. The growing space criteria have been revised to differentiate between private and communal growing space scenarios. They also now account for the difference in opportunities between flat/ house and urban/rural scenarios.   |
| 17                        | Recreational Space            | Some respondents felt that the private space requirements were too onerous, in particular the 100m <sup>2</sup> requirement for maximum credits for 5+ bedroom homes.  | Partially accepted | Our research of approved developments and local plans suggests that these requirements are achievable and in a number of cases, required in the local plan. It is worth mentioning that the maximum credits awarded for private space are intended to recognise those developments with a high provision of private space and are unlikely to be achievable in all locations. The accessible recreational spaces, and communal space criteria are designed to allow flexibility in the achievement of recreational space credits and may be used to compensate for lower performance in private space in some instances.<br>We have also amended the credit scales in some instances for the private space requirements for 3 credits. This is to ensure a more linear scale increase in reward between the requirements. |

| Ref.                                   | Issue                           | Feedback received  | Outcome  | Context for outcome  |
|--|---------------------------------|--|----------|--|
| <b>Category: Safety and Resilience</b> |                                 |  |          |  |
| 18                                     | Flood Risk                      | The +600mm figure is from EA standing guidance. The Environment Agency requirement will usually be site specific and may depart from this.   | Accepted | Clarification has been added to confirm that where the EA has set more onerous requirements, these requirements must be met in order to achieve this criterion.<br>Please refer to item ref. 8 above for further details.  |
| 19                                     | Managing the Impact of Rainfall | There was concern that three credits for the 'water quality' criteria are not sufficient to encourage compliance with the Water Framework Directive.   | Noted    | The EU Water Framework Directive exists as a regulatory control; to tackle water quality. This is however a requirement for the water provider, rather than the developer.<br>Credits for this issue have been awarded based on the impact within the developer's control.<br>Please refer to item ref. 1 and 8 above for further details  |
| 20                                     | Managing the Impact of Rainfall | It was proposed that the SuDS Manual should be referenced in terms of assessing risk and the appropriate surface water treatment method(s), and that the reference to PPG3 should be removed as this has been withdrawn by the EA. | Accepted | The reference to PPG3 has been removed, and the criteria amended to require all pollution prevention and treatment measures designs and installations to be in accordance with the SuDS Manual.<br>Removed CN10 and CN9.<br>Please refer to item ref. 6 above for further details.   |
| 21                                     | Security                        | It was queried why this issue carries the smallest number of credits of any issue in this sub-category (Safety & Resilience).  | Noted    | Whilst they are controlled through the planning process to some degree, the 'Flood Risk' and 'Managing the Impact of Rainfall' issues have a higher number of credits because there are no building regulations relating to these issues. Building regulations set requirements for security which form a baseline for our requirements in HQM hence a fewer number of credits have been allocated to this issue.<br>Please see item ref. 1 above for further details. |

## My Home

| Ref.                     | Issue             | Feedback received   | Outcome | Context for outcome  |
|--------------------------|-------------------|---|---------|--|
| <b>Category: Comfort</b> |                   |   |         |  |
| 22                       | Indoor Pollutants | It was highlighted that many fungicidal paints contain formaldehydes. It was suggested to check that the requirements are compatible.   | Noted   | A review of the criteria compatibility was carried out. For many years there have been non-formaldehyde based biocides and fungicides that can be added to paints to confer resistance to attack and inhibit growth of microorganisms. Products are readily available that meet these criteria and therefore there is no incompatibility in the requirements.  |
| 23                       | Indoor Pollutants | It was suggested that mechanically ventilated homes should be allowed to install a cooker hood that discharges to the outside to help avoid summertime overheating if they wish.  | Noted   | For MVHR systems in particular, the suggestion would go against standard / best practice of having a re-circulating cooker hood with separate extract linked to the central MVHR system. This allows for heat recovery as intended.  |
| 24                       | Indoor Pollutants | There was concern that this issue seems more onerous than BREEAM, and will be difficult to evidence (particularly for many small developers without the man-power to paper-chase). Finding evidence for the testing standards is difficult. | Noted   | The criteria are aligned with those in the current BREEAM International New Construction 2016 scheme, and BREEAM UK New Construction 2018 scheme. The HQM criteria offers greater flexibility in the acceptable ways of demonstrating compliance with the first credit requirements as fewer product types are required to meet the emission limits.<br><br>One of the reasons behind the inclusion of these criteria in both BREEAM and HQM is to drive/encourage product manufacturers to disclose this information. In order to help assessors and project teams identify appropriate products, BREEAM GN22 provides details of third party schemes/standards/labels that can be used as evidence to demonstrate compliance with the BREEAM and HQM emission requirements.  |
| 25                       | Indoor Pollutants | It was queried whether the criteria were penalising gas appliances, and whether the criteria were duplicating Building Regulation requirements for combusting appliances to have a flue that discharges outdoors.                           | Noted   | It is important to note that this issue is crediting improved indoor air quality. It is well-established that gas-fuelled cooking appliances can result in poorer indoor air quality due to the discharge of combustion products into the home, i.e. the living/breathing space of the occupants.<br><br>Gas cookers are combustion appliances that cannot be specifically flued to outdoors, whereas boilers and (most) fires do have to be flued to outdoors. In addition, there are now a range of flueless appliances available for home-owners to install/use. For these appliances the provision of additional ventilation in areas where they are to be fitted is specified by manufacturer's. However, there is no way of knowing whether this guidance is actually followed by anyone wishing to install one. |

| Ref. | Issue             | Feedback received  | Outcome  | Context for outcome  |
|------|-------------------|--|----------|--|
| 26   | Indoor Pollutants | It was suggested that the HQM requirements should be in line with the highest European class F1 as proposed by the EC for BWR3 rather than setting its own formaldehyde limits, which may or may not align with the harmonised system ultimately adopted by CEN. | Noted    | We are aware of the ongoing CEN work to define classification systems for emissions of formaldehyde, carcinogenic substances and VOCs. As the classification system is still under discussion and has yet to be implemented in the EU, it is not currently possible for HQM to refer directly to the proposed formaldehyde emission classes. However, we will continue to monitor the progress of this work, as we would look to align the HQM requirements to such a classification system in the future.   |
| 27   | Daylight          | The use of the 'Daylight Factor' calculation methodology was queried, as there is concern that it is not good at relaying quality or feel (orientation) of the daylight.   | Noted    | We are aware of alternative daylight calculation methodologies; however the disadvantage of these approaches is that they are much more difficult and complex to calculate than average daylight factors and we would not recommend the use of some as they are less appropriate for domestic settings.<br>Daylight factor is a reasonable indicator of quality of daylight, especially when combined with the view of sky criterion.<br>We will however continue to keep this under review.<br>We are aware of developments at a European standards level relating to this and will continue to monitor the situation with a view to amending requirements in HQM in future versions. |
| 28   | Noise Sources     | Concern was raised that the requirement for extractor fans in the kitchen (in the 'Indoor Pollutants' issue) would have a negative impact on this issue.   | Accepted | Point 7 of the 'Internal noise levels' methodology has been clarified to confirm that extractor fan noise should be excluded when undertaking measurement for kitchens, except for when the kitchen is within an open plan space.  |
| 29   | Noise Sources     | It was suggested that the 'Internal noise' credits should be split to separately recognise issues of external noise ingress, and building services noise, as people have a different tolerance to each of these types of noise.                                  | Noted    | At present, there is no robust evidence to suggest that the criteria should be split in this way. We are however aware of work currently under consultation by the Association of Noise Consultants (ANC) and will therefore continue to keep this under review.   |
| 30   | Noise Sources     | It was raised that it is not accurate to assume that if daytime targets are met then the night time ones are too.  | Noted    | Whilst we agree that accurate data is always worth having, the cost for an overnight survey is likely to restrict the accessibility of this criteria, and ultimately prevent its implementation. Looking at the UK National Noise Incidence Study for LAeq, the mean level at night drops by around 8 dB. We take the view that this is a reasonable assumption to take in the interests of encouraging greater consideration of acoustic impacts in homes.  |



| Ref. | Issue            | Feedback received   | Outcome  | Context for outcome  |
|------|------------------|---|----------|--|
| 31   | Sound Insulation | <p>The use of 'Ctr' was questioned, as whilst low frequency sound is important, it is also highly variable.</p> <p>The introduction of Requirement 2 was also queried.</p>        | Noted    | <p>DnT,w+Ctr was introduced into AD E 2003 to ensure better protection for people at low frequencies. This was due to concerns relating to complaints from low frequency noise sources such as TVs, amplified music and surround sound systems. The research conducted at the time showed the combined DnT,w+Ctr rating to give the best correlation between perception of sound insulation to a varied number of different neighbour noises and measured performance.</p> <p>However, it is not necessarily the best descriptor for every source of neighbour noise individually and while it places emphasis on the low frequencies this can be at the expense of protection from mid and high frequency performance. The DnT,w descriptor (requirement 2) has been shown to be generally well correlated with speech frequencies and more general living noises, for example a baby's cry, telephone ringing, conversation etc that would be heard more readily through a home's construction. By incorporating both performance descriptors this allows for protection from a wider range of neighbour noise sources than either individual descriptor would.</p> <p>Using a compliant test body ensures a degree of competency in the tester and should go some way to mitigate against uncertainty in low frequency measurement.</p> |
| 32   | Sound Insulation | Suggest adding a brief description of requirements 1 and 2.   | Accepted | Definitions for requirement 1 and 2 have been included.  |
| 33   | Sound Insulation | It was questioned why the insulation levels for internal walls and floors starts at 44dB?   | Noted    | Credits can only be awarded for specifications beyond building regulation requirements. The 44 dB requirement aligns with section 7 Silver in the Scottish Building Regulations. If the requirement were set at 43, homes built in Scotland would achieve the credit for achieving Building Regulations without further enhancement.   |
| 34   | Sound Insulation | It was queried why the impact (LnTw) noise requirement for 1 and 3 credits has improved by 3 dB, but has only improved by 2 dB in the topmost band (for 5 rather than 4 credits). | Noted    | <p>These requirements were set to align with the Scottish Building Regulations Section 7 Silver (54) and Gold Awards (52).</p> <p>With regards to the changing number of credits, please refer to ref. 1 and 2 above.</p>  |
| 35   | Sound Insulation | Concern was raised that the 35dB requirement at night will rule out most MEV and MVHR systems.  | Noted    | We carried out a review of other standards. Passivhaus set their limit at 25dB and BS8233 - Guidance on sound insulation and noise reduction for building (2014) sets the limit at 30dB, so we believe 25dB to be practical and achievable.  |
| 36   | Sound Insulation | It was queried as to whether there should be consideration of the transmission of sound through risers and other features of pre-fabricated homes.                                | Noted    | We have not included this currently as we would require more evidence demonstrating impact levels and potential solutions for these issues. We will however keep this under review.  |
| 37   | Temperature      | It was suggested that requirements or alternative routes using CIBSE AM11 should be replaced with CIBSE TM59 only, including for simpler buildings.                               | Accepted | The criteria have been changed for the comprehensive route to only refer to CIBSE TM59 and not AM11, for greater consistency and robustness of the calculation methodology used. CN1 has also been removed as there is not a valid, robust alternative method for simpler buildings, except for what is already recognised in HQM.   |

| Ref. | Issue       | Feedback received  | Outcome            | Context for outcome  |
|------|-------------|--|--------------------|--|
| 38   | Temperature | Shading should be considered in the temperature analysis, including the provision for easy retrofit of shading in the future.  | Noted              | Shading is already considered in both the foundation and comprehensive routes including: degree day regions and shading from fixed shutters and overhangs.<br>The upcoming temperature supporting document being produced for the foundation route will explain the methodology used, including relating to shading.<br>If shading is required through retrofit it might indicate a broader problem with the building and it is likely that shading will not be installed by the occupant later due to the high cost of such works. Part of this issue's intention is to make homes more resilient to future climate change so if there is a perceived risk then this should be mitigated early on to avoid potentially severe consequences. |
| 39   | Temperature | Carrying out modelling for every unit is too onerous and costly, so a sample should be accepted.   | Accepted           | The methodology section has been updated to detail the level of sampling required, and scenarios in which thermal modelling does not need to be carried out on each individual home.<br>The foundation route provides an alternative route towards compliance in less risky scenarios, which is less onerous.  |
| 40   | Temperature | Whilst the minimum requirement for temperature analysis is supported, concern was expressed that it may overlap with what will be required in the next version of SAP.   | Noted              | The SAP 10 consultation was released in July 2018. Whilst this incorporates some of the additional issues looked at through the HQM temperature tool, it does not cover all of them. We will continue to monitor changes in regulatory requirements and will update our schemes to take account of these where appropriate.  |
| 41   | Temperature | The overall purpose of the issue is well supported. However feedback suggested the maximum credits shouldn't be reduced from 20 to 17 due to growing importance of overheating risk. Some suggested dynamic modelling should be a minimum requirement. | Partially accepted | More emphasis is being made on temperature through the indicator backstops, which require a certain number of credits to be scored in this issue to achieve health and wellbeing indicator scores of 3 and above. The minimum requirement in this issue also puts more emphasis on considering overheating risk and being more transparent about this with consumers.<br>Feedback and research suggests that dynamic modelling is also difficult for some developments such as flats and making it a minimum requirement for the scheme would exclude many projects.   |
| 42   | Temperature | Occupiers should be shown how to most effectively control their environment and provide them with easy controls.   | Accepted           | The introduction of the handover visit minimum requirement (in Aftercare) specifically requires demonstrations of how to maintain a comfortable internal environment. The home information minimum requirements also require occupants to be given user-friendly guidance on this.   |
| 43   | Temperature | Improved insulation, correctly installed and suitable glazing are very important. Many developers mitigate risk by simply using smaller windows, which leads to unintended consequences.   | Noted              | Quality installation of elements including insulation, is recognised in the inspections and completion issue, as part of achieving better outcomes more broadly. The provision of quality products is also recognised in the procurement policy minimum requirement criteria in the project preparation issue.<br>HQM recognises solutions holistically, so if smaller windows are used, this is likely to affect the score in issues such as daylight, ventilation and energy (due to reduced seasonal heat gains and potentially increased space heating requirements).  |
| 44   | Temperature | Credits are hard to achieve via the foundation route.  | Noted              | HQM's temperature tool is designed to act as a first-pass risk assessment as to whether prevention measures or dynamic simulation modelling are needed. Feedback and research suggests this is how it is working in practice.<br>We will however keep this under review.   |

| Ref. | Issue       | Feedback received  | Outcome  | Context for outcome  |
|------|-------------|--|----------|--|
| 45   | Ventilation | Concern was raised about the achievability of the proposed minimum requirements regarding ventilation rates.   | Accepted | This minimum requirement has been reviewed alongside our technical experts, and changes have been made to the requirements. These changes include:<br>Removal of the 'minimum ventilation rate (for the minimum requirement) – according to the number of bedrooms' criteria<br>Changes to the formula for the 'Minimum ventilation rate – according to the size of the home' criteria<br>Introduction of a boost minimum ventilation rate requirement for kitchens, bathrooms/utility rooms and WCs   |
| 46   | Ventilation | Home information should include access for maintenance, and the intervals required, for filter replacement on mechanical systems. Occupants should not be expected to carry out 'any requirement maintenance'.   | Accepted | The minimum requirement criteria for this issue has been updated to ensure maintenance details for ventilation systems are passed onto the occupant.<br>The methodology has been clarified to confirm that all ventilation systems requiring maintenance must allow occupants or building service engineers to safely complete the work in accordance with manufacturer's instructions and any other safety regulations.   |
| 47   | Ventilation | CIBSE TM21 does not explicitly define the location of air intakes, it is therefore not clear how this credit would be demonstrated/ achieved.  | Accepted | The intention of this criteria is to ensure the position of air intakes is considered to avoid drawing in pollution, therefore helping to protect indoor air quality.<br>Further clarification of the sections of CIBSE TM21 to consider has been added as a compliance note in our Knowledge Base.  |
| 48   | Ventilation | It was suggested that there is limited technical merit in boosting continuous ventilation systems on high humidity as the air quality returns relatively quickly without the boost. Additionally, activating a boost for a bathroom high humidity condition will increase ventilation to the whole dwelling. | Noted    | This issue looks to improve indoor air quality through the specification of appropriate ventilation systems, reducing the chances of moisture build up and the associated consequences of this.<br>Showering or cooking activities can create an intense increase in humidity. Where boost functions are not available in these locations there is an increased likelihood of moisture infiltration into the building fabric, or migration of humidity elsewhere in the home, both of which have the potential to negatively impact the indoor air quality of the home.<br>We appreciate that currently, this criterion is likely to require the boost of continuous ventilation systems in the whole dwelling, but this is considered a critical issue for consumer protection. There may be alternative ways to meet this objective and we are able to review these on a case by case basis. |
| 49   | Ventilation | It is important that an information sign is expressed in plain English.  | Accepted | The criteria have been amended to specify that the information sign must be in plain English.  |
| 50   | Ventilation | A number of responses highlighted that noise from ventilation systems often results in systems being turned off with significant air quality impacts.  | Noted    | This issue contains criteria relating to the noise associated with mechanical ventilation systems (under the 'Ventilation Rates' criteria). This has been made clearer in the manual.  |

| Ref. | Issue       | Feedback received   | Outcome  | Context for outcome   |
|------|-------------|---|----------|---|
| 51   | Ventilation | Some respondents expressed concern over conflicts between this issue, and the Energy & Cost issue.  | Noted    | The focus of this issue is around taking steps to improve the internal air quality of the home, whilst the energy and cost issue looks to improve energy performance. Both issues look to express the consumer benefits that arise where compliance is demonstrated within each issue.<br>Please see ref. 2 above.  |
| 52   | Ventilation | It was suggested that this issue could award credits for employment of a principal designer who is specifically responsible for the control of moisture in the home, assessing the amount of water vapour likely to be generated within the home (due to external climate, orientation, occupancy etc.) and identify and influence design measures to appropriately mitigate moisture build up. | Noted    | The criteria related to moisture build up in this issue sits solely within the minimum requirements. When determining the scope of the minimum requirements, it was important to ensure that these were as accessible to all projects as possible, whilst maintaining their aim (to act as a quality benchmark for all projects seeking HQM certification). As such, minimum requirements that include the input of a specialist specifically for HQM purposes have been kept to a minimum, except where it was felt that it was crucial in order to achieve the aim of that minimum requirement. This was to reduce the risk that the cost implications of this could mean the scheme is not accessible to some situations.<br>We will however keep this suggestion under review and consider the option of introducing a moisture consultant for future versions of HQM.  |
| 53   | Ventilation | Concern was raised over the impact the provision of an information sign will have, and the reality of creating these. It was suggested that this information could (and should) be displayed in alternative formats (i.e. braille, different languages, mobile apps etc).   | Noted    | Research has shown that one of the biggest contributors to poor indoor air quality is a lack of knowledge about appropriate ventilation control. It is frequently reported that occupants turn ventilation systems off due to noise complaints, perceived operating costs, unfamiliarity with their specific system etc.<br>The intention of the minimum requirement to display an information sign is to raise awareness of the appropriate operations of the ventilation system specific to that home, and the potential health impacts of not ensuring good home ventilation. But also, to ensure that this is in an accessible and permanent location.<br>Whilst it would not be practical to request the display of signs in multiple formats a further minimum requirement in the HQM is in relation to the provision of home information to the occupant. This must cover all 'active systems' which includes ventilation systems, and home information must be available (or made available upon request) in alternative formats. |
| 54   | Ventilation | It was queried whether homes will have to have mechanical ventilation in order to achieve maximum credits.  | Noted    | Homes assessed in England and Wales are able to achieve the maximum credits in this issue using either natural or mechanical ventilation systems. However, homes in Scotland can only achieve the 'Ventilation rates' credits for mechanical systems.<br>This is due to differences in Building Regulations. In Scotland, Building Regulations stipulate more onerous natural ventilation requirements than England and Wales. Due to the nature of natural ventilation, it was decided that increasing the size over the regulatory requirements of the natural ventilation surface area would have little or no beneficial impact.  |
| 55   | Ventilation | It was suggested that requirements surrounding humidity should be extended to include areas likely to contain a tumble dryer or used for drying washing.  | Accepted | A 'Wet room' definition has been added clarifying the areas that this criterion must be applied to, which includes any space for washing or drying laundry.   |

| Ref.                    | Issue           | Feedback received   | Outcome | Context for outcome   |
|-------------------------|-----------------|---|---------|---|
| <b>Category: Energy</b> |                 |   |         |   |
| 56                      | Energy and Cost | It was queried whether PHPP can be considered as an alternative calculation methodology.  | Noted   | The PHPP method uses a different methodology to HQM and the outputs are currently not directly comparable.<br>We are however exploring whether PassivHaus certification could offer an alternative 'deemed to satisfy' route for some HQM credits.  |
| 57                      | Energy and Cost | It was suggested that gas-fired CHP should not be considered an LZCT due to current and future grid decarbonisation.  | Noted   | HQM ONE uses updated carbon factors, which will recognise decarbonisation of the grid and put less emphasis on CHP.<br>HQM considers the additional allowable generation as described in SAP 2012 section 16 (which does allow for biofuel CHP but not gas-fired CHP). The contribution of gas fired CHP is recognised within the HQM engine as in SAP.<br>LZCTs within the scope of the Decentralised energy are defined as part of the EU Directive 2009/28/EC.   |
| 58                      | Energy and Cost | The vast majority of comments and responses agreed that updated carbon factors should be used. However, one comment said this could cause confusion.                                | Noted   | HQM ONE uses updated carbon and primary energy factors to better reflect the actual emissions of the home. SAP carbon factors are generated using forward looking data supplied by the government. Any predictions beyond approximately three years are quite speculative. These will be reviewed regularly.<br>HQM already calculates energy differently to SAP and this is appropriate because they are meeting different objectives; SAP is the calculation methodology used to demonstrate compliance against the minimum standards of Building Regulations. HQM recognises performance that is above these minimum standards, and is designed to provide a greater level of accuracy to the consumer and others using the scheme (such as the financial sector, planners etc). |
| 59                      | Energy and Cost | Feedback suggested that the achievement of zero net regulated CO <sub>2</sub> emissions is unlikely, and therefore that the maximum credit requirements for this are too difficult. | Noted   | Zero net regulated CO <sub>2</sub> emissions is absolute best-practice and is included to recognise developments that are able to achieve this. It is not expected that this will be met by the vast majority of current projects. Net zero carbon is a well-established target in industry and previously by Government and as such needs to be recognised within the credit structure. The emphasis is likely to change as other energy solutions become more standard (such as energy storage and smart energy infrastructure) but the technology and evidence relating to these aspects is not well established at this point. We will continue to review this for future development of HQM.   |
| 60                      | Energy and Cost | It was suggested that energy performance should be calculated using Dynamic Simulation Modelling, including consideration of thermal mass using this method.                        | Noted   | SAP takes into account thermal mass using the method from European standard EN13790.<br>HQM is about rating homes' potential performance rather than providing a design tool. While thermal mass may be a useful strategy for reducing energy demand in many instances, modelling using DSM software would be problematic for rating purposes because use of these models requires much more subjective decisions around factors and boundaries than a SAP assessment leading to a lack of consistency and comparability. There is also a limited pool of dynamic modellers, which would significantly restrict uptake of this issue and increase developer costs at this point in time.  |
| 61                      | Energy and Cost | Internal lighting colour temperature and quality of light should be mentioned.  | Noted   | This is not relevant in terms of energy efficiency and is more related to internal comfort/health and wellbeing. Whilst it is an issue that we will consider in future development around health and wellbeing it is not something that has been raised as a priority through engagement to date. This has been added to the list of future considerations for the Daylight assessment issue, for future updates.   |
| 62                      | Energy and Cost | AV/IT that will be on constantly should be considered   | Noted   | Standby usage is addressed through the miscellaneous electricity term in appliances. HQM doesn't deal with the specification and timing of such electricity usage, only a kWh/annum. AV/IT fall outside the remit of white goods in the home that are included as they are not typically provided by the developer/landlord.  |

| Ref. | Issue                       | Feedback received   | Outcome            | Context for outcome   |
|------|-----------------------------|---|--------------------|---|
| 63   | Decentralised Energy        | It was suggested that more emphasis should be made on the site-wide infrastructure required for heat networks.  | Accepted           | Further clarification has been provided in a compliance note to ensure homes are connected to site wide infrastructure where these will be made available in future.  |
| 64   | Decentralised Energy        | It was suggested that a standard minimum performance criteria should be applied to hydraulic interface units (HIUs) to prevent poor overall network performance.  | Partially accepted | The CIBSE Heat Networks Code of Practice is referred to as an indicator of good and best practice.<br>Whether this can be set as a specific requirement going forward will be reviewed depending on examples of projects that emerge which use this code of practice.   |
| 65   | Decentralised Energy        | Ambient temperature networks should be referred to in relation to building heat pumps/cooling, for inclusion with the feasibility study.  | Partially accepted | These types of systems typically operate at a larger district level. While they could be acceptable, they are often not relevant to the scale of most UK housing developments. A Knowledge Base Compliance Note will be added to clarify this point.<br>The feasibility study allows for recognition of heat pumps. This has been clarified in the methodology section. The compliance note on air source heat pumps has also been amended to refer to 'heat pumps' more generally as ground and water source heat pumps may be applicable.   |
| 66   | Decentralised Energy        | It was suggested that safe maintenance access and clarity over route of DC cables to avoid safety issues for PV should be specified.  | Noted              | HQM requires PV installation to be carried out by MCS certified installers, who would install the systems to a suitable standard for future maintenance. MCS guidance covers safety and access issues that relate to future maintenance.  |
| 67   | Impact on Local Air Quality | It was queried whether maximum credits should be achieved through the specification of electrical hot water and heating appliances. If supplied by legally-compliant, small-scale local power plant burning wood or waste the air quality outcomes may be no better than gas. And if remote power generation reverts to coal, then any local air quality gains would come at the expense of local air quality losses elsewhere. | Noted              | This issue focuses on reducing air pollution in the area immediately around the home.<br>Even where an electricity generation sources is cited close to a home, it is the electricity supply company that have control of these impacts and therefore are considered responsible for the local emissions. There is legislation which aims to control emissions at the national level from power stations and this falls outside the scope of HQM.<br>The European Union has passed the Large Combustion Plants Directive 2001/80/EC (the 'LCPD') and the Industrial Emissions Directive 2010/75/EU to reduce the effect of these pollutants throughout Europe.<br>These European controls on power plants have effect in the UK through the Environmental Permitting (England and Wales) Regulations 2010 (in particular Schedule 15), the Large Combustion Plants (Scotland) Regulations 2002. |
| 68   | Impact on Local Air Quality | There were mixed responses as to whether the criteria should account for location, or whether it should be a fair standard across the board.  | Noted              | Criteria remain based on location. As a consumer focussed scheme, HQM looks to provide consumers with more information about new homes. This issue looks to assess the impact the home has on local air quality rather than the local air quality issues resulting from the choice of location. If the impact is higher in one location compared to another, then this will be accounted for within the different target levels set.  |

| Ref.                       | Issue                             | Feedback received  | Outcome | Context for outcome   |
|----------------------------|-----------------------------------|--|---------|---|
| 69                         | Impact on Local Air Quality       | Feedback suggested that the 27 mg/kWh requirement is very low.   | Noted   | Whilst this is challenging target appliances are available that exceed this target level. HQM criteria is designed to recognise good and best practices.  |
| 70                         | Impact on Local Air Quality       | It was highlighted that it is not always possible to use technologies that have no impact on air quality due to cost constraints.  | Noted   | This issue looks to encourage improved local air quality through the specification of low emitting heating and hot water appliances. As such, the criteria range from current good to best practice targets and represent reasonable cost solutions for most developments. All credits within this issue are tradable, and are therefore optional for sites to target as part of their HQM rating including where cost constraints limit choice of solutions.   |
| <b>Category: Materials</b> |                                   |  |         |   |
| 71                         | Environmental Impact of Materials | Whilst there was support for the requirement for the procurement policy section for policies which encourage the specification of products with Environmental Product Declaration (EPD) over similar products without EPDs, it was suggested the requirements should be made stricter to allow specification of products covered by EPD only (where a product EPD exists). And that the scope of the EPD should be widened and go beyond the requirement for a 'verified' EPD, and award credits based on the whole life performance of the product. | Noted   | <p>Although the availability of products covered by an EPD is growing in the industry, the numbers are still low. HQM ONE criteria requirements reflect this.</p> <p>EPD requirements are a relatively recent addition to the scheme, and as such the requirements have not been mandated at this point.</p> <p>In general, BREEAM works by rewarding more sustainable design outcomes rather than, to encourage designers to think more sustainably.</p> <p>However, we will continue to monitor the availability of products covered by credible EPDs and may make further changes to our requirements in the future.</p> |
| 72                         | Durability                        | The statement 'Credits are not given for demonstrating how the factor that causes the degradation has been reduced' was queried as it was suggested that good design should also be about reducing the potential impact of degradation.  | Noted   | The aim of this issue is to encourage designers to consider the impact of climate change and building use, and reduce degradation of materials through good design and specification. This may include avoidance through good design. Factors that cause degradation can range from local climate to location of development (urban/ rural / high pollution areas), in many cases these will be outside the control of the project team.  |



| Ref.                   | Issue            | Feedback received   | Outcome  | Context for outcome  |
|------------------------|------------------|---|----------|--|
| 73                     | Durability       | Concern was raised over the omission of 'combustion' as a potential degradation of external surfaces.<br><br>It was also queried whether former criteria 1 and 4 in this issue have been removed.   | Noted    | This issue has undergone only minor clarity changes at this time. We are in the process of completing a BREEAM wide review of this issue, and the results of this will be communicated in due course.<br><br>Criteria 1 and 4 have been merged with criteria 2 and 5 respectively. As such these criteria requirements have not been removed.  |
| <b>Category: Space</b> |                  |   |          |  |
| 74                     | Drying Space     | The requirement for a ventilated internal cupboard space for drying clothes was raised as a concern as there is no standard way to measure energy use in such areas. Respondents suggested the recognition of energy efficient white goods. | Accepted | A full review of the internal drying space requirements was carried out and these have been amended to recognise tumble dryers or washer dryers that meet the specified energy and condensation (for tumble dryers only) requirements taken from the EU energy label.<br><br>An amendment has also been made to the 'My Wellbeing' indicator. Credits achieved in this issue will now contribute 0.75 towards this indicator (in place of 0.5 specified in the consultation manual), to reflect the introduction of ventilation controls for internal laundry drying.<br><br>Furthermore, amendments have been made to the Energy and Cost issue to ensure that clothes drying appliances are accounted for within these calculations. Further details of the changes here will be detailed in GN28. |
| 75                     | Drying Space     | Many respondents voiced concern over the increased external drying line requirements, particularly for flats or homes without gardens.  | Accepted | Market research was undertaken to establish current external drying products available. The requirements have been relaxed to account for flats/apartments, and houses without private external space.   |
| 76                     | Access and Space | Many respondents questioned whether an architect could complete the role of the Accredited Access Consultant.   | Noted    | The Accredited Access Consultant definition has been updated to clarify that this must be an individual who is a member of the National Register of Access Consultants (NRAC). These are normally architects or surveyors who have chosen to specialise in this field.   |
| 77                     | Access and Space | There were mixed responses regarding whether homes should be designed for wheelchair accessibility. Many suggested all homes should be, whilst some suggested that this would incur significant cost implications.                          | Accepted | This issue offers tradable credits to recognise homes that have been designed as wheelchair accessible (or can be easily adapted to be wheelchair accessible in the future). HQM therefore does not prescribe that all certified homes must achieve these criteria, but it does recognise that this is an important issue.<br><br>Furthermore, a backstop for the 'My Wellbeing' indicator has been introduced which would require all credits in this issue to be achieved in order to obtain a level 5 for this indicator.   |
| 78                     | Access and Space | It was suggested that the Accredited Access Consultant should also confirm that the homes have been built in accordance with their advice.  | Accepted | A new criterion has been added awarding credits where the Accredited Access Consultant confirms that the homes have been built following the advice given to satisfy the earlier criteria.   |



| Ref.                   | Issue            | Feedback received   | Outcome  | Context for outcome  |
|------------------------|------------------|---|----------|--|
| 79                     | Access and Space | It was suggested that the additional 0.5m <sup>2</sup> cupboard storage requirement should be adapted according to dwelling size.   | Noted    | The 0.5m <sup>2</sup> built in storage requirement has been retained.<br>Lack of storage space in new build homes is a common concern raised by occupants. The 0.5m <sup>2</sup> requirement has been kept consistent across all homes as this is required in addition to the NDSS requirements. The storage requirements set out in the NDSS reflects the predicted occupancy, therefore indirectly the HQM requirements are reflective of the size and capacity of a home. |
| <b>Category: Water</b> |                  |   |          |  |
| 80                     | Water Efficiency | It was suggested that an intermediate number of credits should be available where 50% of the total demand for WC flushing is met by rainwater or greywater.   | Accepted | The manual has been updated, and it is now possible to achieve three credits for the 'Water recycling' criteria where at least 50% of the WC flushing demand is met by rainwater or greywater. The full six credits are achieved where 100% is achieved.   |
| 81                     | Water Efficiency | There was concern that the 'Water fittings standard' was too prescriptive, and a suggestion that developments should be able to freely select water fittings and saving equipment to demonstrate compliance with the modelled water consumption requirements. | Noted    | The requirements have been set for total water consumption as well as for individual fittings to limit instances where one very high water consuming fitting is specified which requires offsetting by very low water consuming fittings which may be considered by some occupants as being impractical to use. The intention is to achieve a balanced approach to reducing water consumption between fittings whilst ensuring that all fittings are functional.             |
| 82                     | Water Efficiency | It was raised that many washing machines and washer/dryers do not meet the ≤ 8.17L/kilogram requirement, which makes the credits unachievable for many developments.  | Accepted | The manual has been updated and an additional credit level has been introduced where only 6 of the 7 water fitting categories in the Optional fittings standard must be met to offer some flexibility.   |

## Delivery

| Ref.                               | Issue               | Feedback received   | Outcome | Context for outcome  |
|------------------------------------|---------------------|---|---------|--|
| <b>Category: Quality Assurance</b> |                     |   |         |  |
| 83                                 | Project Preparation | There was concern that feedback from previous project criteria seems to undermine the value of doing a full POE on the project being assessed.  | Noted   | The intent of the 'Lessons Learned' criteria is to encourage project teams to use feedback from previous projects to positively influence the assessed project. The criteria require project teams to consider feedback from various sources that may include findings from previous POEs as well as others including a review of the design and construction stage of earlier projects. The aim is to improve the assessed project's performance by learning from past experience. Credits are awarded separately where a POE will be carried out for the assessed development and as such we do not believe that this undermines this in any way.  |
| 84                                 | Project Preparation | It was suggested that crit 4 should refer to 'construction' instead of 'activities' and not demolition or clearance etc., in terms of when plans for construction quality measures, commissioning and testing should have been agreed as part of the project delivery plan minimum requirement. | Noted   | Some of the activities connected with site preparation such as site clearance, excavation and demolition can impact the delivery of quality homes. Early consideration helps to ensure that sufficient time and resources are available for carrying out these processes at all key stages of the development. Therefore, the scope of this issue goes beyond the construction stage itself.   |
| 85                                 | Project Preparation | It was queried how the 'Procurement policy' criteria differs from the 'Product procurement policy' criteria within the 'Responsible sourcing of construction products' and 'Environmental impact from construction products' issues?  | Noted   | Product procurement policy within Issue 26 relates to the setting out of performance requirements for products including specific performance specifications to be procured for the project. It also requires the setting of clear procedures to manage substitution of products ensuring set performance requirement are still met.<br><br>The Procurement policy requirement within Responsible sourcing and environmental impact issue is more general and relates to procurement of goods and services that are responsibly sourced and result in reduced environmental impact. Where all three criteria are being pursued, the procurement policy can be one document provided it covers all three aspects.   |
| 86                                 | Project Preparation | There was concern over the proposed 'Site work feedback' criteria. In particular this related to the fact that this would add significant additional requirements over the already existing pressures on site (H&S, CCS etc).   | Noted   | Whilst we recognise the additional requirements that this creates, the criteria reflect best practice. The aim of this criteria is to encourage, support and enable staff who have serious concerns about any aspect of the construction work to come forward and voice their concerns. This is so any issues that could lead to serious defects can be addressed early on before serious problems or abortive works have been carried out. Confidential reporting encourages people to come forward with feedback and helps organisations to: <ul style="list-style-type: none"> <li>- demonstrate that the organisation is committed to ensuring an open and transparent culture where staff feel safe raising concerns and that this is part of normal business.</li> <li>- encourage staff to raise concerns internally, rather than making wider disclosures to a prescribed person, media, MP or the police.</li> <li>- demonstrate that they are committed to ensuring high standards.</li> <li>- demonstrate good employment practice.</li> <li>- show that they are committed to protecting public safety and public money.</li> <li>- help develop a culture of openness and accountability.</li> <li>- discourage wrongdoing, corruption, fraud and mismanagement.</li> <li>- help uphold an organisation's reputation and maintain public confidence.</li> </ul> |

| Ref. | Issue                     | Feedback received   | Outcome  | Context for outcome  |
|------|---------------------------|---|----------|--|
| 87   | Commissioning and Testing | It was suggested that thermographic surveys should achieve more credits than air tightness testing because the latter is required by building regulations already.  | Accepted | <p>Air testing is only required on a sample of homes (100% for small projects) for the purpose of building regulations. HQM awards credits if the assessed home has been individually air tightness tested. This provides a higher level of quality assurance for the specific home being assessed and so helps to reassure consumers when they are looking to buy or rent a new home.</p> <p>It is agreed that more emphasis should be made on thermographic surveys because they are less common in domestic projects and build on the value of doing an airtightness test. As such, an extra credit is awarded. Maximum credits for post-construction testing can be awarded for doing an airtightness test and a thermographic survey.</p>   |
| 88   | Commissioning and Testing | Responses strongly supported the credits for pre-testing as a way of improving build quality, but some said it may not be practical for large projects. As a result some felt that recognition should be given for projects that carry out this testing on a proportion of homes. | Accepted | <p>Criteria have been changed to allocate credits according to the proportion of homes that have had pre-testing carried out and therefore the likelihood of defects being identified at an early stage and addressed during construction. Every assessed home still needs to be pre-tested to get maximum credits. This does not affect post-construction testing requirements because some level of testing is common practice and provides assurance of the specific dwelling being assessed.</p> <p>Although an additional expense, pre-testing helps identify potential issues that can be resolved early on and as such can prevent the often much higher costs and delays associated with deficiencies resulting in repeated post-construction testing and reactive corrections later in the construction period.</p> |
| 89   | Commissioning and Testing | It was suggested that testing timings should be clearly outlined in the criteria.   | Accepted | <p>The commissioning and testing strategy have been amended to make clear the requirement that timeframes are agreed between project delivery stakeholders, before any activities have started on-site, including details of any testing that will be carried out. This is a prerequisite to the testing criteria. For further clarity a new requirement has been added for the timings to be agreed with the AQP, where testing credits are being pursued. Guidance is given in the Methodology regarding the timing of testing.</p>  |
| 90   | Commissioning and Testing | <p>It should be clearer that testing methods other than thermographic surveys and blower door tests can contribute to post-construction testing for this issue.</p> <p>For example, co-heating and other methods should achieve more credits.</p>                                 | Accepted | <p>Blower-door tests and thermographic surveys are emphasised as they are well established ways of achieving the criteria within the new homes sector. Wording has been changed to emphasise the ability to recognise other methods, including co-heating (which is far less common), that achieve the same outcome. The wording allows for greater flexibility including the potential recognition of methods mentioned in consultation feedback such as co-heating and low pressure pulse air testing.</p>   |
| 91   | Commissioning and Testing | Overall feedback suggests that independent commissioning is of value but some said it may be difficult for some projects.   | Noted    | <p>The concern is noted. However, due to the overall support for this addition and the importance of robust commissioning practices in reducing the performance gap, this criteria has been retained as a minimum requirement.</p> <p>We will however keep this under review.</p>  |

| Ref. | Issue                      | Feedback received  | Outcome  | Context for outcome  |
|------|----------------------------|--|----------|--|
| 92   | Commissioning and Testing  | It was raised that time available for post-construction testing can be very tight and this is particularly difficult for thermographic surveys which are influenced by seasonal variations that are beyond the developer's control.  | Noted    | The timing issues with post-construction testing are part of the reason for requiring a commissioning and testing strategy that allows adequate time. The credits for doing this testing are available because it is not always standard practice and is often rushed. Pre-testing also helps to avoid delays in a project because post-construction testing identifies deficiencies so minimising the risk of late remedial works.  |
| 93   | Inspections and Completion | It was highlighted that the 'Right to inspect' timings don't work for those buying off plan.   | Accepted | The wording has been changed to require right to inspect before completion of construction, even if occupants are already committed to buy.  |
| 94   | Inspections and Completion | It was queried how the client or potential owners' right to inspect credits could be achieved if the client is also the developer?   | Noted    | The 'Right to inspect' credits would be met by default in this scenario. This is explained in the 'potential owner' definition. For the 'independent third party' credits, the developer would need to employ someone from an external organisation (see definition for 'independent third party').  |
| 95   | Inspections and Completion | Feedback broadly agreed that the occupant 'Right to inspect' criteria would be of value but it was felt that it would often be impractical, particularly for larger projects.<br>There was also concern that potential homeowners who commit to buy without inspecting may be favoured above one who would wish to inspect the home. | Noted    | This concern is noted but is outside the scope of what HQM can influence. HQM is a consumer focussed standard, and from the potential occupant's point of view, having this feature available is of value. Also the credit would only be available where the right was enshrined in the T&Cs. That should help to guard against unethical practices such as avoiding specific tenants or purchasers because they agree to wave this right.<br>Please see ref. 2 above for further details.   |
| 96   | Inspections and Completion | Most comments supported the requirement that transparent record and checks should be standard but there was some questioning of whether occupants would understand the record or be interested, and whether this was introducing the need for prescriptive evidence.   | Noted    | Transparent and accessible information helps to resolve disputes and identify sources of problems more quickly. It is not intended that this should form part of the occupants' home user information but should be something that they have a right to access if and when they need it. Where these checks are done as standard, this would simply need to be demonstrated to the assessor. Research into construction defects has identified that this transparent record is often not kept and that important checks can be missed. |

| Ref.                                  | Issue                               | Feedback received  | Outcome  | Context for outcome  |
|---------------------------------------|-------------------------------------|--|----------|--|
| 97                                    | Inspections and Completion          | Regarding the minimum requirement for a visual defects inspection before moving in, some welcomed the flexibility of occupants moving in before this but most comments raised concerns that it could allow for snagging issues/ defects not being dealt with in good time and ultimately lead to customer dissatisfaction.   | Noted    | Further research and review of consultation feedback suggests that allowing for exceptions in this case could undermine the purpose of this minimum requirement, which is to ensure the home is finished to an acceptable standard before people move in. This should be a basic requirement for any quality home, which consumers will expect. There are numerous cases of unfinished components not being resolved sufficiently in good time.  |
| <b>Category: Construction Impacts</b> |                                     |  |          |  |
| 98                                    | Responsible Construction Management | There was concern that achieving a CCS score of 40 is unreasonably onerous and would be extremely difficult for small developments to achieve. It was suggested that the foundation route should allow for sites that are not able to achieve this. It was also expressed that a procedure which is externally audited is more rigorous than a contractor appointing their own dedicated person. | Noted    | This issue has been updated to align with BREEAM NC 2018. There are examples of robust internal processes which achieves the outcomes required for this issue and as such it is felt that requiring an external audit would be unnecessarily restrictive. Aligning with NC gives appropriate flexibility (by awarding credits based on the number of items achieved within the new responsible construction management checklist) whilst achieving the desired outcomes. However the concerns are noted and we will monitor this through assessments. We are also currently working alongside CCS to establish a route by which a CCS assessment may be deemed to satisfy many of these requirements. This work is ongoing and the outcome will be communicated with assessors as soon as this is available. |
| 99                                    | Responsible Construction Practices  | The comprehensive route should include items relating to construction worker wellbeing.  | Noted    | Please see the 'Health and wellbeing' section of the checklist, this details items such as emergency procedures, making sure facilities are provided and clean and tidy for workers and initiatives to promote and maintain the health and wellbeing of all site operatives.   |
| 100                                   | Responsible Construction Practices  | It was suggested that the risk of fire should be addressed, as Building Regulations does not cover fire risk during construction.  | Noted    | The risk of fire during construction is addressed within the Health and Safety Executive (HSE) regulations. As such it falls outside of the scope of HQM and other UK BREEAM schemes which aim to go beyond current regulatory requirements.   |
| 101                                   | Responsible Construction Practices  | It was suggested that 'fleet operator' should be defined.  | Accepted | The 'Fleet operator' definition has been expanded to provide further clarity.  |

| Ref.                                 | Issue                              | Feedback received  | Outcome            | Context for outcome   |
|--------------------------------------|------------------------------------|--|--------------------|---|
| 102                                  | Responsible Construction Practices | It was suggested that most sites meet these criteria as a matter of course, and therefore best practice is being rewarded and not trying to encourage compliance beyond.         | Noted              | Whilst some sites might be meeting the criteria, there are some that aren't. The intention of the HQM is to recognise performance beyond the minimum, and encourage the adoption of best practice.<br>We will however monitor the number of projects which achieve the maximum number of credits for this issue.  |
| 103                                  | Site Waste Management              | It was suggested that further refinement of the EWC codes should be considered to better promote material recovery.  | Partially accepted | This comment has been noted and will form part of a wider BREEAM review going forward (beyond the HQM ONE timescales).<br>However, in the meantime, further text has been added to the criteria stating that 'further sub division of these categories to reflect the most appropriate recovery route for materials (e.g., recycle, energy from waste etc.) is encouraged'. |
| <b>Category: Customer Experience</b> |                                    |  |                    |   |
| 104                                  | Aftercare                          | It was suggested that building warranties aren't always the most appropriate solution for meeting the aim of this issue.   | Partially accepted | Alternatives can be proposed by the assessor and will be considered on a case by case basis; <b>KBCN0673</b> . We will continue to explore this going forward.  |
| 105                                  | Aftercare                          | It was suggested that alternatives to individual handover visits should be recognised, such as group demonstrations and videos.  | Accepted           | As long as the outcomes of the criteria are being met, the format is flexible. A 'flexible format' KB has been added to clarify this.   |
| 106                                  | Aftercare                          | Feedback was that the requirements for handover visits and level of aftercare support are well supported and valuable to consumers although some projects may find it difficult. | Noted              | The feedback comments were supportive of the purpose of the criteria. The structure of the criteria has been scaled to allow for different levels of support beyond minimum levels.   |
| 107                                  | Aftercare                          | It was noted that having handover visits at moving in is not the best timing due to other pressures at this time. The content may not be absorbed by the future occupant.        | Accepted           | Criteria now requires the handover visit to be carried out before or after the move in date (within 4 weeks), to make it more flexible and appropriate.   |
| 108                                  | Aftercare                          | There were mixed views on whether 2 years of on-call support is feasible for all projects.   | Partially accepted | This was initially proposed as a minimum requirement, but the feedback was that it is too difficult for all types of projects to achieve. The requirement was kept as credited criteria to avoid restricting projects while still recognising the value of those that achieve this.   |

| Ref. | Issue            | Feedback received  | Outcome            | Context for outcome  |
|------|------------------|--|--------------------|--|
| 109  | Home Information | It was suggested that credits should be available for simply creating Home Information, similar to the HQM Beta version, as this would encourage the design team to provide high quality home information to occupants.  | Noted              | Home information was a minimum requirement in the beta version. It has been re-structured to make this clearer and the credits have been redistributed within the delivery section to put emphasis on other issues (see ref. 1 above for further information). Home information is something that all HQM homes should have, regardless of the rating as it is a way of helping occupants get the most from their home and influencing behaviour to help reduce the performance gap. Information has been split to make it clear which parts are always required and which parts are only required as part of particular credits achieved throughout the manual. |
| 110  | Smart Homes      | Comments were mixed in terms of the additional credit for ultrafast broadband (100 mb/s) and the achievability of superfast broadband; some said it was too difficult and will not be achieved in many places (particularly rural and smaller projects), while others suggested that higher speeds are also possible and should be recognised.     | Noted              | Almost 89% of UK properties can get Superfast broadband with this continuing to rise, including for rural areas (Ofcom, 2016). If developers engage with infrastructure network providers early on, this is possible for a lot of developments. Ultrafast broadband is becoming increasingly available and is valuable to consumers in terms of entertainment, work and smart systems. Broadband speeds lower than superfast broadband would significantly impact the effectiveness of a number of smart devices, especially during periods of high internet usage.  |
| 111  | Smart Homes      | It was highlighted that smart meters are mentioned in the context and benefits sections but there is no reference to it in the criteria.   | Partially accepted | Smart meters are already being driven by Government initiatives (all homes to be offered them by 2020, in England Scotland and Wales). Early development and consultation with stakeholders such as energy suppliers suggested that it could cause unnecessary confusion and programme conflicts if HQM set standards around smart meters. HQM focuses on standards beyond standard practice, to demonstrate additional value to consumers. Wording has been added in the context section to clarify this.   |
| 112  | Smart Homes      | Most responses supported the importance of digital connectivity for consumers, suggesting that it is expected and is now key to modern living. A minority said it may put some people off, particularly in terms of smart features. In contrast, some suggested more credits should be awarded for these criteria due to its growing significance. | Noted              | There is a growing demand for smart homes but there is also confusion about what a smart home should be able to do to meet this demand. The criteria outline a way towards achieving a smart home that is based on research and products that are presently available on the market.<br><br>This issue aims to give consumers choice by giving them the infrastructure and initial set up for them to use and build on in the future if they want to. As the growing demand for smart homes is still in its early stages, additional credits have not been added at this time but it does provide a route to best-practice for those that want it.               |

| Ref. | Issue                     | Feedback received   | Outcome            | Context for outcome   |
|------|---------------------------|---|--------------------|---|
| 113  | Smart Homes               | It was suggested that ducting is not necessary when power-line adapters can be used, particularly for small apartments.   | Accepted           | Using multiple wi-fi enabled devices can cause interference, connection drops, decreased range and decreased throughput, especially if multiple homes are using Wi-Fi in this way. Direct connections avoid these issues. However there is less risk of this for smaller homes and a change has been made for apartments with two bedrooms or less so they do not have to provide ducting to secondary rooms (crit 6) to make this less onerous.  |
| 114  | Smart Homes               | Some responses suggested the smart systems being referred to will quickly become out of date, whilst others said they are well beyond best practice.  | Noted              | Due to the rapid nature of smart devices available, the issue has focussed on functionality in terms of what the installed devices need to do (e.g. heating, lighting, energy management etc.). Devices installed that meet the outcomes required in the criteria will be able to be used even when more up to date systems are available. The infrastructure required for connectivity throughout the home also means that additional or upgraded devices can be more easily installed later. The criteria have been developed in line with devices that are currently available on the market from multiple suppliers and provide a starting point to build on. |
| 115  | Smart Homes               | Feedback suggested the credit for additional smart home solution is too difficult.  | Accepted           | The requirements were reviewed with expert advice and it was agreed that these could be made more achievable – the requirements have been amended to make them more achievable by introducing greater flexibility around the number and type of devices/systems that have been installed.   |
| 116  | Smart Homes               | There was some concern that consumers might not be able to choose their preferred broadband provider.   | Noted              | It is important to note that an infrastructure network provider is different to a service provider. Developers need to work with them in order to ensure telecommunication services are in place to allow for later plug-in from a service provider. This does not affect consumer choice.  |
| 117  | Post Occupancy Evaluation | It was suggested that the criteria should require information on confidentiality that occupants would need to agree to, and set out the principles of PoE including user feedback as well as performance information. | Accepted           | Data format requirements have been added to the Methodology section. Those carrying out POEs may be subject to additional restrictions and requirements under the GDPR regulations. Regarding the introduction to POEs, this is required as part of the Handover visit minimum requirement.   |
| 118  | Post Occupancy Evaluation | It was suggested that the energy, temperature and water monitoring data may be difficult to collect from larger developments.   | Partially accepted | Not every single home needs to be involved in the POE to get credits. As the aim of this issue is about improving knowledge and understanding of consumption and performance in homes generally, a sample-based approach can be taken provided that this is representative. Occupants may choose not to agree to get involved and as such the criteria are based on the POE being offered. <a href="#">KBCN0908</a> provides further clarification.   |
| 119  | Post Occupancy Evaluation | There was some confusion regarding the value of giving credits for the POE to be carried out by an independent third party, when it appeared that this was required anyway.   | Accepted           | Credits for being an independent third party are only given if the person carrying out the POE is not involved with the assessed home, other than for the purposes of the POE issue. If they are not completely independent (for instance they may be employed directly by the developer organisation) they can still achieve some credits as long as they are independent from the design and construction of the home. There are two definitions that explain this distinction and this has been made clearer.  |



| Ref. | Issue                     | Feedback received  | Outcome  | Context for outcome  |
|------|---------------------------|--|----------|--|
| 120  | Post Occupancy Evaluation | It was requested that more clarity be provided on who can carry out a POE. | Accepted | A Knowledge Base entry is being developed to clarify this point further with expert input. |

## HQM ONE Follow-up consultation on the scoring and rating system

HQM ONE technical consultation feedback suggested that the HQM scoring system needed to change significantly in order to better reflect the level of effort required to achieve the ratings, open up a wider range of entry levels and improve the value of HQM ratings to consumers and industry alike. This feedback was analysed, and further development work was carried out to create an improved star rating and indicator scoring system. The follow-up consultation asked for further feedback on the 'revised HQM ONE scoring proposals' so the final scoring system could be refined as much as possible.

Details of this feedback and the 'revised HQM ONE scoring proposals' established as a result, can be found in the document available here: <http://www.homequalitymark.com/HQMONEconsultationfollowup>

A new star rating and indicator scoring system were proposed, and respondents were asked to comment on the proposed changes.

Having analysed the responses received from the follow-up consultation, the majority of respondents preferred the 'revised HQM ONE scoring proposals', and these have therefore been applied to the HQM ONE manual. We have included the comments raised during the follow-up consultation below.

| Ref. | Issue                  | Feedback received  | Outcome | Context for outcome   |
|------|------------------------|--|---------|---|
| 121  | Follow-up consultation | It was suggested that the star and indicator ratings should be equally distributed. There was particular concern that there are significant improvement requirements between the upper levels (i.e. 4 – 5 stars).                                      | Noted   | <p>To create the proposed scoring improvements curve, a number of key points were first established through a series of desk-based studies and scenario testing. The results from this were used to set the desired scoring requirements for a 3 star home (broadly equivalent to a well designed and built CSH 3 home), and a number of best practice scenarios. From these, the proposed scoring curve was created.</p> <p>The upper level scores are designed to recognise homes of outstanding performance that are leading the way in terms of housing standards. They are not intended to be achieved by the majority of homes undergoing assessment.</p> <p>We will however continue to keep this under review during the operation of HQM ONE and rating thresholds will be amended in subsequent updates to the scheme to reflect changes in typical performance over time.</p>  |
| 122  | Follow-up consultation | Whilst the majority of respondents felt that the scoring should accommodate homes not achieving a 3 star, some felt that extending the scoring scale (by including half stars) meant there were too many levels and didn't like the use of half stars. | Noted   | <p>Responses from the initial HQM ONE consultation raised concerns that starting the ratings from 3 stars was misleading to consumers as it was not possible to achieve a 1 or 2 star rating. This feedback also suggested that a rating lower than 3 stars would be viewed poorly by consumers, and therefore, undesirable to developers. This suggested that the scoring system needed to range from 1 to 5 stars, but that 3 stars should continue to represent a home broadly equivalent to a well-designed and constructed CSH 3 home.</p> <p>Having reviewed many scoring options, maintaining a 5 star rating system (consisting of full stars only) could not offer the granularity that the scheme required to encourage improvement over the 3 star level. This was particularly the case for ratings representing a performance range from 'good' to 'outstanding' if only 3, 4 and 5 star ratings would be available.</p> <p>Having completed market research, it was found that many popular and well-known public rating systems (e.g. Google, Amazon, TripAdvisor etc.) use 0.1 star rating systems, suggesting that part-star ratings are well known by consumers. Introducing half star ratings from 1 – 5 stars enabled the granularity of the HQM rating system to be extended and ensure that all performance levels were represented to a sufficient degree.</p> <p>This solution provides a balanced and versatile scoring system that recognises the need for ratings to provide differentiation between levels of overall performance. Feedback suggests that this is valuable to both developers and consumers however we will continue to keep this under review during the operation of HQM ONE.</p> |

## Further Information

For further information of the HQM ONE technical consultation, or the follow-up consultation, please see the below links:

[www.homequalitymark.com/HQMONEconsultation](http://www.homequalitymark.com/HQMONEconsultation)

[www.homequalitymark.com/HQMONEconsultationfollowup](http://www.homequalitymark.com/HQMONEconsultationfollowup)