

**Housing**  
Executive

**CAVITY WALL  
INSULATION  
ACTION PLAN:**

FINAL DOCUMENT

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## 1.0 Introduction

- 1.1 This Cavity Wall Insulation Action Plan sets out the Northern Ireland Housing Executive's proposals for addressing issues related to Cavity Wall Insulation installations in its stock.
- 1.2 Specifically it is our response to:
- The findings and recommendations of a research project that we commissioned into Cavity Wall Insulation in 2017 and that was published in 2019.
  - The initial consultation exercise that was undertaken on this research project's findings and recommendations with tenants' representatives, elected representatives and members of the insulation industry.
  - The responses to our Draft Cavity Wall Insulation Action Plan proposals that was issued for public consultation in December 2020.
- 1.3 A summary of the responses received to the Draft Cavity Wall Insulation Action Plan is at **Appendix A**. We wish to thank those who responded for their comments.
- 1.4 We acknowledge that there are a significant number of references and acronyms regarding technical issues, standards, guarantees and accreditation schemes that may not be familiar to those not involved in the construction/insulation industry. Accordingly a Glossary of Terms & Definitions is provided at **Appendix B**.

## 2.0 Background

- 2.1 Most houses built from the late 1920s have been constructed with cavity walls. The cavity was originally planned to prevent rain that hits the external walls crossing to the internal walls of the dwelling and affecting the internal structure, but was also seen as a form of thermal insulation, though minor in its effectiveness.
- 2.2 Since the 1980s building regulations have required that new cavity wall constructed dwellings are built with insulation in the cavity and, as long as they are well constructed, this insulation should not compromise the structure's resistance to rain penetration.
- 2.3 Cavity wall insulation correctly installed can be an effective long-term investment in keeping the inner wall structure dry and warm, and reducing heat loss, energy use and, consequently, energy running costs.
- 2.4 In the 1980s the Housing Executive began installing cavity wall insulation in its new build schemes and also implemented a major cavity wall insulation retrofit programme in its other cavity wall constructed stock.
- 2.5 Years later, concerns began to be voiced regarding the condition of cavity wall insulation, not just in Northern Ireland but UK wide. In 2012/13 representatives of the insulation industry briefed the (then) Minister for Social Development and the N.I. Assembly that there was evidence emerging that CWI installed in dwellings in the 1980s and early 1990s was no longer performing due to degradation or poor installation. The cavity wall insulation industry was in its infancy in the 1980s and installation techniques, quality control, inspection methods and industry training were not as advanced as today. Inspectors would not have had ease of access to surveying equipment such as borescopes or thermal imaging cameras, and inspections would have been difficult without very costly, time consuming and intrusive measures.
- 2.6 As a consequence of this briefing, the Housing Executive appointed the South Eastern Regional College (SERC) in August 2013 to undertake research into the condition of cavity wall insulation in a sample of its dwellings.
- 2.7 A total of 206 properties were surveyed and SERC's report was published in 2014. The research found that *'the cavity wall insulation had deteriorated in many of these properties for a variety of reasons - ageing processes, stability, slumping, voids and air gaps, settling, weathering processes, disturbance by operatives or biological*

*processes*' and that only 9% were deemed to have sufficient cavity wall insulation installed that was fit for purpose.

- 2.8 The report made a series of recommendations relating to: Quality Control (i.e. that the processes of surveying, design, remediation, installation needed to be formalised and quality assured to ensure best practice); Whole House Solutions; climate and weather consideration for materials; Industry Training; upskilling Housing Executive staff; and remedial action.
- 2.9 In 2014 Savills PLC was commissioned by the then Department for Social Development and the Housing Executive to undertake a Stock Condition Survey Report to determine the long term investment requirements for our stock. Savills report indicated a 30 year funding requirement of some £6.7 billion in order to achieve and maintain the modern standards expected of social housing.
- 2.10 While Savills did not intrusively inspect cavity wall insulation as part of its survey work, it included an estimated investment liability for future replacement of cavity wall insulation in the stock.
- 2.11 Given the SERC research report, continued concerns by tenants, elected representatives and the insulation industry about cavity wall insulation failure, and the need to assess the likely scale and urgency of cavity wall insulation remedial or replacement works against other investment needs that were identified by Savills, it was decided to commission a larger investigation in order to provide the Housing Executive with robust information on the extent, type and reasons for cavity wall insulation failures in the stock.
- 2.12 In August 2017 the Housing Executive commissioned the British Board of Agrément's Consultancy, Investigation and Training (BBA CIT) to undertake a much larger survey in order to inform any future strategy and associated programmes required to address CWI issues.
- 2.13 The BBA is an independent non-profit distributing organisation and is the UK's leading construction certification body, offering approval, certification, audit and test services to manufacturers of products and systems.
- 2.14 CIT was a subsidiary of the BBA that provides technical consultancy, property investigation and technical training services, and works predominantly in partnership with local authorities and housing associations, providing independent and impartial expertise focused on both cavity wall and external wall insulation systems.

### 3.0 BBA Report – Findings and Recommendations

- 3.1 The BBA CIT’s report was published in May 2019 and is available on the Housing Executive’s website<sup>1</sup>. The following sets out a summary of its findings and recommendations.
- 3.2 The primary aims of the Cavity Wall Insulation Research were to establish:
1. The condition of the CWI in the Housing Executive’s housing stock and the private sector, and
  2. The impact that this is having on the stock in terms of thermal efficiency and associated technical defects
- 3.3 A sample of 825 Housing Executive properties (representative of its cavity wall stock) and 100 privately owned homes was surveyed for the research.
- 3.4 The research project was overseen by an Insulation Performance Panel (IPP) comprised of senior staff from the Housing Executive and the Department for Communities, a tenant representative and academics from the two local universities.

#### Findings

- 3.5 BBA CIT and the IIP developed a classification framework - Class Recommendations - as a means of categorising the properties in terms of the condition of the CWI and external fabric and the recommended prioritisation of remedial works. The six categories and the percentage of Housing Executive properties in each are set out in the table below.

Class	Description	%
1	<ul style="list-style-type: none"><li>• Building fabric is actively deteriorating.</li><li>• CWI installation is non-compliant with industry standards, with defects such as voids and/or debris in the cavity</li><li>• CWI has been compromised by excessive water ingress caused by the condition of the external façade and has allowed moisture to bridge across to the inner leaf, resulting in damp</li><li>• Remediation works are required to the CWI and the external facade</li></ul>	1.1%
2A	<ul style="list-style-type: none"><li>• CWI installation is non-compliant with industry standards, with defects such as voids and/or debris in the cavity</li></ul>	24.2%

<sup>1</sup> <https://www.nihe.gov.uk/getmedia/492a0403-2cb8-4482-bd7a-8e5df3f37d4b/2019-Cavity-Wall-Insulation-Research-report.pdf.aspx?ext=.pdf>

	<ul style="list-style-type: none"> <li>• CWI has not been compromised</li> <li>• The building fabric has been compromised by defects and remedial works are required.</li> <li>• There is a high probability that the CWI will become compromised if remedial works are not undertaken</li> </ul>	
2B	<ul style="list-style-type: none"> <li>• CWI installation is compliant with industry standards</li> <li>• CWI has not been compromised</li> <li>• The building fabric has been compromised by defects and remedial works are required.</li> <li>• It is possible that the CWI could become compromised if remedial works are not undertaken</li> </ul>	8.0%
3A	<ul style="list-style-type: none"> <li>• CWI installation is non-compliant with industry standards, with defects such as voids and/or debris in the cavity</li> <li>• CWI has not been compromised</li> <li>• The building fabric is showing signs of minimal stress due to defects</li> <li>• It is possible that the CWI could become compromised if remedial works are not undertaken</li> </ul>	37.6%
3B	<ul style="list-style-type: none"> <li>• CWI installation is compliant with industry standards</li> <li>• CWI has not been compromised</li> <li>• The building fabric is showing signs of minimal stress due to defects</li> </ul>	13.7%
No Class	<ul style="list-style-type: none"> <li>• CWI installation is compliant with industry standards</li> <li>• The building fabric is showing no signs of stress</li> </ul>	15.4%

3.6 The key findings were as follows:

- 63% of the properties surveyed had cavity wall insulation installations that were non-compliant with current industry standards, containing voids and/or debris in the cavity.
- A major contributory factor to the condition of cavity wall insulation in the properties was the standard of maintenance of their external façades where defects - for example, deterioration of pointing and door/window seals - have allowed, or would potentially allow, water ingress into the cavity. This issue was identified in just over 84% of the properties.
- In only 1.1% of properties had the condition of the external façade and CWI compromised the internal fabric of the property causing damp (i.e. a Class 1 property)
- Just under 16% of the stock was found to be defect-free in both the CWI and the external fabric.

## Recommendations

- 3.7 BBA CIT made a range of recommendations across a number of issues.
- 3.8 Remediation. BBA CIT recommended that remediation works should be prioritised as follows:
- Class 1 properties should be prioritised for action, with the condition of neighbouring properties also assessed.
  - Remediation for Class 2 & Class 3 properties should be delivered as part of planned cyclical maintenance programmes, with the condition of neighbouring properties also assessed.
- 3.9 Remediation/recompense from Guarantee Provider. BBA CIT recommended that if there is sufficient evidence that an existing CWI installation has not been completed in accordance with industry standards and with the system Agrément Certificate, the Housing Executive should seek remediation or recompense for the costs of the original CWI installation and associated property damage from the installer/ guarantee provider.
- 3.10 Monitoring. A system for monitoring and checking the accurate completion of remediation works arising from the action above should be set up and overseen by an independent monitoring group.
- 3.11 Installation overview. To ensure that remediation and new CWI installation work is carried out to the correct standard, all current and future CWI wall installation programmes should be closely overseen and monitored by the Housing Executive. It should be carried out in the following way:
- All properties proposed to receive new CWI installations must be independently verified through a valid and recognised industry process before installations take place.
  - Quality assurance assessments of CWI installations should be conducted during and after installation.
  - The Housing Executive should conduct appropriate reviews of the performance of organisations responsible for delivering CWI installations with a specific focus on data gathered on the quality assurance and compliance of CWI installations.
- 3.12 Competency and compliance system. To ensure the required CWI installation standards are met the Housing Executive should set up a new competency and compliance system that any entity responsible for delivering CWI installations must adhere to. This regime would make it mandatory for entities delivering CWI



installations to undertake relevant technical training and pass ongoing competency assessments approved by the Housing Executive.

3.13 Contracts and guarantees.

- The Housing Executive should review the suitability of installation guarantees issued for CWI installations to its housing stock. The review should assess the scope of the guarantees and, equally importantly, the full range of obligations they impose on the Housing Executive to maintain their properties to ensure they remain valid. Guarantees should be insurance-backed to ensure good governance and oversight.
- The Housing Executive should maintain an ongoing assessment of its CWI installation contracts to ensure their technical specifications and contractual requirements are in line with industry standards and best practice.
- The Housing Executive should maintain adequate records of all future CWI remediation and installation works undertaken to their housing stock (on a per property basis) on an asset management database that is accessible to all staff members responsible for overseeing housing maintenance programmes

3.14 Regular stock surveys. Housing stock should be inspected at regular intervals to gauge the condition of the external façade and performance of CWI installations. The inspection regime methodology should be modelled on that delivered for the research project.

3.15 Training. Housing Executive employees involved in delivering CWI installations and housing maintenance programmes should receive ongoing training. They should have access to appropriate expertise when assessing the suitability of properties for CWI installations and be able to assess the property fabric and identify defects on the external façade. They should also demonstrate the required competence to assess the compliance and performance of installations and have an understanding of the relevant industry standards and building regulations.

3.16 Advice for residents. Residents who have CWI installed should be given guidance on how to both maintain and manage their properties following installation and also have access to experts who can provide assistance with any matters relevant to this area. Additionally it is recommended that the Housing Executive puts in place a 'residents' voice' scheme that overtly (or in confidence) allows tenants to raise concerns about the condition or effects of CWI in their homes.

## Consultation

- 3.17 Following the publication of the report the Housing Executive held briefings for its Central Housing Forum<sup>2</sup>, elected representatives, and the insulation industry.
- 3.18 The key issues emerging from consultation with tenant, community and elected representatives were:
- The varying performance of CWI across the Housing Executive's stock.
  - Past practices of installation and the need for the Housing Executive to ensure that future remedial/replacement works were undertaken to a standard that would be specified and quality assured by the Housing Executive.
  - The impact that cavity wall insulation is having on the stock in terms of thermal efficiency and associated technical defects was raised as not been properly addressed in the BBA research.
- 3.19 A briefing event for the local insulation industry was held on 8<sup>th</sup> August 2019 and was well attended. In early 2020, individual meetings were undertaken with a number of system designers who operate in Northern Ireland.
- 3.20 In lieu of a formal agenda, questions were drafted to provide a structure to the meetings; however, from the discussions other queries and topics arose that were useful in terms of informing future direction and gauging the current status of the cavity wall insulation industry. The questions were to ascertain the companies' views and experiences, explore the findings of the BBA CIT research project and seek views in how to best move forward in a positive way to actively inform this CWI action plan.
- 3.21 The key issues that emerged from the meetings were as follows:
- Adherence to standards and specifications for the installation of energy efficiency works to existing dwellings such as PAS 2030:2017 and PAS 2035:2019 was discussed. The majority of the designers already adhere to PAS 2030 (or NZEB/ SEAI in ROI) but generally were not planning on attaining PAS 2035 accreditation in the near future due mainly to concerns such as increased costs to do so and the current lack of skillset within the workforce in order to achieve this (i.e. the low availability of qualified retrofit co-ordinators). It was noted that none of the organisations that provide the accreditation/oversight of PAS have a current presence in Northern Ireland and that adherence to PAS 2035 is not currently mandatory here.

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<sup>2</sup> The Central Housing Forum is the top level of the Housing Executive's tenant and community consultation framework.

- The Designers' current cavity wall surveillance scheme methodology was requested with detail to be provided regarding 3<sup>rd</sup> party validation and if inspections are carried out in accordance with a UKAS accredited inspection body. Two of the Designers were KIWA accredited and the other two BBA. Two of the Designers have CIGA covering the regime of warranty, one has their guarantees provided by GDGC and one Designer has the system holder providing a 10 year guarantee based on the product and the contractor can provide up to 15 years. Two of the Designers either have Trustmark or are in the process of attaining it. With regards to cavity extraction/cleaning and associated guarantee, the majority of the Designers do not have a guarantee in place for this but one provided a copy of its own methodology.
- The Designers' knowledge and opinions on the BBA CIT Research was discussed along with how they would advise the Housing Executive with regards to addressing the BBA recommendations. One of the companies had already issued a detailed response, confirmed that there was very little content they would disagree with, but noted their concern that the report appeared to attribute the 63% non-compliant CWI installations to installation practices.
- They advised that the Housing Executive should specifically address the following points in our response:
  - The formation of a Housing Executive team specifically to roll out the CWI programme of works. It was agreed that the Housing Executive should be carrying out inspections before, during and after installation, and should set its own standard for fabric performance.
  - The Housing Executive should consider the period of time to be covered by guarantees.
  - That accreditation to KIWA or BBA should be specified as a requirement.
  - That a holistic approach is taken to improving the Housing Executive's properties that would cover fabric (including cavity wall insulation), heating and ventilating.
  - It was recommended that funding should be obtained to implement 'entire street' upgrading and not just the Housing Executive stock in the street.
  - Future survey schemes should be carried out to estimate how many Housing Executive properties have cavity wall construction and the nature of the CWI in them (i.e. have no insulation, have insulation installed that is beyond its lifespan, have been filled/topped up post construction).

3.22 In addition, a submission was received in April 2020 from the National Insulation Association of Ireland. This submission - *Cavity Wall Insulation Proposal for the*

*Northern Ireland Housing Executive* - noted many of the issues that had been discussed at the meetings with the system designers, and also proposed that the Housing Executive should prepare a planned CWI replacement programme for its stock.

## 4.0 Action Plan

- 4.1 This Action Plan builds on the proposals presented in the Draft Cavity Wall Insulation Action Plan and the responses from the consultation exercise. A summary of the actions and their timescales is in section 5.
- 4.2 We have structured our actions around the following issues:
- Remediation/Replacement programme
  - External Cyclical Maintenance
  - CWI Extraction/Installation Process
  - Stock Surveys and Data
  - Housing Executive Staffing and Training
  - Residents' Advice and Information
  - Research

### Remediation/Replacement Programme

- 4.3 The findings of BBA CIT's research on the condition of CWI in our stock are obviously concerning. Although BBA CIT found that in only just over 1% of the properties it surveyed was the condition of the CWI having a detrimental impact on the internal structure and, for example, causing damp, the level of non-compliance with modern CWI installation standards was high and found in stock across all locations. We have also noted the findings of other research that have highlighted issues with CWI installations<sup>3</sup>.
- 4.4 Given the age of the CWI in our properties and the findings of both the SERC and BBA CIT research projects, it is clear that a CWI remediation/replacement programme will be required at some point for all of our cavity wall stock. Even setting aside some of the issues already noted that would lead to deterioration, CWI like other building components has a lifecycle at which point it will need to be replaced.
- 4.5 Addressing CWI aligns with the 'Fabric First' approach that the Housing Executive - as the Home Energy Conservation Authority (HECA) for Northern Ireland - promotes across all residential sectors for enhancing the energy efficiency and reducing the carbon footprint of dwellings i.e. first of all improve the external envelope's performance in heat retention, air tightness and ventilation in order to prepare the property for decarbonised services and renewable technologies.

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<sup>3</sup> For example, BRE's 2016 report for Constructing Excellence in Wales on the installation of retrofit wall insulation - *Post Installation Performance of Cavity Wall and External Wall Insulation*

- 4.6 A CWI remediation/replacement programme would, therefore, be an integral part of the Energy Efficiency Strategy/Programme that we will be preparing to improve the thermal performance of our stock in order to reduce heat loss and energy use in our properties. Not only will this strategy/programme help to address Fuel Poverty and improve our tenants' comfort, but it would also be a major part of our effort to contribute to decarbonisation and reducing carbon emissions to help meet the UK's 2050 Net Zero Carbon target.
- 4.7 However, such an Energy Efficiency Strategy/Programme will require very significant investment. Some 70,000 of our stock of 85,000 dwellings are of cavity wall construction. Applying average replacement costs for different types of properties suggests a CWI replacement programme funding requirement of some £150 million to £175 million.
- 4.8 In addition to cavity wall properties we would also have to address our 'single skin' properties<sup>4</sup>, almost all of which have no external wall insulation at all and whose energy ratings tend to be lower.
- 4.9 Unfortunately the level of investment that would be required for this Energy Strategy/Programme is currently not available to the Housing Executive. Our stock investment funding dilemma is well known. In summary, given our low rents, the level of funding available for investment in the stock from our income is not sufficient to meet its maintenance and improvement needs, and we are currently projecting a £1 billion shortfall over the next 10 years alone.
- 4.10 The Minister for Communities' statement to the NI Assembly on 3<sup>rd</sup> November 2020 provides a clear direction of travel to put the Housing Executive in a position to obtain the funding necessary to deliver the investment programme that would be required to achieve and maintain the standard of accommodation expected of modern social housing.
- 4.11 However, this will likely take a number of years to put in place and, therefore, securing the investment that would be needed for our Energy Efficiency Strategy's programme will only be possible in the medium-to-long term.
- 4.12 The Housing Executive and the Department for Communities have agreed a strategic stock investment approach for the interim short term period that is aimed at ensuring the best use of the funding that will be available to us in order to optimise

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<sup>4</sup> For example, properties with solid walls, Orbits, No Fines etc.

the provision of properties to meet growing housing need. This strategic approach focuses on our core landlord obligations i.e. Response Maintenance, Cyclical Maintenance and health & safety activities, Adaptations, External Cyclical Maintenance (ECMs) and addressing the significant backlogs in component replacements that were confirmed by Savills' stock condition survey in 2014/15.

- 4.13 The consequence of this is that in the absence of an injection of external funding to specifically address CWI - that we do not anticipate at present - we are not currently in a financial position, and will not be in such a position for a number of years, to deliver a province-wide CWI replacement programme for all of our cavity wall stock.
- 4.14 That does not mean that we will not take action on CWI until then, but it does mean that any action that we can or do take must be of sufficient priority compared to other investment imperatives and within our means to deliver. Although the BBA CIT report indicated that the condition of CWI in our properties is not having a widespread detrimental impact on their internal structures, both the SERC and BBA CIT research and our own experience demonstrate that there are already instances in which it is. These clearly need to be addressed.
- 4.15 Therefore, we will adopt the short term and medium-to-long term approaches as set out below.

## **Proposals**

### Short Term

Until our stock investment funding position is resolved and we are in a position to implement a full CWI replacement programme we will address CWI remediation/ replacement as follows.

- The Class 1 properties identified by BBA will be investigated and addressed (this is already underway).
- Instances of suspected CWI failure will be investigated and addressed on a case-by-case basis. They will be referred to a new specialist central Insulation Team (see below) if more detailed investigation is required. If there is a CWI failure and it is confirmed by investigation that this failure is having a detrimental impact on the property's structure - i.e. as per the BBA's Class 1 designation - then the issue will be addressed through remediation or replacement.
  - If only a single property or a small number of properties are affected this will be addressed through our Response Maintenance service.
  - If, however, further investigation suggests a local pattern of CWI failure then a planned scheme will be developed.

- We will implement a small annual programme of schemes to test the approach that we propose to take with the full replacement programme in the medium-to-long term.

### Medium-to-Long term

We will develop and deliver a CWI replacement programme for our cavity wall properties as part of our future Energy Efficiency Strategy/Programme for our stock when the necessary funding to be able to do so is available.

An analysis of the BBA's report's findings did not suggest any particular pattern of non-compliance that would indicate targeted spatial action at this time. Therefore, we propose that the CWI replacement schemes will be programmed to follow the cycle of our External Cyclical Maintenance (ECM) schemes in order to ensure that any fabric defects in a property are remedied first to secure the external structure.

Consequently, in following the ECM cycle, we would anticipate that the full CWI programme would take some 7-8 years to complete at 9,000 to 10,000 properties per annum, requiring annual funding of £20 million to £25 million.

This would be a considerable undertaking and will, of course, be subject not only to the required funding being in place, but also to procurement and the necessary capacity being available in the insulation industry and supply chain. We are currently considering delivery options for this programme.

If there are any CWI schemes that need to be delivered in advance of the ECM cycle due to the urgency of the works that are required then such schemes will also include any works necessary to address any fabric defects in the relevant properties.

One of the suggestions raised in the discussions with the system designers was that CWI schemes should be carried out on a 'whole street' basis, not just for the Housing Executive properties in them. We are currently not able to fund such works to privately-owned properties. Given the extent of properties in our estates that have been sold under our House Sales Scheme the required investment funding implications would be significant. However, we will consider a proposal for a mixed tenure pilot project.



## External Cyclical Maintenance

- 4.16 The report's findings in respect of the condition of the external facades of properties reflect our own concerns regarding the impact of our External Cyclical Maintenance (ECM) programme.
- 4.17 Originally undertaken on a 5-year cycle, the frequency in which we have been able to deliver schemes has reduced over recent years due to a combination of funding and delivery issues and consequently the average cycle has been around 10-11 years for much of the stock.

### Proposal

We will increase our annual ECM programme in order to bring the cycle down to 8 years in the short term, and will aim to restore a 5 year cycle in the medium-to-long term when sufficient funding becomes available.

We will review our ECM Standards & Procedures to ensure that all of the types of external fabric issues highlighted by BBA CIT are addressed in our ECM schemes.

## CWI Extraction/Installation Process

- 4.18 As noted in Section 3, BBA CIT made a number of recommendations regarding CWI installations concerning competency, compliance, guarantees and monitoring. Under this section the Housing Executive sets out its current position regarding the installation process generally, including the specification, surveying, guarantees and accreditations and overarching quality assurance systems in place from extracting and cleaning (if required) and refilling/new installations. Also included will be the proposals and recommendations regarding standards to be adhered to so as to enable the insulation industry to be able to provide a considered response.

### 4.19 Specification

Within the current CPI Specification, it is stated under Section P11 that the system is to be *"Installed in accordance with the BBA or comparable Surveillance Scheme. Insulation company to hold a current BBA or other comparable certificate approved by the Employer."* This is consistent with the M3 Specification that we use for our Response Maintenance contracts. However, our specification will be reviewed to reflect the current industry standards and include the scope to future proof which is specifically considered through the implementation of PAS 2035. It is, therefore,

intended that new cavity wall installations are to be carried out to PAS 2035 standard.

#### 4.20 PAS 2030/ PAS 2035

In order to establish and uphold best practice in energy efficiency retrofit work, the UK government introduced a Retrofit Standards Framework that seeks to avoid piecemeal implementation of energy efficiency measures by requiring the characteristics of each property to be carefully assessed, and a medium term action plan created, before any measures are introduced. Central to this framework is PAS 2035, which clearly identifies the process of assessing a property, how energy efficiency measures should be chosen in response and outlines how long term monitoring can be carried out. It also clarifies the responsibilities and qualifications for individuals involved in the retrofit process.

This specification dovetails with an updated version of PAS 2030:2019, which now solely focuses on the installation, commissioning and handover of energy efficiency measures. Previously, the M3 had stipulated that *'The installation must be undertaken by persons with appropriate skill and experience, approved by the manufacturer and in accordance with PAS 2030.'* It is now the requirement to adhere to the PAS 2035 standard regarding retrofitting dwellings for improved energy efficiency in order to future proof any energy efficiency measures, taking account of all measures over the next 30 years to ensure what we do now will not have a detrimental impact on works we may do over the incoming years, prior to this standard becoming mandatory (NB. from 30 June 2021, it will become compulsory for all certification bodies and registered businesses under the TrustMark scheme to comply with it<sup>5</sup>) and also to provide a fabric first and whole house approach.

#### 4.21 Pre-installation Survey and Suitability for CWI

Prior to any works, the Employer must receive evidence from the contractor/ installer that the building has been inspected in accordance with, and independently verified by, the BBA Cavity Assessment Surveillance Scheme (CASS), CIGA–ISA or another UKAS accredited inspection body equal and approved by the Employer.

When considering the suitability of a property to be insulated it is important that the physical condition, form of construction and exposure to wind driven rain is assessed properly at the point of survey see *'BRE Good Building Guide 44: part 2: Insulating masonry cavity walls - principal risks and guidance'* and also should be in accordance

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<sup>5</sup> <https://cpd.building.co.uk/courses/cpd-2-2020-understanding-pas-2035-and-pas-20302019/>

with the following from 'BRE Report 262 Thermal insulation: avoiding risks' regarding quality control checks for masonry cavity walls.

#### 4.22 Guarantees and Accreditations

Similar to the current M3 specification, a 25 year third party, insurance-backed guarantee to cover the cavity wall assessment, insulation materials, system and installation is to be provided. According to BRE the cavity wall insulation systems have a standard lifetime of 42 years where an installation is accompanied by an appropriate guarantee. An appropriate guarantee is one which meets all of the following four criteria listed on page 55 of the ECO2 Guidance<sup>6</sup>:

- Financial assurance: there must be a mechanism that gives assurance that funds will be available to honour the guarantee
- Duration: lasts for 25 years or longer
- Coverage: results in the failed measure being replaced and covers costs of remedial and replacement works plus materials, and
- Quality Assurance Framework: there must be an assurance framework for the quality of the installation and the product used in the installation. We will assess the suitability of this framework and we may require verification through independent assessment by an independent UKAS-accredited organisation or other appropriate body.

The insulation company should be signed up to a code of professional practice and that the installation is guaranteed for 25 years by CIGA, GDGC or through an independent insurance-backed guarantee from a UKAS recognised body.

There should also be evidence of a quality assurance framework in place whereby the quality of the system and its installation are independently assessed by a UKAS accredited body.

#### 4.23 Cavity Wall Extraction/ Cleaning

Cleaning of cavity walls may only be carried out by a contractor currently registered with the BBA Cavity Cleaning Company Scheme, CIGA , or other UKAS accredited body equal and approved by the Employer, that includes for clearing rubble and other material from the cavity in addition to the extraction of insulation.

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<sup>6</sup> [https://www.ofgem.gov.uk/sites/default/files/docs/volume\\_1.1\\_guidance\\_update\\_delivery\\_final.pdf](https://www.ofgem.gov.uk/sites/default/files/docs/volume_1.1_guidance_update_delivery_final.pdf)

## **Proposal**

We will undertake a review of the currently utilised specifications, agreed systems and guarantees regarding the CWI installation process for our stock in order to ensure contractor competency and the required performance standard. Guarantees, accreditations and cavity extraction/cleaning works should be in keeping with the requirements of UKAS accredited inspections bodies only.

We will introduce an installation process methodology that will include, inter alia, the cavity wall surveillance scheme, pre and post inspection photographs, the agreed accreditation requirements, PAS 2035 and the complete digital records within a Health & Safety File to be handed over post completion.

## **Stock Surveys and Data**

- 4.24 BBA recommended that our housing stock should be inspected at regular intervals to gauge the condition of the external façade and performance of CWI installations, and that the inspection regime methodology should be modelled on that delivered for the research project.
- 4.25 The Housing Executive already undertakes a rolling stock condition survey programme with the aim of inspecting all of our properties every five years. The construction type of a property is assessed and recorded as part of the survey. These surveys also inspect the external façade of a property.
- 4.26 However, our stock condition survey does not currently include a detailed investigation of the condition of cavity wall insulation. The logistics and cost implications of replicating the BBA CIT's CWI inspection methodology and programme on a regular basis would be considerable.

## **Proposal**

We will undertake a small random sample of CWI investigations each year involving an invasive review using borescope and thermal imaging technology in order to provide the most complete picture of the dwelling as possible.

We will introduce a CWI mapping database to our GIS system in order to aid our monitoring of patterns of failure and remediation works across our stock, and better inform future programmes.

## Housing Executive Staffing and Training

- 4.27 BBA recommended that, in summary, the Housing Executive should develop its relevant staff's expertise and competence in respect of CWI.
- 4.28 The Housing Executive has already a core of expertise in its Asset Management Division with staff trained in CWI issues and two qualified Retrofit Coordinators. A number of staff were trained in CWI issues as part of BBA CIT's commission.

### Proposal

We will establish a specialist team in our Asset Management Division that will have responsibility for quality assurance, inspection, compliance and monitoring activities for all insulation types.

As already noted, the team will carry out detailed investigations where these are deemed necessary by local Maintenance staff, and will assist and advise staff responsible for Response Maintenance and Planned Maintenance on CWI matters.

We will consider which staff will require specific CWI training and what that training needs to be.

## Residents' Advice and Information

- 4.29 BBA advised that residents who have CWI installed should be given guidance on how to both maintain and manage their properties following installation and have access to experts who can provide assistance with any matters relevant to this area, and that the Housing Executive puts in place a 'residents' voice' scheme that allows tenants to raise concerns about the condition or effects of CWI in their homes.
- 4.30 We have a range of guidance leaflets for our tenants on the use and maintenance of their homes, but we do not have any that specifically deals with cavity wall insulation.
- 4.31 The Housing Executive is not of the view that a 'residents' voice' scheme specifically for CWI issues is required. Our preference would be that tenants should continue to report any suspected CWI issues that arise via our Response Maintenance service.
- 4.32 The Housing Executive's Housing Community Network enables issues to be raised with managers at all levels. Following the publication of BBA CIT's report a CWI Forum was established with the assistance of SCNI with the aim of retaining the

‘tenants’ voice’ that had been represented on the Insulation Performance Panel by one of the members of the Central Housing Forum. The CWO Forum comprises representatives of the Central Housing Forum, SCNI and the Housing Executive. Although it has not met since the onset of the Covid-19 pandemic it is our intention to retain it as our Action Plan is developed.

### **Proposal**

We will develop guidance for tenants on how to maintain their homes following CWI installations.

We will consider with our HCN’s Central Housing Forum how best to obtain and reflect tenants’ views and concerns regarding CWI going forward.

## **Research**

- 4.34 We believe that further research needs may arise as our Action Plan and future programme develops and are open to discussion with the insulation industry and other interested parties on what these might be. We will also continue to engage with research bodies on CWI issues.
- 4.35 We have already initiated a small project to complement the findings of BBA CIT’s research. This is aimed at determining the impact that current Cavity Wall Insulation (CWI) is having on stock in terms of thermal fabric performance of the dwelling and associated heat loss and thermal transmittance to determine the U Value at the following stages:
- Of existing cavity wall insulation
  - After removing the insulation and cleaning the cavity
  - After refilling cavity with grey bead to industry standards
- Ulster University is to independently verify the results and disseminate as research.

### **Proposal**

We will engage with the insulation industry, research bodies and other interested parties on potential future research needs regarding CWI and bring forward projects as necessary.

## Reporting and Review

4.36 We will report annually on the implementation of the Action Plan.

4.37 We will review the Action Plan in 2026/27 (or earlier if required).

## 5.0 Summary of Actions

ITEM	ACTION	TIMESCALE
<b>1. Remediation/Replacement</b>		
1a	We will complete the investigation and resolution of the Class 1 properties.	To be completed by end of 2021/22.
1b	We will investigate and address any instances of cavity wall insulation failure that have a detrimental impact on the structure of a property.	Already commenced. To be actioned as required.
1c	We will develop and deliver a small annual programme of schemes to test the new extraction/installation process to be developed.	From 2022/23
1d	In the medium to long term we will develop and deliver a CWI replacement programme for our cavity wall properties.	To be confirmed when sufficient funding is available.
1e	We will consider the development of a pilot project to consider a mixed tenure approach.	2022/23
<b>2. External Cyclical Maintenance</b>		
2a	We will increase our annual ECM programme in order to bring the cycle down to 8 years in the short term.	By 2024/25.
2b	We will bring the ECM cycle further down to 5 years in the medium-to-long term.	To be confirmed when sufficient funding is available
2c	We will review our ECM Standards & Procedures to ensure that all of the types of external fabric issues highlighted by BBA CIT are addressed in our ECM schemes.	By the end of 2021/22.
<b>3. CWI Extraction/Installation Process</b>		
3a	We will undertake a review of the currently utilised specifications, agreed systems and guarantees regarding the CWI installation process for our stock in order to ensure contractor competency and the required performance standard.	2022/23
3b	We will introduce a new extraction/installation process methodology.	By the end of 2022/23
<b>4. Stock Surveys and Data</b>		
4a	We will undertake a small random sample of CWI investigations each year.	From April 2022



4b	We will introduce a CWI mapping database to our GIS system.	From April 2022
<b>5. Housing Executive Staffing and Training</b>		
5a	We will establish a specialist team in our Asset Management Division that will have responsibility for quality assurance, inspection, compliance and monitoring activities for all insulation types.	2022/23
5b	We will consider which staff will require specific CWI training and what that training needs to be.	By the end of 2021/22.
<b>6. Residents' Advice and Information</b>		
6a	We will develop guidance for tenants on how to maintain their homes following CWI installations.	2022/23
6b	We will consider with our HCN's Central Housing Forum how best to obtain and reflect tenants' views and concerns regarding CWI going forward.	Ongoing – to be completed in 2022/23
<b>7. Research</b>		
7a	We will undertake a project to determine the thermal fabric performance of the existing insulation in the dwelling and associated heat loss.	Completed by the end of 2021/22.
7b	We will engage with the insulation industry, research bodies and other interested parties on potential future research needs regarding CWI and bring forward projects as necessary.	Ongoing

### Summary of the responses to the Draft Cavity Wall Insulation Action Plan

Subject	Summary of Responses
Remediation/ Replacement	<ul style="list-style-type: none"> <li>• There was overwhelming support for a Cavity Wall Insulation remediation /replacement programme.</li> <li>• There was recognition that very little has been spent on insulation as stated in the HECA Report 2019 so hence the need for a major retrofitting campaign to make homes energy efficient and contribute to meeting environmental commitments.</li> <li>• There was a call for Government to invest in a programme of retrofitting in order to address housing quality, fuel poverty and climate commitments.</li> <li>• It was noted that although replacing cavity wall insulation would be in compliance with Building Regulations, these replaced insulated cavity walls would have an insulation standard that is markedly below what a modern newly constructed cavity wall would achieve.</li> <li>• A failure to carry out cavity wall insulation would likely result in not achieving climate related goals and should be done in the context of an integrated investment approach in improving and climate-proofing existing housing stock.</li> </ul>
External Cyclical Maintenance	<ul style="list-style-type: none"> <li>• The intention of the Housing Executive to get the External Cyclical Maintenance cycle to every 8 years in the interim period while moving towards every 5 years is welcomed.</li> <li>• The need to address poor maintenance in the Housing Executive's housing stock and its relevance to tackling fuel poverty and delivering sustainable housing is key.</li> </ul>
CWI Extraction and Installation Process	<ul style="list-style-type: none"> <li>• The report sets out credible recommendations to positively influence successful installation of cavity wall insulation.</li> <li>• It is probable to assume that the action plan proposed by the Housing Executive will have the dual benefits of tackling fuel poverty and mitigation of CO<sub>2</sub> emissions beyond the influence of their building stock.</li> <li>• The Housing Executive needs to invest more in cavity wall insulation as part of these efforts.</li> <li>• The Housing Executive's ambition to adopt the PAS 2035:2019 approach was seen as representing the gold standard in terms of work quality</li> <li>• PAS 2035 takes a 'whole house' risk-based approach - as opposed to a fabric first approach - as part of ongoing commitments to raising standards and promoting best practice in quality management in the construction industry.</li> <li>• PAS certification must be mainstreamed into the construction industry. With this there needs to be Government support to encourage the uptake of PAS. This could be in the form of subsidised training for existing installers and dedicated training programmes in FE colleges.</li> </ul>

	<ul style="list-style-type: none"> <li>• Consideration should be given to reviewing what percentage of properties have had built-in cavity wall insulation as carrying out effective remedial work and upgrade to this type of cavity wall would be much more difficult to achieve.</li> <li>• There was also strong support that the UKAS accreditation body should be suitably qualified, respected and independent as it would give confidence to consumers and certainty to installers.</li> <li>• There was general consensus that the issues around quality and compliance is important.</li> <li>• There needs to be the proper testing and certification of the cavity wall product that is being manufactured and consideration given to Fire Retardant Additives (FRA) being used.</li> </ul>
Stock Surveys & Data	<ul style="list-style-type: none"> <li>• There was support from the responses around the BBA recommendations that the housing stock be inspected at regular intervals to gauge the condition of the external façade and performance of CWI installations.</li> </ul>
Housing Executive Staffing & Training	<ul style="list-style-type: none"> <li>• There was strong consideration given in relation to the inspection and verification process.</li> <li>• There was also recognition of the importance of well-trained staff to identify the potential problems and dangers caused by defects including heat loss, condensation, damaged external façade and particularly internal damp and mould.</li> <li>• It was noted there was potential benefit of a specialist insulation team in the Housing Executive.</li> <li>• The construction sector needs to continue to increase in skills and the quality of its work to avoid a repeat of the past failings.</li> <li>• Setting out the requirement for PAS certification would align trades people working in this sector in Northern Ireland with the requirements made by a range of GB programmes including ECO and the Warm Homes grant scheme.</li> </ul>
Residents' Advice and Information	<ul style="list-style-type: none"> <li>• Tenants should be made aware of their rights to request an inspection of their properties, particularly if they have noticed any of the issues outlined in the BBA research and be advised of the dedicated next steps they can follow to seek support in terms of remediation/recompense.</li> <li>• There was welcomed consideration given by the Housing Community Network's Central Housing Forum on how best to obtain and reflect tenants' views and concerns regarding CWI going forward.</li> <li>• The consultees who commented agreed with the calls for the inclusion of a tenants' voice element to the work of the CWI Forum as a matter of priority, in order to enable tenants to raise their concerns and report any suspected CWI issues.</li> <li>• The recommendations and suggestions made by residents who know their properties should be acted upon and taken seriously.</li> <li>• Any additional engagement and communication between residents and the Housing Executive is welcome.</li> </ul>
Recompense/ remediation	<ul style="list-style-type: none"> <li>• Whilst there was general support in principle of the idea of accessing guarantees for previously installed cavity wall insulation, it was</li> </ul>

regarding past installations	recognised that the lifetime of these guarantees may have elapsed and that the Housing Executive will likely have to look at other options.
Research	<ul style="list-style-type: none"><li>• There was a positive response to the proposal for continued engagement between the Housing Executive, the insulation industry, academics, research bodies and other interested parties on potential future research needs regarding CWI.</li></ul>

### Glossary of Terms & Definitions

Term	Definition
BBA	British Board of Agrément.
CIT	Consultancy, Investigation and Training, a subsidiary of the British Board of Agrément (BBA).
CASS	BBA's Cavity Assessment Surveillance Scheme.
CIGA	Cavity Insulation Guarantee Agency. It provides independent 25 year guarantees for Cavity Wall Insulation fitted by registered installers in the UK and Channel islands.
CIGA – ISA	CIGA's Independent Surveillance of Assessment Scheme.
CPI	Co-ordinated Project Information specification.
CWI	Cavity Wall Insulation.
Designers' CW Surveillance Scheme Methodology	The method by which insulation companies that are classed as system designers propose to carry out the insulation design, installation and monitoring process in a pre-approved system, in line with existing standards. This would include how the surveys are carried out, the method of pre-installation checks, the inclusion of other factors that affect the whole house such as ventilation and heating system, equipment used to survey (e.g. borescopes, thermal imaging cameras), inspections during installation (e.g. machine calibration, actual volume of product installed etc.) and post completion monitoring.
ECM	External Cyclical Maintenance.
EWI	External Wall Insulation.
GDGC	This is a specialist deposit protection and insurance backed guarantee provider for the home improvement sector.
IPP	Insulation Performance Panel
KIWA	European institution for testing, inspection and certification
NZEB	Net zero or nearly zero energy. Buildings designed to this standard are highly efficient with extremely low energy demand. Such buildings produce as much energy as they consume, accounted for annually.
PAS 2030:2017	Publicly Available Specification for the installation of energy efficiency measures in existing buildings. <i>The 2017 updated PAS () specifies requirements for the installation of energy efficiency measures (EEM) in an existing building, applicable whether the building is used for commercial or residential purposes.</i>
PAS 2035:2019	Publicly Available Specification for Retrofitting dwellings for improved energy efficiency.

	<p>PAS 2035 essentially provides a specification for the energy retrofit of domestic buildings, and details best practice guidance for domestic retrofit projects. This PAS embraces quality retrofit work eliminating problems associated with defects, shallow retrofit, accountability, poor design and performance gap. PAS 2035 delivers a whole building approach to the retrofit process, considering the home, environment, occupancy and the householders' improvement objectives when determining the most suitable measures to install. This eliminates the issue of retrofit work being considered in isolation which can unintentionally damage the overall building performance. Moreover, five new retrofit roles have also been introduced within the PAS 2035 process, with clear responsibilities and accountabilities established to ensure that individuals deliver quality throughout. Elmhurst currently runs training and schemes for two of these new roles, including the Retrofit Assessor and Retrofit Coordinator.</p>
TrustMark	<p>This is the Government Endorsed Quality Scheme covering work a consumer chooses to have carried out in or around their home. It has been established as the new quality mark within the retrofit standards framework. TrustMark and PAS 2035 is supported by an Industry Code of Conduct, a Consumer Charter and a framework of technical standards for retrofit. Users of the TrustMark Government endorsed quality scheme will be required to comply with PAS 2035 when undertaking any domestic retrofit work. Those who hold the TrustMark can demonstrate to consumers that they have the skills and knowledge to deliver the best practice standards and trading practices in the sector.</p>
SEAI	Sustainable Energy Authority of Ireland.
SERC	South Eastern Regional College.
UKAS	UK Accreditation Service. This is the body responsible for determining, in the public interest, the technical competence and integrity of organisations such as those offering testing, calibration and certification services.