

BS 40104 Retrofit assessment for domestic dwellings – Code of practice

Recommendations and amendments to Committee CB/401

The Property Care Association (PCA) is the UK's leading representative organisation for the protection of buildings. Championing high standards of professionalism, providing guidance, expertise, and advice for homeowners and professionals championing high standards of professionalism, providing guidance, expertise, and advice for homeowners and professionals.

Our skilled and audited membership operate across domestic, commercial and civil sectors in the structural repair, structural waterproofing, timber preservation, damp protection, flood remediation and invasive weed control industries.

With strict membership criteria, comprehensive training programmes and a wealth of information for professionals and homeowners, the PCA and its members help protect the integrity and comfort of buildings in new build and refurbishment projects whilst also being a reliable source of guidance and expertise.

The following comments or suggested amendments are made in relation to the consultation process by BSI for publication of this British Standard BS 40104.

Greyed text is reflected with no comment or an amendment to the text.

Response Summary

As an industry we understand the consequences of ill-conceived and executed retrofit projects. For many years we have expressed our concerns and advocated for higher standards for retrofit projects, which if installed incorrectly can lead to damp and mould problems. The guidance set out in this draft proposal is clearly aimed at delivering a higher standard and although we support the ambition of the drafting team, it is difficult to see how the requirements set out in this document will be delivered in reality and on the scale required.

This draft guidance follows current industry trends and looks to set out a framework for competence that includes the skills, knowledge and experience that a retrofit assessor should possess. Any assessor who delivers to this standard in future, must work within their competence and recognise when to seek specialist guidance. However, there are few in the current workforce that would meet the competence framework.

To meet government's net zero ambitions, retrofit is required on a vast scale on an increasingly urgent timescale. Scaling the delivery of retrofit on the basis set out in this document, is not achievable. The competence expected of a retrofit assessor is too great: and we believe exceeds the competence expected of a more experienced professional. This would therefore require a huge increase in the upskilling of our existing workforce, which would stifle the mass roll out of retrofit.

1. Scope

2. Normative References

3. Terms and definitions

We would recommend the following revision to the proposed definitions;

3.1 competent person

an individual who possesses necessary skills through knowledge training and experience with appropriate behaviours who can effectively fulfil defined activities for protecting a buildings health, safety and occupancy.

3.7 retrofit assessment

a first step approach for inspecting recording and assessing the characteristics of an existing dwellings and structural condition to its local context. Including the form of construction, services, ventilation energy efficiency and occupancy, to provide sufficient information to prepare a retrofit design.

4. Assessment process

4.1 Stage 1: Context assessment

4.2 Stage 2: On-site assessment

A list is included for the minimum equipment that should be carried by an assessor; this includes a vane. The Future Homes Standard has indicated a move away from standard hooded vane anemometers in favour of varieties with powered hood options due to their lack of reliance on corrective factors.

The correct use a vane anemometer requires considerably more knowledge on the part of the operator, but a powered hood option is a specialist piece of equipment that cost several thousand pounds. In instances where this equipment is required, it should be referred to an appropriate specialist.

The value of a “head and shoulders” inspection of a loft void, particularly given the level of detail indicated elsewhere, is not sufficient. Full access to the loft will enable to assessor to check connections of the ventilation systems, ensure there is even distribution of the insulation across the joists and check for defects that may not have been visible from the external assessment.

The scope of this document is to undertake an assessment of a building and not to identify specific defects. Therefore, the list of equipment is excessive, especially where trained use of equipment is required and the last paragraph clearly states, “*The assessor should identify defects and flag areas requiring further investigation by a recognised competent person.*”

4.3 Stage 3: Reporting and lodgement

5. Context assessment

5.1 Process

5.1.1 Overview

5.1.2 Planning and statutory considerations

5.1.3 Historical Insight

5.1.4 Ground conditions and topography

5.1.5 Local factors, exposure and shelter

5.1.6 Environmental factors

Additional reference to the DEFRA Magic Map <https://magic.defra.gov.uk/> should be added as this will include other topographical and environmental data which will prove useful to an assessor.

5.2 Output

6. On-site assessment

6.1 Condition Assessment

6.1.1 Condition rating

The proposal states that, *“the option of further investigation should only be used when needed, and where the issue is directly relevant to a likely EEM.”* We believe that the assessor has a duty of care to the occupant and if a defect is apparent to the assessor, they should inform the occupant of the defect and recommend further advice is sought from a competent person, regardless of its impact on any EEM. The statement should be updated to reflect this.

6.1.2 Process

6.1.3 Output

6.2 Ventilation assessment

We support the intention to increase occupant engagement but tailoring retrofit requirements around current occupation levels, when it could vary significantly over the life of the retrofit is shortsighted. For example, many properties are tenanted and will have a high turnover in occupants and a semi-detached three-bedroom property could have a two-person occupancy in year one and a six-person occupancy in year two.

We responded to the [Future Homes Standard](#) earlier this year, and pages 5 - 10 detail how we believe ventilation assessment should be considered.

6.2.1 Process

6.2.2 Output

6.3 Occupancy assessment

6.3.1 Process

Although the assessor is expected to engage with the occupant about disabilities and it is important they ensure any additional needs are considered whilst surveying the site, developing the report and communicating the findings to the occupant in a way they understand. Disabilities and other needs of the occupants may also be a consideration whilst undertaking works (including ensuring appropriate access arrangements are in place), but should not be a consideration for the viability of a property for EEM.

6.3.2 Output

6.3.2.1 Current energy use

6.3.2.2 Occupants

The assessment of disabilities or special needs should not be the role of the retrofit assessor. It would not be appropriate for the assessor to assess the severity of the disability or make any needs-based assessments of the occupants.

6.3.2.3 Occupant comfort, satisfaction, needs and usability

Questioning the occupant on their satisfaction with their home and where it meets their needs, is unlikely to provide meaningful data.

6.3.2.4 Other information

In e) it is suggested that the landlord's details should be taken from the occupants. It is not appropriate to undertake an assessment without the landlord's consent.

6.4 Energy performance assessment

6.4.1 Process

6.4.1.1 Overview

The obtaining of data for accurate modelling is far beyond an assessors' remit and therefore assessment should be limited to observations on the physical site visit.

6.4.1.2 Suitable methodologies

6.4.1.3 Site evidence

6.4.1.4 Software

6.4.2 Output

6.5 Site specific context assessment

6.5.1 Process

6.5.2 Output

6.6 Significance assessment

6.6.1 Process

6.6.2 Output

7. Reporting and lodgement

Assessment of a domestic dwelling for a retrofit solution is for a surveyor or competent assessor to collate sufficient non-invasive information based on their observations. The assessment will summarise existing or potential damage due to inherent design or latent defects, into defined categories. This will provide the report's reader with details of any requirements for further detailed investigations by specialist building engineers or surveyors. Categorisation in this way, will allow the property owner with an understanding of priorities and cost control for retrofit solutions.

8. Competencies

The competence framework noted in Annex C covers many building disciplines and there are few individuals who already meet this wide spectrum of competencies. This guidance is designed for assessment of a building for retrofit and, the competencies should demonstrate an awareness of defects or potential defects that could lead to potential property damage or harm to occupants. No surveyor can be an expert in all problems which could affect a building, and specific identifiable defects in an assessment will require further investigative work by a specialist building engineer, the findings of which should be included in the final report.

Annex A (informative) Condition

We would recommend removing the word contextual to avoid any confusion with the context aspect of the assessment.

A.1 Chimney stacks

A.1.1 General

A.1.2 Normal Inspection

A.1.3 Common defects

A.2 Roof coverings, facias and soffits

A.2.1 General

A.2.2 Normal Inspection

A.2.3 Common Defects

A.3 Rainwater pipes and gutters

A.3.1 General

A.3.2 Normal Inspection

A.3.3 Common defects

A.4 External main walls

A.4.1 General

A.4.2 Normal Inspection

A4.3 Common defects

Many of the defects listed here including cavity walls tie failure and structural movement, are well outside the remit of retrofit assessment and would require further inspection by an appropriate specialist. As wall tie failure can only be confirmed via a destructive survey, it would be unlikely that a retrofit surveyor would identify this defect from their non-invasive survey.

A.5 Windows

A.5.1 General

A.5.2 Normal Inspection

A.5.3 Common defects

A.6 External doors (including patio doors)

A.6.1 General

A.6.2 Normal inspection

A.6.3 Common defects

A.7 External woodwork

A.7.1 General

A.7.2 Normal inspection

A.7.3 Common defects

A.8 External finishes

A.8.1 General

A.8.2 Normal inspection

A.8.3 Common defects

A.9 Other external features

A.10 Internal roof structure

A.10.1 General

A.10.2 Normal inspection

A.10.3 Common defects

A.11 Ceilings

A.11.1 General

A.11.2 Normal inspection

A.11.3 Common defects

This list should be extended to include wood boring insects as any activity that could increase moisture loading in the loft has the potential to provide more favourable conditions for wood boring insects.

A.12 Internal walls and partitions

A.12.1 General

A.12.2 Normal inspection

- A.12.3 Common defects
- A.13 Floors
 - A.13.1 General
 - A.13.2 Normal inspection
 - A.13.3 Common defects
- A.14 Fireplaces and chimney breasts
 - A.14.1 General
 - A.14.2 Normal inspection
 - A.14.3 Common defects
- A.15 Built in fittings
 - A.15.1 General
 - A.15.2 Normal inspection
 - A.15.3 Common defects
- A.16 Internal woodwork
 - A.16.1 General
 - A.16.2 Normal inspection
 - A.16.3 Common defects
- A.17 Bathroom fittings
 - A.17.1 General**

The requirement for the assessor to check for bathroom leaks is well beyond the assessment of the property for its suitability for retrofit. Existing plumbing defects should be addressed regardless of proposed EEM measures and should not be a prerequisite for retrofit and referred to a specialist.

- A.17.2 Normal inspection
- A.17.3 Common defects
- A.18 Conservatories
- A.19 Electrical Services
 - A.19.1 General
 - A.19.2 Normal inspection
 - A.19.3 Common defects
- A.20 Space heaters and domestic hot water
 - A.20.1 General
 - A.20.2 Normal inspection
 - A.20.3 Common defects
- A.21 Fuel supplies and meters
 - A.21.1 General
 - A.21.2 Normal inspection
 - A.21.3 Common defects
- A.22 Water Services
 - A.22.1 General
 - A.22.2 Normal inspection
 - A.22.3 Common defects
- A.23 Other Issues
 - A.23.1 General
 - A.23.2 Normal inspection

A.23.3 Common defects

Annex B (informative) Data collection

B.1 Data Templates

Within table B4 there are references to flexible ducting being pulled to 90% taut. Flexible ducting should only be used for final connections and rigid ducting should be used where possible.

B.2 Retrofit assessment drawings

B.3 Obstacles to retrofit

Annex C (normative) Competence framework

C.1 Assessor competencies

C.2 Energy efficiency measures

The list of ventilation systems the assessor is required to have knowledge of only includes mechanical ventilation with heat recovery (MVHR). This is a newer technology installed into more airtight homes (commonly installed in new properties and in new extensions) and are less likely to be encountered during a retrofit assessment. The list should be amended to state the assessor should have knowledge of all ventilation strategies including natural ventilation with mechanical extract fans, centralised and decentralised mechanical extract ventilation (MEV and dMEV), positive input ventilation (PIV) and passive stack ventilation (PSV).

Annex D (informative) Learning, skills development, and qualifications

D.1 Continuing professional development

D.2 Qualifications: to our knowledge, the recommended qualification Level 3 Award in Ventilation and moisture in Buildings doesn't exist. The Certificated Surveyor in Dampness and Timber in buildings (CSTDB) should replace or be added to the current recommended qualifications. This qualification is accredited by the Awarding Body of the Built Environment (ABBE) and is recognised in the government guidance [*Damp and mould: understanding and addressing the health risks for rented housing providers.*](#)

The PCA has also developed the Certificated Surveyor in Dwelling Ventilation (CSDV) which is currently being reviewed by the awarding body ABBE for recognition as a formal qualification. If this recognition is achieved in advance of this standard being published, we hope this will also be added to the list of recognised qualifications.

Bibliography

For further information on our response, please contact:

James Berry 01480 400000