

STBA

SUSTAINABLE TRADITIONAL
BUILDINGS ALLIANCE

The use of EPCs in MEES and the Whole House Approach to Retrofit

Swindon

26th November 2018

Nigel Griffiths
Director, STBA

The Sustainable Traditional Buildings Alliance

Energy, Health and Heritage

STBA Patrons		Affiliates & Members					
							
							
							
							
Supporting Organisations							
							
							
							
							

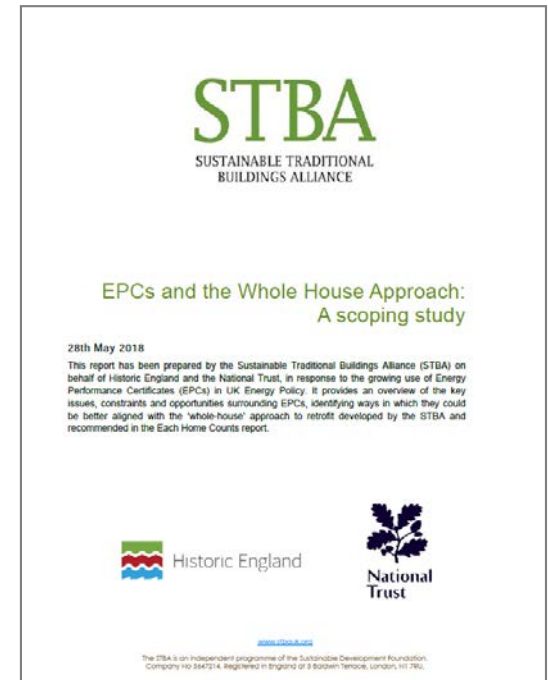
EPCs and the Whole House Approach to Retrofit

Should EPCs be used in MEES?

- Inaccuracies in EPCs
- Challenges for older & rural buildings
- EPCs only look at energy use. They miss:
 - Condition
 - Health -> Moisture, indoor air quality
 - Heritage -> Significance
- The use of EPCs as design tools

Is there a better approach?

- **A Whole House Approach**
- STBA scoping study, published this year
 - 35 pages: origins, uses, issues, solutions
 - Sponsored by our key Patrons - National Trust and Historic England
- Developing templates for Whole House Survey, and training for surveyors.



EPCs and the Whole House Approach to Retrofit

What EPCs are:

Indication costs of energy (not energy use) under standardised conditions.

‘The EPC rating shown here is based on standard assumptions about occupancy and energy use and may not reflect how energy is consumed by individual occupants’

i.e. they do not reflect energy performance, it’s just an estimate.

... so the name is wrong ...

Energy Performance Certificate PREVIEW NOT FOR ISSUE **Government**


Dwelling type: Semi-detached house **Reference number:** 0000-0000-0000-0000-0000
Date of assessment: 20 March 2018 **Type of assessment:** RdSAP, existing dwelling
Date of certificate: 20 March 2018 **Total floor area:** 82 m²

Use this document to:

- Compare current ratings of properties to see which properties are more energy efficient
- Find out how you can save energy and money by installing improvement measures

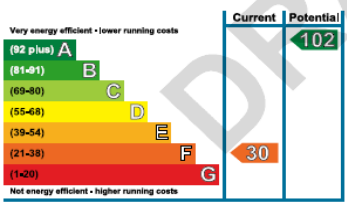
Estimated energy costs of dwelling for 3 years:	£ 3,501
Over 3 years you could save	£ 1,983

Estimated energy costs of this home

	Current costs	Potential costs	Potential future savings
Lighting	£ 255 over 3 years	£ 171 over 3 years	
Heating	£ 2,898 over 3 years	£ 966 over 3 years	
Hot Water	£ 348 over 3 years	£ 381 over 3 years	
Totals	£ 3,501	£ 1,518	

These figures show how much the average household would spend in this property for heating, lighting and hot water and is not based on energy used by individual households. This excludes energy use for running appliances like TVs, computers and cookers, and electricity generated by microgeneration.

Energy Efficiency Rating



The graph shows the current energy efficiency of your home.

The higher the rating the lower your fuel bills are likely to be.

The potential rating shows the effect of undertaking the recommendations on page 3.

The average energy efficiency rating for a dwelling in England and Wales is band D (rating 60).

The EPC rating shown here is based on standard assumptions about occupancy and energy use and may not reflect how energy is consumed by individual occupants.

Top actions you can take to save money and make your home more efficient

Recommended measures	Indicative cost	Typical savings over 3 years
1 Internal or external wall insulation	£4,000 - £14,000	£ 1,170
2 Floor insulation (solid floor)	£4,000 - £6,000	£ 117
3 Draught proofing	£80 - £120	£ 57

See page 3 for a full list of recommendations for this property.

To find out more about the recommended measures and other actions you could take today to save money, visit www.gov.uk/energy-grants-calculator or call 0300 123 1234 (standard national rate). The Green Deal may enable you to make your home warmer and cheaper to run.

EPCs and the Whole House Approach to Retrofit



What they are NOT . . .

. . . a robust energy, building or retrofit survey

The EU's own report on the EPBD (CA EPBD 2016) states:

“The detailed energy audit is not regarded as part of the EPC scheme, but as a necessary next step after having completed the EPC. This distinction is necessary for clients' acceptance:

an EPC cannot substitute for detailed refurbishment planning, nor has it been designed to do so.”

EPCs and the Whole House Approach to Retrofit



Background & origins

- 2002: EU Energy Performance of Buildings Directive (EPBD), Article 7
 - Inspired by Kyoto Protocol, i.e. GHGs
- 2007: EPC included in Home Information Pack
 - Requirement initially limited to 4+ bed properties
- 2010: HIP withdrawn, EPC retained & requirement extended to all dwellings
- 2010: EPBD recast, required EPC to be included in sale / rental advertising
- Contents (& exemptions) dictated by Energy Performance of Buildings (England & Wales) Regulations 2012

EPCs and the Whole House Approach to Retrofit



Purpose / How they are now used

- Environmental: addressing climate change (Kyoto / EPBD)
- Commercial / Financial: *'The ultimate goal of EPCs is to create a demand-driven market for energy efficiency in the building sector' **
- Information source: for owners & occupants
- Policy: increasing use in Government energy efficiency programmes, e.g. Green Deal, ECO2, FiT, RHI
- Enforcement: increasingly being used for minimum standards, e.g. MEES

The last 2 are critical as the recommendations come into play

EPCs and the Whole House Approach to Retrofit



Current UK Policy Context

- Each Home Counts Report
 - Recommends a Whole House Approach to retrofit
- PAS2035 (the new standard for retrofit due 01/02/19)
 - Mandates consideration of heritage, moisture, ventilation
- Building Regulations
 - Covers water efficiency, sustainable drainage, accessibility, safety
 - Contains exemptions for buildings of traditional construction in Part L
- Wales: Wellbeing of Future Generations Act
 - Puts people at the centre of the sustainability agenda
- Clean Growth Strategy
 - Suggests targets for achieving EPC scores by 2030 and 2035.

The first 4 of these require a broader approach to retrofit.

An approach with multiple objectives (and metrics).

EPCs and the Whole House Approach to Retrofit



PAS2035

Objectives

Improved functionality, usability & durability of buildings

Improved comfort, health & wellbeing of building occupants

Improved energy efficiency

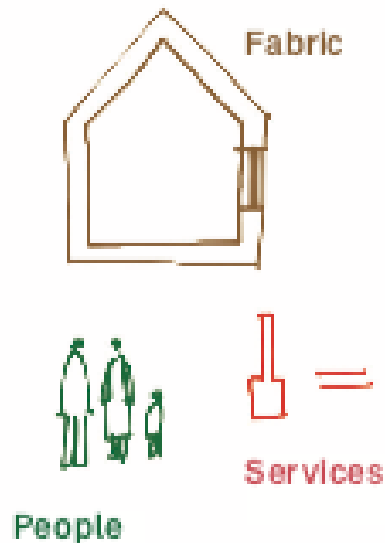
Reduced environmental impacts

Protection & enhancement of architectural / cultural heritage

Avoidance of unintended consequences

PAS 2035 is a major development as it is the first time a UK energy standard has required consideration of factors other than emissions from buildings in use

A Whole House Approach



A Whole House Approach

- Considers all aspects of a building's fabric and services
- Considers interactions with the occupants
- Assesses significance and the potential impact of retrofit
- Assesses moisture levels and the potential impact of retrofit
- Assesses ventilation and the potential impact of retrofit

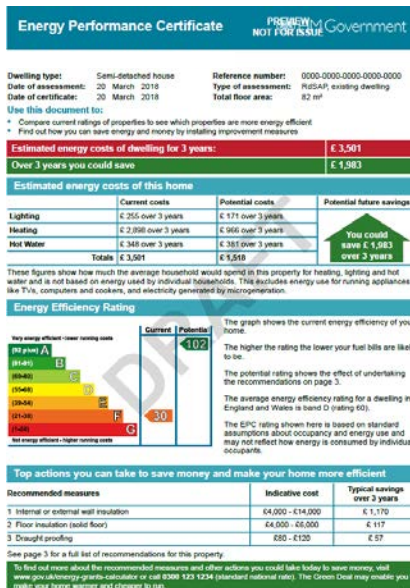
EHC Recommendation 17:

“all retrofit projects will have an appropriate design stage which takes a holistic approach and adequately considers the home, its local environment, heritage, occupancy . . . when determining suitable measures.”

EPCs and the Whole House Approach to Retrofit

Key questions

1. How can EPCs be improved ?
2. How much can they be improved while retaining their basic function?
3. How much can they inform a Whole House design approach?



RETROFITWORKS

RetrofitWorks:
Delivering Whole House
Retrofit at scale in London

7th June 2018

SPAB-STBA Conference 2018

CO-OPERATIVES UK
MEMBER

1. Short term opportunities for improving EPCs

A) Wording & Structure

- Renaming of the Energy Efficiency Rating (Energy Cost Indicator?)
- Give text on assumptions more prominence
- Remove much extraneous text
- Show all figures as annual
- Increase prominence of Environmental Impact Rating
- For low-scoring properties, include summary of likely reasons
- Add explicit text to recommendations
 - Suitability of measures for particular building types
 - General 'maintenance first' principle
 - Possible need for increased ventilation provision
 - Benefits of related measures not shown in list
- Give Addenda notes more prominence

EPCs and the Whole House Approach to Retrofit

STBA

SUSTAINABLE TRADITIONAL
BUILDINGS ALLIANCE

1. Short term opportunities for improving EPCs

B) Advisory Notes

- Allow assessors to note:
 - High exposure outside exposure zones map
 - Evident maintenance issues
 - Where a property is of traditional construction / may have significance & therefore require a different approach (cf. BR L1B)
- Develop standardised text for these areas
- Develop standardised text to appear where EWI or IWI are recommended (as for CWI)

C) Heating system databases – expand to include all models plus biomass

D) Listed buildings & Conservation Areas – clarify position beyond doubt

2. Long term opportunities for improving EPCs

- Rename EPC
- Develop an insulation database
- Develop ventilation database (already exists within SAP)
- Review focus of EPC
- Develop improved assessment process
 - E.g. access to property documentation
 - E.g. option to provide or source further evidence
- Develop enhanced training courses for DEAs (or link into existing)

These changes would make EPC process more consistent with the Whole House approach

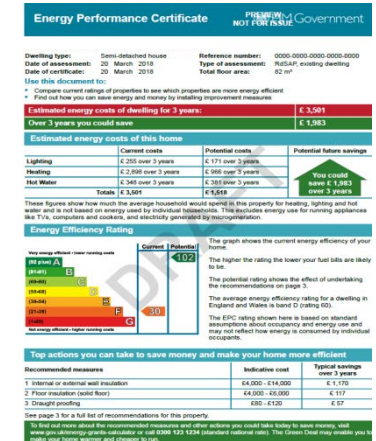
EPCs and the Whole House Approach to Retrofit



3. Alignment with the Whole House approach

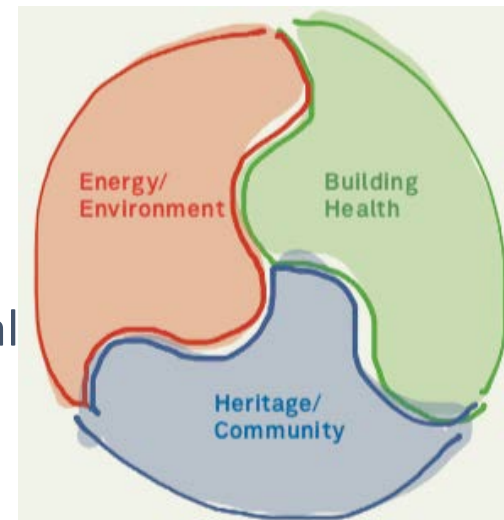
EPCs . . . have the potential to serve as a useful part of a Whole House assessment, but cannot deliver it.

- They contain some of the basic data on areas and construction.
- They have nothing on condition, moisture, ventilation, context, significance



A Whole House Approach

- Will ensure that each building becomes as sustainable as it can be;
- Will ensure that retrofit avoids unintended consequences;
- Can deliver a wide range of co-benefits to the local economy, to the environment, and to residents.



EPCs and the Whole House Approach to Retrofit

The impact of Brexit

Option A

Adopt or exceed EU and existing UK targets and policies to achieve EPC scores for target building groups.

(Note MEES in Scotland)

Option B

Recognise failures of the narrow approach

Take the opportunity to review the sustainability agenda, targets and EPCs

Be consistent with EHC and PAS2035

Achieve a wide range of goals through retrofit



EPCs and the Whole House Approach to Retrofit



EPCs elsewhere in Europe

- Interpretation of EPBD varies
 - i.e. There is scope for change even within EU legislation adopted
- Most focus more on the environmental rating (EIR)
 - UK focuses on energy efficiency (EER) ...
 - ... which is actually an energy cost indicator
- Calculation methodology varies
 - Outdoor climate / internal loads / passive solar gain / local solar exposure / building position / natural & mechanical ventilation ...
- Most cost significantly more to produce
 - Would the UK market bear this?

EPCs and the Whole House Approach to Retrofit



EPCs and the Whole House Approach: A scoping study

28th May 2018

This report has been prepared by the Sustainable Traditional Buildings Alliance (STBA) on behalf of Historic England and the National Trust, in response to the growing use of Energy Performance Certificates (EPCs) in UK Energy Policy. It provides an overview of the key issues, constraints and opportunities surrounding EPCs, identifying ways in which they could be better aligned with the 'whole-house' approach to retrofit developed by the STBA and recommended in the Each Home Counts report.



Historic England



National
Trust

www.stbauk.org

The STBA is an independent programme of the Sustainable Development Foundation.
Company No 5447214. Registered in England at 5 Baldwin Terrace, London, N1 7RU.

Thank you for listening

“EPCs and the Whole House Approach” can be downloaded at:

<http://files.site-fusion.co.uk/e8/8e/e88ebac9-50d6-4710-8fea-0d39e46bcadd.pdf>