STBA
SUSTAINABLE TRADITIONAL
BUILDINGS ALLIANCE

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Home & Local Energy Directorate
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23rd November 2017

Dear Sirs

**Response to call for evidence on the reform of the Green Deal Framework**

We have responded to the consultation questions (appended) but we would like to offer the following general comments regarding points not covered directly by the consultation:

**1. Welcome and offer of further assistance**

The STBA welcomes the UK Government's commitment to reforming and improving mechanisms for funding retrofit. As BEIS is aware, the STBA has already worked with UK Government to develop a responsible approach to retrofit, especially for traditional buildings - which constitute 1 in 3 of those requiring change. We trust that our comments below will contribute further to this process and we would be pleased to discuss any of these in more depth if required.

**2. Whole House Approach**

The Each Home Counts Report recommends a "Whole House" approach to retrofit. However, the Green Deal is currently framed around retrofit "measures" which is not consistent with Each Home Counts. Any one measure has an impact on how the rest of the building behaves (interactions), and there have been well-documented failures in retrofit where a whole house approach has not been used; in these cases, moisture has built up, fabric has been damaged, air quality has been reduced, and there have been impacts on health. Grenfell is of course the most terrible example of where a narrow agenda of simply saving energy, coupled with multiple failures (perhaps including standards, design, procurement, quality control, compliance) can lead. A whole building approach would have prevented such a disaster, and will prevent many lesser failures if adopted in future.

The present "measures" approach of the Green Deal also fails to value proper repair and maintenance. If an older building is correctly maintained it will be dry and well sealed and perform better not only in terms of energy but also in terms of health and heritage. Repair and maintenance is cheaper than most Green Deal measures (and a pre-requisite for their success) and should therefore be included and encouraged wherever possible.

**3. Training of Assessors**

There is an implicit reference (Q3) to "professional" assessors and advisers. Buildings are complex, and traditional buildings are particularly complex; it is not yet fully known how they behave even without retrofit, and much research remains to be done on the effects of adding impermeable insulation to previously vapour-open structures, on issues regarding thermal bridging, and the

effects of retrofit on air quality. Existing Green Deal assessors have at best a limited knowledge in a specialist area. The training provided to assessors needs to be reviewed, standards developed and externally validated. PAS2030 does not currently cover traditional buildings but is under review.

The Green Deal Providers Guidance (Nov 2012) section 2.3 notes the need to consult experts where vulnerable buildings are under consideration and it is essential that this requirement is retained and strengthened for the "1 in 3" in any new Green Deal scheme. At present there are very few people in the UK qualified to provide this assessment for traditional buildings and at the very least they need a full understanding of BS7913. The STBA would be willing to assist in the development of appropriate training and qualifications for surveyors of traditional buildings.

**4. Other ways to improve the take-up of the Green Deal**

The complexity of the Green Deal process is only one reason why it failed, but there are others which may be more important. The scheme is much more likely to have higher take-up if the interest rate is below that which borrowers may obtain elsewhere, and if the loan does not attach to the property.

**5. Relevance to other energy efficiency schemes**

In the specific comments below we have suggested ways in which the quality of retrofit could be improved, and it may be useful to apply many of these points to ECO as well as Green Deal - especially where they relate to the need for bespoke survey by a properly qualified assessor.

We would of course be pleased to engage with you further on Green Deal policy development to ensure that the process and measures promoted by UK Government are appropriate for buildings of traditional construction.

Yours faithfully

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Appendix 1: Responses to specific questions in the consultation
(see next page)

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**Appendix 1: Responses to specific questions in the consultation**

1. Assessors and Advisers should work minimally to the standards in development through the Each Home Counts Standards Committee. Buildings differ widely in terms of construction, location, orientation, exposure, heritage value and patterns of occupation. It is therefore essential that assessment is carried out on a whole building basis[1] by professionals who understand the interaction between all elements of a building's structure, its services, and its occupants. This requires understanding of moisture movement, of ventilation and, for heritage buildings, of significance according to BS7913.

2. Measures cannot be installed in isolation, due to the risk of unintended consequences. [2] Installers therefore need to be linked via the GD provider to ensure that all aspects of the assessment are complied with - so for example a measure which improves thermal performance but reduces natural ventilation does not run the risk of decreasing indoor air quality. The Green Deal approach is "one size fits all and fails to consider the complexity of retrofit works, typologies, locations, condition, patterns of occupation and use..

3. Yes. As per Q1, buildings differ widely in terms of construction, location, orientation, exposure, heritage value and patterns of occupation. It is therefore essential that assessment is carried out on a whole building basis by professionals who understand the interaction between all elements of a building's structure, its services, and its occupants. This requires understanding of moisture movement, of ventilation and, for heritage buildings, of significance according to BS7913. Consumers are not well placed to carry out such assessments as buildings are deceptively complex.

4. GDARs are based on RDSAP which at present does not assess solid walled buildings correctly (though improved through amendments to SAP November 2017 awaiting final confirmation). Solid wall insulation is a default recommendation on many EPCs and GDARs in situations where it is completely inappropriate either due to:

- the heritage impact
- the risk of moisture build-up in the wall matrix
- the negligible energy savings available - for example in a terraced house with minimal front elevation and significant fenestration - i.e. most cases

5. We have to be realistic about energy savings. Predicted savings must be based on empirical trials and not on flawed models, otherwise they will overstate savings and create false expectations.

6. Many items on the existing list are not energy efficiency measures but energy supply alternatives. The STBA would welcome a principles-based approach - one which should include consideration of the embodied energy and other environmental impacts of the retrofit measures themselves.

7. Research clearly demonstrates that retrofit measures cannot be installed in isolation. Any change to a building's fabric or services has an impact on other aspects of the building - so for example insulation reduces heat demand so should not be installed without considering what adjustments

[1] See "What is Whole House Retrofit?" http://stbauk.org/stba-guidance-research-papers
[2] http://discovery.ucl.ac.uk/1432987/

should be made to the heating system. Similarly, insulation of one thermal element makes others relatively cooler and thus increases the potential for condensation to form elsewhere. On this basis it would be better to have a set of high-level principles which guide the selection of an appropriate suite of measures, including the provision of adequate ventilation, as many retrofit measures reduce air leakage.

8. No comment.

9. It is well known that a building in a good state of repair functions more efficiently than a damp and draughty building. Repair must be carried out prior to any measures to improve the thermal performance of the building fabric and these repairs should be funded under the same mechanism as retrofit measures.

We do not see merit in including battery storage as at present it appears to have a cost (and potentially an environmental impact) which exceeds the saving it might provide through actual reductions in grid electricity delivered.

Replacement of condemned boilers must take place in any case and does not therefore need any form of public subsidy or encouragement.

Connections to existing heat networks should be encouraged where the carbon intensity of the heat network is below that of a new gas boiler (or ASHP in the absence of mains gas).

Replacement of failed double glazing should also be included as a measure.

10-11. No comment

12. The point of a Golden Rule, surely, is that it should not be broken.

13 - 14. No comment

15. Please see earlier comments regarding accreditation of assessors. The standards being developed by the Each Home Counts Implementation work streams should be applied to the Green Deal.

16-19. No comment

20. Non-domestic buildings are subject to the same challenges as domestic buildings. The safeguards which should be put in place to protect human health, building fabric and heritage in housing should also be applied to non-domestic buildings. It is essential that a whole-building approach is adopted which considers interactions[3], prioritises health of the building users and assesses heritage according to BS7913. This approach must be incorporated into the assessment process, the installation phase and the post-retrofit monitoring regime.

[3] For a comprehensive explanation of interactions backed by peer-reviewed and published research see the STBA's Retrofit Guidance Wheel: http://responsible-retrofit.org/wheel/