Country Land & Business Association

ALL PARTY PARLIAMENTARY GROUP FOR EXCELLENCE IN THE BUILT ENVIRONMENT

INQUIRY INTO SUSTAINABLE CONSTRUCTION AND THE GREEN DEAL

SUMMARY

1. **UK and EU Government policy on climate change mitigation in new and existing buildings drives the Building Regulations, the Energy Performance Certificate (EPC) regime, and the Green Deal. Unfortunately, this current policy has long been illogical and damaging, and is in urgent need of change**.

2. The core assumptions underlying this policy are that so-called "energy efficiency" (or "energy performance") is almost the only thing that matters, that every other kind of carbon effect must be ruled out of consideration, and that climate change mitigation in buildings entails no more than simple maximisation of "energy efficiency". This is patently illogical, but more importantly this approach has damaging consequences for both new and existing buildings, and for the environment generally. It is leading to a generation of new buildings which – far from the "carbon neutrality" claimed for them – actually have high initial carbon impacts, very short lives, and thus high overall carbon impacts. It is also leading to – and via the Green Deal would actively promote – interventions in existing buildings which are illogical in carbon terms, physically damaging to the buildings, financially damaging to their owners and occupiers, and damaging to (where relevant) their heritage significance.

3. This needs to change, by (a) putting policy onto a logical footing, based on minimising overall whole-life carbon impacts, (b) taking this approach into the Building Regulations, (c) adopting sound measurement methodologies, above all by changing SAP (etc) assessments so that they correctly measure overall carbon impacts, not just "energy efficiency" as now, and (d) targeting Green Deal measures and ECO subsidy correctly.

4. Until these key reforms have been implemented, government policy for the built environment will remain a long way from your APPG's objective of 'excellence'.

THE CLA

5. The CLA's c35,000 members manage half the rural land of England and Wales, and probably at least 500,000 buildings. We are thus one of the biggest stakeholder organisations of managers and owners of buildings. Many (but not all) of these buildings are of traditional construction, and we are by far the biggest stakeholder organisation of managers of such buildings. Our members usually take a longer-term view than most businesses and owners, looking to future generations rather than merely the next 5 or 10 years.

THE NEED TO BASE POLICY (AND THE GREEN DEAL) ON ALL RELEVANT CARBON IMPACTS, NOT MERELY ON "ENERGY EFFICIENCY"

6. The CLA has taken an interest in climate change mitigation in existing buildings for some years, primarily because flawed EU and Government policy in this area has increasingly sub-optimal carbon and financial effects on our members and others.

7. Traditional UK and EU policy is that almost the only thing that matters is "energy efficiency". We are of course not opposed to energy efficiency, but it is obviously not the only thing which matters, and the oversimplified assumption that it is has numerous illogical and damaging consequences for new and existing buildings.

8. This illogicality is best illustrated with examples. For instance, replacing a traditional timber window in an existing building with a new uPVC window may (at least sometimes) increase "energy efficiency" in the sense that when first installed the uPVC window has lower "operational emissions", so that if policy is concerned only with day-one "energy efficiency" the uPVC window may be an "improvement". Even where "energy efficiency" is improved, however, a uPVC window has high initial carbon impacts because it is made of plastics, metals, and glass. It also probably has a 10-15 year lifespan before its seals fail and a further high-carbon-impact replacement is needed. Moreover, the removal and disposal of each of these generations of new windows of course has further carbon impacts. When the sums are done properly, taking all these factors into account[1], the claimed carbon case for uPVC is fatally weakened. In addition, the payback period of a uPVC window in financial terms is much longer than its economic life[2], in which case it clearly makes no sense in financial terms either.

9. Basing policy almost exclusively on "energy efficiency" in this way is not logical in either carbon or financial terms. It encourages – indeed via Building Regulations Part L and other policies requires – buildings and building components which achieve high "energy efficiency" by using materials like glass, concrete, and plastics which have high initial and end-of-life carbon impacts and short 10-60 year lives, all of which is ignored by the policy.

10. This traditional approach has been increasingly criticised. For example the 2010 RICS report *Redefining Zero*[3] concluded that "legislation and practice [ignore] the significant amounts of carbon used to make and maintain a building, [leading to serious] misallocation of environmental and financial resources, [and]…much of [what is proposed] may not achieve the environmental goals it was designed to"; and its 2011 report *Non-domestic Real Estate Climate Change Model*[4] said that "retrofitting and adaptation measures should…take account of the embodied and associated whole life carbon issues to avoid the unintended consequences of shifting carbon emissions further up the supply chain".

11. Similarly, the 2011 *HM Government Low Carbon Construction Innovation & Growth Team Final Report*[5] stresses throughout the need to take proper account of overall whole-life carbon impacts, not just day-one energy performance: "the search for zero operational emissions may be at the cost of uneconomically raised embodied emissions. Whole life emissions must be the assessment basis".

12. Initially, the Green Deal and its sensible cost-effectiveness Golden Rule appeared to have taken this new message on board. The Green Deal focused strongly on the four effective no-nonsense measures most likely to make sense in existing buildings in both carbon and financial terms: loft insulation, draughtproofing, cylinder lagging, and cavity wall insulation. But this logical approach has been under sustained attack by lobbyists seeking the inclusion of high-carbon, short-life interventions like double

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[1] Not, of course, using discounted cash flow, which is obviously inappropriate in carbon calculations.
[2] It is interesting that the Government's recently-published illustrative example of the new post-2013 EPC suggests a payback period for double glazing of 80-160 years, far longer than any possible economic life.
[3] *Redefining Zero* (RICS research, May 2010), see Key findings.
[4] RICS Research, 2011, p61, http://sturgiscarbonprofiling.com/wp-content/uploads/SCP_RICS_CCM.pdf
[5] *Low carbon construction Action plan: Government response to the Low Carbon Innovation and Growth Team* www.businessgreen.com/digital_assets/3100/Government_Response_(2).pdf, see especially chapter 3.

glazing and solid wall insulation[6]. This is well-illustrated by a front page article in the Sunday Times of 25 March 2012, which quoted an unnamed "industry figure" as claiming that "external walls are the next key target…the second best measure after double-glazed windows". As a result, the Energy Company Obligation (ECO) which runs alongside the Green Deal, over-ruling its Golden Rule, and compulsorily funded by energy bill payers, is now to be focused on solid wall insulation (and even, in its small print, on window replacement, which should have no place in a climate change mitigation strategy, especially one being funded by energy bill payers).

13. A further important problem is the fiction that buildings of traditional construction are "bad" in climate change mitigation terms, which is largely the result of the current "energy efficiency"-based policy approach and especially the SAP (etc) "efficiency" assessment methodologies based on it. SAP was designed for modern buildings, and places almost all solid-walled buildings, ie virtually all pre-1919 buildings, and nearly all heritage buildings, in the 'worst' EPC bands E-G.

The impacts of current policy on the ground

14. As above, current policy, via Building Regulations, has damaging carbon effects on new construction, forcing the use of high-carbon, short-life materials and methods.

15. But it also has malign effects on the existing buildings with which this Inquiry is concerned. So far these malign effects have been more limited, because Building Regulations have had less impact on existing buildings, and because SAP and EPCs are widely distrusted, and largely ignored on the ground[7].

16. In future these malign effects may well grow, perhaps explosively. Firstly, as above, the Green Deal seems to be departing from the sound principles of effectiveness and cost-effectiveness with which it began. In particular its ECO is going to be spent mainly on subsidising (by c£700m pa) the solid wall insulation and replacement window industries to carry out work that is likely to be (a) very hard to justify in overall carbon impact mitigation terms, and (b) damaging in physical and aesthetic terms. The Heritage Lottery Fund spends c£300m a year on positive change to traditional buildings; it would be ironic – and extremely damaging – if, as now seems likely, the ECO spends considerably more on harming them. Secondly, instead of considering why building owners ignore the flawed EPC system and the SAP assessments on which it is based, it seems that governments intend to use them unchanged as a basis for coercion, initially by banning the letting of all buildings with EPC ratings of F and G under the current SAP system[8], and disqualifying them from the Renewable Heat Incentive. In addition, we know of many suggestions for further change, like applying further sanctions to buildings which score "poorly" under the current SAP system, applying Building Regulations to more work to existing buildings, and further "rolling out" of EPCs and their commercial building equivalents. These changes might be justifiable if the policy and the assessment tools were logical and accurate, but are undesirable and dangerous for as long as they are not.

17. Current policy may carry real scope for profit for the double glazing and solid wall insulation industries. But it also carries real scope for future embarrassment for

[6] Solid wall insulation can theoretically, in some cases, be a long-life measure, but it seems most unlikely that that is what will happen if policy does not change.

[7] Anecdotal evidence from our members and others suggests that they are not trusted or effective, as does research evidence: the 2009 NEF report on EPCs found that even new purchasers of existing houses – people likely to be carrying out work anyway – were unlikely to act on EPC recommendations: of a large sample of 300,000 recent purchasers, only 22 per cent had implemented or were actively intending to implement *any* of their EPC recommendations. Recent Consumer Focus research shows a similar picture.

[8] Unless there are effective safeguards, this could prevent the letting of most heritage buildings, making many of them financially unsustainable, and reducing the likelihood that they will be maintained.

governments. For example, will voters be happy when they discover that the new homes they thought were rock-solid investments will – because they had to be built with short-life materials – reach the end of their lives in 40-60 years? If, as now, few people trust SAP and EPCs, will they act on current climate change policy, and take up the Green Deal? If they do not, it will fail. If they do, will voters be happy if half the houses in Britain are covered in short-life external wall insulation which is visibly decayed in 20 years, or if it causes widespread damp problems in their houses, and will energy-bill payers be happy when they discover that they are paying for this?

THE NEED FOR ACTION

18. The wrongness of current policy is self-evident. Why, when the building methods and materials we use to achieve high "energy efficiency" – concrete, glass, metals, and plastics – are universally acknowledged to have very high initial carbon impacts, do we have a deliberate policy of ignoring those impacts almost entirely? And why, when those materials and methods are acknowledged as having short lives, are we pretending that they are immortal and ignoring the fact that our supposedly 'green' new buildings will have to be replaced every 20-60 years, and many components within 10-20 years?

19. Policy and practice need to be put onto a sound basis, by:

    (i) Changing the underlying policy, so that it is based on minimising overall carbon impacts, not merely on maximising "energy efficiency".

    (ii) Feeding this policy through into Building Regulations, so that these also take account of all carbon impacts, rather than just "energy efficiency".

    (iii) Taking the same approach in SAP etc methodologies, and in EPCs.

    (iv) Taking this approach into the Green Deal, returning to its original emphasis on effective and cost-effective measures, and targeting the 'hard-to-treat' element of ECO subsidy only on measures which are effective in overall-carbon-impact-mitigation terms, and otherwise undamaging, especially to buildings of traditional construction.

    (v) Making SAP etc methodologies more accurate (much of the modelling is now acknowledged to be inaccurate, often for example overstating the energy performance of current/recent materials and methods, and overstating the benefits of the recommendations made in EPCs).

20. Conversely, if governments were to ignore logic and stick to the "energy efficiency-only" approach, policy is likely to become increasingly discredited and ignored on the ground, or become highly unpopular if governments try to enforce it. For example, the Green Deal is likely either to fail because owners do not take it up, or (if it is over-incentivised in the ECO or elsewhere) to degenerate into a sales bonanza for replacement window and solid wall insulation manufacturers, with negative not positive carbon and financial impacts.

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