



(Illustration based on *Each Home Counts* cover) <sup>6</sup>

## RETROFIT COORDINATION: Reflections on the Bonfield Review

PDP LDN

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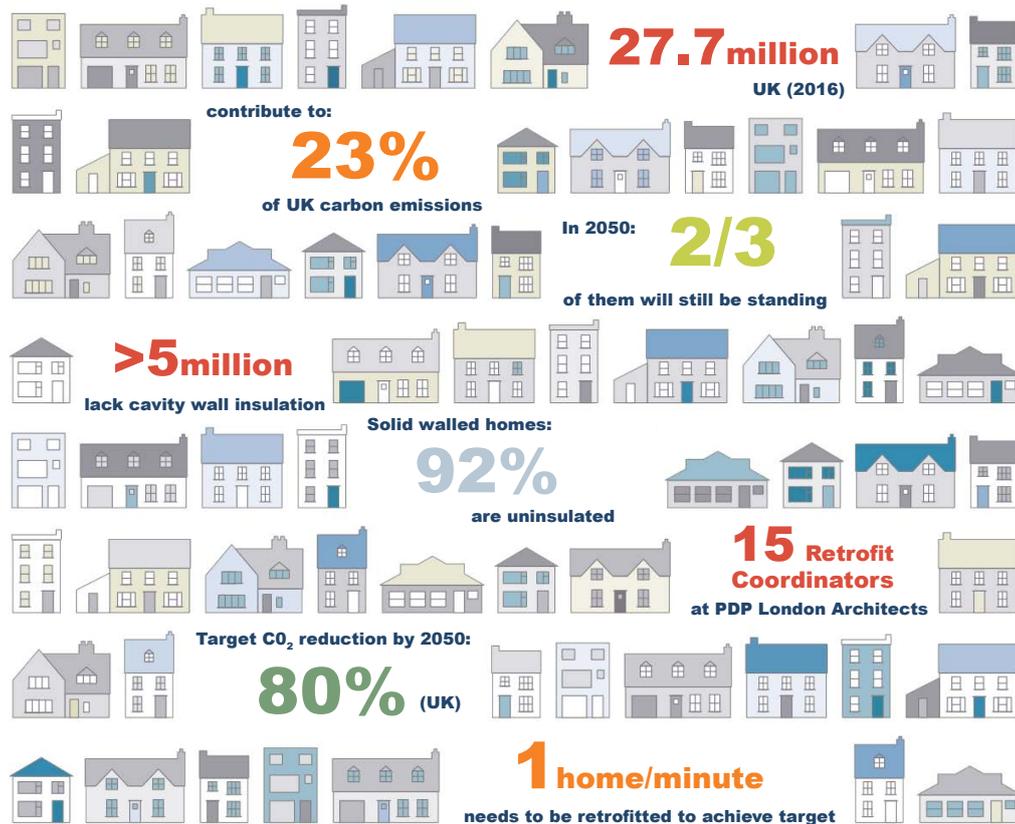
By Lilija Oblecova, Architect / Certified Passivhaus Designer  
with contributions from Marion Baeli, Iain McLellan and Peter Rickaby\*

*\* Peter Rickaby is an energy and sustainability consultant, a member of the Each Home Counts Implementation Board and a co-lead of the retrofit standards work-stream. Peter presented several lectures to PDP London staff as part of the in-house Retrofit Coordinator training course, and has also provided an update on the rapidly advancing development of the retrofit standards associated with the Quality Mark.*

Reflections on the Bonfield Review

It is widely known that domestic buildings contribute to approximately 23% of UK total carbon emissions<sup>1</sup> and that around two-thirds of the existing dwellings will still be standing in 2050<sup>2</sup>. Yet up to this day, more than 5 million homes in Great Britain lack cavity wall insulation and 92% of solid walled homes are uninsulated<sup>3</sup>. To stand the chance of meeting UK statutory carbon targets (80% by 2050<sup>4</sup>), a large-scale roll-out of energy efficiency improvements to the building stock must begin now. The construction industry faces an enormous challenge, given that the interest in implementing energy efficiency measures remains low. However, according to a recent government review<sup>6</sup>, there appear to be some large private investors who would be willing to increase lending to the energy efficiency and renewables sector, provided that a robust quality framework is established to ensure that the retrofit measures deliver proven results.

**DOMESTIC BUILDINGS:**



Retrofit of domestic buildings: context of the issue  
 (illustration by the author, based on *Each Home Counts* cover)<sup>6</sup>

## Reflections on the Bonfield Review

PDP London has a wealth of experience in leading successful residential and non-residential refurbishments, which includes a number of traditional and listed buildings. Marion Baeli, a partner at the practice, led one of the Retrofit for the Future programme projects and subsequently authored '[Residential Retrofit: Twenty Case Studies](#)', a comprehensively illustrated RIBA publication that also features PDP London's [100 Princedale Road](#), the first UK residential Victorian retrofit to be awarded Passivhaus accreditation.

The practice was also involved in such highly-acclaimed projects as [The Beecham](#) and [26-27 Southampton Street](#) in Covent Garden, which were both converted into "BREEAM - Very Good" prime apartments from out-dated office space. Another large development currently on site is the creation of 73 new prime apartments through a total retrofit / partial reconstruction of the Grade I listed [Park Crescent West](#), which includes thermal upgrades to the retained facade in Portland Place. PDP London have been working closely with sustainability consultants [Eight Associates](#) (PDP London's sister company) to ensure that the building achieves its optimum performance within the project constraints.



Thermal monitoring of the retained facade on the Park Crescent West project established that the thermal conductivity ( $\lambda$ -value) of the existing brick was below the default value, enabling the designers to achieve a slimmer wall build-up. Heat flux analysis (by Eight Associates) identified that isolators would be required on the restraint brackets to minimise thermal bridging.

## Reflections on the Bonfield Review

Building on its existing expertise, PDP London is one of the first practices to have invested in specialised in-house staff training to deliver quality assured retrofit projects with optimised costs, comprehensive support, reduced defects and carefully managed technical risks. The training sessions conducted by industry specialists from the Retrofit Academy touch on building physics and customer interaction skills, as well as allowing the would-be Retrofit Coordinators to obtain a robust qualification upon completion — the ['Diploma in Domestic Retrofit Coordination and Risk Management'](#).



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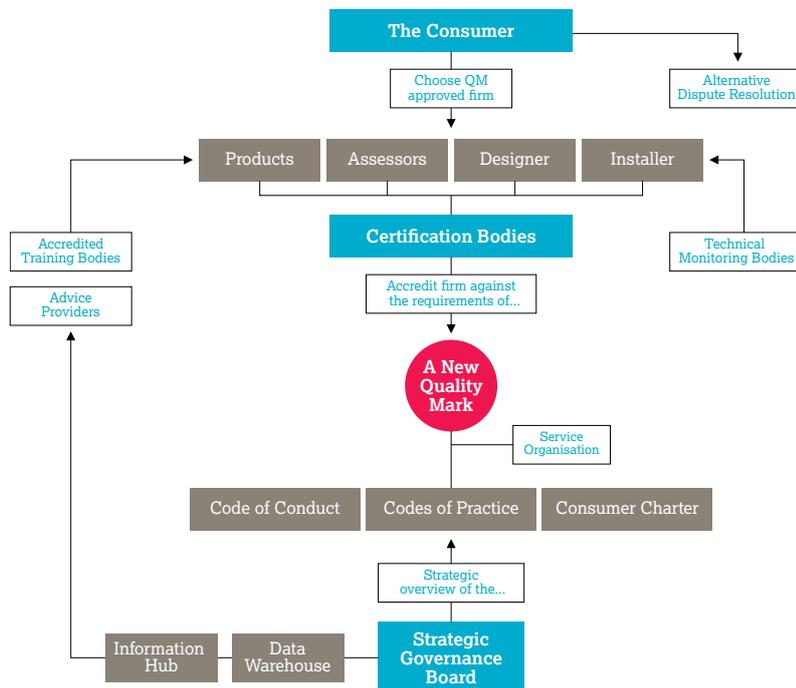
This training initiative has enabled PDP London staff to develop the skills and knowledge as recommended by Each Home Counts — the eagerly awaited ['Independent Review of Consumer Advice, Protection, Standards and Enforcement'](#) for home energy efficiency and renewable energy measures in the UK<sup>6</sup> (also known as the Bonfield Review), which was released by the government in December 2016. It contains 27 recommendations on the subject and sets out a clear action plan for the industry to deliver over the coming years.

The main proposal of the Review is the consumer-focused Quality Mark and its supporting framework, which would underpin the future long-term growth of the sector. With its emphasis on the consumer journey, the proposed framework does not yet refer to any rigorous building performance standards, as they are still being actively developed.

## Reflections on the Bonfield Review

To use the Quality Mark, installers, designers and assessors would need to show that they have been certified by an approved certification body and comply with the following elements of the framework:

- The Consumer Charter, to guarantee excellent customer service and a clear redress process
- The Code of Conduct, setting out how companies operate and report including:
  - Technical competence
  - Quality performance
  - Customer interfacing skills
- The Code of Practice, which, as Peter Rickaby explains, will be PAS 2035 Code of Practice for the Energy Retrofit of Buildings and will act as an “overarching document of the retrofit standards framework”. It will refer to other BSI standards (e.g. PAS 2030), new BSI standards that are being developed (e.g. for assessment of dwellings, for retrofit advice, for thermal comfort and indoor air quality, and for air-tightness and ventilation), as well as the standards published by MCS, CIBSE, and others. Peter clarifies that “any standard referred to in PAS 2035 will be part of the framework, and will thus be required by the Quality Mark.”



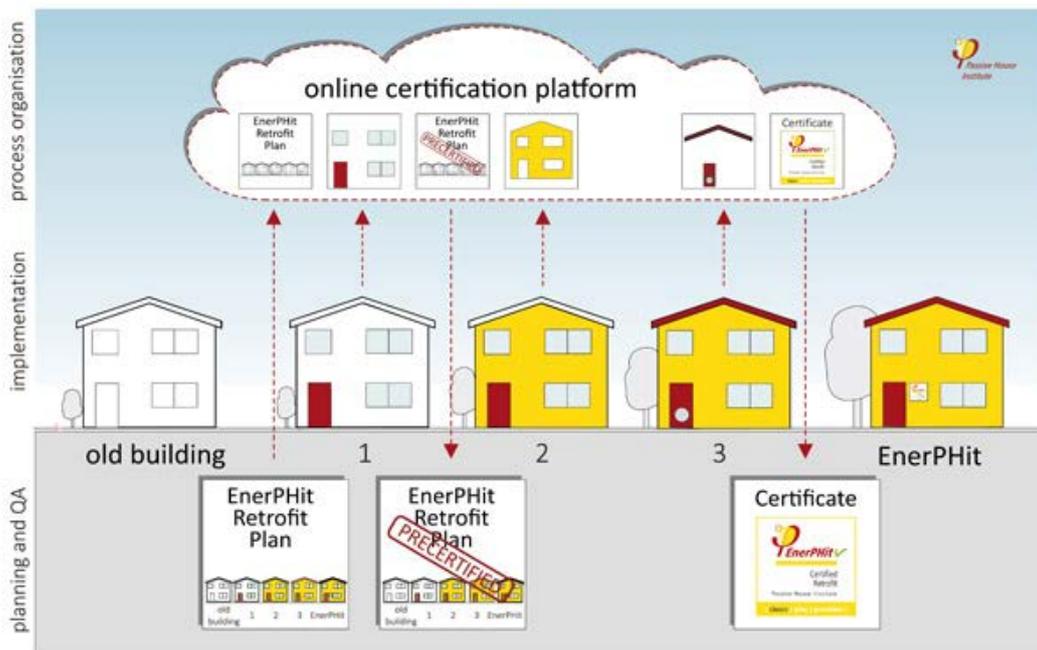
© DBEIS / DCLG : Core components of the framework proposed by Each Home Counts<sup>6</sup>

It is interesting that the recently revised PAS 2030 standard, “Specification for the installation of energy efficiency measures (EEM) in existing buildings”, already places an enhanced duty on the installers to check the appropriateness and compatibility of all proposed EEM’s prior to their installation. Peter clarifies that “there is also a move to focus PAS 2030 on required qualifications rather than the now unsupported Minimal Technical Competences, so the Retrofit Coordinator qualification could become a requirement for retrofit designers and project managers.”

## Reflections on the Bonfield Review

The establishment of a single, recognisable quality mark across the industry is a laudable aspiration and would get rid of unnecessary duplication and bureaucracy. Although there might be some resistance from the more established certification schemes, a unified approach would help build consumer and investor confidence through holistic property assessment and strong enforcement processes. According to Peter Rickaby, the work on PAS 2035 and a simplified update of PAS 2030 is due to start in October 2017, with a view to completion by the end of Q3 2018, to support the new round of the Energy Company Obligation (ECO). He also clarified that the Each Home Counts Quality Mark would replace the current Ofgem Technical Monitoring of ECO-funded retrofit.

A potential standard that could be adopted while the Quality Mark and the associated PAS 2035 are in development is EnerPHit, the Passivhaus Retrofit Standard, which not only benefits from the Passivhaus Institute acting as the approved certification body, but has well developed codes of practice and a Europe-wide designers' training scheme. As a member of the [Passivhaus Trust](#), PDP London supports the adoption of the "step-by-step" EnerPHit approach, which focuses on exercising foresight in the design of the interfaces between retrofit measures, allowing the building owner to gain certification at various stages of the Retrofit Plan implementation.



© Passive House Institute : Step-by-step retrofits with the EnerPHit Retrofit Plan ( <http://www.passiv.de> )

It is also worth mentioning the [AECB CarbonLite Retrofit course](#), which not only equips its graduate "retrofiters" with in-depth knowledge about closing the three "performance gaps" (heat, air quality and moisture), but also encourages the adoption of the most realistic yet ambitious target for each building typology. Of further interest is the CarbonLite Retrofit self-certification system put in place for quality assurance. At PDP London we believe that architects are really well placed to act as Retrofit Coordinators as an extension of their traditional role. Empowered by a holistic overview of the project, architects can prevent individual aspects of retrofit being considered in isolation, thereby minimising the risk of unintended consequences, addressing the widespread "performance gap" issue, while also avoiding the loss of historic value.

## Reflections on the Bonfield Review

While the motivations behind domestic retrofit are still largely focused on reducing operational costs, commercial retrofit is starting to be driven by the desire to protect the long term value of the property<sup>5</sup>. However, the associated technical challenges are in many ways similar, and there is no doubt that the Retrofit Coordinator's role is central to both domestic and commercial projects.

To ensure the success of the framework proposed by Each Home Counts, it is recognised that a critical mass of the supply chain need to use it. To address this, the Review recommends that the Quality Mark is made pre-requisite for obtaining funding for energy efficiency and renewable energy measures from the government, social landlords or private finance organisations.

The Review also recognises that better informed householders and the supply chain are essential for consumer protection. Among the recommendations is the establishment of two interactive platforms. The "Information Hub" would be there to provide verified information and guidance mainly to the industry, and would include a comprehensive suite of standards that are clear to follow and reflect best practice. The "Data Warehouse", on the other hand, would build on the significant amount of property-level data already collected through the various government and industry schemes (e.g. EPCs) and would offer practical, authoritative and specific information to the consumer.

Although Each Home Counts is very consumer-centred, it recognises that for around 37% of all homes in England it is the landlords rather than the tenants that make the investment decisions. Accurate and impartial information (from the "Data Warehouse") is seen as central to dealing with the "split incentive" and informing a dialogue between landlord and tenant, or between freeholder and leaseholder. It is also worth adding that in case of private developers taking on speculative residential retrofits, the consumer journey and the motivations are different, but those developers that recognise the importance of supporting the Quality Mark and go beyond the statutory minimum standards (see [The Energy Efficiency \(Private Rented Property\) \(England and Wales\) Regulations 2015](#)) are likely to reap benefits.

Collectively we are faced with the challenge of having to retrofit 20 million homes by 2050 (one every minute), and several million non-domestic buildings as well. In order to avoid a "lock-in" effect as well as loss of historic value, all retrofits have to be carefully planned and executed, so fully-trained Retrofit Coordinators are central to the process.

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1. Annex: 1990 - 2015 UK Greenhouse Gas Emissions, Final Figures by End User; Department for Business, Energy and Industrial Strategy (March 2017). Available at: [www.gov.uk](http://www.gov.uk)
  2. '40% House. Environmental Change Institute. 2005. Available at: [www.eci.ox.ac.uk/research/energy/downloads/40house/40house.pdf](http://www.eci.ox.ac.uk/research/energy/downloads/40house/40house.pdf)
  3. Household Energy Efficiency National Statistics, Detailed Report 2016. Department for Business, Energy and Industrial Strategy (March 2017). Available at: [www.gov.uk](http://www.gov.uk)
  4. UK 2008 Climate Change Act, Available at: <http://www.legislation.gov.uk/ukpga/2008/27/contents>
  5. Richard Francis. 2014. 'Spend to make: financing commercial retrofits.' in Retrofit for Purpose. Low energy Renewal of Non-Domestic Buildings (ed. Sunand Prasad). RIBA Publishing.
  6. Each Home Counts (DBEIS / DCLG). Available from: <https://www.gov.uk/government/publications/each-home-counts-review-of-consumer-advice-protection-standards-and-enforcement-for-energy-efficiency-and-renewable-energy> [Cover image and image on p.2 based on the cover illustration].