What is PAS 2035 and how did you go about writing it?

PAS 2035 is a comprehensive domestic retrofit standard which is designed to improve processes. It doesn’t say the wall should have a certain insulation level or the boiler should have a certain efficiency. Instead it outlines the process that should be followed to make sure that everything works properly, so that we get what we expected.

I had previously worked on PAS 2030 (the standard that all Green Deal Installers and all ECO Installers must be compliant with) and I had been on the steering group. However, writing a standard from scratch and being the technical author for the first time was a different experience.

Standards worldwide are produced by committees, so there’s a real danger that you get a camel instead of a horse. Those committees are made up of industry representatives and they have to come to consensus. They never vote, which is good because nobody can say, “I didn’t vote for that bit so I’m not following it”, but consensus is difficult to achieve sometimes.

Steering groups are very interesting because there are people who want to achieve a good standard, people who don’t want anything to change, people who are very protectionist about what they’re doing, and people who want to drive things forward and have a vision. They sit around the same table and it’s very easy for a big fight to develop.
The steering group had 50 people on it and 20 or so would come to every meeting and they all came with an agenda. It was a case of dealing with criticism and comments, persuading people and bringing the group to a consensus.

In future we will need to have more standards and make them tougher. But what I learned during this process is that you get what you can. You do what you can at each stage and don’t over-egg it because you’ll just lose everything. We’re now moving gently forward, and I think that’s quite a good lesson for me.

How does that differ from previous processes or other standards that have been done around energy efficiency in the past?

Nearly all the other standards are technical; you must achieve this U-value or this efficiency or this much CO₂. Because of my previous work on risk management in retrofit, I realised that a lot of the risks are process based, especially when you start to work at scale, which is what we need to do.

The one thing I’m really pleased with in PAS 2035 is that, for the first time ever in this industry, we insisted that the project team, led by the retrofit coordinator, should agree with the client (whether a householder, landlord or funding body) what the intended outcomes are. At the end of the process, they should check that the outcomes have been delivered and there have been no unintended consequences. The industry has never done that before.

Now, the project team must do an assessment of the house, figure out what it needs, where it needs to be in 2050 and make a plan for getting it there. They need to understand that it can’t all be done at once, but needs to be taken in stages. Then agree the intended outcomes and make the design match the outcomes. And at the end, they ask the question, “Have we actually done what we said we would do?”

This last element is good practice for any industry.

How does PAS 2035 address the issue of the whole house approach?

In the review we knew that the whole house approach is where we wanted to go. I was conscious that we were faced with an industry which is structured to deliver single measures. There are lots of little companies who install one thing and they can’t do the whole house approach.

The way we’ve set up PAS 2035, the intention is to drive the industry in a certain direction. It very clearly says the whole house approach is what you need to do; you need to take your view of the house and make a plan for all of those things.

What we’re expecting to happen is that all those single measure companies will form partnerships, joint ventures, mergers, acquisitions and cooperatives. Slowly the industry will coalesce to deliver multi-skilled, more capable teams who can deliver the whole house approach.

However, it is still the case that the government’s Energy Company Obligation funding only delivers about half to two-thirds of the money we really need to do the work properly. So the government is either going to have to persuade the energy companies to spend more money on retrofit, is going to have lower its expectations, or it’s going to have to find more money from somewhere else.

We have to understand that trying to do retrofit on two-thirds of the budget required is inevitably going to give us problems. I don’t want to fall back to the quality problems we had before the review.

Will there be additional cost and administration for installers and trades people?

There are lots of very well organised installation companies who are keen to do a good job but they’ve been struggling with a very inconsistent political environment, where subsidies come and go, procedures change all the time, and where the actual amount of money needed to do a good job is not there.

There is always lots of pressure to do more houses, instead of doing fewer houses better. One of the things that the BEIS team (Department for Business, Energy and Industrial Strategy) said to me was that they would rather do fewer houses better, than do lots badly and have to keep going back. PAS 2035 is designed

“Because of my previous work on risk management in retrofit, I realised that a lot of the risks are process based, especially when you start to work at scale, which is what we need to do.”

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An interview with Dr Peter Rickaby
The road to PAS 2035

To encourage people to pause and think very clearly about what they are doing. Rather than rushing out and spending as much ECO money they can, as quickly as they can.

**How will PAS 2035 be policed?**

ECO regulations, publicised through Ofgem, will require ECO-funded work to be endorsed by TrustMark. TrustMark is essentially the overarching quality assurance organisation and it will mandate the use of PAS 2035. PAS 2035 then refers to and calls in dozens of other standards.

There’s a certain amount of compliance policing inside the standard. PAS 2035 creates the role of the retrofit coordinator. There must be one for every project and their job is to demonstrate compliance to TrustMark. They have to assemble the evidence that they’ve done all the things right but at the same time, TrustMark is part of the policing.

**Do you think banks and other sources of funding will come through to the UK retrofit market and drive it forward?**

I think there’s a good chance at the moment. Some of the work I’m doing with BEIS is around persuading other parts of the housing sector to adopt the standards.

For example, housing associations, local authorities, some of the BEIS competitions, and city authority programs such as in the Greater London Authority and Manchester.

If we can get the whole system working, and people with experience of it saying ‘we work in that regime and it’s fine’, then the private sector will be more sympathetic to it.

The finance industry is interesting. A major bank showed up and said we’ve got £13 billion to invest if you de-risk this process for us. They said that [the old-style approach to retrofit] is not investable because it goes wrong too often and I was absolutely in agreement with that. However, we’re never going to be able to de-risk it completely. We can put some rules, processes and quality assurance in place, but there will always be some things that go wrong.

“PAS 2035 is designed to encourage people to pause and think very clearly about what they are doing. Rather than rushing out and spending as much ECO money they can, as quickly as they can.”

That said, as the quality of retrofit work goes up and the numbers of complaints falls, it will become a more investable industry.

We must not lose sight of the fact that we absolutely have to do all 27 million homes. We’re in a climate emergency and we need to get on with it. We have to change gear at some point and start to do more.

My perception of Each Home Counts and of the standard we created is that although it was explicitly about giving the consumer more confidence in the industry, it was also about giving government more confidence.

Government won’t give more subsidy programs, better policies or more promotional domestic retrofit to householders unless they are confident the work will be done properly.

We need to build their confidence as well, and so far that seems to be working.

**You talk about that gear change that needs to happen to get things moving faster, what needs to happen?**

We need the civil servants to be able to say with confidence ‘the standards of quality in this industry have gone up, we’ve done the surveys and we’re not getting the same complaints we used to.’ Then Ministers are going to be more positive about it.

They’re still missing the big component. It’s one thing to allow retrofit to happen and to try and improve the quality, it’s altogether another to promote it actively. If we’re going to reach 27 million homes, then we have to move it to that mode.
An interview with Dr Peter Rickaby
The road to PAS 2035

What about the non-domestic sector?
The old PAS 2030, the installer standard, covered both domestic and non-domestic standards. We took the non-domestic buildings out of it which caused a slight hiatus because there is also ECO funding going into the non-domestic sector.

We are now planning for a non-domestic retrofit standard. It won’t be split into design, process and installation like PAS 2030 and PAS 2035. It will be one standard but it will have two parts because there are a lot of non-domestic buildings that are like houses. They are made of bricks, they are two or three storeys high, and actually we can apply a lot of the provisions of PAS 2035 to them.

Part one of the non-domestic segment will cover buildings that are like houses. That will include hotels in Georgian terraces, doctors’ surgeries, offices in houses and maybe even corner shops, all of those kinds of things. I think that’s a quick win if we can write something for them.

Part two is going to be big buildings; steel frames, concrete, glass, air conditioning, atria, all the stuff you see in city centres which are clearly a different kettle of fish. There is a lot more professional involvement with a retrofit in those buildings and it is often a budgeted part of a refurbishment. It’s a completely different process and we have to engage different people. Instead of installers, it will be architects, engineers and the developers who own the buildings.

We’re also writing a standard for building performance evaluation and that’s come out of the Retrofit Standards Task Group as well. That’s got five parts: new build, retrofit, domestic, non-domestic, and then the fifth part is a common way of measuring things.

We all say that we want to deliver better outcomes in terms of performance of buildings, but we don’t have a common way of measuring them. The standard should give us all a common language we can use. With all of these standards, the stride is two or three years so we still have quite a long way to go.

“We must not lose sight of the fact that we absolutely have to do all 27 million homes. We’re in a climate emergency and we need to get on with it. We have to change gear at some point and start to do more.”

What is your personal legacy in this industry?
I was inspired at the beginning of my career by Jake Chapman, a professor at the Open University. I worked with him for a long time and his stated intention was to affect the efficiency of the UK housing stock as much as possible before retiring. I thought that was a really good ambition and I inherited something like that from him.

I’ve been standing between either green people who have been pushing the envelope, or academics who’ve been doing very rigorous work, but actually not communicating it very well. We’re trying to translate that into guidance, training and standards - something the industry can use.

For me it’s been really satisfying to see that there are now a lot of people working in this area, there is a lot of support. I had people on the PAS 2035 steering group who I know had the same ambitions as I do with regards to retrofit and I could rely on them to support the arguments we needed to make.

That has been very encouraging; completing PAS 2035 is probably a little milestone.

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More information

About PAS 2035

PAS 2035:2019 is the key document in a framework of new and existing standards on how to conduct effective energy retrofits of existing buildings. It covers how to access dwellings for retrofit, identify improvement options, design and specify energy efficiency measures and monitor retrofit projects. PAS 2035 is a BSI standard available for purchase here.

About TrustMark

TrustMark is the Government endorsed quality scheme covering work a consumer chooses to have carried out in or around their home. TrustMark was established in 2005 in conjunction with Government, industry bodies and consumer protection groups. Since this time, in response to the industry led, Government-commissioned Each Home Counts (EHC) review, the TrustMark remit has expanded to include all repair, maintenance and improvement (RMI), energy efficiency and retrofit measures, providing a level playing field of quality for consumers having work carried out in or around their home.

https://www.trustmark.org.uk

About Each Home Counts

The Each Home Counts review was an independent review commissioned by the Government in 2015. It focussed on improving consumer protection relating to home energy efficiency and renewable energy measures. The review had 27 recommendations and set out a new quality and standards framework for all those operating in the sector.

The wide-ranging recommendations covered advice and guidance, quality and standards, skills and training, compliance and enforcement, insulation and building fabric, smart meters, home energy tech and social housing.

Peter Rickaby and Liz Male were both members of the Each Home Counts Implementation Board.

http://www.eachhomecounts.com

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