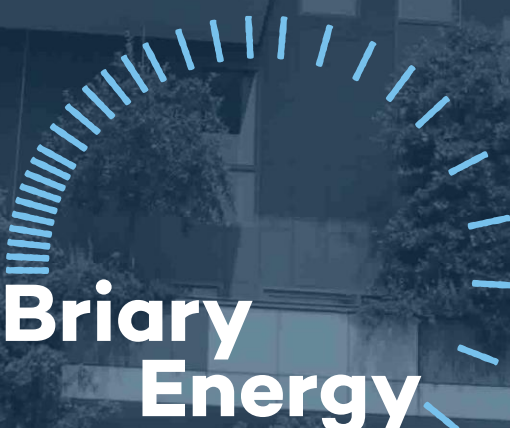




Response to Chichester Interim Housing Policy Criterion 8 – Sustainability *Policy*

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**Briary  
Energy**

23/06/2020

Managing Director - Gary Nicholls has worked closely with the Zero Carbon Hub:

- Author of SAP Untangled – a guide to the SAP process for SME's
- Lead for the Services Group for the Design vs As Built Performance Gap Project
- Lead for The Ventilation Strategy
- Member of the Steering Group for the Services Book
- Member of the Steering Group for the Overheating Study

### **Response to Chichester Interim Housing Policy Criterion 8 – Sustainability**

*Interim Policy:*

*Minimising energy consumption to achieve at least a 19% improvement in the Dwelling Emission Rate (DER) over the Target Emission Rate (TER) calculated according to Part L of the Building Regulations 2013. This should be achieved through improvements to the fabric of the dwelling;*

Response:

Achieving 19% improvement through fabric only measures is flawed, for the following reasons:

- Fabric improvements only address heating demand, they do not affect the energy requirements for hot water, which has a 12 month demand as opposed to heating which has a fluctuating 7 month demand.
- To meet 19% by fabric alone has implications that far outway the carbon saving – ventilation systems become paramount, both on install and in use. – leading to issues of poor indoor air quality -

<http://www.zerocarbonhub.org/resources/reports/ventilation-new-homes> A far better solution would be to enhance the fabric and then include Waste Water Heat Recovery which is also a renewable and addresses hot water demand

- External wall u-values need to be as low as 0.13 which means using a full fill Polyisocyanurate (PIR) foam solution - This is not a sustainable solution compared to mineral wool.
- Sustainability is not just about carbon saving, but also responsible sourcing, indoor air quality, recycling etc. Blown fibre mineral meets these requirements whereas PIR does not.
- The product has come under review since Grenfell and the Hackett review and has resulted in the building regulations being overhauled. Additionally, the full fill solution has a large element of plastic within its design, again going against sustainable solutions. Mineral wool on the other hand is A1 fire resistant.
- Hi performing fabric without additional measures can create overheating issues. Developers just 'box ticking' to meet 19% would not look at this issue <http://www.zerocarbonhub.org/current-projects/tackling-overheating-buildings> If the LPA has declared a 'Climate Emergency' then they must look at overheating in air tight and low thermal mass dwellings.
- There is a limit on how far you can reduce U values before the additional insulation becomes ineffective.
- Triple glazing blocks Solar Gain, in doing so negates the effects passive solar heat. While this addresses overheating it has a negative effect when overheating is not an issue.

- The UK Green Building Council produced a 'Policy Handbook' for local authorities in March 2020 which states on page 17 -

***Policy recommendations: carbon & energy demand reductions***

***Baseline requirements***

*It is recommended that local planning authorities set a requirement for new homes as follows: A 19% reduction on the Dwelling Emission Rate (DER) against the Target Emission Rate (TER) based on the 2013 Edition of the 2010 Building Regulations (Part L) whilst meeting the TER solely from energy efficiency measures as defined within the SAP calculation model. For absolute clarity, the reference to 'solely energy efficiency measures' refers to DER against the TER (i.e. the current requirements of Part L 2013) not to the 19% improvement factor*

What this means is that the 19% is met by any means within the SAP calculation, so not just fabric only.

- The Deregulation Bill March 2015 also states:  
From the date the Deregulation Bill 2015 is given Royal Assent, local planning authorities...should not set... any additional local technical standards relating to the construction, internal layout or performance of new dwellings”
- The ADL2020 Consultation document has proposed the methods and means via a roadmap to achieve 80% new build carbon emissions by 2025 via the Future Homes Standards. The proposal is for the 2020 standard to be either 20% improvement in the DER or 31% improvement. The latter relying heavily on Air Source Heat Pumps. There has been no proposal that this should be through fabric alone, or in fact any onerous minimum fabric standards. The proposal is also that this will remove the ability of LPA's to set these standards, or anything higher, in order to bring the UK policy in line across the country.

## A note on Air Source Heat Pumps and Electric Car charging points - deliverables:

New build sites would require a number of substations and potentially 3 phase electric supplies. The head of Oxford University's Energy and Power group, Malcolm McCulloch, has warned that the National Grid would require an extra 20 gigawatts of generating capacity just to meet the demands for electric car charging. But, in the same way, that commuters come home and plug in their electric car, heating time clocks will put the electric heating on at the same time meaning yet another huge shortfall in the energy supply needed.

### Interim Policy :

*Maximising energy supplied from renewable resources to ensure that at least 10% of the predicted residual energy requirements of the development, after the improvements to the fabric explained above, is met through the incorporation of renewable energy;*

### Response:

As explained above, asking for this in addition to the 19% goes against the advice of the UKGBC and the deregulation Bill 2015. Most developers would just put PV on the roof to satisfy this condition. However, is that really the solution? Mandating this level of renewable energy as opposed to a low-energy design would lead to an underperforming housing stock, a significant financial burden on the developer and an excessive provision of renewable energy likely to cause significant negative visual impact on the scheme. Whereas meeting the 19% using a mixture of renewable, low carbon technologies and energy efficient fabric can meet all the concerns over indoor air quality and overheating which the fabric only requirement with 10% renewable does not address.