



## Graven Hill, Bicester

Passive Design Standards  
Rev. F  
October 2015

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## Audit Sheet

Rev.	Description	Prepared and checked by	Reviewed by	Date
A	First draft for team comments	A. Bateson	L. Wille	02.04.2015
B	Updated with team comments	A. Bateson	L. Wille	09.04.2015
C	Reference to upcoming Building Regulations included, and a short summary to section 3.0	A. Bateson	L. Wille	19.04.2015
D	Front page and audit sheet included, and update to glazing proportion recommendation	L. Wille	A. Bateson	24.06.2015
E	Further update to glazing proportion recommendation and inclusion of MVHR electrical efficiency	L. Wille	A. Bateson	
F	General amendments to incorporate changes in Government zero carbon policy	L. Wille	A. Bateson	19.10.15

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## 1.0 Introduction

Planning condition 39 of the Cherwell Planning Condition Notice for Graven Hill, dated 8<sup>th</sup> August 2014, states the following requirement for housing:

*Prior to the first occupation of any dwelling on the site at Graven Hill, either a final Code Certificate, certifying that the dwellings in question achieve Level 5 of the Code for Sustainable Homes, or a 'Passivhaus' certificate including reduced water use (to meet code for sustainable Homes level 4) shall be issued proof of which shall be submitted to and approved in writing by the Local Planning Authority.*

*Reason - To ensure sustainable construction and reduce carbon emissions in accordance with Government guidance contained within the National Planning Policy Framework.*

This report outlines reason why an alternative strategy for specifying sustainable construction may be more appropriate for the site because, in practice, Passivhaus certification and Code certification, entail challenges and practical design barriers for potential house builders.

In addition, demanding standards that are too high mean that the project could face supply and capacity constraints. In the interests of delivering a successful development at the rate of delivery as expected, it is proposed that a pragmatic balance is set between the ambition to exceed minimum regulatory requirements and the need to deliver the volume of self-build units expected at Graven Hill.

This document sets out minimum recommended thermal performance standards for the homes at Graven Hill.

## 2.0 Changes to national planning standards

As a result of the Housing Standards Review the Government introduced legislation, in the form of the Deregulation Act, that means that planning authorities are no longer be able to set sustainability standards for housing development that are higher than national building regulation standards. The Government expects that national standards, in particular the Building Regulations, will be sufficient for defining sustainable construction and wants to avoid the myriad requirements that have existed across the country for new homes.

The key impacts of the Housing Standards Review and the Deregulation Act 2015 are:

- The Government has withdrawn support for The Code for Sustainable Homes. It will therefore effectively be wound down over the next year or so. (The BRE has agreed to continue to process existing Code for Sustainable Homes assessments, for legacy projects, where the Code is a condition of planning or funding.)
- Local planning authorities and qualifying bodies preparing neighbourhood plans cannot require any level of Code or any other sustainability standard for new residential developments. Consequently, local authorities will need to review and amend their planning policies and supplementary planning guidance and remove any requirements relating to the Code.

- Planning authorities are not to be able to apply policies in their Local Plans which require energy performance standards that exceed the Building Regulations.

A policy change also occurred in the zero carbon commitments that had been policy for nearly ten years. In spring 2015 the Chancellor, George Osborne, announced that the Government no longer intends to implement the proposed zero carbon housing target in 2016 and no longer intends to improve the building regulation carbon targets in 2016.

### 3.0 The impact of planning condition 39 on the proposed masterplan

The nature of the site, including its topography and access strategy, means that a high proportion of plots will find it challenging to achieve the strict requirements of the Passivhaus primary energy target with particular design responses being necessary, in terms of window sizes and room locations. Some of these unintended consequences of the strict Passivhaus primary energy targets could be perceived as undesirable for some house builders, thus affecting the attractiveness and viability of some plots. This will have an impact on the marketability of unfavourable plots and is likely to affect the cost of the plots.

An alternative strategy is to set minimum energy performance standards for the fabric of all plots. The advantage of this approach is that it would not disadvantage certain plots as the standards would be applied to all plots, irrespective of orientation or size.

As previously mentioned, the Code is being withdrawn; it is therefore necessary to amend Condition 39 of the planning permission.

The next section shows proposed energy performance standards at Graven Hill. These are better than Part L 2013 and approximately equivalent to what the Part L 2016 might have looked like, if the Government hadn't withdrawn the commitment to upgrade Part L standards in 2016.

It is proposed that a submission of Part L calculations, which are a mandatory requirement for all homes and will therefore need to be procured for all plots, should be submitted to the Local Authority at design stage and as-built stage to demonstrate that the proposed thermal performance criteria are being achieved.

In summary, the approach of setting energy performance standards is a fair and commercially acceptable approach to sustainable construction at Graven Hill.

## 4.0 Proposed Design Standards for Graven Hill Residences

The following table sets out proposed minimum energy performance standards for the residential units at Graven Hill. The homes should also comply with any updates to Building Regulations.

Element	Energy Performance Standards proposed for homes at Graven Hill
Thermal element U-values	(U-values to be no worse than the standards given here)  Walls: $U = 0.15 \text{ W/m}^2\text{K}$  Ground floor: $U = 0.15 \text{ W/m}^2\text{K}$  Roofs: $U = 0.15 \text{ W/m}^2\text{K}$
Thermal bridges	Meet one of the following standards: (i) Use Accredited Construction Details, provided by the Government's planning portal website. An overview can be downloaded from <a href="http://www.planningportal.gov.uk">www.planningportal.gov.uk</a> In particular at: <a href="http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partl/bcassociateddocuments9/acd">http://www.planningportal.gov.uk/buildingregulations/approveddocuments/partl/bcassociateddocuments9/acd</a> (ii) Achieve the Association of Environmentally Conscious Builders (AECB) Gold or Silver Standard details as a minimum to achieve $y = 0.08 \text{ W/m}^2\text{K}$ (iii) Improve on the Accredited Construction Details to achieve a maximum $y = 0.08 \text{ W/m}^2\text{K}$
Window U-values and g-values (Glazing & Frames combined)	(U-value to be no worse than the standard given here)  $U = 1.4 \text{ W/m}^2\text{K}$  Range for solar gain factor (g-value): $g = 0.50 - 0.70$
Air leakage rate	$3 \text{ m}^3/\text{hr/m}^2 @ 50 \text{ Pa}$ (Air leakage rated to be tested and on site)
Mechanical ventilation with heat recovery (MVHR), where specified	Electrical efficiency: $\leq 1.5 \text{ W/l.s}$  Heat recovery efficiency: $\geq 70\%$
Overheating Risk	Consider design strategies that minimise the risk of summertime overheating risk. As a minimum comply with Building Regulation Part L Standards Assessment Procedure (SAP) Appendix P, or equivalent assessment method to achieve 'low' or 'medium' risk of overheating
Electric lighting	Minimum 75% of fixed lighting to be low energy (such as compact fluorescents or LEDs)