

## WBC/24: Woking Borough Council Core Strategy - Updated evidence of cost impacts of Code for Sustainable Homes

This note focuses on three aspects of the cost information that has been used in assessing the potential impact of policy CS 22 on viability of developments in Woking and that have a bearing on the evidence that has been presented by the council and the in particular representations made by the Home Builders Federation prior to the Examination next week (REP/090/003):

1. The assumptions made in the original economic viability assessment carried out for the council
2. The significance of updated cost information that has been made available subsequently
3. Impact of learning costs for PV

### 1. Assumptions made in the original economic viability assessment

The Council's viability consultants Adams Integra carried out an analysis of the predicted costs (and resulting viability impacts) of adopting differing levels of the Code for Sustainable Homes (CSH) as mandatory minimum requirements for new houses in the borough. The data used for this analysis was published by the government in March 2010<sup>1</sup>.

The CSH comprises 9 categories of environmental design and performance, of which two, energy (ENE) and water (WAT) have the most significant impact on costs. However, the combined impact of achieving the other 7 categories within the CSH is not insignificant (figure below).

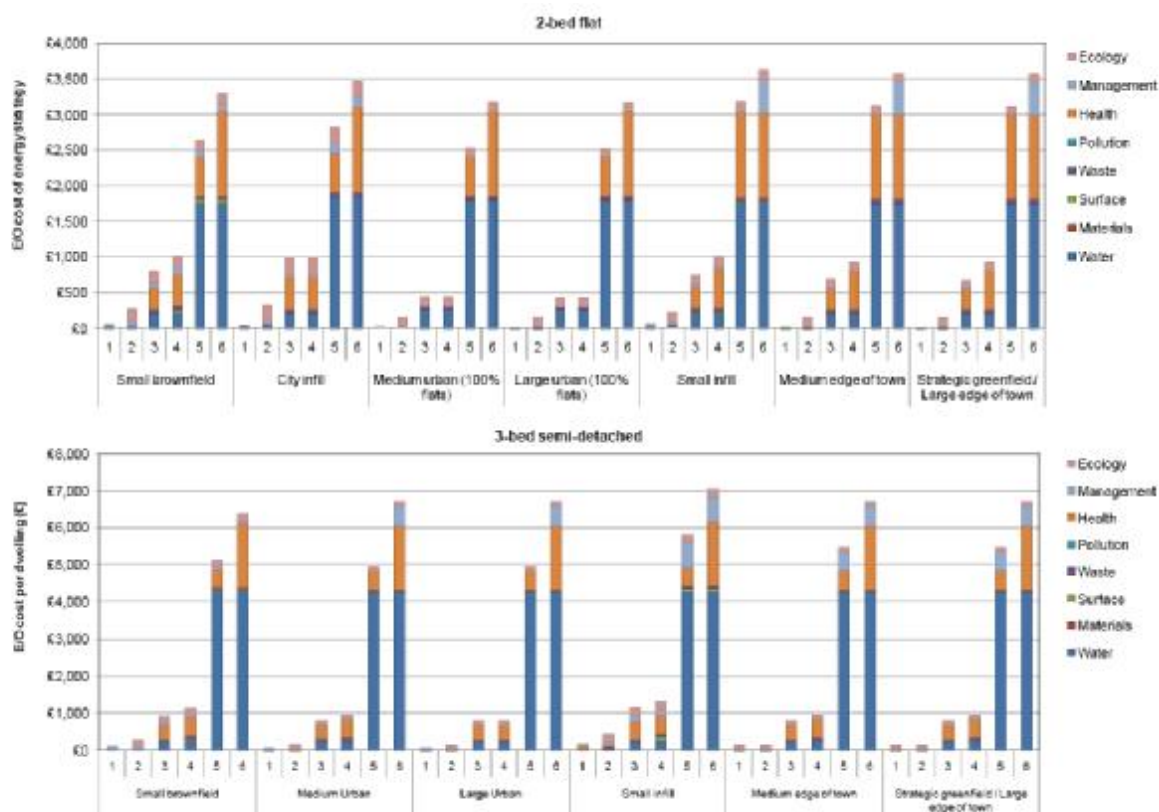


Figure 7: Build up of non-energy extra-over costs at each Code level and variation with development scenario

<sup>1</sup> Code for Sustainable Homes - A Cost Review, DCLG (March 2010)

The tables below are extracts from the data sets provided within the March 2010 cost review and show the proportion of costs that are attributable to the ENE and WAT elements of the CSH:

Development on small brown field sites:

	CSH L3		CSH L4		CSH L5	
	Flat	Small Detached	Flat	Small Detached	Flat	Small Detached
ENE	1668	2104	4611	7022	15089	21705
WAT	200	250	200	250	1750	4250
Sum	1868	2354	4811	7272	16839	25955
ALL	2463	3019	5611	8142	17739	26825
% ENE and WAT	76	78	86	89	95	97

Development on strategic sites:

	CSH L5	
	Flat	Small Detached
ENE	14113	23732
WAT	1750	4250
Sum	15863	27982
ALL	17234	29187
% ENE and WAT	92	96

The Council's policy CS22 requires new residential development to meet the ENE and WAT elements of the CSH. As the figures above show, restricting the mandatory elements of the CSH to energy and water will result in a lower cost to the development compared with a policy requirement for all none components to be provided. Hence, the costs of meeting CSH levels used in the viability assessment are between approximately 5 and 24% higher than the costs of meeting the ENE and WAT components of the equivalent Code levels.

## 2. Updated cost information

Updated information has been published by the government on the cost of building to the standards required by the CSH<sup>2</sup>. This concluded that some costs have fallen by approximately 8% compared with the previous cost review in 2010, and these reductions are primarily in the energy and water components.

<sup>2</sup> Code for Sustainable Homes - Updated Cost Review, DCLG (August 2011)

Other significant considerations are:

- The 2011 updated cost review was based on information garnered through consultation with leading house builders during the third quarter 2010. Hence, it is reasonable to assume that where cost trends have continued further reductions will be reflected in today's costs.
- A large part of the overall costs of building to Code standards are incurred through the energy category, and within this category a large part of this arises from meeting the mandatory Dwelling Emissions Rate (DER). The extra-over costs of building to the Code have been presented relative to a baseline of Part L 2006 Building Regulations minimum standards. The introduction of new Part L Building Regulations in October 2010 requires that all new homes achieve a DER equivalent to the minimum standard in CSH L3. Therefore, new houses built to comply with Part L 2010 the cost of achieving the mandatory DER should be considered a regulatory cost rather than an extra-over cost of the Code<sup>3</sup>. This removes the extra-over cost for energy in new homes built to CSH levels 1-3, and reduces the costs associated with meeting the mandatory DER at higher levels of the Code (tables below)

Cost Impacts 2011 Part L 2006 baseline								
scenario - edge of town/small brownfield								
	CSH L3		CSH L4		CSH L5			
	Flat	3 bed	Flat	3 bed	Flat	3 bed		
	edge of town	3 bed semi	edge of town	3 bed semi	edge of town	3 bed semi		
ENE	1,545	3,263	3,571	6,536	4,723	16,666		
WAT	154	250	154	250	6,154	4,750		
ENE + WAT	1,699	3,513	3,725	6,786	10,877	21,416		
ALL	2,867	4,731	5,343	8,504	13,455	24,469		
% ENE and WAT	59	74	70	80	81	88		
Scenario - strategic greenfield								
	CSH L5							
	3 bed semi							
ENE	10,423						16,666	
WAT	6,154						4,750	
ENE + WAT	CS22 requirement						16,577	21,416
ALL							19,138	24,452
% ENE and WAT							87	88

Cost Impacts 2011 Part L 2010 baseline					
scenario - small brownfield					
	CSH L3	CSH L4	CSH L5		
	3 bed semi	3 bed semi	3 bed semi		
ENE	120	3,393	12,673		
WAT	250	250	4,750		
ENE + WAT	370	3,643	17,423		
ALL	1,160	4,583	19,998		
% ENE and WAT	32	79	87		
Scenario - strategic greenfield					
	CSH L5				
	3 bed semi				
ENE	13,523				
WAT	4,750				
ENE + WAT	18,273				
ALL	21,309				
% ENE and WAT	86				

The tables above show the significant reduction in extra-over costs for the Code for developments built to comply with the current 2010 Building Regulations.

### 3. Impact of learning costs for PV

The development types and scenarios modelled in the cost reviews assume the lowest cost combination of fabric energy efficiency and technologies used to met the minimum standards required for the Code. Solar PV plays a major role in meeting the mandatory requirements in the

<sup>3</sup> Para 1.4.2/Code for Sustainable Homes - Updated Cost Review, DCLG (August 2011)

permutations modelled. There have been very significant reductions in the costs of PV modules and installation costs of PV over the last two years. The average market price of modules has fallen by almost half to €2.17/W in the 24 months up to March 2012, with a number of suppliers offering modules at significantly lower prices.



PV installation costs in the UK have fallen significantly with the rise in take up of the Feed In Tariff. The cost forecasts used in the 2010 review are shown below. These did not take full account of cost reductions in module supply and installation, and are now approximately typically % lower than forecast.

**Table 46: Photovoltaic system costs**

Year	Houses		Flats	Maintenance cost (£/yr)	Notes
	Fixed cost (£/Installation)	Variable cost (£/kWp)	System cost (£/kWp)		
2009	£1,500	£3,680	£4,500	£50 / yr	
2010	£1,500	£3,400	£4,157	£50 / yr	Maintenance cost based on the following assumptions:
2011	£1,500	£3,160	£3,864	£50 / yr	Electrical inspection every 5 years at a cost of £80 (5 inspections over the lifetime of the system)
2012	£1,500	£2,960	£3,612	£50 / yr	
2013	£1,500	£2,760	£3,375	£50 / yr	
2014	£1,500	£2,600	£3,179	£50 / yr	
2015	£1,500	£2,440	£2,984	£50 / yr	One inverter replacement during the system's lifetime (of 30 years) at a cost of £1,200
2016	£1,500	£2,336	£2,858	£50 / yr	
2017	£1,500	£2,232	£2,729	£50 / yr	
2018	£1,500	£2,128	£2,602	£50 / yr	Approximate maintenance cost per year – £50
2019	£1,500	£2,024	£2,475	£50 / yr	
2020	£1,500	£1,920	£2,348	£50 / yr	