

Technical Report

Title: Code for Sustainable Homes Predictive Report – Sheltered Living Accommodation, Basingstoke Road, Reading

Report No: N950-2011-16413



Technical Report

Title: Code for Sustainable Homes Predictive – Sheltered Living
Accommodation, Basingstoke Road, Reading

Client: HCC Property Services, Three Minsters House, 76 High Street,
Winchester, Hampshire, SO23 8UL

Issue date: 17th August 2011

TC job number: V042-3RA0

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NOVEMBER 2010 CODE PRE-ASSESSMENT

Rating	Score
Level 1 (*)	>= 36
Level 2 (**)	>= 48
Level 3 (***)	>= 57
Level 4 (****)	>= 68
Level 5 (*****)	>= 84
Level 6 (*****)	>= 90

	Code Level 3 Target	Code Level 4 Target	
Required Rating	Level 3 (****)	Level 4 (****)	Level 3 (****)
Achieved Rating	Level 3 (****)	Level 3 (****)	FAIL
Score	58	61	0
Shortfall	N/A	-7.00	N/A

Issue	Available Credits	Achieved Credits	Likely Credits	Total	Achieved Credits	Likely Credits	Total	Achieved Credits	Likely Credits	Total
ENE 1 Dwelling Emission Rate	10		4	4		4	4			0
ENE 2 Fabric Energy Efficiency	9		4	4		4	4			0
ENE 3 Energy Display Devices	2		1	1		1	1			0
ENE 4 Drying Space	1			0		1	1			0
ENE 5 Energy Labelled White Goods	2		1	1		2	2			0
ENE 6 External Lighting	2		2	2		2	2			0
ENE 7 Low and Zero Carbon (LZC)	2		2	2		2	2			0
ENE 8 Cycle Storage	2		1	1		1	1			0
ENE 9 Home Office	1			0			0			0
Energy Total (36.40 weighting factor)	31	0	15	15	0	17	17	0	0	0
WAT 1 Indoor Water Use	5	3		3	3		3			0
WAT 2 External Water Use	1		1	1		1	1			0
Water Total (9.00 weighting factor)	6	3	1	4	3	1	4	0	0	0
MAT 1 Environmental Impact of Materials				0			0			0
Roof	15		11	11		13	13			0
External Walls				0			0			0
Internal Walls				0			0			0
Floors - Upper & Ground				0			0			0
Windows				0			0			0
MAT 2 Responsible Sourcing of Materials - Basic Building Elements	6		3	3		3	3			0
MAT 3 Responsible Sourcing of Materials - Finishing Elements	3		2	2		2	2			0
Materials Total (7.20 weighting factor)	24	0	16	16	0	18	18	0	0	0
SUR 1 Management of Surface Water Run-off from Developments	2		1	1		1	1			0
SUR 2 Flood Risk	2		2	2		2	2			0
Surface Water Runoff Total (2.20 weighting factor)	4	0	3	3	0	3	3	0	0	0
WAS 1 Storage of non-recyclable waste and recyclable household waste	4		4	4		4	4			0
WAS 2 Construction Site Waste Management	3		3	3		3	3			0
WAS 3 Composting	1			0			0			0
Waste Total (6.40 weighting factor)	8	0	7	7	0	7	7	0	0	0
POL 1 Global Warming Potential (GWP) of	1		1	1		1	1			0
POL 2 NOx Emissions	3			0			0			0
Pollution Total (2.80 weighting factor)	4	0	1	1	0	1	1	0	0	0
HEA 1 Daylighting	3		1	1		1	1			0
HEA 2 Sound Insulation	4		1	1		1	1			0
HEA 3 Private Space	1		1	1		1	1			0
HEA 4 Lifetime Homes	4		4	4		4	4			0
Health & Well-Being Total (14.00 weighting factor)	12	0	7	7	0	7	7	0	0	0
MAN 1 Home Users Guide	3		3	3		3	3			0
MAN 2 Considerate Constructors Scheme	2		1	1		1	1			0
MAN 3 Construction Site Impacts	2		1	1		1	1			0
MAN 4 Security (SBD)	2		2	2		2	2			0
Management Total (10.00 weighting factor)	9	0	7	7	0	7	7	0	0	0
ECO 1 Ecological Value of Site	1		1	1		1	1			0
ECO 2 Ecological Enhancement	1		1	1		1	1			0
ECO 3 Protection of Ecological Features	1		1	1		1	1			0
ECO 4 Change in Ecological Value of Site	4		2	2		2	2			0
ECO 5 Building Footprint	2			0			0			0
Land Use & Ecology Total (12.00 weighting factor)	9	0	5	5	0	5	5	0	0	0

Credit Totals	107	3	62	65	3	66	69	0	0	0
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ENE1	Dwelling Emission Rate
<i>Credit Aim:</i>	To minimise emissions of carbon dioxide (CO2) to the atmosphere arising from the operation of a home & its services
Both	SAP2005 calculations have been provided for the original 40 units in of the Extra Care building. The whole building average improvement for this building was around 74%.
	Assuming that the Sheltered Living block will be constructed to the same structural design and will be served by the same Biomass district heating system then we can adjust the performance of the Extra Care block to account for the effects of the new SAP2009 calculation. Doing this would suggest around 4 credits could be achieved for this section.
For further details see p.32 of the Code for Sustainable Homes Document (Nov 2010)	

ENE2	Fabric Energy Efficiency
<i>Credit Aim:</i>	To future-proof the efficiency of dwellings over their whole life, and to encourage refurbished dwellings to improve their insulation standards through good fabric performance
Both	We have reviewed the U-Values and air tightness in the SAPs provided for the original Extra Care building. Providing the same specification is used for the Shelterd Living block then four credits for a FEES of <= 45 for apartments should be possible here.
For further details see p.40 of the Code for Sustainable Homes Document (Nov 2010)	

ENE3	Energy Display Devices
<i>Credit Aim:</i>	To encourage the provision of energy efficient internal lighting, thus reducing the CO2 emissions from the dwelling
	There is only one product available on the market at present that meets the requirements for both credits - and this is around £450 excluding installation.
Both	Installing an energy monitor to the electricity supply for each apartment will enable one credit to be achieved here. For full details regarding the specification for this unit please see pages 47 and 48 of the November 2010 Code Technical Guidance document.
For further details see p.46 of the Code for Sustainable Homes Document (Nov 2010)	

ENE4	Drying Space
<i>Credit Aim:</i>	To minimise the amount of energy used to dry clothes
Level 3	Bathrooms are all provided with walk in showers, so the provision of drying lines in these spaces will be problematic.
Level 4	In order to achieve a credit here a suitable wall mounted airer/dryer would need to be installed in the bathroom. This would need a minimum line length of 4m. A suitable product could be something like the 'Telefix wall mounted drier' (Google this exact phrase).
For further details see p.50 of the Code for Sustainable Homes Document (Nov 2010)	

ENE5	Ecolabelled Goods
<i>Credit Aim:</i>	To encourage the purchase of energy efficient white goods, thus reducing the CO2 emissions from the dwelling
Level 3	White goods are not certain to be provided during construction to each unit. In order to gain the one credit information on the EU energy labelling scheme needs to be provided to all units as part of their Home User Guide (HUG).
Level 4	In order to gain an additional credit then A+ rated fridges and freezers or fridge/freezer and A rated washing machines and dishwashers (where applicable) would need to be supplied.
For further details see p.54 of the Code for Sustainable Homes Document (Nov 2010)	

ENE6	External Lighting
<i>Credit Aim:</i>	The purpose of this credit is to encourage the provision of energy efficient external lighting
Both	All lighting provided to communal corridors, bin & cycle stores should be dedicated low energy fittings able to accept only lamps with a luminous efficacy of greater than 40 lumens per circuit watt.
For further details see p.56 of the Code for Sustainable Homes Document (Nov 2010)	

ENE7 Low or Zero Carbon Technology	
<i>Credit Aim:</i> The purpose of this credit is to encourage the provision of energy efficient external lighting	
Both	It has been indicated that a Code/BREEAM compliant energy statement has been produced that demonstrates that at least 20% of the development's energy requirements can be met from LZC energy sources (the Biomass district heating system).
For further details see p.63 of the Code for Sustainable Homes Document (Nov 2010)	

ENE8 Cycle Stores	
<i>Credit Aim:</i> The purpose of this credit is to encourage the provision of energy efficient external lighting	
Both	The communal cycle store will be required able to securely house 1 cycle for every two 1 bed flats - a total of 5 spaces.
	The cycle store will need to be provided with a secure fixing/stand that allows both the frame and a wheel of each cycle to be locked to it - the fixing/stand must be set into concrete so it is not easily removable.
For further details see p.72 of the Code for Sustainable Homes Document (Nov 2010)	

ENE9 Home Office	
<i>Credit Aim:</i> The purpose of this credit is to encourage the provision of energy efficient external lighting	
Both	Although electrical and communications provision is likely to be provided, it is not certain whether the rooms this provision is to be located in will meet the 1.5% daylighting requirement for this credit.
	Technology Centre will investigate the Daylight Factor requirements and update this report as necessary when the calculations have been carried out.
For further details see p.77 of the Code for Sustainable Homes Document (Nov 2010)	

<u>WAT1</u> Internal Potable Water Use	
<i>Credit Aim:</i> To reduce consumption of potable water in the home	
Both	We have assumed that the minimum requirements for Code 3 <=105 l/p/day are to be met but not bettered.
For further details see p.82 of the Code for Sustainable Homes Document (Nov 2010)	

<u>WAT2</u> External Potable Water Use	
<i>Credit Aim:</i> To encourage the recycling of rainwater, and reduce the amount taken from the mains, for use in landscape/garden watering	
Both	1L of water storage needs to be provided for each m2 of external communal planted area allocated for the apartment block.
	The roof terraces each need to be provided with a water butt with a minimum capacity of 100L.
	All water butts need to have a removable lid, tap, detachable connection to downpipe with automatic overflow and be opaque.
For further details see p.87 of the Code for Sustainable Homes Document (Nov 2010)	

MAT1 Environmental Impact of Materials <i>Credit Aim:</i> To encourage the use of materials that have less impact on the environment, taking account of the full life-cycle							
	ELEMENT	RATING					
	Roof		A+				
	External Walls		A+				
	Internal Walls - party walls & internal partitions		A+				
	Floors - Upper & Ground		A+				
	Windows		A?				
Based on the detail drawings provided and information gathered during the Predictive Workshop the Green Guide indicates that the above ratings should be achieved by the proposed construction specification.							
Level 3 The exact window specification is not clear with regards to identifying the correct Green Guide Specification so 11 credits have been assumed (as this removes any impact from the windows on the overall credit score)							
Level 4 Should the windows receive an A rating under the Green Guide then two additional credits would be able to be achieved.							
For further details see p.92 of the Code for Sustainable Homes Document (Nov 2010)							

MAT2 Responsible Sourcing of Materials: Basic Building Elements <i>Credit Aim:</i> To recognise and encourage the specification of responsibly sourced materials for key building elements	
Both	Full details of proposed of suppliers and contractors for this project has yet to be determined. However, other similar projects assessed by ourselves under the Code for Sustainable Homes have achieved a score of at least 3 in this section.
For further details see p.97 of the Code for Sustainable Homes Document (Nov 2010)	

MAT3 Responsible Sourcing of Materials: Finishing Elements <i>Credit Aim:</i> To recognise and encourage the specification of responsibly sourced materials for secondary building and finishing elements	
Both	Full details of proposed of suppliers and contractors for this project has yet to be determined. However, other similar projects assessed by ourselves under the Code for Sustainable Homes have achieved a score of at least 2 in this section.
For further details see p.113 of the Code for Sustainable Homes Document (Nov 2010)	

<u>SUR1</u>	Management of surface water run off
<i>Credit Aim:</i>	To design housing developments which avoid, reduce and delay the discharge of rainfall to public sewers and watercourses. This will protect and reduce potential risks to the aforementioned
	<i>Mandatory requirement - the post development peak rate and volume of run-off should be no worse than the pre-development for a 1 in 100 year storm with a 30% allowance for climate change</i>
Both	The mandatory requirements for this credit should be met using a Special Case as the area of impermeable hardstanding will be lower post development than pre-development.
	One credit is available for ensuring the developed site has either no run-off for rainfall depths of up to 5mm or that run off from hard surfaces receives an appropriate level of treatment to minimise the risk of pollution.
For further details see p.124 of the Code for Sustainable Homes Document (Nov 2010)	

<u>SUR2</u>	Flood Risk
<i>Credit Aim:</i>	To reduce the nitrous oxides (NOx) emitted into the atmosphere
Both	The EA flood risk map indicates that this site does not lie in an area prone to fluvial flooding. Providing a full Flood Risk Assessment is produced for this development following the guidance of PPS25 and this indicates the site lies within an area with a 'low annual probability of flooding' then two credit should be achieved.
For further details see p.143 of the Code for Sustainable Homes Document (Nov 2010)	

WAS1	Storage
<i>Credit Aim:</i>	To recognise and reward the provision of adequate internal and external storage space for non-recyclable waste and recyclable household waste
	Mandatory Requirement - Internal space for storage meeting BS5906 or a LA scheme with external bins.
Both	We have assumed there is a LA collection scheme compatible with the requirements of the CfSH. Internal storage bins are required and should be located in a dedicated position in the dwelling. These internal bins must be of a total capacity of 30L and can be one bin if the LA scheme sorts post-collection (multiple waste types in the same box) or 3 bins each of no less than 7L if materials sorted pre-collection (separate bins for different materials).
For further details see p.150 of the Code for Sustainable Homes Document (Nov 2010)	

WAS2	Construction Site Waste Management
<i>Credit Aim:</i>	to promote reduction and effective management of construction related waste through the use of a SWMP
	Mandatory Requirement - A Site Waste Management Plan (SWMP) must be developed and implemented.
Both	A SWMP will be produced for this development.
	Discussions with Willmott Dixon have indicated that their standard policies include a target to divert 90% of waste from landfill - this would enable all three credits to be achieved under this section.
For further details see p.162 of the Code for Sustainable Homes Document (Nov 2010)	

WAS3	Composting
<i>Credit Aim:</i>	To encourage developers to provide the facilities to compost household waste reducing the amount of household waste sent to landfill
	No composting will be provided due to the communal nature of the scheme.
For further details see p.169 of the Code for Sustainable Homes Document (Nov 2010)	

POL1		Insulant GWP					
Credit Aim:		To reduce the potential global warming from substances used in the manufacture or composition of insulating materials					
	ELEMENT	INSULATION		DOC EVIDENCE		EH CRITERIA	
	Roof			Y/N		GWP < 5	
	Loft Access			Y/N		GWP < 5	
	Internal Walls			Y/N		GWP < 5	
	External Walls			Y/N		GWP < 5	
	Doors			Y/N		GWP < 5	
	Window Lintels			Y/N		GWP < 5	
	Ground Floor			Y/N		GWP < 5	
	Upper Floors			Y/N		GWP < 5	
	Foundations			Y/N		GWP < 5	
	Hot Water Cylinder			Y/N		GWP < 5	
	Pipework			Y/N		GWP < 5	
Both	Providing all insulation used within the development will have an ODP of 0 and a GWP of less than 5 then this credit can be achieved.						
For further details see p.175 of the Code for Sustainable Homes Document (Nov 2010)							

POL2		NOx Emissions	
<i>Credit Aim:</i>		To reduce the nitrous oxides (NOx) emitted into the atmosphere	
Both	Experience with Biomass district heating on other schemes would suggest that this system will not meet the NOx requirements for any credits.		
For further details see p.182 of the Code for Sustainable Homes Document (Nov 2010)			

HEA1	Daylighting
<i>Credit Aim:</i>	To improve the quality of life in homes through good daylighting, and to reduce the need for energy to light a home
Both	It is unknown, give the details provided at this stage, whether each apartment will be able to achieve either of the two credits available for having suitable daylighting factors or the one credit available for providing View of Sky.
	Technology Centre will investigate the Daylight Factor and View of Sky requirements and update this report as necessary when the calculations have been carried out.
For further details see p.192 of the Code for Sustainable Homes Document (Nov 2010)	

HEA2	Sound Insulation
<i>Credit Aim:</i>	To ensure the provision of good sound insulation and reduce the likelihood of noise complaints
Both	Indications are, from the performance achieved in the Extra Care building, that only a 3dB improvement would be expected from the proposed intermediate floor construction - this would enable one credit to be achieved.
For further details see p.199 of the Code for Sustainable Homes Document (Nov 2010)	

HEA3	Private Space
<i>Credit Aim:</i>	To improve the occupiers' quality of life by providing an outdoor space for their use, which is at least partially private
Both	Private space will be provided in the form of a fenced off garden at ground floor level and the two roof terraces.
	All private space provided must be accessible to disabled people in line with the requirements of BS8300.
For further details see p.204 of the Code for Sustainable Homes Document (Nov 2010)	

HEA4	Lifetime Homes
<i>Credit Aim:</i>	To encourage the construction of homes that are accessible and easily adaptable to meet the changing needs of current and future occupants
Both	These units will all be constructed to Lifetime Homes standards.
For further details see p.208 of the Code for Sustainable Homes Document (Nov 2010)	

MAN1 Home User Guide	
<i>Credit Aim:</i> To recognise and encourage the provision of guidance to enable home owners/occupiers to understand and operate their home efficiently, in line with current good practice and in the manner envisaged by the developer, and to make best use of local facilities	
Both	We have assumed that a Home User Guide covering all the areas outlined in the Guidance (both Operational Issues and Site and Surroundings - Checklists Man1 Part 1 and Man1 Part 2) will be provided for each plot.
For further details see p.213 of the Code for Sustainable Homes Document (Nov 2010)	

MAN2 Considerate Constructors	
<i>Credit Aim:</i> To recognise and encourage construction sites managed in an environmentally and socially considerate and accountable manner	
Both	Signing up to the Considerate Constructors Scheme for this development and achieving a score of at least 24, with a minimum of at least 3 scored in each section, will enable the one credit to be achieved.
	Should a score of 32 or more be achieved upon inspection then an additional one credit could be achieved here.
For further details see p.219 of the Code for Sustainable Homes Document (Nov 2010)	

MAN3 Construction Site Impacts	
<i>Credit Aim:</i> To recognise and encourage construction sites managed in an environmentally sound manner in terms of resource use, energy consumption, waste management and pollution	
Both	One credit can be achieved if the site sets targets for, and monitors consumption against these targets, water use and CO2 production. If the site electricity and water are metered then this can be done by taking a monthly meter reading and displaying this information in an Excel graph on site. Alternatively, adopting best practice policies within the site environmental management plan for water and dust pollution would also enable this credit to be achieved.
For further details see p.224 of the Code for Sustainable Homes Document (Nov 2010)	

MAN4 Security	
<i>Credit Aim:</i> To encourage the design of developments where people feel safe and secure; where crime and disorder, or the fear of crime, does not undermine the quality of life or community cohesion	
Both	An ALO/CPDA must be consulted at the design stage of the project and all of their recommendations incorporated. SBD will be applied for on this project and it is a requirement that full certification be achieved.
For further details see p.231 of the Code for Sustainable Homes Document (Nov 2010)	

ECO1	Ecological Value of Site
<i>Credit Aim:</i>	To encourage development on land that already has a limited value to wildlife and discourage the development of ecologically valuable sites
Both	Aerial photo of the site (Google Earth) shows it as being a former school site. The development site is composed of a mix of hardstanding, existing buildings, and mown grass. The development site should be of low ecological value - although a full CfSH ecology report produced by a suitably qualified ecologist will be required in order to confirm this.
For further details see p.234 of the Code for Sustainable Homes Document (Nov 2010)	

ECO2	Ecological Enhancement
<i>Credit Aim:</i>	To enhance the ecological value of a site
Both	Engage a suitably qualified ecologist to produce recommendations for improving the ecology of the site. All of the ecologist's key recommendations and 30% of their additional recommendations will need to be implemented - and these recommendations must go beyond the minimum legal requirements.
For further details see p.240 of the Code for Sustainable Homes Document (Nov 2010)	

ECO3	Protection of Ecological Features
<i>Credit Aim:</i>	To protect existing ecological features from substantial damage during the clearing of the site and the completion of the construction works
Both	Should be achieved by if site is of low ecological value. However, a CfSH ecology report will be required to confirm this as there may be trees and hedgerows removed during construction. Additionally, any areas of value within 3m of the site boundaries will need protecting in accordance with the relevant British Standard.
For further details see p.245 of the Code for Sustainable Homes Document (Nov 2010)	

ECO4	Change in Ecological Value of Site
<i>Credit Aim:</i>	The aim of this credit is to reward steps taken to minimise reductions in ecological value and to encourage an improvement
Both	As the site was a former school pre-development there is unlikely to be a large change in ecological value post-development. However, this should be confirmed with a suitably qualified ecologist in the site ecology report - there may need to be specific planting requirements (specifying additional native species, for example) in order to secure this credit.
For further details see p.250 of the Code for Sustainable Homes Document (Nov 2010)	

ECO5	Building Footprint
<i>Credit Aim:</i>	To promote the most efficient use of the building's footprint by ensuring that land and material use is optimised across the development
Both	The apartment block is 2.5 storeys high, so this credit will not be achieved (minimum requirements for one credit is a 3:1 ratio)
For further details see p.261 of the Code for Sustainable Homes Document (Nov 2010)	



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