Communities and Local Government

Summary of changes to the Code for Sustainable Homes technical guidance

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Department for Communities and Local Government

Department for Communities and Local Government
Eland House
Bressenden Place
London
SW1E 5DU
Telephone: 030 3444 0000
Website: www.communities.gov.uk

If you require this publication in an alternative format please email alternativeformats@communities.gsi.gov.uk

DCLG Publications
Tel: 030 0123 1124
Fax: 030 0123 1125

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Introduction

In December 2009 the Government published a consultation paper[1], to seek views on proposals for updating the Code for Sustainable Homes (the Code). This document provides both a summary of the changes to the Code and a detailed list of the changes made to the Code technical guide. It also explains why some changes proposed in the consultation paper have not been taken forward at this stage.

The consultation

The consultation paper was published after a review of the Code involving the house building industry and other interested groups. It sought views on proposals to update the Code to align it with changes to Part L of the Building Regulations coming into effect in October 2010. The consultation also proposed adopting the 2016 definition of zero carbon and sought views on changes to issues such as Lifetime Homes, Home Security, Surface Water Run-off and Waste as well as setting out issues that are being considered for further investigation in the future.

About 200 responses had been received by end of March 2010, coming from a range of people and organisations. AECOM analysed the responses on behalf of DCLG[2], and their report is available at:
http://www.communities.gov.uk/publications/planningandbuilding/sorfutureofcodeconsultation

The Government response

The consultation was in two sections: the first looked at the Code for Sustainable Homes and the second the Fabric Energy Efficiency Standard. There were 44 main questions, the majority of which were supported by respondents (Figure 1).

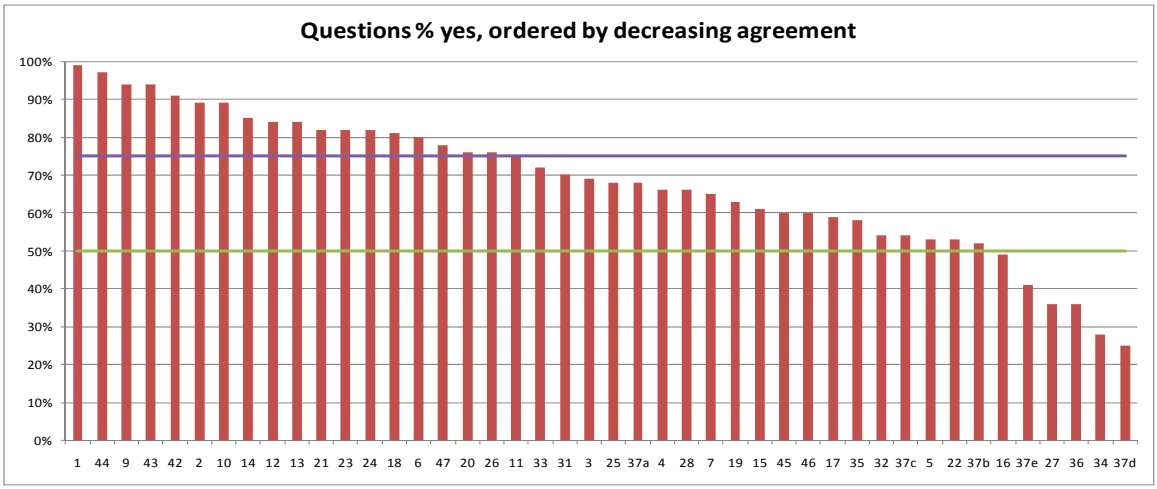

Figure 1: Chart showing percentage 'yes' responses for each question, ordered by the highest percentage of respondents that agreed with the consultation question

[1] *Sustainable New Homes – The Road to Zero Carbon. Consultation on the Code for Sustainable Homes and the Energy Efficiency Standard for Zero Carbon Homes*
[2] *Consultation on the Code for Sustainable Development – Analysis of Responses*.

There was strong support from respondents to most of the recommendations, with over half the questions receiving more than 70 per cent support (and only five questions receiving less than 50 per cent support). Therefore many of the proposals have been taken forward in the 2010 update of the technical guide. The key areas of change are summarised below.

Changes that have been made to the 2010 update to the Code

Aligning the Code with zero carbon policy

- Aligning the Code with Part L 2010. Code level 4 continues to be a 44 per cent improvement above Part L 2006 (25 per cent above Part L 2010).
- Adopting the Fabric Energy Efficiency Standard which replaces Heat Loss Parameter in ENE2.
- Moving credits from ENE1 to ENE2 to incentivise a 'fabric first approach'.
- Allowing fractions of credits in ENE1 and 2 (NB. if this proves successful the Government may consider rolling it out to other areas as appropriate).
- Removing credits for internal lighting and replacing it with a new Energy Display category.
- Requiring evidence to be provided by house builders on the energy efficiency of appliances provided as optional extras if they choose to gain the 1 credit for leaflet provision.
- Introducing a requirement for certification under the Microgeneration Certification Scheme or assurance under the CHPQA, in issue Ene7.

Streamlining the Code

- Postponing the introduction of Lifetime Homes as a mandatory requirement at Code level 4 and 5.
- Introducing an exemption on steeply sloping sites for the external Lifetime Homes requirements, and award three out of the four available points.
- Changing the technical guide criteria in order to better reflect current thinking and standards on accessibility.
- Removing the mandatory requirement for Site Waste Management Plans, and replacing this with voluntary credits for minimising or diverting waste to landfill.

Resolving problems that have arisen in use

- Adopting the revised standards for Surface Water Management in SUR1, subject to amendments by the Environment Agency and other experts. However this will be removed once the National Standards for SUDS are introduced.

Proposed changes that have not been included at this stage

Aligning the Code with zero carbon policy

- Changing Code level 5 and 6 to allow lower levels of carbon compliance as proposed in the 2016 zero carbon policy, pending further work from the Zero Carbon Hub.
- Reordering and renaming the Code energy category. Users of the Code did not support the change as it would mean changes to their systems and processes.
- Introducing an interim Fabric Energy Efficiency Standard (FEES) into the Code at level 4. Whilst there was support for an interim measure to reflect the 2013 standard there was not clear consensus as to whether this should be a FEES or monitoring and testing. The approach we have taken is to provide guidance as to what level should be achieved for those building to Code level 4 in anticipation of Part L 2013.
- Reducing the credits available for external lighting from 2 to 1. Although there was a positive response overall, there was strong opposition to this from house builders and those concerned with security.
- Renaming 'ENE7 Low and Zero Carbon Technologies' 'ENE3: Renewable Technologies': There was strong feedback that we should continue to include low carbon technologies, especially gas CHP, as this could be a suitable first step to installing, at a later stage, a zero emissions or renewable technology.

Streamlining the Code

- Doubling the external space for waste storage where there is a fortnightly waste collection. There was insufficient evidence available to make this change.
- Changing the space requirements for communal cycle storage in large scale, high density developments. Insufficient evidence was provided to support claims that the Code was resulting in widespread unused cycle storage in these developments. However, evidence has suggested that in other (non-Code) developments cycle storage problems could arise if it was not well designed. As such voluntary design guidance has been introduced into the Code, to help overcome this problem.
- Allowing mobility equipment storage instead of cycles in 'specialist' accommodation such as retirement homes. Insufficient evidence was provided to explain the problem, in particular how specialist accommodation is defined. However, this is a valid issue that will be investigated more deeply in the coming months.
- Reducing the home office space requirement for specialist housing or retirement homes. Again, insufficient evidence was presented, and the necessary definitions were absent; a risk is that equity considerations could be triggered. However, this issue will also be investigated further.
- Changing the way credits are allocated for security. A wider review of security in building standards will be conducted in the coming months, which will consider the Code and security issues more deeply.

Fabric Energy Efficiency Standard

In July 2010 the coalition Government confirmed that new homes will be zero carbon from 2016 and that a minimum Fabric Energy Efficiency Standard would be required, as consulted on in December 2009.

Transition arrangements

The Code 2010 update will come into effect immediately. However, as it is important that the versions of the Code, Part L and SAP align, it will be possible for developments to continue to be registered to the May 2009 version of the Code as long as it can be demonstrated that the development is being built to Part L 2006 standards.

Next update to the Code

The Government is committed to reduce the burden of regulation, and to reducing duplication. Future plans to review the future role of the Code are currently being considered, alongside a wider rationalisation of housing standards.

Detailed changes to the technical guidance

Contents

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
General Changes/Preface		
Issue ID	**Location**	**Detail**
General	Various	All evidence requirements updated to align with those published in Technical Guidance Note 002. Evidence requirements for new criteria and issues drafted in line with the theory and definitions included in Technical Guidance Note 002.
	Various	All references and further information updated to align with amendments to the technical guidance.
Preface	Various	All references to 'nil-rated' certificates removed.
	Page 10	Table 1.1: Summary of Environmental Categories and Issues, updated to reflect revised scheme structure and contents.
	Page 12	Table 1.2: Code Levels for Mandatory Minimum Standards in CO_2 Emissions (Ene1), updated to reflect changes to Part L of the Building Regulations (Part L) and the removal of mandatory requirements at Code levels 1, 2 and 3.
	Page 13	Table 1.4: Total Credits Available, Weighting Factors and Points, updated to reflect the revised scheme structure and contents.
	Pages 14 - 15	Table 1.5: Summary of Environmental Impact Categories, Issues, Credits and Weighting, updated to reflect the revised scheme structure and contents.
	Pages 23 -24	Table 2.1: Post Construction Stage Assessment Exceptions, updated to amend the requirement for centralised energy infrastructure to be in place by the time 60% of dwellings on the development are complete. The update allows the figure of 60% to be varied where there is a separate statutory requirement in place for the infrastructure to be implemented at a different stage of the development. In addition the exception is strengthened in relation to community heating systems. For credits to be awarded all dwellings must be provided with the infrastructure to allow a future connection to the community heating system, regardless of the total number of dwellings completed. Text has also been added to clarify that this set of exceptions is not applicable to the Stamp Duty Land Tax (SDLT) Regulations i.e. where exemption from Stamp Duty Land Tax (SDLT) is sought in addition to a Code rating, they do not apply.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Energy		
Issue ID	**Location**	**Detail**
Ene1	Page 32	Issue aim updated to clarify the relationship between the performance criteria and future direction of energy performance related Building Regulations.
	Page 32	Assessment criteria updated to reflect the 25% improvement in the (Part L) compliance baseline between the 2006 and 2010 scheme versions: The five performance requirements and credits that are now below the minimum Part L compliance baseline (i.e. those between a 10% and 25% improvement in previous scheme versions) have been removed from the issue. All other performance requirements (i.e. those between 25% and a 100% improvement in previous scheme versions) have been converted to account for the 25% improvement in the Part L compliance baseline. However, the requirements remain on the same overall trajectory to net zero as those set in previous scheme versions. The following formula has been used to convert the superseded performance benchmarks to those in the October 2010 scheme version: (2007 to 2009 performance benchmark – 25) x (100/75) At the highest level of performance, the link between Code level 6 and the Treasury's SDLT definition of zero carbon has been removed in preparation for the announcement of full details of the revised definition. The minimum level of performance now required to achieve the mandatory Ene1 requirement at Code level 6 is net zero CO_2 emissions.
	Page 32	A sliding credit reward scale has been introduced to improve sensitivity to incremental performance improvements. The revised scale also reduces the likelihood of specification items being downgraded which is currently an issue where performance sits above a benchmark but is not rewarded with additional credits for doing so. The scale is based on increments of 0.1 credits distributed equally between the key performance benchmarks published in the assessment criteria table.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Energy		
Issue ID	**Location**	**Detail**
Ene1	Pages 33 and 35	Minimum Fabric Energy Efficiency requirements have been introduced which preclude the consideration of emissions reductions from SAP Section 16 allowances (i.e. additional allowable electricity and CO_2 emissions offsets from biofuel CHP systems). A minimum of 5 credits must be achieved in issue Ene2 prior to SAP Section 16 allowances being utilised to reduce dwelling emissions in the Ene1 performance calculation.
Ene1	Page 34	The allowance to average energy performance across units in buildings with multiple dwellings has been aligned with that defined in clauses 4.6 and 4.14 of the 2010 edition of Approved Document L1A (ADL1A). Energy averaging is now allowed in each building with multiple dwellings, regardless of the individual services specification of each unit.
	Page 36	A definition of the Stamp Duty Land Tax (Zero Carbon Relief) Regulations 2007 has been added to clarify that the link between Code level 6 and the SDLT definition of zero carbon has been removed and that where SDLT exemption is sought in addition to a Code rating, the additional conditions imposed by the SDLT Regulations must also be met.
	Page 38	Table Cat 1.1: Dwelling Emission Rate, updated to reflect new calculation requirements and to align with SAP 2009.
Ene2	Page 40	Issue aim updated to reflect the revised focus on Fabric Energy Efficiency (FEE) performance as opposed to Heat Loss Parameter (HLP) performance.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Energy		
Issue ID	**Location**	**Detail**
Ene2	Page 40	Assessment criteria updated to reflect the revised focus on FEE performance. Two sets of seven FEE performance requirements have been introduced based on the range of dwelling specifications used to derive the FEE Standard for zero carbon homes. The number of Ene2 credits available has been increased from 2 to 9 to reflect the increased emphasis on energy efficiency performance as the foundation of the revised definition of zero carbon. The first set of FEE performance requirements is applicable to apartment blocks and mid-terrace houses and is the more demanding of the two sets; this is on the basis that the dwelling types to which it applies are inherently more energy efficient. The second set of less demanding requirements are applicable to end terrace, semi detached and detached dwellings. However, there are some exceptions to these rules which are included in the new definition of 'dwelling type' on page x. A new mandatory requirement has been introduced at Code levels 5 and 6 in line with the minimum FEE Standard for zero carbon homes.
	Page 40	A sliding credit reward scale has been introduced to improve sensitivity to incremental performance improvements. The revised scale also reduces the likelihood of specification items being downgraded where performance sits above a benchmark but is not rewarded with additional credits for doing so. The scale is based on increments of 0.1 credits distributed equally between the key performance benchmarks published in the assessment criteria table.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Energy		
Issue ID	**Location**	**Detail**
Ene2	Page 42	Energy averaging definition revised. For the purposes of meeting the FEE performance requirements it is only acceptable to average performance in apartment blocks according to the requirements defined in clause 4.6 of ADL1A.
	Page 45	New special case introduced to account for the decrease in inherent energy efficiency as the area of exposed side wall area increases in stepped and staggered terrace dwellings and houses with integral garages and drive through sections. The special case includes a formula that can be applied to downgrade the standard mid-terrace FEE performance benchmarks for these types of dwelling.
Ene3	Pages 46 - 49	Original internal lighting issue removed. The new allowance to account for the actual specification of low energy lighting in the dwelling emission rate (DER) calculation ensures Part L creates the incentive to specify low energy light fittings. This replaces the incentive provided by the former Ene3 issue. Issue replaced with new Energy Display Devices issue. The new issue awards up to 2 credits for the provision of a device that displays electricity and/or primary heating fuel consumption data to dwelling occupants.
Ene4	Page 51	Additional evidence requirement included to ensure that lock details in line with the definition of 'secure' are referenced where communal drying space is provided.
	Page 52	Definition of heated drying space amended to require a minimum intermittent extract rate of 30l/s controlled in accordance with the requirements defined in the 2010 edition of Approved Document F (ADF)
Ene5	Page 54	Additional condition added where only information on the EU Energy Labelling scheme is provided. It is now necessary for any appliances offered for sale by the developer, either with the dwelling or post completion, to be compliant with the performance criteria.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Energy		
Issue ID	**Location**	**Detail**
Ene6	Page 57	New special case added to account for internal corridors that receive no natural daylight. Dual level lighting, designed to maintain an adequate level of illuminance when spaces are less likely to be occupied, is now acceptable in these situations.
Ene7	Page 63	Issue aim amended to reflect that the revised issue requirements intend to reduce running costs as well as emissions.
	Page 65	New direct supply requirement included to ensure the running cost benefit of installed technologies is passed to dwelling occupants.
	Page 65	Definition of actual case CO_2 emissions amended to clarify that the standard case dwelling model should be used as the basis of the calculation and that only technologies eligible to contribute to performance under Ene7 can be used to substitute standard case systems assumptions.
	Pages 65 - 66	Definition of low and zero carbon technologies amended to align with Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources.
Ene7	Page 69	Table Cat 1.2: Standard CO_2 Emissions Calculation - Specification Assumptions, inserted to clarify the systems assumptions that are required when calculating standard case CO_2 emissions.
	Page 70	Table Cat 1.3: Reduction in CO_2 Emissions, updated to reflect new calculation requirements and to align with SAP 2009.
Ene8	Page 72	Assessment criteria updated to include the option of clause 35 of Secured by Design New Homes 2010 as an alternative route to demonstrate compliance with the 'secure cycle storage' requirements.
	Page 74	Convenient cycle storage definition updated to require lighting in communal cycle stores to meet the requirements defined in Ene6 – External Lighting.
	Page 75	Secure entrance lock definition updated to include the external doorset requirements in Secured by Design New Homes 2010 for doors to communal cycle storage in blocks of flats.
	Page 75	Secure stand definition inserted to align with the requirements of Secured by Design New Homes 2010.
Ene9	Page 79	Average daylight factor definition and calculation inserted.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Materials		
Issue ID	**Location**	**Detail**
Mat1	Page 94	Green Guide element number definition added to clarify the requirements of the assessment methodology.
	Page 94	Online Green Guide calculator definition added to clarify the requirements of the assessment methodology.
	Page 94	Green Guide to specification definition expanded upon to clarify the requirements of the assessment methodology.
Mat2	Pages 101 – 102	BES 6001 definition expanded upon to clarify the requirements of the assessment methodology.
	Pages 108 - 109	Table: Cat 3.1 Tier Levels, updated to include tiers 2a and 2b which allow differentiation between a 'pass' and a 'good' rating where the responsible sourcing of materials is assessed against BES 6001.
Mat3	Pages 116 - 121	All definitions now included in issue body text to clarify the assessment methodology.
	Page 117	BES 6001 definition expanded upon to clarify the requirements of the assessment methodology.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Surface Water Run-off		
Issue ID	**Location**	**Detail**
Sur1	Page 128	The guidance no longer refers to an 'Appropriately Qualified consultant or engineer'; instead it requires all relevant calculations to be completed by an 'Appropriately Qualified Professional'. The technical guide provides a definition for the expertise this person must have: The professional or team of professionals must be capable of understanding the site's particular surface water management needs and opportunities. In addition, they must have knowledge and experience in using SuDS-based solutions to influence the holistic design of a development's drainage system. They must also provide the robust hydraulic design calculations referred to in key guidance documents such as *The SuDS manual* (CIRIA C697, 2007) and *Preliminary rainfall runoff management for developments* (EA/DEFRA, 2007). Suitable professionals may be found in a variety of disciplines, such as engineering, landscape design or hydrology. Geotechnical advisers or specialists may be required for SuDS techniques that allow infiltration.
	Page 137	The methodologies required for calculating the peak rates of run-off have been amended for Greenfield sites to align with the SuDS manual. Additional guidance has been included to assist in the calculation of pre development peak run-off rates for Brownfield sites. If the existing drainage is known, best practice modelling software should be used to model the 1 and 100 year peak flow rates. If the details of the system are not known, then the Greenfield calculation methodology should be used, assuming soil type 5.

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Surface Water Run-off		
Issue ID	**Location**	**Detail**
Sur1	Page 125	The additional volume of run-off must first be prevented from leaving the site using infiltration or other SuDS techniques. It is the responsibility of the Appropriately Qualified Professional to provide full justifications outlining why this requirement could not be satisfied. Where this requirement cannot be satisfied, the residual volume of run-off must be reduced to the limiting discharge (this is defined as the highest flow rate from the following: 1-year peak flow rate, Qbar or 2 l/s/ha)
	Page 135	An allowance for Climate change over the lifetime of the development must only be added post development for all required calculations.
	Page 125	Evidence must be provided to demonstrate that flooding of a property would not occur in the event of local drainage system failure. This will involve evaluating the consequences of system failure caused by extreme rainfall, lack of maintenance, blockage or other causes by assessing the route of water over the ground, and ensuring that that there will be no increased risk of flooding to properties.
Sur1	Page 125	Two credits are available for this issue and they can now be awarded independently. One credit can be awarded for ensuring there is no discharge into the watercourses for rainfall depths up to 5mm. Where green roofs are being installed, it can be assumed that the first 5mm of rainfall that's falls onto their surface will be prevented from leaving the site. However, evidence will still be required to confirm that the first 5mm of rainfall from all other hard surfaces will also be prevented from leaving the site. The second credit can be awarded for ensuring that run-off from all hard surfaces will receive an appropriate *level of treatment*, as defined in the SuDS manual.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Surface Water Run-off		
Issue ID	**Location**	**Detail**
Sur1	Page 130	A definition for the 'level of treatment' has been included: Where a SuDS component has more than one treatment process, it could be considered to provide more than one level of treatment. In these circumstances advice should be sought from the Code service provider.
	Page 125	Where a site discharges directly to a tidal estuary, the mandatory requirements are met by default. However, credits cannot be awarded by default.
	Page 134	The definition of 'Tidal Estuary' has been expanded.
	Pages 141-142	The 'Special Cases' section of the guidance has been expanded to include those outlined in Technical Guidance note 001.
	Various	The evidence requirements and definitions have been amended and/or added to reflect the above changes.
Sur2	Various	The evidence requirements have been amended and re-ordered.
	Page 146	The definition of 'Sources of flooding' has been added from Sur1, and expanded upon.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Waste		
Issue ID	**Location**	**Detail**
Was1	Page 156	Assessment criteria updated to reference the inclusive design checklist, Checklist IDP, superseding the reference to the accessibility checklist. The key changes between the accessibility checklist and checklist IDP are: • the chosen route which requires inclusive access must be that which goes from the closest external entrance door to the relevant external amenity • specific requirements have been added regarding the width of the external entrance door • gates along the inclusive access route must meet specific requirements detailed in the checklist • where external stairs form part of the inclusive access route they must provide easy access in accordance with Approved Document M (AD M)
Was2	Page 161	The mandatory requirement to provide a Site Waste Management Plan (SWMP) has been removed.
	Page 161	An additional credit is now available for the provision of a SWMP. This increases the total number of credits available for this issue from two to three.
	Page 161	A second credit is available where there is a compliant SWMP including procedures and commitments to sort and divert waste from landfill, and where at least 50% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.
	Page 161	A third credit is available where there is a compliant SWMP including procedures and commitments to sort and divert waste from landfill, and where at least 85% by weight or by volume of non-hazardous construction waste generated by the project has been diverted from landfill.
	Pages 165-167	Checklists 2a-2d have been removed and replaced with Checklists Was 2a, 2b and 2c.
Was3	Various	Assessment criteria updated to reference the inclusive design checklist, Checklist IDP, superseding the reference to the accessibility checklist.
	Page 170	The space provided for the internal kitchen waste container must be large enough to hold at least a 7 litre container.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Pollution		
Issue ID	**Location**	**Detail**
Pol2	Pages 187 - 188	Table Cat 6.1 Calculation of average NOx emissions, Systems assessed under Section A of SAP, updated to align with revised calculation methodology. Methodology revised to account for energy generated and saved by SAP appendix H, M, N and Q technologies. Table contents also updated to align with SAP 2009.
	Pages 188 - 189	Table Cat 6.2 Calculation of average NOx emissions, Systems assessed under Section B of SAP, updated to align with revised calculation methodology. Methodology revised to account for energy generated and saved by SAP appendix H, M, N and Q technologies. Table contents also updated to align with SAP 2009.

Code for Sustainable Homes Technical Guide 2010 Update Summary of Changes		
Health and Wellbeing		
Issue ID	**Location**	**Detail**
Hea3	Page 203	Assessment criteria updated to reference the inclusive design checklist, Checklist IDP, superseding the reference to the accessibility checklist.
	Page 205	Definition of inclusive access and usability inserted to align with the use of Checklist IDP and to emphasis the shift in focus towards inclusive design.
	Page 205	Assessment methodology updated to include a reference to Checklist IDP and clarify the requirement for private space to only be accessible to occupants of designated dwellings.
	Page 206	Special case introduced to provide an exemption from requirement 6a of checklist IDP for roof terraces or balconies over habitable rooms where a step up is unavoidable.
Hea4	Pages 210 - 211	Special case introduced to provide an exemption from Lifetime Homes criteria 2 and/or 3 for dwellings on plots with topography exceeding a gradient of 1:15. Where the exemption is utilised three credits can be awarded from the total of four providing all other Lifetime Homes requirements are met. Additional guidance included on how to measure plot gradients between the start and finish points as applicable to Lifetime Homes criteria 2 and 3. References to AD M included defining stepped access routes that are acceptable where the exemption is applied.

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