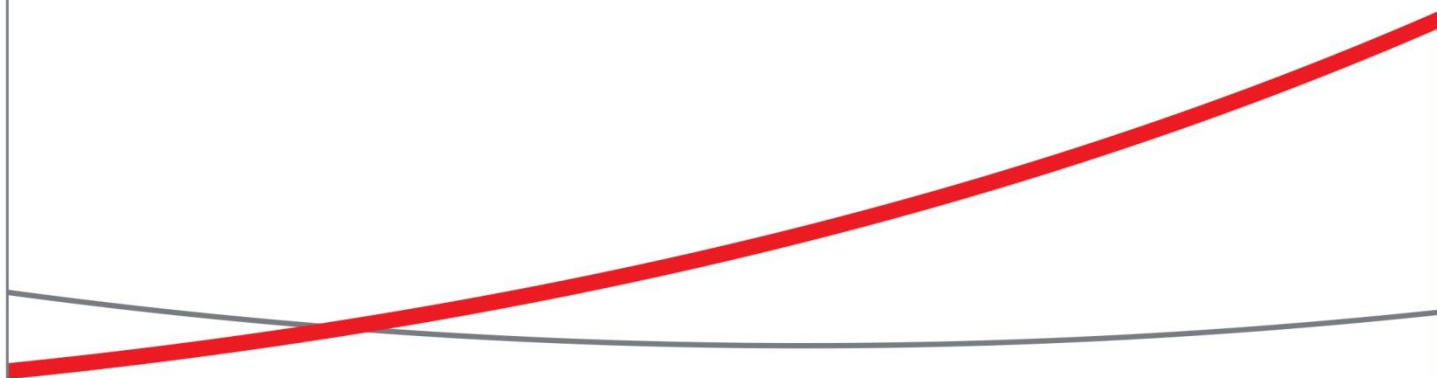


Department for Communities and Local Government

Housing Standards Review

Cost Impacts

September 2014



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1 Executive Summary

- 1.1.1 In June 2013 EC Harris prepared a report on the costs of a number of current and proposed housing standards. The Department for Communities and Local Government (DCLG) issued a consultation document in August 2013 and received feedback responses, including points relating to the cost work.
- 1.1.2 Revised costs for the current and proposed housing standards have been prepared incorporating input from the consultation responses and adding more detail in various areas. The costs for the proposed standards also incorporate revisions to the standards, which have now been worked up into draft approved documents, or in the case of space standards a nationally described standard.
- 1.1.3 Table 1 below summarises the revised costs for the current and proposed standards along with the process costs (for example design time or commissioning of specialist reports) associated with the standards. The figures are for a medium size scheme of 50 dwellings. Other scheme sizes are included within Sections 3 and 4 of this report.

Table 1 – Summary Costs

	Current Standards		Proposed Standards	
	Standard	Range of cost / dwelling	Standard	Range of cost / dwelling
Security	Secured by Design	£299 to £352	Security	£40 to £107
Energy	Code for sustainable homes	£0 to £31,435	Building regulations	£0
	Renewable energy	£1,027 to £4,726		
Access	Lifetime homes*	£1,082 to £1,100*	Category 2 access*	£520 to £940*
	Wheelchair housing standards*	£10,552 to £25,282	Category 3 access	£7,764 to £23,052
Water	Water efficiency	£0 - £2,697	Single standard (110 ltrs / day)	£0 - £9
Process costs**	£16 - £159		£0.4 - £57	

* figures exclude costs of additional space associated with requirements of the access standards – see later sections of this report for costs in this respect.

** process costs relate to general needs dwellings, additional costs are incurred for homes for wheelchair users

- 1.1.4 In addition to the above standards a new space standard was considered which local authorities could choose to implement dependent on suitability for their local housing market. This standard would replace a range of different current standards and as such would reduce process costs. The standard would also permit “type approval” allowing house builders to gain approval of standard house types, avoiding scheme by scheme assessment.
- 1.1.5 For the space standard to be adopted within an area an assessment of viability impacts would need to be made in line with national planning policy, so avoiding implementation where this would impact on housing delivery. Given this point, any negative impacts of the new standard would be limited – the calculations undertaken in relation to this point are further explained within this report and the separate DCLG Housing Standards Review Evidence Report by Adroit Economics.
- 1.1.6 The following sections of this report explain the basis of the above costs, movements since the last cost report, and append full details of the calculations.

2 Approach

2.1 Purpose of Report

2.1.1 In June 2013 EC Harris prepared a report on the costs of a number of current and considered housing standards. The Department for Communities and Local Government (DCLG) issued a consultation document in August 2013 and received feedback responses, including points relating to the cost work. This report seeks to:

- Increase the level of detail of the cost work, reflecting that required for a final stage Impact Assessment.
- Consider feedback received in relation to the earlier work and amend costs as necessary.

2.2 Relation to Other Work

2.2.1 In addition to this cost report, two further elements of work have been undertaken:

- Local Authority Policy Survey – A survey by EC Harris to establish the current extent of application of the various housing standards.
- DCLG Housing Standards Review, Evidence Report – A report and model by Adroit Economics to identify the impact of the change from current to proposed standards.

2.2.2 This report does not therefore include issues relating to the extent of application of standards or scale up (i.e. the objective is to establish the cost data per dwelling type which will form an input to the scale up / impact assessment model).

2.3 Basis of Report

2.3.1 All costs within this report are identified at:

- Quarter 2 2014 prices.
- UK mean location.

2.3.2 The impact assessment model makes adjustments to the costs to reflect the timing and location of estimated housing delivery.

2.3.3 This report should be read in conjunction with the earlier June 2013 EC Harris report. The report can be found on the following link: <https://www.gov.uk/government/consultations/housing-standards-review-consultation>

2.4 Structure of Report

2.4.1 The main bulk of the report has been spilt into two sections:

- Counterfactual – Section 3 of the report details all of the costs associated with the ‘current’ housing standards. The section is separated out into the five housing standards under review and details the current policies and costs that fall within those standards.
 - Security – Secured by Design
 - Energy – Code for Sustainable Homes
 - Space – HCA, London Housing SPG and English Housing Survey
 - Access – Lifetime Homes, Wheelchair Design Guide, Bespoke Higher Wheelchair Housing Standards
 - Water – Code related and Greywater / Rainwater Harvesting
- Proposed – Details all of the costs associated with the ‘proposed’ housing standards review policies. The section follows the same order as the counterfactual section i.e. Section 3.1 Counterfactual Security - Section 4.1 Proposed Security.
 - Security – Single proposed level
 - Energy – No proposed standard
 - Space – Single proposed level

- Access – Category 1, Category 2 and Category 3
- Water – Single proposed level

2.5 Key Changes

2.5.1 The key general areas in which this report amends / develops costs from the June 2013 work are:

- Dwelling types – A further typology has been added for a 1 bed apartment. The dwelling typologies considered are therefore now 1 bed apartment, 2 bed apartment, 2 bed terraced house, 3 bed semi-detached house and 4 bed detached house.
- Methods of compliance – A number of areas include alternative methods of compliance with a standard, for example differing approaches to achieving code credits.

2.5.2 Further points specific to each housing standard are identified within the relevant sections of this report.

2.6 Proposed Standards

2.6.1 For the avoidance of doubt, the versions / references for the proposed standards are listed below.

- Security – Approved Document Q May 2014 DRAFT
- Water – Approved Document G2 Regulation 36
- Energy – No Approved Document
- Space – Space Standard C4
- Access – Approved Document M June 2014 DRAFT

2.7 Quality Assurance

2.7.1 EC Harris is a leading international built asset consultancy with over 100 years of experience across all sectors of the construction and property industry. EC Harris is seen as a leading cost consultant within the UK, working on circa £750m of recently tendered schemes and over half of all residential projects within London.

2.7.2 Internal peer reviews and quality checks were carried out throughout the costing and report writing process. Reviews were carried out at each key stage of the project and upon the receipt of updated information.

2.7.3 All costing work was carried out and reviewed by a team of chartered surveyors and other accredited professionals working within the industry. Internal and external sources of data, (examples listed below), were used to acquire accurate and up to date costs.

- Recent tenders which reflects tendered prices across circa £750m of recent residential projects.
- Consultation of industry professionals e.g. house builders, consultants and suppliers.
- Internal EC Harris cost databases
- Current industry practice based on experience of relevant schemes

2.7.4 Full detailed workings and assumptions of all costing's can be found within the appendices.

2.8 Time costs

2.8.1 Most of the standards considered within this report incur a “process” cost related to professionals’ time spent dealing with the standard, for example architects time working on designs to comply with Lifetime Homes. The DCLG Housing Standards Review Evidence Report by Adroit, further explains the basis of the cost applied to such professionals’ time. Briefly the approach has been to use a blended average between market rates (i.e. what a client could expect to pay for a professional’s time) and the Annual Survey of Hours and Earnings (ASHE) reflecting wages with 30% added for overheads. The two sets of rates and resultant average adopted are indicated below. Market rates are derived from EC Harris’ cost database.

Table 2 – Process Costs Rates

Profession	Market Hourly Rate	ASHE + 30% (2014)	Blended Hourly Rate Adopted
Architect	£80	£24	£52
Building Control Surveyor	£70	£23	£46
Building Surveyor	£70	£23	£46
Quantity Surveyor	£90	£25	£57
Construction Energy Assessors	£70	£26	£48
Building Service Engineer	£70	£23	£46
Civil Engineer	£70	£24	£47
Mechanical Engineer	£70	£28	£49
Construction Manager	£90	£25	£57
Project Manager	£90	£23	£57
Town Country Planner	£100	£23	£61
Skilled Trades	£20	£15	£18

2.9 Scheme Typologies

2.9.1 It is recognised that costs, and in particular process costs, differ dependent on the scale of development. This is particularly true where largely fixed cost items exist such as a report required under Code for Sustainable Homes which may cost the same for a 5 dwelling scheme as a 50 dwelling scheme and as such is a much greater cost per dwelling for the smaller scheme. For this reason all process costs are indicated for a 5, 50 and 100 dwelling scheme.

2.10 Process costs

2.10.1 Process costs are costs not directly associated with the building works to comply with a standard but arising from the process of compliance. These include additional design time incorporating requirements and commissioning of specialist reports. Process costs have been split into three key categories:

- Direct project costs to house builders – These are costs which the house builder would incur in complying with the standard, for example paying for additional design work to incorporate requirements of Lifetime Homes or spending time sourcing components to comply with Secured by Design. These costs are indicated for each current and proposed standard under sections 3 and 4 of this report.
- Recipient costs - In addition to the above there is a further current process cost, typically to planning authorities, in receiving and reviewing evidence of compliance. These costs are indicated for each current and proposed standard under sections 3 and 4 of this report.
- Overhead costs - Following consultation it has been identified that for many firms, there is a further process cost where in-house experts or consultants are retained on a more general basis. An example is a developer employing a “compliance” expert with a remit to ensure each site team comply with the various code for sustainable homes obligations to ensure there are no costly problems at completion. These costs are indicated under section 5 of this report.

3 Counterfactual

3.1 Security

Introduction

3.1.1 By far the most common current security standard is Secured by Design (SBD). This standard can be required under planning consents or adopted to achieve credits under the Code for Sustainable Homes. Section 2 of the SBD standard relates to physical security and is more commonly specified as well as being required via Code for Sustainable Homes and Homes & Communities Agency standards. Section 1 of the SBD standard relates to site layout and design and has been confirmed as being outside the scope of the Housing Standards Review.

Key Changes

3.1.2 Aside from general updates and the additional dwelling typology, the following key changes have been made since the June 2013 EC Harris report:

- Upper floor apartments – costs have been differentiated for ground and upper floor apartments reflecting the difference in requirements where windows are not accessible. The typical costs below relate to an apartment block of 12 dwellings over 3 floors with only ground floor apartments including the enhanced window specification.
- Garages – a separate cost has been identified for security arrangements in relation to garages where these are present.
- PAS 23/24 costs – further market testing and cost data analysis has been undertaken in relation to the cost of PAS23/24 doors and windows in comparison to those specified in usual industry practice.
- Updated figures – since consultation the requirements of Building Regulations Part L were updated, therefore our base case cost has been updated to reflect this. There has also been a reduction in the cost of renewable technology and Secured by Design following market testing and industry data received.

Updated Costs

3.1.3 The following tables indicate the cost of complying with SBD as an extra over usual industry practice.

Table 3 – Secured by Design flat cost summary

	Typical (3 story block)	Ground Floor Flats	Upper Floor Flats
1B Flat	£336	£410	£299
2B Flat	£342	£416	£305

Table 4 – Secured by Design house cost summary

	Small Developer	Large Developer
2B Terrace	£315	£299
3B Semi Detached	£315	£299
4B Detached	£352	£337
Additional Garage Cost		
All Typologies	£203	£203

- 3.1.4 The following points are noted in relation to the above costs. A full breakdown of the costs and supporting notes is included at appendix A1.
- Costs for apartments include an apportionment of communal door costs
 - EC Harris have obtained market quotations for the door and window assumptions included within the schedule for both the Base Case and PAS 24 compliant doors/windows based on a recent specification.
 - The range of costs received indicated the variety of products on the market. Following discussion with various stakeholders it was agreed that the lowest cost scenario for the ‘small developer’ option was agreed as the most competitive quotation received. The ‘large developer’ option cost is based on aggregated figures supplied by leaders in the market, and represents a discounted rate though bulk buying scenarios.
 - Window costs are based on basic UPVC double glazed units, excluding any additional specification options i.e acoustic requirements etc.
 - Cost included with the EO figures are based on additional security requirements for ground floor windows only. No allowance has been made for windows at first floor level which may be required to have additional security i.e where accessible from a flat roof.

Process Costs

- 3.1.5 As noted within the previous report, SBD Section 2 was generally agreed to be one of the more straightforward standards. Common issues contributing to process costs were identified as:
- Sourcing appropriate components and managing certification / evidence of compliance.
 - An element of non-linear process due to some subjectivity in judging compliance (i.e. the design team would make a proposal, receive comment, make a revised proposal and possibly repeat these steps).
 - Some checks / calculations / measurements which would not be required within the normal design process.
 - Typically several written / telephone exchanges plus one meeting.
- 3.1.6 The process costs per dwelling for security standards are summarised below in tables 5-7 for each scheme size typology. Table 8 indicates the process cost for the recipient.

Table 5 – Secured by Design process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Design Team	12.5	£52	£650
Total	12.5		£650
	Nr dwelling types		2
	Nr dwellings		5
	£/type		£325
	£/dwelling		£130

Table 6 – Secured by Design process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Design Team	15	£52	£780
Total	15		£780
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£156
	£/dwelling		£16

Table 7 – Secured by Design process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Design Team	20	£52	£1,040
Total	20		£1,040
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£104
	£/dwelling		£10

Table 8 – Secured by Design recipient process costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	4	£184	£37
Medium	50	£46	6	£276	£6
Large	100	£46	12	£552	£6

3.2 Energy

Introduction

- 3.2.1 Under the Energy work stream the Code for Sustainable Homes was considered. Requirements associated with the Planning and Energy Act (2008) were not part of the scope of the report.
- 3.2.2 The Code for Sustainable Homes is commonly required via planning consents at varying levels, most typically level 3 or 4. Level 4 must be achieved for all schemes in London under the Housing SPG.

Key Changes

- 3.2.3 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:
- Photovoltaic (PV) panel costs – Further market testing and cost data analysis has been undertaken in relation to the cost of PV panel installations. In particular the fixed and variable costs of the installation have been considered (i.e. those which are diluted, driving down the cost for larger schemes). Costs have reduced reflecting an ongoing trend of falling prices for PV panels.
 - Photovoltaic (PV) panel costs – The costs for PV panels compare with the work carried out by Parsons Brinkerhoff. The figures shown in the tables below are within the range of costs produced by the Parsons Brinkerhoff report, however are below the central estimate figure.
 - Code for Sustainable Homes – Two methods of achieving code levels have been included. This reflects the fact that, whilst the central assumption will still be most commonly encountered, certain schemes will have characteristics which drive a lower or higher cost.
 - Building Regulations – The June 2013 work adopted the then current Part L as the base case for calculating extra over costs. The base case has now been revised to the new Part L which came into effect from 6th April 2014.
 - Greywater and rainwater harvesting – Further market testing and cost data analysis has been undertaken in relation to the costs of greywater and rainwater harvesting systems and the need to include these systems at Code for Sustainable Homes levels 5 and 6. This has resulted in a reduction to the earlier costs. Section 3.5.2 of this report states how potential double counting has been considered.

Updated Costs

- 3.2.4 The following tables indicate the costs of compliance with the standards in excess of the Building Regulations. For the avoidance of doubt the base position in respect of Part L is 2013 (i.e. the new Part L which came into effect from 6th April 2014).
- 3.2.5 Table 9 indicates the total costs to comply with the Code for Sustainable Homes. Tables 10 and 10a apportion this total cost between the energy part of the code and other areas.
- 3.2.6 The costs for Lifetime Homes, Secured by Design and Water have been included within the tables below. These figures however have not been double counted within the Impact Assessment Model.

Table 9 – Total Code for Sustainable Homes costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Cost central compliance method (extra over usual industry practice, medium scheme size)					
Code for Sustainable Homes Level 1	£0	£0	£0	£0	£0
Code for Sustainable Homes Level 2	£40	£40	£40	£40	£40
Code for Sustainable Homes Level 3	£46	£46	£46	£49	£49
Code for Sustainable Homes Level 4 (renewable primary heating source)	£287	£662	£631	£790	£1,103
Code for Sustainable Homes Level 5 (renewable primary heating source)	£5,303	£6,297	£15,025	£17,688	£22,713
Code for Sustainable Homes Level 6 (renewable primary heating source)	£10,103	£15,247	£21,566	£25,939	£31,435
Alternative method of compliance					
Code for Sustainable Homes Level 4 (fabric first + PVs)	£441	£574	£865	£978	£1,315
Code for Sustainable Homes Level 5 (fabric first + PVs)	£6,103	£9,247	£15,566	£19,939	£25,435
Code for Sustainable Homes Level 6 (fabric first + PVs)	£10,103	£15,247	£21,566	£25,939	£31,435

Table 10 – Code for Sustainable Homes costs summary (Energy credits only)

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Cost central compliance method (extra over usual industry practice, medium scheme size)					
Code for Sustainable Homes Level 1	£0	£0	£0	£0	£0
Code for Sustainable Homes Level 2	£0	£0	£0	£0	£0
Code for Sustainable Homes Level 3	£0	£0	£0	£0	£0
Code for Sustainable Homes Level 4 (renewable primary heating source)	£241	£616	£585	£741	£10,054
Code for Sustainable Homes Level 5 (renewable primary heating source)	£2,495	£3,441	£10,760	£12,855	£17,764
Code for Sustainable Homes Level 6 (renewable primary heating source)	£2,495	£12,391	£17,301	£21,106	£26,486
Renewable energy, 10% (via PVs)	£1,027	£1,253	£1,499	£1,950	£2,523
Renewable energy, 20% (via PVs)	£1,643	£2,005	£2,399	£3,120	£4,037
Alternative method of compliance					
Code for Sustainable Homes Level 4 (fabric first + PVs)	£395	£528	£819	£929	£1,266
Code for Sustainable Homes Level 5 (fabric first + PVs)	£3,295	£6,391	£11,301	£15,106	£20,486
Code for Sustainable Homes Level 6 (fabric first + PVs)	£7,295	£12,391	£17,301	£21,106	£26,486

Table 10a - Code for Sustainable Homes costs summary (Non Energy credits)

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Cost central compliance method (extra over usual industry practice, medium scheme size)					
Code for Sustainable Homes Level 1	£0	£0	£0	£0	£0
Code for Sustainable Homes Level 2	£40	£40	£40	£40	£40
Code for Sustainable Homes Level 3	£46	£46	£46	£49	£49
Code for Sustainable Homes Level 4	£46	£46	£46	£49	£46
Code for Sustainable Homes Level 5	£2,809	£2,857	£4,265	£4,833	£4,949
Code for Sustainable Homes Level 6	£2,809	£2,857	£4,265	£4,833	£4,949

3.2.7 The following points are noted in relation to the Code for Sustainable Homes costs:

- In line with feedback received 2 alternative methods of achieving the standards for ENE1 and ENE2 have been assessed. Alternative 1 is a renewables approach, using a combination of fabric enhancement and PV panels to achieve the Dwelling Emission Rate and Dwelling Fabric rate required under the standard. Alternative 2 looks to use the Dwelling fabric to achieve the DER/TER improvement required under ENE1, and equally to meet the fabric efficiency targets under ENE2.
- Additional work was carried out to ascertain whether code 5 was achievable through a renewable first approach. It was concluded that circa 50m² of roof space would be required for a 4 bed dwelling, over 80% of the total roof space, which although technically possible would not be a realistic approach across an entire scheme as other factors such as orientation and location would come into play. This aligns with the work carried out by the Zero Carbon Hub report which concluded a maximum installed panel area is 40% of the roof area.
- As part of the exercise EC Harris has reviewed alternative wall, floor and roof construction methodologies and materials to achieve the fabric efficiencies required, and from this exercise taken the most cost effective solution to achieve the required U Values.
- Code 5/6 costs assume the incorporation of additional costs associated with the inclusion of renewable technologies. For the purpose of the costing exercise an air source heat pump has been assumed to all houses.
- Where fabric enhancements are included to achieve both ENE1 and ENE2 all costs are included within ENE1.
- Costs are based on achieving the points detailed within the 'Point Allocation' table included within the appendix, which assumes (with the exception of mandatory elements) the lowest cost solution to achieve the points required will be incorporated.
- Fixed and variable costs have been taken into account with regards to renewable costs. Parsons Brinkerhoff report concluded 20% of costs were fixed which aligned with industry data received.

3.2.8 A full breakdown of the costs and supporting notes is included at appendix A2.

3.2.9 The saving in energy arising from enhanced fabric performance and / or renewable energy technologies is included within the Impact Assessment Model

Process Costs

3.2.10 As previously identified process costs associated with Code for Sustainable Homes can be extensive and can include:

- Undertaking technical calculations, for example related to energy or water use.
- Collating and reviewing compliance evidence, for example light fitting specifications, materials traceability.
- Specialist consultant reports, for example relating to daylighting and ecology.
- The cost to achieve certification for each dwelling charged by the Building Research Establishment.

3.2.11 The process costs per dwelling for energy standards are summarised in table 11 for each scheme size. The table below indicates the costs for the 3 bed house typology, other types are included within Appendix A2.

3.2.12 It is noted that, in addition to the general costs incurred by the house builder, a fee of £37 per dwelling (minimum charge £370), needs to be paid to the Building Research Establishment for Code for Sustainable Homes certification. This fee is indicated within table 11.

Table 11 – Code for Sustainable Homes and planning and energy act process costs summary

	Small scheme	Medium Scheme	Large Scheme
Code for Sustainable Homes Level 1	£593	£117	£92
Code for Sustainable Homes Level 2	£593	£117	£92
Code for Sustainable Homes Level 3	£645	£125	£96
Code for Sustainable Homes Level 4	£686	£136	£107
Code for Sustainable Homes Level 5	£1,118	£228	£193
Code for Sustainable Homes Level 6	£1,118	£228	£193
Code BRE Fees	£74	£37	£37

3.3 Space

Introduction

3.3.1 A single, cross-tenure, nationally applied space standard does not currently exist. The counterfactual position in respect of space is therefore as follows:

- Affordable housing – The Homes & Communities Agency Housing Quality Indicators (HQI) minimum space standards. It is noted that historically many Registered Providers adopt the middle of the range set within the HQI system (rather than the minimum) and the impact assessment allows for this variation. The counterfactual represents the position prior to commencement of the Housing Standards Review – HCA policy for the 2015-18 Affordable housing Programme has already been aligned with the proposed review outcomes.
- Private housing outside of London – Dwellings sizes remain primarily market driven. However the survey evidence indicates an increasing number of local authorities adopting space standards, including cross tenure standards, which typically have similar requirements to the London plan.
- Data from the English Housing Survey has been used to estimate the distribution of current space standards. The data from the EHS was cross referenced against the EC Harris in-house database used at consultation to ensure consistency within the analysis. Further details on the process for analysing the English Housing Survey data are included within the DCLG Housing Standards Review Evidence Report by Adroit Economics.
- Housing within London – The Housing SPG states minimum space standards for dwellings of all tenures.
- Accessible Housing – An estimate has been made of the typical minimum space required to comply with Lifetime Homes, the Wheelchair Housing Design Guide and Wheelchair Housing Design Guides used in London.

Key Changes

3.3.2 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Private housing outside of London – Within the previous report the average areas for this type of housing were estimated based on a survey by EC Harris. This data has now been supplemented by the larger sample offered by analysis of the English Housing Survey. This approach also offers a greater level of granularity as rather than average sizes a distribution of delivery across a range of size bands is identified. Further detail on this point is included in the DCLG Housing Standards Review Evidence Report by Adroit Economics.

Updated Costs

3.3.3 Table 12 indicates the base costs for dwellings constructed to the various current standards. It is noted that costs for Lifetime Homes and WHDG exclude the additional fittings / works for which costs are indicated in section 3.4 of this report. Further details including a selection of the cost models are included at Appendix A3.

Table 12 – Space area comparison

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Typical Private Sale	50m2	67m2	72m2	96m2	117m2
English Housing Survey	46m2	65m2	74m2	94m2	-
London Housing SPG	50m2	61m2	83m2	96m2	107m2

Table 12a – Space cost comparison

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Typical Space Standard (Basecase)	£81,966	£94,520	£78,044	£95,741	£121,045
English Housing Survey	£2,888	-£2,888	£1,264	-£1,264	-
London Housing SPG	-	-£4,332	£6,952	-	-£5,400

Process Costs

3.3.4 Process costs for compliance with the Wheelchair Housing standards and Lifetime Homes are included within the Access part of this report. The English Housing Survey areas do not incur an additional process cost as they are market led (i.e. voluntarily adopted). Process costs associated with the London Housing SPG are indicated in tables 13-16

Table 13 – Space process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Architect	15	£52.00	£780
Total	15		£780
	Nr dwelling types		2
	Nr dwellings		5
	£/type		£390
	£/dwelling		£156

Table 14 – Space process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Architect	30	£52.00	£1,560
Total	30		£1,560

Nr dwelling types	5
Nr dwellings	50
£/type	£312
£/dwelling	£31

Table 15 – Space process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Architect	50	£52.00	£2,600
Total	50		£2,600

Nr dwelling types	10
Nr dwellings	100
£/type	£260
£/dwelling	£26

Table 16 – Space recipient process costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	5	£230	£46
Medium	50	£46	7.5	£345	£7
Large	100	£46	14	£644	£6

3.4 Access

Introduction

- 3.4.1 Access standards include Lifetime Homes and wheelchair housing standards. Lifetime Homes is an accessible housing standard incorporating features to enable adaptability of homes to meet users' changing needs. It can be required under a planning condition or adopted to secure credits under the Code for Sustainable Homes. Compliance is required for all dwellings within London under the Housing SPG.
- 3.4.2 Wheelchair housing standards allow full accessibility and use by wheelchair users and are commonly required under planning consents. The most common standard is the Wheelchair Housing Design Guide, however other bespoke standards have been developed and adopted by local authorities with different and often more demanding requirements than the original Wheelchair Housing Design Guide.
- 3.4.3 In certain cases the full wheelchair standard is not applied and instead a "future adaptability" approach is taken where key structural / mechanical & electrical elements are installed but features such as fully accessible kitchens are not. The dwelling can then be relatively easily converted to full accessibility and use at a later date if required.

Key Changes

- 3.4.4 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:
- Additional wheelchair housing standard – The earlier work considered only the Wheelchair Housing Design Guide. Costs for the bespoke Wheelchair Housing standards which have been adopted by a number of Councils, have now been included.
 - "Future adaptability" – Recognising that a proportion of dwellings are often permitted to be adaptable rather than fully fitted out, a differential cost for this element of the full works has been identified.
 - Car ports – The cost for car port / covered parking has been identified separately to allow application to a proportion of schemes as this will not necessarily be required for every development.

Updated Costs

- 3.4.5 Table 17 indicates the construction related cost of complying with each standard as an extra over usual industry practice.

Table 17 – Access standards costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi-detached	4B Detached
Cost all dwellings (extra over usual industry practice)					
Lifetime Homes	£1,082	£1,083	£1,092	£1,097	£1,100
BS9266	£4,024	£4,312	£3,873	£3,148	£2,458
Wheelchair Housing Design Guide	£10,553	£10,788	£24,568	£25,136	£25,282
Bespoke Higher Wheelchair Housing standards	£15,853	£15,992	£29,599	£30,428	£30,731
Wheelchair Housing Design Guide - Future Adaptable Dwelling	£8,095	£8,278	£9,594	£10,111	£10,204
Additional costs applied to a proportion of dwellings					
Carport (applied to a proportion of houses)	£2,500 per unit applied to BHWHDG	£2,500 per unit applied to BHWHDG	£2,500 per unit applied to BHWHDG	£2,500 per unit applied to BHWHDG	£2,500 per unit applied to BHWHDG

3.4.6 The following points are noted in relation to the above costs. A full breakdown of the costs and supporting notes is included at appendix A4.

- Aside from enlarged stairs, all costs exclude any additional space required to achieve the standard. This is included elsewhere within this report – table 17a summarises the additional cost arising from additional space needed to meet the most common access standards (also see section on cost recovery which has not been applied to these figures)

Table 17a – Access related space cost summary

	1B Apartment		2B Apartment		2B Terrace		3B Semi-detached		4B Detached	
Cost increase for additional m2										
Lifetime Homes	+ 1 sq.m	£722	+ 1 sq.m	£722	+ 2 sq.m	£1,444	+ 3 sq.m	£2,166	+ 3 sq.m	£2,166
WHDG	+ 6 sq.m	£4,332	+ 12 sq.m	£8,664	+ 20 sq.m	£14,440	+ 22 sq.m	£15,884	+ 22 sq.m	£15,884

Process Costs

3.4.7 As previously identified Lifetime Homes is considered to be a complex issue with process costs throughout the design and delivery phases. Issues driving the process cost included:

- Challenging to get a compliant design right first time, even for experienced architects within large practices. Often therefore a level of re-design required.
- Many aspects of the standard are outside of usual industry practice, therefore all “extra over” time.
- The same amount of time required for each house type (rather than scheme) which adds up to a significant cost where there are many house types.
- Requirement for careful management during the delivery phase ensuring attention paid to details which would not otherwise be material.
- Differing local authority requirements for evidencing of compliance and differing views on what is compliant.

- Time consuming to deal with external elements, particularly for sloping sites (note – costs below assume relatively level site).

3.4.8 Similarly the Wheelchair Housing Design Guide is considered to incur a high process cost, largely due to the complexity of the document. Key issues raised as causing the cost included:

- Extensive time to navigate, review and interpret the document.
- Generally a bespoke review needed for each dwelling typology – little opportunity for learning / scale benefits.
- Often a negotiation / review process with external stakeholders causing re-design as differing views incorporated.

3.4.9 The process costs per dwelling for access standards are summarised in tables 18 – 25 below.

Lifetime Homes*Table 18 – Lifetime Homes process costs (Small Development)*

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	15	£52.00	£780
Architect (external items)	12	£52.00	£624
Buyer	4	£57.00	£228
Construction Manager	4	£57.00	£228
Total	35		£1,860
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£930	
	£/dwelling	£372	

Table 19 – Lifetime Homes process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	37.5	£52.00	£1,950
Architect (external items)	15	£52.00	£780
Buyer	10	£57.00	£570
Construction Manager	10	£57.00	£570
Total	72.5		£3,870
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£774	
	£/dwelling	£77	

Table 20 – Lifetime Homes process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	75	£52.00	£3,900
Architect (external items)	20	£52.00	£1,040
Buyer	20	£57.00	£1,140
Construction Manager	20	£57.00	£1,140
Total	135		£7,220
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£722	
	£/dwelling	£72	

Table 21 – Lifetime Homes Recipient process costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	5	£230	£46
Medium	50	£46	7.5	£345	£7
Large	100	£46	14	£644	£6

Wheelchair Housing Design Guide

Table 22 – Wheelchair Housing Design Guide process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	7.5	£57.00	£428
Construction Manager	15	£57.00	£855
Total	67.5		£3,623

Nr dwelling types	1
Nr of wheelchair dwellings	1
£/type	£3,623
£/dwelling	£3,623

Table 23 – Wheelchair Housing Design Guide process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	11.5	£57.00	£656
Construction Manager	11	£57.00	£627
Total	67.5		£3,623

Nr dwelling types	3
Nr of wheelchair dwellings	5
£/type	£1,208
£/dwelling	£725

Table 24 – Wheelchair Housing Design Guide process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	7.5	£57.00	£428
Construction Manager	15	£57.00	£855
Total	67.5		£3,623

Nr dwelling types	6
Nr of wheelchair dwellings	10
£/type	£604
£/dwelling	£362

Table 25 – Wheelchair Housing Design Guide recipient process costs

	Wheelchair Dwellings	Rate	Hrs	Total	£/dwelling
Small	1	£46	2	£92	£92
Medium	5	£46	4	£184	£37
Large	10	£46	8	£368	£37

3.5 Water

Introduction

3.5.1 Specific water standards outside of those driven by Code for Sustainable Homes requirements are relatively uncommon. Policies encountered largely fall into the categories of:

- Requirements to achieve a certain level of Code credits within the water element.
- Requirements for greywater or rainwater harvesting systems.

3.5.2 This section of the report highlights costs of the above separately. The Impact Assessment Model avoids any double counting of costs where, for example, a scenario has a requirement for rainwater harvesting but also a high Code level which may also include this.

Key Changes

3.5.3 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Methods of compliance – Further analysis has been undertaken on alternative methods of achieving compliance with water requirements at Code for Sustainable Homes levels 5 and 6.
- Rainwater and greywater harvesting – Further market testing and cost data analysis has been undertaken to refine the costs of these systems.
- Part G – Costs have been updated to reflect the extra over the latest requirements of Part G of the Building Regulations.

Updated Costs

3.5.4 The following table indicates the cost of complying with each standard as an extra over usual industry practice.

Table 26 – Water standards costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Cost all dwellings (extra over usual industry practice)					
Water, Code Level 1	-	-	-	-	-
Water, Code Level 2	-	-	-	-	-
Water, Code Level 3	£6	£6	£6	£9	£9
Water, Code Level 4	£6	£6	£6	£9	£9
Water, Code Level 5	£900	£900	£2,201	£2,697	£2,697
Water, Code Level 6	£900	£900	£2,201	£2,697	£2,697
Alternative standards					
Rainwater only	£887	£887	£2,181	£2,674	£2,674

3.5.5 The following points are noted in relation to the above costs:

- The Water Calculator for new dwellings has been used to ascertain the required additional measures to achieve the 'Proposed Standard' and Code 5/6 Costs.
- Following research and liaison with industry experts, it is clear that typically rainwater harvesting has been incorporated as the means to achieve the 80l/p/d required under CfSH 5 and 6. An alternative solution would be to have 'shower only' dwellings. However, experience is that dwellings without a bath are not preferred by house builders or registered providers.

- The extra over cost associated with the incorporation of a 4/2.4l toilet is based on quotations received. Costs are based on base range pan/cistern. Plumbing for both scenarios has been assumed to be unchanged between the two options.
- Costs for rainwater harvesting have been obtained. Rates include for all necessary installation costs. For the purposes of comparison craneage has been assumed as being available on site.

3.5.6 A full breakdown of the costs and supporting notes is included at appendix A5.

Process Costs

3.5.7 The process costs per dwelling for water standards are summarised in tables 27 - 30 below.

Table 27 – Water standards process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	3	£49.00	£147
Total	3		£147

Nr dwelling types	2
Nr dwellings	5
£/type	£74
£/dwelling	£29

Table 28 – Water standards process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	3	£49.00	£147
Total	3		£147

Nr dwelling types	5
Nr dwellings	50
£/type	£29
£/dwelling	£3

Table 29 – Water standards process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	7.5	£49.00	£368
Total	7.5		£368

Nr dwelling types	10
Nr dwellings	100
£/type	£37
£/dwelling	£4

Table 30 – Water standards recipient process costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	4	£184	£37
Medium	50	£46	6	£276	£6
Large	100	£46	12	£552	£6

4 Proposed Standards

4.1 Security

Introduction

4.1.1 The proposed security standard is indicated within the draft Approved Document Q included at Appendix B1. The key features of the proposed standard are:

- All external doors to houses, common entrance doors to apartments and apartment entrance doors to meet PAS 24:2012 or the alternative requirements set out within the Approved Document and be fixed appropriately.
- Garage doors are not required to comply if access to the dwelling is not possible.
- All basement, ground floor and easily accessible windows to meet PAS 24:2012 and be fixed appropriately.
- Laminated glazing has been excluded to all windows under the proposed standard

Key Changes

4.1.2 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Definition of the standard – This has now been refined, costs have therefore been amended accordingly.
- Further engagements with Industry and testing of market prices to improve evidence, providing a more detailed and accurate build-up of industry costs.

Updated Costs

4.1.3 Tables 31 and 32 indicate the cost of complying with each standard as an extra over usual industry practice. As for the Secured by Design standard in the counterfactual section of this report a separate cost is included for smaller and larger developers reflecting achievable external door costs given their respective purchasing power.

Table 31 – Proposed security standard costs summary flats

	Ground Floor Flats	Upper Floor Flats
1B Flat	£58	£40
2B Flat	£64	£46

Table 32 – Proposed security standard costs summary houses

	Small Developer	Large Developer
2B Terrace	£95	£79
3B Semi Detached	£95	£79
4B Detached	£107	£91

4.1.4 A full breakdown of the costs and supporting notes is included at appendix B1.

Process Costs

4.1.5 The proposed security standard covers relatively few building elements (doors and windows) and would be applied to all dwellings. It is therefore anticipated that the process associated with the standard would be limited and it is estimated that 5 minutes would be spent for each dwelling checking compliance of components. The tables below indicate the anticipated cost for small, medium and large schemes:

Table 33 - Security process cost (Small Development)

Professional	Total hours	Hourly Rate	Total
Design Team	0.2	£52	£10
Total	0.2		£10
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£5	
	£/dwelling	£2	

Table 34 - Security process cost – (Medium Development)

Professional	Total hours	Hourly Rate	Total
Design Team	0.4	£52	£21
Total	0.4		£21
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£4	
	£/dwelling	£0.4	

Table 35 - Security process cost – (Large Development)

Professional	Total hours	Hourly Rate	Total
Design Team	0.8	£52	£42
Total	0.8		£42
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£4	
	£/dwelling	£0.4	

Table 36 – Security recipient costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.1	£5	£0.9
Medium	50	£46	0.2	£9	£0.2
Large	100	£46	0.4	£18	£0.2

4.2 Energy

Introduction

4.2.1 It is not proposed that a new energy standard be introduced as part of the Housing Standards Review. Schemes would therefore need to comply with the Building Regulations and as such no additional cost would be incurred in the proposed scenario.

Key Changes

4.2.2 The costs in the proposed scenario remain as zero. As noted within the earlier section of this report the counterfactual cost has been reduced to reflect the new Part L of the Building Regulations (i.e. the extra over cost to achieve Code for Sustainable Homes is reduced).

Updated Costs

4.2.3 As above there is no additional cost in the proposed scenario.

Process Costs

4.2.4 As above there is no process cost in the proposed scenario.

4.3 Space

Introduction

4.3.1 It is proposed that a single space standard be available which local authorities could choose to make applicable to dwellings of any tenure in all locations. The standard would be suitable for general needs users and also be sufficient to allow enhanced accessibility but not full wheelchair use.

4.3.2 The space standard would be available for local authorities to select if appropriate, particularly having regard to local housing market characteristics and viability issues.

Key Changes

4.3.3 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Definitions of the standard – The proposed areas have been amended since the June 2013 report and as such the costs have been changed accordingly. The principle of adopting a full cost model to estimate changes in costs does however remain, this ensures that fixed cost items such as bathroom costs remain unchanged and the cost amendment relates only to the enlarged area.
- Ceiling Height – An assumed ceiling height of 2.6m was used within the proposed elemental costings. This is an assumption by EC Harris based on a conservative approach to typical industry practice in areas where space standards are currently applied, and where requirements range from 2.4 – 2.6m. The proposed ceiling height of 2.5m is considered cost neutral compared to the counterfactual where space standards currently apply, but does have a material cost which is relevant for viability purposes. Details on different storey height costings can be found in Appendix B3 with reference to the industry minimum ceiling height of 2.35m.

Updated Costs

4.3.4 The central assumption within the Impact Assessment is that the new space standards would be adopted within areas currently applying a space standard. The new standard is broadly quite similar to existing standards:

- The variance is between 1 and 3m² across the private dwelling typologies under consideration in comparison to the most common current standard.
- The variance is between 3 and 9m² across the affordable dwelling typologies under consideration in comparison to the most common current standard, the Homes & Communities Agency HQI standard.

4.3.5 The DCLG Housing Standards Review Evidence Report by Adroit Economics provides details of the methodology for assessing the impacts of the proposed standard. However, Table 37 below gives an

overview of the construction costs of increasing or decreasing each dwelling typology by various areas and has been calculated based on the cost models at Appendix B3.

Table 37 – Additional space costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Total Cost increase per m2					
+ 1 sq.m	+ £722	+ £722	+ £632	+ £632	+ £540
+ 2 sq.m	+ £1,444	+ £1,444	+ £1,264	+ £1,264	+ £1,080
+ 3 sq.m	+ £2,166	+ £2,166	+ £1,896	+ £1,896	+ £1,620
+ 5 sq.m	+ £3,610	+ £3,610	+ £3,175	+ £3,175	+ £2,700
+ 10 sq.m	+ £7,220	+ £7,220	+ £6,320	+ £6,320	+ £5,400

Table 37a – Additional space costs after Space cost recovery

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
+ 1 sq.m	+ £73	£73	£64	£64	£55
+ 2 sq.m	+ £146	£146	£128	£128	£109
+ 3 sq.m	+ £435	£435	£381	£381	£164
+ 5 sq.m	+ £1,014	£1,014	£891	£891	£758
+ 10 sq.m	+ £2,893	£2,893	£2,532	£2,532	£2,164

Note – The above figures are based on 80% of costs being recovered via increased revenues as described under 4.3.9 to 4.3.16. This approach is based on areas where space standards are implemented after viability testing – in areas where space standards would not be found to be viable a reduced cost recovery may occur.

Table 37b – Space standard cost comparison

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Typical Current Space Standard	50m ²	67m ²	72m ²	96m ²	117m ²
English Housing Survey	46m ²	65m ²	74m ²	94m ²	N/A
Proposed	50m ²	61m ²	79m ²	93m ²	106m ²
Area Difference (Typical - Proposed)	-	6m ²	7m ²	3m ²	11m ²
Cost Difference (Typical - Proposed)	-	£4,332	-£4,424	£1,896	£5,940
Area Difference (EHS - Proposed)	4m ²	4m ²	5m ²	1m ²	N/A
Cost Difference (EHS - Proposed)	-£2,888	£2,888	-£3,160	£632	N/A

- 4.3.6 Table 37b shows both a comparison and of area and cost between the proposed standard, 'typical' current standard and the average size taken from the English Housing Survey.
- 4.3.7 The figures shown for the EHS are the median figure taken from the survey for each typology. The IA uses a distribution of the EHS figures. There was not enough sufficient data collected for 4B Houses.
- 4.3.8 The 'typical' figures are taken from EC Harris's internal benchmark data which were used within the June 2013 consultation report. These figures are similar to those of the English Housing Survey.

Space Cost Recovery

- 4.3.9 The preceding section explains the build cost impact of changing space standards. For affordable rented housing there will not be a material change in value associated with changes in space (the value of affordable rented housing is based on rent levels which are linked to the number of bedspaces rather than the dwelling size). However, for private and intermediate housing, changes in space standard can have an impact on sales value which may offset some or all of the additional build cost.
- 4.3.10 The extent to which sales values change in line with space standards varies greatly dependent on local market characteristics. Key issues include:
- The extent to which buyers are prepared and / or able to pay an additional purchase price.
 - Proximity of current sales values to capped values driven by perceptions (e.g. an unwillingness to pay over £200,000 for a 2 bed home) or stamp duty thresholds (e.g. where a 4 bed home currently sells for £250,000 there will be a significant stamp duty cost even where the value is increased by only £1 and as such buyers will not be prepared to pay a premium for a small increase in space standards).
 - The type and quantity of dwellings available in the existing stock market.
- 4.3.11 A further important issue is the density of development. Where low to medium density houses are constructed it is unlikely that small changes in space standards will lead to an overall reduction in site density (i.e. increased dwelling footprints meaning that less dwellings can fit within the site).

However for higher density schemes, particularly apartments, it is possible that small changes will lead to a reduction in dwelling numbers and therefore potentially impact on developer returns.

- 4.3.12 The issues described in the paragraphs above can have impacts on viability. The Housing Forum report of 2010 “Viability Impacts of Core Standards” examined a space standard proposed at the time and found that in a number of case study location / scheme typologies development would have been unlikely to have been brought forward under the proposed standard.
- 4.3.13 The currently proposed standards are to be optional, with local authorities able to implement them dependent on local circumstances. An authority considering implementing the standard would need to consider viability and ensure that any negative impacts were of a limited nature and as such would not limit developers’ or landowners’ ability to bring forward land for development. The Impact Assessment Model makes assumptions as to the proportion of areas which would be likely to implement the space standards on this basis.
- 4.3.14 On the basis of the above an assessment has been made as to the likely extent to which additional build costs could be recovered via sales values (or the reverse case where the proposed space standard is less than a current space standard). It is noted that this assessment is made on the basis that the standard is implemented in areas where it is supported by viability – areas where this is not the case are likely to have differing results.
- 4.3.15 Table 38 below summarises the impact on a typical dwelling of a variety of space standard changes. The following points are noted in relation to the table:
- The first three columns indicate the area change (1, 2, 3, 5 and 10m² for consistency with other sections of this report), base area (for this example based on the average of all new dwellings from the English Housing Survey) and standards area (base plus change).
 - The columns under the “Values” heading indicate the base value of the theoretical dwelling (the Halifax House Price Index average for new build dwellings has been adopted for this example) in £ and £/m² and the value for the increased size dwelling.
 - The columns under the “Costs” heading indicate the build cost increase (as described earlier within this report and indicated in Table 37), and also an all-in cost change which adds professional fees, contingencies, development management costs, planning costs and sales and marketing costs (a total addition of 32%).
 - It is usual that, when dwellings are amended to a size different to the market optimum, the value will increase but the value per m² will decrease (i.e. the price paid for additional space will decline). This can be seen under the “Standards value £/m²” column.

Table 38 – Space cost recovery

Area change			Values					Costs		Recovery
Area change (m ²)	Base area (m ²)	Standards Area (m ²)	Base value (£)	Base value (£/m ²)	Standards Value (£)	Standards Value (£/m ²)	Value Increase (£)	Cost increase - build (£)	Cost increase - all in (£)	Percent cost recovered
1	91	92	£ 255,000	£ 2,802	£ 255,750	£ 2,780	£ 750	£ 632	£ 834	90%
2	91	93	£ 255,000	£ 2,802	£ 256,500	£ 2,758	£ 1,500	£ 1,264	£ 1,668	90%
3	91	94	£ 255,000	£ 2,802	£ 257,000	£ 2,734	£ 2,000	£ 1,896	£ 2,503	80%
5	91	96	£ 255,000	£ 2,802	£ 258,000	£ 2,688	£ 3,000	£ 3,160	£ 4,171	72%
10	91	101	£ 255,000	£ 2,802	£ 260,000	£ 2,574	£ 5,000	£ 6,320	£ 8,342	60%

- 4.3.16 Table 38 above indicates that the percentage of cost recovered via additional value declines as the amount of space added grows. For relatively small areas (1-2m²) 90% of the cost is recovered via sales values, however this figure declines to 60% for the 10m² addition. The Impact Assessment Model identifies the difference between proposed space standards and the range of current areas. Given that most changes in area are within the 1-5m² range, an assumption of 80% cost recovery is made.

Process Costs

- 4.3.17 Where space standards are adopted by a local authority it is anticipated that house builders would incur a process cost developing designs and checking compliance with the standard. A process of “type approval” would be possible such that house builders who utilise standard house types would avoid the need to test and have these approved for each scheme. Even where type approval is not adopted, costs will be considerably lower within the framework of a national space standard because assessing compliance will be consistent, and standard compliant designs will emerge which can be easily revised to meet bespoke needs, avoiding the need to re-design portfolios from scratch.
- 4.3.18 Tables 39-44 indicate the anticipated costs for those not adopting type approval for small, medium and large schemes and the one-off cost per house type for those adopting type approval. The Impact Assessment model assumes that house builders would adopt type approval for a proportion of schemes with larger firms being more likely to adopt this route. The model also assumes that type approval would be more relevant to houses rather than apartments which are often more site specific designs. The time allowed for type approval includes review of the design, check for compliance, amendment and response to any clarification raised following submission.
- 4.3.19 There has been a significant reduction from the counterfactual space process cost for all development sizes due to the removal of the requirement for both furniture layouts and minimum sized non-habitable room areas.

Table 39 - Space process cost (Small Development)

Professional	Total hours	Hourly Rate	Total
Design Team	3.5	£52	£182
Total	3.5		£182
	Nr dwelling types		2
	Nr dwellings		5
	£/type		£91
	£/dwelling		£36

Table 40 - Space process cost (Medium Development)

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£83
	£/dwelling		£8

Table 41 - Space process cost (Large Development)

Professional	Total hours	Hourly Rate	Total
Design Team	16	£52	£832
Total	16		£832
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£83
	£/dwelling		£8

Table 42 - Space recipient costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.5	£23	£5
Medium	50	£46	2	£92	£2
Large	100	£46	4	£184	£2

Table 43 - Space process cost – Type approval (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416

Table 44 – Space recipient costs – Type approval (per dwelling type)

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2	£92	£92

4.4 Access

Introduction

4.4.1 The proposed security standard is indicated within the draft Approved Document M amendments included at Appendix B4. The key features of the proposed standard are:

- A 3 level standard, reflecting accessibility as follows:
 - Category 1 – Dwellings which provide reasonable accessibility
 - Category 2 – Dwellings which provide enhanced accessibility and adaptability
 - Category 3 – Dwellings which are accessible and adaptable for occupants who use a wheelchair

Key Changes

4.4.2 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Definition of the standard – this has now been refined, costs have therefore been amended accordingly.

Updated Costs

4.4.3 The following table indicates the cost of complying with each standard as an extra over cost above a standard for an equivalent dwelling type excluding additional space costs; these are shown in table 45a.

Table 45 – Access costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi-detached	4B Detached
Cost all dwellings (extra over current industry practice)					
Category 1	-	-	-	-	-
Category 2	£940	£907	£523	£521	£520
Category 3 Adaptable	£7,607	£7,891	£9,754	£10,307	£10,568
Category 3 Accessible	£7,764	£8,048	£22,238	£22,791	£23,052

Table 45a – Access related space cost summary

	1B Apartment		2B Apartment		2B Terrace		3B Semi-detached		4B Detached	
Cost increase for additional m2										
Category 2	+ 1 sq.m	£722	+ 1 sq.m	£722	+ 2 sq.m	£1,444	+ 3 sq.m	£2,166	+ 3 sq.m	£2,166
Category 3	+ 8 sq.m	£5,776	+ 14 sq.m	£10,108	+ 21 sq.m	£15,162	+ 24 sq.m	£17,328	+ 24 sq.m	£17,328

Table 45b – Access related space cost after Space cost recovery

	1B Apartment		2B Apartment		2B Terrace		3B Semi-detached		4B Detached	
Category 2	+ 1 sq.m	£289	+ 1 sq.m	£289	+ 2 sq.m	£578	+ 3 sq.m	£866	+ 3 sq.m	£866
Category 3	+ 8 sq.m	£2,310	+ 14 sq.m	£4,043	+ 21 sq.m	£6,065	+ 24 sq.m	£6,931	+ 24 sq.m	£6,931

- 4.4.4 Table 45b shows the extra costs of access related space allowing for the fact that some of the cost will be recovered via additional sales revenues. The approach to calculating recovery of costs is described in sections 4.3.7 to 4.3.14 of this report. Given that some space associated with access standards may be in different locations to that preferred by the market (e.g. enlargement of a WC rather than a habitable room) the lower end of the recovery range has been adopted (60% of costs are recovered).
- 4.4.5 The costs for enlarged stairs have been costed within the ‘construction’ costs as stated in section 3.4.6 and are excluded from the additional access related space costs.
- 4.4.6 A full breakdown of the costs and supporting notes is included at appendix B4.

Process Costs

- 4.4.7 Process costs for the proposed access levels are indicated in tables 46-57 below. It is noted that the new standards are presented in the same format as Approved Document M of the Building Regulations which has been assessed to reduce process time (i.e. it allows more streamlined review as part of the general design process). As described within the Space section of this report an option for type approval is also included.

Category 1

- 4.4.8 No process cost is incurred. The standard is no different to apply than the current Part M of the Building Regulations.

Category 2

Table 46 – Access process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	8	£52.00	£416
Architect (External Design Work)	8	£52.00	£416
Buyer	3	£57.00	£171
Construction Manager	3	£57.00	£171
Total	22		£1,174

Nr dwelling types	2
Nr dwellings	5
£/type	£587
£/dwelling	£235

Table 47 – Access process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	20	£52.00	£1,040
Architect (External Design Work)	10	£52.00	£520
Buyer	7.5	£57.00	£428
Construction Manager	7.5	£57.00	£428
Total	45		£2,415
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£483
	£/dwelling		£48

Table 48 – Access process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	40	£52.00	£2,080
Architect (External Design Work)	15	£52.00	£780
Buyer	15	£57.00	£855
Construction Manager	15	£57.00	£855
Total	85		£4,570
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£457
	£/dwelling		£46

Table 49 – Access recipient costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.5	£23	£5
Medium	50	£46	4	£184	£4
Large	100	£46	8	£368	£4

Table 50 – Access type approval costs (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416

Table 51 – Access type approval recipient costs

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2	£92	£92

Category 3

Table 52 – Access process costs (Small Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	7.5	£52.00	£390
Construction Manager	4	£57.00	£228
Total	11.5		£618

Nr dwelling types	1
Nr Wheelchair dwellings	1
£/type	£618
£/dwelling	£618

Table 53 – Access process costs (Medium Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	22.5	£52.00	£1,170
Construction Manager	12	£57.00	£684
Total	34.5		£1,854

Nr dwelling types	3
Nr Wheelchair dwellings	5
£/type	£618
£/dwelling	£371

Table 54 – Access process costs (Large Development)

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	45	£52.00	£2,340
Construction Manager	24	£57.00	£1,368
Total	69		£3,708
	Nr dwelling types		6
	Nr Wheelchair dwellings		10
	£/type		£618
	£/dwelling		£371

Table 55 – Access recipient costs

	Wheelchair Dwellings	Rate	Hrs	Total	£/dwelling
Small	1	£46	0.5	£23	£23
Medium	5	£46	3.5	£161	£32
Large	10	£46	7	£322	£32

Table 56 – Access type approval costs (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	10	£52	£520
Total	10		£520

Table 57 – Access type approval recipient costs

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2.5	£115	£115

4.5 Water

Introduction

4.5.1 The proposed water standard is indicated within the draft Approved Document included at Appendix B5. The key features of the proposed standard are:

- A single standard set at 110 litres per day water use.

Key Changes

4.5.2 Aside from general updates and the additional dwelling typology the following key changes have been made since the June 2013 EC Harris report:

- Definition of the standard – this has now been refined, costs have therefore been amended accordingly.
- Method of compliance - enquires have been made with a number of developers to ascertain the current methodology for achieving current Building Regulations requirements. Although responses were mixed, the general consensus was that restrictors are currently used on bathroom taps, however showers and kitchen taps are typically not fitted with restrictors. Similarly dual flush toilets are incorporated however these were typically 6/4l flush toilets. Based on this assumption no additional costs have been incorporated within the basin tap costs but additional costs for restrictors have been allowed to the shower / kitchen taps.

Updated Costs

4.5.3 The following table indicates the cost of complying with each standard as an extra over usual industry practice. The costs within the table reflect the most common current practice which is to use flow restricting devices to reduce water use by taps and showers. Past experience is that as manufacturers replace ranges over time the fitting is designed to meet the current standard and as such additional restricting devices are not required. It is therefore assumed within the Impact Assessment model that this replacement affects approximately 10% of fittings on the market each year, resulting in a declining cost over time.

Table 58 – Water standards costs summary

	1B Apartment	2B Apartment	2B Terrace	3B Semi- detached	4B Detached
Cost all dwellings (extra over usual industry practice)					
Proposed standard	£6	£6	£6	£9	£9

4.5.4 A full breakdown of the costs and supporting notes is included at appendix B5.

Process Costs

4.5.5 The process for checking compliance with the proposed standard would be the same as that currently undertaken in relation to the current Building Regulations (the only difference being a slight reduction in the water use). Given this point there would be no process costs in addition to the current Building Regulations.

5 Process and Transition

5.1 Transition Costs

5.1.1 Should the proposed standards be adopted a transition cost will occur comprised of items such as:

- Time taken for industry professionals to familiarise themselves with the new standard.
- Costs of training events in relation to the new standards.
- Obtaining revised guidance.
- Updating of internal processes and procedures.

5.1.2 Table 59 indicates the estimated time for industry professionals to familiarise themselves with the new standards and review guidance etc. It is noted that, even in the absence of the new standards, a relatively regular updating of the current standards has historically occurred along with ongoing new / variations of standards. The time indicated below is therefore the extra over associated with the new standards. Within the Impact Assessment model the time allowances below are applied to the estimated number of professionals within the housing sector.

Table 59 – Professionals' familiarisation time

Profession	Hours	Rate	Total
Architect	8	£52	£416
Building Control Surveyor	8	£46	£368
Building Surveyor	4	£46	£184
Quantity Surveyor	4	£57	£228
Construction Energy Assessors	5	£48	£240
Building Services Engineer	4	£46	£184
Civil Engineer	2	£47	£94
Mechanical Engineer	4	£49	£196
Construction Manager	4	£57	£228
Project Manager	4	£57	£228
Town and Country Planner	5	£61	£305
Skilled Trades	1.5	£18	£27

5.1.3 It is anticipated that almost all professionals would utilise the freely available electronic Approved Documents rather than purchase hard copies. There is therefore no cost to obtain the revised guidance. It is noted that this is a change from the previous 2013 report in which it was assumed that a proportion of professionals would purchase hard copy documents.

5.1.4 In addition to the cost per professional there will be a cost per firm to update internal processes and procedures. Table 60 below indicates the estimated cost for each type of professional consultancy firm.

Table 60 – Professional firms' updating time

Profession Type	Resource	Rate	Total
Architects	30	£52	£1,560
Planners	30	£61	£1,830
Surveyors	15	£57	£855
Engineers	15	£47	£705
Management	15	£57	£855

5.1.5 Table 61 below indicates the same costs for housebuilders. Very small firms do not incur a cost here as it is assumed that consultant architects, engineers etc would be employed, the costs of which are included under Table 58.

Table 61 – House builders' updating time

Size of Firm (by number employed)	Number of House Builders	Hours	Rate	Total per Firm
1	10,301	0	£52	£0
2 to 3	6,456	0	£52	£0
4 to 7	2,988	0	£52	£0
8 to 13	1,101	0	£52	£0
14-24	607	0	£52	£0
25-34	202	7.5	£52	£390
35-59	238	7.5	£52	£390
60-79	81	15	£52	£780
80-114	76	15	£52	£780
115-299	99	15	£52	£780
300-599	29	22.5	£52	£1,170
600-1,199	8	37.5	£52	£1,950
1,200+	14	37.5	£52	£1,950
	22,200			

5.2 Process Costs

5.2.1 Process costs identified fall into three key categories:

- Costs directly attributed to an individual standard and incurred by the developer / contractor and their professional team (for example surveys required under the Code for Sustainable Homes or design time taken dealing with Lifetime Homes).
- Wider costs incurred by industry in dealing with the range and complexity of current housing standards (for example housebuilders' time amending standard house types for different wheelchair housing standards or manufacturers' time producing differing product ranges).
- Costs incurred by those required to approve or check compliance with standards (for example Architectural Liaison Officers in relation to Secured by Design).

5.2.2 The sections below identify the costs in relation to each of the above scenarios in the current / counterfactual and proposed scenarios.

Individual Standards Process Costs

5.2.3 Sections 3 and 4 of this report identify the costs attributed to each current and proposed standard.

Wider costs Incurred by Industry

5.2.4 The tables below identify the estimated costs incurred by housebuilders in dealing with the standards under the current and proposed scenarios. Following consultation a cost has been included for micro size firms who were assumed within the previous 2013 cost report not to include such staff.

Table 62 - Industry costs – current situation

Firm size	Current resource dedicated	Cost per year per firm
Micro (1-4 employees)	0.015 Full time equivalent design manager	£1,287 (0.015 x £52/hr x 7.5hr day x 220)
Micro (4-7 employees)	0.05 Full time equivalent design manager	£4,290 (0.05 x £52/hr x 7.5hr day x 220)
Small (e.g. local home builder)	0.15 Full time equivalent design manager	£12,870 (0.15 x £52/hr x 7.5hr day x 220)
Medium (e.g. regional home builder)	0.75 Full time equivalent design manager	£64,350 (0.75 x £52/hr x 7.5hr day x 220)
Large (e.g. national home builder with multiple regions)	4 Full time equivalent design managers	£343,200 (4 x £52/hr x 7.5hr day x 220)

Table 63 - Industry costs – proposed situation

Firm size	Proposed resource dedicated	Cost per year per firm
Micro (1-4 employees)	0.01 Full time equivalent design manager	£858 (0.01 x £52/hr x 7.5hr day x 220)
Micro (4-7 employees)	0.03 Full time equivalent design manager	£2,574 (0.03 x £52/hr x 7.5hr day x 220)
Small (e.g. local home builder)	0.10 Full time equivalent design manager	£8,580 (0.10 x £52/hr x 7.5hr day x 220)
Medium (e.g. regional home builder)	0.40 Full time equivalent design manager	£34,320 (0.40 x £52/hr x 7.5hr day x 220)
Large (e.g. national home builder with multiple regions)	2 Full time equivalent design managers	£171,600 (2 x £52/hr x 7.5hr day x 220)

Recipient Process Costs

5.2.5 Sections 3 and 4 of this report identify the costs attributed to each current and proposed standard.

Appendices

Appendix A1 – Counterfactual, Security

Housing Standards Review

Domestic Security Standards - 2 Bed Flat (12 flats in block, 4 flats per floor)

June 14 - Assessment based on Secured by Design 'New Homes 2014' Guide

Element	Current Industry Practice				Secured by Design									
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline			
Doors														
Communal entrance door	Hardwood door and frame to communal door, automatic lock linked to access control	1	Item	£921.00	£921.00	PAS 24 or LPS1175 and PAS 23, with electronic release linked to access control	1	Item	£1,092.00	£1,092.00	£171.00			
Glass panel / side panel to communal entrance door	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00			
Front entrance door	Fire rated flat entrance door inclusive of frame and ironmongery	12	Item	£433.00	£5,196.00	PAS 24 fire rated door set inclusive of frame and ironmongery	12	Item	£465.00	£5,580.00	£384.00			
Door restrictor to front entrance door	Included				£0.00	Included				£0.00	£0.00			
Access Control / Mail Delivery														
Letter box bank	Standard letter box bank	12	Nr	£35.04	£420.48	Security letter box bank with reasonable resistance to forced entry and unauthorised removal of contents	12	Nr	£63.60	£763.20	£342.72			
Audio visual access control system (Flats)	Audio door entry system	1	Item	£3,853.00	£3,853.00	Video door entry system	1	Item	£5,681.00	£5,681.00	£1,828.00			
Windows														
External windows	Ground floor apartments 4nr: 4nr PVCU windows per apartment	1	Item	£5,172.00	£5,172.00	Ground floor apartments 4nr: 4nr PVCU windows per apartment to BS 7950; inclusive of laminated glazing	1	Item	£5,615.60	£5,615.60	£443.60			
PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00			
Lighting														
Photo electric cell switched lighting	Photo electric cell lighting provided to front entrance	1	Nr	£45.00	£45.00	Photo electric switched lighting to front entrance and rear entrance	2	Nr	£45.00	£90.00	£45.00			
Alarms														
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00			
Bicycle Parking Internal														
Secure doorset	Hardwood door and frame	1	Nr	£433.00	£433.00	Secure doorset PAS 23/24	1	Nr	£465.00	£465.00	£32.00			
Ground Anchor	None				£0.00	Ground Anchor - 'Sold Secure' Silver Standard	16	Nr	£15.19	£243.07	£243.07			
Home Office														
Internal door of robust construction	Hollow core flush door	12	Nr	£67.00	£804.00	Fire resistant robust door FD30	12	Nr	£99.00	£1,188.00	£384.00			
BS 3621 lock	Latch only (incl)					BS Mortice Deadlock	12	Nr	£14.40	£172.80	£172.80			
Party Wall, Sound Insulation and Communal Lofts														
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00			
Hatch locks	None	0	Nr	£0.00	£0.00	Sold Secure Lock to communal lofts	1	nr	£25.59	£25.59	£25.59			
					Total	£16,939.00						Total	£21,045.00	£4,106.00
					Total / flat	£1,412.00						Total / flat	£1,754.00	£342.00
					Total / Ground Floor Flat	£2,274.00						Total / Ground Floor Flat	£2,690.00	£416.00
					Total / Upper Floor Flat	£981.00						Total / Upper Floor Flat	£1,286.00	£305.00

Notes

The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's experience in working on residential projects. This includes basic home office provision (latch to bedroom door) . Although not NHBC standards these items are commonly installed by developers and house builders.

Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects, together with price quotation from manufacturers and suppliers

Laminated glass has been included to all ground floor windows

Bicycle Storage area has been assumed to be included as part of the building design. No additional cost for providing the space has been included, cost relate to the provision of SbD compliant bike racks as standard.

Cost associated with Photoelectric Light cells is based on a mid range fitting provided on recent schemes.

'Total Flat' costs are an average cost of ground and upper floor apartments, including the additional security costs associated with ground floor windows. 'Upper floor flat' costs exclude window costs; 'Ground Floor Flat' costs include the full ground floor window costs.

Assumptions

A glazed door or a door with side panel is assumed in all cases to allow natural light - the cost allows for either.

Exclusions

Underground car parking for blocks of flats - we are aware there is a cost for this which will be quantified separately for the proportion of blocks affected.

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Secured by Design - Small Developments					Secured by Design - Large Developments							
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)	
Doors																							
Front entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Nr	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Nr	£202.50	£202.50	PAS 24 Door Set inclusive of ironmongery	1	Nr	£339.00	£339.00	£27.00	PAS 24 Door Set inclusive of ironmongery	1	Nr	£228.00	£228.00	£25.50	
Door restrictor to front entrance door	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00		Included			£0.00	£0.00	£0.00	
Glass panel / side panel	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	
Rear Door Sets	Composite rear door set - assumed half glazed (2N glazed panels), inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set - assumed half glazed (2N glazed panels), inclusive of frame and ironmongery	1	Nr	£237.00	£237.00	Rear Doors Sets to PAS 24 Standard	1	Nr	£441.00	£441.00	£43.00	Rear Doors Sets to PAS 24 Standard	1	Nr	£272.16	£272.16	£35.16	
Mail Delivery																							
Letter Plate	External Letter Plate	1	Nr	£7.00	£7.00	External Letter Plate	1	Nr	£7.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	
Windows																							
External windows	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950-GF ONLY	1	Item	£825.17	£825.17	£62.17	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950-GF ONLY	1	Item	£825.17	£825.17	£62.17	
PVCU BS 7412:2007	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00		Included			£0.00	£0.00	£0.00	
Lighting																							
Photo electric cell switched lighting	Photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	Photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	
Alarms																							
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	
Bicycle Parking External																							
Timber shed and concrete base	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	
Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	None			£0.00	£0.00	None			£0.00	£0.00	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	
Ground Anchor	None			£0.00	£0.00	None			£0.00	£0.00	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	
Home Office																							
Door	Hollow core flush door	1	Nr	£78.00	£78.00	Hollow core flush door	1	Nr	£78.00	£78.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	
BS 3621 lock	Latch only (incl)	0	Nr	£0.00	£0.00	Latch only (incl)			£0.00	£0.00	BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	
Party Wall, Sound Insulation and Communal Lifts																							
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	
Hatch locks	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	Solid Secure Lock	0	Nr	£31.99	£0.00	£0.00	Solid Secure Lock	0	Nr	£31.99	£0.00	£0.00	
Total				£1,988.00					£1,724.00					£2,303.00	£315.00					£2,023.00	£299.00		

Notes
 The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris' considerable experience in working on residential projects. This includes basic home office provision (latch to bedroom door) and timber shed for bicycle storage (houses). Although not NHBC standards these items are commonly installed by developers and house builders.

Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects, together with quotations from manufacturers and suppliers.

Assumptions

- Front entrance doors have been assumed as solid doors with side glazed panel.
- Rear doors are assumed to be half glazed doors (with no other glazed panel)
- All prices are for 'door sets' inclusive of ironmongery
- A glazed door or a door with side panel is assumed in all cases to allow natural light - the cost allows for either
- The cost of the letter plate deflector is based on an 'extra over' from the 'standard' letter fit

Exclusions

- Link door between garage and house at Level 1 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages
- Vehicular garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Secured by Design - Small Developments					Secured by Design - Large Developments							
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)	
Doors																							
Front and rear entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£202.50	£202.50	PAS 24 Door Set inclusive of ironmongery	1	Item	£339.00	£339.00	£27.00	PAS 24 Door Set inclusive of ironmongery	1	Item	£228.00	£228.00	£25.50	
Door restrictor to front entrance door	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00	£0.00	Included			£0.00	£0.00	£0.00	
Glass panel / side panel	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	
Rear Door Sets	Composite rear door set; assumed halft glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set; assumed halft glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£237.00	£237.00	Rear Doors Sets to PAS 24 Standard	1	Nr	£441.00	£441.00	£49.00	Rear Doors Sets to PAS 24 Standard	1	Nr	£272.16	£272.16	£35.16	
Mail Delivery																							
External Letter Plate	External Letter Plate	1	Nr	£7.00	£7.00	External Letter Plate	1	Nr	£7.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	
Windows																							
External windows	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£825.17	£825.17	£62.17	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£825.17	£825.17	£62.17	
PVCU: BS 7412:2007	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00	£0.00	Included			£0.00	£0.00	£0.00	
Lighting																							
Photo electric cell switched lighting	Photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	Photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	
Alarms																							
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	
Bicycle Parking External																							
Timber shed and concrete base	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	
Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	None			£0.00	£0.00	None			£0.00	£0.00	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	
Ground Anchor	None			£0.00	£0.00	None			£0.00	£0.00	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	
Home Office																							
Door	Hollow core flush door	1	Nr	£78.00	£78.00	Hollow core flush door	1	Nr	£78.00	£78.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	
BS 3621 lock	Latch only (incl)					Latch only (incl)					BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	
Party Wall, Sound Insulation and Communal Lofts																							
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	
Hatch locks	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	Sold Secure Lock	0	Nr	£0.00	£0.00	£0.00	Sold Secure Lock	0	Nr	£0.00	£0.00	£0.00	
Total				£1,988.00					£1,724.00					£2,303.00	£315.00					£2,023.12	£299.00		

Notes
 The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's considerable experience in working on residential projects. This includes basic home office provision (latch to bedroom door) and timber shed for bicycle storage (houses). Although not NHBC standards these items are commonly installed by developers and house builders.
 Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects, together with quotations from manufacturers and suppliers.

Assumptions
 Front entrance doors have been assumed as solid doors with side glazed panel.
 Rear doors are assumed to be half glazed doors (with no other glazed panel)
 All prices are for 'door sets' inclusive of ironmongery
 A glazed door or a door with side panel is assumed in all cases to allow natural light - the cost allows for either
 The cost of the letter plate deflector is based on an 'extra over' from the 'standard' letter flat

Exclusions
 Link door between garage and house at Level 1 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages
 Vehicular garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Secured By Design - Small Developments					Secured By Design - Large Developments							
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)	
Doors																							
Front and rear entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£202.50	£202.50	PAS 23/24 Door Set Front	1	Item	£339.00	£339.00	£27.00	PAS 23/24 Door Set Front	1	Item	£228.00	£228.00	£25.50	
Door restrictor to front entrance door	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00		Included			£0.00	£0.00	£0.00	
Glass panel / side panel	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	
Rear Door Sets	Composite rear door set : assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set : assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£237.00	£237.00	Rear Door Sets to PAS 24 Standard	1	Nr	£441.00	£441.00	£49.00	Rear Door Sets to PAS 24 Standard	1	Nr	£272.16	£272.16	£35.16	
Mail Delivery																							
External Letter Plate	External Letter Plate	1	Nr	£7.00	£7.00	External Letter Plate	1	Nr	£7.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	Letter plate size and location to avoid possibility of release of locking device. Letter plate to resist unauthorised removal of items within 1000mm of the door.	1	Nr	£14.00	£14.00	£7.00	
Windows																							
External windows	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr) - GF ONLY	1	Item	£1,195.00	£1,195.00	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr) - GF ONLY	1	Item	£1,195.00	£1,195.00	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£1,294.12	£1,294.12	£99.12	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£1,294.12	£1,294.12	£99.12	
PVCU- BS 7412:2007	Included			£0.00	£0.00	Included			£0.00	£0.00	Included			£0.00	£0.00		Included			£0.00	£0.00	£0.00	
Lighting																							
PRR or Photo electric cell switched lighting	PRR or photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	PRR or photo electric cell lighting provided to front entrance	1	Nr	£46.00	£46.00	PRR or Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	PRR or Photo electric switched lighting to front entrance and rear entrance	2	Nr	£46.00	£92.00	£46.00	
Alarms																							
13 amp non switched fused spur to take intruder alarm	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	13 amp non switched fused spur to take intruder alarm	1	Nr	£34.00	£34.00	£34.00	
Bicycle Parking External																							
Timber shed and concrete base	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	Timber shed on concrete base	1	Item	£295.00	£295.00	£0.00	
Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	None			£0.00	£0.00	None			£0.00	£0.00	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	Shed door - 'Sold Secure' Silver Standard Padlock, Hasp and Staple	1	Nr	£39.19	£39.19	£39.19	
Ground Anchor	None			£0.00	£0.00	None			£0.00	£0.00	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	Ground Anchor - 'Sold Secure' Silver Standard	1	Nr	£15.19	£15.19	£15.19	
Home Office																							
Door	Hollow core flush door	1	Nr	£78.00	£78.00	Hollow core flush door	1	Nr	£78.00	£78.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	Fire resistant robust door FD30	1	Nr	£99.00	£99.00	£21.00	
BS 3621 lock	Latch only (incl)					Latch only (incl)					BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	BS Mortice Deadlock	1	Nr	£14.40	£14.40	£14.40	
Party Wall, Sound Insulation and Communal Lofts																							
Party walls of robust construction	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	Included	0	Item	£0.00	£0.00	£0.00	
Hatch locks	None	0	Nr	£0.00	£0.00	None	0	Nr	£0.00	£0.00	Sold Secure Lock	0	Nr	£0.00	£0.00	£0.00	Sold Secure Lock	0	Nr	£31.99	£0.00	£0.00	
				Total	£2,428.00				Total	£2,156.00				Total	£2,771.90	£352.00				Total	£2,492.06	£337.00	

Notes
 The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's considerable experience in working on residential projects. This includes basic home office provision (latch to bedroom door) and timber shed for bicycle storage (houses). Although not NHBC standards these items are commonly installed by developers and house builders.

Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects, together with quotations from manufacturers and suppliers.

Assumptions
 Front entrance doors have been assumed as solid doors with side glazed panel.

Rear doors are assumed to be half glazed doors (with no other glazed panel)

All prices are for 'door sets' inclusive of ironmongery

A glazed door or a door with side panel is assumed in all cases to allow natural light - the cost allows for either

The cost of the letter plate deflector is based on an 'extra over' from the 'standard' letter flat

Exclusions

Link door between garage and house at Level 1 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Vehicle garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Housing Standards Review
 Domestic Security Standards - Cost for Garages

Element	Current Industry Practice				SbD						
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over
Doors											
Garage Door	Up and Over Garage Door	1	Item	£390.00	£390.00	Guarador Up and Over Garage Door	1	Item	£593.00	£593.00	£203.00

Appendix A2 – Counterfactual, Energy

3 Bed House

Level	Op	Energy	Category	ENE												WAT			MAT				SUR																												
				Ene 1	Ene 2	Ene 3	Ene 4	Ene 5	Ene 6	Ene 7	Ene 8	Ene 9	TOTAL ENE	Wat 1	Wat 2	TOTAL WAT	Mat 1	Mat 2	Mat 3	TOTAL MAT	Sur 1	Sur 2	TOTAL SUR																												
CSH Level 1	Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-														
				CSH Level 2	Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-											
								CSH Level 3	Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-							
			CSH Level 4									Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	625	46	-	-	18	35	-	-	17	35	741	9	9	-	9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
							CSH Level 5								Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	12,639	46	-	-	18	35	-	-	17	35	12,855	2,697	19	17	2,716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
											CSH Level 6							Op 1	ENERGY	MATERIALS & LABOUR	Small (5 Units)	20,890	46	-	-	18	35	-	-	17	35	21,106	2,697	19	17	2,716	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

				Was				Pol				Hea				Man				Eco					TOTAL				
				Was 1	Was 2	Was 3	TOTAL WAS	Pol 1	Pol 2	TOTAL POL	Hea 1	Hea 2	Hea 3	Hea 4	TOTAL HEA	Man 1	Man 2	Man 3	Man 4	TOTAL MAN	Eco 1	Eco 2	Eco 3	Eco 4		Eco 5	TOTAL ECO		
CSH Level 1				Storage of non-recyclable waste	Construction Site Waste Management	Composting		Global Warming Potential of Insulants	Nox Emissions			Daylighting	Sound Insulation	Private Space	Lifetime Homes		Home User Guide	Considerate Constructors	Construction Site Impacts	Security		Ecological Value of Site	Ecological Enhancement	Protection of Ecological Features	Change of Ecological value of site	Building Footprint			
				Low	ENERGY	MATERIALS & LABOUR	Small	£	40	£	-	£	40	£	-	£	-	£	40	£	-	£	-	£	40	£	-	£	-

Code Allocation Table

Section		Points Available	Weighting	Output	Points Achieved Code 1		Points Achieved Code 2		Points Achieved Code 3		Points Achieved Code 4		Points Achieved Code 5		Points Achieved Code 6	
					Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score	Score	Weighted Score
ENERGY																
Ene 1	Dwelling Emission Rate	10	36.4	11.74	3	3.52	6	7.05	7	8.22	7	8.22	9	10.57	10	11.74
Ene 2	Fabric Energy Efficiency	9	36.4	10.57	3	3.52	5	5.87	5	5.87	5	5.87	7	8.22	9	10.57
Ene 3	Energy Display Devices	2	36.4	2.35	x		x		x		x		2	2.35	2	2.35
Ene 4	Drying Space	1	36.4	1.17	x		x		x		2	2.35	1	1.17	1	1.17
Ene 5	Energy Labelled White Goods	2	36.4	2.35	2	2.35	2	2.35	2	2.35	2	2.35	2	2.35	2	2.35
Ene 6	External Lighting	2	36.4	2.35	x		x		x		2	2.35	2	2.35	2	2.35
Ene 7	Low or Zero Carbon Technologies	2	36.4	2.35	2	2.35	2	2.35	2	2.35	2	2.35	2	2.35	2	2.35
Ene 8	Cycle Storage	2	36.4	2.35	x		x		x		1	1.17	2	2.35	2	2.35
Ene 9	Home Office	1	36.4	1.17	x		x		x		1	1.17	1	1.17	1	1.17
WATER																
Wat 1	Internal Water Usage	5	9	7.50	1	1.50	2	3.00	3	4.50	3	4.50	5	7.50	5	7.50
Wat 2	External Water Usage	1	9	1.50	x		x		x		x		1	1.50	1	1.50
MATERIALS																
Mat 1	Environmental Impact of Materials	15	7.2	4.50	6	1.80	9	2.70	11	3.30	11	3.30	12	3.60	15	4.50
Mat 2	Responsible Sourcing of Materials - Basic Building Elements	6	7.2	1.80	3	0.90	3	0.90	3	0.90	4	1.20	6	1.80	6	1.80
Mat 3	Responsible Sourcing of Materials - Finishing Elements	3	7.2	0.90	2	0.60	2	0.60	2	0.60	2	0.60	3	0.90	3	0.90
SURFACE																
Sur 1	Management of Surface Water Run off	2	2.2	1.10	1	0.55	1	0.55	2	1.10	2	1.10	2	1.10	2	1.10
Sur 2	Flood risk	2	2.2	1.10	2	1.10	2	1.10	2	1.10	2	1.10	2	1.10	2	1.10
WASTE																
Was 1	Storage of non-recyclable waste	4	6.4	3.20	0	0.00	4	3.20	4	3.20	4	3.20	4	3.20	4	3.20
Was 2	Construction Site Waste Management	3	6.4	2.40	3	2.40	3	2.40	3	2.40	3	2.40	3	2.40	3	2.40
Was 3	Composting	1	6.4	0.80	x		x		x		x		1	0.80	1	0.80
POLLUTION																
Pol 1	Global Warming Potential of Insulants	1	2.8	0.70	1	0.70	1	0.70	1	0.70	1	0.70	1	2.80	1	0.70
Pol 2	Nox Emissions	3	2.8	2.10	1	0.70	1	0.70	2	1.40	2	1.40	3	2.10	3	2.10
HEALTH																
Hea 1	Daylighting	3	14	3.50	1	1.17	1	1.17	1	1.17	2	2.33	3	3.50	3	3.50
Hea 2	Sound Insulation	4	14	4.67	2	2.33	2	2.33	3	3.50	3	3.50	4	4.67	4	4.67
Hea 3	Private Space	1	14	1.17	1	1.17	1	1.17	1	1.17	1	1.17	1	1.17	1	1.17
Hea 4	Lifetime Homes	4	14	4.67	x		x		x		3	3.50	4	4.67	4	4.67
MANAGEMENT																
Man 1	Home User Guide	3	10	3.33	3	3.33	3	3.33	3	3.33	3	3.33	3	3.33	3	3.33
Man 2	Considerate Constructors	2	10	2.22	2	2.22	1	1.11	2	2.22	2	2.22	2	2.22	2	2.22
Man 3	Construction Site Impacts	2	10	2.22	2	2.22	2	2.22	2	2.22	2	2.22	2	2.22	2	2.22
Man 4	Security	2	10	2.22	x		x		x		x		2	2.22	2	2.22
ECOLOGY																
Eco 1	Ecological Value of Site	1	12	1.33	1	0.15	1	1.33	1	1.33	1	1.33	1	1.33	1	1.33
Eco 2	Ecological Enhancement	1	12	1.33	1	0.15	1	1.33	1	1.33	1	1.33	1	1.33	1	1.33
Eco 3	Protection of Ecological Feature	1	12	1.33	x		x		x		x		1	1.33	1	1.33
Eco 4	Change of Ecological value of site	4	12	5.33	x		x		1	1.33	1	1.33	3	4.00	4	5.33
Eco 5	Building Footprint	2	12	2.67	1	1.33	1	1.33	1	1.33	2	2.67	2	2.67	2	2.67
		9														
Score Required					36		48		56		68		84		90	
		107		100.00	44	36.07	56	48.80	65	56.93	77	70.28	100	96.34	107	100.00

Review of CfSH Standards - (Option 1 - Renewables Approach)

ENERGY												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Ene 1	Dwelling Emission Rate <i>(Min energy performance requirement i.e. mass of CO2; expressed in kg/m2 of floor area) Based on space heating & hot water + internal lighting</i>	10	1.17%	1 Bed Flat 2 Bed Flat 2 Bed House 3 Bed House 4 Bed House	£0 £0 £0 £0 £0	£0 £0 £0 £0 £0	£0 £0 £0 £0 £0	£125 £500 £469 £625 £938	£2,278 £3,224 £10,544 £12,639 £17,548	£7,078 £12,174 £21,920 £20,890 £26,269	Requires SAP calcs by accredited energy assessor % Improvement of DER over TER required based on SAP output	CfSH 4 - Assumes enhanced wall fabric CfSH 5 - Assumes a 'fabric first' approach, enhancing wall, floor and roof insulation; a gas boiler system, Balanced whole house ventilation with heat recovery and PV panels. CfSH 6 - Assumes a Ground Source Heat pump system; enhanced building fabric to walls, roof, floors and windows; balanced whole house ventilation with heat recovery and PV Panels
Ene 2	Dwelling Fabric <i>(kWh/m2/yr)</i> <60 <55 <52 <49	9 3 4 5 6	0.00%		£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	Requires SAP calcs by accredited energy assessor	Fabric enhancements incorporated within ENE 1 are assumed to satisfy the requirements of ENE 2
Ene 3	Energy Display Devices	2	0.00%		Not provided	Not provided	Not provided	Not provided	£100	£100		*Range between £100 and £450 however are becoming the norm
Ene 4	Drying Space	1	0.00%		Not provided	Not provided	Not provided	£18	£18	£18	NONE	
Ene 5	Energy Labelled White Good	2	0.00%		£0	£0	£0	£0	£0	£0	NONE	
Ene 6	External Lights	2	0.00%		Not provided	Not provided	Not provided	£46	£46	£46	NONE	Lights need to meet specific CfSH requirements
Ene 7	Low & Zero carbon technologies	2	0.00%		£0	£0	£0	£0	£0	£0		Assumed achieved through the PV panels included within the ENE 1 credit
Ene 8	Cycle Storage	2	0.00%		Not provided	Not provided	Not provided	£17	£17	£17		Cost for cycle hoop compliant with Code; space assumed required via planning
Ene 9	Home Office	1	0.00%		Not provided	Not provided	Not provided	£35	£35	£35		Requires additional BT and power sockets
WATER												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Wat 1	Internal Water Use 2 bed flats 2, 3, & 4 bed house 3 & 4 bed house <120 l/p/day <110 l/p/day <105 l/p/day *CfSH 3/4 <90 l/p/day <80l/p/day	5 1 2 3 4 5	1.50%		£0 £0 £0	£0 £0 £0	£6 £6 £9	£6 £6 £9	£900 £2,201 £2,697	£900 £2,201 £2,697	*The Water Efficiency Calculator for New Dwellings is also required by AD G	CfSH 3 and 4 - cost based on water butt or similar connected to existing down pipe CfSH 5 and 6 - Assumes a rainwater harvesting system; figure based on average of tenders received. Allowance of £100 made for craneage assuming facility already on site NB: 80 /day assumes rainwater harvesting required.
Wat 2	External Water Use	1	1.50%		Not Provided	Not Provide	Not Provided	£19	£19	£19		
MATERIALS												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Mat 1	Environmental Impact of Materials	15	0.30%		£0	£0	£0	£0	£0	£0		Assumes that standard materials incorporated within the Green Guide
Mat 2	Responsible Sourcing of Materials	6	0.30%		£0	£0	£0	£0	£0	£0		Ditto above
Mat 3	Responsible Sourcing of Materials - Finishing Elements	3	0.30%		£0	£0	£0	£0	£0	£0	*Process Cost associated with collation of documentation and completion of the Mat 3 Calculator Tool	Ditto above
SURFACE												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Sur 1	Management of SW Run-off for developments	2	0.55%		£0	£0	£0	£0	£0	£0	Process cost with additional survey however unlikely to influence design as potentially a 'costly credit' if the design does not meet the current criteria	* Site specific, potentially lower cost on Brownfield sites where SW run off not changing, additional requirement over and above Flood Water and Management Act 2012 for Greenfield therefore additional process cost

Review of CfSH Standards - back up information (Option 2 - Fabric First Approach)

ENERGY												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Ene 1	Dwelling Emission Rate <i>(Min energy performance requirement i.e. mass of CO2; expressed in kg/m2 of floor area)</i>	10	1.17%	1 Bed Flat 2 Bed Flat 2 Bed House 3 Bed House 4 Bed House	£0 £0 £0 £0 £0	£0 £0 £0 £0 £0	£0 £0 £0 £0 £0	£278 £412 £703 £812 £1,150	£3,078 £6,174 £11,085 £14,890 £20,269	£7,078 £12,174 £21,920 £20,890 £26,269	Requires SAP calcs by accredited energy assessor % Improvement of DER over TER required based on SAP output	CfSH 4 - Assumes enhanced wall fabric CfSH 5 - Assumes a 'fabric first' approach, enhancing wall, floor and roof insulation; a gas boiler system, Balanced whole house ventilation with heat recovery and PV panels. CfSH 6 - Assumes a Ground Source Heat pump system; enhanced building fabric to walls, roof, floors and windows; balanced whole house ventilation with heat recovery and PV Panels
Ene 2	Dwelling Fabric (kWh/m2/yr) <60 <55 <52 <49	9 3 4 5 6	0.00%		£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	£0 £0 £0 £0	Requires SAP calcs by acc	Fabric enhancements incorporated within ENE 1 are assumed to satisfy the requirements of ENE 2
Ene 3	Energy Display Devices	2	0.00%		Not provided	Not provided	Not provided	£100	£100	£100		*Range between £100 and £450 however are becoming the norm; NB: CfSH requires very specific criteria to be met to be compliant
Ene 4	Drying Space	1	0.00%		Not provided	Not provided	Not provided	£18	£18	£18	NONE	Assumes over bath drying system
Ene 5	Energy Labelled White Good	2	0.00%		£0	£0	£0	£0	£0	£0	NONE	Not provided
Ene 6	External Lights	2	0.00%		Not provided	Not provided	Not provided	£46	£46	£46	NONE	Lights need to meet specific CfSH requirements
Ene 7	Low & Zero carbon technologies	2	0.00%		£0	£0	£0	£0	£0	£0		Assumed achieved through the PV panels included within the ENE 1 credit
Ene 8	Cycle Storage	2	0.00%		Not provided	Not provided	Not provided	£17	£17	£17		Cost for cycle hoop compliant with Code; space assumed required via planning
Ene 9	Home Office	1	0.00%		Not provided	Not provided	Not provided	£35	£35	£35		Requires additional BT and power sockets; requires daylighting however not incorporate in cost as a design criteria
WATER												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Wat 1	Internal Water Use 2 bed flats 2, 3, & 4 bed house 3 & 4 Bed Houses <120 l/p/day <110 l/p/day <105 l/p/day *CfSH 3/4 <90 l/p/day <80l/p/day	5 1 2 3 4 5	1.50%		£0 £0 £0	£0 £0 £0	£6 £6 £9	£6 £6 £9	£900 £2,201 £2,697	£900 £2,201 £2,697	*The Water Efficiency Calculator for New Dwellings is also required by AD G	CfSH 3 and 4 - cost based on water butt or similar connected to existing down pipe CfSH 5 and 6 - Assumes a rainwater harvesting system; figure based on average of tenders received. Allowance of £100 made for craneage assuming facility already on site NB: 80 /day assumes rainwater harvesting required.
Wat 2	External Water Use	1	1.50%		Not Provided	Not Provide	Not Provided	£19	£19	£19		
MATERIALS												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Mat 1	Environmental Impact of Materials	15	0.30%		£0	£0	£0	£0	£0	£0		
Mat 2	Responsible Sourcing of Materials	6	0.30%		£0	£0	£0	£0	£0	£0		
Mat 3	Responsible Sourcing of Materials - Finishing Elements	3	0.30%		£0	£0	£0	£0	£0	£0	*Process Cost associated with collation of documentation and completion of the Mat 3 Calculator Tool	
SURFACE												
Requirement		Available Credits	Weighting		CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Sur 1	Management of SW Run-off for developments	2	0.55%		£0	£0	£0	£0	£0	£0	Process cost with additional survey however unlikely to influence design as potentially a 'costly credit' if the design does not meet the current criteria	* Site specific, potentially lower cost on Brownfield sites where SW run off not changing, additional requirement over and above Flood Water and Management Act 2012 for Greenfield therefore additional process cost

Sur 2	Flood Risk	2	0.55%		£0	£0	£0	£0	£0	£0	Process cost associated with having a code specific flood risk as a traditional survey for planning is unlikely to meet the criteria	*Project specific dependant on site location
WASTE												
Requirement		Available Credits			CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Was 1	Storage of Non-recyclable Waste and Recyclable Household Waste	4	0.80%		£0	£40	£40	£40	£40	£40		*Cost associated with 'accessibility'
Was 2	Construction Site Waste Management	3	0.80%		£0	£0	£0	£0	£0	£0		
Was 3	Composting	1	0.80%		Not provided	Not provided	Not provided	£15	£15	£15		
POLLUTION												
Requirement		Available Credits			CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Pol 1	Global Warming Potential of Insulants	1	0.70%		£0	£0	£0	£0	£0	£0	* Process costs associated with completing CfSH tables	
Pol 2	Nox Emissions	3	0.70%		£0	£0	£0	£0	£0	£0		* A rated boiler provided as 'norm' no additional cost
HEALTH												
Requirement		Available Credits			CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Hea 1	Daylighting	3	1.17%		£0	£0	£0	£0	£0	£0	- External assessor (typically architect) Daylighting Calculation required (1hr per unit)	? More onerous than Planning requirement
Hea 2	Sound Insulation	4	1.17%	1 Bed Flat	£0	£0	£0	£0	£100	£100	- Nature of buildings may provide as standard however additional acoustic test or Robust details provided	*Achieving the dwelling fabric should improve noise transfer therefore cost may only allowed where 'fabric first approach not included'
				2 Bed Flat	£0	£0	£0	£0	£148	£148	- Similar to Building Regs	*Dependant on construction methodology whether 'natural' improvement
				2 Bed House	£0	£0	£0	£0	£298	£298	- Sound insulation	* Costs assume 4 points for level 5 and 6, i.e Robust Detail. Cost associated with the additional detailing required to achieve the separating wall and floor detail
				3 Bed House	£0	£0	£0	£0	£370	£370		* Cost based on £2/m2 for houses and £4/m2 for flats on floor area,
				4 Bed House	£0	£0	£0	£0	£448	£448		
				3db								
				5db								
				8db								
				Robust Details								
Hea 3	Private Space	1	1.17%		£0	£0	£0	£0	£0	£0	- Detailed on the drawing	* Sales driver to provide some outside space * Required in LHDG * Assessment criteria under HQI for Affordable Housing
Hea 4	Lifetime Homes	4	1.17%		Not provided	Not provided	Not provided	Not provided	£1,091	£1,091		* Affordable schemes typically comply as part of funding requirement; Cost is £1,091
MANAGEMENT												
Requirement		Available Credits			CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Man 1	Home User Guide	3	1.11%		£0	£0	£0	£0	£0	£0		
Man 2	Considerate Constructors Scheme	2	1.11%		£0	£0	£0	£0	£0	£0		
Man 3	Construction Site Impacts	2	1.11%		£0	£0	£0	£0	£0	£0		* Monitored as part of site management * Commercial benefit in reducing site costs
Man 4	Security	2	1.11%		Not provided	Not provided	Not provided	Not provided	£244	£244	2 Bed Flat	Additional SbD compliance to achieve credit. Involvement required early on therefore audit process
									£217	£217	2 Bed House	
									£217	£217	3 Bed House	
									£254	£254	4 Bed House	
ECOLOGY												
Requirement		Available Credits			CfSH 1	CfSH 2	CfSH 3	CfSH 4	CfSH 5	CfSH 6	Process Cost Associated	Comments
Eco 1	Ecological Value of Site	1	1.33%		£0	£0	£0	£0	£0	£0		* Ecologist required to produce 'code compliant report'
Eco 2	Ecological Enhancement	1	1.33%		£0	£0	£0	£0	£0	£0		* Site specific
Eco 3	Protection of Ecological Features	1	1.33%		Not provided	Not provided	Not provided	£100	£100	£100		* Site specific because of 'default' case where site of low ecological value, therefore Greenfield sites potentially harder to achieve
Eco 4	Change in Ecological Value of the Site	4	1.33%		Not provided	Not provided	Not provided	Not provided	£300	£300		Additional planting - assumed figure of £300 * Assumed not provided at lower levels
Eco 5	Building Footprint	2	1.33%		£0	£0	£0	£0	£0	£0		
93												

Review of CfSH Standards - process cost breakdown version

£ 52 Labour rate £/hr

Large' assumes a 100 unit scheme with 10 standard house types; 'Medium' assumes 50 Unit Scheme has 5 House types and 'Small' assumes 5 Unit Scheme has 2 House types

ENERGY				PROCESS COST			NOTES		
Requirement	Available Credits			Small 5 Units	Medium 50 Units	Large 100 Units			
Ene 1	Dwelling Emission Rate	10	MANDATORY	Code Fee	£ 94	£ 23	£ 23	Assume 4.5 hour per house type for CfSH 10 house types in Large; 5 House Types in Medium; 2 House types in Small	- Code Energy Calculator Tool (based on SAP)
Ene 2	Dwelling Fabric	9	MANDATORY	Code Fee	£ -	£ -	£ -	Assumes cost dealt with under ENE 1 at Level 1 to 4;	- Code Energy Calculator Tool (based on SAP)
Ene 3	Energy Display Devices	2	NOT MANDATORY	Code Fee	£ 10	£ 2	£ 2	Small - 1 hour to compile information Medium - 2 hours to compile information Large - Assume 3 hours to compile information	- Documentary Evidence of light fitting - ASSUME 1hour of assessors time to collate information, divided by number of units - Documentary evidence of location - included within above costs
Ene 4	Drying Space	1	NOT MANDATORY		£ -	£ -	£ -	No	- Detailed on construction drawings - Drawings issued under ENE2 therefore no process cost
Ene 5	Energy Labelled White Good	2	NOT MANDATORY		£ -	£ -	£ -	No	- Copy of information provided under EU Labelling Scheme as standard
Ene 6	External Lights	2	NOT MANDATORY		£ -	£ -	£ -	No	- Detailed on construction drawings - Drawings issued under ENE2 therefore no process cost
Ene 7	Low & Zero carbon technologies	2	NOT MANDATORY		£ -	£ -	£ -	No	- Not typically required for CfSH 3/4 - SAP used as evidence therefore no additional process cost
Ene 8	Cycle Storage	2	NOT MANDATORY	Code Fee	£ 21	£ 5	£ 5	Assume 1 hour per house type for CfSH	- Documentary Evidence and specification to meet location and criteria
Ene 9	Home Office	1	NOT MANDATORY		£ -	£ -	£ -	No	- Information detailed on drawings provided under ENE3, and daylighting criteria
TOTAL					£ 437	£ 108	£ 108		
WATER									
Requirement	Available Credits								
Wat 1	Internal Water Use	5	MANDATORY	Surveyor	£ 78	£ 8	£ 5	Assume 7.5 hours technical support at Code Level 3 & above for small and medium scheme; assume 10 hours for large schemes CfSH 1 and 2 - no cost; water calculator completed as standard	- Water Calculator to be completed. Duplicate across scheme where the same sanitaryware etc used.
Wat 2	External Water Use	1	NOT MANDATORY		£ -	£ -	£ -	No	- Water calculator dealt with under WAT1
TOTAL					£ 78	£ 8	£ 5		
MATERIALS									
Requirement	Available Credits								
Mat 1	Environmental Impact of Materials	15	MANDATORY	Code Fee	£ 62	£ 16	£ 16	Assume 3 hour per house type	- Information readily available as the industry has reacted to requirement for tracability of materials - Some process cost to collate the information.
Mat 2	Responsible Sourcing of Materials	6	NOT MANDATORY		£ -	£ -	£ -	CfSH 5 & 6 - 2 hours per house type	- Ditto Mat 1; information collated as part of MAT 1 therefore no additional info - Additional cost included at cFsh 5 and 6 to allow for more time required to source products information
Mat 3	Responsible Sourcing of Materials - Finishing Elements	3	NOT MANDATORY		£ -	£ -	£ -	CfSH 5 & 6 - 2 hours per house type	- Ditto Mat 1; Information collated as part of MAT 1 therefore no additional info - Ditto Mat 2
TOTAL					£ 146	£ 36	£ 36		
SURFACE									
Requirement	Available Credits								
Sur 1	Management of SW Run-off for developments	2	MANDATORY	Surveyor	£ 109	£ 11	£ 5	10.5 hours of time to complete the survey for the whole development. (4 hours to compile data and 6.5 hours to produce report in correct CfSH format). £52/hour	- Not typically dealt with under a 'typical' assesment criteria therefore process cost; Peak rate management and volume of run off - SUD's element - 1 in 100 year storm assume 5 hours
Sur 2	Flood Risk	2	NOT MANDATORY		£ 36	£ 4	£ 2	Assumed additional 3.5hours to produce the additional information required	- Additional info required over and above the 'standard' flood risk assesment typically required.
TOTAL					£ 146	£ 15	£ 7		

WASTE									
Requirement		Available Credits							
Was 1	Storage of Non-recyclable Waste and Recyclable Household Waste	4	MANDATORY		£ -	£ -	£ -	No	- No process cost - industry standard. Information readily available
Was 2	Construction Site Waste Management	3	NOT MANDATORY		£ -	£ -	£ -	No	- Required as standard therefore no additional cost
Was 3	Composting	1	NOT MANDATORY	Code Assesor	£ 10	£ 2	£ 1	1 hour for small scheme and 2 hours for medium and large scheme assumed to provide information and liason with architect to ensure complies with criteria	- Documentary evidence to be collated therefore negligible process cost
TOTAL					£ 10	£ 2	£ 1		
POLLUTION									
Requirement		Available Credits							
Pol 1	Global Warming Potential of Insulants	1	MANDATORY	Code Assesor + external	£ 42	£ 4	£ 0	Assume 4 hours to source and collate information; Assume information is repeated across house types	- Challenging credit to achieve because the information is not readily available
Pol 2	Nox Emissions	3	NOT MANDATORY	Code Assessor	£ 42	£ 10	£ 10	Assume 2 hour per house type	- Information collation; Information detailed on SAP assesment
TOTAL					£ 84	£ 14	£ 10		
HEALTH									
Requirement		Available Credits							
Hea 1	Daylighting	3	NOT MANDATORY	Architect	£ 21	£ 5	£ 3	Assumed 1 hour per unit type to complete assesment in CfSH standard format	- External assesor (typically architect) Daylighting Calculation required (1hr per unit)
Hea 2	Sound Insulation	4	NOT MANDATORY	External Assesor	£ 21	£ 5	£ 3	Assumed 1 hour per house type for small, medium and large schemes;	- Nature of buildings may provide as standard however additional acoustic test or Robust details provided - Similar to Building Regs - Sound insulation testing costs
Hea 3	Private Space	1	NOT MANDATORY		£ -	£ -	£ -	No	- Detailed on the drawings and via site inspection
Hea 4	Lifetime Homes	4	NOT MANDATORY (Except L6)	Architect	£ 21	£ 5	£ 5	Say 1 per house type to allow for design etc.	- Process cost to complete survey
TOTAL					£ 63	£ 15	£ 11		
MANAGEMENT									
Requirement		Available Credits							
Man 1	Home User Guide	3	NOT MANDATORY	Contractor	£ 21	£ 8	£ 4	Say 2 hours for small and 7.5 hours for medium and larger scheme	- Very bespoke for code therefore some process costs
Man 2	Considerate Constructors Scheme	2	NOT MANDATORY		£ -	£ -	£ -		- Achieved as standards
Man 3	Construction Site Impacts	2	NOT MANDATORY	Contractor	£ 21	£ 2	£ 1	Nominal process cost assumed to collate the information; Assume 2 hours regardless of scheme type	- Additional info above Build Regs standard however achieved by internal procedures that are likely to be in place ie . ISO;
Man 4	Security	2	NOT MANDATORY	Code and SbD	£ 52	£ 5	£ 3	Assume 5hours to complete - process the same regardless of scheme size	- Evidence onerous to achieve the standard; additional documentary evidence over and above the 'norm' ; - Requires Secured by Design to be completed.
TOTAL					£ 94	£ 15	£ 8		
ECOLOGY									
Requirement		Available Credits							
Eco 1	Ecological Value of Site	1	NOT MANDATORY	Ecologist report	£ 42	£ 8	£ 4	- Additional 7.5 hours survey and report time assumed to be CfSH compliant for medium and large; 4 hours with small	- Enhanced survey required to achieve the standard and suitably qualified ecologist
Eco 2	Ecological Enhancement	1	NOT MANDATORY		£ -	£ -	£ -	No	- Achieved under ECO1
Eco 3	Protection of Ecological Features	1	NOT MANDATORY		£ -	£ -	£ -	No	- Achieved under ECO1
Eco 4	Change in Ecological Value of the Site	1	NOT MANDATORY	Ecologist report	£ 21	£ 5	£ 3	- Assumed 2 hours to complete site visit for small; 5 hours for medium and large	- Additional site visit required to sign off items have been installed correctly
Eco 5	Building Footprint	2	NOT MANDATORY		£ -	£ -	£ -	No	- Achieved under ECO1
TOTAL					£ 63	£ 13	£ 7		
OVERALL PROCESS COST					£ 1,120	£ 226	£ 193	PER DWELLING ASSUMING ALL CODE CREDITS ACHIEVED	

Appendix A3 – Counterfactual, Space

Appendix A4 – Counterfactual, Access

Lifetime Homes Design Criteria Cost

	1 Bed Flat	2 Bed Flat	2 Bed Terr	3 Bed Semi House	4 Bed Detached	
Standard	Costs	Costs	Costs	Costs	Costs	Comments
1 Parking Adaptation - potential to increase parking space (3.3 x 4.8) required	£141	£141	£0	£0	£0	- 'Standard' Car Park (2.4x4.8) = 11.52m2 - LTH (3.3x6) = 19.8m2 - Additional area = 8.28m2 - Say hard = £85/m2 = £703 Say only provided to every 5th unit (provided near each entrance or lift core) Terraces assumes on-street parking where the standard can be accommodated at no additional cost
2 Approach to dwelling	£0	£0	£0	£0	£0	Addressed under Part M
3 Approach to all entrances	£0	£0	£0	£0	£0	Addressed under Part M
4 Entrance	£83	£83	£133	£133	£133	- To be illuminated - Level Access over threshold - addressed under Part M - Entrance Porch NB: Flat costs divided between 40Nr flats
5 Communal Stairs & Lifts	£0	£0	£0	£0	£0	
6 Hallway Width and Doors	£0	£0	£25	£25	£25	Extra over cost of £62 to allow for 1050mm door. 2 doors allowed, total in 20% of dwellings
7 Circulation	£0	£0	£0	£0	£0	
8 Entrance Level Living	£0	£0	£0	£0	£0	
9 Potential for entrance bed space	£0	£0	£0	£0	£0	
10 Entrance Level WC and Shower Drainage	£275	£275	£275	£275	£275	Additional drainage point including falls to screed and filled in. Additional labour etc included. Same to all units
11 WC and Bathroom Walls	£384	£384	£384	£384	£384	8m x 2.4m = 19.2m2 ; Lining board £20 supply and fit
12 Stairs and Through floor Lift space	£0	£0	£0	£0	£0	Space Only. No allowance made for concrete floors No allowance made in flats as assumed single storey
13 Potential for fitting hoist	£18	£18	£91	£91	£91	Requirement is design related and 'requires capable of adaptation to support' Cost in flats is an allowance based on additional support in some top floor flats (however subject to structural design and would not necessarily be required in concrete frame building). Flat allowance therefore based on 11m2 (bedroom size) x £10/m2. Cost divided by 12 plots per block, multiplied by 4 top floor flats. Total cost divided by 50% (assuming 50% units concrete not timber) Cost allowed for double joist/strengthening. Bedroom length assumed 3.5m; double joist allowed therefore 7m @ £13/m
14 Bathroom	£116	£116	£116	£116	£116	Additional space required to comply therefore additional flooring, drainage point costed within item 9. Additional tiling and flooring. Cost Breakdown provided below
15 Glazing and window heights	£14	£14	£16	£18	£20	Nominal cost included as requirement means a top hung window, therefore limited supply chain
16 Service Controls	£4	£5	£5	£8	£9	Radiator controls require between 450 and 1200mm. Additional pipework required accommodate.
Total	£1,035	£1,035	£1,044	£1,049	£1,051	

Current Base Date 2Q 14 £1,082 £1,083 £1,092 £1,097 £1,100

Bathroom costing break down:-

	<u>Standard Bathroom</u>	
	<u>Wall Width</u>	<u>Wall Length</u>
Standard	1.7 m	1.8 m
LTH	2.1 m	2.1 m
Difference 'Norm'/LTH	0.4 m	0.3 m
<u>Floor to Ceiling</u>	<u>2.4 m</u>	<u>2.4 m</u>
Additional Wall area	0.96 m2	0.72 m2
Wall		
Plasterboard incl. sundries (@ £18.50/m2)	17.76 €/m2	13.32 €/m2
Extra Over Tiling (@£50/m2 Supply and Fit)	48.00	36.00
<u>GIFA</u>	<u>3.06 m2</u>	<u>4.41 m2</u>
Flooring (@£50/m2)	153 €/m2	220.5 €/m2
Extra over cost	67.5 €/m2	
TOTAL	115.50 €/m2	

Entrance

	<u>House</u>	<u>Flat Block</u>	<i>*Assume 40Nr Flats</i>
Canopy	500 €/Nr	950 €/Nr	
Light	50 €/Nr	50 €/Nr	
	<u>550 €/Nr</u>	<u>1000 €/Nr</u>	
		83.33 €/Nr	
Adjusted Canopy	125 €/Nr		<i>* 75% already have canopy</i>
Light	7.5 €/Nr		<i>* 85% already have ext light</i>
	<u>132.5 €/Nr</u>		

Radiator Pipes

		<u>Nr Radiators</u>				
		<u>Flat (1B)</u>	<u>Flat (2B)</u>	<u>2bed</u>	<u>3 Bed</u>	<u>4Bed</u>
Per Radiator (flow and return)	700 mm	5	6	6	10	11
		<u>3500</u>	<u>4200</u>	<u>4200</u>	<u>7000</u>	<u>7700</u>
		3.5	4.2	4.2	7	7.7
Pipe	£28 for 25m	0				
		<u>1.12</u>				
		3.92	4.704	4.704	7.84	8.624

Wheelchair Housing Design Guide

Standard	REQUIREMENTS	Flat 1B £	Flat 2B £	Terraced £	Semi £	Det £	Comments
External Environment and entrances							
Moving Around Outside							
	1.2.1 1200mm path	£150	£150	£188	£375	£375	Path - Standard 900mm, say 5m per dwelling @ £75/m
	1.2.2 Protective kerb edging	£125	£125	£125	£250	£250	5m @ £25/m
	1.2.3 Gradient	£0	£0	£0	£0	£0	Building Reg
	1.2.4 Cross falls	£0	£0	£0	£0	£0	
	1.2.5 Crossings	£0	£0	£0	£0	£0	
Using outdoor spaces							
	2.2.1 Gardens - 850mm gate opening	£0	£0	£50	£50	£50	Extra over for wider gate and additional ironmongery
	2.2.2	£0	£0	£0	£0	£0	Design Item
	2.2.3 Accessible Paving	£0	£0	£375	£375	£375	Additional 4m2
	2.2.4 Refuse	£0	£0	£0	£0	£0	Design related
Approaching the home							
	3.2.1 Covered Car parking (5.4 x 3.6 x 2.2)	£0	£0	£0	£0	£0	Car port
	3.2.2 Min height covered area	£0	£0	£0	£0	£0	Addressed under 3.2.1
	3.2.3 Dwelling with communal external entrance	£0	£0	£0	£0	£0	
	3.2.4 Garages	£0	£0	£0	£0	£0	<i>Not ideal therefore costs not included</i>
	3.2.5 Route to entrance - smooth slip resistant	£0	£0	£0	£0	£0	Design and material specification issue - no required cost
	3.2.6 Entrance Landing - 1500 x 1500mm	£225	£225	£225	£225	£225	
	3.2.7 1200mm canopy	£950	£950	£950	£950	£950	
	3.2.8 Lighting of transfer area	£0	£0	£0	£0	£0	Provided as standard
	3.2.9 Additional Lift	£1,589	£1,589	£0	£0	£0	Assume 10Nr units per floor therefore over 4 floors would require additional lift; Lift cost = £47,666 divide by 30Nr dwellings (i.e 3 floors of 10Nr)
Negotiating Entrance Doors							
	4.2.1 Door - 800mm	£125	£125	£125	£125	£125	To accommodate larger door/frame etc
	4.2.2 Approaching space	£0	£0	£0	£0	£0	Space/ Design
	4.2.3 Threshold	£0	£0	£0	£0	£0	
	4.2.4 Lock - 800 -900mm high	£0	£0	£0	£0	£0	Height
	4.2.5 Remote controlled door opener	£800	£800	£800	£800	£800	£550 nett cost, electrical installation etc.
	4.2.7 Lever, Pull Handles	£0	£0	£0	£0	£0	Front door only Specification
	4.2.8 Entry Phone	£0	£0	£0	£0	£0	Height of install - no additional cost
	4.2.9 Bell	£0	£0	£0	£0	£0	Height of install - no additional cost
	4.2.10 External Light	£0	£0	£0	£0	£0	Supplied generally 'as standard'
	4.2.12 Pull - pull bar	£150	£200	£300	£350	£400	Say £50 supply and fit per door
Entering and Leaving							
	5.2.1 Transfer - 1100 x 1700 required	£0	£0	£0	£0	£0	Space
	5.2.2 Turning Space - 1500 x 1800mm clear turning	£0	£0	£0	£0	£0	Space
	5.2.3 Post - Fitting to collect post	£0	£0	£30	£30	£30	Flat assumed to have post boxes 'as standard'
	5.2.4 Entry Phone - future provision	£0	£0	£0	£0	£0	
	5.2.5 Lobby - Requirement for space if additional lobby	£0	£0	£0	£0	£0	Additional Space therefore not extra cost

Standard	REQUIREMENTS	£	£	£	£	£	Comments
Negotiating secondary door							
	6.2.1 Landing 1500 x 1500mm landing	£0	£0	£0	£0	£0	Space
	6.2.2 Door - clear width of 800mm	£75	£100	£150	£175	£200	£25/door
	6.2.3 Approach - Space to approach, manoeuvre and pass through door	£0	£0	£0	£0	£0	Space
	6.2.4 Threshold - weathertight	£0	£0	£0	£0	£0	
Internal Environment							
Moving around inside - storing things							
	7.2.1 Straight passages	£0	£0	£0	£0	£0	900mm min width - space
	7.2.2 Head on approach to doors in passage	£0	£0	£0	£0	£0	Space/Design
	7.2.3 Turning 90 degrees	£0	£0	£0	£0	£0	
	7.2.3 Turning 180 degrees	£0	£0	£0	£0	£0	Space/Design
	7.2.5 Right angles	£0	£0	£0	£0	£0	Design detail / space
	7.2.6 Effective clear width for doors	£0	£0	£0	£0	£0	
	7.2.7 Space to approach doors	£0	£0	£0	£0	£0	
	7.2.8 Doors at angles	£0	£0	£0	£0	£0	Design detail / space
	7.2.9 Sliding doors	£0	£0	£0	£0	£0	Not required/provided as standard therefore nil cost allowed
	7.2.10 Storage - depth and width	£0	£0	£0	£0	£0	
Moving between levels within the dwelling							
	8.2.1 Lift (supply and install excluding lift shaft)	£0	£0	£11,785	£11,785	£11,785	Provided 'as standard' in most flatted blocks. Allowance as Category 3.
	8.2.1 Lift (shaft and fit out for storage)	£0	£0	£2,215	£2,215	£2,215	Provided 'as standard' in most flatted blocks. Allowance as Category 3.
	8.2.2 Installation - incl above	£0	£0	£0	£0	£0	Safety and security features provided as standard
	8.2.3 Circulation	£0	£0	£0	£0	£0	Design / space
Using living spaces							
	9.2.1 Room Layout	£0	£0	£0	£0	£0	Space
	9.2.2 Radiators - does not inhibit reasonable layout	£0	£0	£0	£0	£0	Layout - not additional cost
	9.2.3 Sockets - not sited within 750mm of internal angle	£0	£0	£0	£0	£0	Layout - not additional cost
Using the kitchen							
	10.2.1 Layout - windows positioned for ease of control and cleaning	£0	£0	£0	£0	£0	Layout and space
	10.2.2 Worktops - 600mm deep worktop	£0	£150	£150	£150	£150	
	10.2.3 Sink - adjustable	£500	£500	£500	£500	£500	Cost of sink (E/O) - plumbing as standard
	10.2.4 Storage	£250	£250	£250	£250	£250	Additional base units in lieu of wall
	10.2.5 Controls and Lighting	£0	£0	£0	£0	£0	Height of lights
	10.2.6 Appliances - install hob and built in oven	£900	£900	£900	£900	£900	Supply and fit
	10.2.7 Refuse	£0	£0	£0	£0	£0	
Using the bathroom							
	11.2.1 Bathroom - fully accessible toilet, shower etc	£2,470	£2,470	£2,470	£2,470	£2,470	£800 shower; £750 toilet, £500 sink, £150 grab rails; Additional Tiling £270
	11.2.2 Direct Access from bed to bath	£0	£0	£0	£0	£0	Design/Layout
	11.2.3 Additional W/C in dwelling of 4 or more	£0	£0	£0	£0	£0	Not 'standard' requirement
	11.2.4 Layout - independent transfer	£0	£0	£0	£0	£0	Space standard
	11.2.5 W/C - position for range of diff transfer positions	£0	£0	£0	£0	£0	Space standard
	11.2.6 Shower - drained floor	£0	£0	£0	£0	£0	Dealt with under 11.2.1
	11.2.7 Bath - allow range of transfer	£0	£0	£0	£0	£0	
Standard	REQUIREMENTS	£	£	£	£	£	Comments
Using the bedrooms							
	11.2.8 Basin - clearance under bowl	£0	£0	£0	£0	£0	Dealt with under 11.2.1
	11.2.9 Finishes	£0	£0	£0	£0	£0	Dealt with under 11.2.1
	11.2.10 Support - wall	£22	£22	£22	£22	£22	8m x 2.7m = 2.2m ² ; Lining board £10 supply and fit
	12.2.1 Layout	£0	£0	£0	£0	£0	Design/space
	12.2.2 Controls	£0	£0	£0	£0	£0	Location rather than additional
	12.2.3 Door - knock out panel	£300	£300	£300	£300	£300	Additional time/work
	12.2.4 Hoist - strengthening ceiling, provide conduit wiring in roof	£650	£650	£650	£650	£650	£50 for wiring; £600 for strengthening

Components and details									
Operating internal doors	13.2.1	Construction - door allows future grab handles	£0	£0	£0	£0	£0	Solid door - generally required for fire under building regs	
	13.2.2	Handle heights	£0	£0	£0	£0	£0		
	13.2.3	Locking - indicators openable in emergency	£0	£0	£0	£0	£0		
	13.2.4	Emergency opening - inward opening door open outwards in an emergency	£0	£0	£0	£0	£0		
Operating windows	14.2.1	Approach	£0	£0	£0	£0	£0	Generally requires a larger window; 5% larger - allowance of additional £100 per window and say 4 Nr (exclude kitchen and bath - winders costed under 14.2.3)	
	14.2.2	Lower height	£105	£105	£225	£375	£435		
	14.2.3	Window gear	£500	£500	£500	£500	£500		Assume £250 per winder, assume only required on Kitchen & Bathroom
	14.2.4	Safety - not over paths	£0	£0	£0	£0	£0		Design
	14.2.5	Glazing	£0	£0	£0	£0	£0		Dealt with under 14.2.1
	14.2.6	Transom	£0	£0	£0	£0	£0		Design
Controlling services	15.2.1	Mains services - location	£0	£0	£0	£0	£0	Design	
	15.2.2	Plumbing	£0	£0	£0	£0	£0		
	15.2.3	Flexible Plumbing	£0	£0	£0	£0	£0		
	15.2.4	Switches	£28	£28	£28	£34	£38	Assume 6Nr switches @ extra over £2)	
	15.2.5	Socket outlets - general	£0	£0	£0	£0	£0	Height	
	15.2.6	Socket outlets - appliance	£0	£0	£0	£0	£0	Height	
	15.2.7	Telephone	£75	£75	£75	£75	£75	Additional 5Nr BT socket @£15	
	15.2.8	Future Control	£100	£100	£100	£100	£100	2Nr additional	
Total			£10,089	£10,314	£23,488	£24,031	£24,170		
Current Base Date 2Q 14 Adaptable			£8,095	£8,278	£9,594	£10,111	£10,204		
Current Base Date 2Q 14			£10,553	£10,788	£24,568	£25,136	£25,282		

Bespoke London Wheelchair Design Guide

Standard	REQUIREMENTS	Flat 1B £	Flat 2B £	Terraced £	Semi £	Det £	Comments
External Environment and entrances							
Moving Around Outside							
	1.1 Pavement Crossovers	£0	£0	£0	£0	£0	No additional cost
	1.2 1200mm path	£150	£150	£188	£375	£375	Path - Standard 900mm, say 5m per dwelling @ £75/m
	1.3 Ramps - Gradient	£0	£0	£0	£0	£0	Building Reg
	1.4 Protective edges	£125	£125	£125	£250	£250	5m @ £25/m on flats & terrace, 10m @ £25/ m on semi and det
	1.5 Rails	£0	£0	£0	£0	£0	Assume that these will be rare and designed out whether possible
Using outdoor spaces							
	2.1 900mm gate opening	£0	£0	£50	£50	£50	Extra over for wider gate and additional ironmongery
	2.2 Accessible Paving	£0	£0	£225	£225	£225	Additional 3m2
	2.3 Clothes Drying	£0	£0	£0	£0	£0	
	2.4 Route for Refuse etc	£0	£0	£0	£0	£0	Design related
	2.5 Balcony area	£0	£0	£0	£0	£0	Design related
	2.6 Garden Access	£0	£0	£0	£0	£0	Design related
Approaching the home							
	3.1 Car parking (4.0 x 6.6 x 2.3) - covered where possible - follow the same principle as the WHDG costing	£3,000	£3,000	£3,000	£3,000	£3,000	Car parking and covered canopy - used the same principles as the Habinteg costing exercise
	3.2 Remove auto gates (where fitted)	£0	£0	£0	£0	£0	Assume standard build specification
	3.3 Route to entrance (covered where possible)	£0	£0	£0	£0	£0	Assume standard build specification
	3.4 Covered canopy to entrance (where possible)	£950	£950	£950	£950	£950	Say £950 assume to all of units - used the same principle as the Habinteg exercise
	3.5 Lighting to car parking space (PIR) and internal switch	£200	£200	£200	£200	£200	Uplift for PIR and internal switching say £200/ unit
	3.6 Ground Floor Flat Access (preference)	£0	£0	£0	£0	£0	Design related
	3.7 Communal Corridors	£0	£0	£0	£0	£0	Design related
	3.8 Communal internal corridor doors	£0	£0	£0	£0	£0	Design related - Assume designed out
	3.9 Additional Lift	£1,589	£1,589	£0	£0	£0	Assume 10Nr units per floor therefore over 4 floors would require additional lift; Lift cost = £47,666 divide by 30Nr dwellings (i.e 3 floors of 10Nr)
Negotiating Communal Entrance Doors							
	4.1 Door - 900mm and pull handle on flat communal entrance door	£250	£250	£200	£200	£200	To accommodate larger door/frame. Pull handle on flats only (£50) etc
	4.2 Approaching space	£0	£0	£0	£0	£0	Space/ Design
	4.3 Threshold	£0	£0	£0	£0	£0	Design/ specification
	4.4 Lock - 800 -900mm high	£0	£0	£0	£0	£0	Height
	4.5 Remote controlled door opener	£800	£800	£800	£800	£800	£550 nett cost, electrical installation etc. Front door only
	4.4 Lever, Pull Handles	£0	£0	£0	£0	£0	Specification
	4.6 Entry Phone	£0	£0	£0	£0	£0	Included in flats and not required in houses
Entering and Leaving the Home, Dealing with Callers							
	5.1 Door - 900mm	£200	£200	£200	£200	£200	To accommodate larger door/frame etc
	5.2 Transfer - 1800 x 1500 required	£0	£0	£0	£0	£0	Space
	5.3 Threshold - Flat front door	£100	£100	£0	£0	£0	To flats only
	5.4 Turning Space - 1500 x 1800mm clear turning . Additional power point	£50	£50	£50	£50	£50	Space and £50 for power point
	5.5 Spy Hole	£30	£30	£30	£30	£30	Assume extra to all units £30 supply and fix
	5.6 Bell	£0	£0	£0	£0	£0	Height of install - no additional cost
	5.7 Post - Fitting to collect post	£0	£0	£30	£30	£30	Flat assumed to have post boxes 'as standard'
	5.8 Specialist locking mechanism and power supply	£75	£75	£75	£75	£75	Extra for electric power supply and specialist ironmonger say £75
	5.9 Entry Phone - Additional to the main entrance door	£100	£100	£100	£100	£100	Required to flats and houses
Negotiating a Secondary Door to Garden or Balcony							
	6.1 Landing 1500 x 1500mm landing	£0	£0	£0	£0	£0	Space
	6.2 Door - clear width of 900mm	£200	£200	£200	£200	£200	To accommodate larger door/frame etc
	6.3 Secure Lock (and door stays)	£15	£15	£15	£15	£15	Additional cost for supply and fix stays
	6.4 External lighting	£0	£0	£0	£0	£0	Supplied generally as standard
	6.5 French Windows	£0	£0	£0	£0	£0	Standard specification
Internal Environment							
Moving around inside/ storing things							
	7.1 All passages min 1200 wide	£0	£0	£0	£0	£0	Space/Design
	7.2 Clear opening width min 840mm	£75	£100	£150	£175	£200	£25/ door
	7.3 Storage - depth and width	£0	£0	£0	£0	£0	Standard Specification
	7.4 Flooring	£0	£0	£0	£0	£0	Design/ specification related
Moving between levels							
	8.1 Lift to flats and houses	£0	£0	£14,000	£14,000	£14,000	Provided 'as standard' in most flatted blocks. Additional cost to houses - Access Lifts fitted one on Claude Rd Dec 2012 for £12,500k including bwic. Say £14k each adjusting for on costs.
	8.2 Min lift dimensions	£0	£0	£0	£0	£0	Included in 8.1 above
	8.3 Powered door lifts	£0	£0	£0	£0	£0	Included in 8.1 above
	8.4 Lift controls	£0	£0	£0	£0	£0	Included in 8.1 above
	8.5 Lift position	£0	£0	£0	£0	£0	Included in 8.1 above
Using living spaces							
	9.1 Turning circle	£0	£0	£0	£0	£0	Space
	9.2 Transfer spaces	£0	£0	£0	£0	£0	Layout - not additional cost
	9.3 Operable fittings	£0	£0	£0	£0	£0	Layout - not additional cost
	9.4 Radiators	£0	£0	£0	£0	£0	Layout - not additional cost
	9.5 Sockets - min 750mm from a corner	£0	£0	£0	£0	£0	Layout - not additional cost
	9.6 Full plate switches	£50	£60	£80	£90	£100	e/o material price £10 per room

	9.7	Ceiling Hoists	£132	£165	£920	£1,050	£1,180	Requirement is design related and 'requires ceilings throughout to have structural capacity for future possible hoist installation' Flats Cost in flats is an allowance based on additional support in some top floor flats (however subject to structural design and would not necessarily be required in concrete frame building). Flat allowance therefore based on flat GIFA x £10/m2 plus £100 for electrical conduit. Cost divided by 12 plots per block, multiplied by 4 top floor flats. Total cost divided by 50% (assuming 50% units concrete not timber) Houses Cost allowed for double joist/strengthening. House GIFA x £10/m2 plus £150 for electrical conduit
Using the kitchen								
	10.1	Space and Layout	£0	£0	£0	£0	£0	Layout - not additional cost
	10.2	Worktops	£150	£150	£150	£150	£150	800mm adjustable section with extended tiling
	10.3	Storage	£250	£250	£250	£250	£250	Additional base units in lieu of wall units - Say £250
	10.4	Adjustable Sink	£600	£600	£600	£600	£600	E/o Cost of sink, taps and adjustable pipework - plumbing as standard
	10.5 & 10.6	Oven and hob	£1,000	£1,000	£1,000	£1,000	£1,000	Supply and fit (including adjustable hob and side hung oven)
	10.7	Additional appliance space	£100	£100	£100	£200	£200	Additional appliance space and service. Assume 2 spaces and services provided as standard. For units with less than 5 persons then 1 additional space For units with 5 or more persons then 2 additional spaces Space and services @ say £100 ea
	10.8	Controls and Sockets	£0	£0	£0	£0	£0	Height of lights
	10.9	Internal Refuse	£0	£0	£0	£0	£0	Design/ specification related
	10.10	Fridge	£0	£0	£0	£0	£0	Design/ specification related
	10.11	Windows	£250	£250	£500	£500	£500	Window winders for windows above worktops - Say £250 supply and install. Say 1 nr per flat (above kitchen worktop) and say 2 nr required per house. Manual not electronic
Using the bathroom and shower room								
	11.1, 11.2 & 11.5	Space for bath and shower (1 & 2 bed)	£1,200	£1,200	£0	£0	£0	e/o for level access shower, shower seat, wall reinforcement, grab rails, floor gully and associated works - Say £500
	11.1, 11.3 & 11.5	Space for bath and shower (3 + bed)	£2,470	£2,470	£2,470	£2,470	£2,470	£800 shower; £750 toilet, £500 sink, £150 grab rails; Additional Tiling £270
	11.4	Bathroom and shower room	£0	£0	£0	£0	£0	
	11.6	Turning circle	£0	£0	£0	£0	£0	Design/Layout
	11.7 - 11.10	Transfer space	£0	£0	£0	£0	£0	Space standard
	11.11	Fixings	£0	£0	£0	£0	£0	included above
	11.12	WC Height	£0	£0	£0	£0	£0	Standard
	11.13	The Cistern	£10	£10	£20	£20	£20	Splayed lever handle - say £10 e/o (1 in flats 2 in houses)
	11.14	Showering Space	£0	£0	£0	£0	£0	included above
	11.15 - 11.18	Level Access Shower	£0	£0	£0	£0	£0	included above
	11.19	Rail and weighted shower curtain	£150	£150	£150	£150	£150	supply and install
	11.20	Bath	£0	£0	£0	£0	£0	Standard
	11.21	Bath taps	£0	£0	£0	£0	£0	included above
	11.22	Integral bath rails	£0	£0	£0	£0	£0	included above
	11.23 - 11.25	Over bath shower	£0	£0	£0	£0	£0	included above
	11.26	Wash hand basin	£50	£50	£100	£100	£100	e/o for upgraded basin - say £50 e/o (1 in flats 2 in houses)
	11.27	Rails	£150	£150	£300	£300	£300	2 x drop down WC rails per toilet @ say £150 per toilet (1 in flats and 2 in houses). Supply only. Not fitted
	11.28	Floor	£100	£100	£200	£200	£200	Floor upstand - say £100 per room (1 in flats 2 in houses)
	11.29	Pull switches - Large pull cord	£0	£0	£0	£0	£0	included above
	11.30	Shaving point - Height between 800mm-1000mm	£0	£0	£0	£0	£0	included above
	11.31	Over basin light - Long pull cord	£0	£0	£0	£0	£0	included above
Using bedrooms								
	12.1	Turning circle	£0	£0	£0	£0	£0	Design/space
	12.2	Transfer space	£0	£0	£0	£0	£0	Design/space
	12.3	Access past bed	£0	£0	£0	£0	£0	Design/space
	12.4	Access to furniture	£0	£0	£0	£0	£0	Design/space
	12.5	Controls	£0	£0	£0	£0	£0	included as standard
	12.6	Adjacent to bed head	£50	£50	£50	£50	£50	Socket outlet, 2 way light and TV point (design no extra cost). Entry phone point - included below
	12.7	Hoists	£0	£0	£0	£0	£0	included above
Components and details								
Operating doors								
	13.1	Door Construction - door allows future grab handles	£0	£0	£0	£0	£0	Solid door - generally required for fire under building regs
	13.2	Lever Handles - heights	£0	£0	£0	£0	£0	No additional cost
	13.3	Internal Locks - easily manipulated (inside and out) in emergency	£0	£0	£0	£0	£0	No additional cost
	13.4	Emergency opening - wetroom doors to open outwards	£0	£0	£0	£0	£0	No additional cost
	13.5	Self closing doors	£0	£0	£0	£0	£0	Door closer fitted to internal doors - say £75 ea
Operating windows								
	14.1	Handles - operating handle height 800mm-1000mm	£0	£0	£0	£0	£0	No additional cost
	14.2	Remote control	£200	£200	£200	£200	£200	Window winders - Say £200 supply and install. Assume required to 1 other window in each unit type (in addition to kitchen included above)
	14.3	Safety - not to create hazard externally	£0	£0	£0	£0	£0	Design

Controlling services	14.4	Glazing Line	£105	£105	£225	£375	£435	Generally requires a larger window; 5% larger - allowance of additional £100 per window and say 4 Nr (exclude kitchen and bath - winders costed under 14.2.3)	
	15.1	Mains services - location	£0	£0	£0	£0	£0	Design	
	15.2	Mains water - stopcock accessibility	£0	£0	£0	£0	£0	Design	
	15.3	Plumbing - isolating stop taps	£0	£0	£0	£0	£0	No additional cost included above	
	15.4	Flexible Plumbing	£0	£0	£0	£0	£0		
	15.5	Radiators - LST	£100	£100	£200	£200	£200	Low surface temperature rads to bathrooms and shower rooms. Assume 1 in the flats and 2 in the houses @ e/o £100 ea	
	15.6 & 7	Light Switches	£0	£0	£0	£0	£0	included above	
	15.8 & 9	Socket outlets - location	£0	£0	£0	£0	£0	Design	
	15.10, 15.11 & 15.12	Radiator positions and controls - Location						Design	
	15.13	Telephone	£30	£45	£45	£60	£75	Additional BT socket @£15 (1 + nr of bedrooms)	
	15.14	Entry phone	£100	£150	£150	£200	£250	Additional intercom @£50 (1 + nr of bedrooms)	
								Entry phone point - additional door entry phone set (1 nr) to master bedroom only - say £50	
	Total			£15,156	£15,289	£28,298	£29,090	£29,380	

BCIS TPI Uplift Original Base Date 2Q 13	£15,156	£15,289	£28,298	£29,090	£29,380
Current Base Date 2Q 14	£15,853	£15,992	£29,599	£30,428	£30,731

WCHG vs GWHHDG

	Flat 1B	Flat 2B	Terraced	Semi	Det	Comments
	£	£	£	£	£	
WCHG	£10,553	£10,788	£24,568	£25,136	£25,282	
BLWHDG	£15,853	£15,992	£29,599	£30,428	£30,731	

Additional for incorporating BLWHDG over WCHG

	Flat 1B	Flat 2B	Terraced	Semi	Det
	£5,300	£5,204	£5,031	£5,292	£5,450

Key Assumptions

- 1 Car parking space based on the same principles as the Habinteg model
- 2 Covered car parking is based on the same principles as the Habinteg model
- 3 Covered entrance canopy is based on the same principles as the Habinteg model
- 4 Lifts are an essential requirement in Bespoke London Wheelchair Housing Design Guide. Allowance of £14k for the houses only. IM rang Greenwich OT - 09.05.14 who confirmed that lifts would be required in houses - they buy these from Pollock (NI) for £10.5k
- 5 Ceiling hoists - Greenwich appears to require these throughout the dwelling (e/o £10/ m2 uplift) - OT at Greenwich explained that this was required as they want to limit distances that anyone is on a hoist and that the hoist may be required anywhere in the home. ie. to help someone get out of bed into a shower chair or a child from a smaller bedroom to the bathroom. This is a fair assumption.
- 6 Self closing doors not required throughout for Greenwich. OT explained that these are to be avoided and it appears that they are now obsolete for dwellings when you consider the revised Part B Dwellings. In 3 storey houses closers on all doors would make life very difficult for a wheelchair bound resident. Doors would need to be held open unless fire sensors triggered them to shut.
- 7 Assumed that the spacial implications for Greenwich are the same as for Habinteg - Not correct assumption. Greenwich compliance is circa 20% additional space above LTH.

Appendix A5 – Counterfactual, Water

Housing Standards Review

Water Standards - 4 bed detached house

Jun-14

CfSH	Specification	Proposed Standard		Code Level 5 /6		Comments
		Specification	E/O Cost	Specification	E/O cost	
	120l/p/d	110 l/p/d		80l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower (2 nr)	10 l/min	8 l/min	£ 6	6 l/min	£ 6	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,674	Including above / below ground storage tanks
Sub total			£ 9		£ 2,697	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office South East Figures)

House roofs assumed to be pitched and tiled

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Housing Standards Review

Water Standards - 3 bed semi detached house

Jun-14

CfSH	Proposed Standard			Code Level 5 /6		Comments
	Base Specification	Specification		Specification	E/O cost	
CfSH water consumption (l/p/d)	125 l/p/d	110 l/p/d		80 l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower (2nr)	10 l/min	8 l/min	£ 6	6 l/min	£ 6	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,674	Including above / below ground storage tanks
Sub total			£ 9		£ 2,697	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office figures for the South East)

House roofs assumed to be tiled and pitched

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Housing Standards Review

Water Standards - 2 bed terraced house

Jun-14

CfSH	Building Regs	Proposed Standard		Code Level 5 /6		Comments
	Specification	Specification		Specification	E/O cost	
	125 l/p/d	110 l/p/d		80 l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower	10 l/min	8 l/min	£ 3	6 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,181	Including above / below ground storage tanks
Sub total	£ -		£ 6		£ 2,201	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office figures for South East)

House roofs assumed to be pitched tiled roofs

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Housing Standards Review

Water Standard - 2 Bed Flat

Jun-14

The Water Efficiency Calculator		125 l/p/d (Current Building Regs)				110 l/p/d (Proposed)				80 l/p/d (CSH 5/6)					
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
		1	2	3	4	1	2	3	4	1	2	3	4		
W/C (Single Flush)	Flush Volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
WC (Dual Flush)	Full flush volume (litres)	6	1.46	0	8.76	6	1.46	0	8.76	4	1.46	0	5.84		
	Part flush volume (litres)	4	2.96	0	11.84	4	2.96	0	11.84	2.6	2.96	0	7.70		
WCs (Multiple Fittings)	Average effective flushing volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	6	1.58	1.58	11.06	4	1.58	1.58	7.9	2	1.58	1.58	4.74		
Bath (where shower also present)	Flow rate (litres/minute)	170	0.11	0	18.7	145	0.11	0	15.95	145	0.11	0	15.95		
Shower (where bath also present)	Capacity to overflow (litres)	10	4.37	0	43.7	8	4.37	0	34.96	6	4.37	0	26.22		
Bath only	Flow rate (litres/minute)	N/A	0.5	0	N/A	N/A	0.5	0	N/A	N/A	0.5	0	N/A		
Shower only	Flow rate (litres/minute)	N/A	5.6	0	N/A	N/A	5.6	0	N/A	N/A	5.6	0	N/A		
Kitchen / utility room sink taps	Flow rate (litres/minute)	8	0.44	10.36	13.88	6	0.44	10.36	13	4	0.44	10.36	12.12		
Washing machine	Litres/kg dry load	8.17	2.1	0	17.16	8.17	2.1	0	17.16	8.17	2.1	0	17.16		
Dishwasher	Litres/place setting	1.25	3.6	0	4.5	1.25	3.6	0	4.5	1.25	3.6	0	4.5		
Waste disposal unit	Litres/use	0	3.08	0	0	0	3.08	0	0	0	3.08	0	0		
Water softner	Litres/person/day	0	1.00	0	0	0	1.00	0	0	0	1.00	0	0		
Total calculated use (litres/person/day)=(Sum column 4)					129.60						114.07				94.22
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
	6	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0		
	7	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			12.73		
	8	Normilisation Factor			0.91	Normilisation Factor			0.91	Normilisation Factor			0.91		
	9	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			117.93	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			103.80	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			74.16		
	10	External water use			5	External water use			5	External water use			5		
	11	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			122.93	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			108.80	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			79.16		

Housing Standards Review

Water Standard - 2 Bed House

Jun-14

The Water Efficiency Calculator		125 l/p/d (Current Building Regs)				110 l/p/d (Proposed)				80 l/p/d (CFSH 5/6)					
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
		1	2	3	4	1	2	3	4	1	2	3	4		
W/C (Single Flush)	Flush Volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
WC (Dual Flush)	Full flush volume (litres)	6	1.46	0	8.76	6	1.46	0	8.76	4	1.46	0	5.84		
	Part flush volume (litres)	4	2.96	0	11.84	4	2.96	0	11.84	2.6	2.96	0	7.70		
WCs (Multiple Fittings)	Average effective flushing volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	6	1.58	1.58	11.06	4	1.58	1.58	7.9	2	1.58	1.58	4.74		
Bath (where shower also present)	Flow rate (litres/minute)	170	0.11	0	18.7	145	0.11	0	15.95	145	0.11	0	15.95		
Shower (where bath also present)	Capacity to overflow (litres)	10	4.37	0	43.7	8	4.37	0	34.96	6	4.37	0	26.22		
Bath only	Flow rate (litres/minute)	N/A	0.5	0	N/A	N/A	0.5	0	N/A	N/A	0.5	0	N/A		
Shower only	Flow rate (litres/minute)	N/A	5.6	0	N/A	N/A	5.6	0	N/A	N/A	5.6	0	N/A		
Kitchen / utility room sink taps	Flow rate (litres/minute)	8	0.44	10.36	13.88	6	0.44	10.36	13	4	0.44	10.36	12.12		
Washing machine	Litres/kg dry load	8.17	2.1	0	17.16	8.17	2.1	0	17.16	8.17	2.1	0	17.16		
Dishwasher	Litres/place setting	1.25	3.6	0	4.5	1.25	3.6	0	4.5	1.25	3.6	0	4.5		
Waste disposal unit	Litres/use	0	3.08	0	0	0	3.08	0	0	0	3.08	0	0		
Water softner	Litres/person/day	0	1.00	0	0	0	1.00	0	0	0	1.00	0	0		
Total calculated use (litres/person/day)=(Sum column 4)					129.60						114.07				94.22
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
	6	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0		
	7	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			14.42		
	8	Normilisation Factor			0.91	Normilisation Factor			0.91	Normilisation Factor			0.91		
	9	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			117.93	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			103.80	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			72.62		
	10	External water use			5	External water use			5	External water use			5		
	11	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			122.93	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			108.80	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			77.62		

Housing Standards Review

Water Standard - 3 Bed House

Jun-14

The Water Efficiency Calculator		125 l/p/d (Current Building Regs)				110 l/p/d (Proposed)				80 l/p/d (CFSH 5/6)					
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
		1	2	3	4	1	2	3	4	1	2	3	4		
W/C (Single Flush)	Flush Volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
WC (Dual Flush)	Full flush volume (litres)	6	1.46	0	8.76	6	1.46	0	8.76	4	1.46	0	5.84		
	Part flush volume (litres)	4	2.96	0	11.84	4	2.96	0	11.84	2.6	2.96	0	7.70		
WCs (Multiple Fittings)	Average effective flushing volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	6	1.58	1.58	11.06	4	1.58	1.58	7.9	2	1.58	1.58	4.74		
Bath (where shower also present)	Flow rate (litres/minute)	170	0.11	0	18.7	145	0.11	0	15.95	145	0.11	0	15.95		
Shower (where bath also present)	Capacity to overflow (litres)	10	4.37	0	43.7	8	4.37	0	34.96	6	4.37	0	26.22		
Bath only	Flow rate (litres/minute)	N/A	0.5	0	N/A	N/A	0.5	0	N/A	N/A	0.5	0	N/A		
Shower only	Flow rate (litres/minute)	N/A	5.6	0	N/A	N/A	5.6	0	N/A	N/A	5.6	0	N/A		
Kitchen / utility room sink taps	Flow rate (litres/minute)	8	0.44	10.36	13.88	6	0.44	10.36	13	4	0.44	10.36	12.12		
Washing machine	Litres/kg dry load	8.17	2.1	0	17.16	8.17	2.1	0	17.16	8.17	2.1	0	17.16		
Dishwasher	Litres/place setting	1.25	3.6	0	4.5	1.25	3.6	0	4.5	1.25	3.6	0	4.5		
Waste disposal unit	Litres/use	0	3.08	0	0	0	3.08	0	0	0	3.08	0	0		
Water softner	Litres/person/day	0	1.00	0	0	0	1.00	0	0	0	1.00	0	0		
Total calculated use (litres/person/day)=(Sum column 4)					129.60						114.07				94.22
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
	6	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0		
	7	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			14.75		
	8	Normilisation Factor			0.91	Normilisation Factor			0.91	Normilisation Factor			0.91		
	9	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			117.93	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			103.80	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			72.32		
	10	External water use			5	External water use			5	External water use			5		
	11	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			122.93	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			108.80	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			77.32		

Housing Standards Review

Water Standard - 4 Bed House

Jun-14

The Water Efficiency Calculator		125 l/p/d (Current Building Regs)				110 l/p/d (Proposed)				80 l/p/d (CFSH 5/6)					
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
		1	2	3	4	1	2	3	4	1	2	3	4		
W/C (Single Flush)	Flush Volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
WC (Dual Flush)	Full flush volume (litres)	6	1.46	0	8.76	6	1.46	0	8.76	4	1.46	0	5.84		
	Part flush volume (litres)	4	2.96	0	11.84	4	2.96	0	11.84	2.6	2.96	0	7.70		
WCs (Multiple Fittings)	Average effective flushing volume (litres)	N/A	4.42	0	N/A	N/A	4.42	0	N/A	N/A	4.42	0	N/A		
Taps (excluding kitchen/utility room taps)	Flow rate (litres/minute)	6	1.58	1.58	11.06	4	1.58	1.58	7.9	4	1.58	1.58	7.9		
Bath (where shower also present)	Flow rate (litres/minute)	170	0.11	0	18.7	145	0.11	0	15.95	145	0.11	0	15.95		
Shower (where bath also present)	Capacity to overflow (litres)	10	4.37	0	43.7	8	4.37	0	34.96	6	4.37	0	26.22		
Bath only	Flow rate (litres/minute)	N/A	0.5	0	N/A	N/A	0.5	0	N/A	N/A	0.5	0	N/A		
Shower only	Flow rate (litres/minute)	N/A	5.6	0	N/A	N/A	5.6	0	N/A	N/A	5.6	0	N/A		
Kitchen / utility room sink taps	Flow rate (litres/minute)	8	0.44	10.36	13.88	6	0.44	10.36	13	4	0.44	10.36	12.12		
Washing machine	Litres/kg dry load	8.17	2.1	0	17.16	8.17	2.1	0	17.16	8.17	2.1	0	17.16		
Dishwasher	Litres/place setting	1.25	3.6	0	4.5	1.25	3.6	0	4.5	1.25	3.6	0	4.5		
Waste disposal unit	Litres/use	0	3.08	0	0	0	3.08	0	0	0	3.08	0	0		
Water softner	Litres/person/day	0	1.00	0	0	0	1.00	0	0	0	1.00	0	0		
Total calculated use (litres/person/day)=(Sum column 4)					129.60						114.07				97.38
Installation Type	Unit measure	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day	Capacity / flow rate	Use factor	Fixed use (litres/person/day)	Litres/person/day		
	6	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0	Contribution from greywater (litres/person/day) from Table 4.6			0		
	7	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			0	Contribution from rainwater (litres/person/day) from Table 5.5			15.63		
	8	Normilisation Factor			0.91	Normilisation Factor			0.91	Normilisation Factor			0.91		
	9	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			117.93	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			103.80	Total water consumption (Code for Sustainable Homes) = [(5)-(6)-(7)]x(8) (litres/person/day)			74.40		
	10	External water use			5	External water use			5	External water use			5		
	11	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			122.93	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			108.80	Total water consumption (Building Regulation 17.5k) = (9) + (10) (litres/person/day)			79.40		

Appendix B1 – Proposed, Security

Housing Standards Review

Domestic Security Standards - 2 Bed Flat (12 flats in block, 4 flats per floor)

Element	Current Industry Practice					Proposed Standard					Extra Over Baseline			
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total				
Doors														
Communal entrance door	Hardwood door and frame to communal door, automatic lock linked to access control	1	Item	£921.00	£921.00	PAS 24 with electronic release linked to access control	1	Item	£1,092.00	£1,092.00	£171.00			
Glass panel / side panel to communal entrance door	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00			
Flat Entrance Door	Fire rated flat entrance door inclusive of frame and ironmongery	12	Item	£433.00	£5,196.00	PAS 24 Fire Rated Door Set inclusive of frame and ironmongery	12	Item	£465.00	£5,580.00	£384.00			
Door restrictor to front entrance door	Included				£0.00	Included				£0.00	£0.00			
Windows														
External windows	Ground floor apartments 4nr: 4nr PVCU windows per apartment	1	Item	£3,444.00	£3,444.00	Ground floor apartments 4nr: 4nr PVCU windows per apartment to BS 7950	1	Item	£3,518.16	£3,518.16	£74.16			
PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	£0.00			
					Total	£9,656.00						Total	£10,285.00	£629.00
					Total / flat	£805.00						Total / Flat	£ 857.00	£ 52.00
					Total / Ground Floor Flat	£1,379.00						Total / Ground Floor Flat	£ 1,443.00	£ 64.00
					Total / Upper Floor Flat	£518.00						Total / Upper Floor Flat	£ 564.00	£ 46.00

Notes

The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's experience in working on residential projects.

Costs have been sourced from priced quotations from manufacturers and suppliers together with EC Harris' internal benchmarking database which draws costs from past and present projects.

'Total Flat' costs are an average cost of ground and upper floor apartments, including the additional security costs associated with ground floor windows. 'Upper floor flat' costs exclude window costs; 'Ground Floor Flat' costs include the full ground floor window costs.

Assumptions

A solid door with side panel is assumed in all cases to allow natural light - the cost allows for either.

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Proposed Standard - Small Development					Proposed Standard - Large Development									
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)			
Doors																									
Front entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Nr	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Nr	£202.50	£202.50	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Nr	£339.00	£339.00	£27.00	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Nr	£228.38	£228.38	£25.88			
Door restrictor to front entrance door	Included				£0.00	Included				£0.00	Included				£0.00	Included					£0.00	£0.00			
Glass panel / side panel	Glass panel / side panel	1	Nr	£95.00	£95.00	Glass panel / side panel	1	Nr	£95.00	£95.00	Glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Glass panel / side panel	1	Nr	£95.00	£95.00	£0.00			
Rear Door Sets	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£237.53	£237.53	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£441.00	£441.00	£49.00	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£272.16	£272.16	£34.63			
Windows																									
External windows	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) -	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr)	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), PAS 24 - GF Window	1	Item	£781.54	£781.54	£18.54	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), PAS 24 -GF Window	1	Item	£781.54	£781.54	£18.54			
PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	Included				£0.00	Included					£0.00	£0.00			
Total					£1,562.00	Total					£1,298.03	Total					£1,656.54	£94.54	Total					£1,377.08	£79.05

Notes

The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's considerable experience in working on residential projects.

Costs have been sourced from with quotations from manufacturers and suppliers, together with cost from EC Harris internal benchmarking which draws on data from past and present projects.

Composite doors and frames have been included for both small and large development scenarios however we accept that timber doors and frames are still used in a number of cases, particularly on smaller development, however from priced quotations received the extra over cost over the baseline to achieve the additional security requirements appears to be generally inline with the above.

Assumptions

Front entrance doors have been assumed as solid doors with side glazed panel

Rear doors are assumed to be doors with 2 glazed panels

All prices are for 'door sets' inclusive of ironmongery

No laminated glazing is allowed to ground floor windows

PAS 24 requirement and criteria relate to the 'enhanced security performance of doorsets and windows, intended to resist attack normally associated with the casual or opportunistic burglar' therefore only ground floor windows have been incorporated within the costs above.

The 1200 x 630 window assumed to have 1Nr opening light; 1200 x 1200 assumed to have 2Nr opening lights and 1200

Exclusions

Vehicular garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Proposed Standard - Small Development					Proposed Standard - Large Development							
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)	
Doors																							
Front and rear entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£202.50	£202.50	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Item	£339.00	£339.00	£27.00	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Item	£228.38	£228.38	£25.88	
Door restrictor to front entrance door	Included				£0.00	Included				£0.00	Included				£0.00	Included						£0.00	£0.00
Glass panel / side panel	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	£0.00
Rear Door Sets	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£237.53	£237.53	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£441.00	£441.00	£49.00	Composite rear door set ; assumed halved glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£272.16	£272.16	£34.63	£34.63
Windows																							
External windows	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr) - GF ONLY	1	Item	£763.00	£763.00	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£781.54	£781.54	£18.54	3nr PVCU windows (circa 1200x630, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£781.54	£781.54	£18.54	£18.54
PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	Included				£0.00	Included						£0.00	£0.00
					Total					Total				Total	£1,656.54	£94.54					Total	£1,377.08	£79.05

Notes
The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's considerable experience in working on residential projects.

Costs have been sourced from with quotations from manufacturers and suppliers, together with cost from EC Harris internal benchmarking which draws on data from past and present projects.

Composite doors and frames have been included for both small and large development scenarios however we accept that timber doors and frames are still used in a number of cases, particularly on smaller development, however from priced quotations received the extra over cost over the baseline to achieve the additional security requirements appears to be generally inline with the above.

Assumptions
Front entrance doors have been assumed as solid doors with side glazed panel
Rear doors are assumed to be doors with 2 glazed panels

All prices are for 'door sets' inclusive of ironmongery

No laminated glazing is allowed to ground floor windows

PAS 24 requirement and criteria relate to the 'enhanced security performance of doorsets and windows, intended to resist attack normally associated with the casual or opportunistic burglar' therefore only ground floor windows have been incorporated within the costs above.

The 1200 x 630 window assumed to have 1Nr opening light; 1200 x 1200 assumed to have 2Nr opening lights and 1200

Exclusions
Vehicular garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified separately for the proportion of houses with garages

Element	Current Industry Practice - Small Developments					Current Industry Practice - Large Developments					Proposed Standard - Small Development					Proposed Standard - Large Development									
	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Small Development)	Item Description	Quant	Unit	Rate	Total	Extra Over Baseline (Large Development)			
Doors																									
Front and rear entrance door	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£312.00	£312.00	Composite door and softwood frame front entrance door with no glazing inclusive of all ironmongery	1	Item	£202.50	£202.50	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Item	£339.00	£339.00	£27.00	Composite Front Entrance door set to PAS 24 standard; No glazing inclusive of all ironmongery	1	Item	£228.38	£228.38	£25.88			
Door restrictor to front entrance door	Included				£0.00	Included				£0.00	Included				£0.00	£0.00	Included				£0.00	£0.00			
Glass panel / side panel	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00	Single glazed, laminated glass panel / side panel	1	Nr	£95.00	£95.00	£0.00			
Rear Door Sets	Composite rear door set ; assumed halfed glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£392.00	£392.00	Composite rear door set ; assumed halfed glazed (2Nr glazed panels); inclusive of frame and ironmongery	1	Nr	£237.53	£237.53	Composite rear door set : assumed halfed glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£441.00	£441.00	£49.00	Composite rear door set : assumed halfed glazed (2Nr glazed panels); inclusive of hardwood frame and ironmongery to PAS 24 certification	1	Nr	£272.16	£272.16	£34.63			
Windows																									
External windows	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr) - GF ONLY	1	Item	£1,195.00	£1,195.00	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr) - GF ONLY	1	Item	£1,195.00	£1,195.00	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£1,225.90	£1,225.90	£30.90	4nr PVCU windows (circa 1200x630, 1770x1200, 1200x1200-2nr), laminated glass & BS 7950 - GF ONLY	1	Item	£1,225.90	£1,225.90	£30.90			
PVCU: BS 7412:2007	Included				£0.00	Included				£0.00	Included				£0.00	£0.00	Included				£0.00	£0.00			
Total					£1,994.00	Total					£1,730.03	Total					£2,100.90	£106.90	Total					£1,821.44	£91.41

Notes

The current industry practice represents the security features that are typically installed for new dwellings this view is based on EC Harris's considerable experience in working on residential projects. This includes basic home office provision (latch to bedroom door) and timber shed for bicycle storage (houses). Although not NHBC standards these

Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects, together with quotations from manufacturers and suppliers.

Composite doors and frames have been included for both small and large development scenarios however we accept that timber doors and frames are still used in a number of cases, particularly on smaller development, however from priced quotations recieved the extra over cost over the baseline to achieve the additional security requirements appears to be generally in line with the above.

Assumptions

Front entrance doors have been assumes as solid doors with side glazed panel.

Rear doors are assumed to be half glazed doors (with no other glazed panel)

All prices are for 'door sets' inclusive of ironmongery

A glazed door or a door with side panel is assumed in all cases to allow natural light - the cost allows for either

Exclusions

Vehicular garage entrance door and link door between garage and house at Level 2 - we are aware there is a cost for this which needs to be quantified seperately for the proportion of houses with garages

Appendix B2 – Proposed, Energy

Appendix Not Used

Appendix B3 – Proposed, Space

Housing Standards Review
Space standards Build Cost Matrix

	Basecase		Proposed Level			
	GIA	Build Cost	GIA	Variance m ²	Build Cost Variance	%
1 bed flat						
Space standard (1b2p)			50 m ²		£81,966	
Private (average from survey)	50.0 m ²	£ 81,966	.0 m ²		£0	0%
HCA Average	51.1 m ²	£ 78,032	-1.1 m ²		£3,934	5%
Lifetime Homes	48.5 m ²	£ 80,549	1.5 m ²		£1,416	2%
WHDG	58.0 m ²	£ 87,382				
2 bed flat						
Space standard (2b3p)			61 m ²		£90,252	
Private (average from survey)	67.0 m ²	£ 94,520	-6.0 m ²		£-4,268	-5%
HCA Average	64.0 m ²	£ 86,752	-3.0 m ²		£3,500	4%
Lifetime Homes	63.0 m ²	£ 91,413	-2.0 m ²		£-1,161	-1%
WHDG	76.0 m ²	£ 101,511				
Space standard (2b4p)			70 m ²		£96,850	
Private (lower end of size range)	51.0 m ²	£ 82,091	19.0 m ²		£14,759	18%
Private (average from survey)	67.0 m ²	£ 94,520	3.0 m ²		£2,330	2%
Private (upper end of size range)	79.0 m ²	£ 103,842	-9.0 m ²		£-6,991	-7%
HCA Average	71.5 m ²	£ 94,520	-1.5 m ²		£2,330	2%
Lifetime Homes	72.0 m ²	£ 98,403	-2.0 m ²		£-1,553	-2%
WHDG	87.0 m ²	£ 110,056				
2 bed terraced house						
Space standard (2b/3p)			70 m ²		£78,156	
Private (average from survey)	72.0 m ²	£ 78,044	-2.0 m ²		£113	0%
HCA Average	65.4 m ²	£ 70,708	4.6 m ²		£7,449	11%
Lifetime Homes	64.0 m ²	£ 72,175	6.0 m ²		£5,981	8%
WHDG	76.0 m ²	£ 80,978				
Space standard (2b4p)			79 m ²		£80,544	
Private (lower end of size range)	55.0 m ²	£ 65,573	24.0 m ²		£14,971	23%
Private (average from survey)	72.0 m ²	£ 78,044	7.0 m ²		£2,501	3%
Private (upper end of size range)	79.0 m ²	£ 83,179	.0 m ²		£-2,635	-3%
HCA Average	75.0 m ²	£ 74,376	4.0 m ²		£6,169	8%
Lifetime Homes	73.0 m ²	£ 78,777	6.0 m ²		£1,767	2%
WHDG	87.0 m ²	£ 92,147				
3 bed semi detached house						
Space standard (3b4p)			84 m ²		£95,330	
Private (average from survey)	92.0 m ²	£ 95,741	-8.0 m ²		£-410	0%
HCA Average	85.0 m ²	£ 76,736	-1.0 m ²		£18,594	24%
Lifetime Homes	74.0 m ²	£ 82,058	10.0 m ²		£13,273	16%
WHDG	87.0 m ²	£ 91,939				
Space standard (3b5p)			93 m ²		£97,718	
Private (lower end of size range)	70.0 m ²	£ 79,017	23.0 m ²		£18,701	24%
Private (average from survey)	92.0 m ²	£ 95,741	1.0 m ²		£1,978	2%
Private (upper end of size range)	121.0 m ²	£ 117,786	-28.0 m ²		£-20,068	-17%
HCA Average	89.0 m ²	£ 88,139	4.0 m ²		£9,580	11%
Lifetime Homes	86.0 m ²	£ 91,180	7.0 m ²		£6,539	7%
WHDG	102.0 m ²	£ 103,343				
4 bed detached house						
Space standard (4b5p)			97 m ²		£117,051	
Private (average from survey)	117.0 m ²	£ 121,045	-20.0 m ²		£-3,995	-3%
HCA Average	96.5 m ²	£ 94,571	.5 m ²		£22,480	24%
Lifetime Homes	85.5 m ²	£ 96,151	11.5 m ²		£20,899	22%
WHDG	102.0 m ²	£ 109,191				
Space standard (4b6p)			106 m ²		£119,439	
Private (lower end of size range)	93.0 m ²	£ 102,078	13.0 m ²		£17,360	17%
Private (average from survey)	117.0 m ²	£ 121,045	-11.0 m ²		£-1,607	-1%
Private (upper end of size range)	158.0 m ²	£ 153,447	-52.0 m ²		£-34,009	-22%
HCA Average	-	£ 103,659	-		-	-
Lifetime Homes	99.5 m ²	£ 107,610	6.5 m ²		£11,828	11%
WHDG	119.0 m ²	£ 122,626				
Space standard (4b7p)			115 m ²		£121,827	
Private	117.0 m ²	£ 121,045	-2.0 m ²		£781	1%
HCA Average	-	£ 117,094	-		-	-
Lifetime Homes	113.0 m ²	£ 117,884	2.0 m ²		£3,942	3%
WHDG	137.0 m ²	£ 136,851				

Notes:

- Where proposed standards are less than existing a negative cost is included, this would not however be relevant to the impact assessment for private sale dwellings
- No information for the HCA average size of 4 bed detached house units was available.

Housing Standards Review

Space standards - Indicative Cost per m2 by Typology

Typology	Current Build Cost	Total Build Cost				
	Basecase	+ 1 sq.m	+ 2 sq.m	+ 3 sq.m	+ 5 sq.m	+ 10 sq.m
1 bed 2 person (Flat)	£81,966	£82,688	£83,410	£84,132	£85,577	£89,188
2 bed 3 person (Flat)	£90,252	£90,974	£91,695	£92,417	£93,861	£97,469
2 bed 4 person (House)	£78,883	£79,515	£80,147	£80,778	£82,041	£85,200
3 bed 5 person (House)	£98,196	£98,827	£99,459	£100,091	£101,354	£104,512
4 bed 6 person (House)	£122,031	£122,571	£123,111	£123,651	£124,732	£127,433

	1B Apartment	2B Apartment	2B Terrace	3B Semi-detached	4B Detached
Total Cost increase per m2					
Current Cost	£81,966	£90,252	£78,883	£98,196	£122,031
+ 1 sq.m	+ £722	£722	£632	£632	£540
+ 2 sq.m	+ £1,444	£1,444	£1,264	£1,264	£1,080
+ 3 sq.m	+ £2,166	£2,166	£1,896	£1,896	£1,620
+ 5 sq.m	+ £3,610	£3,610	£3,175	£3,175	£2,700
+ 10 sq.m	+ £7,220	£7,220	£6,320	£6,320	£5,400

	Height	1 bed flat	2 bed flat	2 bed house	3 bed house	4 bed house
Total Cost Increase						
EC Harris Assumption	2.6m	£1,708	£1,856	£1,337	£2,079	£2,376
Proposed Standard	2.5m	£1,087	£1,181	£850	£1,324	£1,512
Industry standard (Baseline)	2.325m	-	-	-	-	-

Appendix B4 – Proposed, Access

Access Standard															
ONE BED FLAT	Category 1			Category 2			Category 3 - Adaptable			Category 3 - Adaptable (London)			Category 3 - Accessible		
	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance
Baseline	Part M			Lifetime Homes			WHDG			WHDG			WHDG		
	£0	£0	£0	£0	£0	£1,082	£0	£0	£10,533	£0	£0	£10,533	£0	£0	£10,533
Criteria A (Omissions)	£0	£0	£0	£0	£0	£0	£0	£0	£-1,449	£0	£0	£-1,449	£0	£0	£-1,449
Criteria B (Areas Relaxed)	£0	£0	£0	£-142	£0	£-142	£0	£0	£-1,923	£0	£0	£-1,923	£0	£0	£-1,923
Criteria C (Areas Tightened)	N/A	N/A	N/A	£0	£0	£0	£0	£0	£426	£0	£0	£433	£0	£0	£583
TOTAL CHANGE	£	-	£	-	£	142	£	-	2,946	£	-	2,939	£	-	2,789
Adjusted Cost	£	-	£	-	£	940	£	-	7,607	£	-	7,614	£	-	7,764
TWO BED FLAT															
TWO BED FLAT	Category 1			Category 2			Category 3 - Adaptable			Category 3 - Adaptable (London)			Category 3 - Accessible		
	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance
Baseline	Part M			Lifetime Homes			WHDG			WHDG			WHDG		
	£0	£0	£0	£0	£0	£1,083	£0	£0	£10,788	£0	£0	£10,788	£0	£0	£10,788
Criteria A (Omissions)	£0	£0	£0	£0	£0	£0	£0	£0	£-1,449	£0	£0	£-1,449	£0	£0	£-1,449
Criteria B (Areas Relaxed)	£0	£0	£0	£-176	£0	£-176	£0	£0	£-1,923	£0	£0	£-1,923	£0	£0	£-1,923
Criteria C (Areas Tightened)	N/A	N/A	N/A	£0	£0	£0	£0	£0	£474	£0	£0	£481	£0	£0	£631
TOTAL CHANGE	£	-	£	-	£	176	£	-	2,898	£	-	2,891	£	-	2,741
Adjusted Cost	£	-	£	-	£	907	£	-	7,891	£	-	7,898	£	-	8,048
TWO BED TERRACED HOUSE															
TWO BED TERRACED HOUSE	Category 1			Category 2			Category 3 - Adaptable			Category 3 - Adaptable (London)			Category 3 - Accessible		
	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance
Baseline	Part M			Lifetime Homes			WHDG			WHDG			WHDG		
	£0	£0	£0	£0	£0	£1,092	£0	£0	£24,568	£0	£0	£24,568	£0	£0	£24,568
Criteria A (Omissions)	£0	£0	£0	£-68	£0	£-68	£0	£0	£-4,489	£0	£0	£-4,489	£0	£0	£-4,489
Criteria B (Areas Relaxed)	£0	£0	£0	£-527	£0	£-527	£0	£0	£-262	£0	£0	£-262	£0	£0	£-262
Criteria C (Areas Tightened)	N/A	N/A	N/A	£0	£26	£26	£0	£0	£-10,063	£0	£0	£2,271	£0	£0	£2,421
TOTAL CHANGE	£	-	£	-	£	568	£	-	14,813	£	-	2,479	£	-	2,329
Adjusted Cost	£	-	£	-	£	523	£	-	9,754	£	-	22,088	£	-	22,238
THREE BED SEMI DETACHED HOUSE															
THREE BED SEMI DETACHED HOUSE	Category 1			Category 2			Category 3 - Adaptable			Category 3 - Adaptable (London)			Category 3 - Accessible		
	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance
Baseline	Part M			Lifetime Homes			WHDG			WHDG			WHDG		
	£0	£0	£0	£0	£0	£1,097	£0	£0	£25,136	£0	£0	£25,136	£0	£0	£25,136
Criteria A (Omissions)	£0	£0	£0	£-68	£0	£-68	£0	£0	£-4,594	£0	£0	£-4,594	£0	£0	£-4,594
Criteria B (Areas Relaxed)	£0	£0	£0	£-534	£0	£-534	£0	£0	£-262	£0	£0	£-262	£0	£0	£-262
Criteria C (Areas Tightened)	N/A	N/A	N/A	£0	£26	£26	£0	£0	£-9,974	£0	£0	£2,360	£0	£0	£2,510
TOTAL CHANGE	£	-	£	-	£	576	£	-	14,829	£	-	2,495	£	-	2,345
Adjusted Cost	£	-	£	-	£	521	£	-	10,307	£	-	22,641	£	-	22,791
FOUR BEDROOM DETACHED HOUSE															
FOUR BEDROOM DETACHED HOUSE	Category 1			Category 2			Category 3 - Adaptable			Category 3 - Adaptable (London)			Category 3 - Accessible		
	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance	Omit	Add	Cost Variance
Baseline	Part M			Lifetime Homes			WHDG			WHDG			WHDG		
	£0	£0	£0	£0	£0	£1,100	£0	£0	£25,282	£0	£0	£25,282	£0	£0	£25,282
Criteria A (Omissions)	£0	£0	£0	£-68	£0	£-68	£0	£0	£-4,594	£0	£0	£-4,594	£0	£0	£-4,594
Criteria B (Areas Relaxed)	£0	£0	£0	£-538	£0	£-538	£0	£0	£-262	£0	£0	£-262	£0	£0	£-262
Criteria C (Areas Tightened)	N/A	N/A	N/A	£0	£26	£26	£0	£0	£-9,859	£0	£0	£2,475	£0	£0	£2,625
TOTAL CHANGE	£	-	£	-	£	579	£	-	14,714	£	-	2,380	£	-	2,230
Adjusted Cost	£	-	£	-	£	520	£	-	10,568	£	-	22,902	£	-	23,052

Notes/Assumptions:
 - No cost included for the additional build cost associated with larger area dwellings (see space standard review)
 - All lift cost based on a 30Nr units over 3 floors (i.e. 10Nr Units per floor) to demonstrate the saving
 - Item 3b 'Lift Shaft only required in Wheelchair Adaptable' excluded as all other items related to full wheelchair standard, not Wheelchair accessible
 - Cost of garages excluded from Wheelchair Unit cost as this is not 'standard' practice
 - Costs have been sourced from EC Harris' internal benchmarking database which draws costs from past and present projects.
 - The criteria for the 3N category standards and the items to be either omitted, added or relaxed is based on the latest draft of the standards (June 2014)

Accessibility Standard

Category 3 - Additional Accessible cost over Adaptable

		1 Bed Flat		2 Bed Flat		2 Bed Terr		3 Bed Semi		4 Bed Det		
		Omit Cost	Add Cost	Omit Cost	Add Cost	Omit Cost	Add Cost	Omit Cost	Add Cost	Omit Cost	Add Cost	
3.28	Through floor lift space and lift for wheelchair units with more than one floor - Allowance for the provision of a lift (refer to 3.26 for lift shaft allowance)	£0	£0	£0	£0	£0	£11,785	£0	£11,785	£0	£11,785	Provided 'as standard' in most flatted blocks. Additional cost to houses only - Access lifts fitted on Claude Rd Dec 2012 for £12,500k including bwic. Say £14k each adjusting for on costs. Sav shaft and BWIC £2.4k lift £11.6k. Full wheelchair only (allowance just for worktop as hob/ oven is included in Habinteg)
3.33b	1.6m additional lowered worktop (sink + w'top + hob) - WHDG asks for 600mm. Level 3 asks for 2200mm therefore additional 1600mm of adjustable worktop.	£0	£150	£0	£150	£0	£150	£0	£150	£0	£150	
Category 3	Total: Current Base Date 2Q14	£0	£157	£0	£157	£0	£12,484	£0	£12,484	£0	£12,484	

Appendix B5 – Proposed, Water

Housing Standards Review

Water Standards - 4 bed detached house

Jun-14

CfSH	Specification	Proposed Standard		Code Level 5 /6		Comments
		Specification	E/O Cost	Specification	E/O cost	
	120l/p/d	110 l/p/d		80l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower (2 nr)	10 l/min	8 l/min	£ 6	6 l/min	£ 6	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,674	Including above / below ground storage tanks
Sub total			£ 9		£ 2,697	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office South East Figures)

House roofs assumed to be pitched and tiled

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Housing Standards Review

Water Standards - 3 bed semi detached house

Jun-14

CfSH	Proposed Standard			Code Level 5 /6		Comments
	Base Specification	Specification		Specification	E/O cost	
CfSH water consumption (l/p/d)	125 l/p/d	110 l/p/d		80 l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower (2nr)	10 l/min	8 l/min	£ 6	6 l/min	£ 6	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,674	Including above / below ground storage tanks
Sub total			£ 9		£ 2,697	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office figures for the South East)

House roofs assumed to be tiled and pitched

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Housing Standards Review

Water Standards - 2 bed terraced house

Jun-14

CfSH	Building Regs	Proposed Standard		Code Level 5 /6		Comments
	Specification	Specification		Specification	E/O cost	
	125 l/p/d	110 l/p/d		80 l/p/d		
<i>Physical costs</i>						
Low flush WCs (2nr)	6/4 l dual	6/4 l dual	£ -	4/2.6 l dual	£ 14	
Low flow wash basin taps (2 nr)	6/min	4 l/min	£ -	2 l/min	£ -	
Low flow shower	10 l/min	8 l/min	£ 3	6 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Bath capacity	170 l	145 l	£ -	145 l	£ -	
Kitchen tap flow rate	8 l/min	6 l/min	£ 3	4 l/min	£ 3	Flow restrictor used to achieve reduced flow rates
Water efficient washing machine	No	No	£ -	No	£ -	
Water efficient dishwasher	No	No	£ -	No	£ -	
Greywater reuse	No	No	£ -	No	£ -	
Rainwater harvesting	No	No	£ -	Yes	£ 2,181	Including above / below ground storage tanks
Sub total	£ -		£ 6		£ 2,201	

For each Code level, the Water Calculator was used to determine an approximate specification of water saving features to deliver the respective water consumption levels given in the CfSH technical guide.

Costs are based on:

EC Harris' internal benchmarking database which draws on costs data from past and present CfSH projects

Enquiries made with suppliers

Discussions with a leading M&E consultancy specialising in sustainability

Base Level sanitaryware is assumed to be basic spec in which case there is a cost premium for water efficient fittings. Note, for instances where higher spec sanitaryware would be the norm, extra over costs for sanitaryware could be zero.

To achieve Code Level 5/6 rainwater harvesting has been incorporated within the costs. An alternative to the significant cost and complexity of greywater reuse/rainwater harvesting could be a 6 litres/minute shower (typical for an electric shower) and no bath. Although this would save on the cost of installing a bath and reduce the bathroom space this would not be a direct comparison with the other specifications. Similarly a unit without a bath is generally considered to be less desirable, particularly in family dwellings.

All typologies are assumed to have Baths with showers over

Yield co-efficient for rainwater harvesting assumption is based on BS8515 Calculations based on rainfall average of 650mm/yr (based on Met office figures for South East)

House roofs assumed to be pitched tiled roofs

Minimum flow rates on CfSH taps are inline with AECB Best Practice Guidelines

Appendix C1 – Process and Transition

Housing Standards Review
Transition Costs

Time to familiarise professionals with new standards in excess of ongoing changes to current standards

Profession	Hours	Rate	Total	Approx Nr. Of Professionals	Source
Architect	8	£52	£416	20,000	RIBA
Building Control Surveyor	8	£46	£368	810	RICS
Building Surveyor	4	£46	£184	13,334	RICS
Quantity Surveyor	4	£57	£228	9,421	RICS
Construction Energy Assessors	5	£48	£240	981	-
Building Services Engineer	4	£46	£184	3,317	CIBSE
Civil Engineer	2	£47	£94	26,033	ICE
Mechanical Engineer	4	£49	£196	Incl	IME
Construction Manager	4	£57	£228	Incl	RICS / CIOB
Project Manager	4	£57	£228	Incl	RICS / CIOB
Town and Country Planner	5	£61	£305	19,966	RTPI
Skilled Trades	1.5	£18	£27	660,000	Business register

Time for professionals firms to update processes etc

Profession Type	Resource	Rate	Total	Approx Nr. Of Firms	Source
Architects	30	£52	£1,560	2,983	RIBA
Planners	30	£61	£1,830	810	RICS
Surveyors	15	£57	£855	12,000	RICS
Engineers	15	£47	£705	703	RICS
Management	15	£57	£855	Incl	RICS

Overhead type process costs

Current:

Firm size	Current resource dedicated	Cost per year per firm
Micro (1-4 employees)	0.015 Full time equivalent design manager	£1,287 (0.015 x £52/hr x 7.5hr day x 220)
Micro (4-7 employees)	0.05 Full time equivalent design manager	£4,290 (0.05 x £52/hr x 7.5hr day x 220)
Small (e.g. local home builder)	0.15 Full time equivalent design manager	£12,870 (0.15 x £52/hr x 7.5hr day x 220)
Medium (e.g. regional home builder)	0.75 Full time equivalent design manager	£64,350 (0.75 x £52/hr x 7.5hr day x 220)
Large (e.g. national home builder with multiple regions)	4 Full time equivalent design managers	£343,200 (4 x £52/hr x 7.5hr day x 220)

Proposed:

Firm size	Proposed resource dedicated	Cost per year per firm
Micro (1-4 employees)	0.01 Full time equivalent design manager	£858 (0.01 x £52/hr x 7.5hr day x 220)
Micro (4-7 employees)	0.03 Full time equivalent design manager	£2,574 (0.03 x £52/hr x 7.5hr day x 220)
Small (e.g. local home builder)	0.10 Full time equivalent design manager	£8,580 (0.10 x £52/hr x 7.5hr day x 220)
Medium (e.g. regional home builder)	0.40 Full time equivalent design manager	£34,320 (0.40 x £52/hr x 7.5hr day x 220)
Large (e.g. national home builder with multiple regions)	2 Full time equivalent design managers	£171,600 (2 x £52/hr x 7.5hr day x 220)

Housebuilding firms transition cost

Size of Firm (by number employed)	Number of House Builders	Hours	Rate	Total per Firm
1	10,301	0	£52	£0
2 to 3	6,456	0	£52	£0
4 to 7	2,988	0	£52	£0
8 to 13	1,101	0	£52	£0
14-24	607	0	£52	£0
25-34	202	7.5	£52	£390
35-59	238	7.5	£52	£390
60-79	81	15	£52	£780
80-114	76	15	£52	£780
115-299	99	15	£52	£780
300-599	29	22.5	£52	£1,170
600-1,199	8	37.5	£52	£1,950
1,200+	14	37.5	£52	£1,950
	22,200			

Small 5 units 2 unit types
 Medium 50 units 5 unit types
 Large 100 units 10 unit types

Proposed Standards

Space

Small

Professional	Total hours	Hourly Rate	Total
Design Team	3.5	£52	£182
Total	3.5		£182
	Nr dwelling types		
	Nr dwellings		5
	£/type		£91
	£/dwelling		£36

Medium

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£83
	£/dwelling		£8

Large

Professional	Total hours	Hourly Rate	Total
Design Team	16	£52	£832
Total	16		£832
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£83
	£/dwelling		£8

Recipient Costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.5	£23	£5
Medium	50	£46	2	£92	£2
Large	100	£46	4	£184	£2

Type Approval (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416

Type Approval Recipient Costs

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2	£92	£92

Water

None - substitution cost

Security

Small

Professional	Total hours	Hourly Rate	Total
Design Team	0.2	£52	£10
Total	0.2		£10
	Nr dwelling types		2
	Nr dwellings		5
	£/type		£5
	£/dwelling		£2

Medium

Professional	Total hours	Hourly Rate	Total
Design Team	0.4	£52	£21
Total	0.4		£21
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£4
	£/dwelling		£0.4

Large

Professional	Total hours	Hourly Rate	Total
Design Team	0.8	£52	£42
Total	0.8		£42
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£4
	£/dwelling		£0.4

Recipient Costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.1	£5	£0.9
Medium	50	£46	0.2	£9	£0.2
Large	100	£46	0.4	£18	£0.2

Access - level 1

No cost - equivalent to Part M

Access - level 2

Small

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	8	£52.00	£416
Architect (External Design Work)	8	£52.00	£416
Buyer	3	£57.00	£171
Construction Manager	3	£57.00	£171
Total	22		£1,174
	Nr dwelling types		2
	Nr dwellings		5
	£/type		£587
	£/dwelling		£235

Medium

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	20	£52.00	£1,040
Architect (External Design Work)	10	£52.00	£520
Buyer	7.5	£57.00	£428
Construction Manager	7.5	£57.00	£428
Total	45		£2,415
	Nr dwelling types		5
	Nr dwellings		50
	£/type		£483
	£/dwelling		£48

Large

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	40	£52.00	£2,080
Architect (External Design Work)	15	£52.00	£780
Buyer	15	£57.00	£855
Construction Manager	15	£57.00	£855
Total	85		£4,570
	Nr dwelling types		10
	Nr dwellings		100
	£/type		£457
	£/dwelling		£46

Recipient Costs

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	0.5	£23	£5
Medium	50	£46	4	£184	£4
Large	100	£46	8	£368	£4

Type Approval (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	8	£52	£416
Total	8		£416

Type Approval Recipient Costs

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2	£92	£92

Access - level 3

Small

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	7.5	£52.00	£390
Construction Manager	4	£57.00	£228
Total	11.5		£618
	Nr dwelling types		1
	Nr Wheelchair dwellings		1
	£/type		£618
	£/dwelling		£618

Medium

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	22.5	£52.00	£1,170
Construction Manager	12	£57.00	£684
Total	34.5		£1,854
	Nr dwelling types		3
	Nr Wheelchair dwellings		5
	£/type		£618
	£/dwelling		£371

Large

Professional	Total hours	Hourly Rate	Total
Architect (Internal Design Work)	45	£52.00	£2,340
Construction Manager	24	£57.00	£1,368
Total	69		£3,708
	Nr dwelling types		6
	Nr Wheelchair dwellings		10
	£/type		£618
	£/dwelling		£371

Recipient Costs

	Wheelchair Dwellings	Rate	Hrs	Total	£/dwelling
Small	1	£46	0.5	£23	£23
Medium	5	£46	3.5	£161	£32
Large	10	£46	7	£322	£32

Type Approval (per dwelling type)

Professional	Total hours	Hourly Rate	Total
Design Team	10	£52	£520
Total	10		£520

Type Approval Recipient Costs

Dwelling Type	Rate	Hrs	Total	£/dwelling
1	£46	2.5	£115	£115

Small Scheme Process

Lifetime Homes

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	15	£52.00	£780
Architect (external items)	12	£52.00	£624
Buyer	4	£57.00	£228
Construction Manager	4	£57.00	£228
Total	35		£1,860
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£930	
	£/dwelling	£372	

Current Space Standard

Professional	Total hours	Hourly Rate	Total
Architect	15	£52.00	£780
Total	15		£780
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£390	
	£/dwelling	£156	

The Planning and Energy Act

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	3	£49.00	£147
Total	3		£147
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£74	
	£/dwelling	£29	

Wheelchair Housing Design Guide

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	7.5	£57.00	£428
Construction Manager	15	£57.00	£855
Total	67.5		£3,623
	Nr dwelling types	1	
	Nr of wheelchair dwellings	1	
	£/type	£3,623	
	£/dwelling	£3,623	

Secured by Design

Professional	Total hours	Hourly Rate	Total
Design Team	12.5	£52	£650
Total	12.5		£650
	Nr dwelling types	2	
	Nr dwellings	5	
	£/type	£325	
	£/dwelling	£130	

Code for Sustainable Homes

- Refer to separate spreadsheet

Medium Scheme Process

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	37.5	£52.00	£1,950
Architect (external items)	15	£52.00	£780
Buyer	10	£57.00	£570
Construction Manager	10	£57.00	£570
Total	72.5		£3,870
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£774	
	£/dwelling	£77	

Professional	Total hours	Hourly Rate	Total
Architect	30	£52.00	£1,560
Total	30		£1,560
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£312	
	£/dwelling	£31	

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	3	£49.00	£147
Total	3		£147
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£29	
	£/dwelling	£3	

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	11.5	£57.00	£656
Construction Manager	11	£57.00	£627
Total	67.5		£3,623
	Nr dwelling types	3	
	Nr of wheelchair dwellings	5	
	£/type	£1,208	
	£/dwelling	£725	

Professional	Total hours	Hourly Rate	Total
Design Team	15	£52	£780
Total	15		£780
	Nr dwelling types	5	
	Nr dwellings	50	
	£/type	£156	
	£/dwelling	£16	

Large Scheme Process

Professional	Total hours	Hourly Rate	Total
Architect (internal items)	75	£52.00	£3,900
Architect (external items)	20	£52.00	£1,040
Buyer	20	£57.00	£1,140
Construction Manager	20	£57.00	£1,140
Total	135		£7,220
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£722	
	£/dwelling	£72	

Professional	Total hours	Hourly Rate	Total
Architect	50	£52.00	£2,600
Total	50		£2,600
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£260	
	£/dwelling	£26	

Professional	Total hours	Hourly Rate	Total
Mechanical & Electrical Engineer / Sustainability specialist (100%)	7.5	£49.00	£368
Total	7.5		£368
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£37	
	£/dwelling	£4	

Professional	Total hours	Hourly Rate	Total
Architect	45	£52.00	£2,340
Buyer	7.5	£57.00	£428
Construction Manager	15	£57.00	£855
Total	67.5		£3,623
	Nr dwelling types	6	
	Nr of wheelchair dwellings	10	
	£/type	£604	
	£/dwelling	£362	

Professional	Total hours	Hourly Rate	Total
Design Team	20	£52	£1,040
Total	20		£1,040
	Nr dwelling types	10	
	Nr dwellings	100	
	£/type	£104	
	£/dwelling	£10	

Recipient Process

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	5	£230	£46
Medium	50	£46	7.5	£345	£7
Large	100	£46	14	£644	£6

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	5	£230	£46
Medium	50	£46	7.5	£345	£7
Large	100	£46	14	£644	£6

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	4	£184	£37
Medium	50	£46	6	£276	£6
Large	100	£46	12	£552	£6

	Wheelchair Dwellings	Rate	Hrs	Total	£/dwelling
Small	1	£46	2	£92	£92
Medium	5	£46	4	£184	£37
Large	10	£46	8	£368	£37

	Dwellings	Rate	Hrs	Total	£/dwelling
Small	5	£46	4	£184	£37
Medium	50	£46	6	£276	£6
Large	100	£46	12	£552	£6

