Cabinet Office

Government Construction

Construction Cost Benchmarks, Cost Reduction Trajectories & Indicative Cost Reductions April 2011 to March 2012: Addendum July 2012

2nd July 2012

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INTRODUCTION

This document updates the construction cost benchmarking information that was published in April 2012. It includes data published for the first time by London Underground[1] and an update on the cost reductions achieved during FY 2011-12, together with additional data from some of the departments encompassed by the earlier publication (for more detail, refer to **Table 2** below).

Otherwise the document remains as it was April 2012, when for the first time a series of cost distribution charts were published that presented the individual project data points from which the tabulated cost benchmarks were derived. The April 2012 updates to the cost reduction trajectories - i.e. the *speed* with which cost reduction will be achieved - also remain unchanged.

Taken together this information shows the range of costs currently paid for departmental construction projects and the plans departments are developing to reduce those costs, while providing further evidence that the Government Construction Strategy's overarching target - to achieve a sustainable[2] reduction in the cost of construction by 15-20% by the end of this parliament - is practicable.

The experience of leading clients in other sectors shows the availability of cost benchmarking and cost reduction plans to be essential to incentivise higher levels of integrated team working, continuous improvement and effective innovation. This in turn enables increasingly challenging cost envelopes to be set for future projects, as innovative construction firms rise to the challenge to *"beat the benchmark"*. Benchmarks themselves will fall over time and costs will increasingly cluster at the lower end of the range of costs currently paid for similar products.

This publication thus supports the new procurement models being trialled as part of the delivery of the Government Construction Strategy. These trials are not the only way in which Government will procure, but are three ways of developing a new approach towards early contractor involvement in an integrated team, within an environment which remains competitive.

[1] The publication April 2012 already included data from Department of Health (DoH / P21), DEFRA / Environment Agency (DEFRA / EA), DfE / Education Funding Agency (DfE / EFA, formerly Partnerships for Schools), DfT / Highways Agency (DfT / HA), DCLG / Homes and Communities Agency (DCLG / HCA), Ministry of Defence (MoD), Ministry of Justice (MoJ) and Network Rail.
[2] Without adversely impacting either whole life value or the long term financial health of the construction industry.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

The publication also continues the process of making Government more transparent and accountable to citizens and taxpayers. The information it contains should provide a helpful point of reference for the wider public sector – for example Health Trusts and Local Authorities – in determining standard costs for their projects.

Moving forward, the information within this document will be added to and updated on an annual basis and reporting of progress against the cost reduction trajectories will also be incorporated. This document therefore incorporates baseline benchmarks that will be used to monitor progress by the departments concerned.

In the meantime, Cabinet Office will work together with departments to extend the application of cost reducing approaches to the totality of the Government's construction expenditure. This activity will also continue the work already underway to identify and learn from comparisons made against equivalent private sector cost benchmarks.

Feedback and queries on this document, including proposals opening the opportunity to exchange construction cost data with industry organisations, would be very welcome and should be sent to: GovernmentConstructionTeam@cabinet-office.gsi.gov.uk).

Summary of the benchmark data, cost reduction plans and *indicative* cost reductions achieved 2011/12

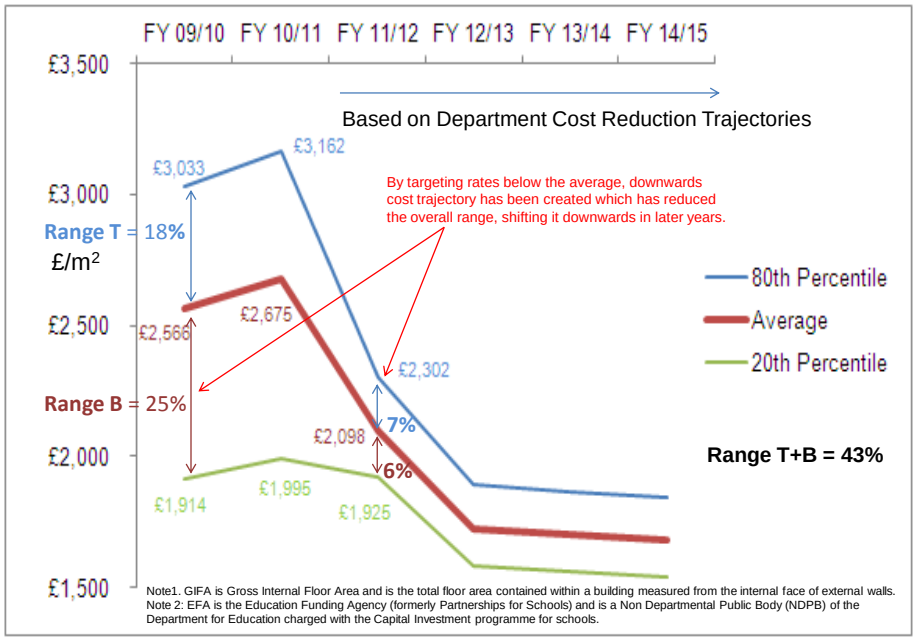
Benchmarks: Departmental cost benchmarks are presented in the form of charts and tables. The charts present data points relating to a range of projects, while the tables summarise these data points in the form of single point averages and ranges defined by the 20th and 80th percentile thresholds. Typically the charts (refer to **Charts 3 to 17** below) present the 2009/10 baseline cost distribution, while the tables (refer to **Tables 4 to 10, 13 to 14** and **Annex A** below) also provide more recent data for 2010/11 and 2011/12.

The initial trends that are visible indicate that the departments reporting benchmarks for 2011/12 are making progress in reducing their costs compared to the 2009/10 baseline. The percentage difference between the 80th percentile and the average, divided by the average, is denoted as **Range T** and is illustrated on **Chart 1** below. **Range T** typically ranges from circa 10% to 30% and provides an indication of the opportunity available to departments to target costs lying between the average and 20th percentile (**Range B**), which would establish a cost reducing feedback loop and corresponding cost reduction (refer to illustration of this outcome in

Chart 1, which is based on data from Table 10). This is the basis of the new cost led and continuous improvement focused models of procurement that are to be trialled.

A more detailed analysis of the **Range T** and **Range T+B** values is presented in the charts below with corresponding commentary provided in **Table 3**.

Chart 1: Illustration: DfE/EFA GIFA for 4000 – 6000m^2



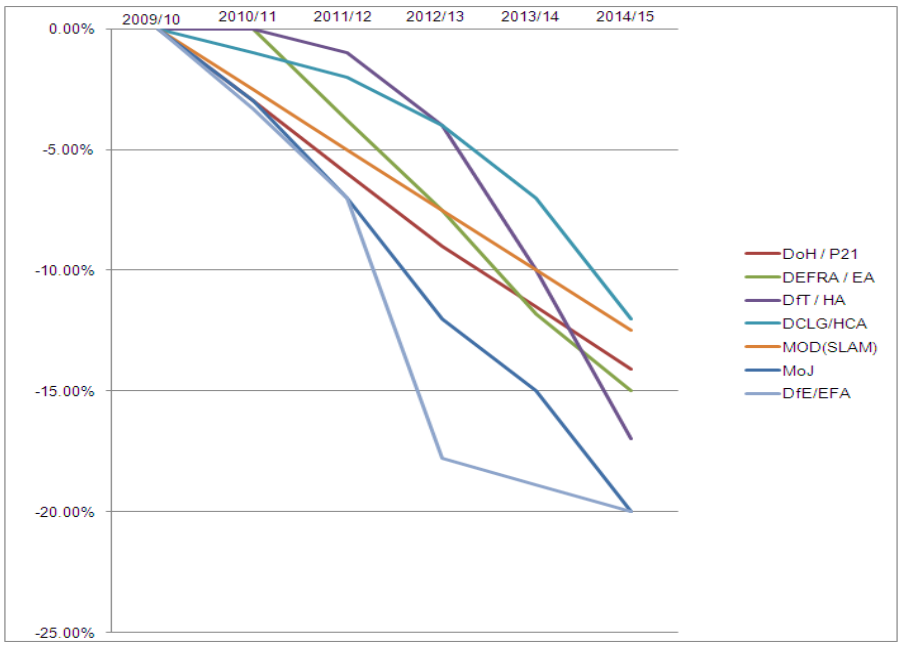
Discussions are underway between the Building Cost Information Service and departments to develop comparisons between public and private benchmarks. An important aspect of making such comparisons is to understand precisely what has been included or excluded within any given benchmark and this is addressed in **Tables 11, 12 and 15** in the main body and **Annex B** of this document.

Cost Reduction Trajectories: The Cost Reduction Trajectories included in this document **(Table 16)** – which are shown in graphical form in **Chart 2** below - confirm that departments have committed to trajectories that will deliver between 12% and 20% by the end of this Parliament. The departmental initiatives that will be implemented to achieve these trajectories have been set out in **Table 17**[3] and, where relevant, Cabinet Office will work with departments to ensure trajectories are developed further towards meeting the aspiration of achieving 15-20% cost reduction. Cost reduction trajectories will also be revised in the light of the

[3] Table 17 also provides explanations for the relative shapes of the different departmental trajectories provided in Table 16.

development of work to promote the Government Construction Strategy, notably the outcome of the new trial projects.

Chart 2: Department Cost Reduction Trajectories



***Indicative* Cost Reductions achieved during 2011/12:** The February 2012 publication reported cost reductions achieved by departments between May 2010 and September 2011. **Table 1** below restates the proportion of these related to the period April to September 2011, while adding further *indicative* cost reductions achieved by departments during the period October 2011 to March 2012. **The *indicative* cost reductions for FY 2011/12 in Table 1 are currently subject to completion of a Cabinet Office internal audit[4] and *final* figures will therefore be published, together with those from other Government expenditure categories, later in 2012.**

In the meantime, Table 1 has been modified to distinguish between WHOLE PROJECT LIFE[5] and IN YEAR *indicative* cost reductions. Additional data is therefore included from DfE / EFA, DfT / HA and DCLG / HCA, while updated figures are included from DEFRA / EA. Re-

[4] Facilitating overarching Cabinet Office reporting of progress, internal audit is only performed on the IN YEAR portion of WHOLE PROJECT LIFE cost (in this case the portion relating to FY 2011-12).
[5] Predominantly those cost reductions relating to the total project value corresponding to the construction phase and which are therefore realised over a number of years.

categorised, the overall *indicative* cost reductions declared by departments for FY 2011/12 are therefore in the order of:

- **whole project life:** £279m on an expenditure of around £2.6bn (>10%);

- **in year:** £72m on an expenditure of £476m (15.1%).

In general, these overarching *indicative* cost reductions represent lower spending confirmed during the development and construction phases of specific projects awarded and registered by departments and devolved bodies during FY 2011/12. The relatively high percentages reflect that a significant proportion of reported data is from DfE / EFA and DfT / HA and these departments are particularly well advanced in implementing the principles set out in the Strategy.

All *indicative* cost reductions for FY 2011/12 have been calculated on the basis of department-specific methods in advance of the introduction from April 2012 of the cross Government Cost Reduction Validation Method, which was described in the February 2012 publication[6]. Table 1 therefore outlines how the *indicative* cost reductions have been derived by each department.

Table 1: *Indicative* cost reductions achieved April 2011 to March 2012

Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[7]**	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** (subject to completion of internal audit[8])	**How these figures have been derived using department specific methods** (for more detail, refer to Table 18 below)
DoH / P21	£22m	-	Cost reductions have been derived by applying a confirmed fee rate reduction of 3%[9] to the capital values registered on the DoH / P21 database of projects / schemes during FY 2011/12. The capital values represent

[6] In reporting cost reductions from April 2012 onwards, it will be necessary to ensure that cost reductions are reconciled against the corresponding annual portion already reported for FY 2010/11 and FY 2011/12 for multi-year projects - for example, where these are based on target costs that are subject to ongoing validation during the project lifecycle.
[7] The IN YEAR component of the figures remains subject to the outcome of a Cabinet Office internal audit (refer to next footnote). HCA is also giving further consideration to the sustainability of its reported cost reduction (refer to footnote 11 below).
[8] Facilitating overarching Cabinet Office reporting of progress, internal audit is only performed on the IN YEAR portion of WHOLE PROJECT LIFE cost (in this case the portion relating to FY 2011/12).
[9] The fee rate reduction is a combination of reduced overhead, profit and staff design rates.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 1: *Indicative* cost reductions achieved April 2011 to March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12**[7]	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** (subject to completion of internal audit[8])	**How these figures have been derived using department specific methods** (for more detail, refer to Table 18 below)
			an estimate Health Trusts provide when they register a project / scheme. The fee rates cover work by the Principal Supply Chain Partner (PSCP) in developing and constructing the project over a number of years. On appointment, the PSCP also works with a Trust to develop the scheme in more detail to develop a contract award value (Guaranteed Maximum Price). As a consequence, it is envisaged that further development and construction related cost reductions would be identified and reported in subsequent years against the same capital value.
DEFRA / EA	£6m (TBC)[10]	-	Cost reductions encompass multi-year projects reaching contract award during FY 2011/12. They represent costs avoided prior to business case sign off (from procurement initiatives or where a new issue arises and is addressed without additional outlay) and cash released after the approval of the business case.
DfT / HA	£81m	£21m	The £81m represents the indicative total cost reduction taken into contract

[10] Provisional figure to be confirmed Summer 2012.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 1: *Indicative* cost reductions achieved April 2011 to March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12**[7]	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** (subject to completion of internal audit[8])	**How these figures have been derived using department specific methods** (for more detail, refer to Table 18 below)
			(target cost) across the three schemes approved for construction in 2011/12. The indicative cost reduction of £21m represents the proportion of the £81m taken into contract (target cost) that was achieved during FY 2011/12.
DCLG / HCA	£16m	-	The figure provided relates to New Build construction. It has been determined by multiplying the difference between benchmark rates achieved in 2011/12 and baseline rates from 2009/10, with the actual 2011/12 construction spend reported by social housing providers[11]. Refurbishment (Decent Homes) data will be available final quarter 2012. Cost benchmark data and cost reduction trajectories are included in the main body of this document.
MoD	£4m	-	Cost reductions have been derived on the basis of award costs (maximum price target costs) for SLAM[12] projects commenced during FY 2011/12 with

[11] Having received and sense checked data from providers, HCA is now engaging with them to gather qualitative evidence about how these relatively significant cost reductions (12.4%) were achieved and to establish whether they can be considered sustainable - as defined within footnote 2 above – or, alternatively, confirm the extent to which the principles of the Strategy will need to be further embedded in order to make them sustainable. It is therefore anticipated that HCA should be in the position to confirm the outcomes of this engagement by Spring 2013. Once the factors behind the cost reductions for 2011/12 have been established, HCA will then review the trajectory set out in Chart 2 and Table 16 to confirm its ongoing validity.

[12] MoD Single Living Accommodation Programme. For further details refer to Tables 17 and 18 below.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 1: *Indicative* cost reductions achieved April 2011 to March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12**[7]	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** (subject to completion of internal audit[8])	**How these figures have been derived using department specific methods** (for more detail, refer to Table 18 below)
			construction durations of several years. Many of the tender packages have therefore yet to be let and cost reductions are estimated on the basis of those achieved in the previous period.
MoJ	£12m	-	Cost reductions encompass multi-year projects reaching contract award during FY 2011/12. They have been derived from the difference between the project value at Outline Business Case / initial Tender Price (if higher) and the project value at Final Business Case / Contract Award.
DfE / EFA	£138m	£51m	Cost reductions represent the proportion attributed to FY 2011/12 that corresponds with the contract award values confirmed for projects achieving financial close by 31 March 2012. The balance of the cost reductions for the corresponding projects would therefore be delivered during subsequent years.
Totals	**£279m**[13]	**£72m**	

[13] The figure of £279m includes the £72m.

SCHEDULE OF UPDATES: COMPARISON WITH DOCUMENT PUBLISHED FEBRUARY 2012

To identify the updates included in this version, Table 2 below provides a summary comparison with the earlier versions of this document published February and April 2012.

Table 2: Schedule of updates: Comparison with the earlier version of this document published February 2012 (further additions since April 2012 are marked in bold italics)

Department	Cost Benchmarks	Cost Reduction Trajectories	*Indicative* Cost Reductions April 2011 to March 2012
DoH / P21	New Charts 3 and 4 Updated Table 4: new 2011/12 data Updated Table 11: additional commentary	Published Feb 2012	Updated: Tables 1 and 18
DEFRA / EA	New Charts 5 and 6 Updated Table 5: new 2011/12 data ***July 2012: updated Table 5: further 2011/12 data***	Published Feb 2012	Updated: Tables 1 and 18 ***July 2012: updated Tables 1 and 18***
DfT / HA	New Charts 7 and 8 Updated Table 6: updated data (all years) and new 2011/12 data	Published Feb 2012	Updated: Tables 1 and 18 ***July 2012: updated Tables 1 and 18***

Table 2: Schedule of updates: Comparison with the earlier version of this document published February 2012 (further additions since April 2012 are marked in bold italics)			
Department	**Cost Benchmarks**	**Cost Reduction Trajectories**	***Indicative* Cost Reductions April 2011 to March 2012**
	Updated Table 11: additional commentary		
DCLG / HCA	First publication of: - Charts 9 to 13 - Table 7 - Annex B: Tables 19 to 23 ***July 2012: First publication of New Build data for 2011/12: updated Tables 7, 19 to 23***	First publication within: Chart 2 Table 16	***July 2012: First publication of New Build data: updated Tables 1 and 18*** Refurbishment (Decent Homes) data not available until final quarter 2012
LU	***July 2012: First publication of:*** ***-Data in Table 13*** ***-Commentary in Table 15***	n/a	n/a
MoD	First publication of: - Chart 14 - Table 8	First publication within: Chart 2 Table 16	Updated: Tables 1 and 18
MoJ	Updated Table 9: new and updated data (all years) Updated Table 12: additional commentary	Published Feb 2012	Updated: Tables 1 and 18
NR	First publication of: Tables 14 and 15	n/a	n/a
DfE / EFA	New Charts 15 to 17	Published Feb 2012	Updated: Tables 1 and 18 ***July 2012: updated Tables 1 and 18***

DEPARTMENT COST BENCHMARK DATA: INTRODUCTION

Cost benchmarks for government departments and the regulated and wider public sectors are presented in the following sections in the form of charts and tables. The charts present data points relating to a range of projects, while the tables summarise these data points in the form of single point averages and ranges defined by the 20th and 80th percentile thresholds[14]. Typically the charts present the 2009/10 baseline cost distribution, while the tables also provide more recent data for 2010/11 and 2011/12.

The cost levels reported in this document will be influenced by policy imperatives beyond those covered by the Government Construction Strategy.

The department cost benchmark data given in the next sections encompasses the following types of benchmark**:**

Type 1 Benchmarks (Spatial Measures) encompass the most common formats used by clients and industry to benchmark total construction costs, for example: £/m, £/m^2, £/m^3. They are related to *throughput* (quantity) in the sense, for example, of square metres of accommodation delivered by a project.

Type 2 Benchmarks (Functional Measures) encompass a range of more department-specific benchmarks, which address *business outcomes* per £ for example: £/Place; Flood Damage Avoided £/Investment £.

Type 3 Benchmarks address a range of more department-specific benchmarks but where *business outcomes* are related only indirectly to the benchmark, for example: ratio of product cost (or alternatively development cost) to total construction cost.

Type 4 Benchmarks are similar to Type 1 benchmarks but applied at an *elemental throughput* (quantity) level, for example: foundation costs £/m, £/m^2 or £/m^3. They are

[14] The Highways Agency is able to calculate each project cost using probabilistic three point estimating and estimating software with Monte Carlo simulation capability. Based upon the principles of three point estimating the minimum, most likely and maximum cost for every activity is used to the produce the estimates. The Highways Agency therefore provides an 80% confidence probability by reporting the P10, P50 and P90 costs. This could be for individual schemes or a group of schemes or portfolio of schemes. Therefore, for example, setting a project forecast on the basis of a P90 result would indicate a larger contingency than one based on a P50 result.

only applied within this document, when elements taken together represent majority of spend.

Cost benchmark data for each department are presented in Charts 3 to 17, Tables 4 to 10, 13 to 14 and in Annex A below. These are to be read in conjunction with:

- Tables 11, 12 and 15, which provide corresponding notes and commentary; and
- Annex B, which details the cost components included within each department's cost benchmark data.

In general, cost benchmarks are reported in this document at the prices current during the corresponding period i.e. they are not inflation adjusted. So, for example, the 2009/10 baseline benchmarks are reported at prices current in 2009/10, while the 2011/12 benchmarks are reported at prices current in 2011/12.

The exception to this is where benchmarks are derived from averaging data from a period of more than one year, to ensure either baseline or subsequent annual benchmarks are statistically representative. In these cases, the figures are adjusted to the prices current in the year reported. For example, a 5 year rolling average reported for 2009/10 would be derived from the figures from 2005/06, 2006/07, 2007/08 and 2008/09 adjusted to 2009/10 prices and added to the figures from 2009/10. Where this has been required, it has been highlighted within Tables 11, 12 and 15.

Terminology: Suppliers offer prices to clients - i.e. their internal costs plus overheads and profit - which on the award of a contract become client costs. Therefore what is in effect the same benchmark is denoted as *cost benchmark data* within this document.

DEPARTMENT COST BENCHMARK DATA: CHARTS

The charts included within this section present cost data points relating to a range of Government department projects. Typically these charts show the 2009/10 baseline cost distribution against which future progress would be monitored, plotting unit costs against spatial/size characteristics for different project types.

Though it should be expected that costs will continue to encompass a range, over time the distribution of costs should move down and narrow (as illustrated by Chart 1) as a consequence of implementing the Government Construction Strategy.

In reading these charts, the following should be considered:

1) There are typical patterns where smaller projects tend to have more cost variation than larger projects. This tends to be because smaller projects encompass only some of the range of components that are included within larger projects, while also using different combinations of these components (refer also to Annex B). Smaller projects can also tend to be located on existing sites where there are both physical and operational constraints that drive up cost.

2) Economies of scale can also lead to differences between the unit rates for smaller compared with larger projects, for example, total site establishment may be similar but divided over a larger area for a large project.

3) For brevity, cost data from more than one project type are sometimes plotted on a single chart. Like for like comparisons are therefore possible by comparing data points for the same project type.

4) Unless noted otherwise, all data has been normalised to 2009-10 prices.

5) Typically cost data has been normalised to compensate for regional differences in costs that affect the construction industry as a whole. In some cases data has been provided

instead on a regional basis where this would facilitate more representative like for like comparisons.

6) Where baseline data has been drawn from multiple years, cost variations may also be partly attributed to other factors such as the ongoing development of construction practices and techniques, or changes in standards.

7) The corresponding single point averages and 20th/80th percentile thresholds given in Tables 4 to 10 and Annex A are included with the charts, since – as highlighted in the introduction to this document – they tend to demonstrate the extent of opportunity available to achieve the 15-20% cost reduction target. These are expressed as follows:

Table 3: Definition of Range T, Range T+B and Range B used in the following cost distribution charts

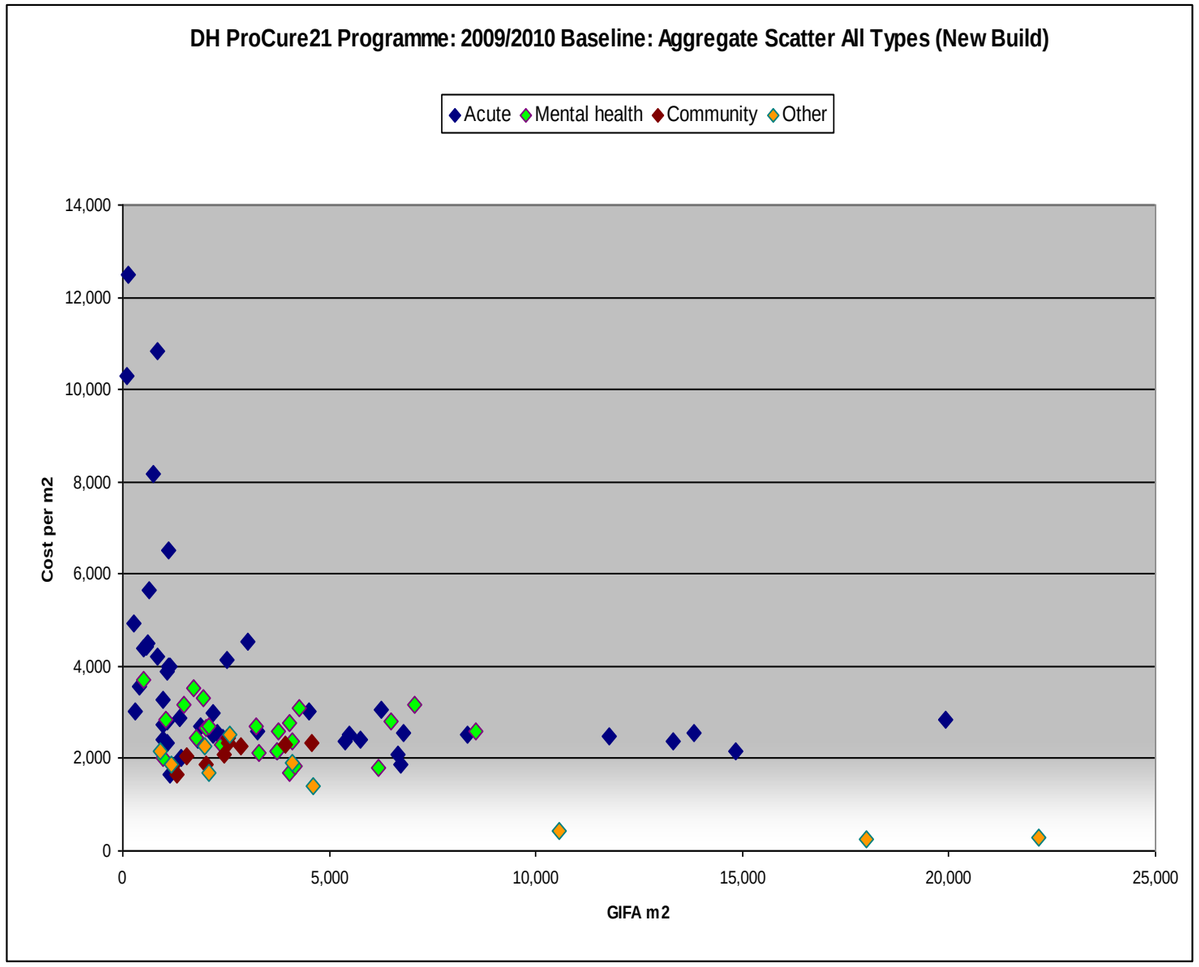
Reference in Charts	Definition (Refer also to **Chart 1** from the Introduction)	Commentary
Range T	Percentage difference between the 80th percentile and the average[15], divided by the average.	Range T values greater than 15-20% (marked thus ✓) indicate that consistent cross Government targeting of costs within Range B should be expected to lead to the achievement of the Government Construction Strategy cost reduction target. In doing so, clients / suppliers might expect to achieve the required cost reductions by learning from the approaches taken on projects already falling within Range B.
Range T+B	Percentage difference between 80th and 20th percentiles, divided by the average. **Note:** only shown when Range T < 15%.	Range T+B values greater than 15-20% (marked thus ✓) indicate that consistent cross Government targeting of costs towards the 20th percentile threshold should be expected to lead to the achievement of the Government Construction Strategy cost reduction target. In doing so, clients / suppliers might therefore only expect to achieve the required gains by adopting new

[15] Average when used in Table 3 refers to the single point averages in Tables 4 to 10 and Annex A i.e. typically the arithmetical mean.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 3: Definition of Range T, Range T+B and Range B used in the following cost distribution charts		
Reference in Charts	**Definition** (Refer also to **Chart 1** from the Introduction)	**Commentary**
		approaches, in addition to learning from approaches taken on projects already falling within Range B.
Range B	Percentage difference between the average and the 20th percentile, divided by the average.	The consistent cross Government targeting of costs within Range B should be expected to lead to ongoing continuous improvement.

Chart 3: Construction Cost Benchmarks for Department of Health (P21 Framework): New Build



What this cost data represents: Normalised new build cost data for 2009-10 and earlier years (dating back to the commencement of the Procure21 framework in 2003) for the following project types: Acute, Mental Health, Community and Other.

Corresponding cost data tables: Refer to Tables 4 and 11 for more details.

Averages and 20th/80th percentile thresholds:

Acute: **80th:** £4440/m^2; **Av:** £3730/m^2; **20th:** £2400/m^2
Range T: 19% ✓

Mental Health: **80th:** £3160/m^2; **Av:** £2620/m^2; **20th:** £2130/m^2
Range T: 21% ✓

Community: **80th:** £2330/m^2; **Av:** £2120/m^2; **20th:** £1880/m^2
Range T: 10%

Range T+B: 21% ✓

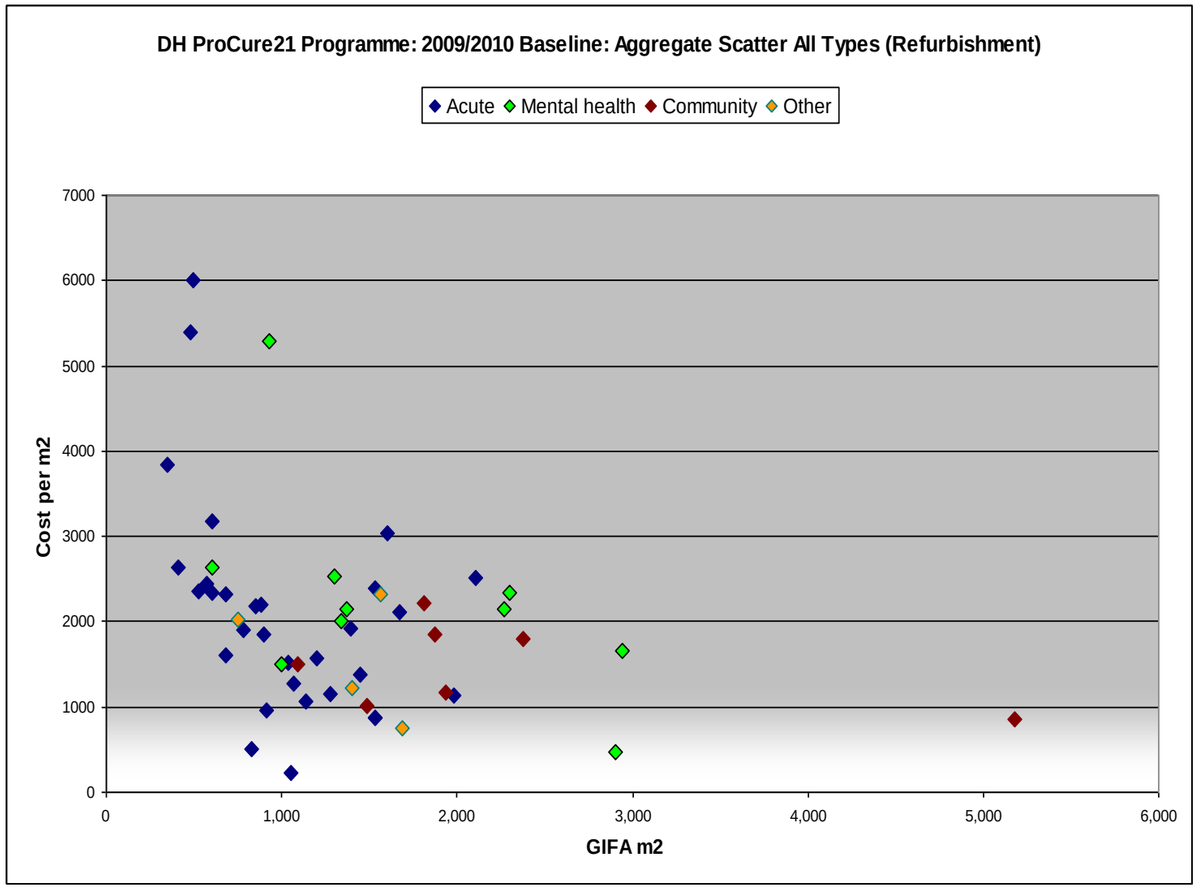
Other: **80th:** £2200/m^2; **Av:** £1480/m^2; **20th:** £450/m^2
Range T: 49% ✓

Chart specific commentary: Healthcare projects vary considerably in terms of functional content, scope and complexity as reflected in the distribution of costs per m^2.This is particularly noticeable within the 'Acute' project type where variance in project scope and content is the greatest.

In terms of projects at the extremes of the £/m^2 ranges: small projects in terms of GIFA can be highly specialised and serviced, on very restrictive inner city sites, constrained by fully functioning acute hospitals operating 24/7, resulting in buildings with high £/m^2. Similarly other projects can be simple in nature, such as multi storey car parks on greenfield sites with relatively low £/m^2. A very small number of projects can potentially be subject to a combination of several cost significant factors that results in a £/m^2 outside normal expectations.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Chart 4: Construction Cost Benchmarks for Department of Health (P21 Framework): Refurbishment



What this cost data represents: Normalised refurbishment cost data for 2009-10 and earlier years (dating back to the commencement of the Procure21 framework in 2003) for the following project types: Acute, Mental Health, Community and Other.

Corresponding cost data tables: Refer to Tables 4 and 11 for more details.

Averages and 20th/80th percentile thresholds:

Acute: **80th:** £2520/m2; **Av:** £2090/m^2; **20th:** £1140/m^2
Range T: 21% ✓

Mental Health: **80th:** £2640/m^2; **Av:** £2270/m^2; **20th:** £1650/m^2
Range T: 16% ✓

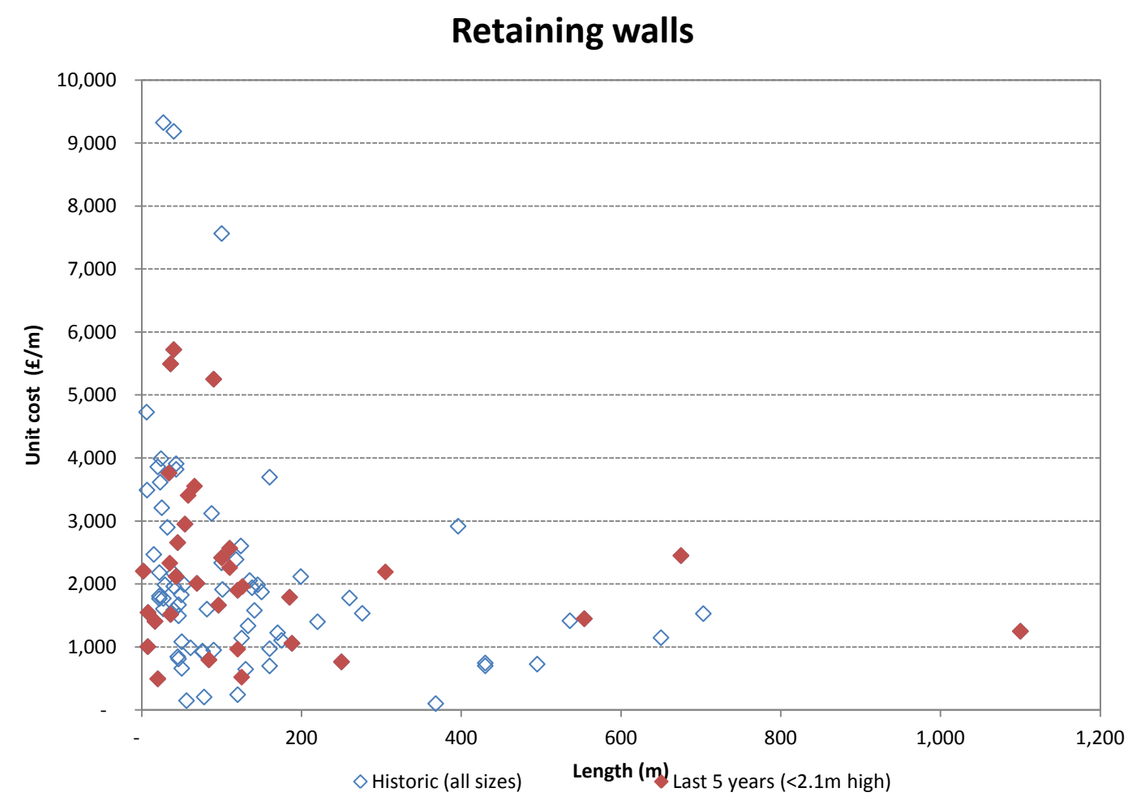
Community: **80th:** £1860/m^2; **Av:** £1490/m^2; **20th:** £1010/m^2
Range T: 25% ✓

Other: **80th:** £2000/m^2; **Av:** £1580/m^2; **20th:** £1220/m^2
Range T: 27% ✓

Chart specific commentary: Healthcare projects vary considerably in terms of functional content, scope and complexity as reflected in the distribution of costs per m^2.This is particularly noticeable within the 'Acute' project type where variance in project scope and content is the greatest.

In terms of projects at the extremes of the £/m^2 ranges: small projects in terms of GIFA can be highly specialised and serviced, on very restrictive inner city sites, constrained by fully functioning acute hospitals operating 24/7, resulting in buildings with high £/m^2. A very small number of projects can potentially be subject to a combination of several cost significant factors that results in a £/m^2 outside normal expectations.

Chart 5: Construction Cost Benchmarks for DEFRA/Environment Agency: Retaining Walls



Information available at March 2012 (inflation using March 2011 prices)

What this cost data represents: Normalised new build cost data for retaining walls collected over the last 10 years addressing: a) last 5 years (2006/07 to 2011/12) for retaining walls < 2.1m high; b) all retaining wall sizes for last 5 years and before (includes retaining walls < 2.1m from before 2006/07).

Corresponding cost data tables: Refer to Tables 5 and 11 for more details.

Averages and 20th/80th percentile thresholds (5 year rolling sample):

80th: £2856/m; **Av:** £2244/m; **20th:** £1145/m

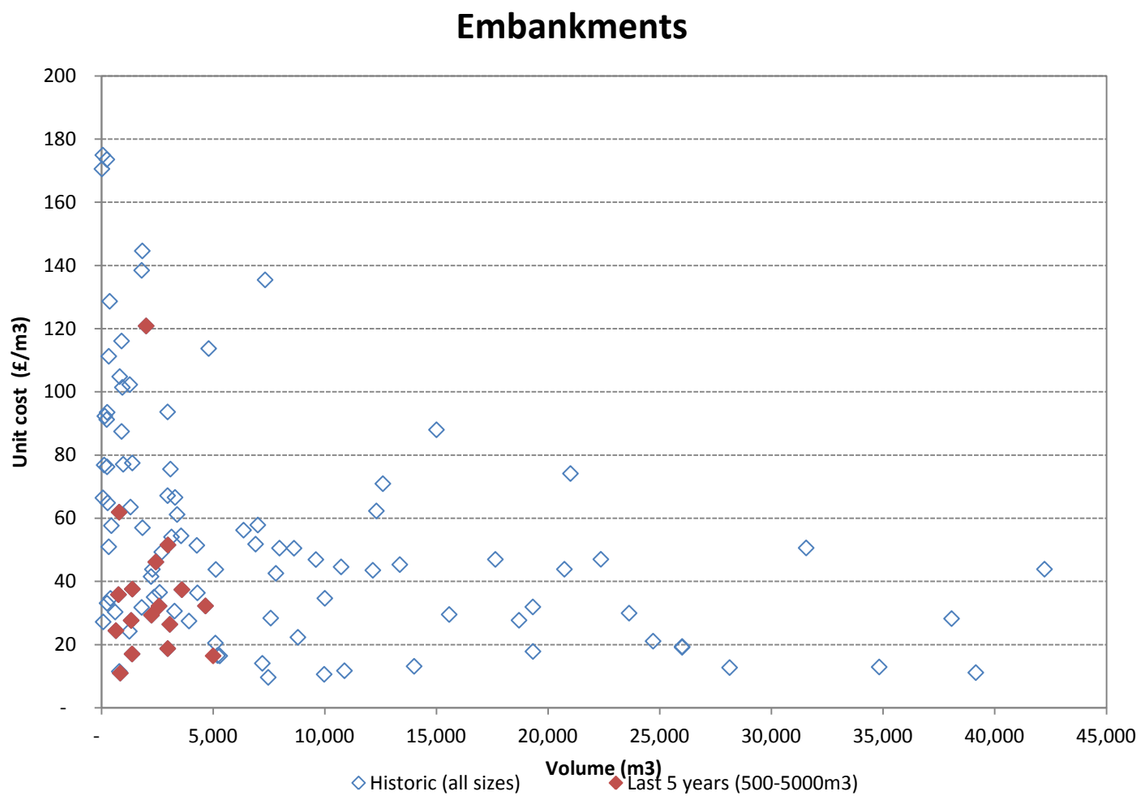
Range T: 27% ✓

Note: Data given in 2011/12 prices.

Chart specific commentary: The costs of retaining walls vary particularly due to:

- site location: some walls are in very restricted locations and may require a lot of changes in direction;
- planning driven finish requirements (for instance whether brick or stone clad);
- distance of site from material sources;
- development in construction techniques to reduce unit costs.

Chart 6: Construction Cost Benchmarks for DEFRA/Environment Agency: Embankments



Information available at March 2012 (inflation using March 2011 prices)

What this cost data represents: Normalised new build cost data for embankments collected over the last 10 years addressing: a) last 5 years (2006/07 to 2011/12) for embankments 500 - 5000 m^3; b) all embankment sizes for last 5 years and before (includes embankments 500 – 5000 m^3 from before 2006/07).

Corresponding cost data tables: Refer to Tables 5 and 11 for more details.

Averages and 20th/80th percentile thresholds (5 year rolling sample):

80th: £38/m^3; **Av:** £31/m^3; **20th:** £17/m^3

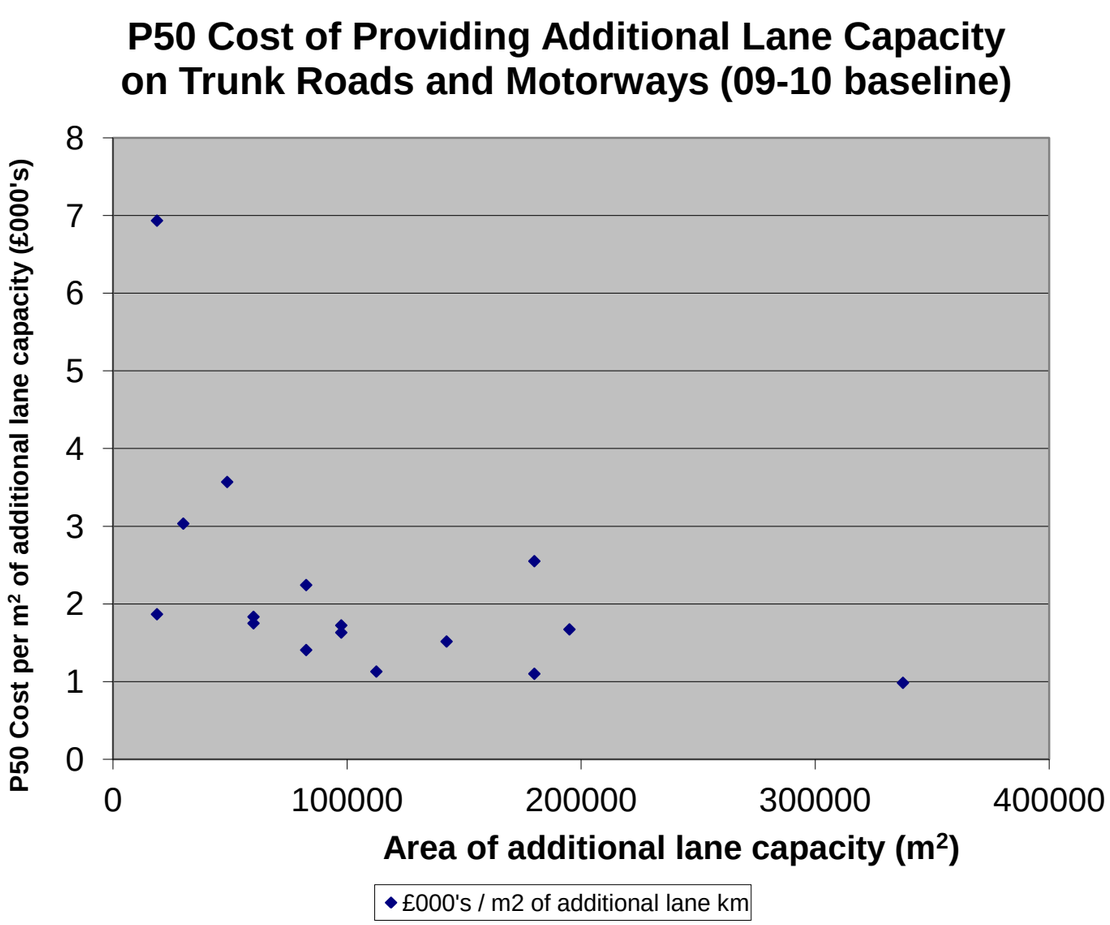
Range T: 23% ✓

Note: Data given in 2011/12 prices.

Chart specific commentary: The costs of embankments vary particularly due to:

- distance of site from material sources: on some sites it is possible to source embankment fill material from on-site borrow pits, elsewhere this may not be possible;
- ease of access to the site;
- development in construction techniques to reduce construction costs.

Chart 7: Construction Cost Benchmarks for DfT/Highways Agency: Trunk Roads and Managed Motorways (2009/10 Baseline)



What this cost data represents: Normalised new build P50 cost data for constructing a m^2 of each additional lane of trunk road or managed motorway. The figures represent the total cost to the client i.e. inclusive of design, client costs and any client retained risk.

Corresponding cost data tables: Refer to Tables 6 and 11 for more details.

Note: Chart is not shown for 2010/11 on account of insufficient data.

Averages and P10/P90 thresholds:

Trunk Road Improvement**: P90:** £3.0K/m^2 ; **Av (P50):** £2.6K/m^2 ; **P10:** £2.1K/m^2

Range T (equivalent): 15% ✓

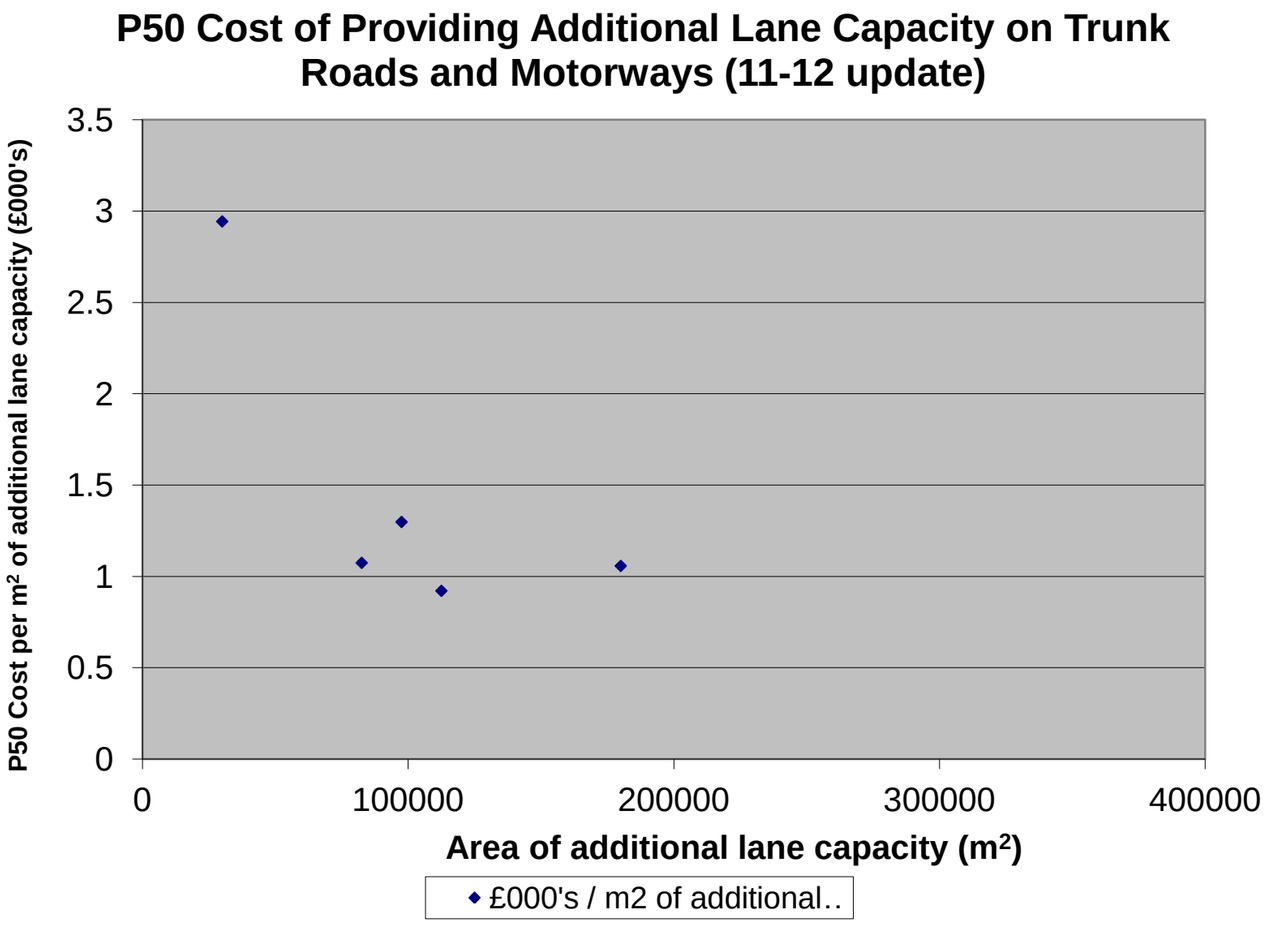
Managed Motorways**: P90:** £2.1K/m^2 ; **Av (P50):** £1.7K/m^2 ; **P10:** £1.3K/m^2

Range T (equivalent): 24% ✓

Chart specific commentary:

There are some large peaks in the data due to the complex nature of particular projects. For example some short projects incorporating complex and/or many structures will have a very high £/m^2.

Chart 8: Construction Cost Benchmarks for DfT/Highways Agency: Trunk Roads and Managed Motorways (2011/12)



What this cost data represents: Normalised new build P50 cost data for constructing a m^2 of each additional lane of trunk road or managed motorway. The figures represent the total cost to the client, i.e. inclusive of design, client costs and any client retained risk.

Corresponding cost data tables: Refer to Tables 6 and 11 for more details.

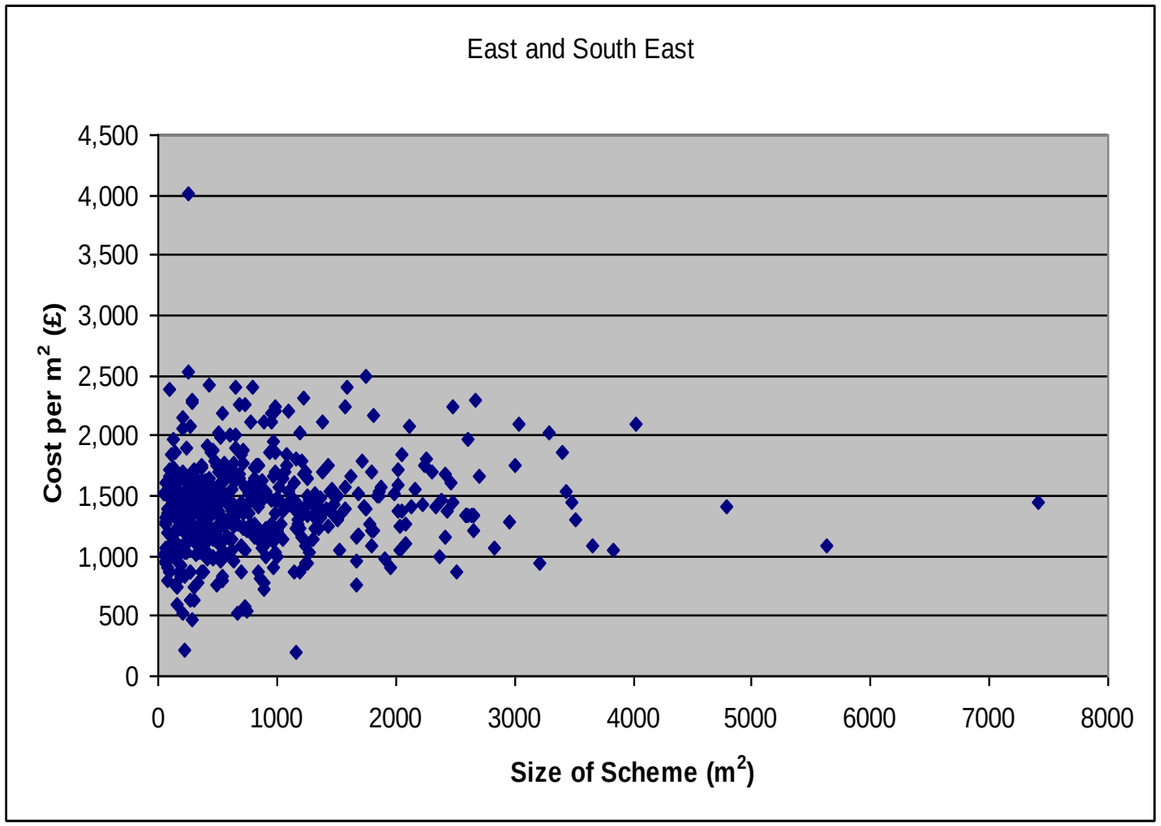
Note: Data given in 2011/12 prices.

Chart specific commentary:

There are some large peaks in the data due to the complex nature of particular projects. For example some short projects incorporating complex and/or many structures will have a very high £/m^2.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Chart 9: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (East and South East HCA Operating Area)



What this cost data represents: Normalised new build cost data for 2009-10 for houses and flats of the following project types: For Rent, For LCHO[16], For Rent/General Needs and For Rent/Supported Housing.

Corresponding cost data tables: Refer to Tables 11 and 19 for more details.

Averages and 20th/80th percentile thresholds:

For Rent: **80th:** £1648/m²; **Av:** £1419/m2; **20th:** £1130/m²
Range T: 16% ✓

For LCHO: **80th:** £1703/m²; **Av:** £1514/m²; **20th:** £1154/m²
Range T: 12%

Range T+B: 36% ✓

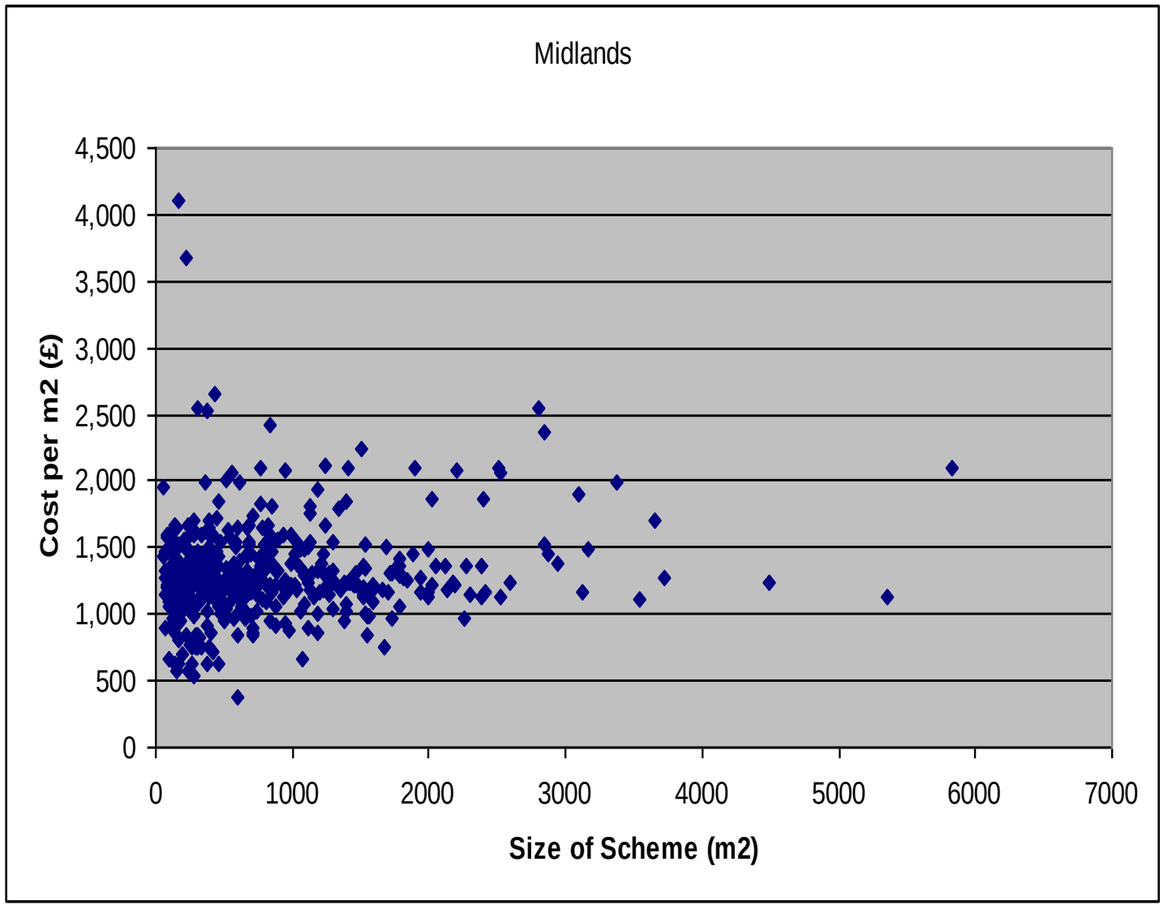
For Rent/General Needs: **80th:** £1628/m²; **Av:** £1405/m²; **20th:** £1123/m²
Range T: 16% ✓

For Rent/Supported Housing: **80th:** £2078/m²; **Av:** £1808/m²; **20th:** £1346/m²
Range T: 15% ✓

Chart specific commentary: Affordable housing projects will vary in size (number of homes), location (urban, rural), the balance of building type (e.g. houses, low rise flats, high rise flats), unit size, and the complexity of construction (greenfield, urban infill). Each of these factors will partially explain construction cost variation, with site and type choices driven by local needs and priorities. The greatest opportunity for construction cost reduction is represented by the larger projects, which also represent a significant proportion of expenditure.

[16] Low Cost Home Ownership

Chart 10: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (Midlands HCA Operating Area)



What this cost data represents: Normalised new build cost data for 2009-10 for houses and flats of the following project types: For Rent, For LCHO, For Rent/General Needs and For Rent/Supported Housing.

Corresponding cost data tables: Refer to Tables 11 and 20 for more details.

Averages and 20th / 80th percentile thresholds:

For Rent: **80th:** £1496/m2; **Av:** £1376/m2; **20th:** £1097/m^2
Range T: 9%

Range T+B: 29% ✓

For LCHO: **80th:** £1455/m^2; **Av:** £1316/m^2; **20th:** £1114/m^2
Range T: 11%

Range T+B: 26% ✓

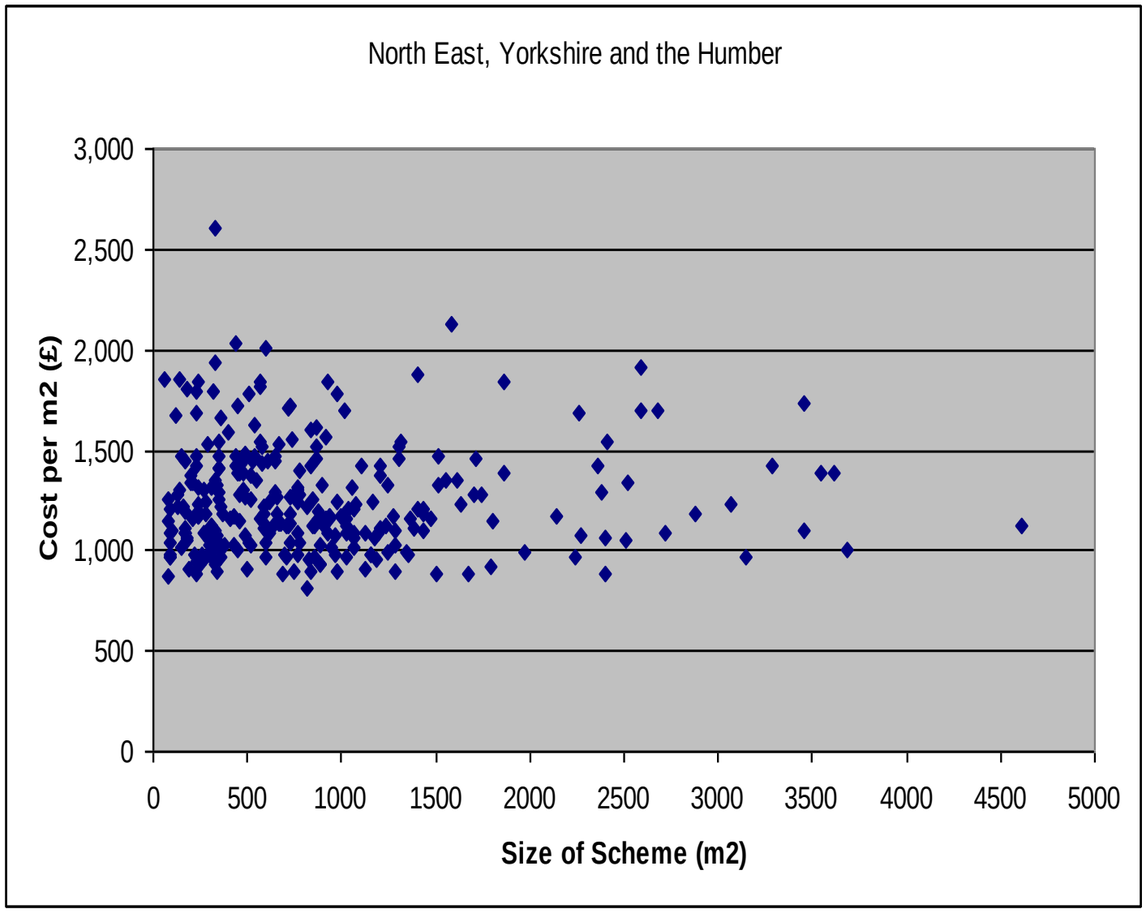
For Rent/General Needs: **80th:** £1456/m^2; **Av:** £1360/m^2; **20th:** £1092/m^2
Range T: 7%

Range T+B: 27% ✓

For Rent/Supported Housing: **80th:** £2543/m^2; **Av:** £1773/m^2; **20th:** £1302/m^2
Range T: 43% ✓

Chart specific commentary: Affordable housing projects will vary in size (number of homes), location (urban, rural), the balance of building type (e.g. houses, low rise flats, high rise flats), unit size, and the complexity of construction (greenfield, urban infill). Each of these factors will partially explain construction cost variation, with site and type choices driven by local needs and priorities. The greatest opportunity for construction cost reduction is represented by the larger projects, which also represent a significant proportion of expenditure.

Chart 11: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (North East, Yorkshire and the Humber HCA Operating Area)



What this cost data represents: Normalised new build cost data for 2009-10 for houses and flats of the following project types: For Rent, For LCHO, For Rent/General Needs and For Rent/Supported Housing.

Corresponding cost data tables: Refer to Tables 11 and 21 for more details.

Averages and 20th/80th percentile thresholds:

For Rent: **80th:** £1467/m2; **Av:** £1273/m2; **20th:** £1044/m2
Range T: 15% ✓

For LCHO: **80th:** £1391/m2; **Av:** £1174/m2; **20th:** £974/m2
Range T: 18% ✓

For Rent/General Needs: **80th:** £1428/m2; **Av:** £1254/m2; **20th:** £1039/m2
Range T: 14%

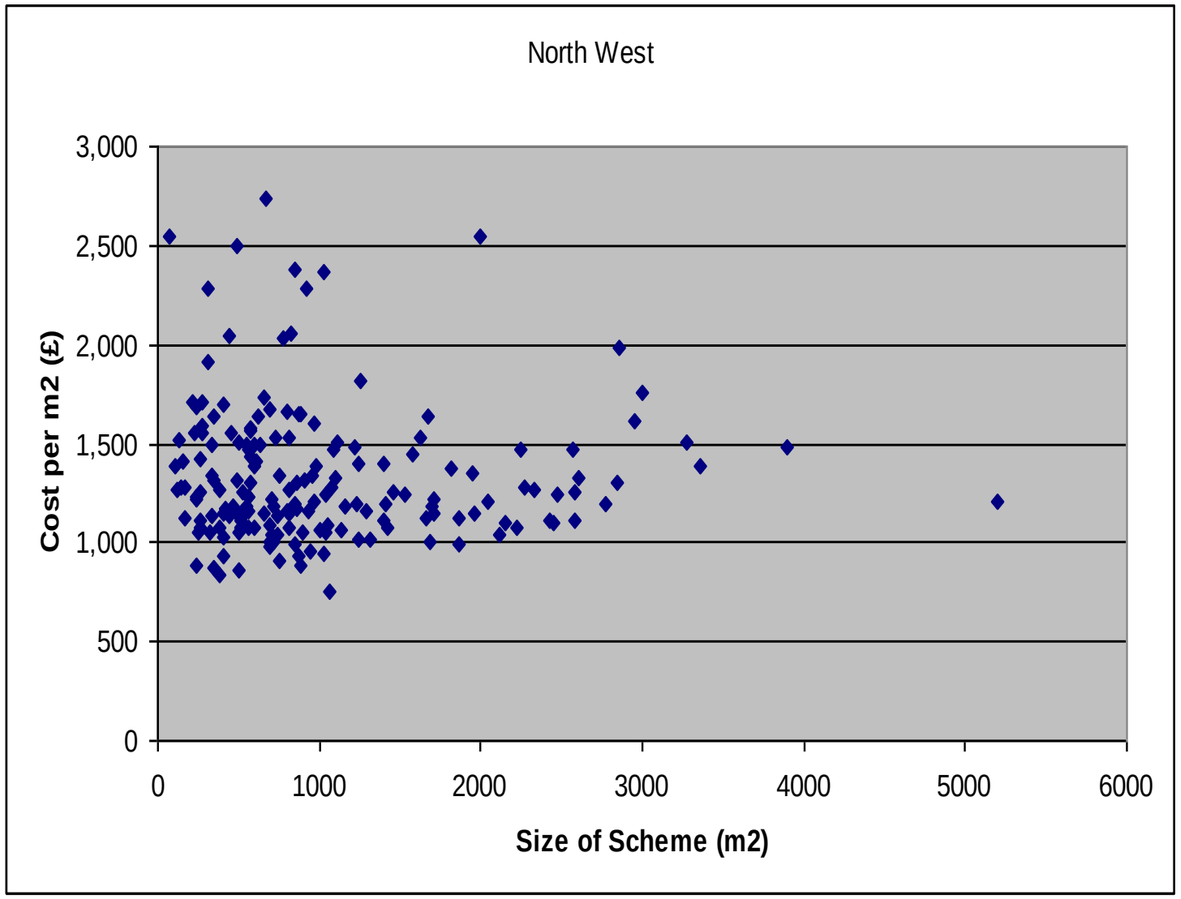
Range T+B: 31% ✓

For Rent/Supported Housing: **80th:** £1804/m2; **Av:** £1703/m2; **20th:** £1428/m2
Range T: 6%

Range T+B: 22% ✓

Chart specific commentary: Affordable housing projects will vary in size (number of homes), location (urban, rural), the balance of building type (e.g. houses, low rise flats, high rise flats), unit size, and the complexity of construction (greenfield, urban infill). Each of these factors will partially explain construction cost variation, with site and type choices driven by local needs and priorities. The greatest opportunity for construction cost reduction is represented by the larger projects, which also represent a significant proportion of expenditure.

Chart 12: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (North West HCA Operating Area)



What this cost data represents: Normalised new build cost data for 2009-10 for houses and flats of the following project types: For Rent, For LCHO, For Rent/General Needs and For Rent/Supported Housing.

Corresponding cost data tables: Refer to Tables 11 and 22 for more details.

Averages and 20th/80th percentile thresholds:

For Rent: **80th:** £1558/m^2; **Av:** £1326/m^2; **20th:** £1087/m^2
Range T: 17% ✓

For LCHO: **80th:** £1488/m^2; **Av:** £1341/m^2; **20th:** £1045/m^2
Range T: 11%

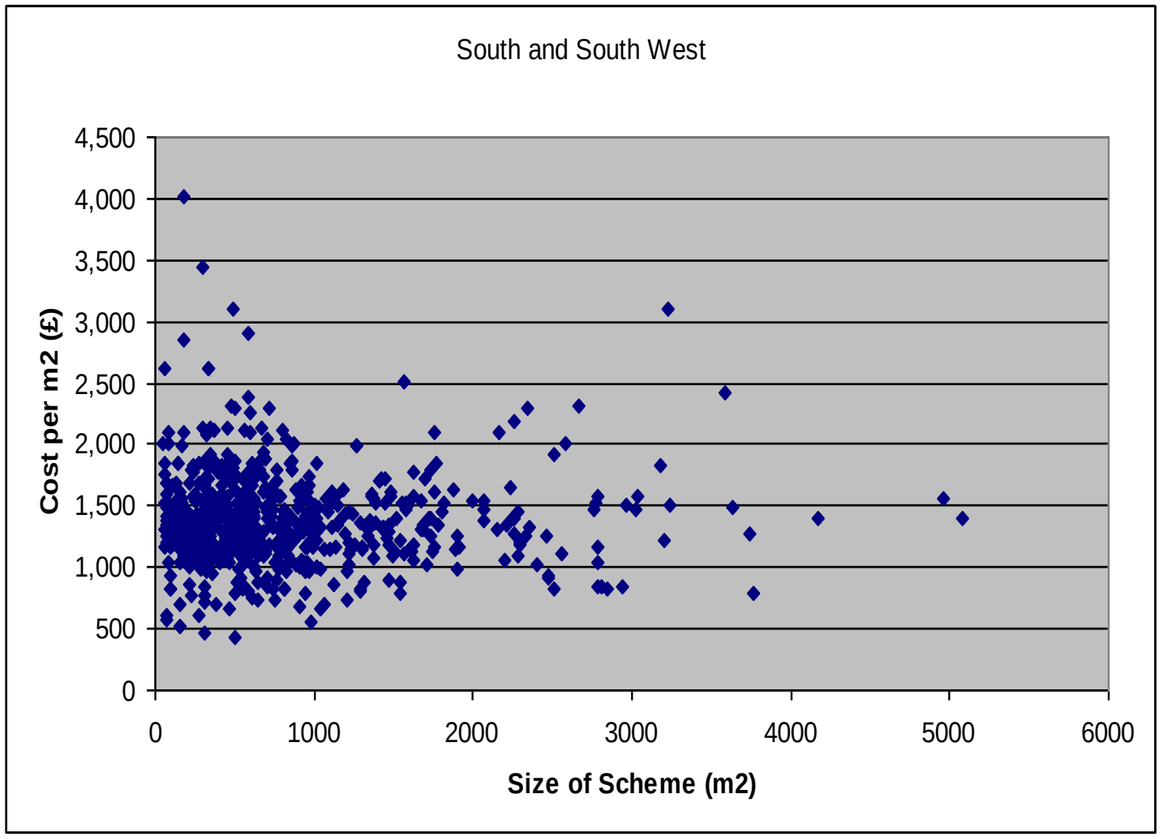
Range T+B: 33% ✓

For Rent/General Needs: **80th:** £1487/m^2; **Av:** £1274/m^2; **20th:** £1080/m^2
Range T: 17% ✓

For Rent/Supported Housing: **80th:** £2283/m^2; **Av:** £1841/m^2; **20th:** £1495/m^2
Range T: 24% ✓

Chart specific commentary: Affordable housing projects will vary in size (number of homes), location (urban, rural), the balance of building type (e.g. houses, low rise flats, high rise flats), unit size, and the complexity of construction (greenfield, urban infill). Each of these factors will partially explain construction cost variation, with site and type choices driven by local needs and priorities. The greatest opportunity for construction cost reduction is represented by the larger projects, which also represent a significant proportion of expenditure.

Chart 13: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (South and South West HCA Operating Area)



What this cost data represents: Normalised new build cost data for 2009-10 for houses and flats of the following project types: For Rent, For LCHO, For Rent/General Needs and For Rent/Supported Housing.

Corresponding cost data tables: Refer to Tables 11 and 23 for more details.

Averages and 20th/80th percentile thresholds:

For Rent: **80th:** £1609/m^2; **Av:** £1394/m^2; **20th:** £1150/m^2;
Range T: 15% ✓

For LCHO: **80th:** £1579/m^2; **Av:** £1339/m^2; **20th:** £1062/m^2;
Range T: 18% ✓

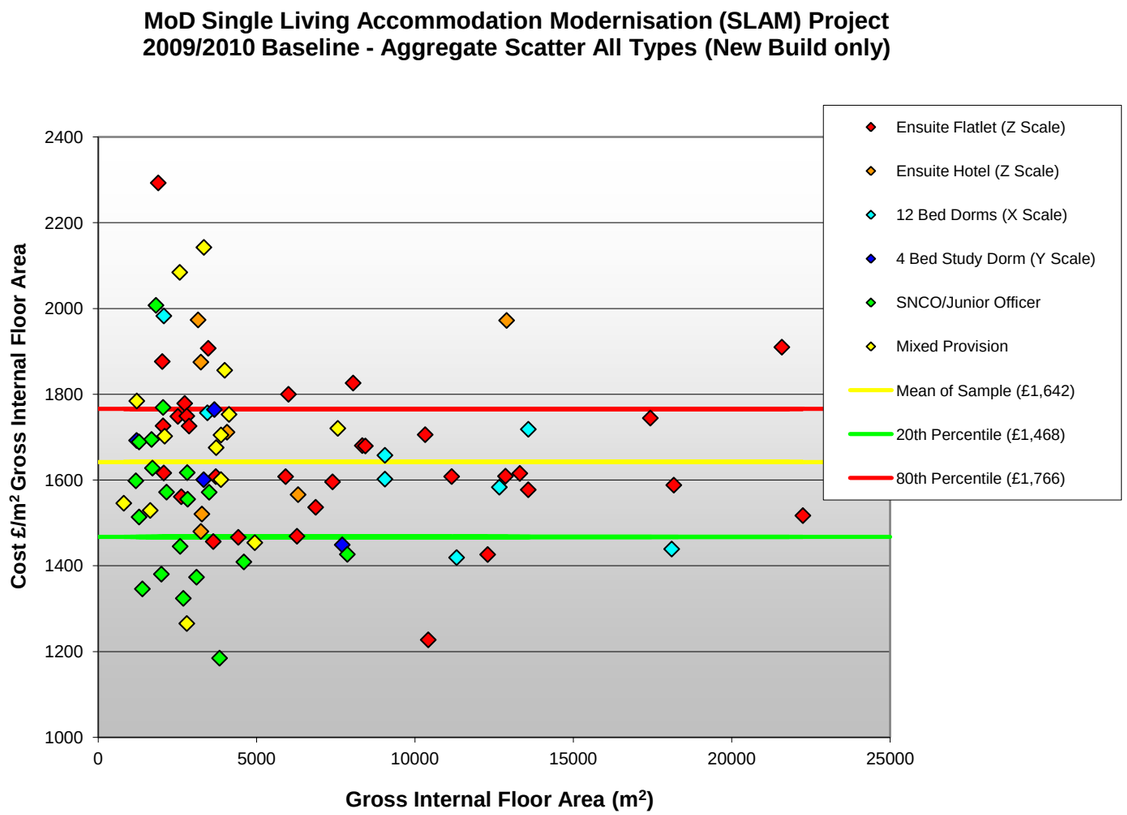
For Rent/General Needs: **80th:** £1588/m^2; **Av:** £1388/m^2; **20th:** £1149/m^2;
Range T: 14%

Range T+B: 32% ✓

For Rent/Supported Housing: **80th:** £3443/m^2; **Av:** £2610/m^2; **20th:** £1827/m^2;
Range T: 32% ✓

Chart specific commentary: Affordable housing projects will vary in size (number of homes), location (urban, rural), the balance of building type (e.g. houses, low rise flats, high rise flats), unit size, and the complexity of construction (greenfield, urban infill). Each of these factors will partially explain construction cost variation, with site and type choices driven by local needs and priorities. The greatest opportunity for construction cost reduction is represented by the larger projects, which also represent a significant proportion of expenditure.

Chart 14: Construction Cost Benchmarks for Ministry of Defence: Single Living Accommodation



What this cost data represents: Normalised new build cost data for all Single Living Accommodation projects let under MoD's Single Living Accommodation Modernisation (SLAM) programme since 2002/03. The sample is split between generic types of accommodation, or – where a mixture of accommodation has been contracted as a single package – a 'Mixed Provision' category.

Corresponding cost data tables: Refer to Tables 8 and 12 for more details.

Averages and 20th/80th percentile thresholds:

80th: £1766/m^2; **Av:** £1642/m^2; **20th:** £1468/m^2

Range T: 8%

Range T+B: 18% ✓

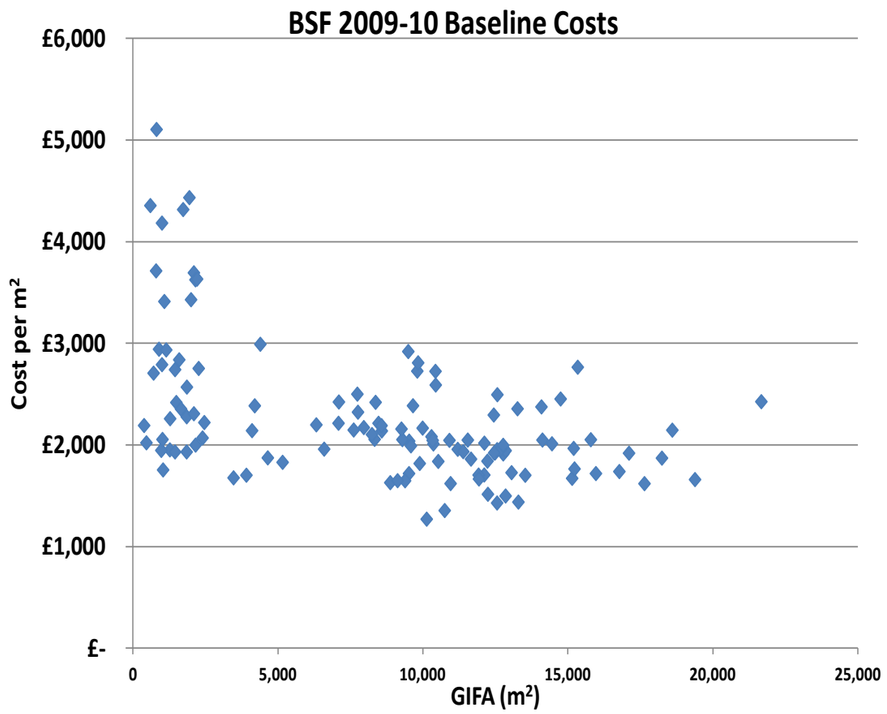
Chart specific commentary: The costs of the various types of accommodation tend to scatter and cluster in slightly different ways, which is generally down to the varying proportions of wet/dry areas per bed. For example Z Scale Flatlet and Hotel formats have individual ensuite provision to each bedroom, whereas X and Y Scales have beds configured in 4 or 12 person dormitories with communal ablution facilities.

Another significant influence on the observed ranges of cost is the extent of external provision within each project. Going forward, data uploaded to the BCIS database – whilst including the overall value of external works – will exclude such values from the £/m^2 Gross internal Floor Area (GIFA). This will enable closer scrutiny of comparable building costs and open up comparison at an elemental level.

The influence of the Gross Internal Floor Areas on costs is somewhat lower than would be expected for works procured under individual contracts. This is because all 2009/2010 baseline projects were procured under the umbrella of the overall SLAM framework, where economy of scale is to an extent already factored in through the original tender reflecting a potential programme of approximately £1b turnover.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Chart 15: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2009/10 Baseline)



What this cost data represents: Normalised new build cost data for secondary schools for 2009/10 and earlier years.

Corresponding cost data tables: Refer to Tables 10 and 12 for more details.

Averages and 20th/80th percentile thresholds:

GIFA 0-2,000m²: **80th:** £3712/m²; **Av:** £2851/m²; **20th:** £2021/m²

Range T: 30% ✓

GIFA 2-4,000m²: **80th:** £3442/m²; **Av:** £2780/m²; **20th:** £1999/m²

Range T: 24% ✓

GIFA 4-6,000m²: **80th:** £3033/m²; **Av:** £2566/m²; **20th:** £1914/m²

Range T: 18% ✓

GIFA 6-8,000m²: **80th:** £2508/m²; **Av:** £2303/m²; **20th:** £2132/m²

Range T: 9%

Range T+B: 16% ✓

GIFA 8-10,000m²: **80th:** £2403/m²; **Av:** £2158/m²; **20th:** £1863/m²

Range T: 11%

Range T+B: 25% ✓

GIFA 10-12,000m²: **80th:** £2081/m²; **Av:** £1980/m²; **20th:** £1837/m²

Range T: 5%

Range T+B: 12%

GIFA 12-14,000m²: **80th:** £2017/m²; **Av:** £1899/m²; **20th:** £1701/m²

Range T: 6%

Range T+B: 17% ✓

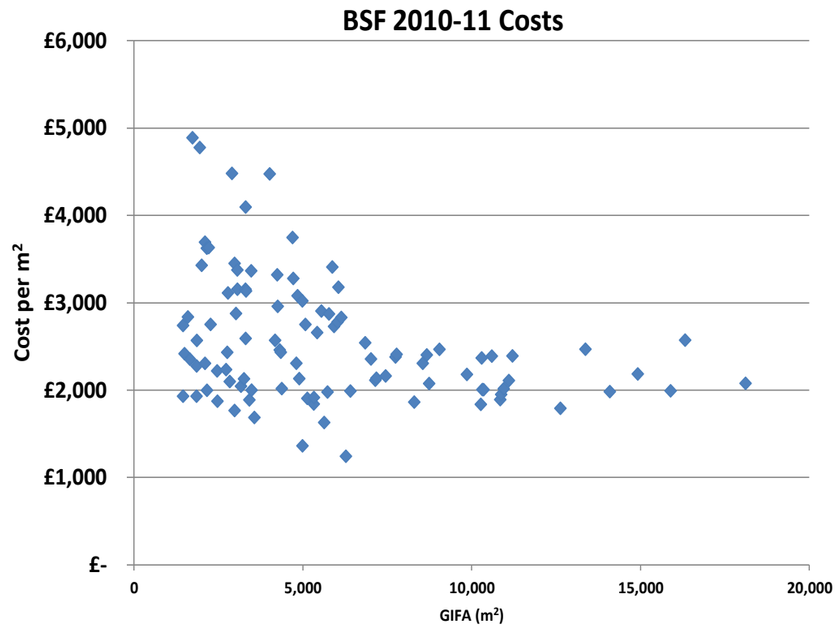
GIFA 14-16,000m²: **80th:** £2299/m²; **Av:** £2075/m²; **20th:** £1845/m²

Range T: 11%

Range T+B: 22% ✓

Chart 15: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2009/10 Baseline)	
	GIFA 16-18,000m^2: **80th:** £2180/m^2; **Av:** £1962/m^2; **20th:** £1690/m^2 **Range T: 11%** **Range T+B: 25%** ✓ GIFA 18-20,000m^2: **80th:** £2105/m^2; **Av:** £1938/m^2; **20th:** £1786/m^2 **Range T: 9%** **Range T+B: 16%** ✓
	Chart specific commentary: Building Schools for the Future (BSF) projects were funded formulaically on pupil numbers, which produced a m^2 area per pupil. This area was then converted into a 'funding envelope' calculated on the basis of 50 per cent new build, 35 per cent refurbishment and 15 per cent minor works. Set rates were included in the formula for each category of works. Aggregating this information for all schools in a 'wave' provided an overall funding envelope for each authority, and it was decided locally how the funds were invested across groups of schools within a project. This funding approach has led to a large variation in the cost per m^2 depending on how these choices were made. Moving forward, school designs are to be more standardized, which is expected to produce significant cost reductions.

Chart 16: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2010/11)

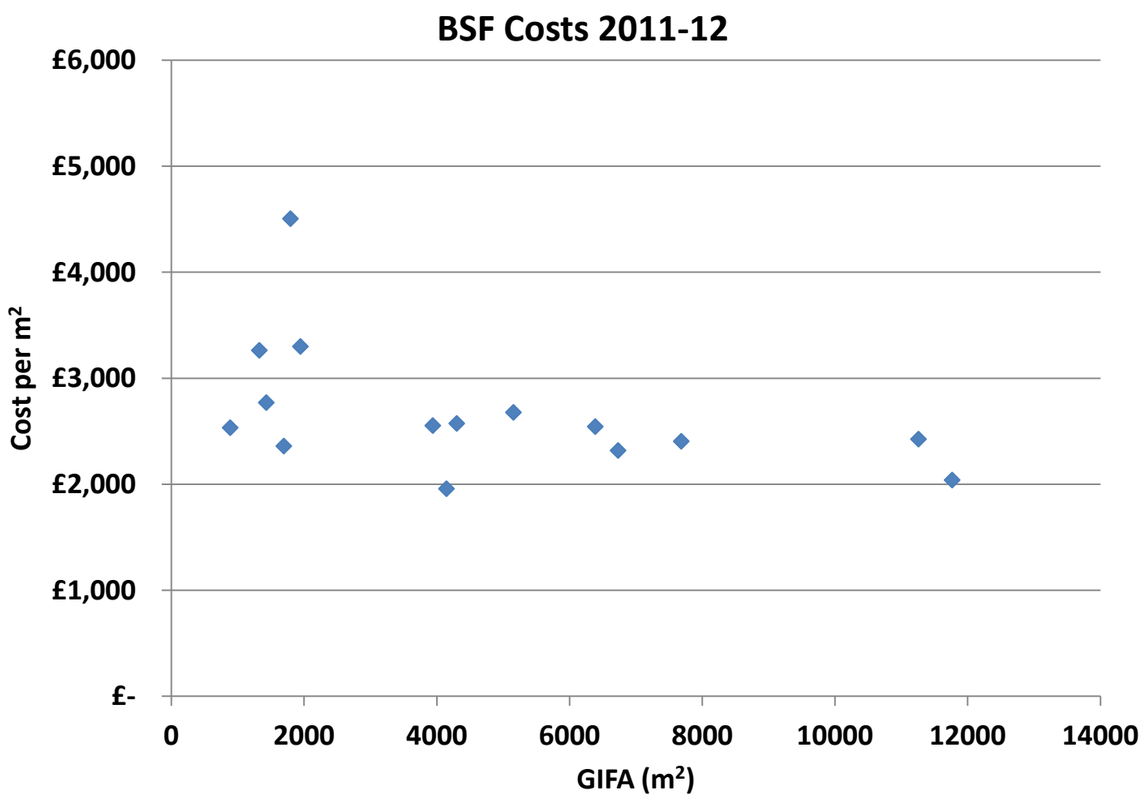


What this cost data represents: New build cost data for secondary schools for 2010/11.

Corresponding cost data tables: Refer to Tables 10 and 12 for more details.

Note: To allow comparison with Charts 15 and 17 data given in 2009/10 prices.

Chart 17: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2011/12)



What this cost data represents: New build cost data for secondary schools for 2011/12.

Corresponding cost data tables: Refer to Tables 10 and 12 for more details.

Note: To allow comparison with Charts 15 and 16 data given in 2009/10 prices.

Chart specific commentary: There are at least 38 projects still to be validated, added to this set of data points and therefore included in the next update to this publication.

DEPARTMENT COST BENCHMARK DATA: TABLES

The tables included within this section summarise the data points provided for Government departments and shown in the charts given in the previous section. The summary data is in the form of single point averages and ranges defined by the 20th and 80th percentile thresholds[17] and are presented in relation to the 2009/10 baseline for all departments. Wherever available, data for 2010/11 and 2011/12 have also been provided.

The data within the tables in this section should be read in conjunction with the notes provided in Tables 11 and 12 below.

[17] The Highways Agency is able to calculate each project cost using probabilistic three point estimating and estimating software with Monte Carlo simulation capability. Based upon the principles of three point estimating the minimum, most likely and maximum cost for every activity is used to the produce the estimates. The Highways Agency therefore provides an 80% confidence probability by reporting the P10, P50 and P90 costs. This could be for individual schemes or a group of schemes or portfolio of schemes. Therefore, for example, setting a project forecast on the basis of a P90 result would indicate a larger contingency than one based on a P50 result.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 4: Construction Cost Benchmarks for Department of Health (P21 Framework)									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12[18]**	
				Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
Acute	New Build	**Type 1:** Total construction cost Includes: Contractor's Design Fees; Other development/project costs; Risks; Fittings, Furnishing and Equipment (FF+E)	£/m^2	3730	2400 4440	Not applicable		3425	2746 3946
	Refurbishment		£/m^2	2090	1140 2520			1939	1359 2268
Mental Health	New Build		£/m^2	2620	2130 3160			n/a	n/a
	Refurbishment		£/m^2	2270	1650 2640			1566	Insuff data
Primary Care / Community	New Build		£/m^2	2120	1880 2330			n/a	n/a
	Refurbishment		£/m^2	1490	1010 1860			n/a	n/a
Other	New Build		£/m^2	1480	450 2200			n/a	n/a
	Refurbishment		£/m^2	1580	1220 2000			n/a	n/a
All Schemes	New Build		£/m^2	3020	2080 3530			n/a	n/a
	Refurbishment		£/m^2	2000	1130 2450			n/a	n/a

[18] In making comparisons with the 2009/10 baseline, 2011/12 benchmarks should be viewed with caution due to the statistically small sample size. Project teams continue to work towards delivery within previously published 2009/10 baseline figures and relevant cost reduction trajectories.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 4: Construction Cost Benchmarks for Department of Health (P21 Framework)									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12[18]**	
				Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
	All schemes (New Build and Refurbishment)		£/m^2	2680	1700 3160			2390	1484 3321

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 5: Construction Cost Benchmarks for DEFRA/Environment Agency										
Project Types	**Project Subtypes**	**Benchmarks**		**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
					Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
River Flood Protection and Coastal Defences	N/A	**Type 4:** Unit cost embankments (500 – 5000 m^3 total volume)	5 year rolling average	£/m^3	46	23 66	43	18 63	31	17 38
		Type 4: Unit cost flood walls (less than 2.1 m high)		£/m	2802	1386 3784	2387	1170 2894	2244	1145 2856
		Type 2: Net Present Value (cumulative of major projects completed in the stated year. Figure in brackets is the whole life cost to flood defence grant in aid of these projects)	Annual	£m	2297 (278)	n/a	11359 (888)	n/a	12380 (824)	n/a
		Type 3: Programme "Streamlining" (Ratio project development costs up to the equivalent of OGC Gateway 3 to FCRM Capital Programme Investment)	3 year rolling average	%	22	n/a	20	n/a	<20	n/a

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 6: Construction Cost Benchmarks for DfT/Highways Agency									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single point average (P50)	Range P10-P90[19]	Single point average (P50)	Range P10-P90	Single point average (P50)	Range P10-P90
Major Projects	Trunk Road Improvement[20]	**Type 1:** Total construction cost additional lane provided	£M/km	9.7	8.0 11.3	Not applicable given availability of corresponding data		7.2	6.2 7.6
		Type 1: Total construction cost additional lane provided	£K/m^2	2.6	2.1 3.0			1.9	1.7 2.0
	Junction Improvement	**Type 1:** Total construction cost junction or interchange	£M/Jn	21	19 23	20.3	17.9 23.4	Not applicable given availability of corresponding data[21]	
	Managed Motorways	**Type 1:** Total construction cost additional lane provided	£M/km	6.3	4.9 7.8	9.6	8.6 10.5[22]	4.3	3.6 5.0[23]
		Type 1: Total construction cost additional lane provided	£K/m^2	1.7	1.3 2.1	2.6	2.3 2.8	1.1	1.0 1.3

[19] HA project costs are 3 point estimates modelled to produce P10, P50 and P90 (minimum, most likely and maximum). Therefore, for example, setting a project forecast on the basis of a P90 result would indicate a larger contingency than one based on a P50 result.
[20] Trunk road projects that incorporate widening along the existing alignment or construction of a new alignment (by-pass).
[21] Further junction work is anticipated beyond 2011/12.
[22] Only one Managed Motorway project was started in 2010/11.
[23] Data available from only three projects.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 7: Construction Cost Benchmarks for DCLG/HCA: England (Outside London) – for regions refer to Annex A										
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
New Build	House/flat for rent	**Type 1:** Total construction cost	£/m^2	1419	1130 1648	1376	1155 1563	1227	1018 1438
	House/flat for LCHO			1514	1154 1703	1453	1162 1678	1245	1005 1450
	House/flat for rent: General needs			1405	1123 1628	1368	1146 1550	1207	1011 1415
	House/flat for rent: Supported Housing			1808	1346 2078	1664	1474 2014	1837	1291 2123
New Build	House/flat for rent	**Type 2:** £/home and £/person housed	£/home	100129	82728 119077	98519	83169 114297	90063	74106 108597
			£/person housed	27734	21511 34156	26772	21741 31783	24198	18,855 29997
	House/flat for LCHO		£/home	102631	76731 120253	99214	81163 117439	93708	76198 108987
			£/person housed	29343	21954 32935	28057	21723 32820	23878	18687 28717
	House/flat for rent: General needs		£/home	99758	82728 118783	98760	83529 114300	89730	74110 108601
			£/person housed	27166	21277 32568	26409	21581 30773	23585	18736 28604
	House/flat for rent: Supported Housing		£/home	108538	80137 119700	91787	74375 106178	97110	72352 105399

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 7: Construction Cost Benchmarks for DCLG/HCA: England (Outside London) – for regions refer to Annex A									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile
			£/person housed	49047	37406 59850	45664	34434 59982	49311	32564 72352
Refurbishment	Decent Homes	Type 2: £ /Dwelling receiving capital works	£/home	5001	2089 7596	4018	2037 8062	Refurbishment (Decent Homes) data available final quarter 2012.	

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 8: Construction Cost Benchmarks for Ministry of Defence									
Project Type	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single point average	Range 20th – 80th Percentile	Single point average	Range 20th – 80th Percentile	Single point average	Range 20th – 80th Percentile
New Build Single Living Accommodation	Ensuite Rooms - Flatlet format (Z Scale Flatlet)	Type 1	£/m^2	1663	1541 1773	2039 (single project)	Insufficient data	1804	1721 1887
		Type 2	£/Bed	52859	48497 58086	57069 (single project)	Insufficient data	51573	50732 52343
		Type 2	m^2/Bed	31.86	29.86 33.65	27.99 (single project)	Insufficient data	28.69	27.81 29.56
	Ensuite Rooms - Hotel format (Z Scale Hotel)	Type 1	£/m^2	1728	1530 1953	2011 (single project)	Insufficient data	n/a	n/a
		Type 2	£/Bed	50158	44433 55398	69,021 (single project)	Insufficient data	n/a	n/a
		Type 2	m^2/Bed	28.98	26.69 30.02	34.31 (single project)	Insufficient data	n/a	n/a
	12 Bed Dormitories (X Scale)	Type 1	£/m^2	1645	1497 1741	n/a	n/a	n/a	n/a
		Type 2	£/Bed	38251	35148 41444	n/a	n/a	n/a	n/a
		Type 2	m^2/Bed	23.31	23.09 23.80	n/a	n/a	n/a	n/a
	4 Bed Study/Dormitories (Y Scale)	Type 1	£/m^2	1626	1540 1721	n/a	n/a	1580 (single project)	Insufficient data
		Type 2	£/Bed	40201	36262 44209	n/a	n/a	39108 (single project)	Insufficient data
		Type 2	m^2/Bed	24.67	23.79 25.62	n/a	n/a	24.76 (single project)	Insufficient data
	Senior NCO /Junior Officer	Type 1	£/m^2	1532	1377 1652	1406 (single project)	Insufficient data	n/a	n/a

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 8: Construction Cost Benchmarks for Ministry of Defence									
Project Type	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single point average	Range 20th – 80th Percentile	Single point average	Range 20th – 80th Percentile	Single point average	Range 20th – 80th Percentile
	Accommodation	Type 2	£/Bed	57136	51957 62616	76879 (single project)	Insufficient data	n/a	n/a
		Type 2	m^2/Bed	37.50	35.94 39.32	54.67 (single project)	Insufficient data	n/a	n/a
New Build Single Living Accommodation	Mixed Provision	Type 1	£/m^2	1701	1539 1813	1238 (single project)	Insufficient data	1688	1669 1707
		Type 2	£/Bed	55786	49626 63051	49879 (single project)	Insufficient data	61834	53329 70338
		Type 2	m^2/Bed	33.22	29.47 38.43	40.30 (single project)	Insufficient data	36.49	31.86 41.12
	Aggregated Sample – All Types	Type 1	£/m^2	1642	1468 1766	1655	1373 2017	1745	1662 1809
Refurbishment	SLA Various	Type 1	£/m^2	667	666 668	1138	Insufficient data	n/a	n/a

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 9: Construction Cost Benchmarks for Ministry of Justice									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
All projects	New Build	**Type 1:** Kitchens	£/m^2	2999	Insuff. data	n/a	n/a	n/a	n/a
		Type 1: House Blocks	£/m^2	3465	2679 4510	n/a	n/a	n/a	n/a
		Type 1: New Prison	£/m^2	3585	Insuff. data	n/a	n/a	n/a	n/a
		Type 1: New Ancillary (incl. prison workshops)	£/m^2	3528	2091 5115	2832	Insuff. data	n/a	n/a
		Type 1: Court Buildings	£/m^2	5046	Insuff. data	n/a	n/a	3970	Insuff. data
	Refurbishment	**Type 1:** Prison: General Minor Refurbishment	£/m^2	1542	430 2294	2402[24]	497 2830	1204	109 2080
		Type 1: Prison: Major Refurbishment	£/m^2	3940	3728 5092	n/a	n/a	n/a	n/a
	New Build	**Type 3:** Product value[25] from Cost Component Breakdown	%	45	n/a	49	n/a	54	n/a
	Refurbishments less than £2m	**Type 3:** Product value from Cost Component Breakdown	%	32	n/a	36	n/a	39	n/a
	Refurbishments greater than £2m	**Type 3:** Product value from Cost Component Breakdown	%	32	n/a	36	n/a	39	n/a

[24] Influenced by significant range found within small sample.
[25] Positive progress is indicated by upwards movement in product %.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 10: Construction Cost Benchmarks for DfE / Education Funding Agency									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**[26]	
				Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
New Build Secondary Schools	GIFA 0-2,000 m^2	**Type1:** Total construction cost Includes: External works and professional fees; Excludes: Fittings, Furnishing and Equipment (FF+E)	£/m^2	2851	2021 3712	2972	2106 3870	2726	2212 2881
	GIFA 2-4,000 m^2		£/m^2	2780	1999 3442	2897	2084 3588	2230	Insuff. data
	GIFA 4-6,000 m^2		£/m^2	2566	1914 3033	2675	1995 3162	2098	1925 2302
	GIFA 6-8,000 m^2		£/m^2	2303	2132 2508	2400	2222 2615	2115	2055 2173
	GIFA 8-10,000 m^2		£/m^2	2158	1863 2403	2250	1942 2505	Insuff. data	Insuff. data
	GIFA 10-12,0000 m^2		£/m^2	1980	1837 2081	2064	1915 2169	1950	Insuff. data
	GIFA 12-14,000 m^2		£/m^2	1899	1701 2017	1980	1773 2103	Insuff. data	Insuff. data
	GIFA 14-16,000 m^2		£/m^2	2075	1845 2299	2163	1923 2396	Insuff. data	Insuff. data
	GIFA 16-18,000 m^2		£/m^2	1962	1690 2180	2045	1762 2273	Insuff. data	Insuff. data
	GIFA 18-20,000 m^2		£/m^2	1938	1786 2105	2020	1861 2194	Insuff. data	Insuff. data

[26] Data for 2010/11 and 2011/12 are provisional at this stage and subject to final data collection and validation, which will be completed during FY 2012/13 and included in the next update to this document.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A				
General areas to be addressed by commentary	**Department of Health (P21 Framework)** (with reference to Table 4 above)	**DEFRA/Environment Agency** (with reference to Table 5 above)	**DfT/Highways Agency** (with reference to Table 6 above)	**DCLG/Homes & Communities Agency** (with reference to Table 7 above and Annex A below)
What the data represents	2009/10 baseline benchmarks cover 144 schemes where full Elemental Cost Analysis (ECA) information is available. Benchmarks are based on capital cost (£) per m^2 (Gross Internal Floor Area) for eight high level generic types of healthcare building and their combined values. Benchmarks are collected at **contract award** (Guaranteed Maximum Price – GMP). Costs (£/m^2) are reported at location factor of 1.00 and tender price levels current during the corresponding year: 2009/10 (PUBSEC 173) and 2011/12 (PUBSEC 177).	**Outturn costs** relating to Flood and Coastal Risk Management (FCRM) investment. **Type 1 benchmarks:** Walls and embankments form about 65% of EA's total construction spend. EA's construction database captures data from at least 50% (in earlier years of database) of EA projects by value. **Type 2 and 3 benchmarks:** Both sets of figures relate to the entire capital programme. In relation to the Type 3 benchmark *Programme "Streamlining"*, a smaller percentage indicates a greater proportion of FCRM programme being invested in works on the ground.	The 2009/10 baseline benchmarks presented are based on total project cost estimates from seventeen major projects. These estimates have been derived from the Highways Agency's estimating system. The estimates incorporate allowances for inflation to and from anticipated project start dates. The benchmarks are the mid-point between the calculated min and max estimated project value. The 2010/11 and 2011/12 benchmarks are based on total project cost estimates at contract award stage. The total project cost estimate at contract award is the negotiated contract price plus historic costs and agreed client managed future cost and risk allowances. These estimates include inflation allowances covering the project duration. FY10/11 estimates are a mid point as per the 09/10 estimates. The FY11/12 estimates are a summation of estimates Min, Most Likely and Max modeled to create a P50 outturn.	Benchmark data covers both new build (Affordable Homes Programme) and refurbishment (Decent Homes Backlog programme). It is presented for England as whole and at the regional level (HCA Operating Area) for new build, where costs tend to be more comparable. London data has been excluded, since from April 2012 the GLA has taken on responsibility for the delivery of housing funding programmes in London. **New Build**: Annualised figures cover homes starting on site in the stated year. HCA funding for a scheme is not equivalent to construction costs: delivery partners will use a mixed funding package (with HCA funding as one element) to cover the total construction costs (including land and on-costs as well as construction). HCA funding is (generally) paid at scheme completion. Construction cost data used for benchmarking is confirmed by HCA delivery partners at start on site and will therefore generally represent the delivery partner's **contract award** data. Construction cost data is not routinely validated by HCA. Pre-2011/12 data (including the baseline year 2009/10) does not allow distinction between flats and houses, and these are therefore combined. In relation to the rent sub-categorisation,

<table>
<tr><th colspan="5">Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A</th></tr>
<tr><th>General areas to be addressed by commentary</th><th>Department of Health (P21 Framework)
(with reference to Table 4 above)</th><th>DEFRA/Environment Agency
(with reference to Table 5 above)</th><th>DfT/Highways Agency
(with reference to Table 6 above)</th><th>DCLG/Homes & Communities Agency
(with reference to Table 7 above and Annex A below)</th></tr>
<tr><td></td><td></td><td></td><td></td><td>where developments contain a mixture of general needs and supported housing, the majority of the development by floor area will determine under which category they are included.

The data population for supported housing is relatively small, and therefore more sensitive to the impact from outliers.

Refurbishment:
Refurbishment data presented approximates to outturn construction costs in the Decent Homes Backlog capital programme, funding necessary refurbishment work by LA landlords.</td></tr>
<tr><td>Statistical population represented</td><td>The numbers of projects making up each of the various figures in the 2009/10 baseline in Table 4 are as follows:

Acute - New Build (48);
Acute - Refurbishment (31);
Mental Health - New Build (24);
Mental Health - Refurbishment (10);
Primary Care/Community - New Build (10);
Primary Care/Community - Refurbishment (7);
Other - New Build (10);
Other - Refurbishment (4);
All Schemes - New Build (92);
All Schemes - Refurbishment (52);
All Schemes - (New Build and Refurbishment) (144).</td><td>The Type 1 benchmark figures for walls and embankments are drawn from 32 and 19 projects respectively.

The Type 2 and 3 benchmark figures relate to the entire capital programme.</td><td>The numbers of projects making up each of the various figures in Table 6 is as follows:

Baseline 09/10 – 17 projects
Managed Motorway (11)
Junction Improvement (1)
Trunk Road Improvement (5)

10/11 update – 2 projects
Managed Motorway (1)
Junction Improvement (1)

11/12 update – 5 projects
Managed Motorway (3)
Trunk Road Improvement (2)

The benchmark rates include two trunk road projects that moved into the</td><td>New Build:
The data population used for baseline and benchmark summary statistics represents all homes within the Affordable Housing Programme starting on site in a given year, with the minor exclusions described below.

The number and type of schemes in a given year, and the mix of building types (house/ flat; bedroom number) on a given scheme, will vary. Details for schemes in the 2009/10 and 2010/11 years covered in this data are shown below:

<table><tr><th></th><th>2009/10</th><th>2010/11</th></tr><tr><td>Total number of schemes</td><td>2127 (25107 homes)</td><td>1984 (22078 homes)</td></tr><tr><td>Total number of schemes for rent</td><td>1459 (19514 homes)</td><td>1302 (16425 homes)</td></tr></table></td></tr>
</table>

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A

General areas to be addressed by commentary	**Department of Health (P21 Framework)** (with reference to Table 4 above)	**DEFRA/Environment Agency** (with reference to Table 5 above)	**DfT/Highways Agency** (with reference to Table 6 above)	**DCLG/Homes & Communities Agency** (with reference to Table 7 above and Annex A below)
	These 2009/10 baseline projects reached contract award from 2003 onwards; all data is normalised to the 2009/10 baseline. The numbers of projects making up each of the various figures in the 2011/12 benchmarks in Table 4 are as follows: Acute - New Build (5); Acute - Refurbishment (6); Mental Health - Refurbishment (3); All Schemes - (New Build and Refurbishment) (14).		construction phase in Feb/Mar 2012. The figures have been calculated from approved project budget allowances (including design and Highways Agency managed risk) following the successful negotiation of the Final Target Cost (FTC). Hence the allowances incorporate the FTC.	

Total number of schemes for low cost home ownership	**668** (5593 homes)	**682** (5663 homes)
Total number of general needs schemes for rent	**1387** (18651 homes)	**1237** (15624 homes)
Total number of supported housing schemes for rent	**72** (863 homes)	**65** (791 homes)

	2011/12
Total number of schemes	**704** (8532 homes)
Total number of schemes for rent	**520** (7234 homes)
Total number of schemes for low cost home ownership	**184** (1298 homes)
Total number of general needs schemes for rent	**496** (6908 homes)
Total number of supported housing schemes for rent	**24** (326 homes)

Refurbishment:
The data population used for baseline and benchmark summary statistics covers all capital works by Local Authorities for those Authorities receiving Decent Homes Backlog Funding at some point in 2011-15.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A				
General areas to be addressed by commentary	**Department of Health (P21 Framework)** (with reference to Table 4 above)	**DEFRA/Environment Agency** (with reference to Table 5 above)	**DfT/Highways Agency** (with reference to Table 6 above)	**DCLG/Homes & Communities Agency** (with reference to Table 7 above and Annex A below)
What is included / excluded in the figures	The figures are based on capital building costs (excluding external works for ease of comparative normalisation) with due allowance for Preliminaries, Contingencies / Contractor's Risk and Supply Chain Design Fees. **Refer to Annex B for more detail.**	**Refer to Annex for more detail.**	All benchmarks are calculated from overall project costs i.e. client and contractor costs. The figures therefore incorporate everything required for the project to be delivered, i.e. construction prices, contractors inflation & risks and client risk allowances. **Refer to Annex B for more detail.**	**New Build:** Construction costs shown exclude land acquisition and design fees and other on costs. Data shown excludes: • package deals, for which the disaggregation of historic data into land and build components is unreliable, these account for approximately 10% of total spend; • refurbishment schemes, for which costs are atypical, these account for approximately 5% of total spend. (Although the Affordable Homes Programme primarily funds new build construction, a small proportion of this programme funds refurbishment that brings additional homes into use as affordable housing). **Refurbishment:** Cost definitions within this data collection are open to some interpretation. A number of factors impact on interpretation of this information and HCA influence on these specific indicators. • The works necessary to achieve the Decent Homes Standard will vary from case to case, depending on the starting condition of the stock and the interpretation of outcome based elements of the standard, and covers a wide range of elemental works (i.e. there is variation in both the set of elemental works conducted - bathroom replacement, window replacement, rewiring etc - and the extent of works

Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A				
General areas to be addressed by commentary	**Department of Health (P21 Framework)** (with reference to Table 4 above)	**DEFRA/Environment Agency** (with reference to Table 5 above)	**DfT/Highways Agency** (with reference to Table 6 above)	**DCLG/Homes & Communities Agency** (with reference to Table 7 above and Annex A below)
				within each element). It is assumed that these differences average out in inter-year comparison across the time series. • Available cost data is collected for all capital works to stock, not exclusively that within a funded Decent Homes programme, and shown for all LAs receiving funding at some point in CSR 11-15. Note the data set presented has been generated for the purpose of this document. **Refer to Annex B for more detail**
Where the data comes from	Elemental Cost analyses provided by Principal Supply Chain Partner (PSCP) Quantity Surveyor at contract award.	Data is supplied by EA's Contractors and processed by client Quantity Surveyors.	The 2009/10 baseline benchmark data has been generated from Highways Agencies estimating system Subsequent period benchmarks (e.g. 2010/11, 2011/12) will be informed by agreed contract prices and client budget/risk allowances.	**New Build:** Submitted by HCA delivery partners. **Refurbishment:** Cost data is collected through the LA Business Plan Statistical Appendix (BPSA). From 2011/12 onwards data is collected from the BPSA's successor English Local Authority Statistics on Housing (ELASH).
How it has been calculated	Overall Single Point Averages have been calculated for the total range of each project type. The 20%/80% percentile/cluster thresholds have been determined by excluding the lowest and highest 20% of project values to confirm the range. The basis for the baseline 2009/10 is contract award value (GMP) for building costs (£/m^2) reported at 2009/10 tender levels (MIPS 480/PUBSEC 173) with a location factor of 1.00. Data for 2011/12 is reported at 2011/12	**Type 2 benchmarks:** Programme benefit cost ratio for 2009/10 and 2010/11 relates to the cumulative figure for the SR2007 spending review period. EA is now measuring the cumulative figure over the SR2011 spending review period which starts from 2011/12. **Type 3 benchmarks:** Programme "Streamlining" based on 3 year rolling average. **Type 4 benchmarks:** Unit cost of embankments and flood walls based on 5	2009/10 baseline benchmark average is a straight arithmetic mean of the SR10 project P50 costs. The average of subsequent benchmarks (e.g. 2010/11, 2011/12) will be an arithmetic mean of the project P50 costs. The Highways Agency is able to calculate each project cost using probabilistic three point estimating and estimating software with Monte Carlo simulation capability. Based upon the principles of three point estimating the minimum, most likely and	For both New Build and Refurbishment, the 2009/10 baseline data consists only of projects started on site during 2009/10.

Table 11: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 13, Tables 4 to 7 and Annex A				
General areas to be addressed by commentary	**Department of Health (P21 Framework)** (with reference to Table 4 above)	**DEFRA/Environment Agency** (with reference to Table 5 above)	**DfT/Highways Agency** (with reference to Table 6 above)	**DCLG/Homes & Communities Agency** (with reference to Table 7 above and Annex A below)
	prices (PUBSEC 177).	year rolling average. Single point averages represent a straight arithmetical mean, with no exclusion of outliers. Percentile thresholds have been determined solely using the distribution of data. The index used for the **Type 1 benchmarks** is the Public Works Non-Roads (PWNR) cost index. This index has now been discontinued and BCIS has issued guidance on using a substitute. The guidance is to use the old PWNR numbers for any date up to Q2 2009, and from that point use the new *"BIS Output Price Index for New Construction (2010): Public Non-Housing"* index, multiplied by a conversion factor of 1.448 (and then rounded to the nearest whole number).	maximum cost for every activity is used to the produce the estimates. The Highways Agency therefore provides an 80% confidence probability by reporting the P10, P50 and P90 costs. This could be for individual schemes or a group of schemes or portfolio of schemes.	
Other areas	All P21 framework schemes, used in the 2009/10 baseline, are based on the NEC2 Option C Form of Contract; the subsequent P21+ framework, based on the NEC 3 Option C Form of Contract, provides the data for subsequent years.	Data is obtained from contracts delivered through EA's existing framework arrangements. All contracts since April 2007 have been let under NEC3.	Projects M1 J10-J13 & M1 J19 are let using the Highways Agency Early Contractor Involvement contract based on the NEC option C Subsequent Managed Motorway projects are let using the Highways Agency NEC 3 Framework contract with Z clauses.	The HCA does not directly contract with builders but funds housing providers to procure the purchase and build of new housing and refurbishment works. The HCA does not prescribe a standard form of contract for housing providers to enter into with the builder, developer or contractor and as such the construction contracts represented in the data may be in a variety of forms. For new build: • the data is based on the agreed price for these contracts at the beginning of the contract period; • HCA funding for a scheme is not equivalent to construction costs.

Table 12: Commentary relating to Department Cost Benchmark Data Provided in Charts 14 to 17 and Tables 8 to 10			
General areas to be addressed by commentary	**Ministry of Defence** (with reference to Table 8 above)	**Ministry of Justice** (with reference to Table 9 above)	**DfE / Education Funding Agency** (with reference to Table 10 above)
What the data represents	Benchmarks cover all Single Living Accommodation projects let under MoD's Single Living Accommodation Modernisation (SLAM) programme. The sample is split between generic types of accommodation, or - where a mixture of accommodation has been contracted as a single package -, a 'Mixed Provision' category. Total Target Price (**contract award**) derived benchmarks are expressed as unit rates based on Gross Internal Floor Area (GIFA) of the facility (£/m^2) and the number of Bedspaces provided (£/Bed). A **Type 2** benchmark addressing design efficiency has been provided by dividing the <u>total</u> area of the building (both functional and circulation) by the number of Bedspaces and expressing this as 'm^2 GIFA per Bed'.	The benchmarks cover the entire MoJ construction programme. **Type 1 benchmarks** are collected for comparison & benchmarking at **contract award** (Agreed Maximum Price - AMP) stage. Outturn benchmarks are typically the same as at AMP stage. Moving forward Type 1 benchmarks provided in this publication may not be reported in every period due to the changing project profile of the MoJ programme. **Type 3 benchmarks** are based on the increase of the product value element of the Cost Component Breakdown (CCB). An increase in the product value indicates reduced spend on the non product items such as fees, main contractors overheads etc and increasing the value of the product CCB model is completed with prices current at the time of the AMP (**contract**) award. As the output is a ratio all prices are effectively self updating.	**Contract award** benchmarks are for the total construction cost including all elements but excluding furniture, fixtures and equipment (FF+E). Over 85% of the DfE / EFA total programme is covered by the benchmarks.
Statistical population represented	The statistical samples represented by the data in Table 8 are as follows: **New Build:** Ensuite Rooms – Flatlet format (35 Projects.) Ensuite Rooms – Hotel format (8 Projects) Dormitories – 12 Bed format (8 Projects) Study dormitories - 4 Bed format (5 Projects) Senior NCO/Junior Officers (20 Projects) Mixed Provision (17 Projects) **Refurbishment:** 12 Bed Dormitories (2 Projects) Senior NCO/Junior Officers (1 Project) The total value of the above Projects (without re-basing) is approximately £906m and represents	The numbers of projects making up each of the various figures in Table 9 is as follows: Kitchens – 1 project Houseblocks – 6 projects New Prisons – 2 projects New Ancillary – 8 projects New Courts – 4 projects Prison: General Minor Refurbishment – 32 projects Prison: Major Refurbishment – 6 projects	The 2009/10 baseline includes projects from a wider population from before 2009-10, which in total represents approx. 230 schools. Subsequent years have populations of circa 30-40 schools.

Table 12: Commentary relating to Department Cost Benchmark Data Provided in Charts 14 to 17 and Tables 8 to 10			
General areas to be addressed by commentary	**Ministry of Defence** (with reference to Table 8 above)	**Ministry of Justice** (with reference to Table 9 above)	**DfE / Education Funding Agency** (with reference to Table 10 above)
	the entire programme of Single Living Accommodation, both new build and refurbishment. The 2009/10 baseline data includes projects from a wider population dating from before 2009/10.		
What is included / excluded in the figures	The figures are based on the total Target Price (with Maximum Price Target Cost arrangements) at Contract Award, including: External Works; Preliminaries; Commercial (Contractors) Risk; Supply Chain Design Fees; Overheads; and Profit. **Refer to Annex B for more detail.**	Generally includes for everything except VAT, land costs and departmental overhead costs (staff, accommodation etc.). **Refer to Annex B for more detail.**	**Refer to Annex B for more detail.**
Where the data comes from	Data has been formulated by Quantity Surveyors working for MoD's Defence Infrastructure Organisation.	Based on supplier submissions which are verified by Cost Consultants acting on MoJ's behalf.	Cost data is submitted to DfE/EFA by the Quantity Surveyor working for the Contractor.
How it has been calculated	The 2009/10 baseline represents Contract Award values of all projects let up to and including 1Q2010. Projects have been rebased to the mid-point of 2009/10 using the BIS PUBSEC Tender Price Index of Public Sector Building Non-Housing and normalised to a UK mean location (base = 100) using the BCIS Tender Price Location Study. Single point average and percentile values have been calculated from all values in each range with no exclusion of 'outliers'.	**Type 3 benchmarks:** Single point averages represent the arithmetical mean of all projects included within each category. Percentile thresholds have been determined using the standard percentile calculation within MS Excel. All costs are based on AMP (award). All data provided is within period and therefore has not required inflation adjustment.	Single point averages represent the arithmetical mean. Percentile thresholds have been determined using the standard percentile calculation within MS Excel. For the 2009/10 baseline, data has been normalised using BIS PUBSEC Tender Price Index of Public Sector Building (Non Housing).
Other areas	The projects from which this data is derived have been let under the SLAM Prime Contract using bespoke MoD Conditions of Contract. The data represents the Maximum Price Target Cost value at Contract Award.	All projects are delivered/procured through Strategic Alliancing Contract using PPC 2000.	All data has come from contracts awarded at financial close and are to be considered outturn (as fixed price contracts) are a mix of national and local authority frameworks and Local Education Partnerships (LEPs).

REGULATED AND WIDER PUBLIC SECTORS : COST BENCHMARKS

This section addresses cost benchmark data from private companies. The first (London Underground Limited) is part of the wider public sector, wholly owned by Transport for London. The second (Network Rail Limited) is a private sector not-for-dividend company limited by guarantee, which receives grant funding from the Department for Transport and is regulated by the independent Office of Rail Regulation.

Both of these rail sector organisations have significant capital expenditure programmes, the implementation of which will be carried out by some of the same suppliers delivering the works discussed elsewhere in this publication.

The Rail Command Paper published in March 2012 - in response to Sir McNulty's review - highlighted that Network Rail is already due to deliver £1.2 billion of efficiency savings by 2014 with at least a further £600 million expected by 2019. The Command Paper sets the challenge to the whole rail industry to close the efficiency gap identified by Sir Roy of £3.5 billion per year by 2019[27].

Sir Roy highlighted scope to reduce unit costs by 30% compared to 2008/09 levels by 2018/19. The current means of assessing the efficiency of Network Rail is the Real Economic Efficiency Measure (REEM), a measure agreed between Network Rail and the Office of Rail Regulation.

[27] *Reforming our Railways: Putting the Customer First* (March 2012) published by the Government in response to Sir Roy McNulty's report of rail value for money: *Releasing the Potential of GB Rail* (May 2011).

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 13: Construction Cost Benchmarks for London Underground							
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**Baseline 3 year average** (2008/09, 2009/10, 2010/11)		**2011/12[28]**	
				Single point average	Range 20th - 80th Percentile	Single point average	Range 20th - 80th Percentile
Renewals and Replacements	Escalators	**Type 2:** Escalator Replacement (10-15m rise)	£m per machine	1.5	Insuff. data	0.88	Insuff. data
	Track	**Type 2:** Track Renewal, open section	£m per km	2.8	Insuff. data	2.6	Insuff. data
		Type 2: Track Renewal, deep tube	£m per km	8.5	Insuff. data	6.7	Insuff. data
	Systems	**Type 2:** Signalling upgrade (excluding enabling Civils works)	£m per track km	5.83	Insuff. data	TBC	TBC

[28] Provisional data, excluding Tube Lines. London Underground is committed to the regular publication of unit cost data with the next update expected by Spring 2013.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 14: Construction Cost Benchmarks for Network Rail					
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10**	**2010/11**
All Capital Renewal Projects	N/A	**Type 2:** Real Economic Efficiency Measure (REEM)[29] for Renewals against a baseline position in 2008/09	%	7.1	16.6

In addition to the Real Economic Efficiency Measure (REEM), Network Rail Limited publishes a number of unit rates – for example line renewals and signaling / communications - as part of the Regulatory Financial Statements: Statements 14-17 which can be found using the following link:

http://www.networkrail.co.uk/browse%20documents/regulatory%20documents/regulatory%20compliance%20and%20reporting/regulatory%20accounts/regulatoryfinancialstatements(foryearended31march2011.pdf

[29] Measuring renewal efficiency is not an exact science and requires some judgement to assess the difference between a short term reduction in expenditure or deferral of work and a long term sustainable reduction (i.e. efficiency). This requires an assessment of the long term impact of changes in the scope and volume of renewal work and inevitably involves engineering judgement. The percentage efficiency in the table above is that reported by Network Rail in its 2011 regulatory financial statements and represents the company's best view. The Office of Rail Regulation carry out a review of Network Rail's financial performance each year and in its last report in September 2011 highlighted the uncertainty with the efficiency assessment. It suggested a lower limit for the cumulative renewal efficiency saving by the end of 2010/11 would be 13.1%.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 15: Commentary relating to Cost Benchmark Data Provided in Tables 13 to 14		
General areas to be addressed by commentary	**London Underground**	**Network Rail**
What the data represents	**Outturn** unit costs developed for 39% of LU and Tube Lines capital spend. However, the information in Table 13 only represents 10% of capital costs, since the cost of new rolling stock has been excluded.	Real Economic Efficiency Measure (REEM) is a business performance metric agreed between the ORR and Network Rail. REEM records how costs have changed in real terms (after adjusting for inflation) compared to a base year of 2008/09; hence it measures efficiency improvements since the start of Control Period 4 in April 2009.
Statistical population represented	The data sample represents a small number of high value projects with varying scope. For this reason it has therefore not been possible to include statistically significant P20 to P80 ranges.	43% of renewals expenditure is represented by REEM.
What is included / excluded in the figures	Refer to TfL's 2012 Rail and Underground Benchmarking Report: (http://www.tfl.gov.uk/assets/downloads/corporate/tfl-rail-and-underground-benchmarking-report-2012.pdf)	For this publication, only renewals projects efficiencies are being presented. The reported efficiency is based on delivering work in line with the published Delivery Plan.
Where the data comes from		Generated internally by the Network Rail team.
How it has been calculated	Baseline unit costs are based on a 3 year average (2008/09, 2009/10, 2010/11). The unit costs for 2011/12 are for a single year.	The REEM methodology uses in-year inflation (November RPI) to uplift baseline prices (Control Period 3 exit point). Therefore in FY 2009/10, the baselines in FY 2008/09 prices were uplifted by 0.3 per cent. In FY2010/11 the FY09/10 baselines were uplifted by a further 4.71 per cent.

DEPARTMENT COST REDUCTION TRAJECTORIES

The Cost Reduction Trajectories detailed in Table 16 below represent each department's forecast of the progress that will be made in delivering the Government Construction Strategy target of achieving 15-20% reduction in the cost of construction by the end of this Parliament. Typically, the intermediate points outlined by these trajectories are subject to the profile of individual department's capital programmes.

For this update, cost reduction trajectories for DCLG/HCA and MoD have been added.

Table 17 details the basis on which departments have established their forecasts and Chart 2 above shows these in graphical form.

Table 16: Department Cost Reduction Trajectories

Department	Trajectory showing Cumulative % Cost Reductions					
	2009/10 (Baseline)	2010/11	2011/12	2012/13	2013/14	2014/15
DoH/P21	0.0%	3.0%	6.0%[30]	9.0%	11.5%	14.1%
DEFRA/EA[31]	-	0.0%	3.8%	7.5%	11.8%	15.0%
DfT/HA	0.0%	0.0%	1.0%	4.0%	10.0%	17.0%
DCLG/HCA	0.0%	1.0%[32]	2.0%	4.0%	7.0%	12.0%

[30] Refers to the second half of 2011/12. On an ongoing basis, all projects benefit from the 3% cost reduction that resulted from the P21+ tender action in 2010, through reduced rates and margins incorporated into contracts let under the framework. Early action is underway addressing the remaining measures identified in Table 17, with supply chain partners pursuing strategies in bulk purchasing and BIM for projects registered with P21+ during the second half of 2011/12. Engagement with suppliers will also inform strategies and reductions on standardisation of materials and components. The effect of these initiatives will be first discernable in the £ benchmarks in 2012/13 and subsequent years with evidence accumulating as projects move through their lifecycle from registration of schemes to confirmation of the Guaranteed Maximum Price.

[31] The EA cost reduction trajectory shown has been agreed between EA and DEFRA, is baselined to 2010/11 and applies to EA flood and coastal defence schemes only. Cabinet Office and EA will work together to establish an approach to the cost reduction trajectory based on a 2009/10 baseline to be incorporated into the next update of this document. *"There are efficiencies that can be found in the way we manage floods and the Environment Agency has committed to deliver real-term efficiency savings of at least 15% in procurement over the spending period."* Caroline Spelman MP (October 2010).

[32] The 1% cost reduction shown for 2010/11 corresponds with the £19m cost reductions achieved for Decent Homes against the 2009/10 benchmark and is inclusive of London spend and calculated from data collected as part of the Social Housing Efficiency Programme.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 16: Department Cost Reduction Trajectories						
Department	**Trajectory showing Cumulative % Cost Reductions**					
	2009/10 (Baseline)	**2010/11**	**2011/12**	**2012/13**	**2013/14**	**2014/15**
MoD[33]	0.0%	2.5%	5.0%	7.5%	10.0%	12.5%
MoJ[34]	0.0%	3.0%	7.0%	12.0%	15.0%	20.0%
DfE/EFA[35]	0.0%	3.3%	7.0%[36]	17.8%	18.9%	20.0%

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
DoH/P21	The DoH/P21 cost reduction trajectory is based on cumulative cost reductions of approximately 3% per annum and the Chief Executive Officers of the P21+ supply chain partners have confirmed their support for the corresponding implementation programme. The forecast reductions will principally be generated through: 1) The P21+ tender action which results in the initial 2010/11 cost reductions of approximately 3%; 2) Cost reductions through setting challenging cost per sq metre benchmarks based on data from completed schemes; 3) Standardisation of materials, products and components; 4) Bulk purchasing of materials, products and components; 5) Engaging with P21+ supply chain partners to drive the use of Building Information Modelling (BIM) on all contracts delivered through the P21+ Framework.

[33] The MoD cost reduction trajectory has been developed on the basis of Single Living Accommodation procurement through existing contractual arrangements. Further benchmarks will be developed in alignment with the maturing post 'Strategic Defence and Security Review (SDSR)' Demand Plan. At this early stage, extension of the approach is expected to include: Service Families Accommodation (Houses); Airfield Pavements; and Offices. Maturing cost reduction trajectories will also be developed, reflective of opportunities afforded by MoD's 'Next Generation Estate Contracts' programme, together with the outcome of trials in both Integrated Project Insurance (IPI) and Cost Led Procurement (CLP).

[34] The MoJ cost reduction trajectory has been developed on the basis of typical houseblock projects and will be applied as far as possible to all projects.

[35] The DfE/EFA cost reduction trajectory is based on construction costs for new build areas only (i.e. it does not address refurbishment or maintenance). The cost reductions for 2010/11 and 2011/12 are provisional at this stage and are subject to final data collection and validation, which will be completed during FY 2012/13.

[36] The step change in the trajectory observed between 2010/11 and 2011/12 on the one hand, and 2012/13 on the other, is an outcome of the fact that projects near to financial close prior to the 2010 review of the DfE/EFA programmes offered less scope for the implementation of the DfE / EFA initiatives described in Table 17 and the corresponding significant cost reductions.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
DEFRA/EA	EA will achieve cost reductions of 15% by 2014/15 by implementing efficiencies in the following areas: 1) Better control of project scope to reduce the cost impact of changes; 2) Increased standardisation through the introduction of standard designs that save design fees and reduce construction costs by reducing unnecessary redesign and the range of solutions implemented; 3) Increased use of outcome based specifications that encourage cost saving innovation and remove unnecessary prescription; 4) Packaging of projects to reduce supplier overheads, encourage co-location of project teams, facilitate standardisation and bulk purchasing of commodity services and/or materials; 5) Introduction of new forms of contract that generate cost reductions by increasing project team collaboration and integration e.g. design and build; alliancing.
DfT/HA	HA has committed to save 20% off the original estimated delivery costs of 14 major project schemes confirmed in SR2010 (after deducting historic costs up to and including 2010/2011). The first three schemes have now started: M62 J25-J30 Managed Motorway (September 2011), M4 J19-J20 & M5 J15-J17 Managed Motorway (January 2012) and A23 Handcross to Warninglid (October 2011). All 14 schemes will have started by 2014/15, which means that the full 20% cost reduction will not therefore be achieved until the final scheme is completed in 2016 i.e. beyond the period covered by Table 16. The corresponding cost reduction trajectory is therefore based on the reality that target costs agreed for projects early in the programme assume efficiencies that will be delivered by initiatives over the life of the programme. Certainty of funding allows HA to plan and manage as a programme rather than as a series of discrete projects, and to better collaborate with the supply chain to develop a more efficient delivery strategy to take advantage of the commercial value that comes with a large and visible programme. This will be measured with both lead indicators (SOW[37] dates, FTC[38] compared to planned cost reduction) and lag indicators (earned value), and reported monthly to HA Board and the DfT sponsor and quarterly to DfT Board.

[37] Start of Works
[38] Final Target Cost

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	Planned efficiencies have been identified addressing the following areas/activities: commercial/improved cost targeting; delivery process; standardisation of products; category management of commodities; improved risk and value management; reducing waste/increasing productivity.
DCLG/HCA	The devolved nature of housing delivery presents opportunities for bottom-up innovation within existing allocations for 2011-15. HCA and DCLG will play an active role in promoting the development and take-up of such innovation by: - identifying and spreading best practice; - identifying and rectifying barriers to take-up of innovation placed by the funding process; and - in particular, by capitalising on improved cost data collection in 2011-15 to establish benchmarks and challenge performance. The use of an ambitious cost reduction forecast has particular value as a market signal. However, the levers available to HCA/DCLG to deliver forecasts are less direct than those in other public construction contexts. The trajectory forecasts **12% cost reduction** against the 09/10 baseline by 2014/15. Given the evidence available at this point, HCA believes this is an achievable but ambitious trajectory for its partners and the social housing construction industry. Nonetheless, with a view to ratcheting up the cost reduction ambition within the constraints of the possible, HCA will work in co-ordination with Cabinet Office during 2012/13 to develop the evidence base for the forecast trajectory addressing in particular: - analysis of cost data for the 2011-15 AHP as starts-on-site under contract commence, with the specific intention of understanding construction cost drivers - considering dimensions such as organisation size, presence or absence of development partnership, S106 sites, procurement method, use of procurement consortia, construction technique - and relative performance; - dialogue with providers - in particular through annual contract reviews - to understand possibilities and constraints; - dialogue with innovators in the construction and development industries, to obtain their view on the art of the possible.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	Specific initiatives, and assumed associated cost reductions, giving rise to these 12% cost reduction are as follows with the assumed contributions by 2014/15 given in the brackets: - Aggregation/ commoditisation in procurement **(4%)** - Supply chain engineering (including local contractor and combined capital works models) **(4%)** - Cost-led procurement **(1%)** - Integrated supply chain supporting product innovation **(3%)** HCA will focus activity on the largest providers and - for new build - on those schemes with the largest floor area and hence ability to affect the average £/m^2. For new build, the cost distribution data given in Charts 9 to 13 will be used to identify these schemes (in 2009/10, 20% of schemes made up over 50% of the total m^2). Some important constraints will continue to act on HCA's forecast: **For New Build:** - The programme for the 2011-15 has been let and therefore cost reductions therefore need to be found retrospectively; - DCLG and HCA are not directly parties to the construction contract and therefore can only act indirectly by seeking to influence approximately 150 organisations, where other issues (including issues around total cost and grant requirements) will also impact HCA's decision making; - HCA cannot take actions seen to direct the commercial choices of Registered Providers if their borrowing is to remain off-balance sheet for Government. **For Decent Homes (Refurbishment):** - The Decent Homes programme was the subject of a successful efficiency initiative from 2005 – 11, producing £293m of cost reductions. Significant early wins are therefore built into the baseline; - LA grant recipients are not asked to forecast construction costs. In seeking to influence providers, the following drivers for partners to adopt new methods can be leveraged:

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	For New Build: - Publication of expected cost reductions through the Cost Reduction Forecast; - Challenge through the annual contract review process; - Publication of anonymised peer benchmark data; - Innovation in new build procurement, in particular from consortia formed under the previous Decent Homes efficiency programme moving into new build *(note there is some evidence for gains of approximately 20% from strategic procurement; an assumption that this can be extended to 20% of the programme by 2014/15 underlies the 4% cost reductions against "supply chain engineering"; HCA believes there is also potential for further roll-out of traditional aggregation through consortia purchasing – again an assumed 20% cost reduction and 20% additional coverage underlies the 4% cost reduction shown against "aggregation/commoditisation");* - HCA endorsement of new methods/promotion of best practice (including product innovation) and a signalling of future construction efficiency expectations *(specifically DCLG and HCA will organise a joint Social Housing Construction Summit in late May; outcomes from this workstream underlie the 3% cost reductions shown for 2014/15 against "integrated supply chain");* - HCA is working to develop a BIM pilot, within the AHP, though this is also contingent on securing ERDF funding. It is expected this will be of value for future programmes, but not to produce measurable cost reductions at the programme scale in the current spending period. **For Decent Homes (Refurbishment):** - Publication of expected cost reductions through Cost Reduction Forecast; - Challenge through annual monitoring process; - Publication of peer benchmark data; - Expectations set within 2013-15 allocation confirmation process.
MoD	The preparation and publication of MoD's Single Living Accommodation (SLA) benchmark data - albeit currently representing a relatively small proportion (15-20%) of the total capital programme (excluding PFI) - marks the beginning of a significant corporate drive to consolidate and reinforce the departments approach to benchmarking. This approach will see an expanding range of

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	benchmark data being formulated and used to challenge MoD's contracting partners (both current and future) and to work with them in developing sustainable strategies aimed at 'beating the benchmarks', through a combination of: • Improving the department's intelligent customer challenge function; • Cooperation/collaboration on cost reduction with other sectors (public & private); • Improving the cost management of projects and programmes; • Tracking cost performance of new initiatives in both procurement and delivery; • Facilitating benchmarking of common structures with other sectors; • Questioning the scale and quality of provision, ensure that all aspects of expenditure add value, as determined by customer defined value drivers. There are numerous examples where MoD can demonstrate how benchmarking has supported robust challenge on costs, and will do so increasingly in future. Several recent Airfield Pavement projects have used benchmark comparisons to challenge and subsequently reduce Target Price proposals by 3-5% (cost reduction >£1m). MoD has recently challenged the SLAM Prime Contractor on 2 prospective projects, to explore and propose further means - over and above those already achieved - by which additional cost reductions can be achieved. This work is ongoing with areas under consideration including: alteration to Pain/Gain share arrangements; revised project insurances; changes to risk allocation and amendments to supply chain arrangements. The added impetus of this initiative will see the identification and enhancement of existing good practice. This will achieve systems that not only provide clear indicators of what MoD construction has historically cost, but more importantly what such construction should cost based on incorporating cost comparisons with similar works delivered by other government departments and the private sector. This work will see increasing use of public and private sector comparative data, achieved through a maturing understanding of those cost drivers deemed

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	unique to MoD construction, such as Counter Terrorist Measures (CTM), Nuclear Safety Requirements and the financial implications of Security Restrictions. The MoD has also stated their intent to use the Building Cost Information Service (BCIS), a business of the Royal Institution of Chartered Surveyors (RICS), as a cornerstone of its benchmarking initiative. Work is currently underway to upload a significant number of cost analyses to the BCIS system. This is also accompanied by additional effort in expanding this approach to Infrastructure. The MoD has worked closely with the BCIS in developing their Standard Forms of Cost Analysis for Civil Engineering (SFCECA), with the resultant documents currently undergoing industry consultation. As a result of the Strategic Defence and Security Review (SDSR), the MoD is currently undertaking a fundamental review of future works programmes. This continues to hamper the establishment of clear cost reduction trajectories going forward, as the 'pipeline' remains uncertain. However, as this emerging programme develops, maturing content will form the basis for prioritisation of further benchmarking focus (resource permitting), which in turn will see further cost reduction forecasts declared. Likely areas for expansion of the initiative over the coming year include: • Service Families Accommodation (Houses) - both new build and refurbishment; • Airfield Pavements; • Offices. The MoD's membership of the Joint Data and Benchmarking Task Group is seen as an opportunity for its internal practitioner community to share and learn from a wide pool of collective experience, enabling more coordinated engagement with industry in striving to deliver the ambitious targets set by this initiative. MoD are also participating in a number of associated trials of New Models of Procurement, namely: • Airseeker, RAF Waddington (Cost Led Procurement); • Specialist Training Centre, RM Lympstone (Integrated Project

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	Insurance). The success of these new models will be carefully monitored, with any financial effects being fed into developing benchmarking data and associated cost reduction trajectories.
MoJ	MoJ has introduced a Lean system of project management and benchmarking, engaging with supply chains to provide training in the MoJ's Project Performance Indicator and Management System. The system places an onus on the supply chain to develop their delivery programmes at an early stage and in a prescribed way that forces them to review the logic and delivery efficiency. MoJ also uses a measure whereby the percentage of the delivered product (i.e building minus management costs, OHP etc) is used as a benchmark to evaluate efficient procurement and delivery. The process forces early stage engagement and collaboration of the team, which increases the understanding of the parties and forges an ownership of the delivery information. Further, all the required data is used for the tender evaluation and therefore provides a further incentive for MoJ's supply chains to engage with Lean delivery. The accumulating evidence is that imposing this level of early stage detail in the delivery process and including it in the tender evaluation, helps the supply chain think about delivery much earlier than in a non-Lean environment, whereby waste is removed (time, preliminary costs, re work, duplication in design, etc) which supports sustainable competitive tendering i.e. it is the waste being removed and not necessarily profit margin. MoJ is now embarking on a second stage cultural training phase, which will further embed continuous improvement, collaborative working and Lean principles, while continuing to sustainably and reliably reduce costs through the identification and eradication of waste. The PPI system approach also gathers significant data that is used to benchmark costs and performance which are used to highlight performance expectations and improvements. MoJ has therefore set itself a target of increasing the value of the product by 10% every year until at least 2014/15. In addition to benchmarking the product value, the department is building up benchmarks for £/m^2 and unit cost £, which complement the PPI system,

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 17: Basis of Department Cost Reduction Trajectories	
Department	**Commentary**
	providing a rounded approach that promotes client best practice with industry recognised cost benchmarks. The department has embedded Lean management and industry improvement practices within the new frameworks. Early indications are that suppliers are wholeheartedly embedding these initiatives with ideas to better interact with Tier 2 and 3 to share/reduce preliminaries, use technology (such as mould manufacture to increase mould use and therefore decrease unit costs,) embed standardised designs to drive out cost and many more ideas, all based on a focus of delivering better value and quality at least costs, in a sustainable way.
DfE/EFA	The DfE/EFA cost reduction trajectory is based on the cost reductions that have been gained from existing BSF projects, together with a mix of forecast cost reductions that are expected during the remaining BSF programme and the expected 20% cost reductions for the Priority Schools Building Programme (PSBP). These 3 sources of cost reductions therefore combine in the later years and the trajectory will be subject to update as the actual outturn cost reductions are analysed. In relation to the BSF cost reductions: 1) The baseline for the measurement of these cost reductions is the original funding that was allocated to each project through DfE/EFA Funding Allocation Model before reductions were sought from projects; 2) Cost reductions are expected from the amendment of output specification requirements and floor areas (reduced by up to 15%), grouping projects differently, through value engineering to meet new policy direction and contractor efficiencies; 3) In some instances cost reductions are also expected through shifting from new build to a refurbishment option. In contrast, PSBP cost reductions are to be derived from: 1) Closer scrutiny of benchmark outturn data from previous procurements and its application to all projects across different programmes; 2) Challenge on elemental cost breakdowns using the above, to minimise over allocation of resources e.g. external works being justified against specification, not as a fixed % of base construction cost; 3) Ongoing challenge to reduce non-product cost e.g. closer scrutiny of preliminaries, rather than accept contractors' assumptions.

INDICATIVE COST REDUCTIONS ACHIEVED APRIL 2011 TO MARCH 2012

With reference to Table 1 in the Introduction, Table 18[39] below outlines the *indicative* construction related cost reductions declared by departments generated between April 2011 and March 2012.

Typically, *indicative* cost reductions have been calculated with reference to outline business cases, funding calculations or framework rates that adopted benchmarks from the baseline year 2009-10 or before. In general, these *indicative* cost reductions represent lower spending during the development and construction phases of specific projects awarded by departments and devolved bodies during FY 2011/12. All *indicative* cost reductions for FY 2011/12 have been calculated on the basis of department-specific methods in advance of the introduction from April 2012 of the cross Government Cost Reduction Validation Method, which was described in the February 2012 publication. The methods used by departments are also detailed in Table 18.

Validation of declared Department Cost Reductions: The *indicative* cost reductions for FY 2011/12 shown in Tables 1 and 18 are currently subject to completion of a Cabinet Office internal audit[40] and *final* figures will therefore be published, together with those from other Government expenditure categories, later in 2012.

[39] Table 18 represents a development for FY 2011/12 of data that was originally published February 2012 in the Cabinet Office document *Cost Reduction Validation Method / Cost Reductions May 2010 to September 2011* (Table 8).
[40] Facilitating overarching Cabinet Office reporting of progress, internal audit is only performed on the IN YEAR portion of WHOLE PROJECT LIFE cost (in this case the portion relating to FY 2011/12).

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
Department of Health/ P21	£22m *[£745m[43]]*		Cost reductions come from reduced overhead, profit and staff design fee rates tendered in awarding the new construction framework in October 2010 and applied to the value of projects registered on the framework. The reduced rates reflect the increased confidence by framework suppliers in the forward project pipeline.
DEFRA/ Environment Agency	£6m (TBC)[44] *[ca. £163m]*	-	Cost reduction comes from initiatives addressing packaging of projects and procurement (25%), streamlining project development and approvals process (20%) and value engineering using innovation and alternative methods to deliver the same outcome (55%). These are logged via a savings register and represent costs avoided prior to business case

[41] The IN YEAR component of the figures remains subject to the outcome of a Cabinet Office internal audit (refer to next footnote). HCA is also giving further consideration to the sustainability of its reported cost reduction (refer to footnote 45 below).
[42] Facilitating overarching Cabinet Office reporting of progress, internal audit is only performed on the IN YEAR portion of WHOLE PROJECT LIFE cost (in this case the portion relating to FY 2011/12).
[43] Represents value of projects registered on P21+ framework during 2011/12. On an ongoing basis, all projects benefit from the 3% cost reduction that resulted from the P21+ tender action in 2010, through reduced rates and margins incorporated into contracts let under the framework. Early action is underway addressing the remaining measures identified in Table 17, with supply chain partners pursuing strategies in bulk purchasing and BIM for projects registered with P21+ during the second half of 2011/12. Engagement with suppliers will also inform strategies and reductions on standardisation of materials and components. The effect of these initiatives will be first discernable in the £ benchmarks in 2012/13 and subsequent years with evidence accumulating as projects move through their lifecycle from registration of schemes to confirmation of the Guaranteed Maximum Price.
[44] Provisional figure to be confirmed Summer 2012.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			sign off (from procurement initiatives or where a new issue arises and is addressed without additional outlay) and cash released after the approval of the business case.
DfT/ Highways Agency	£81m *[£398m]*	£21m *[£110m]*	HA has committed to save 20% off the original estimated delivery costs of 14 major project schemes confirmed to SR2010 (after deducting historic costs up to and including 2010/2011). The first 3 schemes have now started:- M62 J25-J30 Managed Motorway (September 2011), M4 J19-J20 & M5 J15-J17 Managed Motorway (January 2012) and A23 Handcross to Warninglid (October 2011). Cumulatively they have agreed target costs which include cost reductions of around £81 million towards the overall objective of reducing costs by £443 million across the programme of 14 schemes. The cost reductions will not be realised and confirmed until each scheme has completed and will be delivered across the period of construction which will be

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			more than one financial / calendar year. The £21 million cost reduction represents the in year proportion of the total £81 million taken into contract for the three schemes approved for construction in 2011/12. The final scheme will complete in 2016 and over the lifetime of the programme, forecast cost reductions of £443 million have been declared against gross estimated expenditure of £2216 million. Schemes already under construction as part of the pre-SR2010 programme are also delivering cost reductions against the construction budgets and agreed target costs however are not part of the £443 million (20%) offer.
DCLG/ Homes & Communities Agency	£16m[45] *[£129m]*	-	The figure provided relates to New Build construction. It has been determined by multiplying the difference between benchmark rates achieved in 2011/12 and baseline

[45] Having received and sense checked data from providers, HCA is now engaging with them to gather qualitative evidence about how these relatively significant cost reductions (12.4%) were achieved and to establish whether they can be considered sustainable - as defined within footnote 2 above – or, alternatively, confirm the extent to which the principles of the Strategy will need to be further embedded in order to make them sustainable. It is therefore anticipated that HCA should be in the position to confirm the outcomes of this engagement by Spring 2013. Once the factors behind the cost reductions for 2011/12 have been established, HCA will then review the trajectory set out in Chart 2 and Table 16 to confirm its ongoing validity.

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			rates from 2009/10, with the actual 2011/12 construction spend reported by social housing providers. Refurbishment (Decent Homes) data available final quarter 2012.
Ministry of Defence *(Single Living Accomm. Project: SLAM)*	£4m *[£72m]*	-	In order to correspond with the benchmarking data reported in the accompanying charts and tables, declared cost reductions represent those achieved solely in relation to the provision of Single Living Accommodation procured via the SLAM Prime Contract for the period in question. Cost reductions have been derived on the basis of award costs (maximum price target costs) for projects commenced during FY 2011/12 with construction durations of several years. Many of the tender packages have therefore yet to be let and cost reductions are estimated on the basis of those achieved in the previous period. Cost reductions represent cumulative effects of: continuous improvement; innovation and collaborative focus on

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			cost reduction (including lower level supply chain). It should also be noted that Project SLAM has already achieved 18% Continuous Improvement efficiencies (on repetitive elements of project Target Costs) over the 9 year duration of the contract. Whilst the majority of the cost reductions declared above result from delivering the same or similar scope at reduced cost, throughout the SLAM programme there have also been ongoing design development reviews. These have brought together users, designers, builders and various subject matter experts, to collaboratively and critically focus on the scale and quality of provision. These initiatives have sought to achieve facilities which - whilst continuing to fully satisfy the needs of the service community - are stripped of any expenditure where resultant 'added value' is considered questionable. During the earlier period May 2010 to

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			March 2011 - which was originally covered by the publication February 2012 – cost reductions were of the order of **£5m** against a corresponding expenditure of **£68m**. Owing to the nature of the procurement arrangements (Maximum Price Target Cost) precise outturn cost reductions will not be available until each corresponding project has reached financial close.
Ministry of Justice	£12m *[£104m]*	-	Cost reductions have come from an ongoing lean initiative to increase the proportion of spend on the end product and a corresponding reduction in non productive costs (particularly those related to upfront design and site overhead costs/schedule duration). Cost reductions have also come from the introduction of mini competitions into the existing framework and the increased bundling of projects. These have been calculated on the basis of the difference between the project value at Outline Business Case/initial Tender Price (if higher) and the project value at Final

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			Business Case/Contract Award. The data gathered by MoJ using the Cost Component Breakdown has demonstrated further benefits to the industry. Although the product value has increased and effectively more product has been received per £, evidence indicates the levels of profit and overheads have been sustained both at main contractor and supply chain level.
DfE / Education Funding Agency	£138m *[ca. £1bn]*	£51m *[£366m]*	Cost reductions have come from amendment of output specification requirements and floor areas (reduced by up to 15% i.e. achieving tighter fit between specification and requirement), grouping projects differently, through value engineering to meet new policy direction and contractor efficiencies. In some instances cost reductions have also been achieved through shifting from new build to a refurbishment option. The baseline for the measurement of these cost reductions is the original funding that was allocated to each project through DfE/EFA Fnding

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 18: *Indicative* construction related Departmental Cost Reductions achieved between April 2011 and March 2012			
Department	***Indicative* WHOLE PROJECT LIFE Cost Reductions on new contracts awarded /projects registered during 2011/12[41]** ***[Corresponding Expenditure]***	***Indicative* IN YEAR Cost Reductions on project spend during 2011/12** ***[Corresponding Expenditure]*** (subject to completion of internal audit[42])	**Commentary on the source of cost reductions**
			Allocation Model before DfE/EFA sought reductions from projects.
Totals	**£279m** ***[ca. £2.6bn]*** **>10%**	**£72m** ***[£476m]*** **15.1%**	

ANNEX A: DEPARTMENT COST BENCHMARK DATA: REGIONAL DCLG/HCA DATA

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 19: Construction Cost Benchmarks for DCLG/HCA: East and South East HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m^2	1419	1130 1648	1376	1155 1563	1322	1080 1508
	House/flat for LCHO			1514	1154 1703	1453	1162 1678	1425	1025 1495
	House/flat for rent: General needs			1405	1123 1628	1368	1146 1550	1322	1096 1516
	House/flat for rent: Supported Housing			1808	1346 2078	1664	1474 2014	1445	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	100129	82728 119077	98519	83169 114297	97354	77362 117268
			£/person housed	27734	21511 34156	26772	21741 31783	26728	20965 32443
	House/flat for LCHO		£/home	102631	76731 120253	99214	81163 117439	103599	79890 114921
			£/person housed	29343	21954 32935	28057	21723 32820	27952	20720 30703
	House/flat for rent: General needs		£/home	99758	82728 118783	98760	83529 114300	97314	77655 117268
			£/person housed	27166	21277 32568	26409	21581 30773	26720	21272 32443

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 19: Construction Cost Benchmarks for DCLG/HCA: East and South East HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
	House/flat for rent: Supported housing		£/home	108538	80137 119700	91787	74375 106178	140194	Insuff. data
			£/person housed	49047	37406 59850	45664	34434 59982	35049	Insuff. data

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 20: Construction Cost Benchmarks for DCLG/HCA: Midlands HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m^2	1376	1097 1496	1297	1077 1488	1250	994 1346
	House/flat for LCHO			1316	1114 1455	1260	1037 1417	1126	1020 1331
	House/flat for rent: General needs			1360	1092 1456	1258	1070 1425	1211	1003 1333
	House/flat for rent: Supported Housing			1773	1302 2543	1867	1363 1918	2000	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	98122	79114 113524	96154	80520 108911	91163	71297 105118
			£/person housed	27331	20889 30954	24846	19853 29531	24227	17955 28738
	House/flat for LCHO		£/home	103293	81218 111530	93051	75455 106667	88786	79994 104294
			£/person housed	25308	20588 28201	24498	1895 26334	20827	17819 24940
	House/flat for rent: General needs		£/home	98422	79114 112931	95623	80520 108911	89805	71346 104843
			£/person housed	26749	20651 29643	23717	19622 27500	23266	17955 26755

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 20: Construction Cost Benchmarks for DCLG/HCA: Midlands HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile
	House/flat for rent: Supported housing		£/home	92733	65795 143249	10575	73000 106515	111215	Insuff. data
			£/person housed	46817	24976 127164	45839	31095 53810	47732	Insuff. data

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 21: Construction Cost Benchmarks for DCLG/HCA: North East, Yorkshire and The Humber HCA Operating Area										
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m^2	1273	1044 1467	1198	980 1487	1088	952 1318
	House/flat for LCHO			1174	974 1391	1051	982 1254	918	699 1304
	House/flat for rent: General needs			1254	1039 1428	1173	965 1413	1081	963 1318
	House/flat for rent: Supported Housing			1703	1428 1804	1631	1402 2137	1458	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	98040	82935 110000	95557	82865 110135	83791	70061 98933
			£/person housed	24535	19061 30127	23430	18800 30094	21682	17742 25362
	House/flat for LCHO		£/home	96286	79601 108822	91297	84434 106533	73349	43859 101351
			£/person housed	21811	18503 26333	19986	18541 23674	18524	13971 27118
	House/flat for rent: General needs		£/home	97979	84297 109312	94899	82865 109438	83693	71237 101449
			£/person housed	23948	18924 27790	22818	18520 28518	21434	18126 25362

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 21: Construction Cost Benchmarks for DCLG/HCA: North East, Yorkshire and The Humber HCA Operating Area										
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile
	House/flat for rent: Supported housing		£/home	99028	76000 108535	104749	76697 111799	88330	Insuff. data
			£/person housed	40668	33019 60230	35459	28105 66787	44165	Insuff. data

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 22: Construction Cost Benchmarks for DCLG/HCA: North West HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m^2	1326	1087 1558	1266	1053 1389	1097	989 1312
	House/flat for LCHO			1341	1045 1488	1158	994 1331	1150	1013 1380
	House/flat for rent: General needs			1274	1080 1487	1253	1053 1363	1085	990 1301
	House/flat for rent: Supported Housing			1841	1495 2283	1510	482 1795	1802	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	96407	85946 117500	99448	85606 114511	85277	75509 103058
			£/person housed	26278	19331 33456	24299	19119 26696	20650	17800 25792
	House/flat for LCHO		£/home	101905	79999 108507	94868	83846 107673	96351	89130 103523
			£/person housed	26011	18278 32941	21820	18613 25119	20833	17826 24233
	House/flat for rent: General needs		£/home	94996	85452 118827	99991	86298 114511	85294	76245 101913
			£/person housed	24599	19157 29253	23728	19037 2862	20332	17895 25000

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 22: Construction Cost Benchmarks for DCLG/HCA: North West HCA Operating Area										
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile	Single Point Average	Range 20th – 80th Percentile
	House/flat for rent: Supported housing		£/home	107272	83379 116459	104865	75559 105081	84666	Insuff. data
			£/person housed	49166	39243 92112	42848	26138 54305	49725	Insuff. data

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 23: Construction Cost Benchmarks for DCLG/HCA: South and South West HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m^2	1394	1150 1609	1414	1123 1650	1340	1102 1502
	House/flat for LCHO			1339	1062 1579	1368	1115 1550	1274	976 1491
	House/flat for rent: General needs			1388	1149 1588	1407	1120 1624	1311	1102 1473
	House/flat for rent: Supported Housing			2610	1827 3443	1916	1451 1998	1803	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	101267	81486 121037	104644	85713 126000	92050	75037 110643
			£/person housed	27384	21802 33333	27530	21284 31974	27216	20947 31756
	House/flat for LCHO		£/home	94170	77173 112253	96128	82565 113840	90827	70492 106987
			£/person housed	26016	20463 30993	26621	2502 31446	24816	19358 28806
	House/flat for rent: General needs		£/home	101187	81575 120952	104640	85730 126000	92027	76800 110852
			£/person housed	27228	21673 32046	27335	21188 31765	26160	20828 31598

Cost Benchmark Data, Cost Reduction Trajectories and Indicative Cost Reductions

Table 23: Construction Cost Benchmarks for DCLG/HCA: South and South West HCA Operating Area									
Project Types	**Project Subtypes**	**Benchmarks**	**Units**	**2009/10 (Baseline)**		**2010/11**		**2011/12**	
				Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile	Single Point Average	Range 20^{th} – 80^{th} Percentile
	House/flat for rent: Supported housing		£/home	109761	81486 124455	104865	82000 115867	92315	Insuff. data
			£/person housed	62390	43611 94997	42848	2821 82000	51459	Insuff. data

ANNEX B: COST COMPONENTS INCLUDED WITHIN DEPARTMENT COST BENCHMARKS

Table 24: Cost Components included within Department Cost Benchmarks (for DoH/P21, MoJ and DfE/EFA)							
NRM Ref	**Cost Components**	**Typically included in DoH/P21 benchmarks** (Reference Table 4)	**DCLG/HCA New Build** (Reference Table 7 and Annex A)	**DCLG/HCA Refurbishment** (Reference Table 7 and Annex A)	**MOD** (Reference Table 8 and Annex A)	**Typically included in MoJ benchmarks** (Reference Table 9)	**Typically included in DfE / EFA benchmarks** (Reference Table 10)
0	**Facilitating works**						
0.01	Toxic/hazardous material removal	N	Y	N	N	N	N
0.02	Major demolition works	N	Y	N	N	Y	Y
0.03	Specialist groundworks	N	Y	N/A	N	N	N
0.04	Temporary diversion works	N	Y	N/A	Y	N	N
0.05	Extraordinary site investigation works	N	Y	N/A	N	N	N
01	**Substructure**						
01.01	Foundations	Y	Y	N/A	Y	Y	Y
01.02	Basement Excavation	Y	Y	N/A	Y	N	N
01.03	Basement Retaining Walls	Y	Y	N/A	Y	N	N
01.04	Ground Floor Construction	Y	Y	N/A	Y	Y	Y
02	**Superstructure**					Y	
02.01	Frame	Y	Y	N/A		Y	Y
02.02	Upper Floors	Y	Y	N/A	Y	Y	Y
02.03	Roof	Y	Y	Y	Y	Y	Y
02.04	Stairs and Ramps	Y	Y	N	Y	Y	Y
02.05	External Walls	Y	Y	Y	Y	Y	Y
02.06	Windows and External Doors	Y	Y	Y	Y	Y	Y
02.07	Internal Walls and Partitions	Y	Y	N	Y	Y	Y
02.08	Internal Doors	Y	Y	N	Y	Y	Y
03	**Internal finishes**						
03.01	Wall finishes	Y	Y	Y	Y	Y	Y
03.02	Floor finishes	Y	Y	Y	Y	Y	Y
03.03	Ceiling finishes	Y	Y	Y	Y	Y	Y
04	**Fittings, furnishing and equipment**						
04.01	General fittings, furnishings and equipment	Y	Y	N/A	Y	Y	N
04.02	Special fittings, furnishings and equipment	Y	Y	N/A	Y	N	N
04.03	Internal planting	Y	Y	N/A	Y	N	N
04.04	Bird and vermin control	Y	Y	N/A	Y	N	N
05	**Services**						
05.01	Sanitary appliances	Y	Y	Y	Y	Y	Y
05.02	Services equipment	Y	Y	Y	Y	Y	Y
05.03	Disposal installations	Y	Y	N/A	Y	Y	Y
05.04	Water installations	Y	Y	N/A	Y	N	Y
05.05	Heat source	Y	Y	Y	Y	N	Y
05.06	Space heating and air conditioning	Y	Y	Y	Y	N	Y
05.07	Ventilation systems	Y	Y	N	Y	Y	Y
05.08	Electrical installations	Y	Y	Y	Y	Y	Y

Table 24: Cost Components included within Department Cost Benchmarks (for DoH/P21, MoJ and DfE/EFA)							
NRM Ref	**Cost Components**	**Typically included in DoH/P21 benchmarks** (Reference Table 4)	**DCLG/HCA New Build** (Reference Table 7 and Annex A)	**DCLG/HCA Refurbishment** (Reference Table 7 and Annex A)	**MOD** (Reference Table 8 and Annex A)	**Typically included in MoJ benchmarks** (Reference Table 9)	**Typically included in DfE / EFA benchmarks** (Reference Table 10)
05.09	Gas and other fuel installations	Y	Y	Y	Y	N	Y
05.10	Lift and conveyor installations	Y	Y	N	Y	N	Y
05.11	Fire and lightning protection	Y	Y	Y	Y	N	Y
05.12	Communication, security and control systems	Y	Y	Y	Y	N	Y
05.13	Specialist installations	Y	Y	N	Y	N	Y
05.14	Builder's work in connection with services	Y	Y	N	Y	N	Y
05.15	Testing and commissioning of services	Y	Y	N	Y	N	Y
06	**Complete buildings and building units**						
06.01	Prefabricated buildings	Y	Y	N/A	Y	N	N
07	**Work to existing buildings**						
07.01	Minor demolition works and alteration works	Y	Y	N	Y	Y	N
07.02	Repairs to existing services	Y	Y	Y	Y	N	N
07.03	Damp-proof courses /fungus and beetle eradication	Y	Y	N	Y	N	N
07.04	Façade retention	Y	Y	N	Y	N	N
07.05	Cleaning existing surfaces	Y	Y	N	Y	N	N
07.06	Renovation works	Y	Y	Y	Y	N	N
08	**External works**						
08.01	Site preparation works	N	Y	Y	Y	N	Y
08.02	Roads, paths and pavings	N	Y	N	Y	Y	Y
08.03	Planting	N	Y	N	Y	Y	Y
08.04	Fencing, railings and walls	N	Y	N	Y	Y	Y
08.05	Site/street furniture and equipment	N	Y	N	Y	N	Y
08.06	External drainage	N	Y	N	Y	Y	Y
08.07	External services	N	Y	N	Y	N	Y
08.08	Minor building works and ancillary buildings	N	Y	N	Y	N	N
09	**Main contractor's preliminaries**						
09.01	Employer's requirements	Y	Y	Y	Y	Y	N
09.02	Main contractor's cost items	Y	Y	Y	Y	Y	Y
10	**Main contractor's overheads and profit**						
10.01	Main contractor's overheads	Y	Y	Y	Y	Y	Y
10.02	Main contractor's profit	Y	Y	Y	Y	Y	Y
11	**Project/design team fees**						
11.01	Consultants' fees	N	N	N/A	N	Y	Y
11.02	Main contractor's pre-construction fees	Y	N	N/A	N	Y	N
11.03	Main contractor’s design fees*	Y	N	N/A	Y	Y	Y
12	**Other development/project costs**						

Table 24: Cost Components included within Department Cost Benchmarks (for DoH/P21, MoJ and DfE/EFA)							
NRM Ref	**Cost Components**	**Typically included in DoH/P21 benchmarks** (Reference Table 4)	**DCLG/HCA New Build** (Reference Table 7 and Annex A)	**DCLG/HCA Refurbishment** (Reference Table 7 and Annex A)	**MOD** (Reference Table 8 and Annex A)	**Typically included in MoJ benchmarks** (Reference Table 9)	**Typically included in DfE / EFA benchmarks** (Reference Table 10)
12.01	Other development /project costs	Y	Y	N	Y	Y	N
13	**Risks**						
13.01	Design development risks	Y	Y	N/A	Y	Y	Y
13.02	Construction risks	Y	Y	N/A	Y	Y	Y
13.03	Employer change risks	N	Y	N/A	N	Y	N
13.04	Employer other risks	N	Y	N/A	N	Y	N
14	**Inflation**						
14.01	Tender inflation	Y	Y	N	Y	N	N
14.02	Construction inflation	Y	Y	Y	Y	N	Y
* **For P21:** these are P21 supply chain design fees; **for MoD:** Maximum Price Target Costs include detailed design from RIBA Stage D onwards.							

Table 25: Cost Components included within Department Cost Benchmarks for EA	
Cost Components	**Typically included in EA Type 1 benchmarks** (Reference Table 5)
Contractors direct construction costs	**Y**
Overheads & profit	
Preliminaries	**Y**
Method related charges	**Y**
temporary works	**Y**
Site establishment	**Y**
Staff costs	**Y**
Insurances	**Y**
Painshare/ gainshare	**Y**
Profit	**Y**
The **elemental costs (for either embankments or retaining walls)** also include other associated construction works, which are not separately identified as measured elements, these might include:	
Work undertaken as part of the main construction work such as fencing, drainage, culvert inlet works/ screens	**Y**
Temporary works such as access tracks, pumping, cofferdams, river diversions where appropriate	**Y**
Variations/ compensation events/ delay costs where these are not specific to any particular element	**Y**
VAT	**N**
External consultants	**N**
Internal client costs	**N**
Land	**N**
Compensation payments	**N**

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Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
A		**Contractor - Options Phase**	
A	2001	Options Phase - Option Identification and Selection	
B		Contractor - Development Phase	
B	2002	Development Phase - Preliminary Design, Statutory Procedures & Powers and Construction Preparation	
C			Client Project Support (costs generated by the Employers Agent and other Consultants directly employed by the HA under the Project Support Framework) Contract.
C	1000		Pre-Options Phase - Client Project Support
C	1001		Options Phase- (Option Identification and Selection)
C	1002		Development Phase - (Preliminary design, Statutory Procedures & Powers and Construction Preparation)
C	1003		Construction Phase - (Construction, Commissioning & Handover and Closeout)
O		Project Overhead	
O		Contractors Project Overhead	
O	100	Cost of Offices	
O	101	Construction Management	
O	102	Design Management (Contractor, the Contractors Designer & the PCF Products in Phase)	
O	103	Insurances	
O	104	Ancillary Overhead Costs	
O	105	General Labour	
P		Method Related Costs	
P	113	General Plant	
P	114	Temporary Works	
P	115	Traffic Management	
R1		Roadworks General	
R1	200	Site Clearance	
R1	300	Fencing	
R1	400	Road Restraint Systems	
R1	1100	Kerbs, Footways And Paved Areas	
R1	1200	Traffic Signs And Road Markings	
R1	1300	Road Lighting Columns, Brackets & CCTV Masts	

Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
R1	1400	Electrical Work For Road Lighting And Traffic Signs	
R1	1500	Motorways Communications and Technology	
R1	2400	Brickwork, Blockwork & Stonework	
R1	3000	Landscape & Ecology	
R1	5000	Maintenance Painting Of Existing Steelwork	
R2		Roadworks main carriageway	
R2	500	Drainage	
R2	600	Earthworks	
R2	700	Pavements	
R3		Roadworks Interchange	
R3	500	Drainage	
R3	600	Earthworks	
R3	700	Pavements	
R4		Roadworks side roads	
R4	500	Drainage	
R4	600	Earthworks	
R4	700	Pavements	
S		Structures	
S	100	Temporary Works	
S	200	Existing Structures Demolitions - Only where to receive New Construction	
S	400	Road Restraint Systems excluding safety fencing	
S	500	Drainage and Service Ducts in Structures	
S	600	Earthworks	
S	700	Pavements- in, on, under and associated with structures	
S	1100	Kerbs, Footways And Paved Areas	
S	1300	Road Lighting Columns, Communications and electrical works in association with Structures	
S	1500	Motorways Communications and Technology	
S	1600	Piling and Embedded Retaining Walls	
S	1700	Structural Concrete	
S	1800	Structural Steelwork	
S	1900	Protection of Steelwork Against Corrosion	
S	2000	Waterproofing for concrete structures	

Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
S	2100	Bearings, joints and sealing of gaps	
S	2400	Brickwork, Blockwork & Stonework	
S	2500	Special Commissioned Structures	
S	2600	Building Works	
T		Tunnels	
T	7000	Tunnels - New Construction & / or Refurbishment (Preliminaries Type Items)	
T	7001	Demolition & Site Clearance; excludes works external to tunnel e.g. the RCC	
T	7002	Road Restraint Systems	
T	7003	Earthworks	
T	7004	Drainage & Ducts	
T	7005	Pavements in Tunnels, cross passageways and the like	
T	7006	Kerbs, Footways And Paved Areas	
T	7007	Traffic Signs And Road Markings	
T	7008	Linings to Tunnels, shafts and other cavities	
T	7010	Piling and Embedded Retaining Walls in or in connection with Tunnels (Permanent Works Only)	
T	7020	Concrete	
T	7025	Precast Concrete	
T	7030	Formwork	
T	7035	Structural Steelwork	
T	7040	Surface Finishes and Waterproofing	
T	7050	Brickwork, blockwork, stonework - finishes	
T	7100	Mechanical, Electrical, and Ventilation Works	
T	7500	Tunnel - Other	
W		Accommodation Works and Statuatory undertakers	
W	2700	Accommodation Works	
W	2701	Works by the Contractor for Statutory Undertakers - Replicate SU's where necessary	
W	2702	Works by the Statutory Undertakers - Replicate SU's where necessary	
Z			HA cost and value (Allowance within clients project budget for client managed costs - historic project, HA staff, Stats, contributions, Land and

Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
			pain/gain).
Z	9000		Historic Costs (pre PCF Phase / Stage entry)
Z	9100		Pre-Options Phase - HA Management Costs
Z	9200		Options Phase - HA Management Costs
Z	9300		Development Phase - HA Management Costs
Z	9400		Construction Phase - HA Management Costs
Z	9500		Construction Phase - Supplementary HA Costs
Z	9600		Statutory Bodies Costs
Z	9800		Value Adjustments for Funding
Z	9900		Lands
Z	9999		Bonus Payments (and Deductions) made to and against the Main Contractor
Z	9700		Post Road Opening
X1		Contractor project risk - Design	
X1		Contractor project risk - Construction	
X1	O	Project Overhead	
X1	P	Method Related Costs	
X1	R	Roadworks	
X1	S	Structures	
X1	T	Road Tunnel Construction & Refurbishment	
X1	W	Accommodation Works and Statutory Undertakers in Target (Paid by the Contractor and recovered through the contract)	
X2			HA Project risk (construction)
X2	1		Project Specific Risks
X3			HA Strategic risk (construction)
X3	1		Strategic Risks
X4			HA Programme risk
X4	1		Programme Risks
Ia		Contractual Inflation (RPI)	
Ia	O	Project Overhead	
Ia	P	Method Related Costs	
Ia	R	Roadworks	
Ia	S	Structures	

Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
Ia	T	Road Tunnel Construction & Refurbishment	
Ia	W	Accommodation Works and Statutory Undertakers in Target (Paid by the Contractor and recovered through the contract)	
Ib		Contractors inflation (above RPI)	
Ib	O	Project Overhead	
Ib	P	Method Related Costs	
Ib	R	Roadworks	
Ib	S	Structures	
Ib	T	Road Tunnel Construction & Refurbishment	
Ib	W	Accommodation Works and Statutory Undertakers in Target (Paid by the Contractor and recovered through the contract)	
CE 1		Change Orders and Compensation Events - Contractor	
CE 1	A	Options Phase - Contractor	
CE 1	B	Development Phase - Contractor	
CE 1		Construction - Contractor and his Consultants	
CE 1	O	Project Overhead	
CE 1	P	Method Related Costs	
CE 1	R	Roadworks	
CE 1	S	Structures	
CE 1	T	Road Tunnel Construction & Refurbishment	
CE 1	W	Accommodation Works and Statutory Undertakers in Target (Paid by the Contractor and recovered through the contract)	
CE 2		Change Orders - Client Project Support	
CE 2	A	Options Phase - Client Project Support	
CE 2	B	Development Phase - Client Project Support	

Table 26: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		**Typically included in HA Benchmarks / Total Project Costs** (reference Table 6)	
		Construction Cost Components	**Client Cost Components**
CE 2	1003	Construction Phase - (Construction, Commissioning & Handover and Closeout) ~ Client Project Support	

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