

Government Construction

Construction Cost Reductions, Cost Benchmarks,
& Cost Reduction Trajectories to March 2013:
Addendum December 2013

18th December 2013

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FOREWORD

This is the second year that government has published construction cost benchmark data as part of the broader implementation of the Government Construction Strategy.

The Strategy outlines the detailed measures that are being implemented in order to match the best in private sector delivery of construction projects. This publication therefore reports on the progress government departments are already making in achieving this objective and how they want to go further. Private clients and construction suppliers are therefore invited to work with government in order to share in the learning that comes from comparing cost benchmarks and practices (GovernmentConstructionTeam@cabinet-office.gsi.gov.uk).

Document Overview

The report that follows is split into 6 main parts:

Introduction	Introductory narrative providing the context for this publication and a summary of progress made to date.
Part 1: Cost Reductions:	Actual cost reductions, together with how departments are achieving them.
Part 2: Cost Benchmark Data:	Cost data sets for a range of public and regulated bodies are presented in the following formats: <ul style="list-style-type: none">- Cost distribution charts - <i>individual project data</i>- Tables - <i>aggregated data for a range of projects</i>- Trend charts – <i>visual depictions of the tabular data</i>- Elemental tables/charts – <i>subsets of the above data in more granular form</i>
Part 3: Use of Cost Benchmarks:	Progress being made by departments in comparing their cost data with other departments and private clients.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Part 4: Cost Reduction Trajectories:	Restatement of departmental cost reduction commitments first published in 2012. These show the <i>speed</i> with which cost reduction will be achieved.
Technical Annexes:	For the data in this report to be of value it is important to detail how the costs presented have been built up.

INTRODUCTION

This document supplements the construction cost benchmarking information that was originally published in July 2013.

It provides additional benchmark information for 2012/13 and reports on the progress departments have made in reducing construction costs, including **half year savings for 2013/14 of £293m**. It also shows the corresponding downward trends in unit construction costs. These trends demonstrate how, by procuring more intelligently and consistently, departments are not only securing lower costs on average but the bandwidths of cost are also becoming tighter (refer to **Chart 1** below).

This document also presents more granular (elemental) department cost benchmarks, together with data included direct from local authorities.

The presented information shows the range of costs currently paid for departmental construction projects and the plans departments are currently developing and implementing to reduce those costs. It also provides further evidence that the Government Construction Strategy's overarching target - to achieve a sustainable¹ reduction in the cost of construction by 15-20% by the end of this parliament - is already being achieved by some departments.

The information contained within this document is necessarily detailed because it sets out the measures departments are taking to implement the leading practices needed to secure cost reductions of 20%, or more. High level unit cost data also needs to be explained in terms of its build up so that the information here can be used appropriately.

Furthermore, this publication supports the new delivery models being trialled as part of the implementation of the Government Construction Strategy. These trials are not the only way in which Government will deliver the Strategy's overarching cost reduction objective, but do represent new ways of buying construction through setting challenging cost targets.

In parallel with this document, trial project case studies are being published which report on the journey of change embarked on by departments and local authorities and how the first real

¹ Without adversely impacting either whole life value or the long term financial health of the construction industry.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

benefits are being achieved. While this publication and future updates will evidence the programme level cost reductions being achieved by departments, the trial project case studies demonstrate how measures being taken by departments on individual projects are also achieving savings outcomes that can be replicated on other projects. Taken together, these initiatives should ultimately lead to the implementation of consistent practices across Government and other public bodies that deliver sustainable cost reductions.

Trials are also being developed for Building Information Modelling (BIM) and Government Soft Landings which will extend the potential scope of benchmarking to cover Whole Life Costs. There is also the potential for BIM to provide a systematic platform for recording project metrics that will provide uniformity of benchmark data that can be used across government, the wider public sector, private sector and regulated industries.

This 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 continue to be developed and added to and the trends relating to the initial reporting of contract award costs will over time be validated by subsequent trends relating to outturn costs. This will confirm cost reductions can be sustained and are not simply the result of short term under-pricing to maintain supply chain order books in difficult market conditions. This document therefore continues to incorporate the 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 all government construction expenditure. This activity will also encompass comparisons made against equivalent private sector cost benchmarks, the progress of which is also reported here.

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).

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Summary of the benchmark data, cost reduction plans and cost reductions achieved in 2012/13 and the first half of 2013/14

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 21** below) present the 2009/10 baseline cost distributions, while also now showing how 2012/13 department cost benchmarks indicate departments are not only securing lower costs on average but the bandwidths of cost are also becoming tighter (refer to **Charts 4 to 16**).

These downward trends can also be seen in the tables (refer to **Tables 5 to 11, 14 to 15** and **Annex A** below) which provide data for 2009/10 (baseline year) through to 2012/13. The accompanying charts (**Charts 22-34**), also show these downward trends.

These trends, taken together with the overall cost reductions of £447m in 2012/13 and £293m in the first half of 2013/14 reported in Table 2 below, indicate that departments made progress in reducing their costs compared to the 2009/10 baseline.

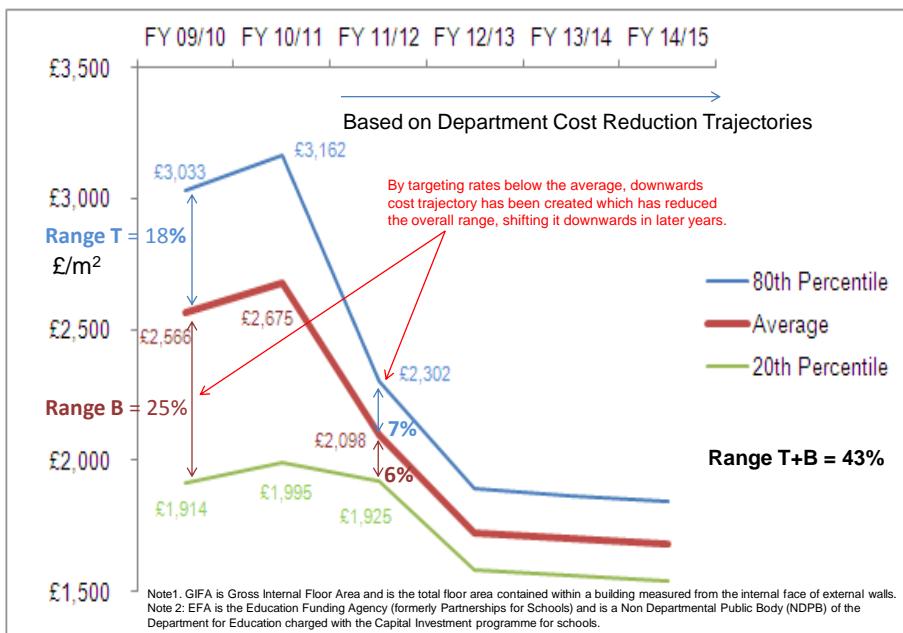
This should be expected, since - as was reported in 2012 - the **Range T** values shown within Charts 3 to 21 typically ranged from circa 10% to 30%.

Note on Range T: 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** 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 11). 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 4**.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 1: Illustration: DfE/EFA GIFA for 4000 – 6000m²



Departments continue to engage with private client organisations and the Building Cost Information Service to develop comparisons between public and private benchmarks. An important aspect of making such comparisons is to understand what has been included or excluded within any given benchmark and this is addressed in **Tables 12, 13, 16 and 18** in the main body and **Annex B** of this document.

Cost Reduction Trajectories: The Cost Reduction Trajectories included in this document (**Table 20**) – 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 21**² and Cabinet Office continues to work with departments to ensure trajectories are developed further towards meeting the aspiration of achieving 15-20% cost reduction.

² Table 21 also provides explanations for the relative shapes of the different departmental trajectories provided in Table 20.

Chart 2: Department Cost Reduction Trajectories



Cost Reductions achieved during 2011/12, 2012/13 and the first half of 2013/14: Table 2 below states the cost reductions achieved for 2011/12, 2012/13 and the first half of 2013/14. It compares the resulting cost reduction percentages with the department trajectories set out in Table 20 and Chart 2. **The IN YEAR cost reductions for 2011/12, 2012/13 and the first half of 2013/14 in Table 2 have been subject to Cabinet Office internal audit³. For 2011/12 these are also shown with the indicative WHOLE PROJECT LIFE⁴ cost reductions for some departments. For 2012/13 and the first half of 2013/14 all departments provided IN YEAR cost reductions.**

The overall cost reductions declared by departments for 2011/12 were:

- **whole project life:** £247m on an expenditure of around £2.6bn (8.7%);
- **in-year:** £72m on an expenditure of £476m (13.1%).

³ 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 portions relating to 2011/12 and 2012/13).

⁴ 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.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

In contrast, the overall cost reductions declared by departments for 2012/13 and the first half of 2013/14 were:

- **in-Year 2012/13:** £447m on an expenditure of £2.4bn (15.6%)
- **in the first half of 2013/14:** £293m on an expenditure of £1.3bn (22.5%)

In general, these cost reductions represent lower spending confirmed during the development and construction phases of specific projects that were awarded and registered by departments and devolved bodies during 2011/12, 2012/13 and 2013/14. The relatively high overall percentages reflect that a significant proportion of reported data is from DfE / Education Funding Agency and DfT / Highways Agency. These departments are particularly well advanced in implementing the principles set out in the Strategy.

Important note: Within this document cost reductions are reported at the prices current during the corresponding period. So, for example, the 2011/12 cost reductions are reported at prices current in 2011/12, while the 2012/13 cost reductions are reported at prices current in 2012/13. The 2009/10 baseline has therefore been inflated to 2011/12 and 2012/13 prices respectively. This permits comparison of cost reductions with those from other categories of spend reported by Cabinet Office in each annual period.

In contrast, cost benchmarks are reported in this document in constant 2009/10 prices. So, for example, the 2012/13 benchmarks have been deflated to prices current in 2009/10. This permits the generation of consistent benchmark trend diagrams that can be added to year on year. Refer to Annex C for further detail on the inflation adjustments used by each department.

INTRODUCTION: COMPARISON WITH DOCUMENT PUBLISHED JULY 2013

Table 1 provides a summary comparison with the version of this document published July 2013.

Table 1: Comparison with the previous version of this document published July 2013		
Relevant Sections	Adds updates to earlier data	Data / reports published for the first time
Part 1: Cost Reductions achieved in 2011/12, 2012/13 and the first half of 2013/14	Table 3 contains supplementary commentary from EFA and MOD	Table 2 contains additional column for 2013/14 half year savings
Part 2: Cost Distribution Charts	N/A	New Chart 16-2 for MOD SFA EFA Chart 19-2 for All Capital programmes in 2012/13
Part 2: Cost Tables and Trend Charts	Update to Table 8: Decent Homes data for 2011/12	New Table 9-2 for MOD SFA New Table 11-2 for all DfE Capital programmes in 2012/13
Part 2: Elemental Cost Tables and Charts	N/A	MoD SFA data added to Table A New Chart 36-2 for MOD SFA New Charts 38-2 and 38-3 for MOJ projects
Part 2: Regulated and Wider Public Sectors: Cost Tables	Update to Table 15: Network Rail data for 2012/13	N/A

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 1: Comparison with the previous version of this document published July 2013		
Relevant Sections	Adds updates to earlier data	Data / reports published for the first time
Part 2: Dept Progress in Implementing Benchmarking Principles	Updates to Table 19	N/A
Part 3: Dept Progress in Generating Public Private Comparisons	Update from DEFRA/EA	Home Office commentary included for the first time
Part 4: Dept Cost Reduction Trajectories	Updates to Table 21 for DfE/EFA	N/A
Technical Appendices: Inflation Adjustments		Inflation data added to Table 30 for Network Rail

PART 1 : COST REDUCTIONS

COST REDUCTIONS ACHIEVED IN 2011/12, 2012/13 AND THE FIRST HALF YEAR OF 2013/14

All cost reductions for 2011/12 reported in Table 2 below were calculated on the basis of department specific methods and the table therefore outlines how the cost reductions were counted by each department during this period.

Subsequently during 2012/13 the cross government counting method was adopted by all departments. This method is described in the February 2012 publication: *Cost Reduction Validation Method*.

Table 3 below describes the measures departments are implementing to achieve these cost reductions.

Typically, 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 cost reductions represent lower spending during the development and construction phases of specific projects awarded by departments and devolved bodies during 2011/12, 2012/13 and the first half of 2013/14.

The IN YEAR cost reductions for 2011/12 and 2012/13 shown in Table 2 were subject to Cabinet Office internal audit⁵. The figures for the first half of 2013/14 were first published on 7 November 2013, together with those from other Government expenditure categories. These are subject to validation by a full audit at the end of the financial year.

⁵ 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 portions relating to 2011/12 and 2012/13).

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 2: Cost reductions achieved April 2011 to October 2013					
Department	Results Category	2011/12 ⁶ IN YEAR (unless noted WPL = Whole Project Life)	2012/13 IN YEAR	First Half of 2013/14 IN YEAR	How the figures were derived during 2011/12 using department specific methods prior to application of the cross government Cost Reduction Validation Method during 2012/13 (for more detail, refer to Table 18 below)
DoH / P21	Published Cost Reduction Trajectory	6.0%	9.0%	11.5%	Cost reductions have been derived by applying a confirmed fee rate reduction of 3% ⁷ to the capital values registered on the DoH / P21 database of projects / schemes during 2011/12. The capital values represent 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.
	Actual Cost Reductions	£22m (WPL)	£15 m	£25m	
	Actual % Cost Reduction⁸	2.9% ⁹ (WPL)	6.8%	12.2%	

⁶ Facilitating overarching Cabinet Office reporting of progress during 2011/12 and 2012/13, internal audit is only performed on the IN YEAR portion of WHOLE PROJECT LIFE cost reductions achieved on new contracts awarded and/or projects registered. WHOLE PROJECT LIFE cost reductions are therefore indicative.

⁷ The fee rate reduction is a combination of reduced overhead, profit and staff design rates.

⁸ Percentage cost reductions at the half year stage may not be indicative of end of year outcomes.

⁹ Since DoH / P21's WHOLE PROJECT LIFE figures are indicative they cannot be confirmed until all projects have reached GMP. Of those projects that have reached GMP the average cost reduction is significantly in excess of the 2.9% stated in Table 2.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 2: Cost reductions achieved April 2011 to October 2013					
Department	Results Category	2011/12 ⁶ IN YEAR (unless noted WPL = Whole Project Life)	2012/13 IN YEAR	First Half of 2013/14 IN YEAR	How the figures were derived during 2011/12 using department specific methods prior to application of the cross government Cost Reduction Validation Method during 2012/13 (for more detail, refer to Table 18 below)
DEFRA / EA	Published Cost Reduction Trajectory	3.8%	7.5%	11.8%	Cost reductions encompass multi-year projects as well as projects delivered in one year. 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.
	Actual Cost Reductions	£6m (WPL)	£17 m	£5.7m	
	Actual % Cost Reduction	3.6% (WPL)	8.7%	8.2%	
DfT / HA	Published Cost Reduction Trajectory	1.0%	4.0%	10%	The Whole Project Life cost reduction of £81m represents the total cost reduction taken into contract (target cost) across the three major schemes approved for construction in 2011/12. The In Year cost reduction of £21m therefore represents the proportion of the £81m taken into contract (target cost) that was achieved during 2011/12. Cost reductions for major
	Actual Cost Reductions	£21m (WPL: £81m)	£278m ¹⁰	£239.9m	

¹⁰ The attribution of cost reductions between Major Projects and Highways Maintenance in 2012/13 is £115m and £163m respectively. Subsequent to 2012/13 audit sign off, HA submitted further cost reductions on Highways Maintenance of £64.8m.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 2: Cost reductions achieved April 2011 to October 2013					
Department	Results Category	2011/12 ⁶ IN YEAR (unless noted WPL = Whole Project Life)	2012/13 IN YEAR	First Half of 2013/14 IN YEAR	How the figures were derived during 2011/12 using department specific methods prior to application of the cross government Cost Reduction Validation Method during 2012/13 (for more detail, refer to Table 18 below)
	Actual % Cost Reduction	16.0%	22.0%	22.7%	maintenance have been included for the first time in 2012/13.
DCLG / HCA	Published Cost Reduction Trajectory	2.0%	4.0%	7%	The 2011/12 figure relates only to New Build construction (as does the 2012/13). It was 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 .
	Actual Cost Reductions	£16m (WPL)	£35m	£5m	
	Actual % Cost Reduction	11.0% (WPL)	11.7%	10.9%	
MoD	Published Cost Reduction Trajectory	5.0%	7.5%	10%	Cost reductions were derived on the basis of award costs (maximum price target costs) for SLAM ¹² projects commenced during 2011/12 with construction durations of several years. Many of the tender packages had therefore to

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 (11%) were achieved and to establish whether they can be considered sustainable - as defined within footnote 1 above – or, alternatively, confirm the extent to which the principles of the Government Construction 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 during 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 20 to confirm its ongoing validity.

¹² MoD Single Living Accommodation Programme. For further details refer to Table 3 below.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 2: Cost reductions achieved April 2011 to October 2013					
Department	Results Category	2011/12 ⁶ IN YEAR (unless noted WPL = Whole Project Life)	2012/13 IN YEAR	First Half of 2013/14 IN YEAR	How the figures were derived during 2011/12 using department specific methods prior to application of the cross government Cost Reduction Validation Method during 2012/13 (for more detail, refer to Table 18 below)
	Actual Cost Reductions	£4m (WPL)	£0.6m	£3.6m	be let and cost reductions were estimated on the basis of those achieved in the previous period.
	Actual % Cost Reduction	5.3%	10.0%	8.6%	
MoJ	Published Cost Reduction Trajectory	7.0%	12.0%	15%	Cost reductions encompass multi-year projects reaching contract award during 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.
	Actual Cost Reductions	£12m (WPL)	£15m	£9m	
	Actual % Cost Reduction	10.3% (WPL)	16.5%	20.9%	
DfE / EFA	Published Cost Reduction Trajectory	7.0%	17.8%	18.9%	Cost reductions represent the proportion attributed to 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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 2: Cost reductions achieved April 2011 to October 2013					
Department	Results Category	2011/12 ⁶ IN YEAR (unless noted WPL = Whole Project Life)	2012/13 IN YEAR	First Half of 2013/14 IN YEAR	How the figures were derived during 2011/12 using department specific methods prior to application of the cross government Cost Reduction Validation Method during 2012/13 (for more detail, refer to Table 18 below)
	Actual Cost Reductions	£51m (WPL: £138m)	£86m	£5m	would therefore be delivered during subsequent years.
	Actual % Cost Reduction	12.2%	11.3%	3.5%	
Totals		IN YEAR: £72m (WPL: £279m ¹³)	IN YEAR: £447m	IN YEAR: £293m	

¹³ The WHOLE PROJECT LIFE figure of £279m includes the IN YEAR figure of £72m.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 3: Construction related Departmental Cost Reductions achieved between April 2011 and October 2013	
Department	Commentary on the source of cost reductions
Department of Health/ P21	<p>In year Cost Reductions are calculated in accordance with the Cabinet Office publication 'Cost Reduction Validation Method' 10th February 2012, based on project types with sufficient sample size to provide a statistically valid comparison.</p> <p>Indicative Whole Project Life Cost Reductions are based on projects registered during 2011/12.</p>
DEFRA/ Environment Agency	<p>Cost reduction comes from initiatives addressing packaging of projects and procurement (5%), streamlining project development and controlling project scope (22%), effective contracting approach (20%) and value engineering using innovation and alternative methods to deliver the same outcome (53%). These are logged via a savings register and 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.</p>
DfT/ Highways Agency	<p>In 2011/12 the HA had committed to save 20% off the original 14 SR10 Major Projects. In the Autumn Statement 2011 HA made a further commitment to save 20% (£201m) off an additional 6 schemes. The revised programme target taking in the new schemes therefore gave 20% (£644m) saving across 20 schemes. In addition to the 3 schemes that started in 2011/12, during 2012/13 HA agreed target costs on a further 5 schemes: M6 J5-8 (BBox3), A11 Fiveways, M25 J5-7, M25 J23-27 and A453 Widening.</p> <p>Cumulatively these schemes have agreed target costs which include further cost reductions of around £314m towards the overall objective of reducing costs by £644 million across the programme of 20 schemes. The cost reductions will be realised and confirmed across the period of construction which will be more than one financial / calendar year. The £115m cost reduction for Major Projects represents the in year portion of the total £314m taken into contract for the five schemes approved for construction in 2012/13 and a proportion from schemes already under construction that commenced in 2011/12. The final scheme across the programme of 20 will complete in 2016/17 and over the lifetime of the programme, forecast cost reductions of £644m have been declared against gross estimated expenditure of around £3220m.</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 3: Construction related Departmental Cost Reductions achieved between April 2011 and October 2013	
Department	Commentary on the source of cost reductions
DCLG/ Homes & Communities Agency	The figures provided relate to New Build construction. They have been determined by multiplying the difference between benchmark rates achieved in 2011/12 and 2012/13 respectively and baseline rates from 2009/10, with the actual 2011/12 and 2012/13 construction spends reported by social housing providers.
Ministry of Defence <i>(Single Living Accomm. Project: SLAM)</i>	<p>In order to correspond with the benchmarking data reported in the accompanying charts and tables, declared cost reductions represent those achieved <u>solely</u> in relation to the provision of Single Living Accommodation procured via the SLAM Prime Contract for the period in question.</p> <p>Cost reductions have been derived on the basis of award costs (target prices) for contracts awarded during 2012/13 with construction durations up to 2014/15 with the majority of spend in 2013/14.</p> <p>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.</p> <p>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.</p> <p>During the earlier period May 2010 to 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.</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 3: Construction related Departmental Cost Reductions achieved between April 2011 and October 2013	
Department	Commentary on the source of cost reductions
Ministry of Justice	<p>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. Also a new Strategic Alliancing Framework was introduced in April 2012 which has resulted in further savings. The savings have been calculated on the basis of the cost per square metre of the projects reaching Agreed Maximum Price Stage compared to the cost per square metre of comparable 2009/10 benchmark projects. An inflation adjustment has been applied to ensure a like for like comparison.</p> <p>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.</p>
DfE / Education Funding Agency	<p>Recent cost efficiencies have delivered school places at about 40% below Building Schools for the Future (BSF) costs. This has been achieved via procurement through the EFA Contractors Framework and the standards underpinning new baseline designs. Through baseline designs, reductions in overall floor areas have been achieved whilst: safe-guarding classroom and teaching areas; and delivering facilities that are functional and resource efficient, for example, by designing out over-complex environmental services. ICT costs per school are also now 60% below BSF costs. More savings are to be achieved through further standardisation of components e.g. doors, windows, M&E, etc.</p>

PART 2 : COST BENCHMARK DATA

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 thresholds¹⁴. Typically the charts present the 2009/10 baseline cost distribution, while the tables also provide more recent data for 2010/11, 2011/12 and 2012/13.

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, £/m², £/m³. 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, £/m² or £/m³. They are only applied within this document, when elements taken together represent majority of spend.

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 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 Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Cost benchmark data for each organisation are presented in Charts 3 to 21, Tables 5 to 11, 14 15 and 17, and in Annex A below. These are to be read in conjunction with:

- Tables 12, 13, 16 and 18 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 constant prices i.e. those current in 2009/10 i.e. prices in years 2010/11, 2011/12 and 2012/13 are deflated.

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 12, 13, 16 and 18.

Commonly used terminology within this document:

- 1) 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.
- 2) **GIFA:** This acronym is used throughout much of the document. It refers to Gross Internal Floor Area and a specific method for ensuring internal floor areas of buildings are measured consistently.
- 3) **P10 / P50 / P90:** Highways Agency 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.
- 4) **BCIS:** Royal Institution of Chartered Surveyors' (RICS) Building Cost Information Service.
- 5) **PUBSEC / TPI / Location Factor:** Refer to Annex C for more details.
- 6) **NEC:** New Engineering Contract; a widely used collaborative form of contract.

COST BENCHMARK DATA: COST DISTRIBUTION 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. Charts showing 2012/13 unit costs against the 2009/10 baseline have also been included.

Though it should be expected that costs will continue to encompass a range, over time the distribution of costs should move down and tighten (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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

instead on a regional basis where this would facilitate more representative like for like comparisons. For further detail refer to Annex C.

- 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 5 to 11 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 4: 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 80 th 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. Clients / suppliers might therefore 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 80 th and 20 th 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 20 th percentile threshold should be expected to lead to the achievement of the Government Construction Strategy cost reduction target. Clients / suppliers might therefore only expect to achieve the required gains by adopting new approaches, in addition to learning from approaches taken on projects already falling within

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.

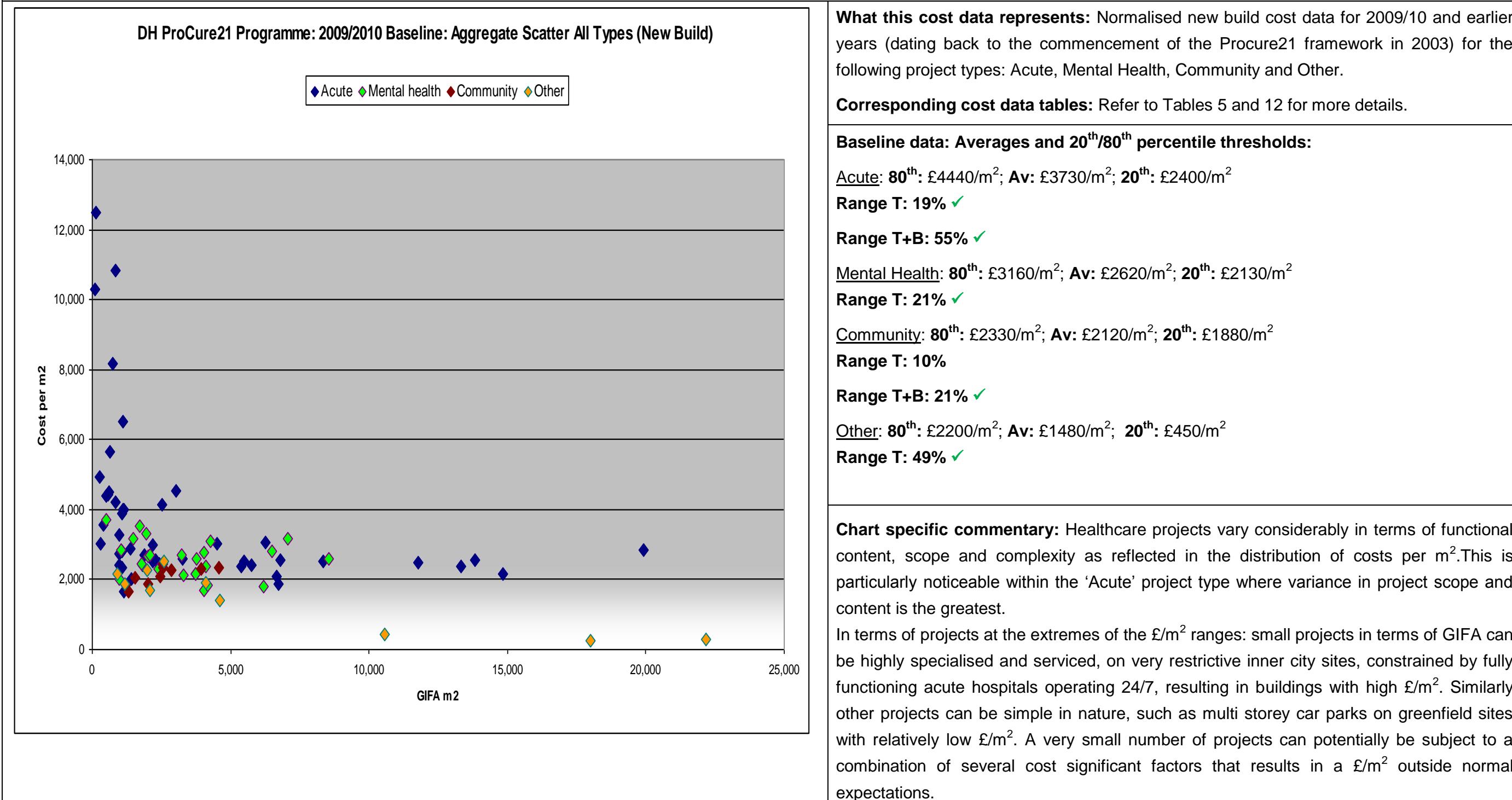
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 4: 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 B.
Range B	Percentage difference between the average and the 20 th percentile, divided by the average.	The consistent cross Government targeting of costs within Range B should be expected to lead to ongoing continuous improvement.

- 8) Where single project types are shown, the Range T and Range T+B are also provided for the 2012/13 data and comparisons are made with the 2009/10 baseline.

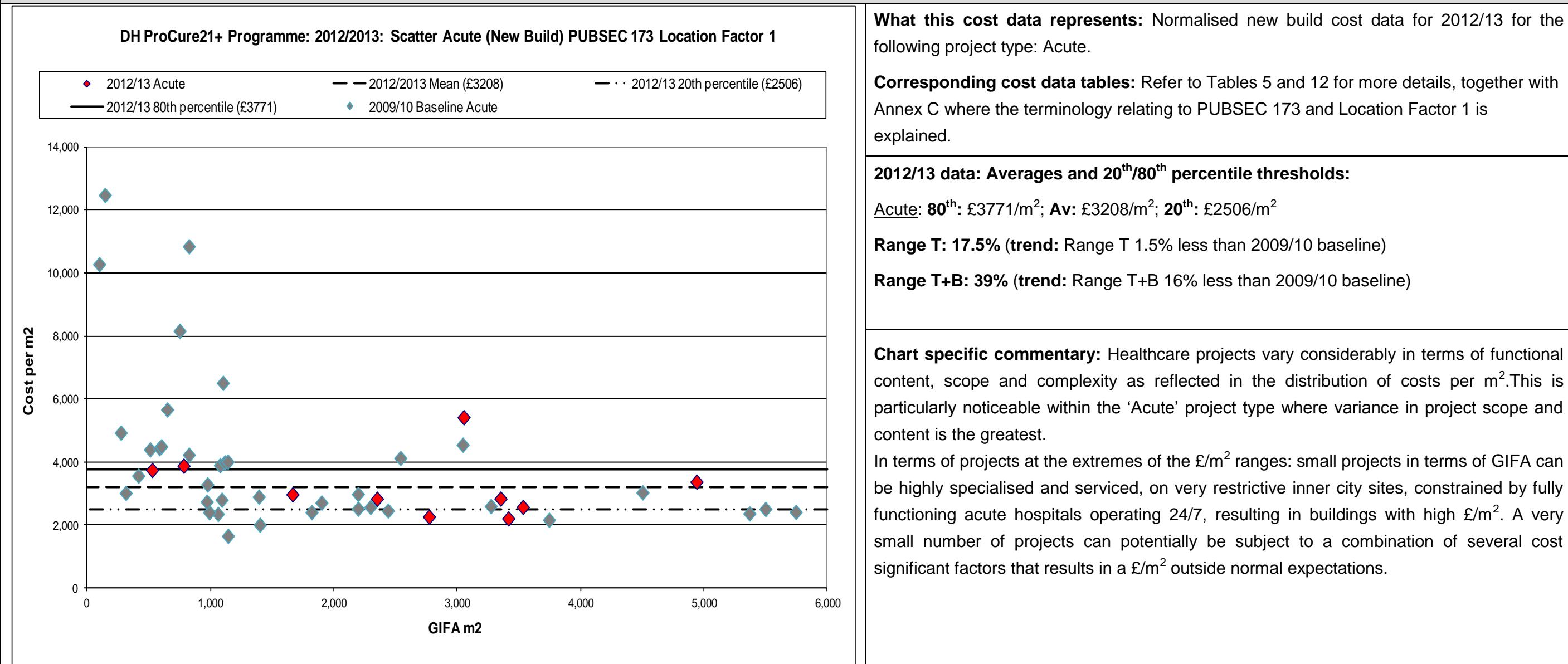
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 3: Construction Cost Benchmarks for Department of Health (P21 Framework): New Build 2009/10 Baseline



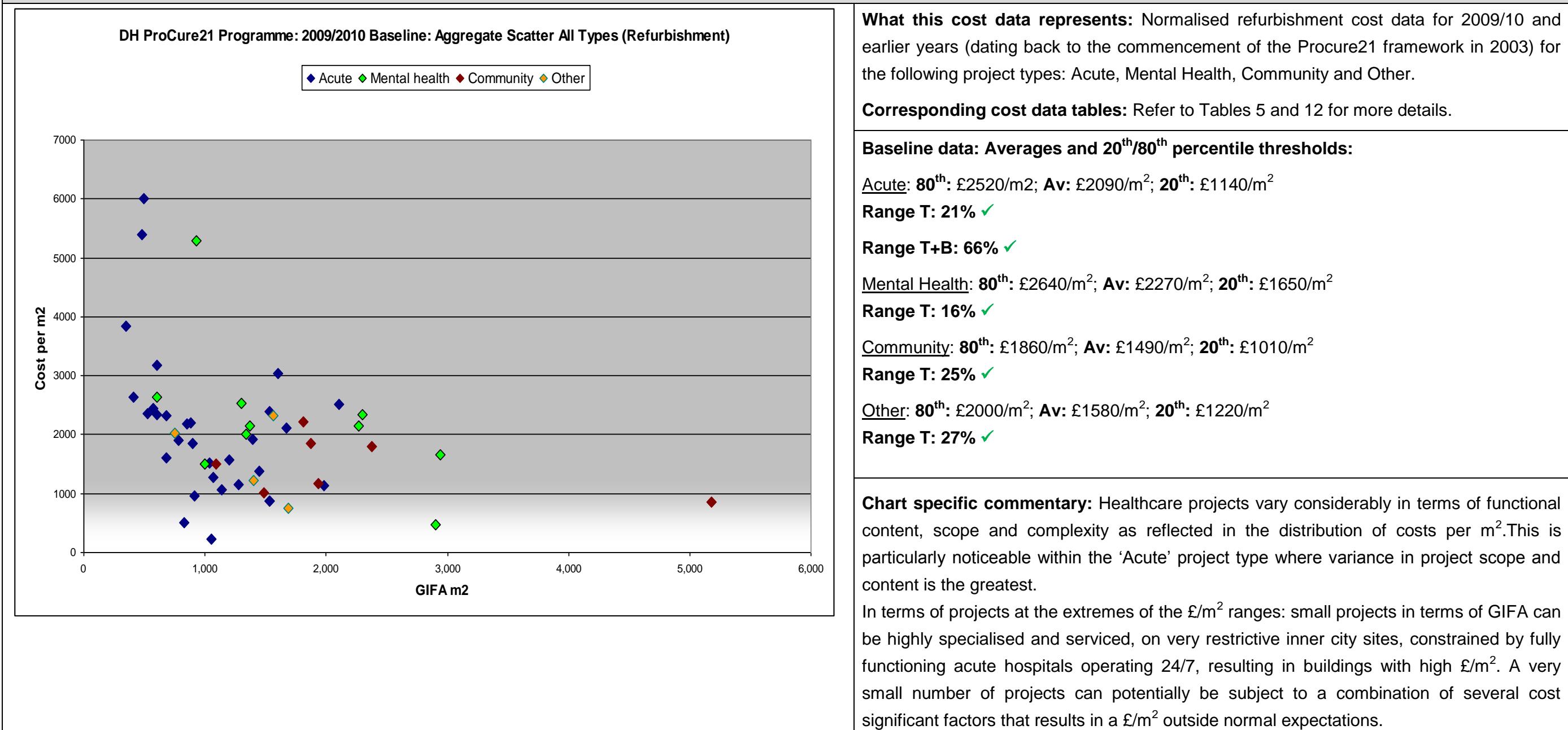
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 4: Construction Cost Benchmarks for Department of Health (P21 Framework): New Build 2012/13



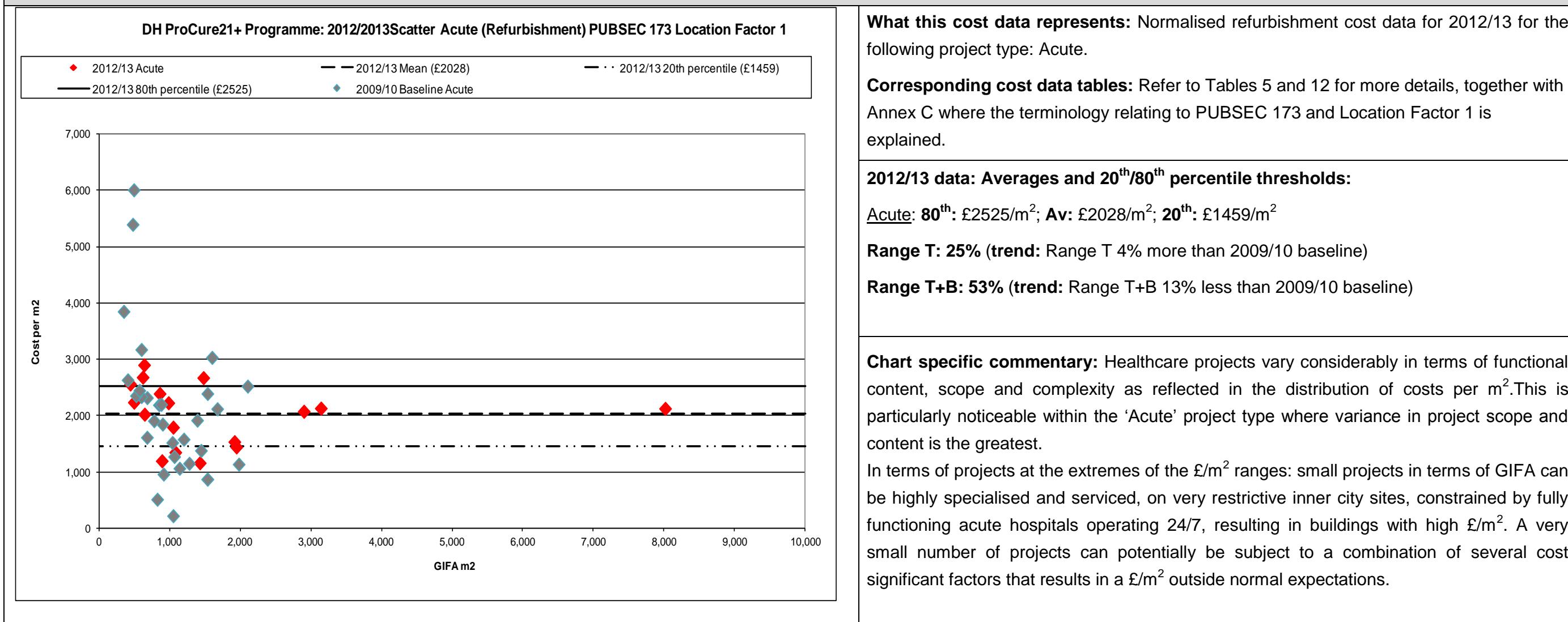
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 5: Construction Cost Benchmarks for Department of Health (P21 Framework): Refurbishment 2009/10 Baseline



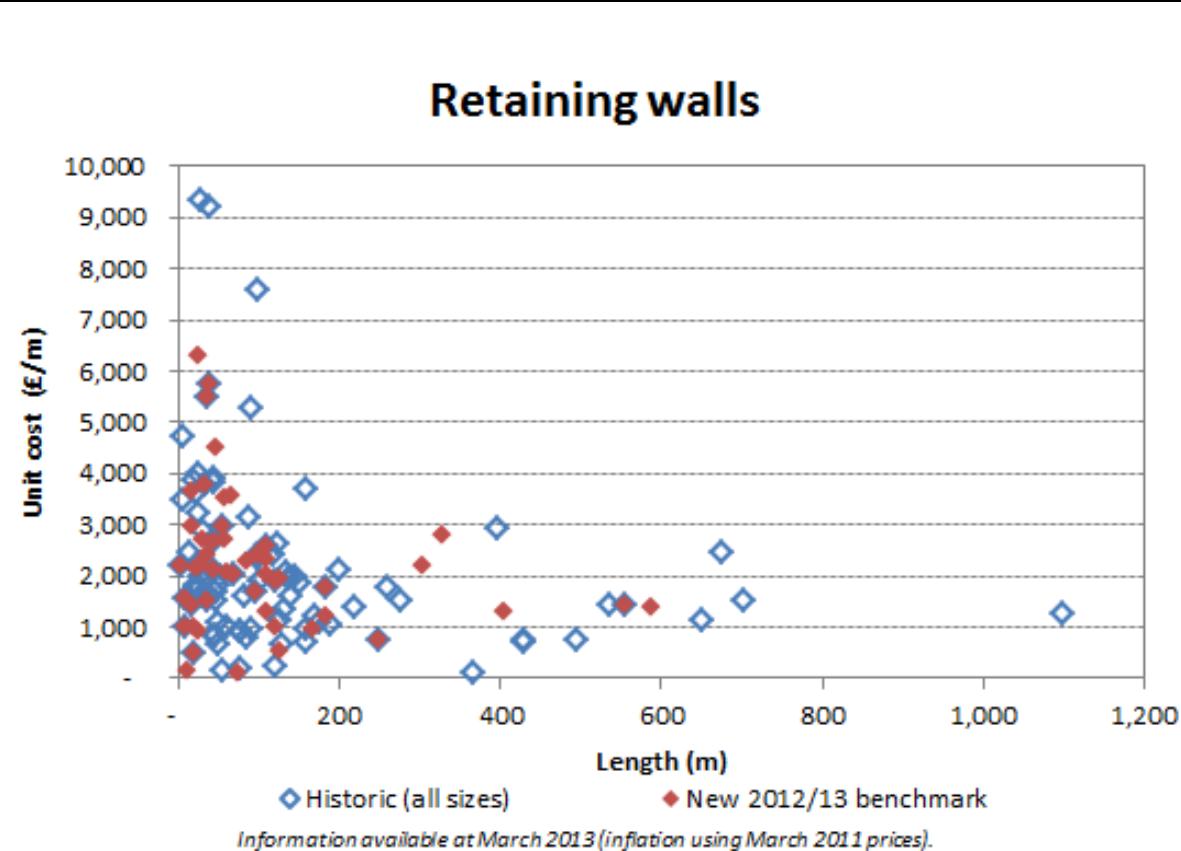
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 6: Construction Cost Benchmarks for Department of Health (P21 Framework): Refurbishment 2012/13



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 7: Construction Cost Benchmarks for DEFRA/Environment Agency: Retaining Walls



What this cost data represents: Normalised new build cost data for retaining walls at constant March 2011 prices and 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 6 and 12 for more details.

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

80th: £3784/m; Av: £2802/m; 20th: £1386/m

Range T: 35% ✓

Note: Data given in 2011/12 prices.

2012/13 data: Averages and 20th/80th percentile thresholds:

80th: £2851/m; Av: £2196/m; 20th: £1138/m

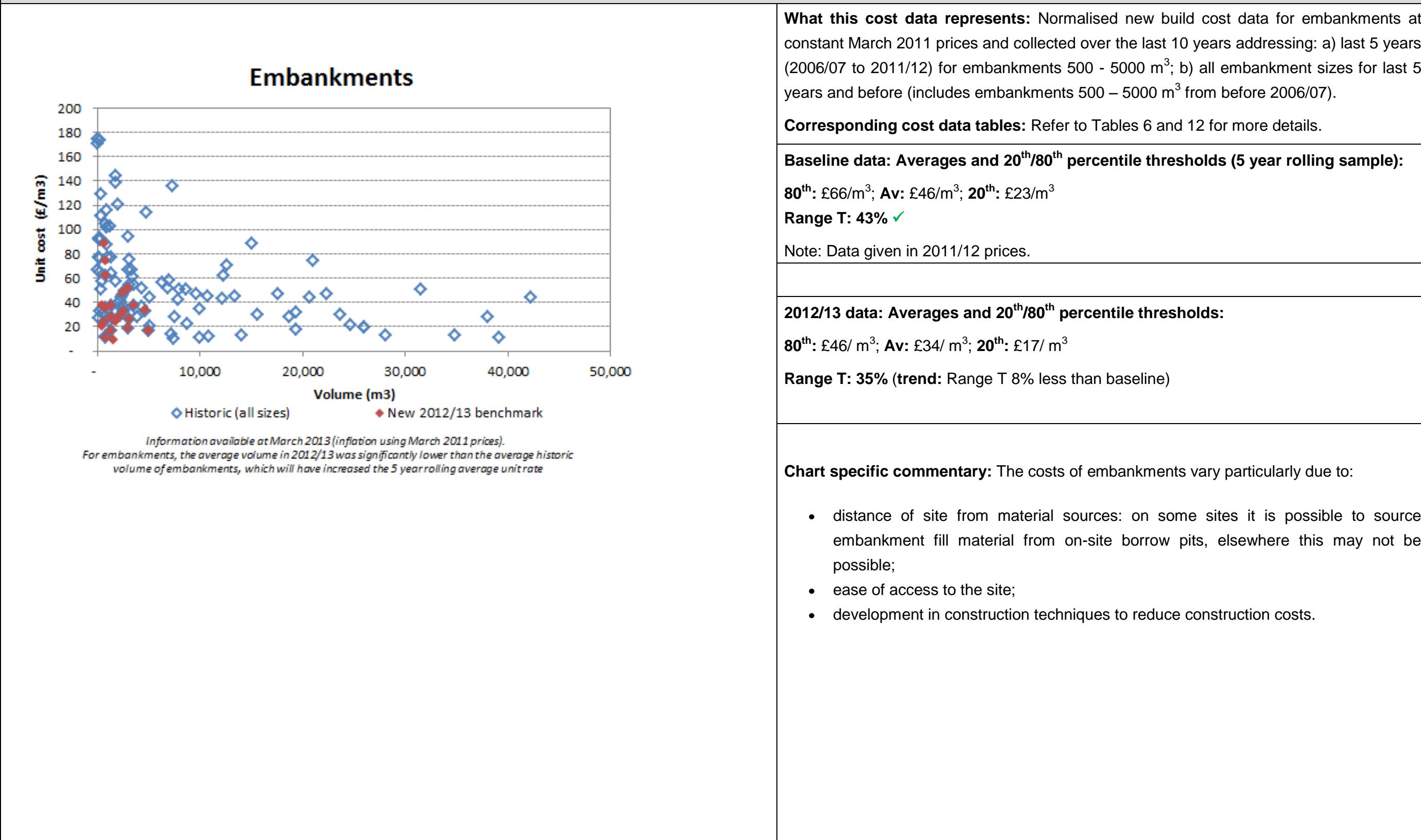
Range T: 30% (trend: Range T 5% less than baseline)

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.

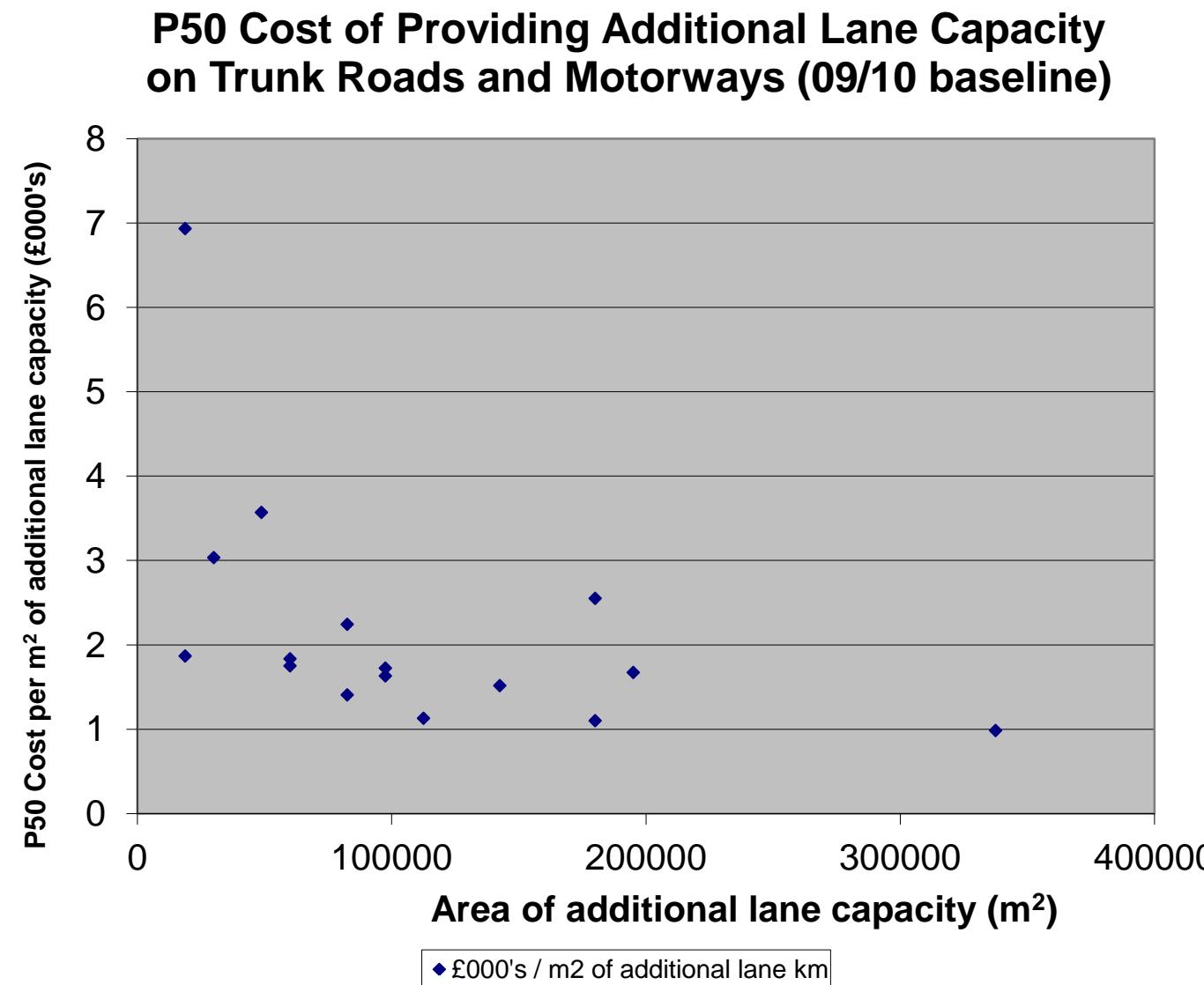
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 8: Construction Cost Benchmarks for DEFRA/Environment Agency: Embankments



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 9: 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 m² 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 7 and 12 for more details.

Note: Chart is shown in 2009/10 constant prices and does not show points for 2010/11 on account of insufficient data.

Baseline data: Averages and P10/P90 thresholds:

Trunk Road Improvement: P90: £3.0K/m²; Av (P50): £2.6K/m²; P10: £2.1K/m²

Range T (equivalent): 15% ✓

Range T+B (equivalent): 35% ✓

Managed Motorways: P90: £2.1K/m²; Av (P50): £1.7K/m²; P10: £1.3K/m²

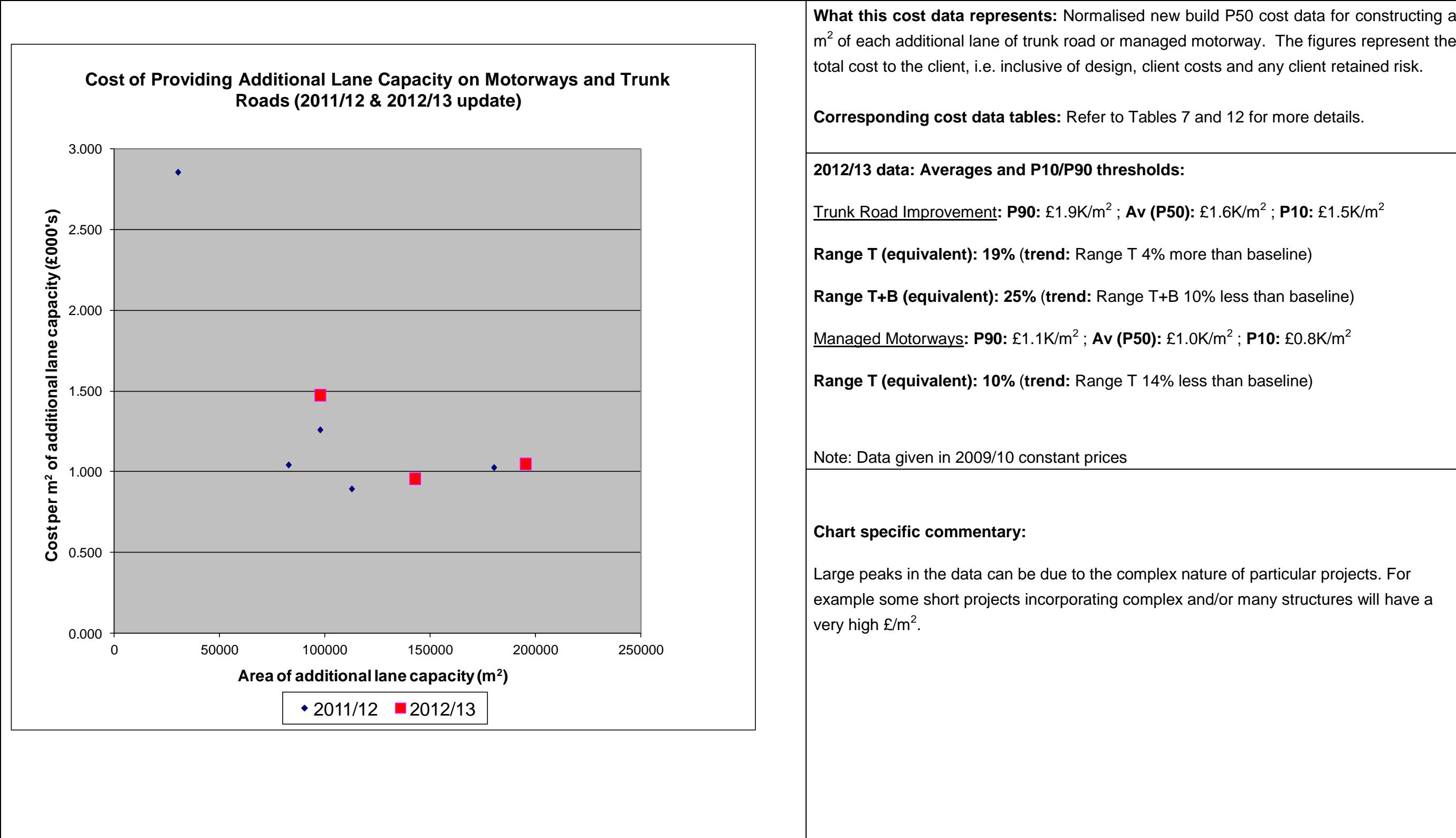
Range T (equivalent): 24% ✓

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 £/m².

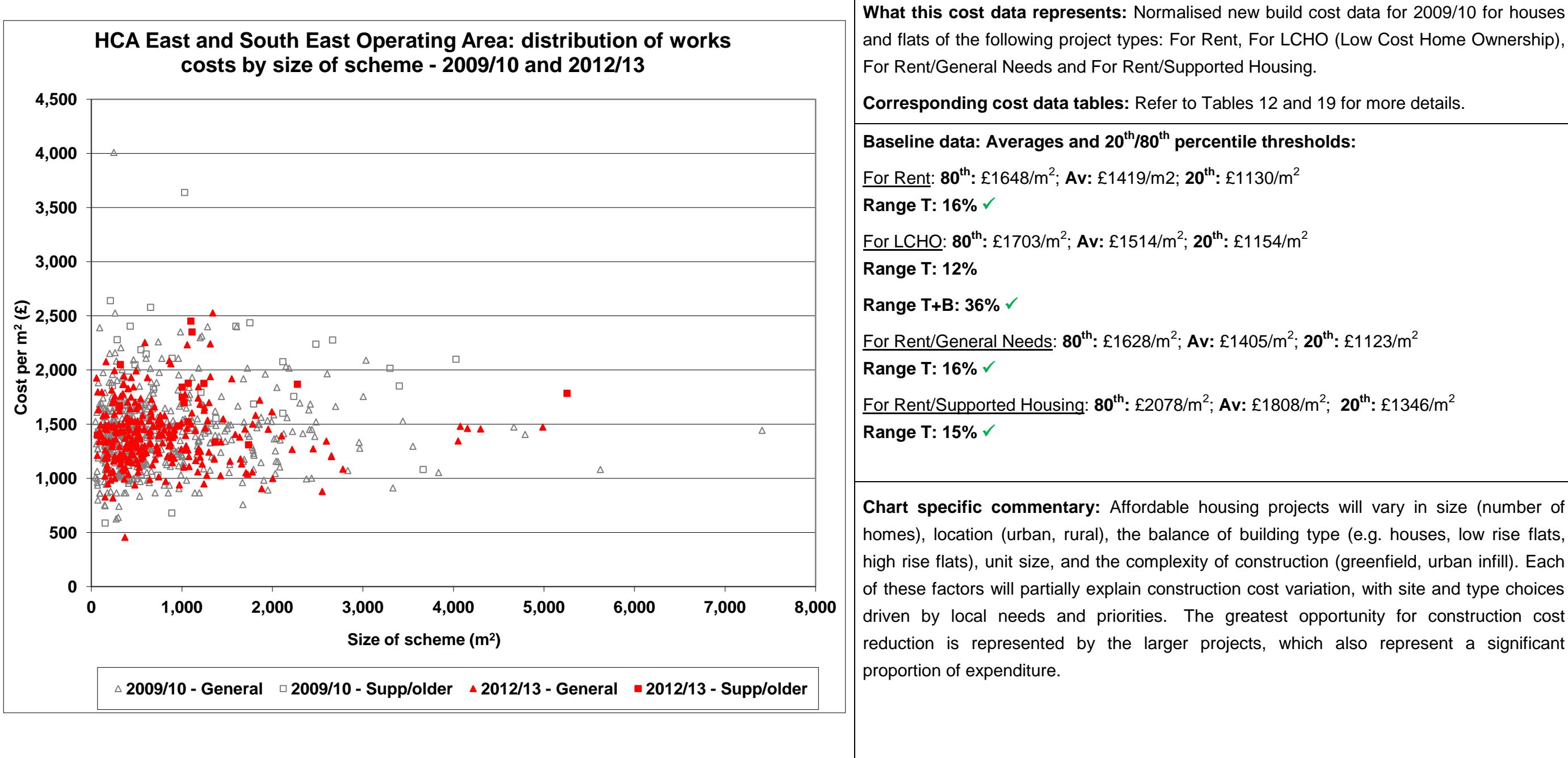
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 10: Construction Cost Benchmarks for DfT/Highways Agency: Trunk Roads and Managed Motorways (2011/12)



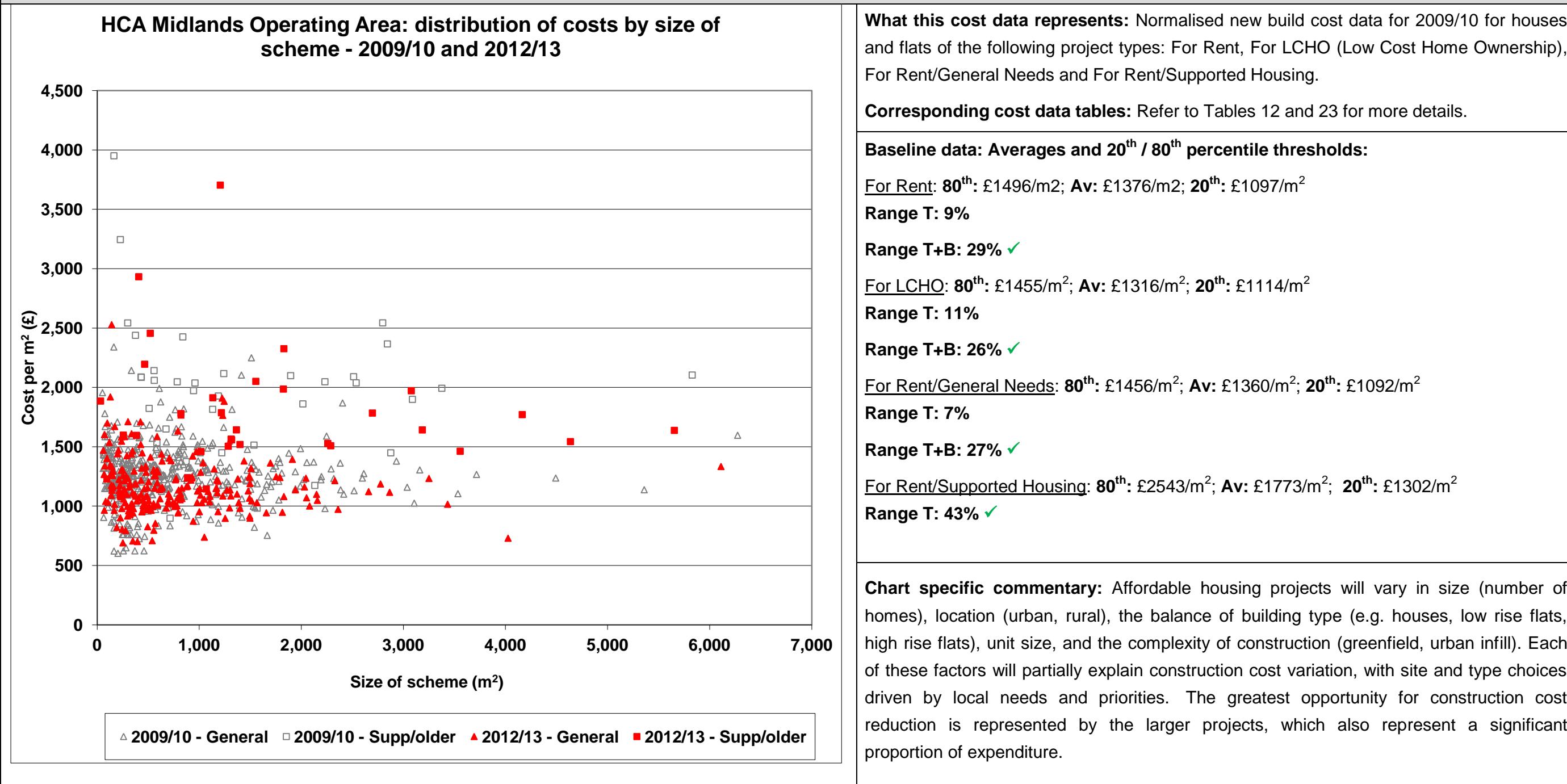
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 11: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (East and South East HCA Operating Area)



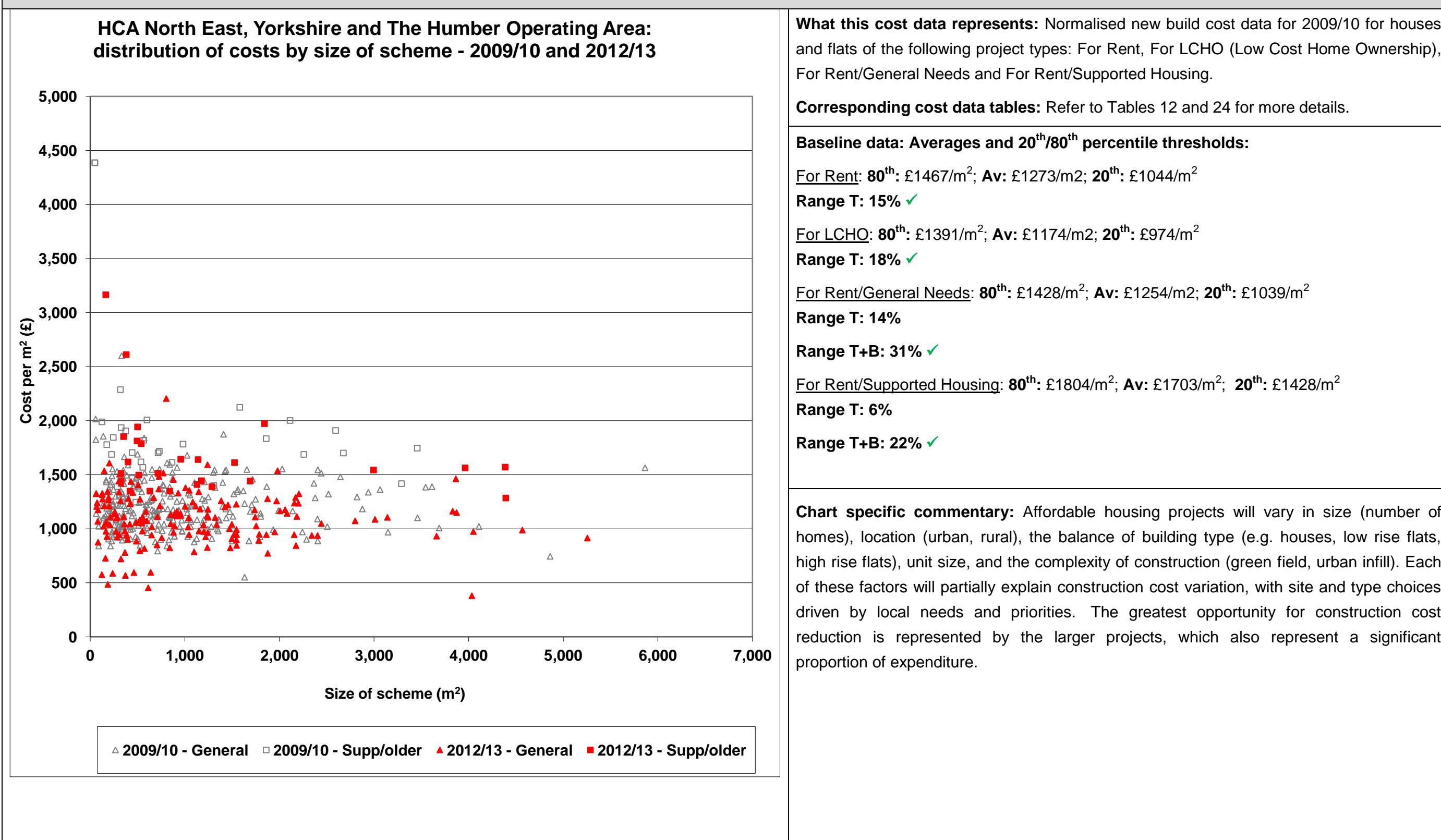
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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



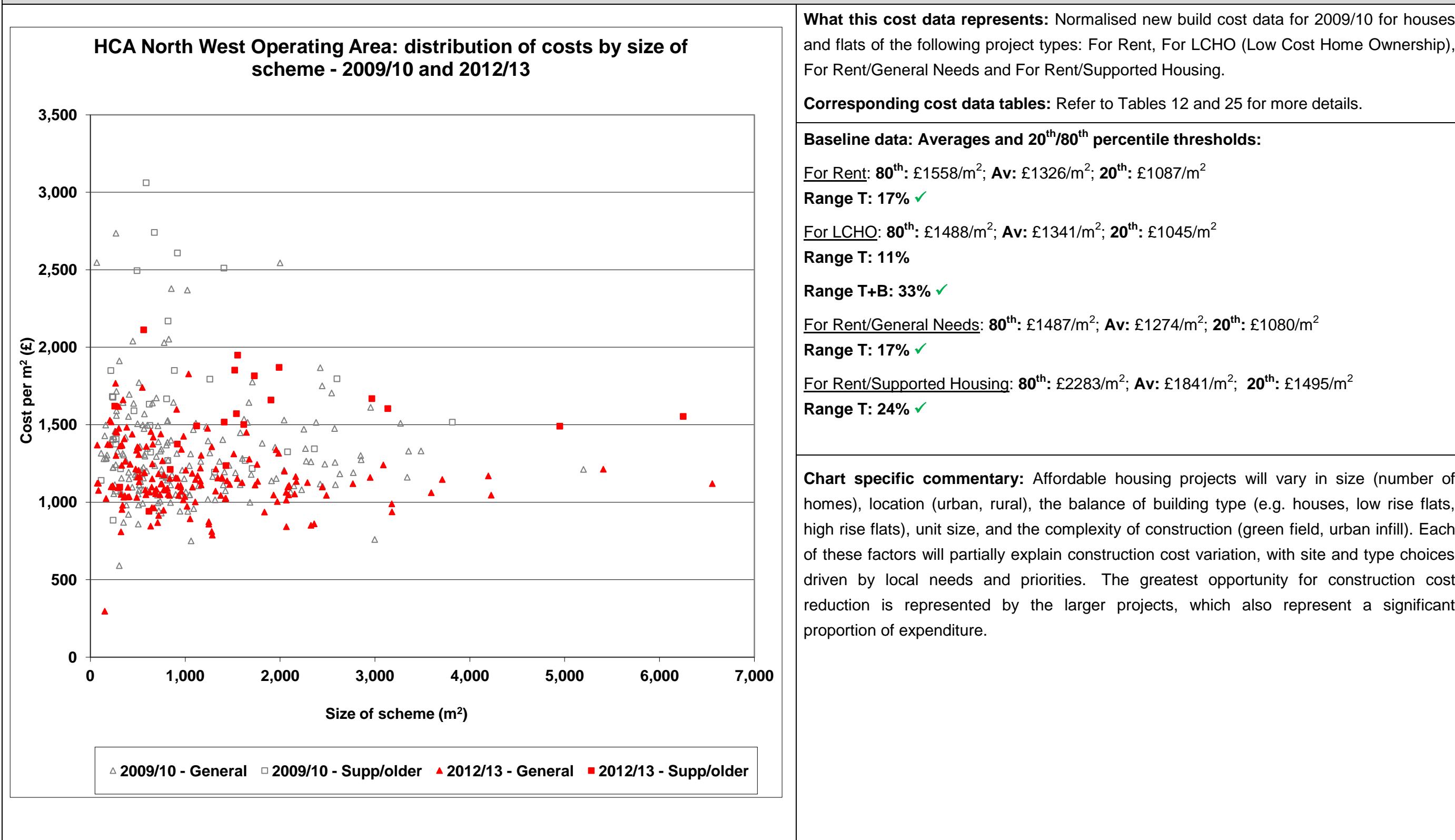
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 13: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (North East, Yorkshire and the Humber HCA Operating Area)



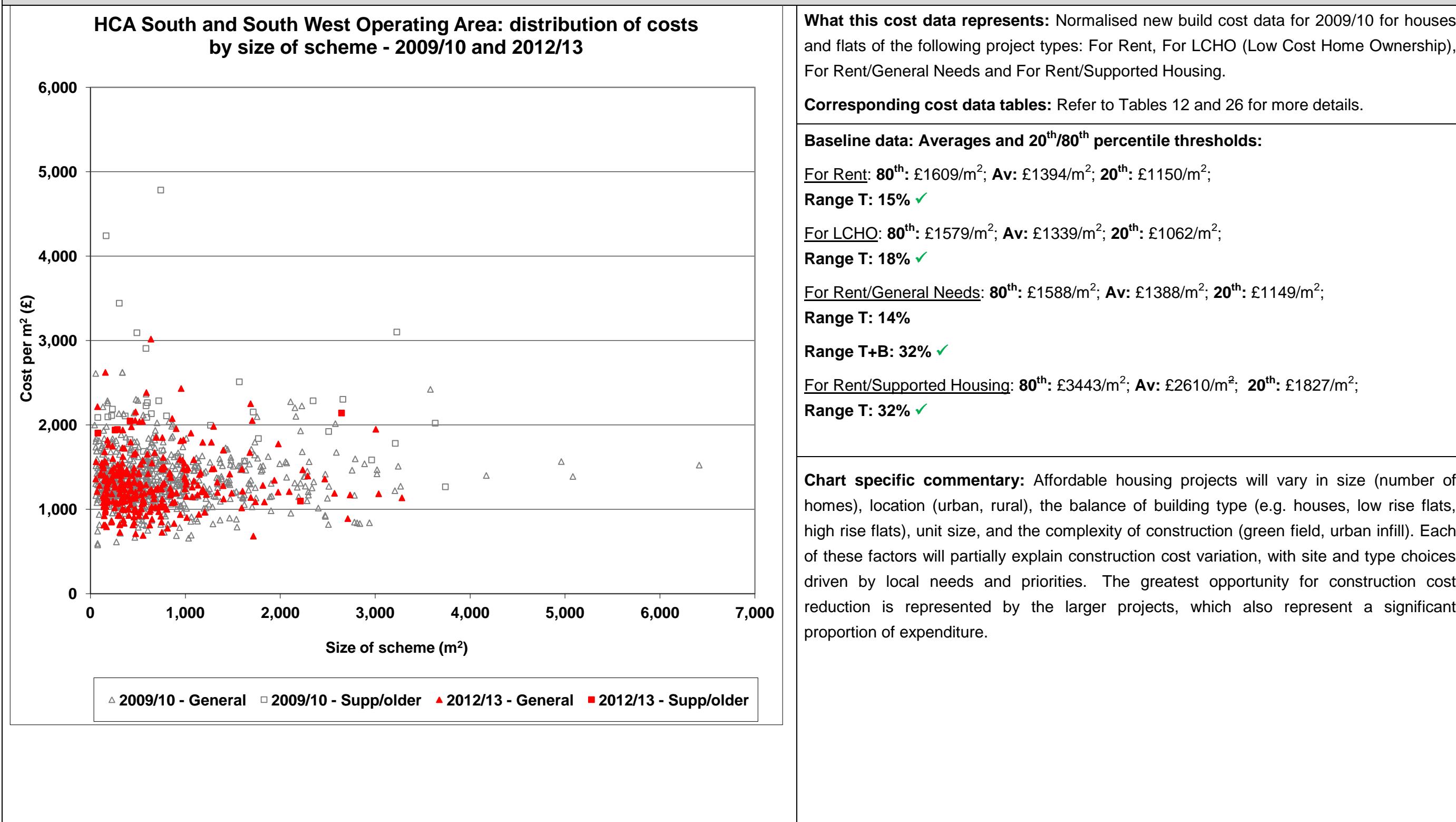
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 14: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (North West HCA Operating Area)



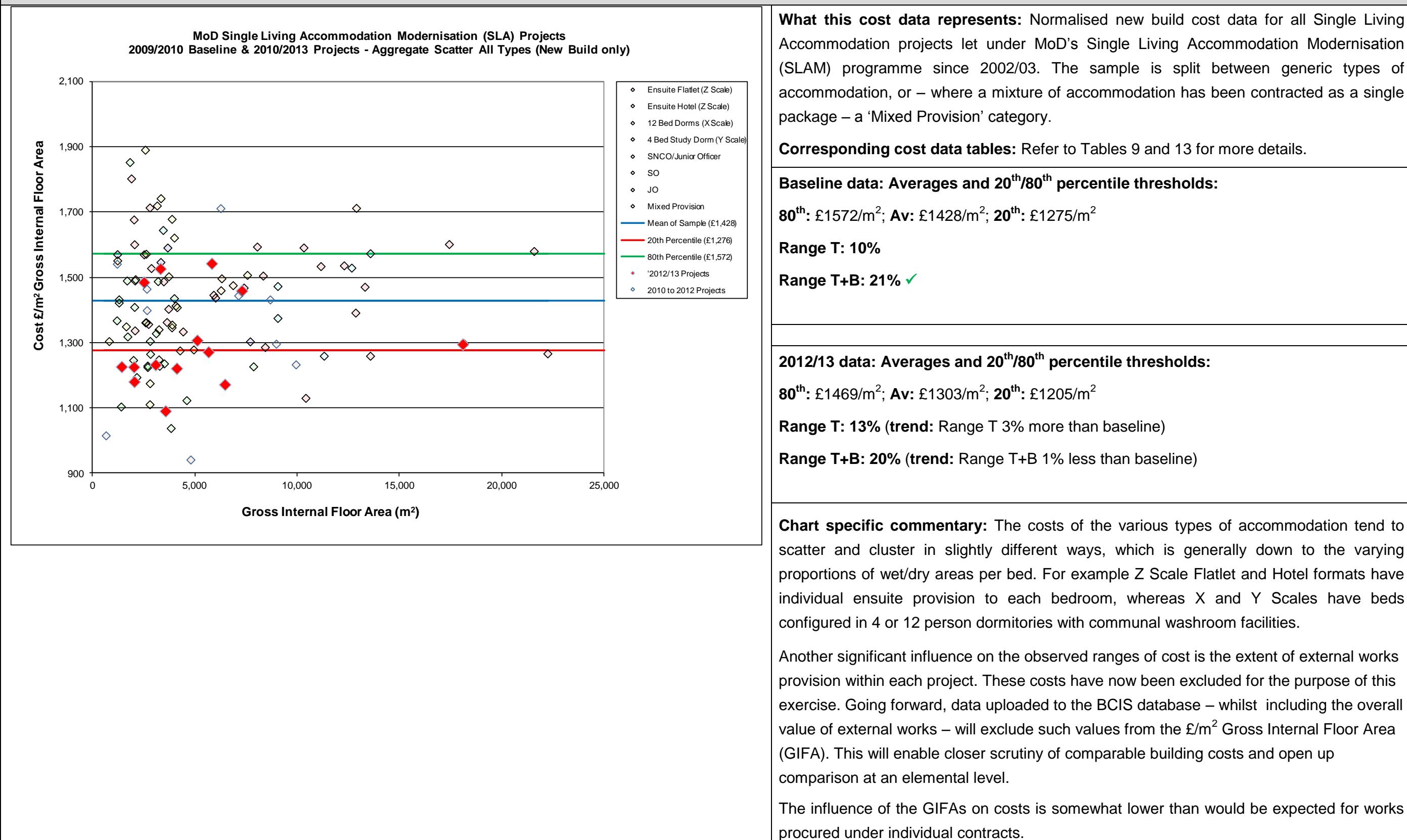
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 15: Construction Cost Benchmarks for DCLG/Homes and Communities Agency: New Build (South and South West HCA Operating Area)



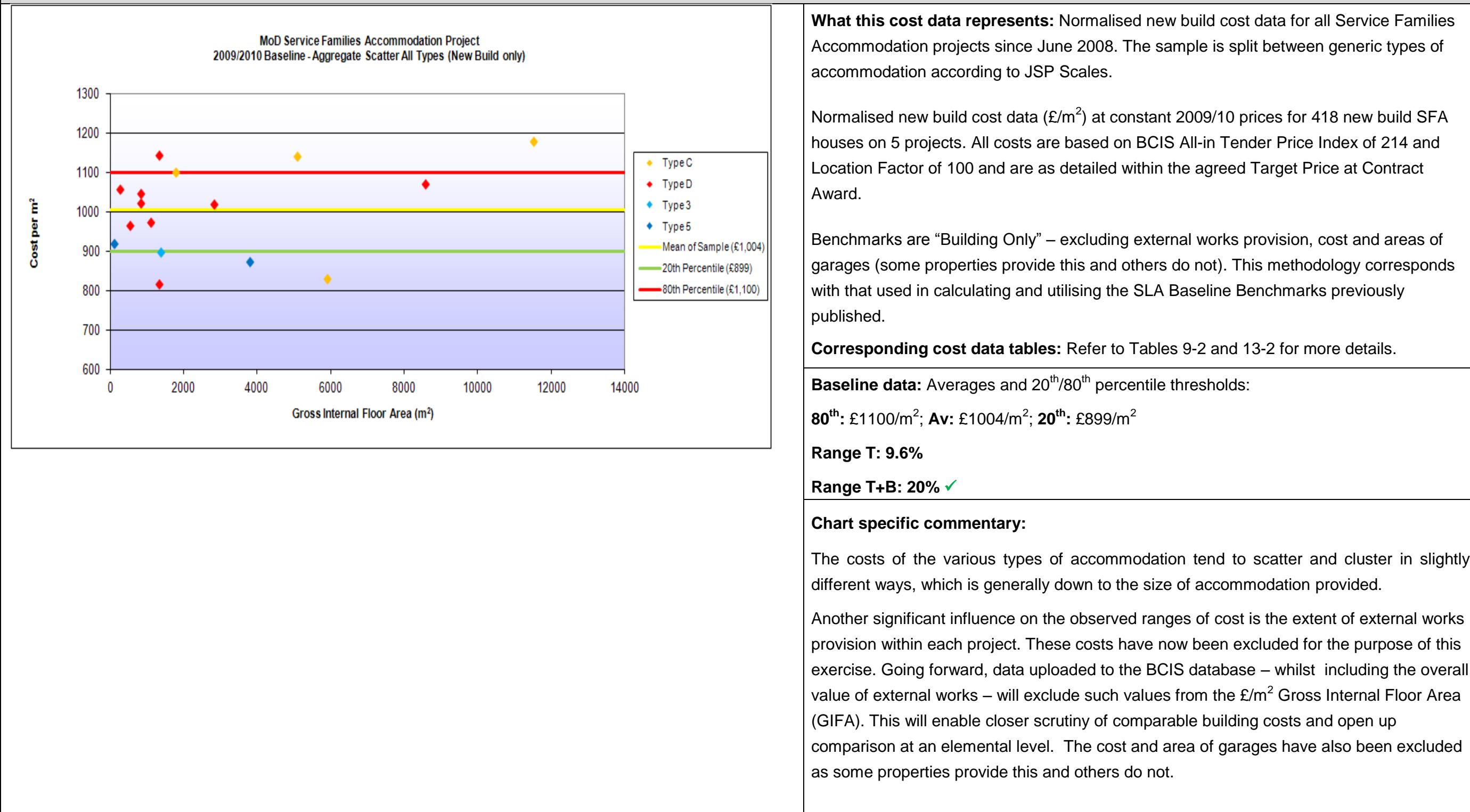
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 16-1: Construction Cost Benchmarks for Ministry of Defence: Single Living Accommodation



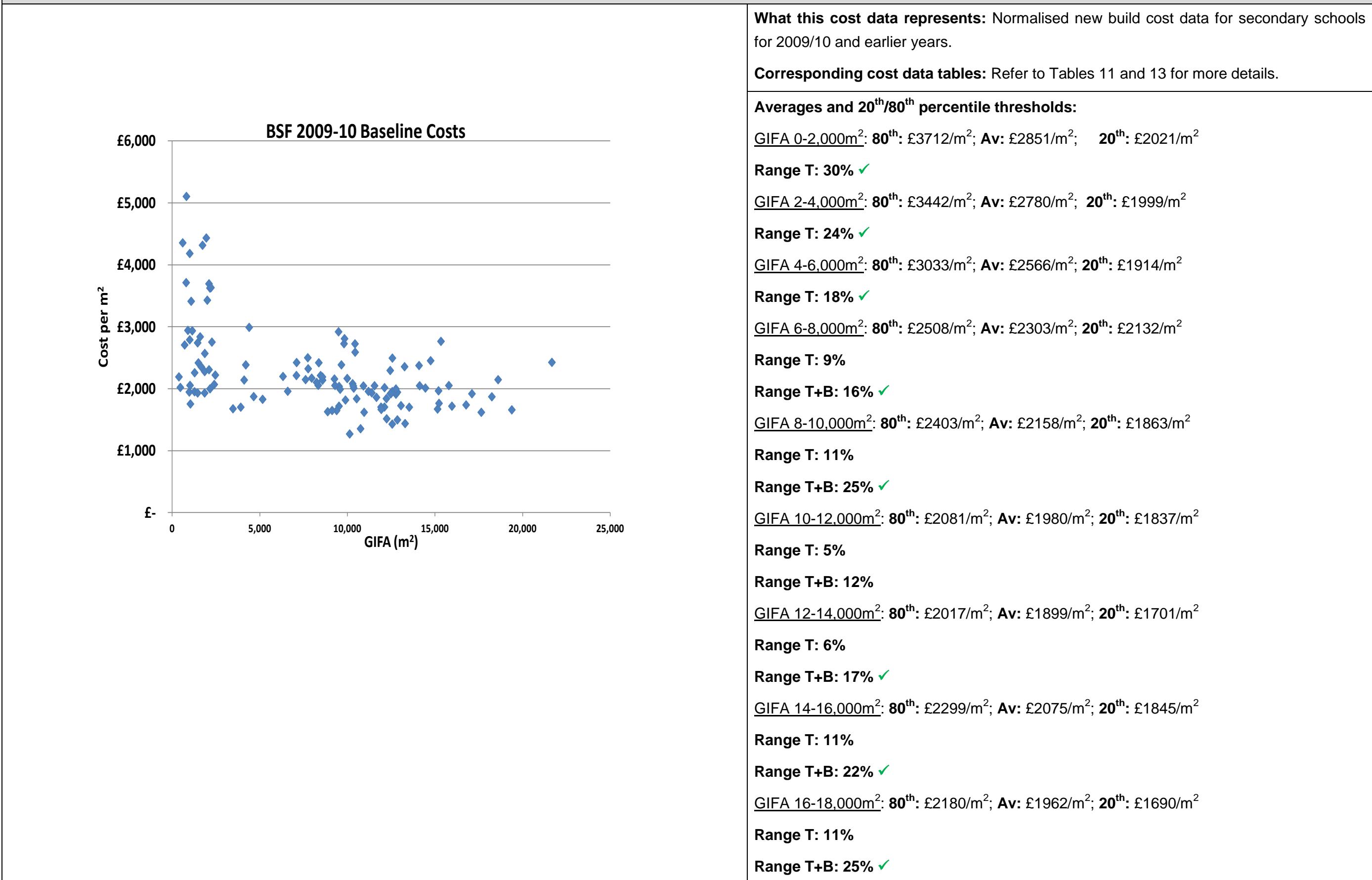
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 16-2: Construction Cost Benchmarks for Ministry of Defence: Service Families Accommodation (SFA)



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 17: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2009/10 Baseline)



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 17: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2009/10 Baseline)

	<p><u>GIFA 18-20,000m²:</u> 80th: £2105/m²; Av: £1938/m²; 20th: £1786/m²</p> <p>Range T: 9%</p> <p>Range T+B: 16% ✓</p>
	<p>Chart specific commentary: Building Schools for the Future (BSF) projects were funded formulaically on pupil numbers, which produced a m² 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.</p> <p>This funding approach has led to a large variation in the cost per m² depending on how these choices were made. Moving forward, school designs are to be more standardized, which is expected to produce significant cost reductions.</p>

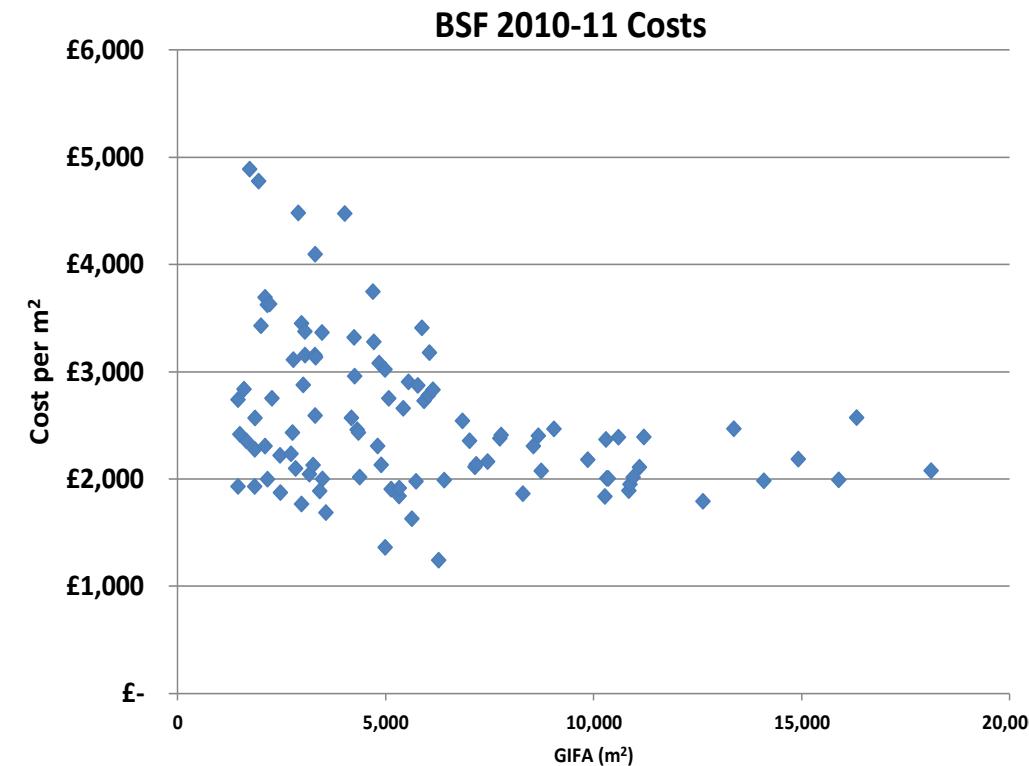
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 18: 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.

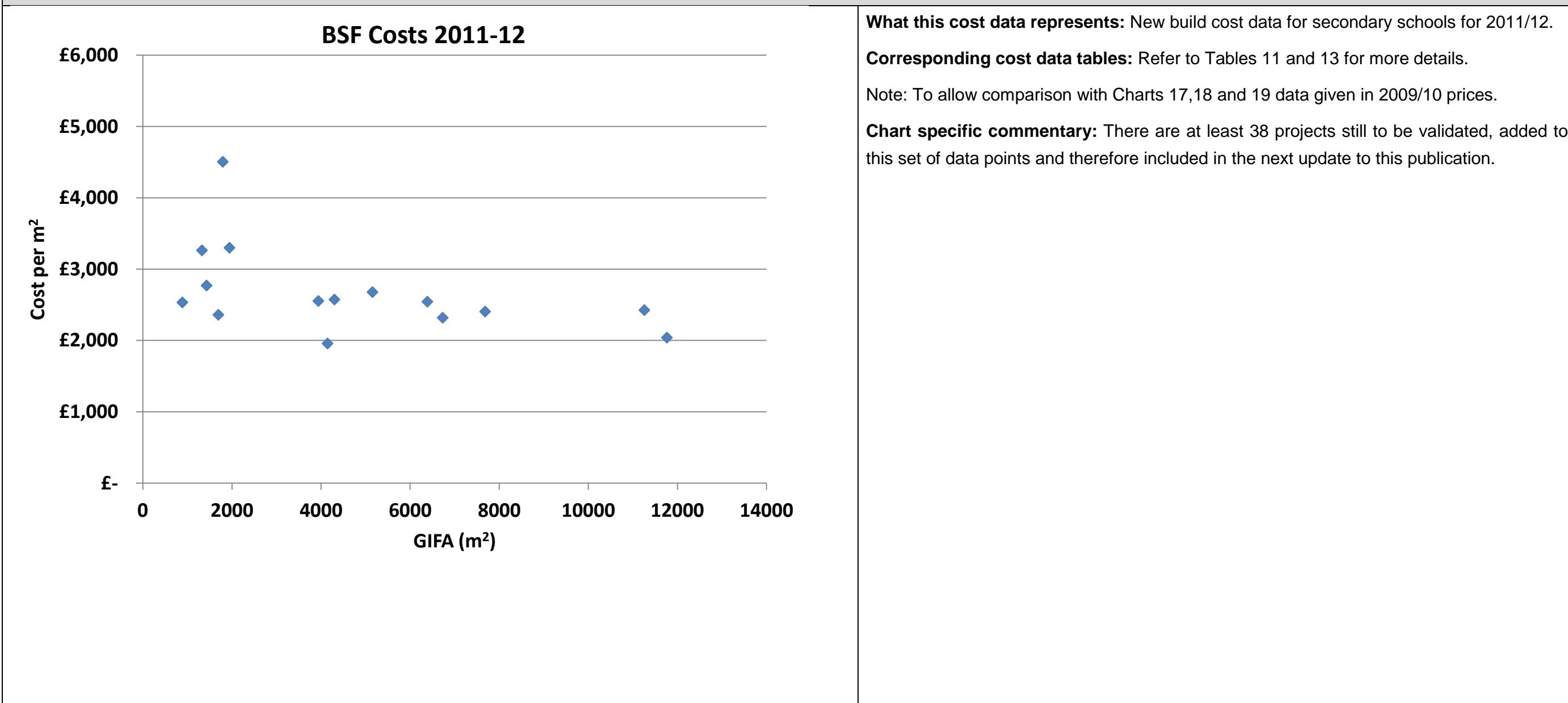
Corresponding cost data tables: Refer to Tables 11 and 13 for more details.

Note: To allow comparison with Charts 17, 20 and 21 data given in 2009/10 prices.



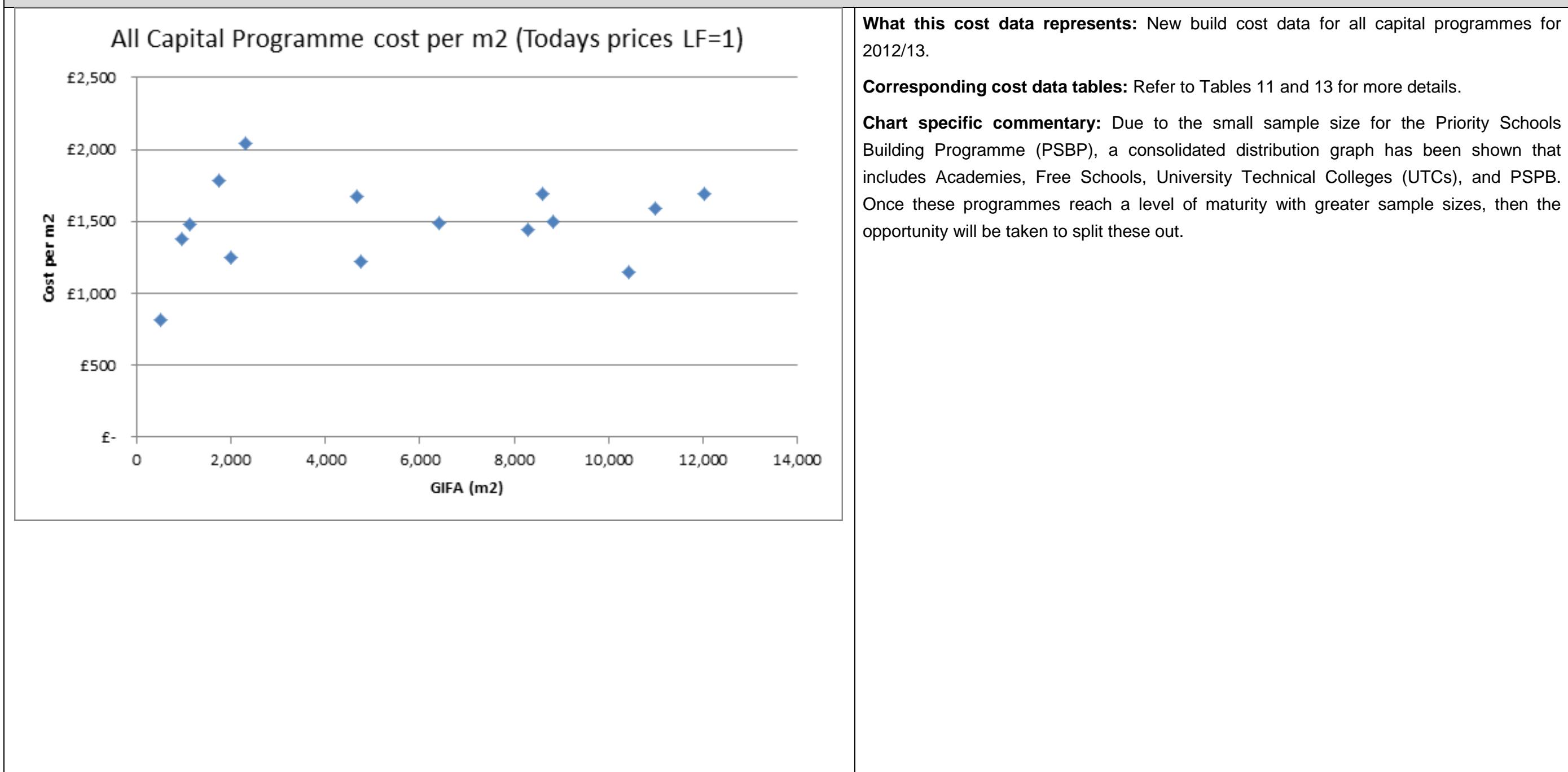
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 19-1: Construction Cost Benchmarks for DfE / Education Funding Agency: Secondary Schools (2011/12)



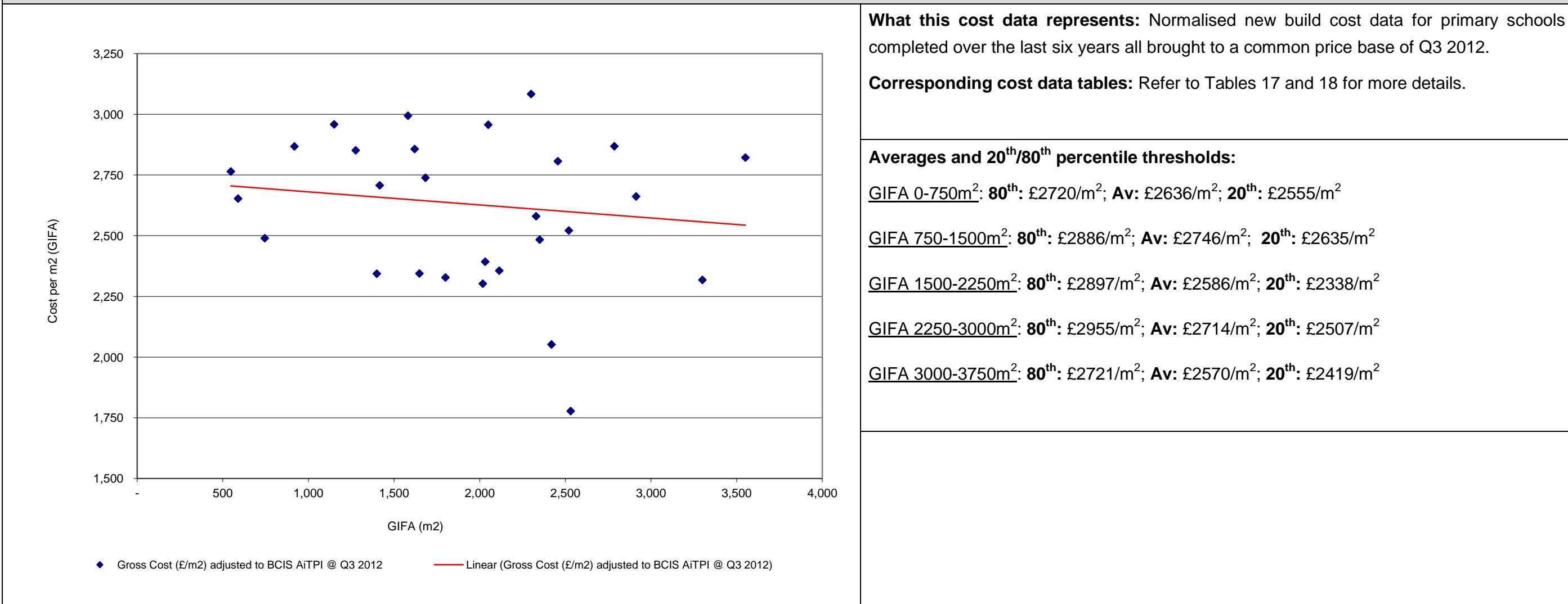
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 19-2: Construction Cost Benchmarks for DfE / Education Funding Agency: All Schools Capital Programmes (2012/13)



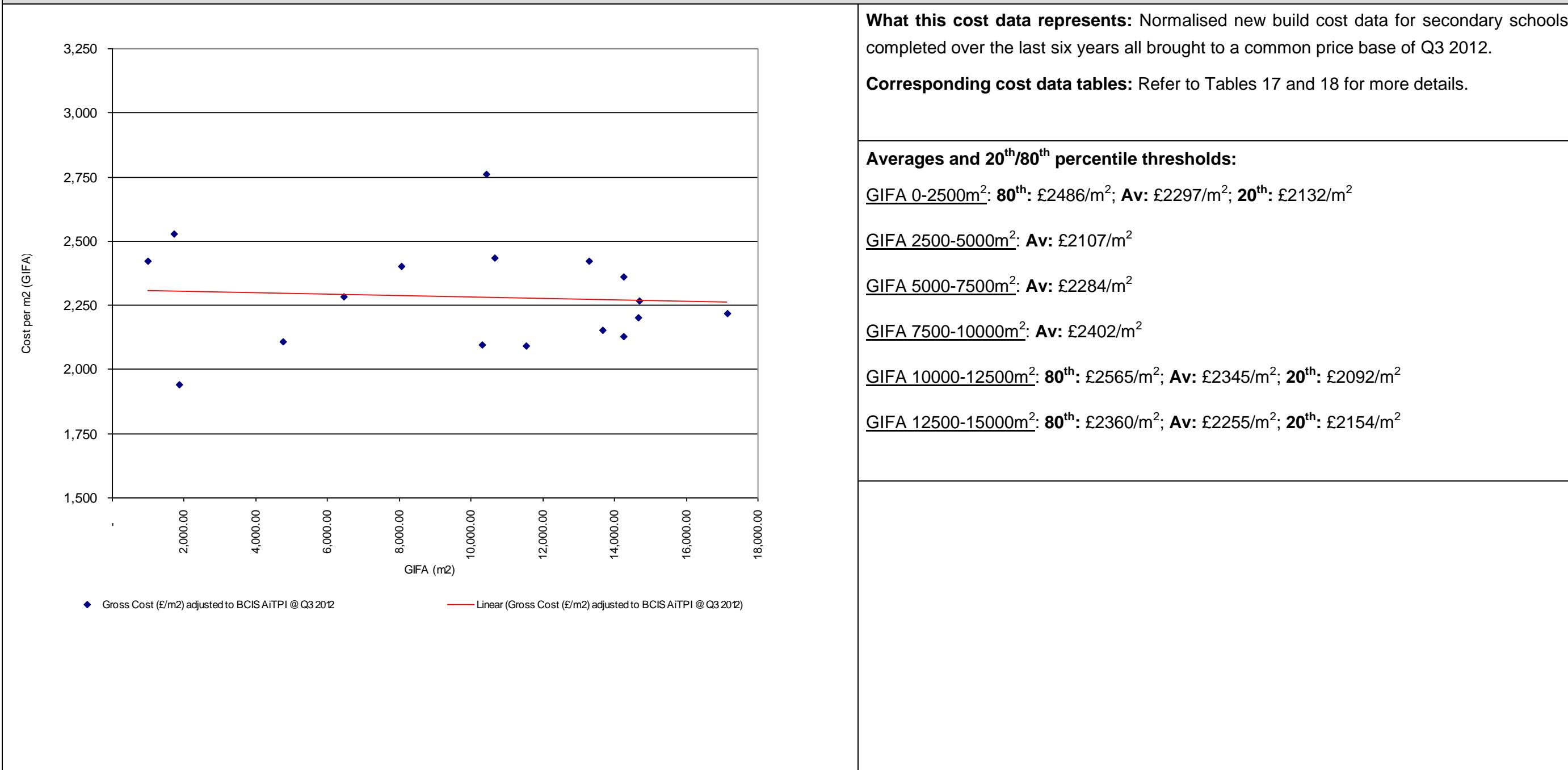
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 20: Construction Cost Benchmarks provided direct by Local Authorities (Compiled by Hampshire County Council and Manchester City Council): Primary Schools



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 21: Construction Cost Benchmarks provided direct by Local Authorities (Compiled by Hampshire County Council and Manchester City Council): Secondary Schools



DEPARTMENT COST BENCHMARK DATA: TABLES AND TREND CHARTS

The tables included within this section summarise the data points provided by 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 thresholds¹⁶ and are presented in relation to the 2009/10 baseline for all departments. Wherever available, data for 2010/11, 2011/12, and 2012/13 have also been provided.

The data within the tables in this section should be read in conjunction with the notes provided in Tables 12 and 13 below.

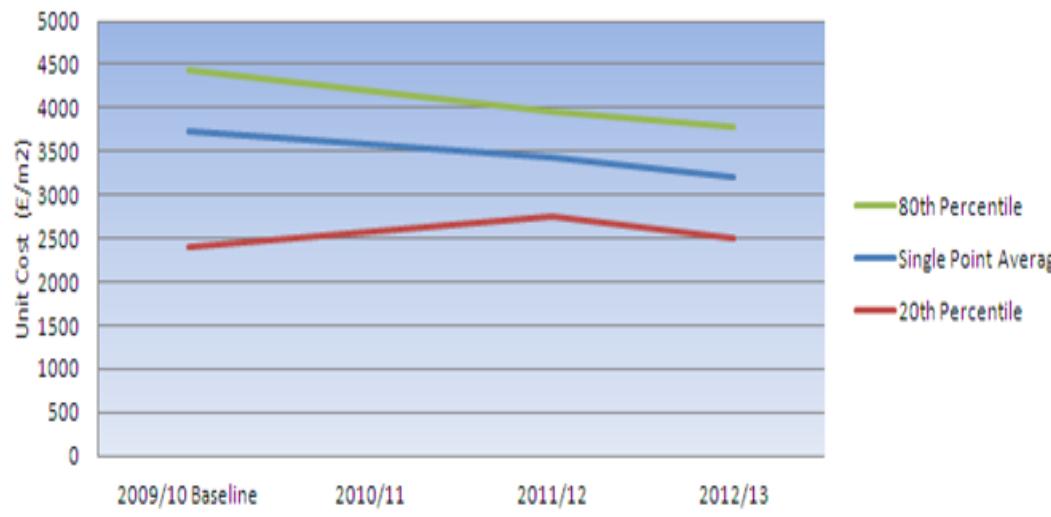
¹⁶ The Highways Agency is able to calculate each project cost using probabilistic three point estimating and estimating software with Monte Carlo simulation capability. Based upon the principles of three point estimating, the minimum, most likely and maximum cost for every activity is used to produce 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 Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 5: Construction Cost Benchmarks for Department of Health (P21 Framework)

Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12 ¹⁷		2012/13	
				Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th 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	3208	2506 3771
	Refurbishment		£/m ²	2090	1140 2520			1939	1359 2268	2028	1459 2525
Mental Health	New Build		£/m ²	2620	2130 3160			n/a	n/a	n/a	n/a
	Refurbishment		£/m ²	2270	1650 2640			1566	Insuff data	n/a	n/a
Primary Care / Community	New Build		£/m ²	2120	1880 2330			n/a	n/a	n/a	n/a
	Refurbishment		£/m ²	1490	1010 1860			n/a	n/a	n/a	n/a
Other	New Build		£/m ²	1480	450 2200			n/a	n/a	n/a	n/a
	Refurbishment		£/m ²	1580	1220 2000			n/a	n/a	n/a	n/a
All Schemes	New Build		£/m ²	3020	2080 3530			n/a	n/a	3208	2506 3771
	Refurbishment		£/m ²	2000	1130 2450			n/a	n/a	2028	1459 2525
	All schemes (New Build and Refurbishment)		£/m ²	2680	1700 3160			2390	1484 3321	2465	1837 2885

Chart 22: Acute New Build



¹⁷ In making comparisons with the 2009/10 baseline, 2011/12 benchmarks should be viewed with caution due to the statistically small sample size.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 6: Construction Cost Benchmarks for DEFRA/Environment Agency

Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th 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	44	19 65	32	18 39	34	17 46
		Type 4: Unit cost flood walls (less than 2.1 m high)		£/m	2802 3784	1386 <u>2458</u> 3784	<u>1204</u> 2979	<u>2293</u>	<u>1170</u> 2919	2196	1138 2851
		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	10246
		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	15

Important note: Type 4 benchmarks for 2010/11 and 2011/12 – i.e. those underlined – have been updated so that the data for all years are now at constant prices (March 2010). Refer also to Annex C.

Chart 23: Embankments

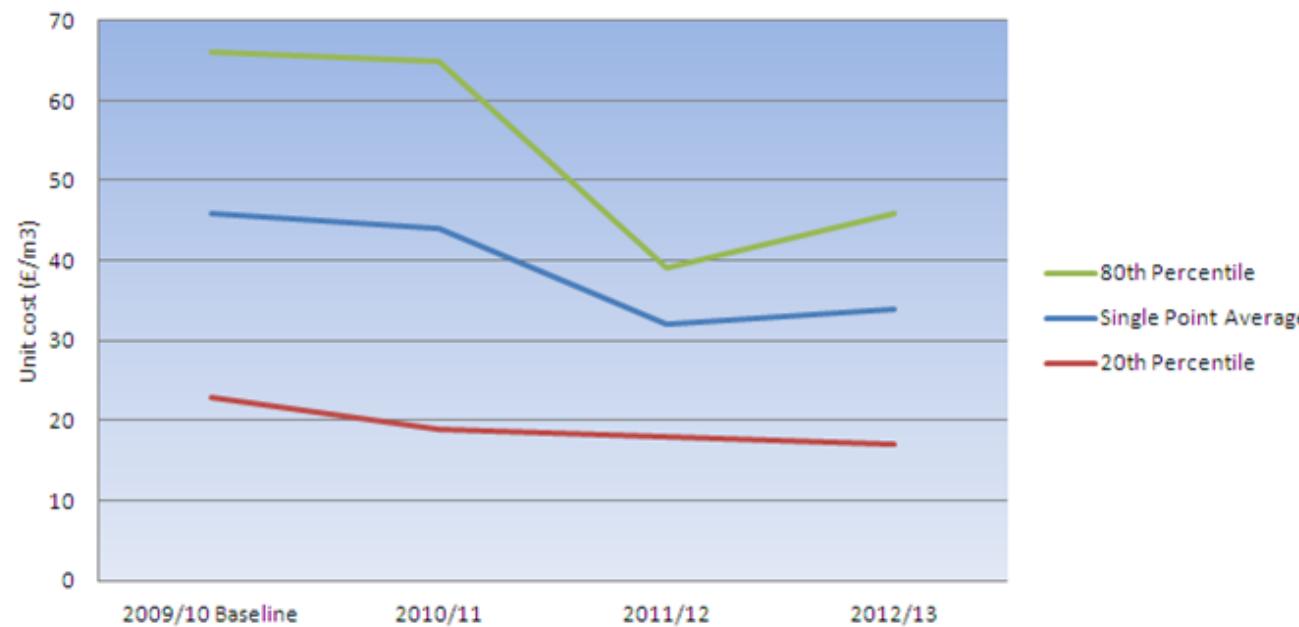
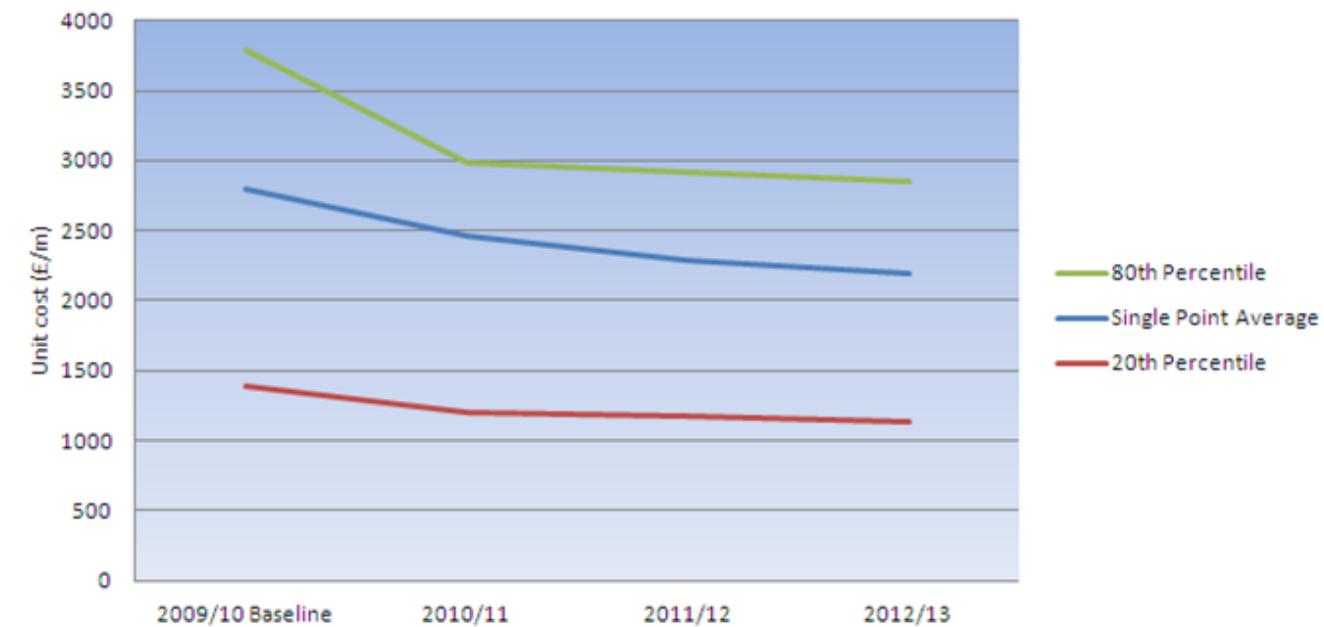


Chart 24: Retaining Walls



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 7: Construction Cost Benchmarks for DfT/Highways Agency

Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				Single point average (P50)	Range P10-P90 ¹⁸	Single point average (P50)	Range P10-P90	Single point average (P50)	Range P10-P90	Single point average (P50)	Range P10-P90
Major Projects	Trunk Road Improvement ¹⁹	Type 1: Total construction cost additional lane provided	£M/km	9.7	8.0 11.3	Not applicable given availability of corresponding data		7.0	6.0 7.4	6.2	5.8 7.0 ²⁰
		Type 1: Total construction cost additional lane provided	£K/m ²	2.6	2.1 3.0			1.8	1.6 1.9	1.6	1.5 1.9
	Junction Improvement	Type 1: Total construction cost junction or interchange	£M/Jn	21	19 23	20.5	18.1 23.6	Not applicable given availability of corresponding data		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	9.7	8.7 10.6 ²²	4.2	3.5 4.9 ²³	3.6	3.0 3.9 ²⁴
		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	1.0	0.8 1.1

Important note: Type 1 benchmarks for 2010/11 and 2011/12 – i.e. those underlined – have been updated so that the data for all years are now at constant prices (2009/10). Refer also to Annex C.

Chart 25: Trunk Roads

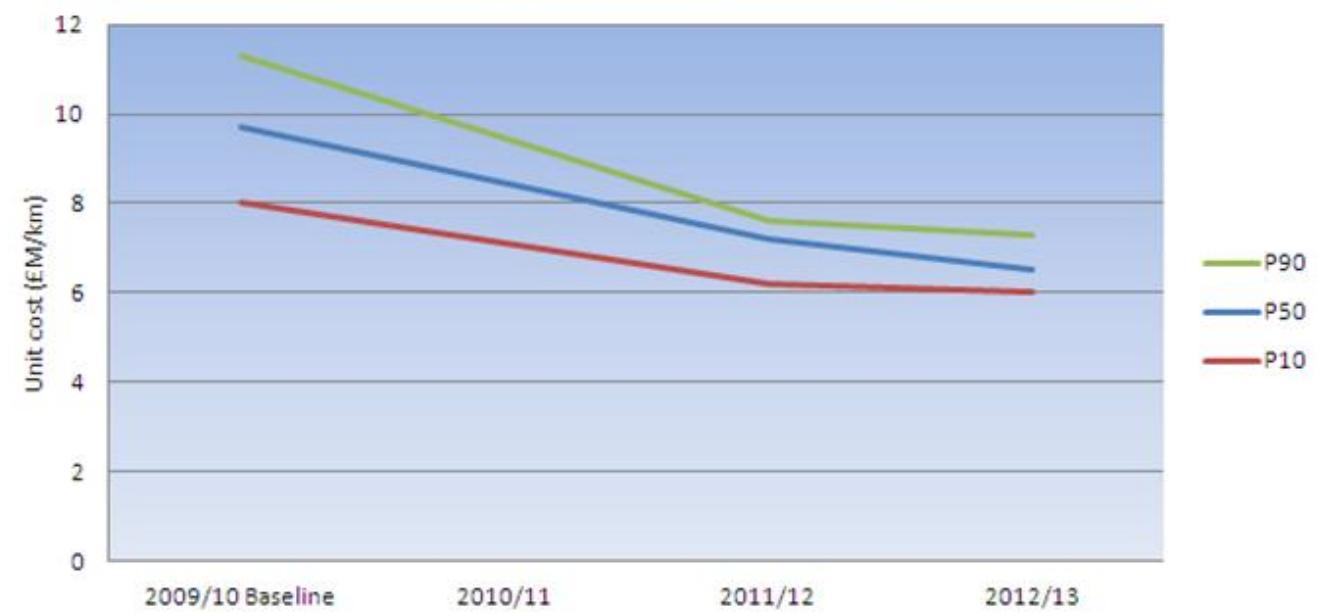
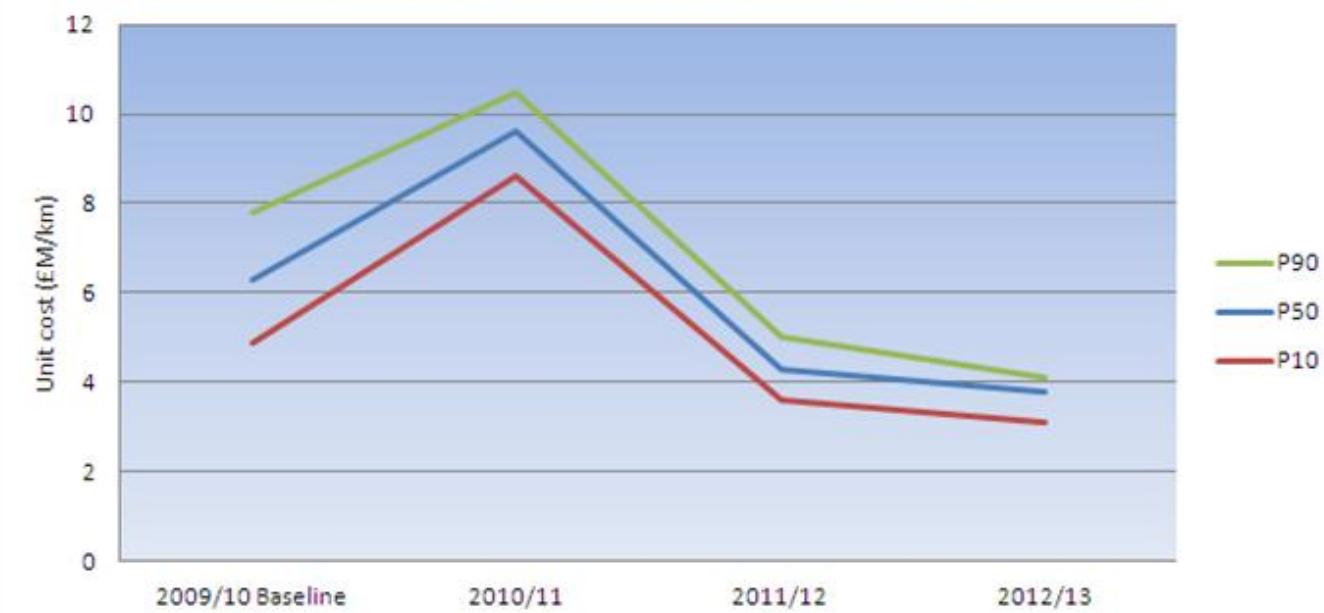


Chart 26: Managed Motorways



¹⁸ 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.

¹⁹ Trunk road projects that incorporate widening along the existing alignment or construction of a new alignment (by-pass).

²⁰ Data only available from a single project.

²¹ Further junction work is anticipated beyond 2012/13.

²² Only one Managed Motorway project was started in 2010/11.

²³ Data available from only three projects.

²⁴ Data only available from two projects.

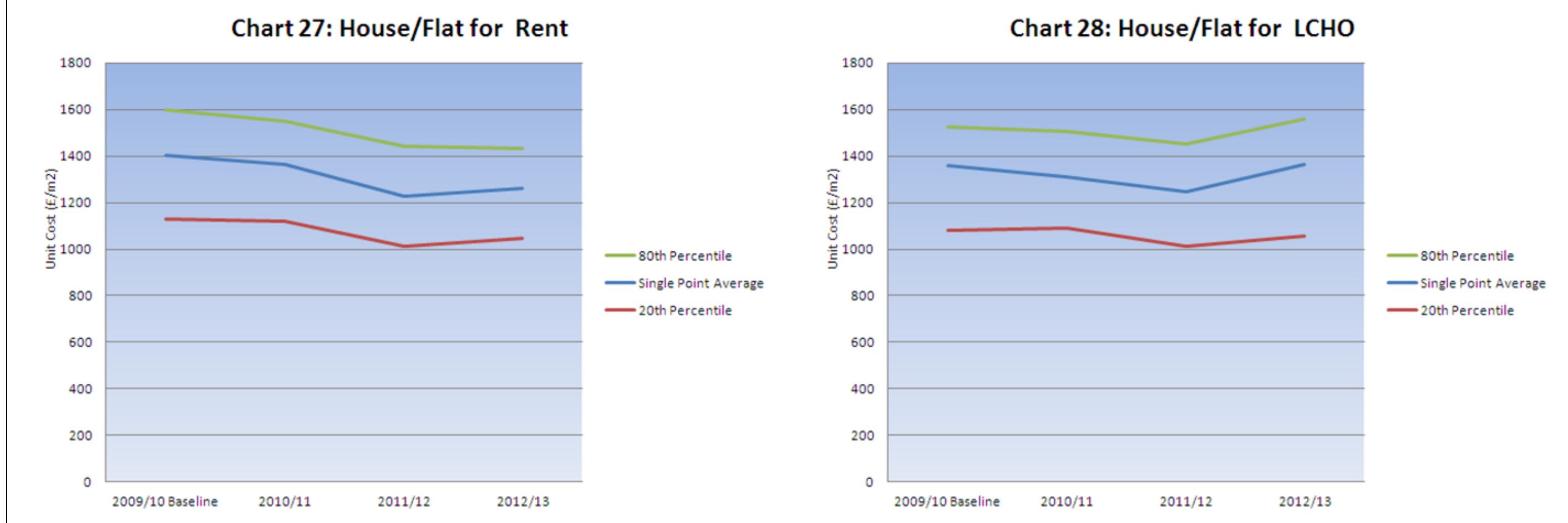
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 8: 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		2012/13	
				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	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	1263	1048 1432
	House/flat for LCHO ²⁵			1514	1154 1703	1453	1162 1678	1245	1005 1450	1363	1058 1562
	House/flat for rent: General needs			1405	1123 1628	1368	1146 1550	1207	1011 1415	1201	1048 1426
	House/flat for rent: Supported Housing			1808	1346 2078	1664	1474 2014	1837	1291 2123	1691	1484 2047
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	100129	82728 119077	98519	83169 114297	90063	74106 108597	92587	80838 113008
	House/flat for LCHO			27734	21511 34156	26772	21741 31783	24198	18,855 29997	24660	19403 29776
	House/flat for rent: General needs		£/home	102631	76731 120253	99214	81163 117439	93708	76198 108987	99466	79122 122747
	House/flat for rent: Supported Housing			29343	21954 32935	28057	21723 32820	23878	18687 28717	26596	20279 31938
	House/flat for rent		£/home	99758	82728 118783	98760	83529 114300	89730	74110 108601	91548	80882 113008
	House/flat for LCHO			27166	21277 32568	26409	21581 30773	23585	18736 28604	22723	19400 28702
	House/flat for rent: General needs		£/person housed	108538	80137 119700	91787	74375 106178	97110	72352 105399	98068	82939 108789
	House/flat for rent: Supported Housing			49047	37406 59850	45664	34434 59982	49311	32564 72352	42471	32613 62973
Refurbishment	Decent Homes	Type 2: £ /Dwelling receiving capital works	£/home	5001	2089 7596	4018	2037 8062	2420	1564 2952	FY 2012/13 data available from spring 2014	

²⁵ Low Cost Home Ownership

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 8: Construction Cost Benchmarks for DCLG/HCA: England (Outside London) – for regions refer to Annex A



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 8: Construction Cost Benchmarks for DCLG/HCA: England (Outside London) – for regions refer to Annex A

Chart 29: House/Flat for General Needs

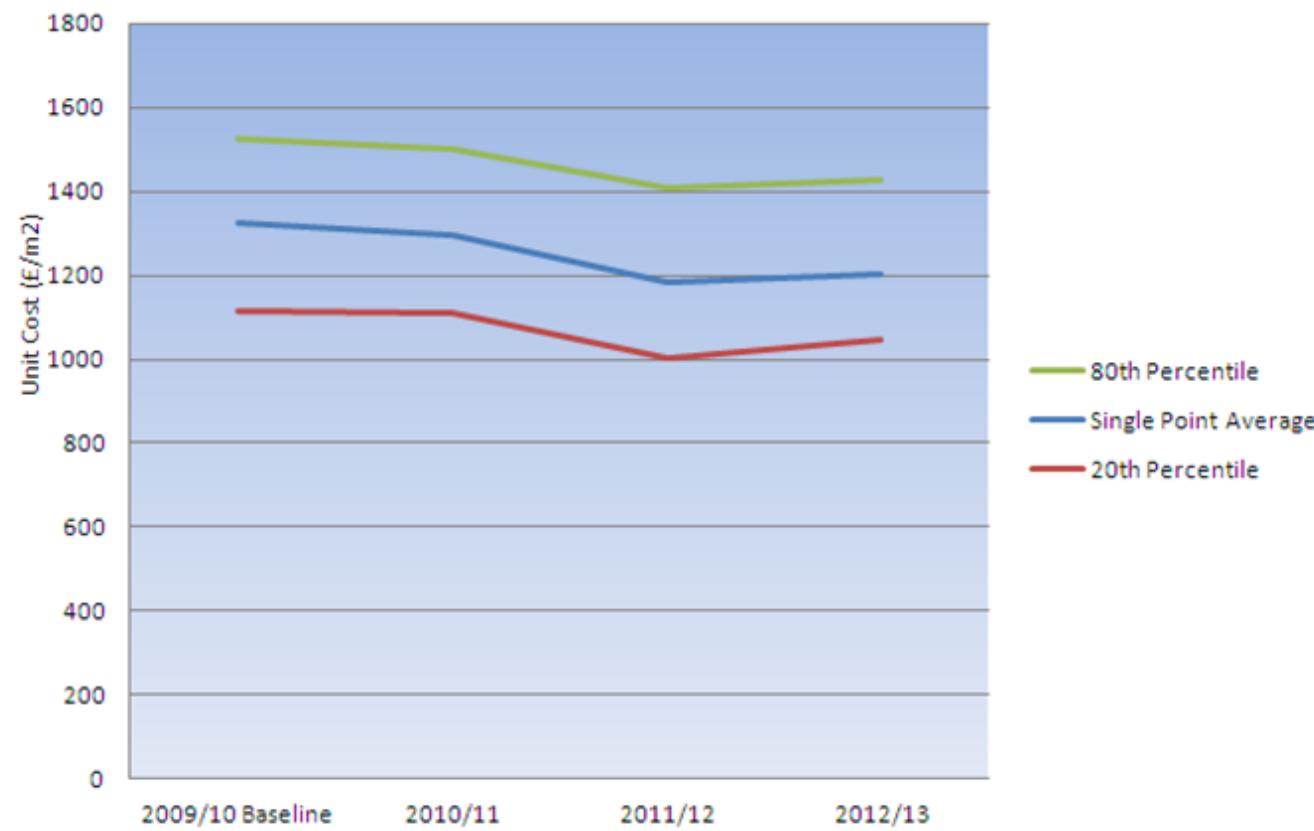
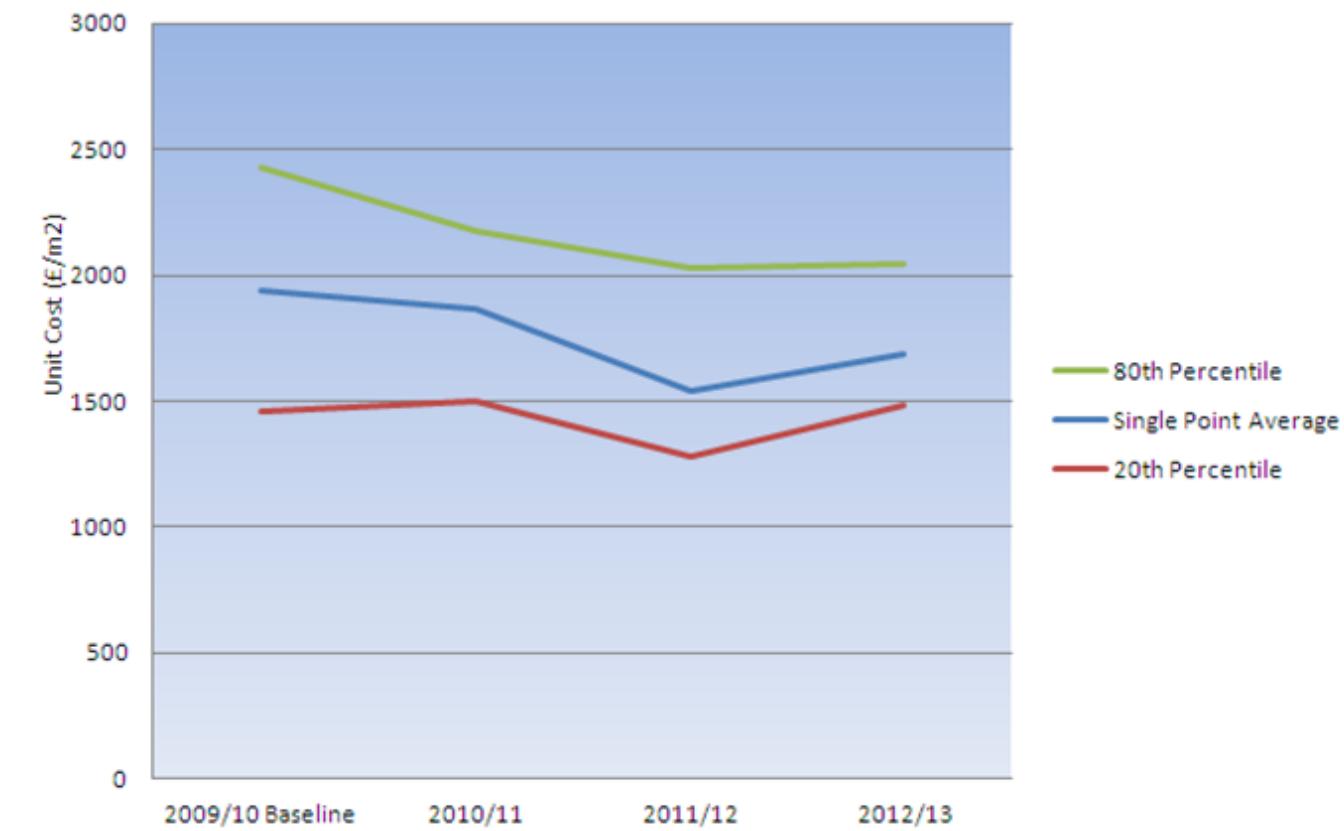


Chart 30: House/Flat Supported Housing



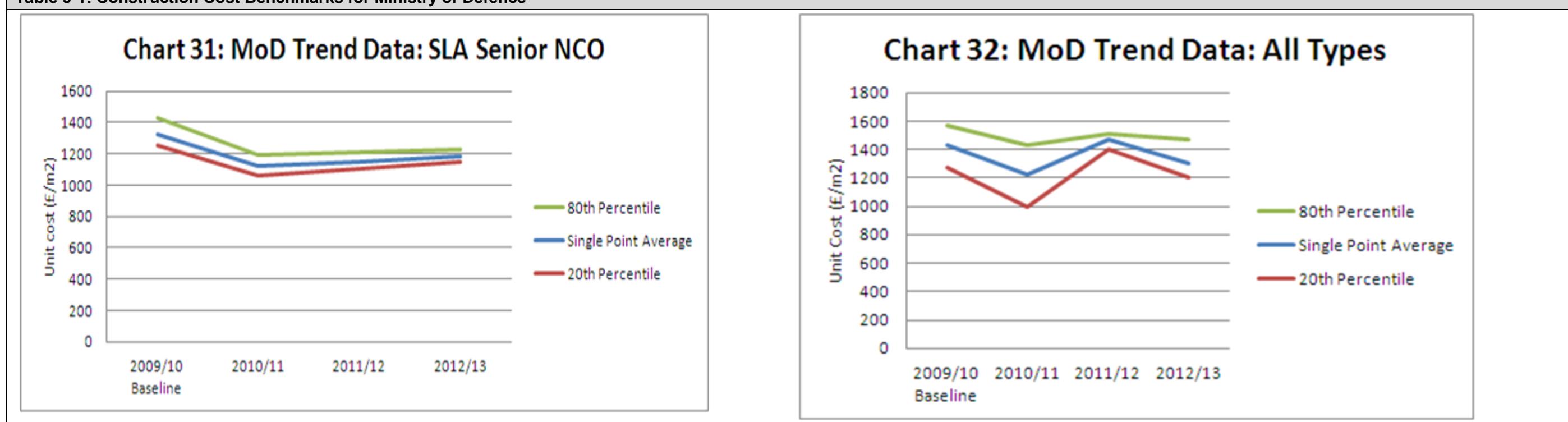
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 9-1: Construction Cost Benchmarks for Ministry of Defence ²⁶ : Single Living Accommodation Modernisation (SLAM)											
Project Type	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				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	Single point average	Range 20 th – 80 th Percentile
New Build Single Living Accommodation	Ensuite Rooms - Flatlet format (Z Scale Flatlet)	Type 1	£/m ²	1465	1337 1592	1399 (single project)	Insufficient data	1480	1351 1600	n/a	n/a
		Type 2	£/Bed	46698	44612 49196	39164 (single project)	Insufficient data	42360	39652 45230	n/a	n/a
		Type 2	m ² /Bed	32.02	29.90 33.65	27.99 (single project)	Insufficient data	28.72	27.85 29.60	n/a	n/a
	Ensuite Rooms - Hotel format (Z Scale Hotel)	Type 1	£/m ²	1455	1304 1583	1541 (single project)	Insufficient data	n/a	n/a	1527 (single project)	Insufficient data
		Type 2	£/Bed	42298	38607 44518	52892 (single project)	Insufficient data	n/a	n/a	42214 (single project)	Insufficient data
		Type 2	m ² /Bed	29.08	27.47 30.02	34.31 (single project)	Insufficient data	n/a	n/a	27.65 (single project)	insufficient data
	12 Bed Dormitories (X Scale)	Type 1	£/m ²	1455	1326 1556	n/a	n/a	n/a	n/a	n/a	n/a
		Type 2	£/Bed	33912	30984 36929	n/a	n/a	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	n/a	n/a
	4 Bed Study/Dormitories (Y Scale)	Type 1	£/m ²	1503	1449 1579	n/a	n/a	1444 (single project)	Insufficient data	1295 (single project)	Insufficient data
		Type 2	£/Bed	37124	34108 40559	n/a	n/a	35760 (single project)	Insufficient data	30367 (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	23.45 (single project)	Insufficient data
	Senior NCO /Junior Officer Accommodation	Type 1	£/m ²	1323	1255 1430	1124	1059 1190	n/a	n/a	1181	1145 1226
		Type 2	£/Bed	49612	44932 54179	51893	49714 54073	n/a	n/a	44208	41280 47483
		Type 2	m ² /Bed	37.74	35.97 39.39	54.67	42.24 51.56	n/a	n/a	37.35	35.99 38.73
New Build Single Living Accommodation	Mixed Provision	Type 1	£/m ²	1454	1289 1602	942 (single project)	Insufficient data	1465	Insufficient data	1319	1205 1470
		Type 2	£/Bed	51545	44737 57735	37949 (single project)	Insufficient data	64741	Insufficient data	45343	40443 50278
		Type 2	m ² /Bed	36.10	29.81 41.39	40.30 (single project)	Insufficient data	44.20	Insufficient data	34.73	31.36 40.96
	Aggregated Sample – All Types	Type 1	£/m ²	1428	1275 1572	1226	1000 1427	1470	1404 1514	1303	1205 1469
		Type 2	£/Bed	46381	40244 51577	46758	38921 53418	45516	36997 50231	44001	39219 48658
		Type 2	m ² /Bed	32.83	28.46 38.33	33.11	27.99 40.30	38.22	30.49 45.35	n/a	n/a
Refurbishment	SLA Various	Type 1	£/m ²	Insufficient data	Insufficient data	Insufficient data	Insufficient data	n/a	n/a	n/a	n/a

²⁶ Data for 2009/10, 2010/11 and 2011/12 has been revised to remove the costs of external works, since these can vary significantly between schemes adversely impacting the ability to compare otherwise similar projects.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 9-1: Construction Cost Benchmarks for Ministry of Defence



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 9-2: Construction Cost Benchmarks for Ministry of Defence: Service Family Accommodation (SFA)											
Project Type	Project Subtypes ^{27,28}	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				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	Single point average	Range 20 th – 80 th Percentile
Service Family Accommodation	Type B – Two bedrooms	Type 1	£/m ²	1043	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	89187	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type C – Three bedrooms	Type 1	£/m ²	1063 (single project)	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	105347 (single project)	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type D – Three bedrooms	Type 1	£/m ²	1013	971 1062	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	139287	134527 148112	n/a	n/a	n/a	n/a	tbc	tbc
	Type I – Four bedrooms	Type 1	£/m ²	976	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	245027	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type II – Four bedrooms	Type 1	£/m ²	965	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	202668	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type III – Three bedrooms	Type 1	£/m ²	899 (single project)	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	138872 (single project)	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type IV – Four bedrooms	Type 1	£/m ²	883	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	121530	Insufficient data	n/a	n/a	n/a	n/a	tbc	tbc
	Type V – Three bedrooms	Type 1	£/m ²	897	884 910	n/a	n/a	n/a	n/a	tbc	tbc
		Type 2	£/House	106741	105190 108291	n/a	n/a	n/a	n/a	tbc	tbc

²⁷ The benchmarks include data for projects covering 2008 to 2011 because of the low sample size.

²⁸ The benchmarks for Type B are calculated from the Type C costs. Type I and Type II benchmarks have been calculated from the Type III costs. Type IV benchmark has been calculated from the Type V costs.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 10: Construction Cost Benchmarks for Ministry of Justice

Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile
All projects	New Build	Type 1: Kitchens	£/m ²	2999	Insuff. data	n/a	n/a	n/a	n/a	2482	Insuff. data
		Type 1: House Blocks	£/m ²	3465	2679 4510	n/a	n/a	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	n/a	n/a
		Type 1: New Ancillary (incl. prison workshops)	£/m ²	3528	2091 5115	2832	Insuff. data	n/a	n/a	2566	2071 3082
		Type 1: Court Buildings	£/m ²	5046	Insuff. data	n/a	n/a	3970	Insuff. data	n/a	n/a
	Refurbishment	Type 1: Prison: General Minor Refurbishment	£/m ²	1542	430 2294	2402 ²⁹	497 2830	1204	109 2080	n/a	n/a
		Type 1: Prison: Major Refurbishment	£/m ²	3940	3728 5092	n/a	n/a	n/a	n/a	2856	Insuff. data
	New Build	Type 3: Product value ³⁰ from Cost Component Breakdown	%	45	n/a	49	n/a	54	n/a	59	n/a
	Refurbishments less than £2m	Type 3: Product value from Cost Component Breakdown	%	32	n/a	36	n/a	39	n/a	43	n/a
	Refurbishments greater than £2m	Type 3: Product value from Cost Component Breakdown	%	32	n/a	36	n/a	39	n/a	43	n/a

Chart 33: New Ancillary

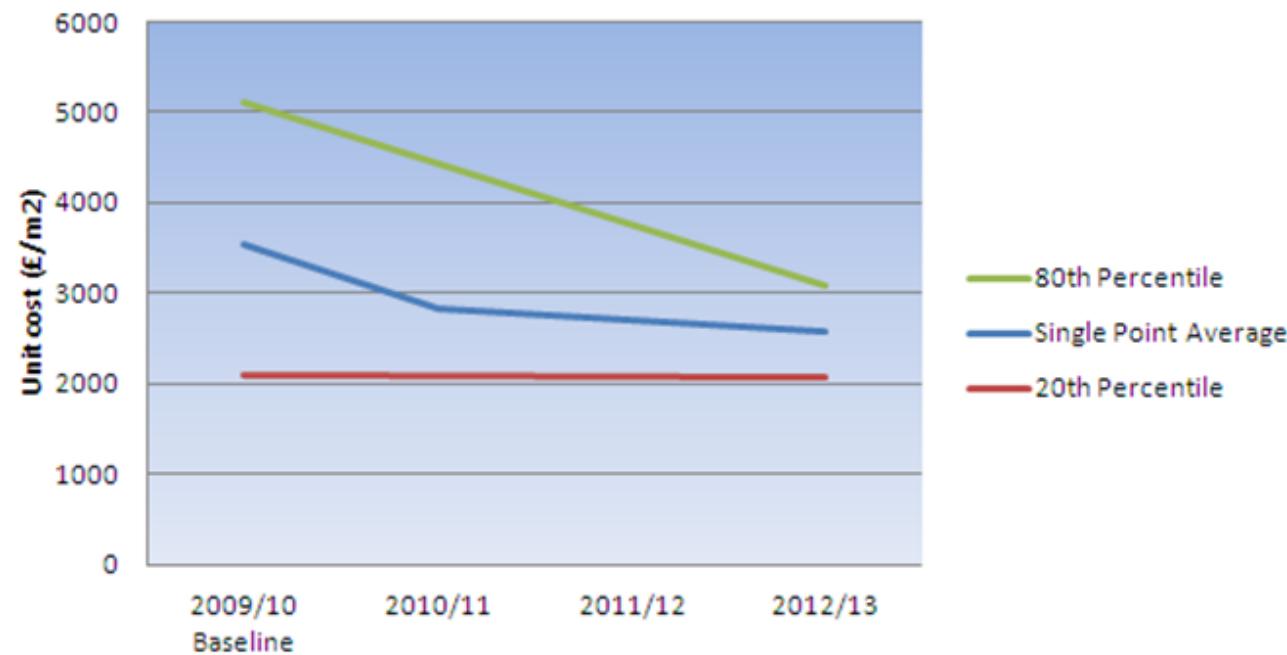
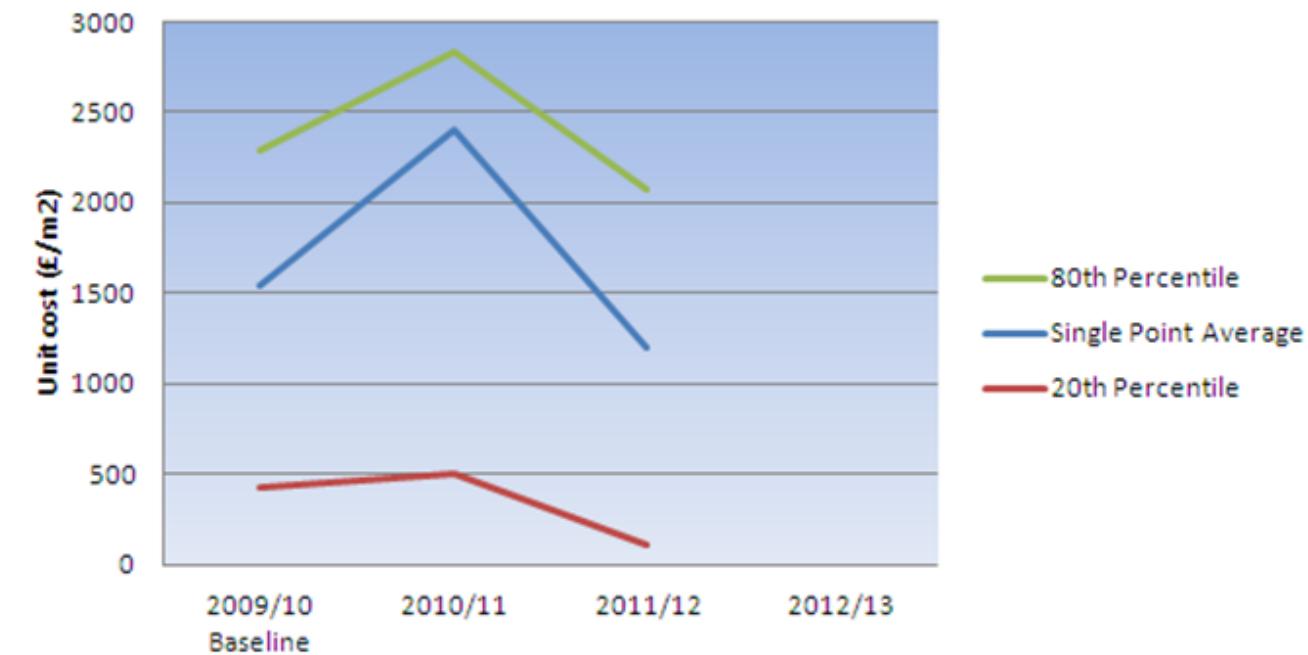


Chart 34: Minor Refurbishment



²⁹ Influenced by significant range found within small sample.

³⁰ Positive progress is indicated by upwards movement in product %.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 11-1: Construction Cost Benchmarks for DfE / Education Funding Agency

Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12 ³¹		2012/13	
				Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th Percentile	Single point average	Range 20th - 80 th 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	BSF end of year returns are still being analysed. In the interim reference should be made to the direction of travel evidenced by the Academies Programme (refer to note below) and Table 11-2.	
	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		
Note: The average cost of new schools in the last parliament was £2524 per m ² (at 2012/13 prices). This refers to new build construction for mainstream secondary schools in the BSF programme. This compares to the latest outturn cost of £1455 per m ² for new build schools delivered via EFA's Contractors' Framework, primarily the "71 Academies Programme", and this is also the basis for funding allocations through the new Priority School Building Programme. This gives an efficiency saving of 42%. It has been calculated as the "keenest" price that can be applied to a quality school build, based on costs built up as part of the James Review and subsequent work on baseline designs.											

Table 11-2: Construction Cost Benchmarks for DfE / Education Funding Agency: All Capital Programmes (2012/13)

Total number of schools across all programmes	53	Total number of free school projects	25	Number of free schools with no inflation information	18
Average cost per m ² of all projects		1557		Number of schools within sample	53
Average cost per m ² of all projects (excluding the 18 Free Schools with no inflation adjustments)		1588		Number of schools within sample	35
Average cost per m ² of all free schools		1587		Number of schools within sample	25
Average cost per m ² of all free school projects (excluding the 18 Free Schools with no inflation adjustments)		1764		Number of schools within sample	7

Note: These programmes are at a relatively early stage and there represent limited sample sizes. Benchmarks are provided at the highest level (i.e. not broken down by GIFA). These costs are then pooled across capital programmes to maximise the sample size. The data include costs from the following programmes :- Academies, Free Schools, University Technical Colleges (UTCs) and the Priority Schools Building Programme (PSPB). As these programmes mature and the sample sizes increase across each programme, then individual benchmarks will be developed.

³¹ 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 2012/13 and included in the next update to this document.

DEPARTMENT ELEMENTAL COST BENCHMARK DATA: CHARTS AND TABLES

This document includes for the first time elemental (group element) benchmarks for four departments that construct buildings. In future publications it is intended to develop this section further, for example, by also addressing infrastructure projects.

Elemental benchmarks represent the next level in breaking down the construction costs beyond the overarching benchmarks that are presented in the first part of this document. Typically they separate out costs such as the foundations, structural frame, external cladding, building services and internal finishes. They also separate out other costs such as the contractor's overheads, profit and construction risk (though on the grounds of commercial confidentiality only some of these costs are included in the charts and tables below).

The publication of elemental (group element) benchmarks highlights the data available to departments in comparing costs - whether internally or externally - these comparisons being more instructive than those relating to overarching benchmarks. In comparing elemental (group element) costs across departments – refer to Summary Table A below – it is apparent that some project types are more comparable than others. For example, there appears to be reasonably good correspondence between the elemental (group element) costs for Primary / Community Care, Other, Single Living Accommodation and Secondary Schools.

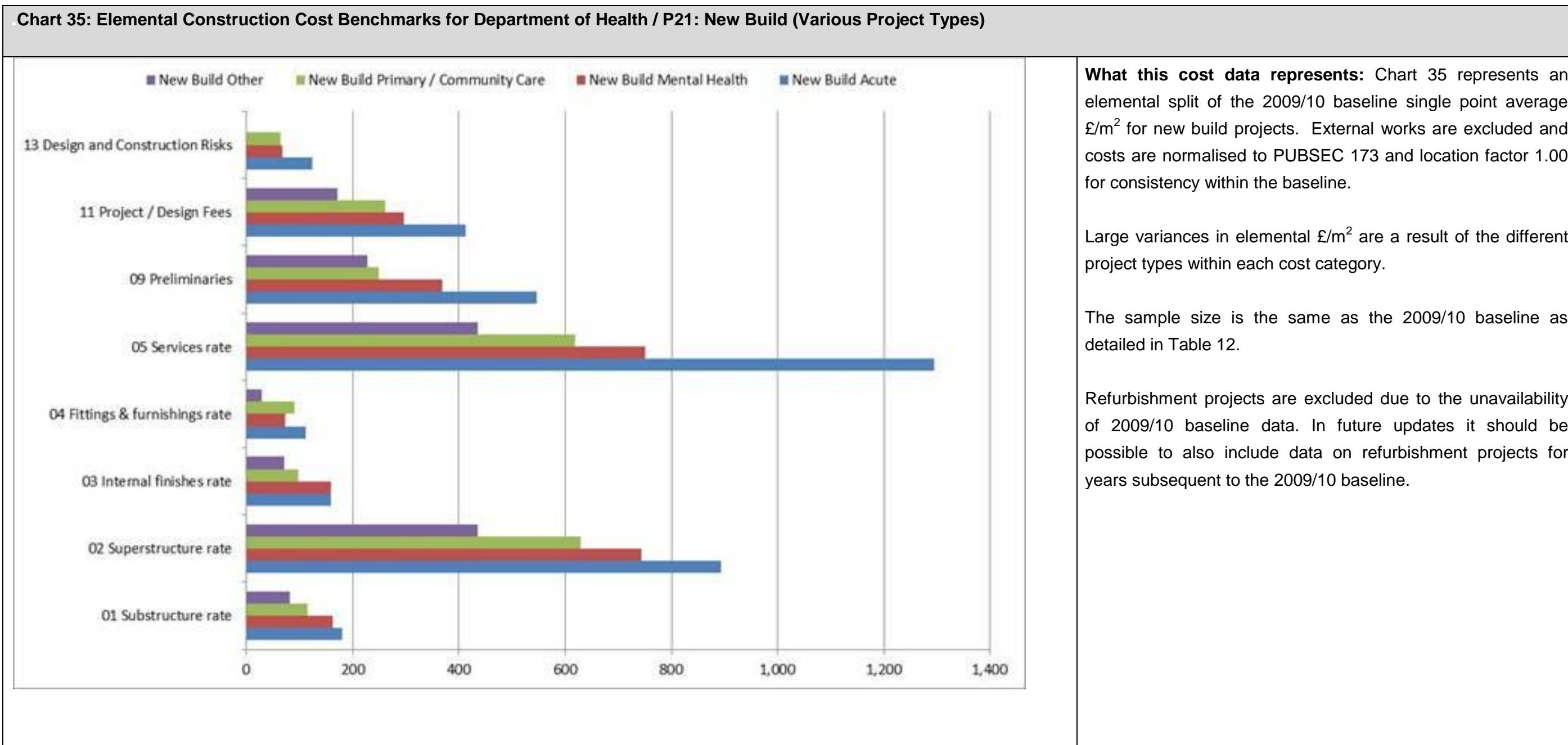
Similarly, some group element categories are also more comparable than others. For example, unit costs for external works vary considerably (from £100/m² to £670/m²), and this might be expected given the scope of work involved is also likely to vary considerably.

In making comparisons using this data, departments therefore need first to obtain a granular understanding of both the commonalities and differences. Part 3: *Use of Cost Benchmarks* reports on the progress departments are making in developing these comparisons.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Summary Table A: Group Element Construction Cost Benchmarks (£/m ² ; compiled from Charts 35 to 39 below)																
Department	DoH / P21 (New Build)								MoD			MoJ		DfE / EFA		
Project Type	Acute		Mental Health		Primary / Community Care		Other		Single Living Accommodation		Service Families Accommodation		Various Project Types		Secondary Schools	
Group Element Category <i>(using New Rules of Measurement NRM references e.g. 01, 02 etc – refer also to Annex B)</i>	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	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	Single point average	Range 20 th – 80 th Percentile		
01 Substructure Rate	180	87 240	162	110 185	114	74 149	82	32 108	73	51 88	89	62 129	172	62 268	109	N/A
02 Superstructure Rate	893	607 1063	743	554 859	630	585 658	435	203 597	563	480 628	472	389 595	1232	442 1735	570	N/A
03 Internal Finishes Rate	158	81 191	159	130 192	98	89 106	70	9 106	109	85 131	141	72 184	95	8 142	95	N/A
04 Fittings & Furnishings Rate	112	55 168	72	50 100	90	41 112	29	11 49	68	48 79	51	26 70	145	2 252	76	N/A
05 Services Rate	1295	733 1552	750	579 873	618	510 731	436	35 671	294	246 334	202	139 245	825	218 1197	424	N/A
08 External Works	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	152	106 194	374	331 418	461	226 670	212	N/A
09 Preliminaries	547	257 651	368	289 422	248	229 295	228	33 364	335	277 389	223	156 357	423	151 804	333	N/A
11 Project / Design Fees	412	195 503	297	244 368	261	221 309	171	22 310	48	32 60	62	37 78	229	126 320	235	N/A
13 Design & Construction Risks	124	41 168	67	45 89	64	41 74	35	7 49	Included across all elemental rates		N/A	N/A	35	0 52	77	N/A

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

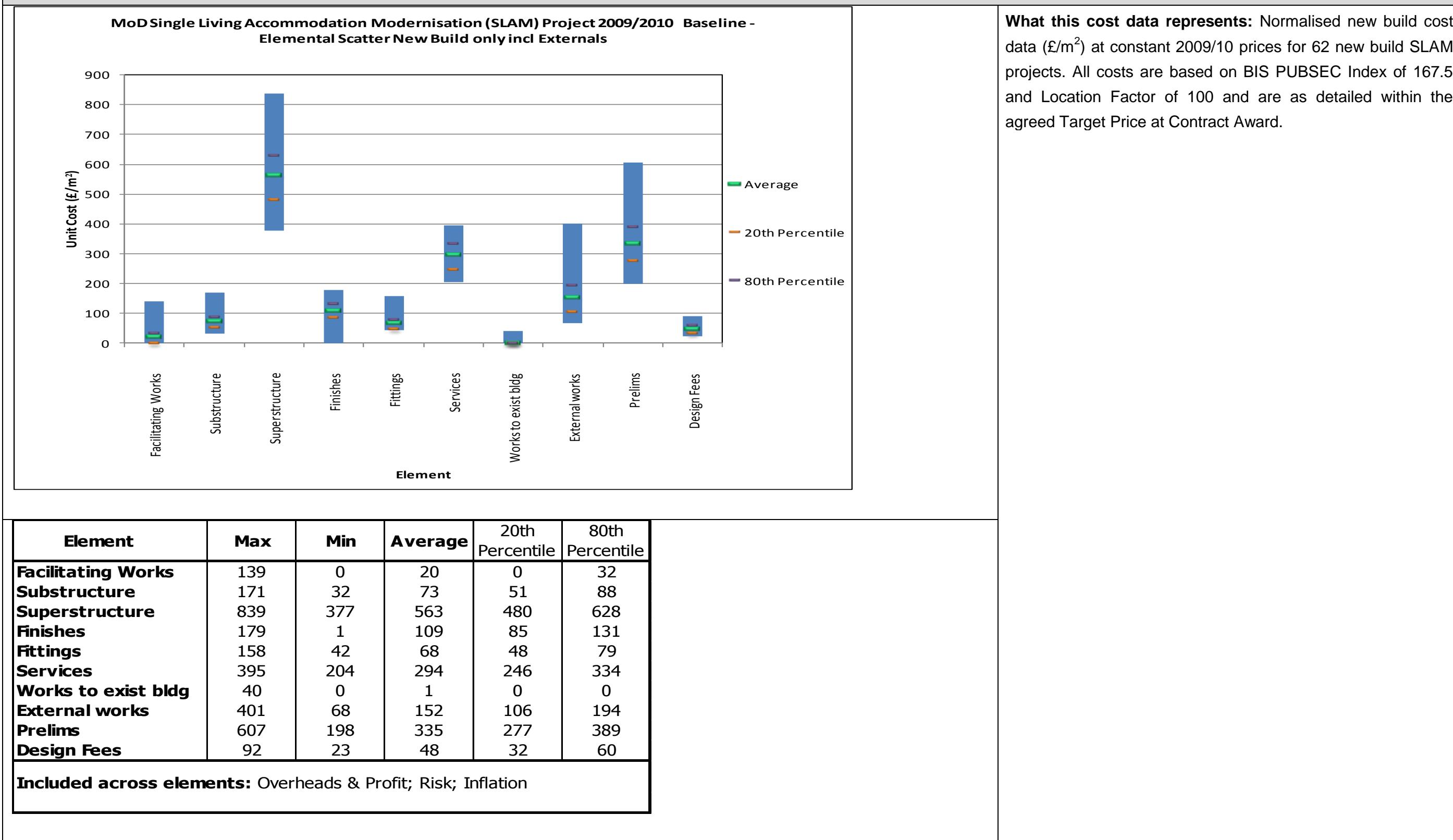


Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 35: Elemental Construction Cost Benchmarks for Department of Health / P21: New Build (Various Project Types)								
New Build Project Types	Acute		Mental Health		Primary / Community Care		Other	
Group Element Category (with unit costs shown in £/m ²)	Single Point Average	Range 20th - 80th Percentile	Single Point Average	Range 20th - 80th Percentile	Single Point Average	Range 20th - 80th Percentile	Single Point Average	Range 20th - 80th Percentile
01 Substructure rate	180	87 240	162	110 185	114	74 149	82	32 108
02 Superstructure rate	893	607 1063	743	554 859	630	585 658	435	203 597
03 Internal finishes rate	158	81 191	159	130 192	98	89 106	70	9 106
04 Fittings & furnishings rate	112	55 168	72	50 100	90	41 112	29	11 49
05 Services rate	1295	733 1552	750	579 873	618	510 731	436	35 671
09 Preliminaries	547	257 651	368	289 422	248	229 295	228	33 364
11 Project / Design Fees	412	195 503	297	244 368	261	221 309	171	22 310
13 Design and Construction Risks	124	41 168	67	45 89	64	41 74	35	7 49
Excluded: 00 Facilitating Works; 07 Work to Existing Buildings; 08 External Works.			Not applicable / available: 12 Other Development / Project Costs; 14 Client Risks, Furniture and Equipment (F&E); Pre-construction Fees; Regulatory Fees.					
Included across elements: 10 Overhead and Profit; 15 Inflation; Abnormals.								

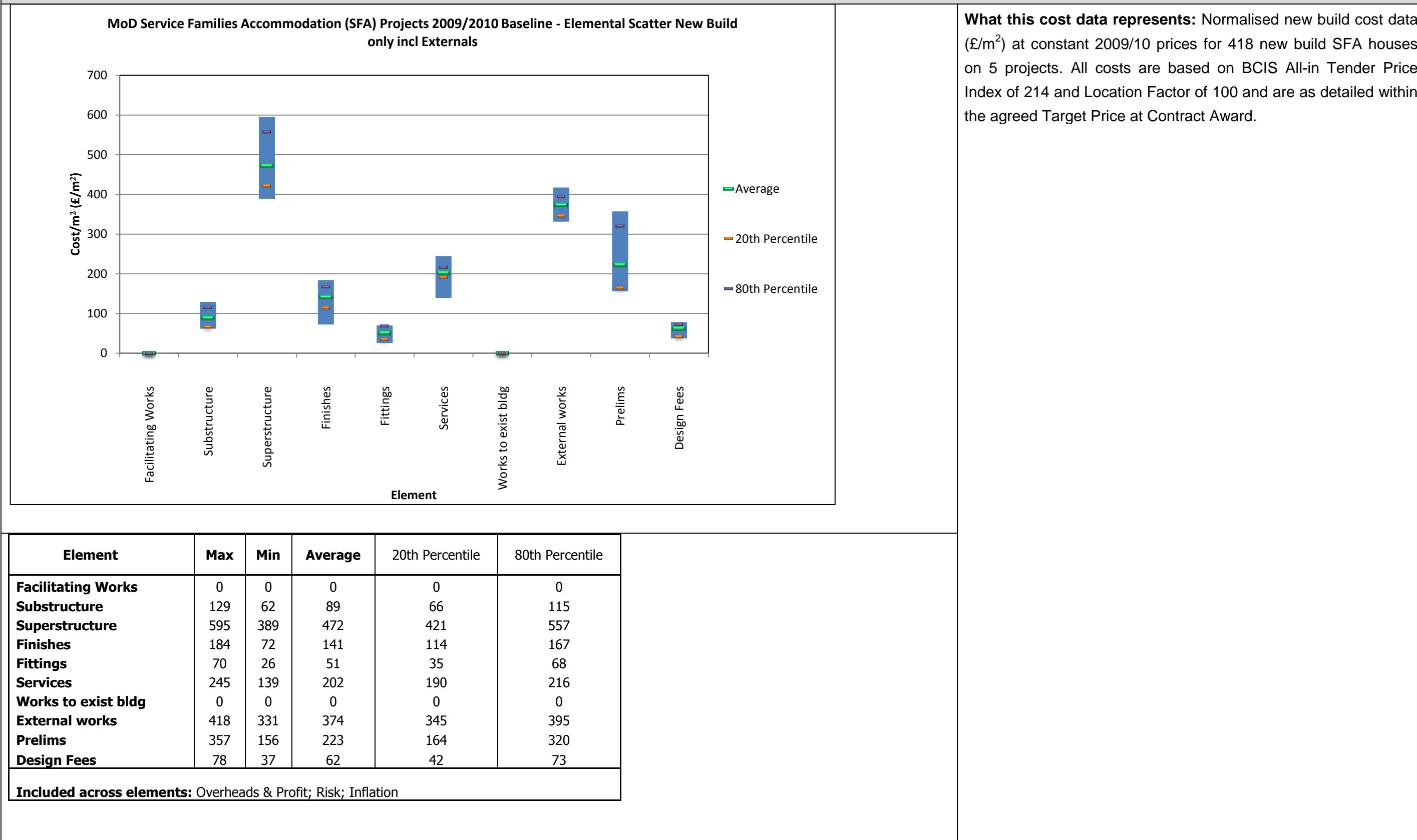
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 36-1: Elemental Construction Cost Benchmarks for Ministry of Defence: New Build (Single Living Accommodation)



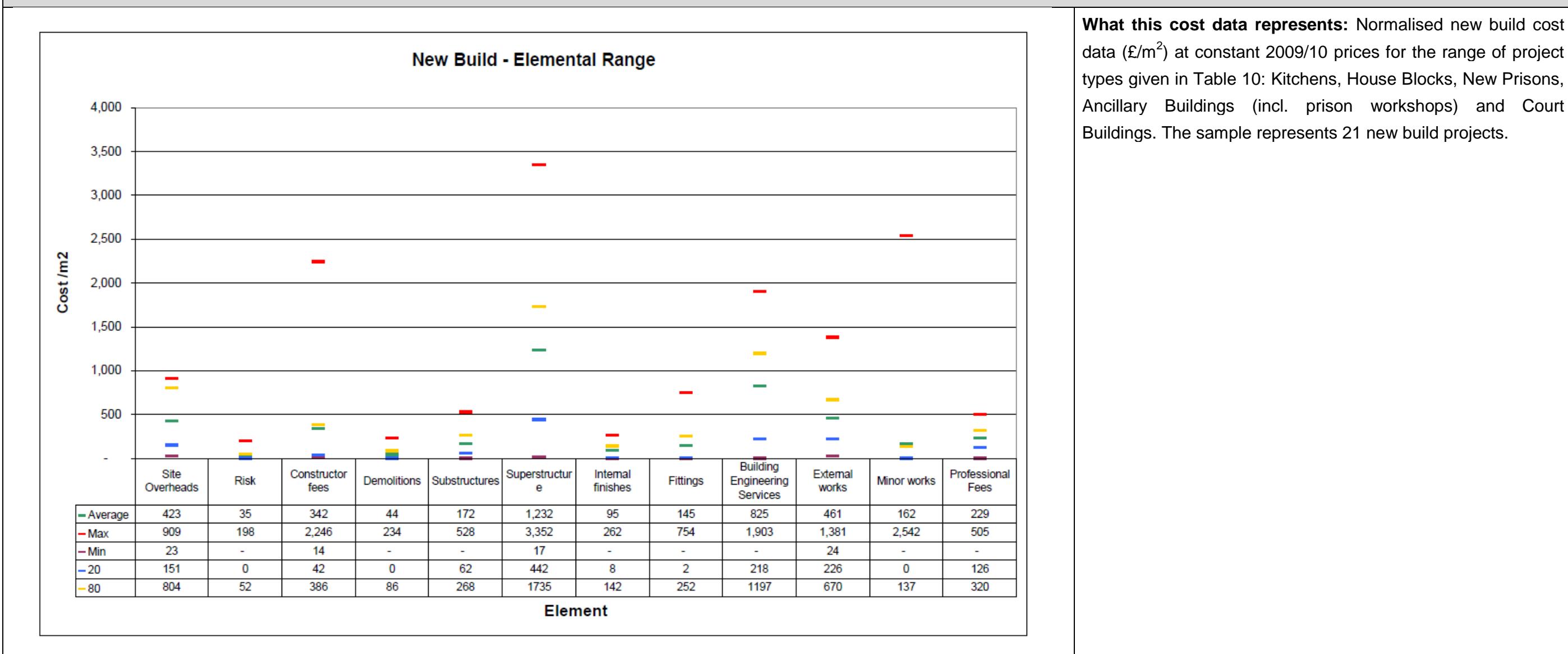
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 36-2: Elemental Construction Cost Benchmarks for Ministry of Defence: New Build (Service Families Accommodation)



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 37: Elemental Construction Cost Benchmarks for Ministry of Justice: New Build (Various Project Types)

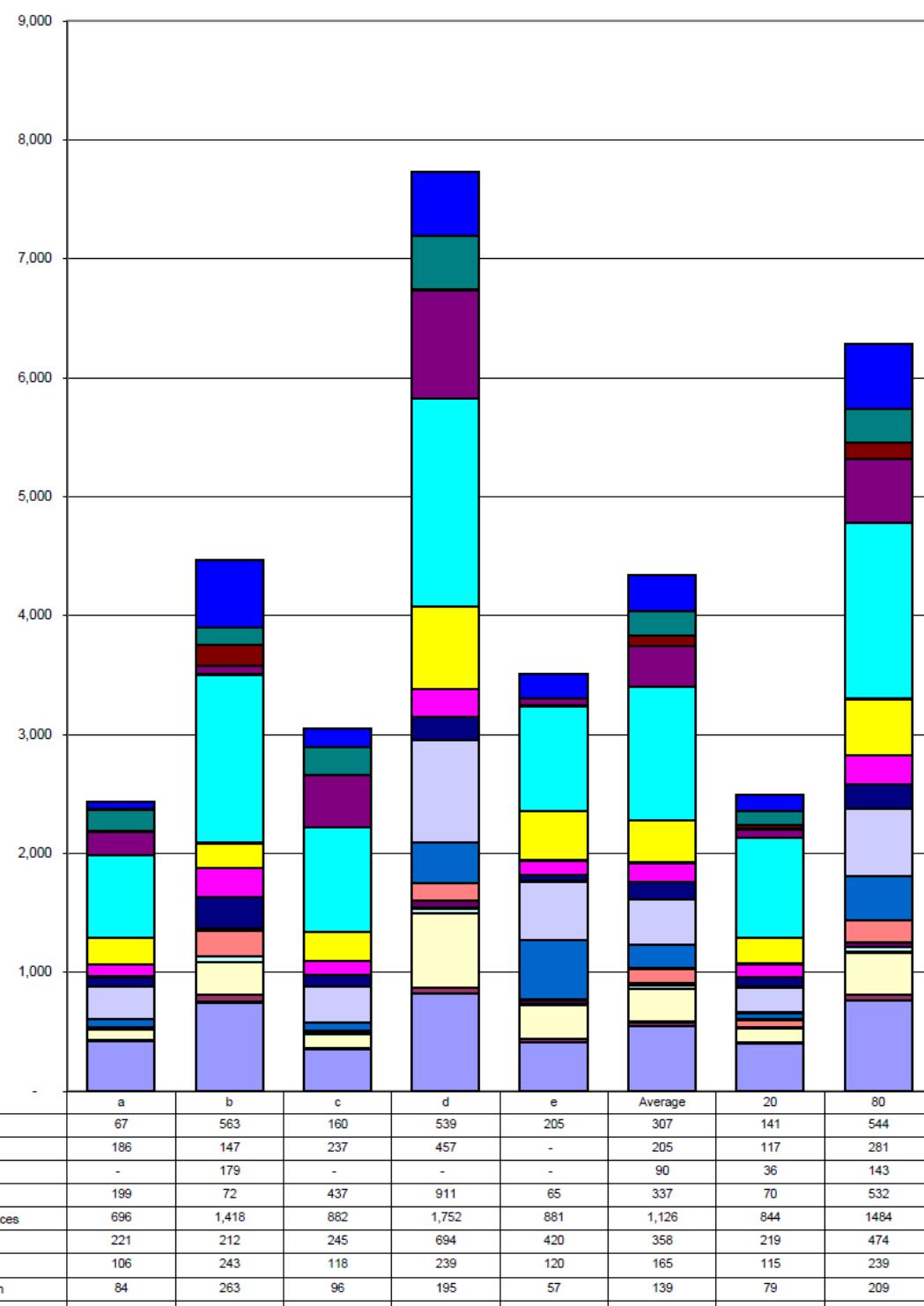


Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 38-1 : Elemental Construction Cost Benchmarks for Ministry of Justice (Kitchens)

What this cost data represents: Normalised new build cost data (£/m²) at constant 2009/10 prices for 5 kitchen projects.

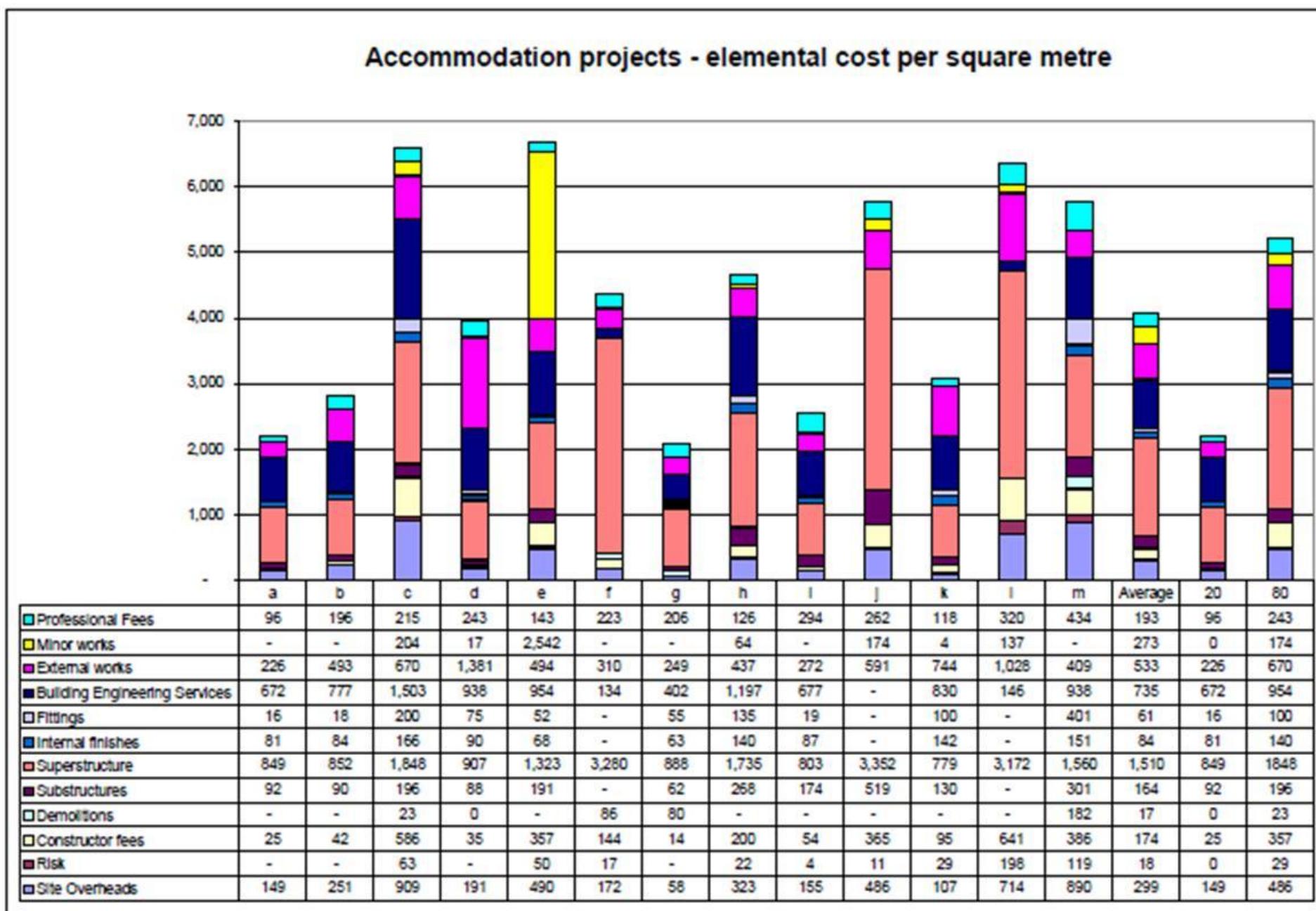
Kitchen projects - elemental cost per square metre



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 38-2 : Elemental Construction Cost Benchmarks for Ministry of Justice (Prison Accommodation Projects)

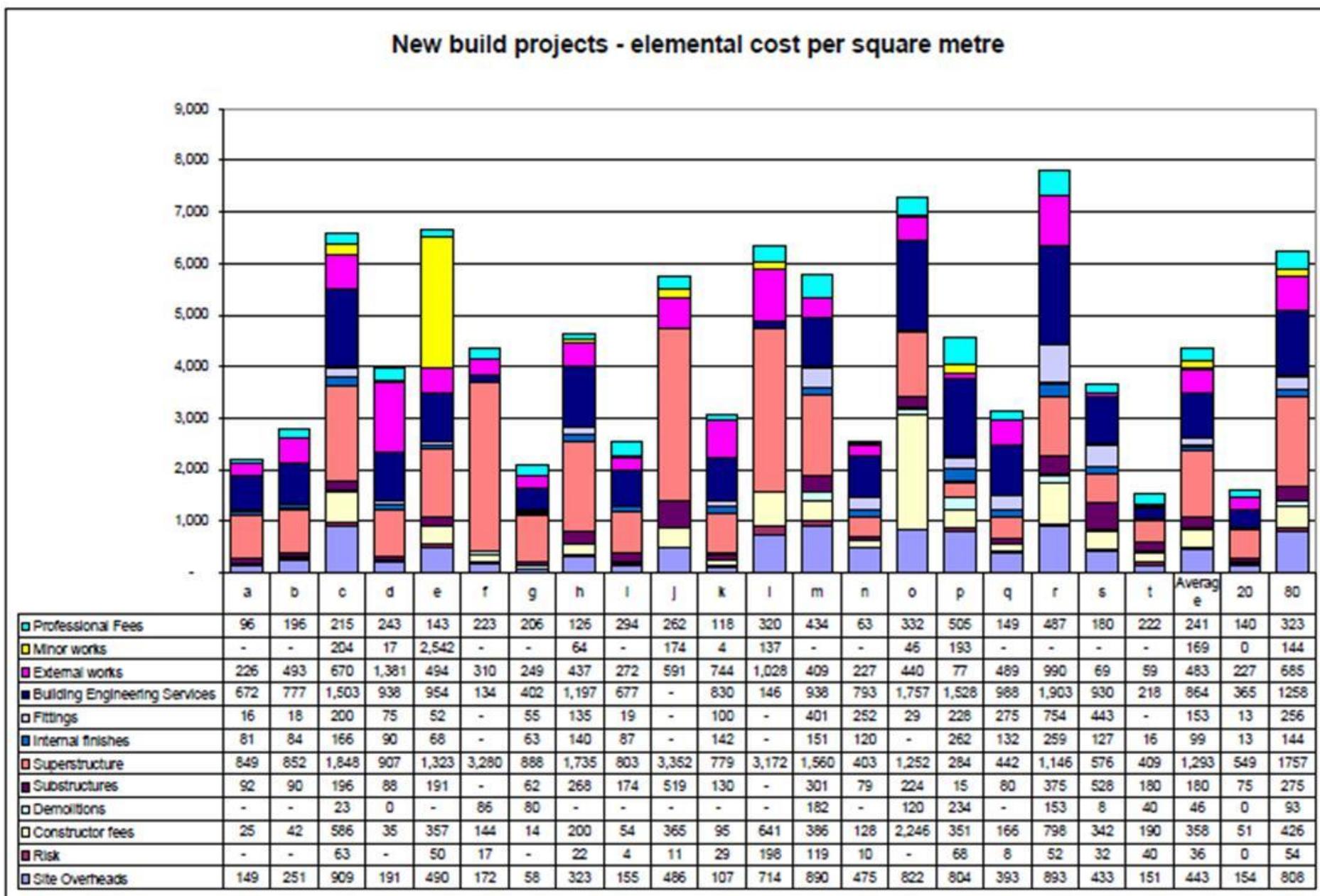
What this cost data represents: Normalised new build cost data (£/m²) at constant 2009/10 prices for Accommodation projects.



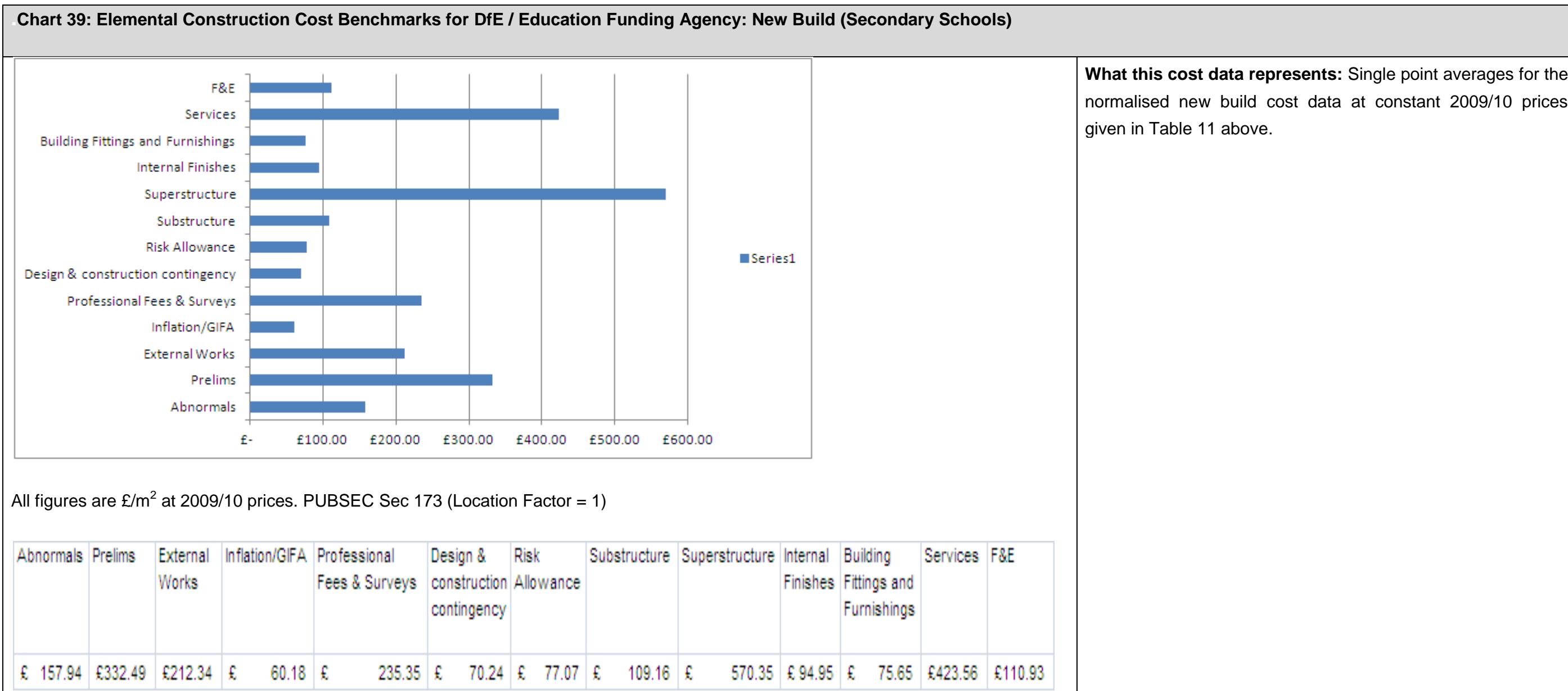
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Chart 38-3 : Elemental Construction Cost Benchmarks for Ministry of Justice (New Build Projects)

What this cost data represents: Normalised new build cost data (£/m²) at constant 2009/10 prices for New Build projects.



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories



Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 12: Commentary relating to Department Cost Benchmark Data Provided in Charts 3 to 15, Tables 5 to 8 and Annex A				
General areas to be addressed by commentary	Department of Health (P21 Framework) (with reference to Table 5 above)	DEFRA/Environment Agency (with reference to Table 6 above)	DfT/Highways Agency (with reference to Table 7 above)	DCLG/Homes & Communities Agency (with reference to Table 8 above and Annex A below)
What the data represents	<p>Benchmarks are based on capital cost (£) per m² (Gross Internal Floor Area) for eight high level generic types of healthcare building and their combined values.</p> <p>Benchmarks are collected at contract award (Guaranteed Maximum Price – GMP).</p> <p>For comparison purposes all costs (£/m²) are adjusted (normalised) to the same tender price level and location factor of the 2009/10 baseline:</p> <p>BIS PUBSEC Tender Price Index of Public Sector Building Non-Housing: 173</p> <p>Location factor of 1.00 using the BCIS (The Building Cost Information Service of RICS) Location study.</p>	<p>Outturn costs relating to Flood and Coastal Risk Management (FCRM) investment.</p> <p>Type 1 benchmarks: Walls and embankments are the largest construction elements within the EA's programme and form about 30% of EA's total construction spend. EA's construction database captures data from at least 50% of EA projects by value (in the earlier years of the database).</p> <p>Type 2 and 3 benchmarks: Both sets of figures relate to the entire capital programme.</p> <p>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.</p>	<p>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 relating to anticipated project start dates. The benchmarks are the mid-point between the calculated min (P10) and max (P90) estimated project value.</p> <p>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.</p> <p>2010/11 estimates are a mid point as per the 2009/10 estimates.</p> <p>The 2011/12 estimates are a summation of estimates Min (P10), Most Likely and Max (P90) modeled to create a P50 outturn.</p>	<p>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, because from April 2012 the GLA has taken on responsibility for the delivery of housing programmes in London.</p> <p>New Build:</p> <p>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 paid 50% at start on site and 50% at scheme completion at present and for the remainder of the 2011-15 programme, though has been paid at different tranche amounts previously.</p> <p>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.</p> <p>Pre-2011/12 data (including the baseline year 2009/10) does not allow distinction between flats and houses, and these are</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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				<p>therefore combined.</p> <p>In relation to the rent sub-categorisation, where developments contain a mixture of general needs and supported/older persons housing, the majority of the development by the number of homes has been used to determine under which category they are included. Such judgement has been used in a very small number of instances as the majority of schemes are either 100% general needs or 100% supported/older persons housing.</p> <p>The data population for supported/older persons housing is relatively small for some years and individual areas, and therefore more sensitive to the impact from outliers. Where the number of such schemes is less than 10 then the 20th and 80th percentile information has not been presented due to the potential for excessive distortion.</p> <p>Refurbishment:</p> <p>Refurbishment data presented approximates to outturn construction costs in the Decent Homes Backlog capital programme, funding necessary refurbishment work by local authority landlords.</p>
Statistical population represented	For comparison purposes all data is normalised to the 2009/10 baseline. The numbers of projects making up each of the various figures in the 2009/10 baseline in Table 5 are as follows:	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.	The number of projects making up each of the various figures in Table 7 is as follows: Baseline 2009/10 – 17 projects Managed Motorway (11) Junction Improvement (1) Trunk Road Improvement (5)	<p>New Build:</p> <p>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.</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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	<p>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).</p> <p>These 2009/10 baseline projects reached contract award from 2003 onwards;</p> <p>The number of projects making up each of the various figures in the 2011/12 benchmarks in Table 5 are as follows:</p> <p>Acute - New Build (5); Acute - Refurbishment (6); Mental Health - Refurbishment (3); All Schemes - (New Build and Refurbishment) (14).</p> <p>The numbers of projects making up each of the various figures in the 2011/12 benchmarks in Table 5 are as follows:</p> <p>Acute - New Build (5);</p>		<p>2010/11 update – 2 projects Managed Motorway (1) Junction Improvement (1)</p> <p>2011/12 update – 5 projects Managed Motorway (3) Trunk Road Improvement (2)</p> <p>2012/13 update – 3 projects Managed Motorway (2) Trunk Road Improvement (1)</p> <p>The benchmark rates include two trunk road projects that moved into the 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.</p>	<p>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:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">2009/10</th> <th style="text-align: left;">2010/11</th> <th style="text-align: left;">2011/12</th> <th style="text-align: left;">2012/13</th> </tr> </thead> <tbody> <tr> <td>Total no. of schemes</td> <td></td> <td></td> <td></td> </tr> <tr> <td>2,197</td> <td>1,996</td> <td>723</td> <td>1,251</td> </tr> <tr> <td>Total no. of schemes (Rent)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1,562</td> <td>1,410</td> <td>534</td> <td>939</td> </tr> <tr> <td>Total no. of schemes (LCHO³²)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>635</td> <td>586</td> <td>189</td> <td>312</td> </tr> <tr> <td>Total no. of rent schemes (General Needs)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>1,401</td> <td>1,282</td> <td>490</td> <td>866</td> </tr> <tr> <td>Total no. of rent schemes (Supp/Older)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>161</td> <td>128</td> <td>44</td> <td>73</td> </tr> </tbody> </table> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">2009/10</th> <th style="text-align: left;">2010/11</th> <th style="text-align: left;">2011/12</th> <th style="text-align: left;">2012/13</th> </tr> </thead> <tbody> <tr> <td>Total no. of homes</td> <td></td> <td></td> <td></td> </tr> <tr> <td>26,396</td> <td>22,209</td> <td>8,540</td> <td>15,233</td> </tr> <tr> <td>Total no. of homes (Rent)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>20,900</td> <td>17,676</td> <td>7,242</td> <td>12,642</td> </tr> <tr> <td>Total no. of homes (LCHO)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>5,496</td> <td>4,533</td> <td>1,298</td> <td>2,591</td> </tr> <tr> <td>Total no. of rent homes (General Needs)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>17,441</td> <td>14,919</td> <td>6,122</td> <td>10,626</td> </tr> <tr> <td>Total no. of rent homes (Supp/Older)</td> <td></td> <td></td> <td></td> </tr> <tr> <td>3,459</td> <td>2,757</td> <td>1,120</td> <td>2,016</td> </tr> </tbody> </table>	2009/10	2010/11	2011/12	2012/13	Total no. of schemes				2,197	1,996	723	1,251	Total no. of schemes (Rent)				1,562	1,410	534	939	Total no. of schemes (LCHO ³²)				635	586	189	312	Total no. of rent schemes (General Needs)				1,401	1,282	490	866	Total no. of rent schemes (Supp/Older)				161	128	44	73	2009/10	2010/11	2011/12	2012/13	Total no. of homes				26,396	22,209	8,540	15,233	Total no. of homes (Rent)				20,900	17,676	7,242	12,642	Total no. of homes (LCHO)				5,496	4,533	1,298	2,591	Total no. of rent homes (General Needs)				17,441	14,919	6,122	10,626	Total no. of rent homes (Supp/Older)				3,459	2,757	1,120	2,016
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Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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	<p>Acute - Refurbishment (6); Mental Health - Refurbishment (3); All Schemes - (New Build and Refurbishment) (14).</p> <p>The numbers of projects making up each of the various figures in the 2012/13 baseline in Table 5 are as follows:</p> <p>Acute - New Build (10); Acute - Refurbishment (17); All Schemes - (New Build and Refurbishment) (27).</p>			<p>Refurbishment:</p> <p>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.</p> <p>New Build: Construction costs shown exclude land acquisition and design fees and other on costs. Data shown excludes:</p> <ul style="list-style-type: none"> • 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). <p>Refurbishment: Cost definitions within this data collection are open to some interpretation.</p> <p>A number of factors impact on interpretation of this information and HCA influence on these specific indicators.</p> <ul style="list-style-type: none"> • 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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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				<p>replacement, window replacement, rewiring etc - and the extent of works within each element). It is assumed that these differences average out in inter-year comparison across the time series.</p> <ul style="list-style-type: none"> Available cost data is collected for all capital works to stock, not exclusively that within a funded Decent Homes programme, and shown for all local authorities receiving funding at some point in spending review period 2011-15. Note the data set presented has been generated for the purpose of this document. <p>Refer to Annex B for more detail.</p>
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.	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.
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 EA's 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 Local Authority 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.	Type 2 benchmarks: Programme benefit cost ratio for 2009/10 and 2010/11 relates to the cumulative figure for the SR2007	2009/10 baseline benchmark average is a straight arithmetic mean of the SR10 project P50 costs. The average of	For both New Build and Refurbishment, the 2009/10 baseline data consists only of projects started on site during 2009/10.

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	<p>The 20%/80% percentile/cluster thresholds have been determined by excluding the lowest and highest 20% of project values to confirm the range.</p> <p>The basis for the baseline 2009/10 is contract award value (GMP) for building costs (£/m²) reported at 2009/10 tender levels (MIPS 480/PUBSEC 173) with a location factor of 1.00.</p> <p>Data for 2011/12 is reported at 2011/12 prices (PUBSEC 177).</p>	<p>spending review period. EA is now measuring the cumulative figure over the SR2011 spending review period which starts from 2011/12.</p> <p>Type 3 benchmarks: Programme “Streamlining” based on 3 year rolling average.</p> <p>Type 4 benchmarks: Unit cost of embankments and flood walls based on 5 year rolling average.</p> <p>Single point averages represent a straight arithmetical mean, with no exclusion of outliers. Percentile thresholds have been determined solely using the distribution of data.</p> <p>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 <i>“BIS Output Price Index for New Construction (2010): Public Non-Housing”</i> index, multiplied by a conversion factor of 1.448 (and then rounded to the nearest whole number).</p>	<p>subsequent benchmarks (e.g. 2010/11, 2011/12) will be an arithmetic mean of the project P50 costs.</p> <p>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 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.</p>	
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.	<p>Projects M1 J10-J13 & M1 J19 are let using the Highways Agency Early Contractor Involvement contract based on the NEC Option C</p> <p>Subsequent Managed Motorway projects are let using the Highways Agency NEC 3 Framework contract with Z clauses.</p>	<p>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</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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				<p>represented in the data may be in a variety of forms.</p> <p>For new build:</p> <ul style="list-style-type: none"> • 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.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 13: Commentary relating to Department Cost Benchmark Data Provided in Charts 16 to 21 and Tables 9 to 11			
General areas to be addressed by commentary	Ministry of Defence (with reference to Table 9 above)	Ministry of Justice (with reference to Table 10 above)	DfE / Education Funding Agency (with reference to Table 11 above)
What the data represents	<p>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 (£/m²) and the number of bedspaces provided (£/Bed).</p> <p>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 'm² GIFA per Bed'.</p> <p>Service Family Accommodation (SFA) benchmarks cover projects let by MoD since June 2008. The sample covers a range of generic types of accommodation. Total Target Price (contract award) derived benchmarks are expressed as unit rates based on Gross Internal Floor Area (GIFA) of the facility (£/m²) and the cost per house (£/House).</p>	<p>The benchmarks cover the entire MoJ construction programme.</p> <p>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.</p> <p>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.</p> <p>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</p> <p>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.</p>	<p>Contract award benchmarks are for the total construction cost including all elements but excluding furniture, fixtures and equipment (FF+E).</p> <p>Over 85% of the DfE / EFA total programme is covered by the benchmarks.</p>
Statistical population represented	<p>The statistical samples represented by the data in Table 9 are as follows:</p> <p>SLA New Build:</p> <ul style="list-style-type: none"> Ensuite Rooms – Flatlet format (34 Projects.) Ensuite Rooms – Hotel format (10 Projects) Dormitories – 12 Bed format (8 Projects) Study Dormitories - 4 Bed format (5 Projects) Senior NCO/Junior Officers (24 Projects) Mixed Provision (20Projects) <p>SLA Refurbishment:</p>	<p>The numbers of projects making up each of the various figures in Table 10 is as follows:</p> <ul style="list-style-type: none"> Kitchens – 1 project (12/13 1 project) Houseblocks – 6 projects New Prisons – 2 projects New Ancillary – 8 projects (12/13 4 projects) New Courts – 4 projects Prison: General Minor Refurbishment – 32 projects Prison: Major Refurbishment – 6 projects 1 (12/13 1 project) 	<p>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.</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 13: Commentary relating to Department Cost Benchmark Data Provided in Charts 16 to 21 and Tables 9 to 11			
General areas to be addressed by commentary	Ministry of Defence (with reference to Table 9 above)	Ministry of Justice (with reference to Table 10 above)	DfE / Education Funding Agency (with reference to Table 11 above)
	<p>12 Bed Dormitories (2 Projects) Senior NCO/Junior Officers (1 Project) The total value of the above Projects (without rebasing to 2009/10) is approximately £961m and represents the entire programme of Single Living Accommodation, both new build and refurbishment.</p> <p>The 2009/10 baseline data includes projects from a wider population dating from before 2009/10.</p> <p>SFA New Build:</p> <p>Type C – 3 bedrooms (245 houses – 4 house types – 2 Projects) Type D – 4 bedrooms (131 houses – 9 house types – 4 Projects) Type III – 4 bedrooms (9 houses – 1 house type – 1 Project) Type V – 4 bedrooms (33 houses – 2 house types – 1 Project)</p> <p>The total value of the above Projects (without rebasing to 2009/10) is approximately £76m and represents the programme of new MoD constructed Service Family Accommodation.</p> <p>The 2009/10 baseline data includes projects from a wider population dating between 2008/09 and 2011/12.</p>		
What is included / excluded in the figures	<p>The figures are based on the total Target Price (with Maximum Price Target Cost arrangements) at Contract Award, excluding External Works and Supply Chain Design Fees, with due allowance for Preliminaries; Commercial (Contractors) Risk; Overheads; and Profit. This allows for ease of comparative normalisation,</p> <p>Refer to Annex B for more detail.</p>	<p>Generally includes for everything except VAT, land costs and departmental overhead costs (staff, accommodation etc.).</p> <p>Refer to Annex B for more detail.</p>	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	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.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 13: Commentary relating to Department Cost Benchmark Data Provided in Charts 16 to 21 and Tables 9 to 11			
General areas to be addressed by commentary	Ministry of Defence (with reference to Table 9 above)	Ministry of Justice (with reference to Table 10 above)	DfE / Education Funding Agency (with reference to Table 11 above)
	Organisation with additional technical support from Cost Consultants.		
How it has been calculated	<p>For Single Living Accommodation, 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 (County location) applicable at the mid-point of 2009/10. Single point average and percentile values have been calculated from all values in each range with no exclusion of 'outliers'.</p> <p>For Service Family Accommodation (SFA), the 2009/10 baseline represents Contract Award values of all projects let between 2008/09 and 2011/12. Projects have been rebased to the mid-point of 2009/10 using the BCIS All-in Tender Price Index and normalised to a UK mean location (base = 100) using the BCIS Tender Price Location Study (County location) applicable at the mid-point of 2009/10. Single point average and percentile values have been calculated from all values in each range with no exclusion of 'outliers'. Benchmarks for Types B, I, II and IV have been calculated using the data from the benchmarked projects as no house types were available to analyse.</p>	<p>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.</p>	<p>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).</p>
Other areas	<p>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 Target Prices at Contract Award. For SFA, the projects from which this data is derived have been let by MoD since June 2008 using bespoke MoD Conditions of Contract. The</p>	<p>All projects are procured and delivered through Strategic Alliancing Contract using PPC 2000.</p>	<p>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).</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 13: Commentary relating to Department Cost Benchmark Data Provided in Charts 16 to 21 and Tables 9 to 11			
General areas to be addressed by commentary	Ministry of Defence (with reference to Table 9 above)	Ministry of Justice (with reference to Table 10 above)	DfE / Education Funding Agency (with reference to Table 11 above)
	data represents the Target Prices at Contract Award.		

REGULATED AND WIDER PUBLIC SECTORS : COST BENCHMARK DATA : TABLES

This section addresses cost benchmark data from private companies and the wider public sector. One (London Underground Limited) is part of the wider public sector, wholly owned by Transport for London. Another (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 Office of Rail Regulation.

For the first time data is included for primary and secondary schools that has been submitted directly by local authorities. This data has been compiled by Hampshire County Council and Manchester City Council under the auspices of the National Schools Cost Delivery Benchmarking initiative.

Both of the rail sector organisations have major 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 Roy 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 2019³³.

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.

³³ *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 Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 14: Construction Cost Benchmarks for London Underground									
Project Types	Project Subtypes	Benchmarks	Units	Baseline 3 year average (2008/09, 2009/10, 2010/11)		2011/12		2012/13	
				Single point average	Range Min - Max th Percentile	Single point average	Range Min - Max th Percentile	Single point average	Range Min - Max th Percentile
Renewals and Replacements	Escalators	Type 2: Escalator Replacement (10-15m rise)	£m per machine	1.3	Insuff. data	1.1	0.8 1.3	Insuff. data	Insuff. data
		Type 2: Escalator JLE Refurbishment (10-15m rise)	£m per machine	0.7	0.6 0.8	Insuff. data	Insuff. data	0.6	0.55 0.7
		Type 2: Escalator non-JLE Refurbishment (10-15m rise)	£m per machine	1.3	0.9 1.6	0.9	0.86 1.0	Insuff. data	Insuff. data
	Track	Type 2: Ballasted Track Renewal, open section	£m per km	2.5	1.5 5.4	2.2	1.5 3.3	2.2	1.2 7.8
		Type 2: Track Renewal, full reconditioning of deep tube track	£m per km	8.1	3.3 24.8	4.0	2.5 8.5	4.4	2.6 7.8
		Type 2: Drainage replacement, open section	£m per km	2.2	Insuff. data	1.8	0.4 3.4	1.6	0.6 4.3
	Earth structures	Type 2: Regrading Embankments and Cuttings	£m per m ²	0.5	0.1 4.9	0.3	0.1 1.5	0.4	0.2 0.9

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 14: Construction Cost Benchmarks for London Underground									
Project Types	Project Subtypes	Benchmarks	Units	Baseline 3 year average (2008/09, 2009/10, 2010/11)		2011/12		2012/13	
				Single point average	Range Min - Max th Percentile	Single point average	Range Min - Max th Percentile	Single point average	Range Min - Max th Percentile
	Systems	Type 2: Signalling upgrade (excluding enabling Civils works)	£m per track km	5.4	Insuff. data	5.4	Insuff. data	2.7	1.2 3.1

All figures are in 2008/09 constant prices (i.e. actual costs normalized for RPIx).

The interventions above represent 22% of London Underground's planned investment for 2012/13 to 2014/15. A further 20% of investment relates to new rolling stock and the remainder relates to the costs of stations and civils works (for which unit cost trajectories are under development).

Overall, cumulative unit cost reductions are in the range 25% - 50% in 2012/13, with an average of 36% for the interventions shown above.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 15: Construction Cost Benchmarks for Network Rail							
Project Types	Project Subtypes	Benchmarks	Units	2009/10	2010/11	2011/12	2012/13
All Capital Renewal Projects	N/A	Type 2: Real Economic Efficiency Measure (REEM) ³⁴ for Renewals against a baseline position in 2008/09	%	7.1	16.6	17.7	14.8

In addition to the Real Economic Efficiency Measure (REEM), Network Rail Limited publishes a number of unit rates – for example plain line track renewals and signaling / communications - as part of the Regulatory Financial Statements: Statements 14 and 15 which can be found using the following link:

<http://www.networkrail.co.uk/browse%20documents/regulatory%20documents/regulatory%20compliance%20and%20reporting/regulatory%20accounts/nrl%20regulatory%20financial%20statements%20for%20the%20year%20ended%2031%20march%202013.pdf>

³⁴ 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 efficiencies in the table above are those reported by Network Rail in its regulatory financial statements and represent 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 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 Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 16: Commentary relating to Cost Benchmark Data Provided in Tables 14 to 15		
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 14 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.	80% 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 (CP3 exit point). For more detail refer to Annex C.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 17: National Delivery Cost Benchmarking (prepared by Hampshire CC and Manchester City Council): New Build Schools

Project Type: Primary Schools					Project Type: Secondary Schools				
Project Subtypes	Benchmarks	Units	2012/13 (Baseline)		Project Subtypes	Benchmarks	Units	2012/13 (Baseline)	
			Single point average	Range 20 th -80 th Percentile				Single point average	Range 20 th -80 th Percentile
GIFA 0 - 750 m ²	Type 1: Total construction cost [1]	£/m ²	2636	2555 2720	GIFA 0 - 2500 m ²	Type 1: Total construction cost [1]	£/m ²	2297	2132 2486
GIFA 750 - 1500 m ²		£/m ²	2746	2635 2886	GIFA 2500-5000 m ²		£/m ²	2107	Insuff. data
GIFA 1500 - 2250 m ²		£/m ²	2586	2338 2897	GIFA 5000-7500 m ²		£/m ²	2284	Insuff. data
GIFA 2250 - 3000 m ²		£/m ²	2714	2507 2955	GIFA 7500-10000 m ²		£/m ²	2402	Insuff. data
GIFA 3000 - 3750 m ²		£/m ²	2570	2419 2721	GIFA 10000-12500 m ²		£/m ²	2345	2092 2565
					GIFA 12500-15000 m ²		£/m ²	2255	2154 2360

Note [1]: Includes: External works, professional fees, fixed FF+E (fittings, furnishings and equipment); Excludes: Loose FF+E (fittings, furnishings and equipment).

Other notes:

All prices have been brought to a common price base of Q3 2012.

All projects have been procured through local authority / regional frameworks and therefore represent a different set of projects to those presented in Table 11 above which were procured through Local Education Partnerships (LEPs) and EFA's Academies Framework.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 18: Commentary relating to Primary and Secondary Schools Cost Benchmark Data provided in Table 17	
General areas addressed by commentary	National Schools Cost Delivery Benchmarking
What the data represents	<p>Table 17 publishes the results of a national cost benchmarking exercise undertaken by Hampshire County Council and Manchester City Council on new primary and secondary school projects.</p> <p>It presents total project Award Costs inclusive of fees, external works and abnormal costs, plus percentage additions (where applicable) for preliminaries, contingency, overheads and profit.</p>
Statistical population represented	<p>The sample comprises of national schools projects classified regionally as per the National Improvement and Efficiency Partnership (NIEP) regional classifications of South East & London, East Midlands, East of England, West Midlands, Yorkshire & Humber, North West and South West.</p> <p>The sample comprises 29 primary schools and 16 secondary schools. All of the projects within the sample are projects that have been procured through regional frameworks established for local authorities across England. Each of the projects within the sample is either a complete new build scheme or a significant extension of an existing school.</p>
What is included / excluded in the figures	All professional fees costs have been included where provided within the sample data. If this information is not available a standardised professional fee allowance of 12% has been included on all projects where the unadjusted Contract Sum is £10m or less. A standardised professional fee allowance of 10% has been included on all projects where the unadjusted Contract Sum is in excess of £10m.
Where the data comes from	<p>Included: External works, professional fees, fittings and furnishings.</p> <p>Excluded: Loose furniture, equipment, statutory fees, survey costs, loose furniture and equipment, client costs including programme management fees and charges, legal and land</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 18: Commentary relating to Primary and Secondary Schools Cost Benchmark Data provided in Table 17	
General areas addressed by commentary	National Schools Cost Delivery Benchmarking
	<p>acquisition costs.</p> <p>Typically the unit costs have been prepared by professional quantity surveyors appointed by the local authorities that submitted the data. A standard form of cost analysis has been completed on each of the sample projects, which contained key elemental cost data on each project within the sample.</p>
How it has been calculated	All costs have been normalised to a common UK average price level using location factors published by the Building Cost Information Service (BCIS). The costs have then been brought to a common price base using the All-in Tender Price Index (TPI), published by the BCIS, updated to the latest firm TPI of Q3 2012.

DEPARTMENT PROGRESS IN IMPLEMENTING BENCHMARKING PRINCIPLES

In December 2012, the *Cost Benchmarking Principles and Expectations: Departmental Progress Update* was published. Table 1 within that document included a number of departmental actions and Table 19 within this section provides an update on progress against these actions.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
Common Overarching Approach / Taxonomy	EA, HA, MoD	Agree with BCIS common approach and taxonomy that allows exchange of infrastructure cost data, building on the Memorandum of Understanding implemented as part of the Infrastructure Cost Review. Spring 2013	5.9.3b	Ongoing, with an Infrastructure working group now operating as a sub-group to the Data and Cost Benchmarking Task Group.
	DoH/ P21	Systems and processes have been established and will be tested and refined over the next six months to ensure consistency, quality and robustness. Spring 2013	5.9.3a	<p>Lessons learned from the use of the approach to date include:</p> <ul style="list-style-type: none"> - Achieving a consistent approach across all projects requires ongoing monitoring. - Issues exist on the diverse range of projects within project types (e.g. Acute new build) making comparisons at an individual project level challenging. - Use of cost benchmarks is limited in the case where only small sample sizes exist. - Capturing the effects of changes in legislation etc. can be subjective as projects are costed on current, and not previous legislation.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
				These challenges will be addressed through delivery of an activity plan currently being implemented. Ongoing.
		<i>Separately DCLG / HCA has also reported progress in establishing a common overarching approach and taxonomy.</i>	5.9.3a	<i>From April 2011 until December 2012 data was captured on construction projects funded by HCA through the Affordable Homes Programme, using categories closely aligned to the BCIS TPISH data. The structure was changed for data captured from January 2013, bringing it in line with the RICS NRM.</i>
		Work will progress on private sector comparators where available. Winter 2012/13	5.9.2	A recent meeting identified concerns over the comparability of the projects identified. Further projects have been offered for comparison but significant differences exist within the projects that create challenges in carrying out effective comparisons. Work is scheduled to progress during summer 2013 to establish if comparisons are possible. Establishing common and agreed areas for comparison has pushed this activity to Spring 2014.
Comparable Metrics	All	Agree Type 4 comparable metrics to facilitate cross department /	5.9.3b / 5.13.2	Refer to section in this report addressing Elemental Benchmarks provided by DoH/P21, EFA, MoD and

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
		organisation comparisons. Winter 2012/13		<p>MoJ. Additional commentary has now been added to the data that will enable common comparable metrics to be identified.</p> <p>In relation to HCA:</p> <p>By changing the classification of costs to bring them in line with NRM, HCA has benefitted from the clearer definitions and more consistent data being entered by providers. This will also facilitate better comparison with construction costs available in other departments.</p>
	DoH/ P21	The publication of Type 1 metrics during 2012 has supplemented existing guidance and metrics (HPCG's) ³⁵ for the development of project budgets and costs. Further development work will take the form of refinement, informed by live project data. Summer 2013	5.8.2	Ongoing.

³⁵ Health Premises Cost Guides.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
	MoD	Publish a range of Type 1 and Type 2 benchmarks to better represent and baseline the full range of different projects undertaken by MoD. Spring 2013	1.6.2 / 5.9.3a	The analysis of Service Families Accommodation has instigated a wider MOD accommodation study. Once this study is complete SFA benchmarks will be published followed by facilities where there is sufficient sample size to make the data meaningful; currently planned to be offices, medical, education, messing and potentially airfields. SFA benchmarks are published in this document, while other areas of work are ongoing.
Common Operational Approach	EA, HA, MoD (with other infrastructure providers NR and TfL)	Continue with subgroup established to share infrastructure cost data and report any initial mutually beneficial outcomes. Spring 2013	5.9.3b	In relation to EA's discussions with the Highways Agency addressing cost data, both have cost data available from their respective Tier 1 frameworks and are starting to share this data for mutual benefit. The sub group has met and MOU's have been signed between NR, TfL, MOD, HA and EA that will now allow the exchange of Elemental and Cost component data for analysis. This data will be analysed for potential outcomes during Spring 2014 . Work is also underway with Transport for London to

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
				adapt its Benchmarking Maturity Criteria to Network Rail, and thereby promote a degree of standardisation as to how infrastructure benchmarking can be evaluated.
	DoH/ P21, DfE/ EFA, DCLG/ HCA, MoD, MoJ	Establish subgroup for sharing building cost data, confirm corresponding protocols and report any initial mutually beneficial outcomes. Spring 2013	5.9.3b	The sub group has met and is currently evaluating Elemental and Cost component data for potential mutual benefits and outcomes during Spring 2014 .
	DoH/ P21	P21+ will continue to work with the supply chain to embed, measure and expand the use of cost benchmarks during project development. A database of efficiency savings will be developed to inform new projects. Summer 2013	5.8.2	Ongoing.
	DCLG/ HCA, CO	Determine whether further support and influence is required to ensure social housing providers can fully benefit from implementing the		Through HCA's newly established quarterly contract review process with its 160 delivery partners - which contract for construction materials and services - data are being used to benchmark the costs of

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012 (based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)				
Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
	MoD	following principles: C6, C7, C8 and D1. Spring 2013	1.6.2 / 5.9.3a	individual schemes and the overall programme for each provider. In this way, differences in costs against previous schemes and similar schemes by other providers are discussed with a view to identifying and encouraging efficient practices and how further efficiencies can be achieved.
		Agree means by which varying trends in movement between Type 1 & 2 benchmarks (e.g. £/m ² vs. £/bed) - potentially across a range of different facility types - should be drawn together to form a single Cost Reduction trajectory (or otherwise). Spring 2013		The cost reduction trajectory will be produced when benchmarking data is complete; for SFA in the first instance. The combined percentage reduction trajectory will be based upon the value of work in the pipeline planned for each type of facility. Ongoing
Future Proofing	All	Support BIM/BCIS initiative to map metrics used in commercial and financial decision making to cost data collected within COBie format. From Winter 2012/13		The Data and Benchmarking Task Group has actively supported this initiative which has been led by the BIM programme team and BCIS. A template for the consistent use of a commercial set of Elemental and Cost Components has been developed and is currently being circulated for

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012

(based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)

Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
				agreement to adopt through BIM. Summer 2014
	DoH/ P21, DfE/ EFA, MoD, MoJ	Share data to establish whether 'Counterfactual' adjustments relating to changes to Part L of the Building Regulations (L1A October 2010) should be applied to reported cost reductions. Spring 2013	1.6.2 / 5.9.3a	Ongoing.

References to GCS objectives / milestones (One Year On Report, July 2012):

Overarching Objective 5(ii): To set challenging cost targets in the context of clear criteria for value, informed by what has been achieved on other projects:

Specific Actions and Timescales:

1.6.2: Publish latest cost reduction progress during 12/13 (**Spring 2013**); **Complete**

5.8.2: Departments to bring benchmarking up to an agreed standard³⁶ (using agreed common measures and formats where possible) and share across Government (**From March 2012**);

5.9.2: Identify private partners with whom Government can compare benchmark data and report on outcomes (**Winter 2012/13**);

³⁶ As defined by *Cost Benchmarking Principles and Expectations*, published February 2012.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 19: Next steps in implementing the cost benchmarking principles published February 2012

(based on Table 1 in the Cost Benchmarking Principles and Expectations: Departmental Progress Update, published December 2012)

Principles Category	Departments / Organisations	Next Steps	Ref to GCS objectives / milestones	Progress made by Departments since December 2012
Complete				
		<p>5.9.3a: Benchmark publication update (Spring 2013); Complete</p> <p>5.9.3b: Survey departments to determine feasibility of incorporating elemental benchmarks and, if feasible, develop and implement practical approach (Spring 2013); Ongoing. Departments have provided details of the use of Elemental and Cost components and these are being analysed for variations in price to identify opportunities to drive out cost.</p> <p>5.13.2: Monitor and report on progress of reducing non product costs (Ongoing).</p>		

PART 3 : USE OF COST BENCHMARKS

DEPARTMENT PROGRESS IN GENERATING PUBLIC PRIVATE COMPARISONS

The Government Construction Strategy sets out a routemap to reduce the costs of construction by 15-20% before the end of this parliament. The publication of departmental cost benchmarks are fundamental to achieving the cost reductions targeted by the Strategy.

The exchange of these cost benchmarks both within Departments and across Government is an essential component in leveraging the value of existing data and ensuring all opportunities to reduce costs are identified and acted upon. The exchange of data with private organisations also offers opportunities to compare practices and identify further efficiencies.

This section therefore provides a progress update on the work being undertaken by Departments to compare their cost benchmarks with those of other public and private construction clients. In reporting progress it is important to understand the key steps involved and that significant work can be required between steps, for example, in determining comparable data structures.

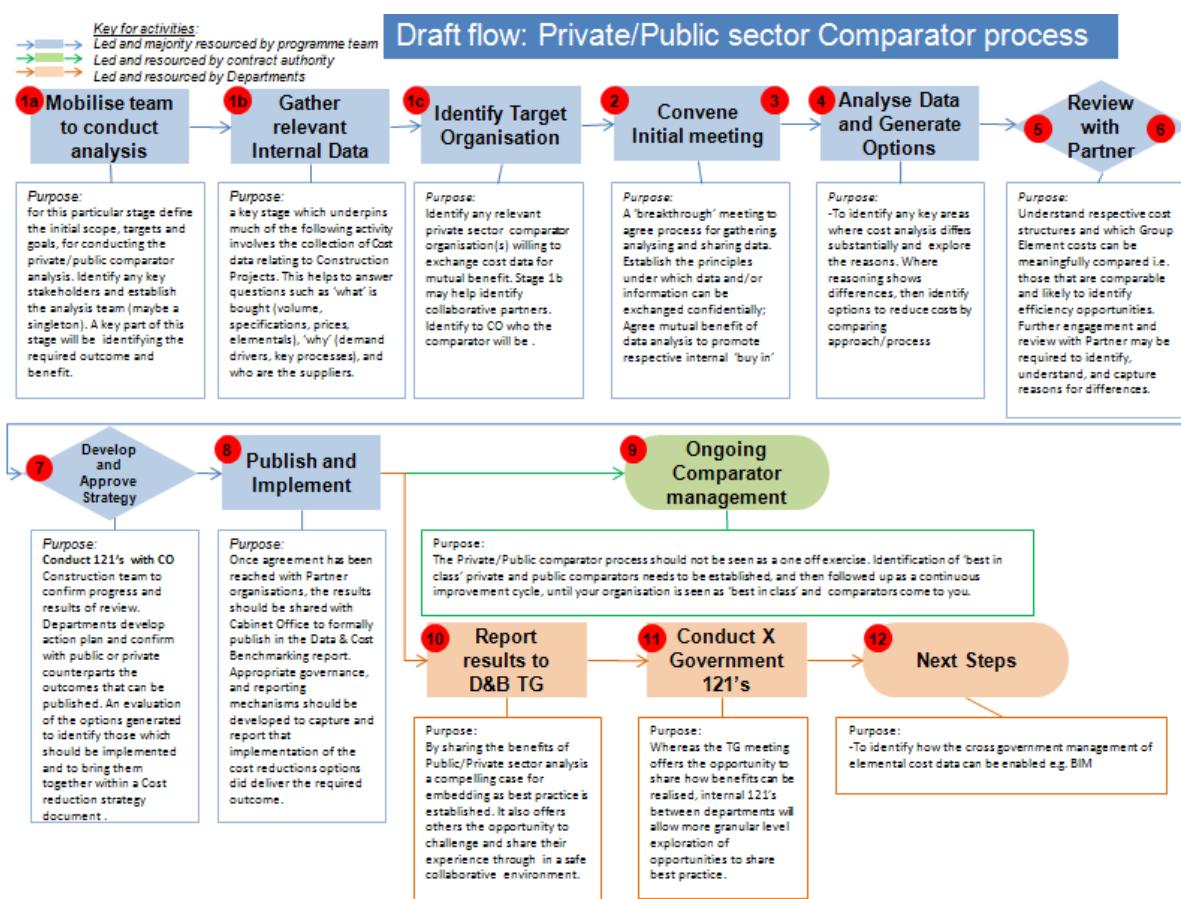
Typically the key steps that Departments are working through are as follows:

- Step 1:** Identify target organisations with which to initiate engagement;
- Step 2:** Convene initial meeting(s) to explore and confirm mutual interest to exchange data and/or compare leading practices;
- Step 3:** Establish the principles under which data and/or information can be exchanged confidentially;
- Step 4:** Understand respective cost structures and which Group Element costs can be meaningfully compared i.e. those that are comparable and likely to identify efficiency opportunities;
- Step 5:** On the basis of common structures, prepare and exchange data and/or information;

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

- Step 6:** Convene joint session(s) to analyse and draw conclusions from key differences and identify efficiency opportunities (BCIS to assist by providing independent validation of comparisons);
- Step 7:** Departments develop action plan and confirm with public or private counterparts the outcomes that can be published;
- Step 8:** Departments publish and implement recommendations.

These steps are now supplemented with a process flowchart that includes steps 9 – 12 for ongoing continuous improvement.



The following tables summarise the progress made to date by each Department against these 8 steps and the immediate next steps. Ultimately, the comparisons that will be made are to highlight any useful learning points in terms of the delivery of capital projects. Comparisons made with private organisations that also deliver public services are therefore only for the purpose of identifying learning points in relation to the delivery of new building or infrastructure assets.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

DCLG / Homes and Communities Agency	
Step	Progress
1 - 4	Through working with private sector developers HCA has sought to establish effective cost benchmarks against which to make comparisons. Direct comparison between the costs of each is not possible as data on the cost of private sector housing is not currently available in a format that would allow comparison with social housing on a like for like basis.
Next Steps	HCA has therefore commissioned BCIS to produce a study that will provide better information on the difference between the cost of construction for social housing and that for private housing.

DEFRA / Environment Agency	
Step	Progress
1 - 5	<p>EA has established contact and shared data with the Local Government Association and Highways Agency.</p> <p>EA has worked with local authorities on possible commercial approaches through the Defra "FCERM Capacity Building" workshops and is encouraging local authorities to use its new Water and Environmental Management (WEM) Framework and share project commercial data.</p> <p>There has been significant interest shown by local authorities in using the WEM framework, and in particular - but not limited to - the framework lot for modelling and mapping services. At least two tenders have been issued to date, with one local authority contract already awarded. It is anticipated that those authorities who have begun to use the framework will be continuing to do so for future work. The main focus of the capacity building work is currently knowledge sharing. The capacity building workshops have provided local authorities with a greater awareness of the use of WEM and the corresponding benefits will be monitored.</p> <p>In relation to EA's discussions with the Highways Agency, concerning cost data and programme information sharing:</p> <ul style="list-style-type: none"> - Both have cost data available from their respective Tier 1 frameworks and are starting to share this data for mutual benefit; - Comparisons have been made addressing how each manages and monitors their respective capital programmes. In doing so, it has been recognised that opportunities may exist to deliver further efficiencies through sharing programmes of work. An initial investigation is therefore underway to

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

DEFRA / Environment Agency	
Step	Progress
	<p>determine whether overlaying programmes on a GIS map will identify future schemes which could be combined or jointly delivered, and what potential savings might flow from this.</p> <ul style="list-style-type: none"> - The EA GIS tool has been shared with the Highways Agency with an expectation of being able to overlay the mutual programmes. These discussions are likely to continue via the IUK Infrastructure Benchmarking Group. <p>Both EA and Highways Agency have established their own respective supply chain frameworks, and are also therefore considering opportunities where it may be possible to use each other's frameworks for greater efficiency.</p> <p>Having been involved in establishing the EA's Site Investigation framework, several parts of the HA have enquired about using it and projects have been programmed and some progressed through to delivery. These include the Manchester Managed Motorways scheme. A contract for the M25 Junction 30 widening project was awarded under the framework in September. There have also been approaches from the rail sector enquiring about the framework principles and potential future use.</p> <p>EA is exploring whether it can make use of the Highways Agency contractor supply chain to deliver any of its large earthworks schemes.</p>
Next Steps	<p>The EA's capital delivery teams have some experience in dealing with the often complex waste transfer issues which arise when combining the earthworks related cut/fill balance across more than one site. The Highways Agency has expressed interest in learning from this experience and EA will therefore share further details at subsequent meetings.</p> <p>EA has set up the engagement exercise to share earthworks programme and cost information.</p>

Department of Health (P21 Framework)	
Step	Progress
1-4	Meetings have taken place between P21+ and a private healthcare provider to scope a suitable methodology for comparison private and public capital construction costs. P21+ has provided detailed project data to assist the provider in identifying a comparable project.
Next	Once a comparable project is identified and corresponding data received from the

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Department of Health (P21 Framework)	
Step	Progress
Steps	private healthcare provider, a detailed comparison will be undertaken. This next step is currently awaiting identification of a suitable comparable project by the private healthcare provider.

DfE / Education Funding Agency	
Step	Progress
1-6	<p>EFA has already made use of BCIS sourced data to undertake comparative £/m² analyses that generated tables and charts showing mean, highest and lowest cost ranges. These analyses comparing BSF school costs with a range of other building types as follows:</p> <ul style="list-style-type: none"> 1) Cost comparisons were made with hotels, offices, housing and local administration buildings, drawing on sample sizes ranging from 8 hotels up to 67 offices. 2) A further analysis compared various types of schools ranging from Secondary, 6th form, special, middle and BSF schools. 3) Comparisons made between BSF and respectively super/hypermarkets and factories concluded schools were more expensive but that the comparison was not particularly meaningful.
Next Steps	EFA is now developing contacts with the Higher Education sector with a view to arranging further cost comparisons.

DfT / Highways Agency	
Step	Progress
1 - 6	<p>HA has established an efficiency review group and process to facilitate the sharing of knowledge and best practice across the portfolio of schemes bringing together HA project managers and the supply chain to drive through savings. This captures a variety of suppliers through more traditional to PFI contracts and enables HA – working with and across the supply chain – to capture, manage, share and report on savings including value adding ideas and whole life cost savings. Data has also been exchanged with Environment Agency.</p> <p>In terms of collaboration with EA:</p> <ul style="list-style-type: none"> • Tier 1 “main contractor” frameworks have been shared with EA for mutual benefits with potential for them to be used by EA. • An exercise is underway with EA to overlay HA and EA programme of works on a GSI map and explore potential future schemes where components could be jointly delivered resulting in potential savings.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

DfT / Highways Agency	
Step	Progress
	<ul style="list-style-type: none"> Comparisons have been discussed on how the HA and EA manages and monitors their capital programmes. This has resulted in potential for future efficiencies through the two agencies collaborating on programme of works. The HA and EA are continuing to explore other avenues for efficiency savings through regular meetings
Next Steps	The EA's capital delivery teams have some experience in dealing with the often complex waste transfer issues which arise when combining the earthworks related cut/fill balance across more than one site. The Highways Agency has expressed interest in learning from this experience and EA will therefore share further details at subsequent meetings.

Ministry of Defence	
Step	Progress
1 - 5	<p>Airfield cost data has been exchanged with a private airport operator and further work is required to ensure a like for like comparisons can be made. MoD is also in discussion with DoH/P21 concerning the costs of medical facilities.</p> <p>MOD has compared the cost of their Single Living Accommodation with BCIS data for university student accommodation. MOD to liaise with EFA to consider if there is benefit in EFA including MOD in their link up with one of the large universities comparing practices / costs around student accommodation. A similar approach could be made through HEFCE.</p>
6 - 8	The analysis is not sufficiently mature for publication at this point.
Next Steps	MoD is also exploring the opportunity to exchange housing data with the Homes and Communities Agency, and this will now be extended to work with MOJ and DfE.

Ministry of Justice	
Step	Progress
1 - 6	<p>MoJ has established arrangements to develop comparisons using PFI Prison tender cost data.</p> <p>EFA has offered to share secure children's home data with MoJ, which has Young Offender establishments. EFA and MoJ have met to compare available data and presented the results to the Data and Cost Benchmarking Task Group.</p>
Next Steps	Having developed 'normalized' data for prison accommodation, this has opened the way for MOJ to explore with MoD and HCA the value of comparing data.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Home Office	
Step	Progress
1 - 2	<p>Home Office has provided elemental data to a local authority and rail sector client. Current projects are proving challenging to match with other organisations. Home Office has explored using external data from consultants and is starting to receive data that may be of use.</p>
Next Steps	<p>Historically there has been a lack of data to establish meaningful in house elemental and project benchmarks. The Home Office has therefore used external consultants to assure value for money is being achieved through competitive competition.</p> <p>Now Home Office is starting to collect data on projects that have been tendered and is requesting elemental breakdowns from tenderers. This process has been established by external consultants.</p> <p>The prospect of a shared property function is also being discussed with other central government organisations.</p>

PART 4 : COST REDUCTION TRAJECTORIES

DEPARTMENT COST REDUCTION TRAJECTORIES

The Cost Reduction Trajectories detailed in Table 20 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 21 details the basis on which departments have established their forecasts and Chart 2 above shows these in graphical form.

Table 20: 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% ³⁷	9.0%	11.5%	14.1%
DEFRA/EA ³⁸	-	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% ³⁹	2.0%	4.0%	7.0%	12.0%
MoD ⁴⁰	0.0%	2.5%	5.0%	7.5%	10.0%	12.5%

³⁷ Refers to the second half of 2011/12. .

³⁸ 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 EA 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).

³⁹ 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.

⁴⁰ 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. This will include: Service Families Accommodation (Houses), Offices, Medical Accommodation, Education Facilities, Messing Facilities and potentially Airfield Pavements . 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).

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 20: Department Cost Reduction Trajectories

Department	Trajectory showing Cumulative % Cost Reductions					
	2009/10 (Baseline)	2010/11	2011/12	2012/13	2013/14	2014/15
MoJ ⁴¹	0.0%	3.0%	7.0%	12.0%	15.0%	20.0%
DfE/EFA ⁴²	0.0%	3.3%	7.0% ⁴³	17.8%	18.9%	20.0%

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
DoH/P21	<p>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:</p> <ul style="list-style-type: none"> 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. <p>Work is progressing on each of these initiatives with the DH meeting the Chief Executive Offices of each PSCP on a bi-annual basis to discuss progress. These initiatives will continue to be actively developed further.</p>
DEFRA/EA	<p>EA will achieve cost reductions of 15% by 2014/15 by implementing efficiencies in the following areas:</p> <ul style="list-style-type: none"> 1) Better control of project scope to reduce the cost impact of changes; 2) Increased standardisation through the introduction of standard designs

⁴¹ 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.

⁴² 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 2012/13.

⁴³ 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 21 and the corresponding significant cost reductions.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<p>that save design fees and reduce construction costs by reducing unnecessary redesign and the range of solutions implemented;</p> <ul style="list-style-type: none"> 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	<p>HA has committed to save 20% off the original estimated delivery costs of 20 major project schemes confirmed in SR10 and GR11 Autumn Statement (after deducting historic costs up to and including 2010/11). Since 2011/12 a further 5 schemes have agreed target costs for construction: M6 J5-J8 (BBox3), A11 Fiveways, M25 J5-7, M25 J23-27 and A453 Widening. All 20 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 2016/17. 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.</p> <p>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 (Start of works dates, Final target cost 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.</p> <p>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.</p>
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:

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<ul style="list-style-type: none"> - 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. <p>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.</p> <p>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.</p> <p>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:</p> <ul style="list-style-type: none"> - 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; and - dialogue with innovators in the construction and development industries, to obtain their view on the art of the possible. <p>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:</p> <ul style="list-style-type: none"> - Aggregation/ commoditisation in procurement (4%); - Supply chain engineering (including local contractor and combined capital works models) (4%); - Cost-led procurement (1%); and

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<ul style="list-style-type: none"> - Integrated supply chain supporting product innovation (3%). <p>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 £/m². For new build, the cost distribution data given in Charts 11 to 15 will be used to identify these schemes (in 2009/10, 20% of schemes made up over 50% of the total m²).</p> <p>Some important constraints will continue to act on HCA's forecast:</p> <p>For New Build:</p> <ul style="list-style-type: none"> - 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. <p>For Decent Homes (Refurbishment):</p> <ul style="list-style-type: none"> - 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. <p>In seeking to influence providers, the following drivers for partners to adopt new methods can be leveraged:</p> <p>For New Build:</p> <ul style="list-style-type: none"> - 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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<p>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");</p> <ul style="list-style-type: none"> - HCA endorsement of new methods/promotion of best practice (including product innovation) and signals 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"); and - 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. <p>For Decent Homes (Refurbishment):</p> <ul style="list-style-type: none"> - Publication of expected cost reductions through Cost Reduction Forecast; - Challenge through annual monitoring process; - Publication of peer benchmark data; and - Expectations set within 2013-15 allocation confirmation process.
MoD	<p>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 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:</p> <ul style="list-style-type: none"> • 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; and

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<ul style="list-style-type: none"> • Questioning the scale and quality of provision, ensure that all aspects of expenditure add value, as determined by customer defined value drivers. <p>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).</p> <p>MoD has recently challenged Contractors on prospective projects, to explore means of achieving cost reductions in line with targets. .</p> <p>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.</p> <p>This work will see increasing use of public and private sector comparative data, achieved through a maturing understanding of those cost drivers deemed unique to MoD construction, such as Counter Terrorist Measures (CTM), Nuclear Safety Requirements and the financial implications of Security Restrictions.</p> <p>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.</p> <p>As a result of the Strategic Defence and Security Review (SDSR), the MoD has undertaken a fundamental review of future works programmes. This will inform establishment of cost reduction trajectories for up to half the programme. Expansion of the initiative beyond SLA is planned to include :</p> <ul style="list-style-type: none"> • Service Families Accommodation (Houses);

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories

Department	Commentary
	<ul style="list-style-type: none"> • Offices; • Medical Accommodation; • Education Facilities; • Messing (kitchens, dining and function rooms etc); and • Potentially Airfield Pavements. <p>The remainder of the MOD programme is made up of bespoke structures including construction and infrastructure in support nuclear facilities, redevelopment of oil fuel depots, work on ordnance depots, maritime facilities, military airfield facilities, specialist infrastructure related to high security establishments, etc. Whilst the principles will be the same a more elemental/unit analysis method of dealing with the bespoke sections of the MOD programme will be necessary.</p> <p>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.</p> <p>MoD are also participating in a number of associated trials of New Models of Procurement, namely:</p> <ul style="list-style-type: none"> • Specialist Training Centre, RM Lympstone (Integrated Project Insurance); and. • Queen Victoria School (Cost Led Procurement). <p>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.</p>
MoJ	<p>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.</p> <p>The process forces early stage engagement and collaboration of the team,</p>

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories	
Department	Commentary
	<p>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.</p> <p>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.</p> <p>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.</p> <p>MoJ has therefore set itself a target of increasing the value of the product by 10% every year until at least 2014/15.</p> <p>In addition to benchmarking the product value, the department is building up benchmarks for £/m² and unit cost £, which complement the PPI system, providing a rounded approach that promotes client best practice with industry recognised cost benchmarks.</p> <p>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.</p>
DfE/EFA	<p>The DfE/EFA cost reduction trajectory is based on the cost reductions that have been obtained from:</p> <ul style="list-style-type: none"> - existing BSF projects and new schools procured through the EFA contractor's framework;

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 21: Basis of Department Cost Reduction Trajectories	
Department	Commentary
	<ul style="list-style-type: none"> - a mix of cost reductions that are expected during the remaining BSF programme; and - expected 40% cost reductions for the Priority Schools Building Programme (PSBP). <p>These 3 sources of cost reductions therefore combine in the later years and the trajectory will be subject to further update as the actual outturn cost reductions are analysed.</p> <p>In relation to the BSF cost reductions:</p> <ol style="list-style-type: none"> 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 have been achieved from reducing floor areas (reduced by up to 15% for secondary schools), procurement through the EFA Contractors Framework and standards underpinning new baseline designs.

TECHNICAL ANNEXES

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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 22: 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		2012/13	
				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	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	1391	1173 1537
	House/flat for LCHO			1514	1154 1703	1453	1162 1678	1425	1025 1495	1516	1226 1705
	House/flat for rent: General needs			1405	1123 1628	1368	1146 1550	1322	1096 1516	1348	1169 1510
	House/flat for rent: Supported Housing			1808	1346 2078	1664	1474 2014	1445	Insuff. data	1771	1399 1877
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	100129	82728 119077	98519	83169 114297	97354	77362 117268	101256	84965 119757
	House/flat for LCHO		£/person housed	27734	21511 34156	26772	21741 31783	26728	20965 32443	27616	22063 32500
	House/flat for rent: General needs		£/home	102631	76731 120253	99214	81163 117439	103599	79890 114921	108280	94156 127405
	House/flat for rent: Supported housing		£/person housed	29343	21954 32935	28057	21723 32820	27952	20720 30703	29370	22980 34449
	House/flat for rent		£/home	99758	82728 118783	98760	83529 114300	97314	77655 117268	99980	84349 119757
	House/flat for LCHO		£/person housed	27166	21277 32568	26409	21581 30773	26720	21272 32443	26150	22000 30666
	House/flat for rent: General needs		£/home	108538	80137 119700	91787	74375 106178	140194	Insuff. data	110739	87498 118187
	House/flat for rent: Supported housing		£/person housed	49047	37406 59850	45664	34434 59982	35049	Insuff. data	44265	28437 55642

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 23: Construction Cost Benchmarks for DCLG/HCA: Midlands HCA Operating Area											
Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				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	Single Point Average	Range 20 th – 80 th Percentile
New Build	House/flat for rent	Type 1: Total construction cost	£/m ²	1376	1097 1496	1297	1077 1488	1250	994 1346	1280	998 1441
	House/flat for LCHO			1316	1114 1455	1260	1037 1417	1126	1020 1331	1284	1020 1404
	House/flat for rent: General needs			1360	1092 1456	1258	1070 1425	1211	1003 1333	1150	992 1304
	House/flat for rent: Supported Housing			1773	1302 2543	1867	1363 1918	2000	Insuff. data	1764	1462 2051
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	98122	79114 113524	96154	80520 108911	91163	71297 105118	89819	75945 101705
	House/flat for LCHO			27331	20889 30954	24846	19853 29531	24227	17955 28738	25383	18897 29330
	House/flat for rent: General needs		£/home	103293	81218 111530	93051	75455 106667	88786	79994 104294	95047	77039 104704
	House/flat for rent: Supported housing			25308	20588 28201	24498	1895 26334	20827	17819 24940	24979	18255 27169
	House/flat for rent		£/person housed	98422	79114 112931	95623	80520 108911	89805	71346 104843	87416	76340 101173
	House/flat for LCHO			26749	20651 29643	23717	19622 27500	23266	17955 26755	21457	18854 25537
	House/flat for rent: General needs		£/home	92733	65795 143249	10575	73000 106515	111215	Insuff. data	96230	64101 106939
	House/flat for rent: Supported housing			46817	24976 127164	45839	31095 53810	47732	Insuff. data	45626	32613 64101

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 24: 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		2012/13	
				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	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	1145	941 1349
	House/flat for LCHO			1174	974 1391	1051	982 1254	918	699 1304	1190	975 1349
	House/flat for rent: General needs			1254	1039 1428	1173	965 1413	1081	963 1318	1075	929 1280
	House/flat for rent: Supported Housing			1703	1428 1804	1631	1402 2137	1458	Insuff. data	1614	1446 1853
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	98040	82935 110000	95557	82865 110135	83791	70061 98933	86063	73815 98398
	House/flat for LCHO			24535	19061 30127	23430	18800 30094	21682	17742 25362	22354	17653 27842
	House/flat for rent: General needs		£/home	96286	79601 108822	91297	84434 106533	73349	43859 101351	92518	78925 98398
	House/flat for rent: Supported housing			21811	18503 26333	19986	18541 23674	18524	13971 27118	23878	17217 29785
	House/flat for rent		£/home	97979	84297 109312	94899	82865 109438	83693	71237 101449	84735	73025 98612
	House/flat for LCHO			23948	18924 27790	22818	18520 28518	21434	18126 25362	20558	17524 25266
	House/flat for rent: General needs		£/home	99028	76000 108535	104749	76697 1117999	88330	Insuff. data	92597	82939 97156
	House/flat for rent: Supported housing			40668	33019 60230	35459	28105 66787	44165	Insuff. data	36864	31481 47197

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 25: Construction Cost Benchmarks for DCLG/HCA: North West HCA Operating Area											
Project Types	Project Subtypes	Benchmarks	Units	2009/10 (Baseline)		2010/11		2011/12		2012/13	
				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	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	1193	1043 1368
	House/flat for LCHO			1341	1045 1488	1158	994 1331	1150	1013 1380	1288	1036 1451
	House/flat for rent: General needs			1274	1080 1487	1253	1053 1363	1085	990 1301	1133	1041 1315
	House/flat for rent: Supported Housing			1841	1495 2283	1510	482 1795	1802	Insuff. data	1585	1211 1870
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	96407	85946 117500	99448	85606 114511	85277	75509 103058	90917	81004 102443
	House/flat for LCHO			26278	19331 33456	24299	19119 26696	20650	17800 25792	22950	18370 27685
	House/flat for rent: General needs		£/home	101905	79999 108507	94868	83846 107673	96351	89130 103523	95654	83045 104294
	House/flat for rent: Supported housing			26011	18278 32941	21820	18613 25119	20833	17826 24233	26198	17583 33855
	House/flat for rent		£/home	94996	85452 118827	99991	86298 114511	85294	76245 101913	89559	81334 101225
	House/flat for LCHO			24599	19157 29253	23728	19037 2862	20332	17895 25000	20885	18324 26085
	House/flat for rent: General needs		£/home	107272	83379 116459	104865	75559 105081	84666	Insuff. data	97768	68000 112749
	House/flat for rent: Supported housing			49166	39243 92112	42848	26138 54305	49725	Insuff. data	42281	27568 56045

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 26: 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		2012/13	
				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	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	1325	1029 1533
	House/flat for LCHO			1339	1062 1579	1368	1115 1550	1274	976 1491	1363	1031 1483
	House/flat for rent: General needs			1388	1149 1588	1407	1120 1624	1311	1102 1473	1311	1026 1,502
	House/flat for rent: Supported Housing			2610	1827 3443	1916	1451 1998	1803	Insuff. data	1723	Insuff. data
New Build	House/flat for rent	Type 2: £/home and £/person housed	£/home	101267	81486 121037	104644	85713 126000	92050	75037 110643	95964	77867 114200
	House/flat for LCHO			27384	21802 33333	27530	21284 31974	27216	20947 31756	25400	19382 30903
	House/flat for rent: General needs		£/home	94170	77173 112253	96128	82565 113840	90827	70492 106987	96809	74946 108899
	House/flat for rent: Supported housing			26016	20463 30993	26621	2502 31446	24816	19358 28806	25894	18020 29130
	House/flat for rent		£/home	101187	81575 120952	104640	85730 126000	92027	76800 110852	95749	77867 113333
	House/flat for LCHO			27228	21673 32046	27335	21188 31765	26160	20828 31598	24937	19210 29949
	House/flat for rent: General needs		£/home	109761	81486 124455	104865	82000 115867	92315	Insuff. data	100622	Insuff. data
	House/flat for rent: Supported housing			62390	43611 94997	42848	2821 82000	51459	Insuff. data	41145	Insuff. data

ANNEX B: COST COMPONENTS INCLUDED WITHIN DEPARTMENT COST BENCHMARKS

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 27: Cost Components included within Department Cost Benchmarks (for DoH/P21, DCLG/HCA, MoD, MoJ, DfE/EFA and National Schools Delivery Cost Benchmarking)								
NRM Ref	Cost Components	Typically included in DoH/P21 benchmarks (Reference Table 5)	DCLG/HCA New Build (Reference Table 8 and Annex A)	DCLG/HCA Refurbishment (Reference Table 8 and Annex A)	MOD (Reference 9 and Annex A)	Typically included in MoJ benchmarks (Reference Table 10)	Typically included in DfE / EFA benchmarks (Reference Table 11)	National Schools Delivery Cost Benchmarking (Reference Table 17)
0	Facilitating works							
0.01	Toxic/hazardous material removal	N	Y	N	N	N	N	Y
0.02	Major demolition works	N	Y	N	N	Y	Y	N
0.03	Specialist ground works	N	Y	N/A	N	N	N	Y
0.04	Temporary diversion works	N	Y	N/A	Y	N	N	Y
0.05	Extraordinary site investigation works	N	Y	N/A	N	N	N	N
01	Substructure							
01.01	Foundations	Y	Y	N/A	Y	Y	Y	Y
01.02	Basement Excavation	Y	Y	N/A	Y	N	N	Y
01.03	Basement Retaining Walls	Y	Y	N/A	Y	N	N	Y
01.04	Ground Floor Construction	Y	Y	N/A	Y	Y	Y	Y
02	Superstructure					Y		
02.01	Frame	Y	Y	N/A		Y	Y	Y
02.02	Upper Floors	Y	Y	N/A	Y	Y	Y	Y
02.03	Roof	Y	Y	Y	Y	Y	Y	Y
02.04	Stairs and Ramps	Y	Y	N	Y	Y	Y	Y
02.05	External Walls	Y	Y	Y	Y	Y	Y	Y
02.06	Windows and External Doors	Y	Y	Y	Y	Y	Y	Y
02.07	Internal Walls and Partitions	Y	Y	N	Y	Y	Y	Y
02.08	Internal Doors	Y	Y	N	Y	Y	Y	Y
03	Internal finishes							
03.01	Wall finishes	Y	Y	Y	Y	Y	Y	Y
03.02	Floor finishes	Y	Y	Y	Y	Y	Y	Y
03.03	Ceiling finishes	Y	Y	Y	Y	Y	Y	Y
04	Fittings, furnishing and equipment							
04.01	General fittings, furnishings and equipment	Y	Y	N/A	Y	Y	Y	Y
04.02	Special fittings, furnishings and equipment	Y	Y	N/A	Y	N	N	Y
04.03	Internal planting	Y	Y	N/A	Y	N	N	Y
04.04	Bird and vermin control	Y	Y	N/A	Y	N	N	Y
05	Services							
05.01	Sanitary appliances	Y	Y	Y	Y	Y	Y	Y
05.02	Services equipment	Y	Y	Y	Y	Y	Y	Y
05.03	Disposal installations	Y	Y	N/A	Y	Y	Y	Y
05.04	Water installations	Y	Y	N/A	Y	N	Y	Y
05.05	Heat source	Y	Y	Y	Y	N	Y	Y
05.06	Space heating and air conditioning	Y	Y	Y	Y	N	Y	Y
05.07	Ventilation systems	Y	Y	N	Y	Y	Y	Y
05.08	Electrical installations	Y	Y	Y	Y	Y	Y	Y
05.09	Gas and other fuel installations	Y	Y	Y	Y	N	Y	Y

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 27: Cost Components included within Department Cost Benchmarks (for DoH/P21, DCLG/HCA, MoD, MoJ, DfE/EFA and National Schools Delivery Cost Benchmarking)								
NRM Ref	Cost Components	Typically included in DoH/P21 benchmarks (Reference Table 5)	DCLG/HCA New Build (Reference Table 8 and Annex A)	DCLG/HCA Refurbishment (Reference Table 8 and Annex A)	MOD (Reference 9 and Annex A)	Typically included in MoJ benchmarks (Reference Table 10)	Typically included in DfE / EFA benchmarks (Reference Table 11)	National Schools Delivery Cost Benchmarking (Reference Table 17)
05.10	Lift and conveyor installations	Y	Y	N	Y	N	Y	Y
05.11	Fire and lightning protection	Y	Y	Y	Y	N	Y	Y
05.12	Communication, security and control systems	Y	Y	Y	Y	N	Y	Y
05.13	Specialist installations	Y	Y	N	Y	N	Y	Y
05.14	Builder's work in connection with services	Y	Y	N	Y	N	Y	Y
05.15	Testing and commissioning of services	Y	Y	N	Y	N	Y	Y
06	Complete buildings and building units							
06.01	Prefabricated buildings	Y	Y	N/A	Y	N	N	N
07	Work to existing buildings							
07.01	Minor demolition works and alteration works	Y	Y	N	Y	Y	N	Y
07.02	Repairs to existing services	Y	Y	Y	Y	N	N	N
07.03	Damp-proof courses /fungus and beetle eradication	Y	Y	N	Y	N	N	N
07.04	Façade retention	Y	Y	N	Y	N	N	N
07.05	Cleaning existing surfaces	Y	Y	N	Y	N	N	N
07.06	Renovation works	Y	Y	Y	Y	N	N	N
08	External works							
08.01	Site preparation works	N	Y	Y	N	N	Y	Y
08.02	Roads, paths and pavings	N	Y	N	N	Y	Y	Y
08.03	Planting	N	Y	N	N	Y	Y	Y
08.04	Fencing, railings and walls	N	Y	N	N	Y	Y	Y
08.05	Site/street furniture and equipment	N	Y	N	N	N	Y	Y
08.06	External drainage	N	Y	N	N	Y	Y	Y
08.07	External services	N	Y	N	N	N	Y	Y
08.08	Minor building works and ancillary buildings	N	Y	N	N	N	N	Y
09	Main contractor's preliminaries							
09.01	Employer's requirements	Y	Y	Y	Y	Y	N	Y
09.02	Main contractor's cost items	Y	Y	Y	Y	Y	Y	Y
10	Main contractor's overheads and profit							Y
10.01	Main contractor's overheads	Y	Y	Y	Y	Y	Y	Y
10.02	Main contractor's profit	Y	Y	Y	Y	Y	Y	Y
11	Project/design team fees							
11.01	Consultants' fees	N	N	N/A	N	Y	Y	Y
11.02	Main contractor's pre-construction fees	Y	N	N/A	N	Y	N	Y
11.03	Main contractor's design fees*	Y	N	N/A	N	Y	Y	Y

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 27: Cost Components included within Department Cost Benchmarks (for DoH/P21, DCLG/HCA, MoD, MoJ, DfE/EFA and National Schools Delivery Cost Benchmarking)								
NRM Ref	Cost Components	Typically included in DoH/P21 benchmarks (Reference Table 5)	DCLG/HCA New Build (Reference Table 8 and Annex A)	DCLG/HCA Refurbishment (Reference Table 8 and Annex A)	MoD (Reference 9 and Annex A)	Typically included in MoJ benchmarks (Reference Table 10)	Typically included in DfE / EFA benchmarks (Reference Table 11)	National Schools Delivery Cost Benchmarking (Reference Table 17)
12	Other development/project costs							
12.01	Other development /project costs	Y	Y	N	Y	Y	N	Y
13	Risks							
13.01	Design development risks	Y	Y	N/A	Y	Y	Y	Y
13.02	Construction risks	Y	Y	N/A	Y	Y	Y	Y
13.03	Employer change risks	N	Y	N/A	N	Y	N	N
13.04	Employer other risks	N	Y	N/A	N	Y	N	N
14	Inflation							
14.01	Tender inflation	Y	Y	N	Y	N	N	N
14.02	Construction inflation	Y	Y	Y	Y	N	Y	Y

* For P21: these are P21 supply chain design fees; for MoD: Maximum Price Target Costs include detailed design from RIBA Stage D onwards.

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 28: Cost Components included within Department Cost Benchmarks for EA

Cost Components	Typically included in EA Type 1 benchmarks (Reference Table 6)
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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)	
		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	

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)	
		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	

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)	
		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 Statutory 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

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)	
		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	

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA			
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)	
		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	

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 29: Cost Components included within Department Cost Benchmarks for HA		
HA ref.		Typically included in HA Benchmarks / Total Project Costs (reference Table 7)
		Construction Cost Components
CE 2	1003	Construction Phase - (Construction, Commissioning & Handover and Closeout) ~ Client Project Support

ANNEX C: INFLATION ADJUSTMENTS

This section addresses the adjustments made to take account of construction inflation. It reproduces the explanation originally in the Cost Reduction Validation Method, published February 2012. It also outlines the approaches taken by each department in determining the annual cost reductions and cost benchmarks reported in each annual period.

Explanation addressing inflation adjustment given in the Cost Reduction Validation Method (February 2012)

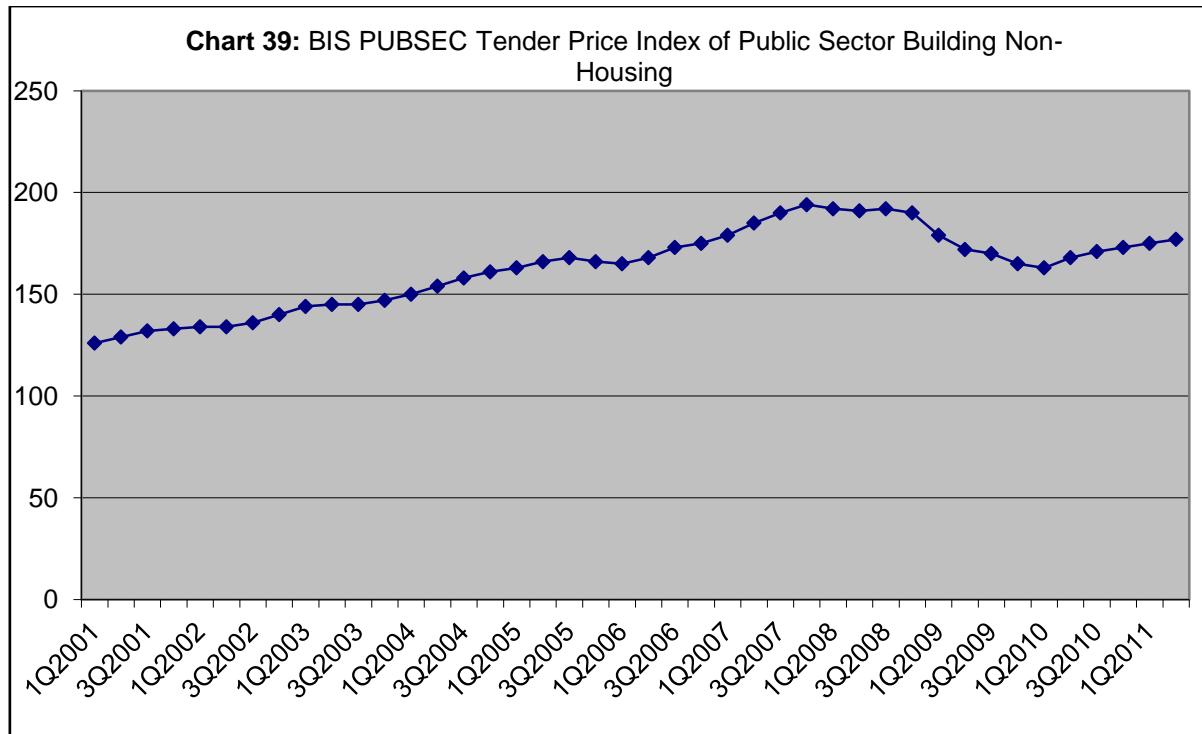
Section 3: Background to the method

The adoption of benchmarks (unit rates such as £/m²) and percentage year on year reductions reflects the construction industry's traditional way of showing cost and price adjustments. The changing basket of project types delivered and fluctuations in overall construction expenditure mean that tracking year on year changes in overall spend are not instructive.

Similarly, over the last decade or more, the UK Construction Market has been characterised by steadily rising prices as evidenced by the industry's price indices (refer to Chart 1 below). Throughout this period industry margins tended to remain keen, indicating rising underlying costs, while in recent years - as investment has fallen as a consequence of the Financial Crisis - prices have fallen accordingly, though perhaps "unsustainably", since prices started to rise again fairly quickly.

The key challenge in measuring progress towards the target of 15-20% is therefore to identify the components within these ongoing price adjustments that represent sustainable cost reductions rather than rising commodity prices and/or temporary and unsustainable price adjustments by businesses "buying work" to maintain volume.

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Other factors that have been taken into account in determining an appropriate quantifiable cost reduction validation method include the:

- *fact that spending review settlements typically resulted in cash being taken from Departments, so that the inability of any particular Department to achieve its required cost reductions will lead to fewer construction projects being delivered than planned, with possible operational consequences;*
- *variety of project types delivered and changing proportions in any given year – for example, a shift away from new build towards refurbishment – that can affect benchmarks, while signifying little about efficiency;*
- *lengthy timescales involved in construction projects, which mean that efficiency initiatives implemented from May 2010 may not generate outturn benchmarks by April 2015;*
- *dependence of the scale of cost reduction possible on the volume of work delivered;*
- *range of cost reduction measures being implemented by Departments (refer to Section 10 below) and the different types of cost reductions being generated: cashable, value enhancement, cost avoidance;*
- *existing recording of cost reductions between May 2010 and publication of this method;*

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

- for some departments, such as MoJ - where the majority of construction spend is currently focused on relatively small scale refurbishment and repairs, with low levels of repetition - there will inevitably be wider ranges in some of the resulting £/m² benchmarks reducing their usefulness.

In general, therefore, it has been important to reflect the factors set out above and standard industry practice in the calculation of cost reductions.

Section 5: Counterfactual

This cost reduction validation method will take account of the counterfactual - i.e. the circumstances that would have prevailed had the Government's broader efficiency programme and sector specific Government Construction Board joint programme not have been introduced, or construction costs not have been affected by external factors such as increased regulation or policy changes - in the following ways.

Inflation

As highlighted in the section above, there has been a tendency historically for construction prices to move up over the long term with relatively brief periods of price stagnation or deflation in between. The 20% reduction is therefore to be measured for each Department as the percentage difference between the 2009/10 baseline benchmarks and the benchmarks achieved in the current period adjusted for inflation to allow sensible comparison. The objective is therefore to demonstrate the Government's ability to "beat the market" by changing an upwards cost curve to a downwards trajectory.

However, should there be an extended period of construction price stagnation or deflation, then the method may need to be modified in a credible way that takes account of the particular circumstances that pertain, since price stagnation or deflation could be because of one or more of the following reasons:

- *The Government Construction Board joint programme has immediate effects that go beyond public and regulated projects, shifting the construction industry onto a "sustainable" downward price trajectory earlier than expected i.e. part of the 15-20% efficiency improvement will have already been achieved.*
- *Keen pricing to maintain volume ("buying work") leads to efficient practices rather than the usual restoration of construction inflation, as "unsustainable" pricing is translated into*

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

efficiencies that allow “sustainable” pricing at a lower level i.e. again part of the 15-20% efficiency improvement will have already been achieved.

- *Global commodity prices suppress the restoration of construction inflation i.e. the state of the global economy presents an “unsustainable” windfall that may have generated little of the 15-20% efficiency improvement targeted.*

Sector Specific Inflation

Broader measures of construction inflation – such as that shown in Chart 1 – may not be representative of the inflation experienced within specific sectors, for example, in the highways sector where the cost of bitumen represents a significant proportion of the cost and relates to global oil price movements.

Controlling for External Factors

External factors such as policy and regulatory changes can adversely impact construction costs beyond the ability of the Departmental clients to mitigate increases. Therefore in parallel with the tracking of the above measures and inflation, step changes in construction costs due to external factors will also be recorded by each Department and will be accepted by Cabinet Office after review of the evidence submitted to support the inclusion of percentage uplifts to what will be known as the “control curve”.

Inflation adjustments made by each department in reporting annual cost reductions and cost benchmarks year to year

The following section outlines the inflation adjustments made by each department in assessing annual cost reductions (typically by applying an inflator to the baseline data) and in generating the cost benchmark related charts and tables (typically by applying a deflator to each year's data following the baseline year).

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 30: Explanation of inflation adjustments made by each department in reporting annual cost reductions and cost benchmarks year to year

Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year															
DoH / P21	<p>Cost reductions have been reported on the basis of 2009/10 constant prices as per the method used for cost benchmarks described in the next column.</p> <p>From 2013/14 onwards this method will be modified to bring it in line with the methods applied by other departments in calculating cost reductions achieved (see below).</p>	<p>Cost benchmarks have been reported on the basis of constant 2009/10 prices.</p> <p>2012/13 projects have therefore been adjusted to the same basis as the 2009/10 baseline using the BIS PUBSEC Tender Price Index of Public Sector Non Housing (PUBSEC 173). The adjustment varies from project to project and is based on the PUBSEC index prevailing when the guaranteed maximum price is agreed. For 2012/13, these adjustments range from 0.96 to 0.98 i.e. cost benchmarks in 2012/13 prices have been multiplied by these factors to translate them into equivalent 2009/10 prices.</p> <p>Benchmarks reported for 2010/11, 2011/12 and 2012/13 have therefore been deflated as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th>2009/10</th><th>2010/11</th><th>2011/12</th><th>2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td>173</td><td>174 to 177</td><td>174 to 178</td><td>176 to 181</td></tr> <tr> <td>Deflator</td><td>1.00</td><td>0.97 to 0.98</td><td>0.97 to 0.99</td><td>0.96 to 0.98</td></tr> </tbody> </table>		2009/10	2010/11	2011/12	2012/13	Index	173	174 to 177	174 to 178	176 to 181	Deflator	1.00	0.97 to 0.98	0.97 to 0.99	0.96 to 0.98
	2009/10	2010/11	2011/12	2012/13													
Index	173	174 to 177	174 to 178	176 to 181													
Deflator	1.00	0.97 to 0.98	0.97 to 0.99	0.96 to 0.98													

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year															
		<p>Project costs are also adjusted for location factor as projects are more expensive to construct in some parts of the country. The BCIS (RICS Building Cost Information Service) location study has been used for this purpose and project benchmarks have been normalised to the national average i.e. adjusted to a common basis of 1.00 for consistency with the baseline. In 2012/13 location factors for DoH / P21 projects have ranged from 0.89 in Crewe to 1.10 in West Sussex.</p>															
DEFRA / EA	<p>The efficiency savings are reported on a project basis and are calculated using cash released back into the programme within the current financial year. Cost reductions have been reported on the basis of 2012/13 prices.</p>	<p>Construction cost benchmarks have been adjusted to the same basis as the 2009/10 baseline using the BIS Output Price Index for New Construction (2010): Public Non-Housing index</p> <p>Benchmarks reported for 2010/11, 2011/12 and 2012/13 have therefore been deflated as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th>2009/10</th><th>2010/11</th><th>2011/12</th><th>2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td>120.8</td><td>110.1</td><td>106.5</td><td>109.8</td></tr> <tr> <td>Deflator</td><td>1.00</td><td>0.91</td><td>0.88</td><td>0.91</td></tr> </tbody> </table>		2009/10	2010/11	2011/12	2012/13	Index	120.8	110.1	106.5	109.8	Deflator	1.00	0.91	0.88	0.91
	2009/10	2010/11	2011/12	2012/13													
Index	120.8	110.1	106.5	109.8													
Deflator	1.00	0.91	0.88	0.91													

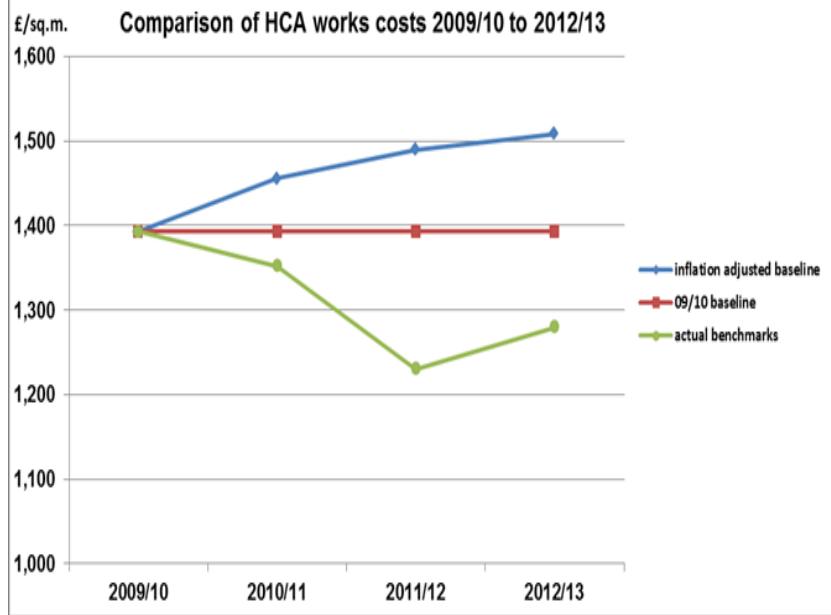
Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 30: Explanation of inflation adjustments made by each department in reporting annual cost reductions and cost benchmarks year to year

Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year																								
DfT / HA	<p>The aggregated efficiency savings are calculated on a project by project basis against their respective baseline estimates, these included an estimate/forecast for inflation. Part of the actual savings reported in each year reflect performance against those inflation assumptions which is a product of market conditions and the commercial negotiating process which drives lower unit rates across the work breakdown structure.</p>	<p>Cost benchmarks have been reported on the basis of the 2009/10 baseline.</p> <p>2010/11, 2011/12 and 2012/13 projects have therefore been adjusted to a baseline of 2009/10. This has been carried out using BIS (RICS – Building Cost Information Service) ROADCON index.</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th style="text-align: center;">2009/10</th><th style="text-align: center;">2010/11</th><th style="text-align: center;">2011/12</th><th style="text-align: center;">2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td style="text-align: center;">152</td><td style="text-align: center;">151</td><td style="text-align: center;">157</td><td style="text-align: center;">159</td></tr> <tr> <td>Deflator</td><td style="text-align: center;">1.00</td><td style="text-align: center;">1.01</td><td style="text-align: center;">0.97</td><td style="text-align: center;">0.96</td></tr> </tbody> </table> <p>No adjustment has been made for location factors.</p>		2009/10	2010/11	2011/12	2012/13	Index	152	151	157	159	Deflator	1.00	1.01	0.97	0.96									
	2009/10	2010/11	2011/12	2012/13																						
Index	152	151	157	159																						
Deflator	1.00	1.01	0.97	0.96																						
DCLG / HCA	<p>Cost reductions have been reported on the basis of 2012/13 prices. The 2009/10 baseline has therefore been adjusted to 2012/13 prices using the Building Cost Information Service (BCIS) General Construction Cost Index as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th style="text-align: center;">2009/10</th><th style="text-align: center;">2012/13</th></tr> </thead> <tbody> <tr> <td>Inflator</td><td style="text-align: center;">1.00</td><td style="text-align: center;">1.08</td></tr> <tr> <td>Baseline Benchmark £/m²</td><td style="text-align: center;">1393</td><td style="text-align: center;">1508</td></tr> </tbody> </table>		2009/10	2012/13	Inflator	1.00	1.08	Baseline Benchmark £/m ²	1393	1508	<p>Cost benchmarks have been reported on the basis of constant 2009/10 prices. Benchmarks reported for 2010/11, 2011/12 and 2012/13 have therefore been deflated using the Building Cost Information Service (BCIS) General Construction Cost Index as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th style="text-align: center;">2009/10</th><th style="text-align: center;">2010/11</th><th style="text-align: center;">2011/12</th><th style="text-align: center;">2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td style="text-align: center;">290</td><td style="text-align: center;">303</td><td style="text-align: center;">310</td><td style="text-align: center;">314</td></tr> <tr> <td>Deflator</td><td style="text-align: center;">1.00</td><td style="text-align: center;">0.95</td><td style="text-align: center;">0.94</td><td style="text-align: center;">0.92</td></tr> </tbody> </table>		2009/10	2010/11	2011/12	2012/13	Index	290	303	310	314	Deflator	1.00	0.95	0.94	0.92
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Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

Table 30: Explanation of inflation adjustments made by each department in reporting annual cost reductions and cost benchmarks year to year

Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year																				
	 <table border="1"> <caption>Data for Comparison of HCA works costs 2009/10 to 2012/13</caption> <thead> <tr> <th>Year</th> <th>Inflation Adjusted Baseline (£/sq.m.)</th> <th>09/10 Baseline (£/sq.m.)</th> <th>Actual Benchmarks (£/sq.m.)</th> </tr> </thead> <tbody> <tr> <td>2009/10</td> <td>1,400</td> <td>1,400</td> <td>1,400</td> </tr> <tr> <td>2010/11</td> <td>1,450</td> <td>1,400</td> <td>1,350</td> </tr> <tr> <td>2011/12</td> <td>1,480</td> <td>1,400</td> <td>1,250</td> </tr> <tr> <td>2012/13</td> <td>1,520</td> <td>1,400</td> <td>1,280</td> </tr> </tbody> </table>	Year	Inflation Adjusted Baseline (£/sq.m.)	09/10 Baseline (£/sq.m.)	Actual Benchmarks (£/sq.m.)	2009/10	1,400	1,400	1,400	2010/11	1,450	1,400	1,350	2011/12	1,480	1,400	1,250	2012/13	1,520	1,400	1,280	
Year	Inflation Adjusted Baseline (£/sq.m.)	09/10 Baseline (£/sq.m.)	Actual Benchmarks (£/sq.m.)																			
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2012/13	1,520	1,400	1,280																			
MoD	<p>Cost reductions have been reported on the basis of 2012/13 prices using the BIS PUBSEC Tender Price Index of Public Sector Non Housing (PUBSEC 173).</p> <p>The baseline 2009/10 index used was the mid-point of 2009/10 i.e. the mid-point of Q3 2009 index of 170 and 4Q2009 index of 165 giving an average index of 167.5. For</p>	<p>Cost benchmarks have been reported on the basis of constant 2009/10 prices.</p> <p>2012/13 projects have therefore been adjusted to the same basis as the 2009/10 baseline using the BIS PUBSEC Tender Price Index of Public Sector Non Housing (PUBSEC 173). The baseline 2009/10 index</p>																				

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Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year																								
MoJ	<p>Cost reductions have been reported on the basis of 2012/13 prices using the All-in Tender Price Index (TPI), published by the Building Cost Information Service (BCIS) i.e. the 2009/10 baseline has been adjusted as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th style="text-align: center;">2009/10</th><th style="text-align: center;">2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td style="text-align: center;">216</td><td style="text-align: center;">228</td></tr> <tr> <td>Inflator</td><td style="text-align: center;">1.00</td><td style="text-align: center;">1.06</td></tr> </tbody> </table> <p>Location factors are not used on MOJ projects.</p>		2009/10	2012/13	Index	216	228	Inflator	1.00	1.06	<p>Cost benchmarks have been reported on the basis of constant 2009/10 prices using the All-in Tender Price Index (TPI), published by the Building Cost Information Service (BCIS) i.e. the 2009/10 baseline has been adjusted as follows:</p> <p>Benchmarks reported for 2010/11, 2011/12 and 2012/13 have therefore been deflated as follows:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th><th style="text-align: center;">2009/10</th><th style="text-align: center;">2010/11</th><th style="text-align: center;">2011/12</th><th style="text-align: center;">2012/13</th></tr> </thead> <tbody> <tr> <td>Index</td><td style="text-align: center;">216</td><td style="text-align: center;">220</td><td style="text-align: center;">226</td><td style="text-align: center;">228</td></tr> <tr> <td>Deflator</td><td style="text-align: center;">1.00</td><td style="text-align: center;">0.98</td><td style="text-align: center;">0.96</td><td style="text-align: center;">0.95</td></tr> </tbody> </table> <p>Location factors are not used on MOJ projects.</p>		2009/10	2010/11	2011/12	2012/13	Index	216	220	226	228	Deflator	1.00	0.98	0.96	0.95
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DfE / EFA	<p>Cost reductions have been normalised on the basis of current year prices using the BIS PUBSEC Tender Price Index of Public Sector Non Housing i.e. the 2009/10 baseline has been inflated as required.</p>	<p>Cost benchmarks have been normalised on the basis of constant 2009/10 prices using the BIS PUBSEC Tender Price Index of Public Sector Non Housing.</p>																								
Network Rail	Not Applicable	The REEM methodology uses in-year inflation (November RPI) to uplift baseline prices (CP3 exit point) as set out below :																								

Cost Reductions, Cost Benchmark Data and Cost Reduction Trajectories

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Department / Organisation	Inflation adjustments made in reporting annual cost reductions	Inflation adjustments made in reporting cost benchmarks year to year															
		<p>Year: Year Inflation:</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">2009/10</td> <td style="width: 50%;">0.30%</td> </tr> <tr> <td>2010/11</td> <td>4.71%</td> </tr> <tr> <td>2011/12</td> <td>5.16%</td> </tr> <tr> <td>2012/13</td> <td>2.98%</td> </tr> </table>	2009/10	0.30%	2010/11	4.71%	2011/12	5.16%	2012/13	2.98%							
2009/10	0.30%																
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Local Authorities	Not Applicable	<p>Cost benchmarks have been reported on the basis of constant Q3 2012 prices using the All-in Tender Price Index (TPI), published by the Building Cost Information Service (BCIS).</p> <p>Benchmarks reported for 2009/10, 2010/11 and 2011/12 have therefore been inflated as follows:</p> <table border="1" style="margin-top: 10px; width: 100%; border-collapse: collapse;"> <thead> <tr> <th></th> <th style="text-align: center;">2009/10</th> <th style="text-align: center;">2010/11</th> <th style="text-align: center;">2011/12</th> <th style="text-align: center;">2012/13</th> </tr> </thead> <tbody> <tr> <td>Index</td> <td style="text-align: center;">209 to 216</td> <td style="text-align: center;">218 to 220</td> <td style="text-align: center;">218 to 223</td> <td style="text-align: center;">217</td> </tr> <tr> <td>Inflator</td> <td style="text-align: center;">1.00 to 1.04</td> <td style="text-align: center;">0.99 to 1.00</td> <td style="text-align: center;">0.97 to 1.00</td> <td style="text-align: center;">1.00</td> </tr> </tbody> </table> <p>All costs have been normalised to a common UK average price level using location factors published by BCIS.</p>		2009/10	2010/11	2011/12	2012/13	Index	209 to 216	218 to 220	218 to 223	217	Inflator	1.00 to 1.04	0.99 to 1.00	0.97 to 1.00	1.00
	2009/10	2010/11	2011/12	2012/13													
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