Cabinet Office

Government Construction

Cost Benchmarking Principles and Expectations: Departmental Progress Update

10th December 2012

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INTRODUCTION

This document reports on the progress made by Departments in implementing the recommendations within *Cost Benchmarking Principles and Expectations* that was published February 2012.

Cost Benchmarking Principles and Expectations set out for the first time construction related cost benchmarking standards developed by the Joint Data and Benchmarking Task Group. These principles were intended to be used as the basis for developing consistent Departmental approaches to construction cost benchmarking, some of which were already relatively mature. They therefore also provided a helpful point of reference for the wider public sector – for example Health Trusts and Local Authorities – in determining a standard approach to construction cost benchmarking.

Effective cost benchmarking is central to the successful delivery of the Government Construction Strategy (GCS) and the Infrastructure Cost Review. It provides the "should cost" capability[1] that is an essential component of the new procurement models being trialled as part of the delivery of the GCS. In doing so, it therefore facilitates the corresponding achievement of the overarching target of a sustainable[2] reduction in construction costs of up to 20% by the end of this parliament.

This report provides a snapshot of the progress made by Departments to date in delivering "should cost" capability and, where there remains more to be done, the ongoing and future activities still to be completed[3]. This snapshot also demonstrates how the implementation of the GCS and Infrastructure Cost Review have prompted departments to build on their existing approaches to address further benchmarking principles.

In summary, departments have made progress in implementing the following principles:

- Adoption of a common summary analysis format e.g. that used by the Building Cost Information Service (BCIS) or similar for infrastructure;
- Adoption of Type 1 comparable metrics (for further explanation refer to definition below);

[1] "Should cost" capability describes where an intelligent client understands what a particular requirement should cost before going to market. Typically this knowledge is gained by reference to earlier cost benchmarks – for example those published by Cabinet Office July 2012 – together with an appreciation of what is currently affordable e.g. those costs towards the bottom of the cost distribution for a particular type of project. It is therefore envisaged that "should cost" capability would be deployed together with output / outcome specifications in order to ensure the final specification represents the minimum needed to effectively deliver a client's business requirement.
[2] Without adversely impacting either whole life value or the long term financial health of the construction industry.
[3] These are denoted within Table 9 at the end of this document as Y, IP and NYC respectively.

- Establishment of process and contractual arrangements that deliver the required data in a timely manner at key stages in the project;
- Consistent format and use of data facilitating comparison of costs by different clients within a single organisation and/or same sector;
- Guidance on using data during the feasibility and procurement stages.

Typically departments are still in the process of implementing or have yet to address the following principles:

- Identification of processes to data collection that allow benchmarking of different procurement approaches;
- Establishment of methods to assess the effect of legislative and technical changes relating to Government policies (e.g. Building Regulations and BIM);
- Adoption of Type 4 comparable metrics (for further explanation refer to definition below);
- Consistent format and use of data facilitating comparison of costs by different contractors within a single framework and/or different clients across sectors;
- Development of data sharing protocols to facilitate the above;
- Development of protocols to capitalise on BIM in the collection and use of cost data.

Consistent with the terminology used for the Department Cost Benchmark Data - the current version of which was published July 2012 - cost benchmarks are described within this document in terms of the following types**:**

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

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

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

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

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

NEXT STEPS

Table 1 below outlines actions departments have identified to address acknowledged gaps – that are highlighted within Tables 2 to 8 in the next section - and to further enhance existing practices in relation to the implementation of the published cost benchmarking principles.

Table 1: Next steps in implementing the cost benchmarking principles published February 2012			
Principles Category	**Departments / Organisations**	**Next Steps**	**Reference to corresponding GCS objectives / milestones**
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
	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
		Work will progress on private sector comparators where available. **Winter 2012/13**	5.9.2
Comparable Metrics	All	Agree Type 4 comparable metrics to facilitate cross department / organisation comparisons. **Winter 2012/13**	5.9.3b / 5.13.2

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Table 1: Next steps in implementing the cost benchmarking principles published February 2012			
Principles Category	**Departments / Organisations**	**Next Steps**	**Reference to corresponding GCS objectives / milestones**
	DoH/ P21	The publication of Type 1 metrics during 2012 has supplemented existing guidance and metrics (HPCG's)[4] 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
	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
Common Operational Approach	EA, HA, MoD (with other infrastructure providers)	Continue with subgroup established to share infrastructure cost data and report any initial mutually beneficial outcomes. **Spring 2013**	5.9.3b
	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
	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

[4] Health Premises Cost Guides.

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Table 1: Next steps in implementing the cost benchmarking principles published February 2012			
Principles Category	**Departments / Organisations**	**Next Steps**	**Reference to corresponding GCS objectives / milestones**
	DCLG/ HCA, CO	Determine whether further support and influence is required to ensure social housing providers can fully benefit from implementing the following principles: C6, C7, C8 and D1. **Spring 2013**	
	MoD	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**	1.6.2 / 5.9.3a
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**	
	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

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

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);**

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Table 1: Next steps in implementing the cost benchmarking principles published February 2012			
Principles Category	**Departments / Organisations**	**Next Steps**	**Reference to corresponding GCS objectives / milestones**
5.8.2: Departments to bring benchmarking up to an agreed standard[5] (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);** **5.9.3a:** Benchmark publication update **(Spring 2013);** **5.9.3b:** Survey departments to determine feasibility of incorporating elemental benchmarks and, if feasible, develop and implement practical approach **(Spring 2013);** **5.13.2:** Monitor and report on progress of reducing non product costs **(Ongoing).**			

[5] As defined by *Cost Benchmarking Principles and Expectations,* published February 2012.

PROGRESS BY DEPARTMENT: SUMMARY TABLES

The following Tables 2 to 8 summarise the progress made to date by each Department in implementing the cost benchmarking principles published February 2012. Progress is reported with reference to the following four stages identified within the original document:

- common overarching approach and taxonomy;
- comparable metrics;
- common operational approach;
- future proofing.

The progress commentary provided within Tables 2 to 8 identifies key aspects with further detail provided in Table 9 at the end of the main section (hence the references to A1, B2 etc that are used in Table 9 to denote each principle). This commentary is in turn categorised using the following three classifications:

- **Existing practice:** Where the published cost benchmarking principles have already been implemented – or were in the process of being implemented - prior to the launch of the Government Construction Strategy (GCS) and Infrastructure Cost Review.
- **Ongoing activity in response to GCS and Infrastructure Cost Review / published principles / other efficiency drivers:** Where the published cost benchmarking principles are still in the process of being implemented in response to efficiency initiatives and / or other drivers.
- **Acknowledged gaps in terms of the published principles:** Where implementation of the published cost benchmarking principles either has yet to be addressed or is not applicable to the particular department. In the case that future activities to implement cost benchmarking principles are envisaged, then these are identified in the previous *Next Steps* section.

Table 2: Department of Health (P21 Framework)	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** DoH/P21 has a standard format for new build and refurbishment based on BCIS detailed (elemental) cost analysis; Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A8. Private sector comparators:*** DoH/P21 has identified potential private sector comparators. Acknowledged gaps in terms of the published principles ***A3. Additional cost data collection requirements:*** Benchmarking of "costs in use" is available via the *NHS Estates Return Information Collection (ERIC)*[6] and therefore there is no requirement to collect this data separately under the P21+ framework. This data can be used during project development to provide a suitable challenge on proposed "costs in use". ***A7. Understand the external factors affecting cost benchmarks:*** The intention is to assemble a database of health specific and industry wide factors that could affect cost benchmarks. In order to avoid a burden on projects, a generic cost adjustment will be calculated and agreed for each factor. Adjustments for significant project specific 'abnormals' will also be required to ensure valid comparisons.
Comparable Metrics	Existing practice ***B1. Adoption of Type 1 benchmarks:*** Data collection on the basis of Type 1 metrics has been in place since the establishment of the National P21 framework in 2003.

[6] http://www.ic.nhs.uk/statistics-and-data-collections/data-collections/information-about-the-nhs-workforce-estates-and-facilities-management-collections/direct-collections/estates-and-facilities-management

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Table 2: Department of Health (P21 Framework)	
Principles Category	**Progress / Commentary**
	Acknowledged gaps in terms of the published principles ***B1. Adoption of Type 1 benchmarks:*** Cost benchmarks relating to departments/functions are available within the *Health Premises Cost Guides (HPCGs)*. These can be used in conjunction with the Type 1 benchmarks.
Common Operational Approach	Existing practice ***C1. Establish effective data collection:*** The P21+ performance management plan contains a clear obligation for the provision of data by Principal Supply Chain Partners (PSCPs). Failure to comply can result in suspension from bidding for future work. Data are provided by contractors in relation to the Guaranteed Maximum Price (GMP) agreed with the NHS Trust clients. All relevant P21+ projects will provide data in this format going forward. ***C2. Establish effective data presentation:*** Elemental cost analyses are freely available for use by NHS Trust clients on future projects and available in BCIS detailed (elemental) format. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***C3. Establish effective use of data:*** Benchmarks provide the NHS with an additional level of challenge when setting the GMP. Under the P21+ framework elemental data is made available to suppliers and clients. ***C5. Enable data sharing with non-governmental organisations:*** Measures protecting commercial confidentiality are being put in place with private partners. ***C7/C8. Provide guidance on using data to inform feasibility studies and procurement:*** DoH / P21 is working with the PSCPs to develop a clear understanding of the use of benchmarks to challenge costs on

Table 2: Department of Health (P21 Framework)	
Principles Category	**Progress / Commentary**
	individual projects. The use of benchmarks supplements existing processes for evidencing value for money used within the NHS that ensure comparisons are made using data from similar projects. The publication of cost reduction trajectories has prompted the review of specifications by suppliers and clients as a means to achieve cost reductions.
Future Proofing	<u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***D1. Address the use of BIM in collecting cost data:*** The use of BIM is being driven by all PSCPs on the P21+ framework. ***D2. Control for the external factors affecting cost benchmarks:*** DoH / P21 is working with the PSCPs to ensure the effects of external legislative and policy changes are understood and taken into account during benchmarking (refer also to response against A7 above).

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Table 3: DfE / Education Funding Agency	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** EFA has a standard format for new build and refurbishment based on BCIS detailed (elemental) cost analysis. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A1. Common cost format:*** Future cost reductions will be benchmarked using the standard BCIS detailed (elemental) cost analysis.
Comparable Metrics	Existing practice ***B1. Adoption of Type 1 and Type 2 benchmarks:*** EFA has adopted Type 1 benchmarks (cost per m^2 GIFA using standard BCIS elemental cost analysis) and where relevant Type 2 benchmarks (cost per pupil).
Common Operational Approach	Existing practice ***C3. Establish effective use of data:*** Elemental benchmarks are made available to contractors, local authorities, academies suitably adjusted to take account of specific site conditions. Aggregated high level benchmarks have also been published.
Future Proofing	Acknowledged gaps in terms of the published principles ***D1. Address the use of BIM in collecting cost data:*** Though BIM is widely used by main contractors in the schools sector, it is not mandatory. Wherever possible, EFA will ensure BIM data is made available to support cost and value for money analyses.

Table 4: DEFRA / Environment Agency	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** EA can record additional data under NRM[7] items addressing main contractor's preliminaries, overhead & profit, design fees, other and risk. ***A9. Departments meet to compare data and information:*** EA and HA have started to meet periodically to exchange information and data, and identify ways to work together. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A1. Common cost format:*** EA is investigating a common infrastructure cost format with BCIS. ***A8. Private sector comparators:*** EA is seeking to identify private sector clients who construct flood defences as part of new developments, typically as a requirement of planning permission. New construction framework arrangements - which come into effect in 2013 - are open to local authorities and as part of those arrangements key project data will be requested in return. This will help populate the Project Cost Tool described under C1 below and provide a cost comparator for projects delivered by other public sector clients.
Comparable Metrics	Existing practice ***B1/B2. Adoption of Type 2 and Type 4 benchmarks:*** EA has established that Type 2 and Type 4 metrics provide the most effective way to benchmark across its projects. Acknowledged gaps in terms of the published principles ***B1. Adoption of Type 1 benchmarks:*** The use of Type 1 linear or area metrics for flood risk management work

[7] Royal Institution of Chartered Surveyors' (RICS) New Rules of Measurement (NRM).

Table 4: DEFRA / Environment Agency	
Principles Category	**Progress / Commentary**
	is problematic owing to the variety of possible solutions (embankments/walls, flood storage, diversion channels, property protection, pumping), not all of which can be usefully categorised by metre or area.
Common Operational Approach	Existing practice ***C1. Establish effective data collection:*** Primary point of data collection is currently at project out-turn and systems are being developed to record this data at business case and contract award as well. Final payment can be withheld if data is not supplied by contractors. ***C3. Establish effective use of data:*** Cost data are currently used for benchmarking supplier tenders. Following trials of the Project Cost Tool, the use of data will be progressively expanded in 2013 in three phases: Phase 1: set project benchmarks to compare tenders against; Phase 2: set project budgets for business cases; Phase 3: set Maximum Acceptable Tender Prices for tenders received under new framework arrangements. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***C1/C3. Establish effective data collection and use of data:*** EA is currently developing a Project Cost Tool which has two key objectives: • estimate project costs at key project stages; • facilitate the measurement of efficiency savings. ***C2. Establish effective data presentation:*** The Project Cost Tool will be used to develop historic project cost benchmarks and provide the main way by which EA will convey future cost expectations to suppliers. ***C3. Establish effective use of data:*** The Project Cost Tool will allow cost estimation at four specific levels

Table 4: DEFRA / Environment Agency	
Principles Category	**Progress / Commentary**
	related to project stage, with current development focused on levels 1 and 2: • Level 1: using key project outcomes to estimate costs (for use at project initiation stage); • Level 2: using outline design type information (for use at business case stage); • Level 3: for developing estimates at detailed design stage; • Level 4: for developing estimates for specific works elements. Moving forward, the most efficient process for EA's programme will be to share data between organisations and then feed it into the Project Cost Tool, so data is gathered and reviewed once and then used many times. ***C5. Enable data sharing with non-governmental organisations:*** EA is already committed to share data with non-governmental organisations on the basis of the Infrastructure Cost Review Memorandum of Understanding.
Future Proofing	<u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***D1. Address the use of BIM in collecting cost data:*** The Project Cost Tool will be integrated with EA's BIM compliant, work collaboration tool. The new Water and Environment Management (WEM) framework incorporates the need to meet Government BIM targets by 2016. ***D2. Control for the external factors affecting cost benchmarks:*** The Project Cost Tool will allow analysis of the impact of over 20 key cost drivers on project out-turn cost. These cost drivers reflect legislative or policy requirements such as environmental designations of sites and Partnership Funding, as well as timing of construction, ease of access to site, etc. Projects always have to deal with the impact of new requirements but under the constraint that the supply chain delivers more for the same cost.

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Table 5: DfT / Highways Agency	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** HA has established a 11,000 line Work Breakdown Structure (WBS) for Major Projects and a 2,500 line WBS for Maintenance. ***A2. Identify differences between sectors:*** HA already differentiates between Motorway and Trunk Road works, Roadworks and Structures in its benchmarks and has now also introduced Maintenance. ***A3. Additional cost data collection requirements:*** HA already collects pre and post contract costs i.e. Final Target Costs (FTC) and Final Actual Costs (FAC). For maintenance it collects schedule of rates and maintenance scheme costs. ***A8. Private sector comparators:*** 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 this 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. ***A9. Departments meet to compare data and information:*** HA and EA have started to meet periodically to exchange information and data, and identify ways to work together.

Table 5: DfT / Highways Agency	
Principles Category	**Progress / Commentary**
	Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A1. Common cost format:*** Possible, but needs agreement with the BCIS. HA's WBS has been submitted to the BCIS with a view to establishing a common infrastructure cost format. ***A3. Additional cost data collection requirements:*** HA has started to collect Tier 2 (subcontractor) costs and is establishing a common structure for Tier 3 (material) costs. Acknowledged gaps in terms of the published principles ***A5. Identify elements requiring further detailed cost information:*** There is scope within the HA data set to start developing benchmarks for standard highway elements or construction elements common with other sectors e.g. MoD, EA, rail infrastructure providers. ***A6. Collect data to allow benchmarking of procurement approaches:*** This could be achieved by HA, but would need the existing project characteristics to be improved. ***A7. Understand the external factors affecting cost benchmarks:*** Again this could be achieved, but would need the current set of project and item characteristics to be improved, together with the recording of the standards and specification to which each project element was designed.
Comparable Metrics	Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***B1. Adoption of Type 1 benchmarks:*** HA has published Type 1 metrics. Acknowledged gaps in terms of the published principles ***B1. Adoption of Type 4 benchmarks:*** Again this could be achieved with the current HA data set, if more work

Table 5: DfT / Highways Agency	
Principles Category	**Progress / Commentary**
	was dedicated to analysis. Also cross-department comparators would need to be agreed e.g. the cost of HA and rail overbridges or HA and MoD pavement. Common cost elements / differences to be addressed would include preliminaries, traffic management, track closures etc.
Common Operational Approach	<u>Existing practice</u> ***C1. Establish effective data collection:*** HA has established points at which prices and costs are collected from suppliers. ***C3. Establish effective use of data:*** HA has an established process for using the data during the negotiation of future contract prices. ***C7. Provide guidance on using data to inform feasibility studies:*** HA uses £/m^2 metrics during the FTC negotiation process. During scheme development HA uses three point estimating based on the collected data sets. ***C8. Provide guidance on using data to inform procurements:*** HA has a methodology for using these metrics during the procurement process. <u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***C4 / C5. Enable data sharing with government and non-governmental organisations:*** HA is already committed to share data with non-governmental organisations on the basis of the Infrastructure Cost Review Memorandum of Understanding. Possible areas of comparison between HA and other infrastructure organizations include embankments and structures.

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Table 5: DfT / Highways Agency	
Principles Category	**Progress / Commentary**
	Acknowledged gaps in terms of the published principles: ***C2. Establish effective data presentation:*** Reporting points have not yet been established for a set of item or highway prices.
Future Proofing	Existing practice ***D2. Control for the external factors affecting cost benchmarks:*** HA has the ability to collect characteristics about projects and Bills of Quantity items. Acknowledged gaps in terms of the published principles ***D1. Address the use of BIM in collecting cost data:*** HA is in discussion with the BIM programme team to understand their requirements for BIM information files. HA has yet to address the use of BIM in collecting cost data or how it could be dovetailed with the existing Cost Information Model (CIM).

Table 6: DCLG / Homes & Communities Agency	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** Since April 2011 data has been captured on construction projects funded by HCA through the Affordable Homes Programme, using categrories closely aligned to the BCIS TPISH[8] data. The structure will be changed for data captured from January 2013, bringing it in line with the RICS NRM. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A8. Private sector comparators:*** HCA is in discussions with private sector developers to establish pilot projects to demonstrate innovative forms of construction and procurement. Through this activity, HCA is also seeking to establish effective cost benchmarks against which to make comparisons. Further discussions are to also take place with BCIS to establish how the costs of social housing and privately developed housing can be meaningfully compared.
Comparable Metrics	Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***B1. Adoption of Type 1 benchmarks:*** Benchmark information on the basis of aggregated £/m^2 has been adopted and will be used to inform discussions with providers on efficient procurement. ***B2. Adoption of Type 4 benchmarks:*** By changing the classification of costs to bring them in line with NRM, HCA will lose the ability to directly compare previous elemental costs but will benefit from the clearer definitions and more consistent data being entered by providers.

[8] Tender Price Index of Social Housing.

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Table 6: DCLG / Homes & Communities Agency	
Principles Category	**Progress / Commentary**
Common Operational Approach	Existing practice ***C1. Establish effective data collection:*** Cost data is captured as part of the application process for funding HCA's providers - who then contract for construction - at start on site and practical completion. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***C3. Establish effective use of data:*** Through HCA's quarterly contract review process with its 140 delivery partners - who contract for construction materials and services - this data will be used to benchmark the costs of individual schemes and the overall programme for each provider. In this way, differences in costs against previous schemes and similar schemes by other providers will be discussed with a view to identifying and encouraging efficient practices and how further efficiencies can be achieved.
Future Proofing	Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***D1. Address the use of BIM in collecting cost data:*** HCA is working with the National Housing Federation to establish a working group for promoting the use of BIM within the sector.

Table 7: Ministry of Defence	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** The majority of MoD Capital Work contracts require that tenders be submitted in BCIS elemental format and that Maximum Price Target Cost (MPTC) arrangements require profit and overheads to be shown separately. ***A2. Identify differences between sectors:*** MoD already attempts to compare many of its facilities with other sectors, primarily through the use of the BCIS database. In performing such comparisons, MoD specific *'abnormals'* – for example, Counter Terrorist Measures (CTM), enhanced security restrictions etc - are identified and as far as possible stripped from the costs, to create a meaningful 'like-for-like' comparison. MoD is seeking currently to further standardization this approach across the organisation. ***A3. Additional cost data collection requirements:*** For some types of construction, Whole Life Cost forecasts are provided in support of Tender Submissions. ***A4. Identify standard project descriptions or categories:*** All MoD building 'Usage Codes' have been aligned with comparable facilities in the CI/SfB[9] codification system adopted by the BCIS. Whilst some facilities align fairly closely, others require more involved analysis, often requiring amalgamation of functions to replicate an MoD equivalent. ***A6. Collect data to allow benchmarking of procurement approaches:*** In using the BCIS database, MoD is following accepted convention by populating the 'Market Conditions' section of the Elemental Analysis. This

[9] CI/SfB is a widely used classification system for building information.

Table 7: Ministry of Defence	
Principles Category	**Progress / Commentary**
	includes detail such as: Selection of Contractor; Number of Tenders; Type of Contract; etc, thereby enabling differentiation/comparison of results between procurement approaches. <u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***A1. Common cost format:*** MoD is currently regularizing its approach against the BCIS Standard Form of Cost Analysis (SFCA) conventions and uploading corresponding costs to the BCIS database. Additional resource has been made available, with 54 projects now 'regularised' and uploaded. Work is also underway to utilise the BCIS Standard Form of Civil Engineering Cost Analysis (SFCECA), developed jointly by MoD and BCIS (currently undergoing industry consultation). This analysis will form the basis of a 2009/10 baseline for airfield pavements. ***A2. Identify differences between sectors:*** As the GCS benchmark data is developed, associated guidance will also be developed as to how 'Abnormals' should be considered. ***A3. Additional cost data collection requirements:*** A limited amount of analysis has already been carried out into the cost of pre-contract design work with further work to be undertaken. Some areas of MoD also require contractors to submit proposals in a 'Linear Bill' format, providing total transparency as to how costs have been formulated (incl. quantities, unit rates, assumptions, uncertainties etc). The level of detail afforded by this approach is considered to greatly assist in: the understanding of cost drivers and levels of inherent uncertainty; the identification of 'Abnormals; more accurate alignment with available benchmark data. MoD's Next Generation Estate Contracts (NGEC) will look to identify and build on best practice to arrive at a corresponding standard approach across the organisation.

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Table 7: Ministry of Defence	
Principles Category	**Progress / Commentary**
	A7. Understand the external factors affecting cost benchmarks: MoD is seeking to quantify the financial impacts of Sustainability and the recent introduction of Part L1A (Oct 2010) of the Building Regulations. This is considered particularly pertinent when the majority of historic baseline cost data predates such legislative changes. <u>Acknowledged gaps in terms of the published principles</u> ***A7. Understand the external factors affecting cost benchmarks:*** With other departments more advanced in the introduction of BIM, any analysis of initial outlay against potential / actual payback would be of interest. ***A8. Private sector comparators:*** MoD has identified student living accommodation and airfield pavement works as prime candidates for exchanging data and making comparisons with private organisations.
Comparable Metrics	<u>Existing</u> ***B1. Adoption of Type 1 and Type 2 benchmarks:*** In addition to Type 1 £/m^2 GIFA, MoD also uses Type 2 metrics where appropriate. For Single Living Accommodation (SLA), MoD has already published £/bed and m^2/bed, as these are considered to add an additional design efficiency perspective not reflected by £/m^2 alone. <u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***B1. Adoption of Type 1 and Type 2 benchmarks:*** Formulation of MoD benchmarks for Housing, Airfield Pavements, Storage and Engineering Workshops is ongoing. ***B2. Adoption of Type 4 benchmarks:*** MoD is in the process of sharing Type 4 metrics with other departments in line with standard BCIS conventions that permit meaningful comparisons.

Table 7: Ministry of Defence	
Principles Category	**Progress / Commentary**
Common Operational Approach	Existing practice ***C1. Establish effective data collection:*** For the majority of MoD Capital Works, Contractors are obliged to submit tenders using BCIS elemental conventions. In some areas, contractors have been requested to provide additional degrees of transparency, such as the 'Linear Bill' or variants thereof (see A3 above). There have been varying degrees of success in getting contractors to submit out-turn costs in the same BCIS elemental format. ***C7. Provide guidance on using data to inform feasibility studies:*** The BCIS database, via the 'alignment' process, is one of the most widely used tools in MoD's development of cost estimates, whether these be on the basis of *top down* £/m^2 or *bottom up* elemental or unitary costs. ***C8. Provide guidance on using data to inform procurements:*** MoD has examples where robust challenge, supported by meaningful comparative data, has succeeded in influencing negotiations where there has been early contractor engagement. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***C1. Establish effective data collection:*** MoD is currently working to establish benchmark data based on costs at Contract Award. Acknowledged gaps in terms of the published principles ***C1. Establish effective data collection:*** There is a downstream aspiration to consider costs at out-turn, subject to available resource and priorities. ***C3. Establish effective use of data:*** MoD recognizes the need to refine the means by which varying trends in

Table 7: Ministry of Defence	
Principles Category	**Progress / Commentary**
	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). ***C4. Enable data sharing with other government organisations:*** There is an intention to use the Medical facilities within the Defence Infrastructure Programme (DIP) as a test case, to establish data availability and the actions required to facilitate effective sharing.
Future Proofing	<u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***D1. Address the use of BIM in collecting cost data:*** MoD is at a very early stage of BIM introduction. ***D2. Control for the external factors affecting cost benchmarks:*** MoD has identified a need to consider recent changes to Part L of the Building Regulations (L1A Oct 2010) in terms of establishing a possible counterfactual adjustment in reporting actual cost reductions (refer to A7 above).

Table 8: Ministry of Justice	
Principles Category	**Progress / Commentary**
Common Overarching Approach / Taxonomy	Existing practice ***A1. Common cost format:*** MoJ has established a common cost format, similar to BCIS. This includes 18 high level elements including profit, overheads, risk, client fees, client risk and escort costs. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***A7. Understand the external factors affecting cost benchmarks:*** Through MoJ's existing Cost Component Breakdown (CCB), it will be possible to assess the impact of external factors.
Comparable Metrics	Existing practice ***B1. Adoption of Type 1 and Type 2 benchmarks:*** MoJ has adopted Type 1 and Type 2 benchmarks in the form of cost per m^2 GIFA and cost per place. Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***B2. Adoption of Type 4 benchmarks:*** Through its existing Cost Component Breakdown, MoJ will access and share Type 4 benchmarks.
Common Operational Approach	Existing practice ***C1. Establish effective data collection:*** MoJ already collects cost data at the following stages: Outline Business Case (OBC), Initial Project Proposals and Agreed Maximum Price. When a project reaches Final Account (FA), these costs are also collected. Pricing / collection document is part of tender package. ***C2. Establish effective data presentation:*** High level data is already presented back to supply chain with

Table 8: Ministry of Justice	
Principles Category	**Progress / Commentary**
	projects grouped / anonymised to maintain commercial confidentiality. New Strategic Alliance Agreement (SAA) constructors have already been shown MoJ's cost reduction trajectory and understand what is expected of them. MoJ also has a corresponding target to increase the product by 10% percent year on year for the foreseeable future. ***C3. Establish effective use of data:*** Data is already used internally to benchmark projects at designated milestones. Emphasis with new SAA is total visibility of supply chain. New SAA CCB captures supply chain information to ensure all work packages are tendered correctly, have an adequate number of tenderers and a corresponding adequate number of returns. Constructor overheads and profit as tendered for the new SAA cannot be exceeded throughout the life of the SAA, while average supply chain overheads and profits have similar controls. In future these measures will be used to drive savings. <u>Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers</u> ***C1. Establish effective data collection:*** Data are soon to collected at OBC for OBC costs. ***C7. Provide guidance on using data to inform feasibility studies:*** Methodology for applying cost data during feasibility stage is currently under development. <u>Acknowledged gaps in terms of the published principles</u> ***C4. Enable data sharing with other government organisations:*** Commercial data – contractor and supply chain overheads, profit, site overheads – cannot be shared across contractors or with other government organisations without currently breaching agreements on confidentiality. A possible solution would be to ensure complete anonymity - e.g. no establishment, project or project team identity to be given - and therefore to only

Cost Benchmarking Principles: Departmental Progress Update

Table 8: Ministry of Justice	
Principles Category	**Progress / Commentary**
	report on the basis of project type.
Future Proofing	Ongoing activity in response to GCS / Infrastructure Cost Review / published principles / other efficiency drivers ***D1 / D2. Address the use of BIM in collecting cost data and control for the external factors affecting cost benchmarks:*** MoJ's Cost Component Breakdown is starting to be used in conjunction with BIM and to control for the effects of changes in legislation or other key variables, such as changing business or quality requirements.

PROGRESS BY DEPARTMENT: DETAILED REPORT

Table 9 within this section sets out the detailed responses provided by departments against each of the cost benchmarking principles published February 2012. Responses are categorised as follows:

Y = already implemented;

IP = in progress;

NYC = not yet commenced / future activity.

Cost Benchmarking Principles: Departmental Progress Update

Table 9: Detailed report on progress made by departments in implementing the cost benchmarking principles published February 2012		Department of Health (P21 Framework)	DfE / Education Funding Agency	DEFRA/ Environment Agency	DfT/ Highways Agency	DCLG/ Homes & Communities Agency	Ministry of Defence	Ministry of Justice
A)	**Achieve a Common Overarching Approach and Taxonomy**							
A1	Adopt a common cost summary analysis format for the purpose of mandating to clients and industry such as that used by the Building Cost Information Service (BCIS) or similar for infrastructure.	Y	Y	IP	Y	Y	Y	Y
A2	Identify against the common cost summary where differences will occur between different sectors.	IP	IP	IP	Y	IP	Y	Y
A3	Establish additional cost data collection requirements e.g. pre-contract and Whole Life Costs (consideration to be given to the RICS New Rules of Measurements additional cost categories).	N/A	Y	N/A	IP	IP	IP	N/A
A4	Identify standard project descriptions or categories that can be common to any data set to assist in identifying comparable project types used across sectors, including the private sector, for possible benchmarking purposes.	IP	Y	IP	IP	Y	Y	IP
A5	Within the cost summary data set, identify elements which need further detailed cost information that supports further analysis e.g. Ministry of Justice's Cost Component Breakdown approach.	N/A	NYC	NYC	NYC	N/A	IP	N/A
A6	Identify approaches to data collection to allow benchmarking of procurement approaches, e.g. Design & Build, Frameworks, Cost Led Procurement.	N/A	Y	NYC	NYC	IP	Y	NYC
A7	Establish a method for assessing the effect of legislative, technical changes or Government policies (e.g. BIM) that could be expected to flow through to construction costs may impact on costs, to build a reliable comparator database.	IP	NYC	IP	NYC	N/A	NYC	IP
A8	Identify possible private sector comparators of building types worthy of future consideration to identify any cost differences e.g. living accommodation vs. hotels.	IP	Y	IP	Y	NYC	NYC	Y
A9	Government Departments to meet on a regular basis to discuss current trends in costs, contractor's intelligence, new work practices.	IP	IP	Y	Y	NYC	IP	IP
B)	**Achieve Comparable Metrics**							
B1	a) Adopt Type 1 comparable metrics and cost component breakdowns based upon BCIS (or similar for infrastructure): assumed to be £ per m^2 (or £ per m), ensuring the constituent cost build up is commonly understood.	Y	Y	N/A	IP	Y	IP	Y
	b) Identify Type 2 (sector specific, business outcome per £) metrics, e.g. £ per pupil, £ per teaching area (as a ratio of the whole GIFA), Flood Damage Avoided £ / Investment £ etc.	N/A	Y	Y	Y	Y	IP	Y
B2	Identify Type 4 (element specific) metrics : a) Break down £ per m^2 to 'meaningful' comparator elements (e.g. kitchens) and appropriate measures (e.g. percentage of build cost) to be used across sectors.	N/A	IP	Y	IP	NYC	IP	IP
	b) Identify common project types across various sectors offering 'meaningful' analysis of where elements command a greater or lesser proportion of overall spend relative to others (e.g. professional fees, preliminaries etc) to provide meaningful comparisons	IP	IP	IP	IP	NYC	IP	IP

Cost Benchmarking Principles: Departmental Progress Update

Table 9: Detailed report on progress made by departments in implementing the cost benchmarking principles published February 2012		Department of Health (P21 Framework)	DfE / Education Funding Agency	DEFRA/ Environment Agency	DfT/ Highways Agency	DCLG/ Homes & Communities Agency	Ministry of Defence	Ministry of Justice
C) Achieve a Common Operational Approach								
C1	For *data collection* establish: ▪ Timing of collection (e.g. feasibility, contract award, out turn costs);	Y	Y	Y	Y	Y	Y	Y
	▪ Requirements to be placed upon client and contractor to report back;	Y	Y	Y	Y	Y [1]	Y	Y
	▪ Potential leverage mechanisms to ensure data is made available by suppliers (e.g. linked to release of payments, pre-qualification for future schemes, eligibility for future framework projects, etc. – aligned with contract structures for existing and future contracts).	Y	Y	Y	Y	Y [1]	Y	Y
C2	For *data presentation* establish: ▪ Comparable format for presenting data back to future clients/contractors, especially use of Type 2 metrics that offer a meaningful comparison (e.g. need to establish whether relevant relationships exist between sector specific measurements, such as £ per prisoner vs. £ per pupil);	Y	Y	IP	NYC	IP	NYC	Y
	▪ Level of detail to be set out;	Y	Y	IP	NYC	IP	NYC	Y
	▪ Comparable metrics to be included, as far down as is practicable and value adding (e.g. headline elemental, or down to sub-elements).	Y	Y	IP	NYC	N/A	NYC	Y
C3	For *data use* establish: Define potential uses of data, to emphasise value of both gathering and disseminating benchmark information:	-	-	-	-	-	-	-
	▪ Sharing of data should ensure a consistent challenge to contractors working across Government;	Y	Y	IP	IP	IP	NYC	Y
	▪ Cumulative effect of the challenge will be to improve value for money when applied consistently and systematically;	Y	Y	IP	Y	IP	IP	Y
	▪ Specific data use for budgeting process: empirical data sets with which to model capital programmes for both annual process and CSR negotiations.	N/A	NYC	IP	Y	NYC	NYC	NYC
	▪ Project specific: data sets to assist in delivery of best VfM outcomes on project by project basis.	Y	Y	IP	Y	Y	IP	Y
	▪ Periodic publication as part of the transparency agenda and in support of industry innovation.	Y	Y	Y	Y	Y	IP	Y
C4	Enable data sharing across Government (i.e. people should actively seek to share data, and to investigate what is available from others before commencing feasibility), while making clear how it should be used (i.e. need to ensure commercial confidentiality, etc.).	IP	Y	IP	IP	IP	NYC	NYC
C5	To enable sharing of data with non-governmental organisations, a legal document such as a Memorandum of Understanding may be required, which would enshrine measures to ensure commercial confidentiality etc.	Y	NYC	Y	IP	NYC	IP	NYC
C6	Sharing process to be defined in more detail, for example: ▪ Department commences development of a project; ▪ Consults list of contact names and (ideally) available data sources by work type (e.g. single living accommodation, school, teaching hospital, outpatient unit, etc.) to choose the most relevant data set;	NYC	IP	IP	IP	N/A [2]	NYC	NYC

Table 9: Detailed report on progress made by departments in implementing the cost benchmarking principles published February 2012		Department of Health (P21 Framework)	DfE / Education Funding Agency	DEFRA/ Environment Agency	DfT/ Highways Agency	DCLG/ Homes & Communities Agency	Ministry of Defence	Ministry of Justice
	▪ Contacts relevant owner of data to request release of current data sets; ▪ Data provided in common format; ▪ Data used to develop outline project costs; ▪ Data used again during procurement and prior to contract award.							
C7	Guidance on methodology for applying benchmark data during the feasibility process when developing cost model, for example: ▪ Initial estimation of total cost envelope on *top down* £/m^2 basis, triangulated by using relevant Type 2 metrics; ▪ More detailed estimation using Type 4 elemental costs, on *bottom up* basis.	Y	Y	IP	Y	N/A [2]	Y	IP
C8	Guidance on use of data during the procurement process, for example: ▪ Communication of cost expectations relating to frameworks and programmes of work (e.g. downward cost glidepath);	Y	NYC	IP	Y	IP [3]	NYC	Y
	▪ To inform tender documentation, especially specifications;	Y	Y	IP	Y	N/A [2]	Y	Y
	▪ For confirmation that bidders' elemental cost plans achieve cost expectations, with reference to quality being achieved, allowing a direct challenge to be made (a challenge that in some cases might also usefully inform the strategic dialogue between Government and significant suppliers).	IP	Y	IP	Y	N/A [2]	Y	IP
D)	**Future Proofing**							
D1	Address the use of BIM and any impacts on financial data collection, i.e. elemental or by work package or other.	Y	NYC	IP	NYC	N/A [2]	NYC	Y
D2	Retain flexibility to control for the effects of changes in legislation or other key variables – such as changing business or quality requirements - that may affect some sectors more than others, potentially distorting the data (e.g. reduction of regulatory burden in education sector might produce lower costs that cannot be immediately replicated in health).	Y	Y	IP	Y	NYC	NYC	Y

Notes:

[1] HCA has no direct contractual relationship with the construction supply chain. All information requirements therefore relate to HCA funded social housing providers.

[2] With reference to Table 1, a next step has been established to determine whether further support and influence is required to ensure social housing providers can fully benefit from implementing these principles.

[3] Status given is as principle relates to HCA's initial allocation of funding to, and subsequent periodic contract management discussions with, social housing providers.

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