

# Department for Education and Skills Schools Building and Design Unit

## Education Building Projects: Information on Costs and Performance Data, April 2003.

**To:** Local Authority and Diocesan Directors of Education, Local Authority Associations, the national bodies concerned with Voluntary Aided and Special Agreement schools, and the Chief Architects, Quantity Surveyors, or Property Advisers of Local Education Authorities.

**Introduction** The primary aim of this publication is to provide guidance and comparative performance data to assist authorities in continuing to obtain value for money in the design and construction of educational buildings. It is hoped that these cost guidelines will help to establish cost baselines which will ensure that all new school buildings across the country are built to similar high standards.

The intention is not to encourage a standard model of school design: each project will vary according to local conditions, needs and priorities. Rather, the purpose is to stimulate authorities to review their planning and design briefs and to help focus resources where they can have maximum impact on raising standards.

### **This document provides**

- Guide Costs for school building work (Table 1) and commentary
- LEA and Voluntary aided project performance table (Table 2) and commentary.
- Analysis of cost standards in LEA school building projects 1996-2001 (Figures 1 – 3)
- A summary of energy and water benchmarks for maintained schools in England 2000/2001
- A synopsis of Building Bulletin 93 (Acoustic design of Schools) which is due to be published in the spring.
- The secondary school cost study (Annex A)
- A list of LEA reference numbers (Table 3).

# Building Guide Costs

Table 1 below provides an indicative unit cost for both the primary and secondary sectors. The Department intends to use these values for reference when scrutinising cost standards in grant-aided school projects, PFI Outline Business Cases, Academies and Targeted Capital Funding.

**Table 1. Building Guide Costs per m<sup>2</sup> at Q1 2003 prices**

	DTI Pubsec Index 1Q 2003
Primary School Projects	£1,080 / m <sup>2</sup>
Secondary School Projects	£1,080 / m <sup>2</sup>

## Building Guide Costs in Table 1

The costs given relate to DTI PUBSEC indicative index 141 at Q1 2003. The value given for Secondary school projects reflects the findings of independent research by Schools Building and Design Unit (SBDU) into recently completed new secondary school projects. This report is included in this document at Annex A. This study standardised costs at 3Q 2002 in absolute terms at £1025/m<sup>2</sup> but this was increased to £1050/m<sup>2</sup> to include design aspirations, innovation and sustainability issues. This figure has Ministerial approval. For the purposes of this document we have updated this figure to 1Q 2003 price levels.

Comparison with the previous cost and performance data publication (March 2000) will show that this latest guide cost is significantly higher in real terms than before. Historically we have analysed the costs of projects undertaken within the previous five years to ascertain a published guide cost, which has normally been set at the median value between the middle and lower quartiles. This methodology has always

attracted criticism from many quarters, especially for secondary projects, so for a number of reasons outlined further on we are recommending a substantial increase to the previous guide cost.

The steering group advising SBDU on the secondary school study have indicated that this new cost benchmark should enable all new schools to be built to the 'schools for the future' standard.

The exemplar designs that SBDU is currently developing will be based on the new cost guideline.

Since March 2000 the tender price index has increased by 23%, considerably more than the general rate of inflation. In this period there have also been changes in legislation and constructional standards, as well as increasing demands for IT systems with the implication that this has for design. Tender costs are forecast to rise at a similar annual rate during 2003.

We intend to undertake this year a review of primary school projects in much the same way as we did for secondaries. In our previous cost and performance data publications we have always reported higher guide costs for primary schools. This may have been primarily due to diseconomies of scale; primary schools are essentially much smaller than secondaries and are generally single storey structures which would normally command a higher unit cost. On the other hand, primary schools are generally simpler buildings, with fewer specialist areas, so one would expect costs to be lower than secondary schools.

Until the primary school study is complete we will not know for sure at what level to pitch the

primary guide cost, but for 2003/4 we are recommending a similar unit cost for primary school projects as for secondaries.

These guide costs should provide reasonable and achievable target costs for use in the cost planning of new schools. This is a significantly higher figure in real terms in comparison with earlier guide costs, and reflects to an extent the higher standard of public buildings which are expected at this time. The cost will allow for higher design aspirations, innovation and sustainability, and cover the higher specification for environmental and energy efficiency standards which have recently come into effect. In addition, the current pressure to adhere to 'best value' has tended to increase capital costs recently. The relatively generous guide cost is intended to give developers an opportunity to consider slightly more expensive initial solutions with better quality materials in order to procure accommodation with subsequently lower maintenance costs. It would also allow higher standards of insulation which will help reduce running costs.

We have developed an excel spreadsheet for costing new secondary schools which will help authorities in their cost planning. It is available at the website address at the end of this section. We will develop a primary sector spreadsheet once we have undertaken a similar cost study.

We intend to carry on using the DTI (formerly DETR) index for the time being, but are considering a move toward using the BCIS all in tender price index in future, for a variety of reasons. Professional consultants involved in education projects will generally have easier access to BCIS information. At the moment there is a slight disparity between the indices.

The guide cost above is in respect of basic building only, and excludes the cost of:

- 'Abnormal' substructure costs (i.e. the proportion of the total substructure costs over £69m<sup>2</sup> at Q1 2003 prices)
- External works
- Furniture and fittings whether built-in or loose
- Equipment, whether fixed or loose
- ICT infrastructure or hardware
- Professional Fees and VAT.

If used as the basis for project cost planning, the guide cost should be adjusted to take account of tender date, location and contract size factors. The guide cost should be adjusted to reflect tender price movements by reference to the DTI pubsec index, which is widely available (see below). Adjustments for location may be made by reference to the BCIS. Currently the highest location factor is 50% above the lowest location factor in England. Adjustments for contract size should also be made by further reference to the BCIS. It should be noted that for relatively small school extensions the unit rate could therefore increase significantly.

Other factors affecting costs will include design, specification, planning requirements, site conditions, timescale and phasing of the works. The guide values for primary and secondary are intended to relate to substantial projects providing the usual mix of accommodation types. Actual costs may therefore be higher in schemes providing disproportionately more specialist accommodation.

Since exemption from Building Regulations was ended in April 2001 the requirement to submit projects for approval using either ABBX or ABBY forms has been removed. The department has therefore not been receiving the respective project data on LA1 forms since that date. We have therefore suspended the collection of data using LA1 forms and are currently reviewing our data collection procedures. The revised procedure will probably involve analysis of sample data collected for AMP purposes but we have yet to finalise these new arrangements and are still considering the different options.

The format and content of future cost and performance data publications will alter significantly in the future. In part it will depend on the methodology employed for data collection, which has yet to be determined.

## Table 2: Project performance.

Table 2 covers major projects, both LEA and voluntary aided, for which details have been received by the Department on either LA (Building)1 or VA (Building)1 forms since the last performance publication in March 2000. The tender dates for these projects range from March 98 through to June 2001. It should be emphasised that the data in this table has not been used to formulate the current guide cost; as discussed earlier the current agenda is to increase the design quality to public buildings.

Apart from the following, the table should be largely self-explanatory:

- The gross tender cost value in Column 8e is derived by the total sum of the values in Columns 8a - 8d.

- The guideline gross area per pupil value in column 6f gives the gross area standard derived from the higher formulae given in Appendix 4 of DfES's original BB82 publication: 'Area Guidelines for Schools', which has recently been redrafted. While aimed principally at new school projects, this indicator may also be used as a reference for area standards in adaptation and extension schemes, though it may be necessary to allow for greater spatial inefficiency in these projects.
- The standardised new building cost shown in Column 9b was derived by standardising the actual cost of new building work, shown in 8a, adjusting for tender price index to 3Q 2002 using the DTI Pubsec index (which was 135 at the time of preparation) and adjusting for location. Adjustments, however, have not been made for the size of the contract, either in terms of value or new build area. A 'normal' size contract is considered to be of about £1m for the primary sector. This explains why some of the smaller projects appear to have a relatively high cost/m<sup>2</sup> on occasion. This indicator enables the cost of similar projects in the table to be compared on a common basis.
- The LEA project reference identifies schools uniquely. The first three digits relate to the LEA code which is listed in table 3.

## Provision of tender price information.

It is essential for the reliability of the education component of the PUBSEC index that LEA and Diocesan authorities continue to provide DTI with sufficient priced Bills of Quantities each quarter for indexing purposes. The Department is very grateful to authorities for their co-operation in this respect over the years, and details should be provided to the DTI at the following address

Tender Indexing Section  
Construction Directorate  
Department of Trade and Industry  
Bay 395 151 Buckingham Palace Road  
London SW1W 9SS

The PUBSEC index is produced for the DTI by Tudorseed Construction, publishers for the BRE. The full title of the publication is:

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**Table 2: Project Performance Table**

GENERAL DETAILS																				AREA DETAILS					COST DETAILS							
1 LEA Project reference	2 Tender Date	3 Project Type	4 Age Range	5a 5b 5c Places when Project Complete			6a Teaching Area m <sup>2</sup>	6b Gross Area m <sup>2</sup>	6c Teaching Area per pupil m <sup>2</sup>	6d Gross Area per pupil m <sup>2</sup>	6e Ratio Teaching to Gross %	6f Guideline Gross Area per pupil m <sup>2</sup>	7 Area New Accom m <sup>2</sup>	8a New Building £	8b Other Building £	8c Furniture & Fittings £	8d External Works £	8e Gross Tender Cost £	9a New Building Cost/m <sup>2</sup> £	9b Standardised New Building Cost/m <sup>2</sup> £												
				Nursery	5 - 16	OSLA																										
<b>Secondary Establishments</b>																																
307 2059	29-Nov-00	Adaptation & Extension (8)	3 - 11	25	315	898	1,548	2.64	4.55	58	4.39	340	562,817	67,503	22,440	186,517	839,277	1655	1443													
307 2167	05-Apr-00	Extension (4)	3 - 11	50	630	1,600	2,947	2.35	4.33	54	4.09	648	834,799	52,184	20,178	116,483	1,023,644	1288	1206													
308 2011	23-Mar-98	Extension (4)	4 - 6	30	270	895	2,159	2.98	7.20	41	4.47	261	239,000	10,000	6,000	55,000	310,000	916	743													
308 2073	16-Sep-98	Adaption & Extension (8)	5 - 11		840	2,143	4,033	2.55	4.80	53	4.04	404	570,000	20,000	50,000	75,000	715,000	1411	1487													
330 2010	04-Dec-00	Extension (4)	5 - 11		510	1,477	2,247	2.90	4.41	66	4.19	586	856,145	11,895	21,261	77,446	966,747	1461	1470													
352 2008	23-Nov-99	Adaption & Extension (8)	3 - 11	30	204	1,012	2,099	4.32	8.97	48	4.65	118	122,378	420,580	0	118,087	661,045	1037	1253													
805 2189	13-Dec-99	Extension (4)	2 - 11	39	411	1,819	2,859	4.02	6.31	64	4.24	1082	852,167	70,773	22,000	81,000	1,025,940	788	952													
815 3099	11-Jan-99	Extension (4)	5 - 11		59	261	360	4.42	6.10	72	7.19	156	185,570	17,182	1,300	10,740	214,792	1190	1381													
830 2254	22-Feb-00	1st Instal. New School (2)	3 - 7	121	177	767	2,130	2.57	7.15	36	4.47	1753	1,477,959	102,765	55,160	383,407	2,019,291	843	846													
840 2001	17-Apr-00	New School (1)	3 - 11	26	210	639	1,260	2.71	5.34	51	4.65	1260	831,250	26,890	65,945	172,752	1,096,837	660	759													
850 2063	21-Oct-98	Extension (4)	4 - 7		264	504	1,132	1.91	4.29	45	4.56	268	241,654	0	3,589	35,669	280,912	902	985													
850 2085	04-Jul-00	Adapt.,Extens. & Other (9)	3 - 11	7	68	219	437	2.92	5.83	50	6.47	152	223,119	27,451	3,163	21,351	275,084	1468	1352													
850 2778	20-Jan-00	Extension (4)	5 - 11		630	1,812	2,650	2.88	4.21	68	4.12	580	650,603	26,399	22,414	132,329	831,745	1122	1037													
850 3004	25-Jan-00	Extension (4)	5 - 11		221	656	1,060	2.97	4.80	62	4.70	210	189,181	0	3,053	14,462	206,696	901	930													
850 3040	26-Jul-00	Adapt.,Extens. & Other (9)	3 - 11	15	92		635		5.93		5.67	403	302,532	71,737	11,180	30,276	415,725	751	738													
861 2001	20-Nov-00	New School (1)	3 - 11	52	420	1,242	2,090	2.63	4.43	59	4.22	2090	1,980,336	0	70,800	238,864	2,290,000	948	1042													
873 2014	11-Sep-00	Adaption & Extension (8)	5 - 9		222	686	1,284	3.09	5.78	53	4.70	400	325,440	55,700	7,820	53,430	442,390	814	853													
873 2069	19-May-00	Extension (4)	5 - 11		117	417	808	3.56	6.91	52	5.51	188	187,251	0	750	29,337	217,338	996	1048													
873 2080	24-Aug-00	Extension (4)	5 - 11		100	317	619	3.17	6.19	51	5.80	226	195,414	460	9,173	21,525	226,572	865	791													
873 2090	19-May-99	Adaptation & Extension (8)	5 - 11		185	513	969	2.77	5.24	53	4.88	317	199,623	53,172	6,225	27,170	286,190	630	715													
873 2110	26-Feb-01	Adaptation & Extension (8)	5 - 11		420	1,089	2,998	2.59	7.14	36	4.28	534	554,026	61,813	9,963	130,622	756,424	1038	1064													
873 2222	20-Dec-00	Adaptation & Extension (8)	5 - 11		174	552	1,134	3.17	6.52	49	4.95	381	340,619	31,298	8,208	70,875	451,000	894	909													
873 2444	12-Mar-01	Adaptation & Extension (8)	5 - 11		420	1,112	2,023	2.65	4.82	55	4.28	892	731,418	30,872	46,148	57,430	865,868	820	834													
873 3008	27-Sep-99	Extension (4)	5 - 11		132	408	785	3.09	5.95	52	5.32	371	263,536	1,050	7,100	4,790	276,476	710	774													
873 3014	16-Feb-00	Adaptation & Extension (8)	5 - 11		219	648	1,110	2.96	5.07	58	4.71	333	265,210	35,130	7,350	29,268	336,958	796	840													
873 3046	29-Sep-00	Extension (4)	5 - 11		207	552	984	2.67	4.75	56	4.77	259	242,910	0	0	24,024	266,934	938	1047													
878 3007	02-Jun-99	Extension (4)	8 - 12		333	1,208	1,672	3.63	5.02	72	4.40	339	278,488	13,054	8,700	26,108	326,350	822	959													
881 2005	28-Jun-00	Adaptation & Extension (8)	5 - 11		314	881	1,312	2.81	4.18	67	4.44	163	273,744	138,319	18,355	10,504	440,922	1679	1584													
881 3243	11-Jun-01	Extension (4)	4 - 11		129	483	954	3.74	7.40	51	5.35	349	458,926	0	14,745	5,989	479,660	1315	1236													
881 3250	13-Dec-00	New School (1)	5 - 11		210	632	1,120	3.01	5.33	56	4.75	1120	1,100,034	1,650	32,205	394,991	1,528,880	982	898													
882 2015	27-Jul-00	Extension (4)	3 - 11	78	555	1,724	2,854	2.72	4.51	60	4.12	552	593,257	4,000	8,000	15,000	620,257	1075	1077													
888 2089	30-Jun-00	Adaptation (3)	4 - 11		420	1,154	2,118	2.75	5.04	54	4.28		0	884,000	0	52,000	936,000															
908 2700	18-Feb-00	Adaptation & Extension (8)	3 - 11	22	429						4.24	220	199,526	51,293	0	22,049	272,868	907	1096													
916 2046	21-Jan-00	Extension (4)	5 - 11		240	1,136	1,772	4.73	7.38	64	4.63	180	179,409	17,719	6,800	3,742	207,670	997	1117													
916 2181	11-Nov-99	New School (1)	5 - 11		120	383	689	3.19	5.74	56	5.47	689	711,344	0	38,547	348,829	1,098,720	1032	1176													
916 3028	10-Feb-00	Adaptation & Extension (8)	5 - 11		226	712	1,151	3.15	5.09	62	4.68	64	134,508	58,918	2,254	5,482	201,162	2102	2404													
916 3077	13-Jan-00	Extension (4)	5 - 11		434	1,094	1,803	2.52	4.15	61	4.26	335	311,233	10,676	13,864	20,118	355,891	929	1041													
936 2959	24-Mar-99	Adaptation (3)	5 - 11		330	1,573	2,351	4.77	7.12	67	4.41	101	116,792	115,912	1,222	17,423	251,349	1156	1193													
938 2090	21-Nov-00	Adaptation (3)	8 - 12		361	1,781	3,222	4.93	8.93	55	4.35		0	437,198	0	116,800	553,998															
938 2100	03-Mar-00	Extension (4)	8 - 12		435	1,439	2,359	3.31	5.42	61	4.26	345	213,028	3,679	0	78,317	295,024	617	665													
938 2120	21-Nov-00	Adaptation (3)	5 - 8		239	784	1,410	3.28	5.90	56	4.64	190	201,253	214,060	15,176	30,000	460,489	1059	944													
938 2138	08-Mar-00	Extension (4)	4 - 11		300	815	1,087	2.72	3.62	75	4.47	306	231,567	90,666	13,324	49,408	384,965	757	793													
938 2206	14-Feb-01	Extension (4)	5 - 7		167	578	915	3.46	5.48	63	5.00	320	413,820	0	0	0	413,820	1293	1260													
938 2217	08-Nov-99	Adapt.,Extens. & Other (9)	4 - 11		420	1,337	2,187	3.18	5.21	61	4.28	1033	762,862	58,225	24,280	248,680	1,094,047	738	747													
938 2252	12-May-00	Extension (4)	4 - 11		420	1,110	1,933	2.64	4.60	57	4.28	395	270,117	7,186	15,001	96,739	389,043	684	663													
938 2252	03-Jun-99	Extension (4)	4 - 11		330	890	1,610	2.70	4.88	55	4.41	290	208,510	5,450	8,000	60,000	281,960	719	769													

GENERAL DETAILS							AREA DETAILS						COST DETAILS							
1 LEA Project reference	2 Tender Date	3 Project Type	4 Age Range	5 Places when Project Complete			6a Teaching Area  m²	6b Gross Area  m²	6c Teaching Area per pupil m²	6d Gross Area per pupil m²	6e Ratio Teaching to Gross %	6f Guideline Gross Area per pupil m²	7 Area New Accom m²	8a New Building  £	8b Other Building  £	8c Furniture & Fittings  £	8d External Works  £	8e Gross Tender Cost £	9a New Building Cost/m² £	9b Standardised New Building Cost/m² £
				Nursery	5 - 16	OSLA														
<b>Secondary Establishments</b>																				
308 415	04-Jul-00	Adaptation (3)	11 - 18		1196	135	6,939	12,857	5.21	9.66	54	7.28	1395		256,846	0	0	256,846		
308 4041	13-Oct-98	Adaptation & Extension (8)	11 - 13		810		4,266	7,605	5.27	9.39	56		1185	833,245	600,000	200,000	150,000	1,783,245	703	728
352 4292	16-Nov-99	Adaptation & Extension (8)	11 - 16		900		4,710	8,114	5.23	9.02	58	7.44	1375	253,642	681,941	0	0	935,583	184	223
830 4057	27-Jan-00	Extension (4)	11 - 18		784	156	4,372	6,974	4.65	7.42	63	7.88	637	546,637	28,450	19,471	69,672	664,230	858	997
830 4172	07-Dec-00	Extension (4)	11 - 16		562		2,920	4,649	5.20	8.27	63	8.31	358	342,741	51,219	30,621	82,307	506,888	957	1003
830 4197	17-Sep-99	Adaptation & Extension (8)	11 - 16		837		4,409	6,914	5.27	8.26	64	7.55	1084	770,398	69,352	20,000	274,894	1,134,644	711	887
850 4153	09-Jul-98	Extension (4)	11 - 16		638							8.04	117	176,145	225,764	9,113	23,978	435,000	1506	1655
850 4307	18-Jan-00	Extension (4)	11 - 16		992			7,720				7.31	1370	1,072,953	119,958	50,819	68,539	1,312,269	783	844
850 4310	11-May-99	Extension (4)	11 - 16		1671							6.78	118	605,924	29,342	18,627	203,956	857,849	5135	5588
852 4271	30-Jun-99	Adaptation & Extension (8)	11 - 16		847							7.53	584	564,823	75,648	25,000	47,883	713,354	967	1098
860 4070	09-Sep-99	Extension (4)	11 - 18		1137	169	5,013	8,412	3.84	6.44	60	7.38	240	298,615	0	14,673	40,200	353,488	1244	1501
860 4070	16-Feb-01	Extension (4)	11 - 18		1159	117	5,143	9,380	4.03	7.35	55	7.29	295	254,187	0	434	23,379	278,000	862	772
860 4156	27-Nov-00	Adaptation & Extension (8)	11 - 18		982	133	5,296		4.75			7.52	213	160,224	57,921	3,869	2,424	224,438	750	860
860 4516	02-Nov-98	Adaptation & Extension (8)	9 - 13		441		1,309	2,742	2.97	6.22	48	5.77	330	227,801	73,764	28,485	37,950	368,000	690	790
873 4083	19-Jan-01	Adaptation & Extension (8)	11 - 18		1200	200	6,028	10,863	4.31	7.76	55	7.36	594	578,371	97,053	70,730	57,178	803,332	974	940
874 4081	08-Nov-99	Extension (4)	11 - 18		744	101	4,417	5,411	5.23	6.40	82	7.90	315	221,530	19,640	4,700	21,800	267,670	703	817
875 4124	26-Oct-99	Extens. & Other Works (7)	11 - 18		900	200		6,096		5.54		7.73	729	554,336	0	13,665	111,852	679,853	760	920
875 4125	27-Sep-99	Extension (4)	11 - 18		900	200	3,771	6,279	3.43	5.71	60	7.73	1376	731,640	0	57,154	210,630	999,424	523	649
886 4092	13-Jan-99	Adaptation & Extension (8)	11 - 18		730	197	5,993	8,720	6.46	9.40	69	8.04	1600	1,015,919	40,157	20,700	125,322	1,202,098	635	687
886 4196	21-Aug-00	Adaptation & Extension (8)	11 - 18		1360	260	6,352	11,391	3.92	7.03	56	6.96	2198	1,238,886	136,674	151,062	352,752	1,879,374	564	545
888 4041	15-Aug-00	Extension (4)	11 - 16		405		1,947	3,883	4.81	9.59	50	9.21	874	696,372	6,100	76,528	27,900	806,900	797	899
888 4131	26-Jan-01	Adaptation & Extension (8)	11 - 16		978							7.33	394	285,800	22,600	5,200	12,400	326,000	725	772
888 4150	08-Dec-00	Extension (4)	11 - 16		611		4,389	7,682	7.18	12.57	57	8.13	253	208,341	165,057	5,143	24,413	402,954	823	835
888 4155	25-Aug-00	Extension (4)	11 - 18		1113	140	5,274	8,057	4.21	6.43	65	7.37	1048	666,228	77,336	20,729	46,440	810,733	636	665
888 4178	28-Sep-99	Adapt., Extens. & Other (9)	11 - 16		779		3,558	6,067	4.57	7.79	59	7.67	492	279,097	50,069	4,408	29,411	362,985	567	678
888 4238	09-Jun-00	Adaptation & Extension (8)	11 - 15		980		4,046	7,090	4.13	7.23	57	7.32		2,511,014	416,856	98,754	616,650	3,643,274		
908 4149	20-Mar-01	Adaptation & Extension (8)	11 - 16		839							7.55	487	204,300	410,545	0	22,390	637,235	420	463
908 4156	30-Jun-00	Extension (4)	11 - 16		1281							7.01	750	706,712	0	63,560	89,596	859,868	942	945
916 4015	21-Dec-00	Other Works (5)	11 - 18		998	138	5,897	9,708	5.19	8.55	61	7.51	97	220,667	228,650	0	13,250	462,567	2275	2452
916 4032	06-Feb-01	Extension (4)	11 - 18		1011	126	4,925	10,242	4.33	9.01	48	7.48	664	556,942	0	8,788	29,409	595,139	839	870
916 4064	02-Sep-99	Adap., Extens. & Other (9)	11 - 16		1050		4,446	8,153	4.23	7.76	55	7.24	1004	630,880	69,056	19,692	75,372	795,000	628	736
928 4035	08-Dec-98	Extension (4)	11 - 16		1200		5,342	9,480	4.45	7.90	56	7.08	485	354,055	142,531	23,031	23,101	542,718	730	856
936 4098	26-Jan-99	Other Works (5)	11 - 18		1597	349	8,985	13,549	4.62	6.96	66	7.21		2,527,981	0	240,000	192,000	2,959,981		
936 4459	28-Apr-99	Adaptation & Extension (8)	11 - 16		1050		3,916	8,347	3.73	7.95	47	7.24	423	248,209	421,964	19,642	47,955	737,770	587	607
938 4000	23-Jan-01	Extension (4)	11 - 18		1200	300	6,965	8,170	4.64	5.45	85	7.47	210	247,494	0	0	23,927	271,421	1179	1145
938 4060	04-May-00	Extension (4)	11 - 18		1173	175						7.35	630	496,696	196,536	0	72,316	765,548	788	804
938 4110	29-Jun-00	Adaptation & Extension (8)	12 - 16		1038		7,756		7.47			7.48	1657	1,165,589	91,399	62,847	229,345	1,549,180	703	714
938 4502	20-Apr-00	Adaptation & Extension (8)	12 - 16		960		4,252	5,438	4.43	5.66	78	7.59	410	154,679	176,977	4,060	13,880	349,596	377	384
<b>Special Establishments</b>																				
350 7003	08-Sep-00	Adaptation (3)	11 - 19		102	38	1,142	2,331	8.16	16.65	49		80	79,931	1,279,426	1,020	206,572	1,566,949	999	1161
806 7005	26-May-00	Adaptation & Extension (8)	5 - 11		90		729	1,378	8.10	15.31	53		231	176,550	473,822	5,250	114,000	769,622	764	851
835 7011	08-Jun-00	Adaptation & Extension (8)	3 - 16	3	150		1,369	2,237	8.95	14.62	61		155	158,514	31,226	0	14,260	204,000	1023	1168
850 7000	11-Feb-00	Adaptation & Extension (8)	2 - 19	10	80	10	1,232	2,280	12.32	22.80	54		1161	1,155,533	464,130	48,070	524,058	2,191,791	995	1009
873 7003	17-Jul-00	Adaptation & Extension (8)	6 - 16		129		961	1,580	7.45	12.25	61		363	328,636	3,500	4,000	43,387	379,523	905	928
873 7018	14-Dec-00	Adaptation & Extension (8)	2 - 19	6	159	15	2,148	4,109	11.93	22.83	52		1564	1,352,608	94,199	56,504	255,696	1,759,007	865	872
881 7021	02-Apr-00	Extension (4)	11 - 16		55		910	3,486	16.55	63.38	26		214	215,000	0	0	9,000	224,000	1005	974
887 7053	23-Nov-99	Extension (4)	5 - 19		125	15	1,631	3,066	11.65	21.90	53			34,000	256,500	1,000	75,000	366,500		
937 7024	31-Jan-00	Adaptation & Extension (8)	2 - 19	13	47	13	958	1,749	13.12	23.96	55		476	225,220	174,287	17,076	29,696	446,279	473	556

**Article on analysis of area and cost standards in LEA school building projects.**

These analyses, presented graphically in figures 1 – 3 relate to data from form LA1 and VA1 returns for nearly 500 LEA building projects over the period 1996 – 2001.

Some obviously suspect records have not been included in this analysis, for example where incorrect data has been supplied through careless

form filling. Nevertheless the figures may still perhaps contain one or two rogue values.

The analyses do not provide a comprehensive national picture of standards as they only cover data supplied voluntarily by LEAs for major projects costing £200k or more. No account has therefore been taken of standards in minor works projects costing less than £200k or of schemes where LA1 or VA1 information was not supplied.

Costs in figures 1 – 3 are at Q3 2002 prices, using the DTI index 135 (1995=100) and have been standardised in accordance with the methodology used for the preparation of table 2. Currently the index at 1Q 2003 is 141 (indicative) so cost/m<sub>2</sub> would need to be enhanced by 4.4% to compare with current costs.

Figures 1 – 3 show the distribution of cost/m<sup>2</sup> for new primary schools and for primary and secondary extensions.

The range of results in figure 1 do not appear to show any pattern at all. The median figure is £875/m<sup>2</sup> but the inter-quartile range is £780/m<sup>2</sup> - £930/m<sup>2</sup>.

In figure 2 the median figure is £818/m<sup>2</sup> but the variation is greater. The inter-quartile range is £700/m<sup>2</sup> to £1040/m<sup>2</sup>. With a much larger sample this figure demonstrates well the inverse relationship between contract size and unit rate.

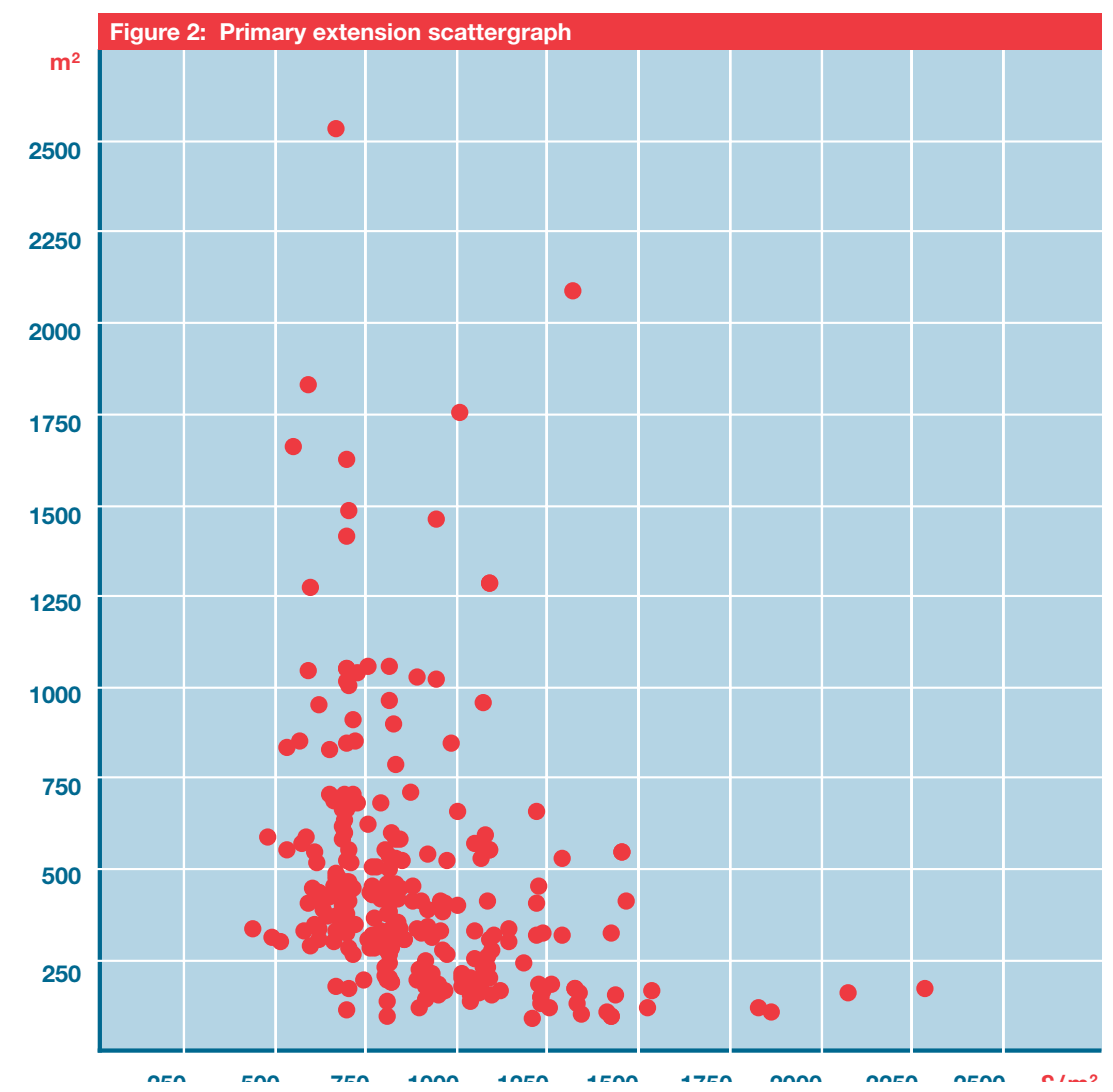
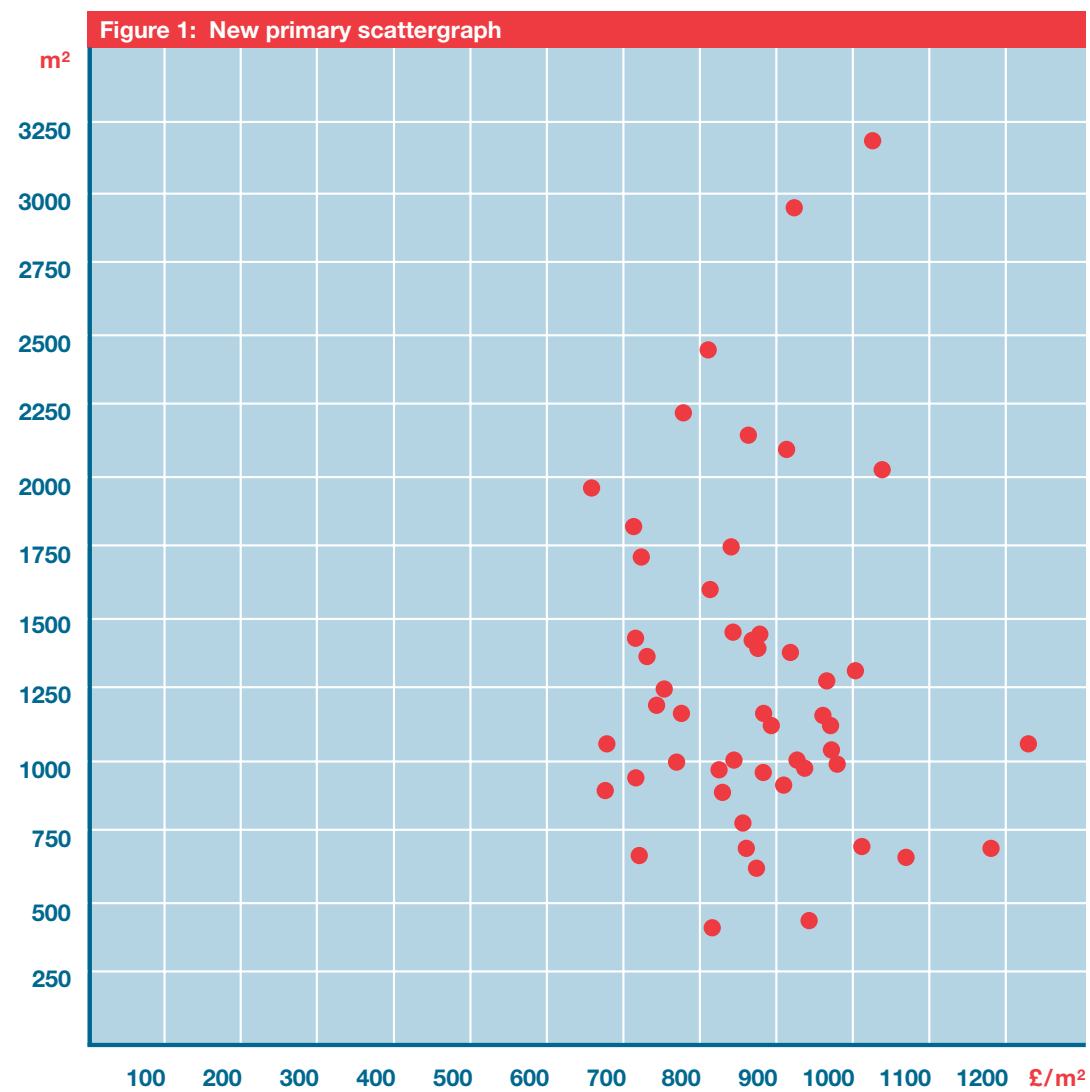
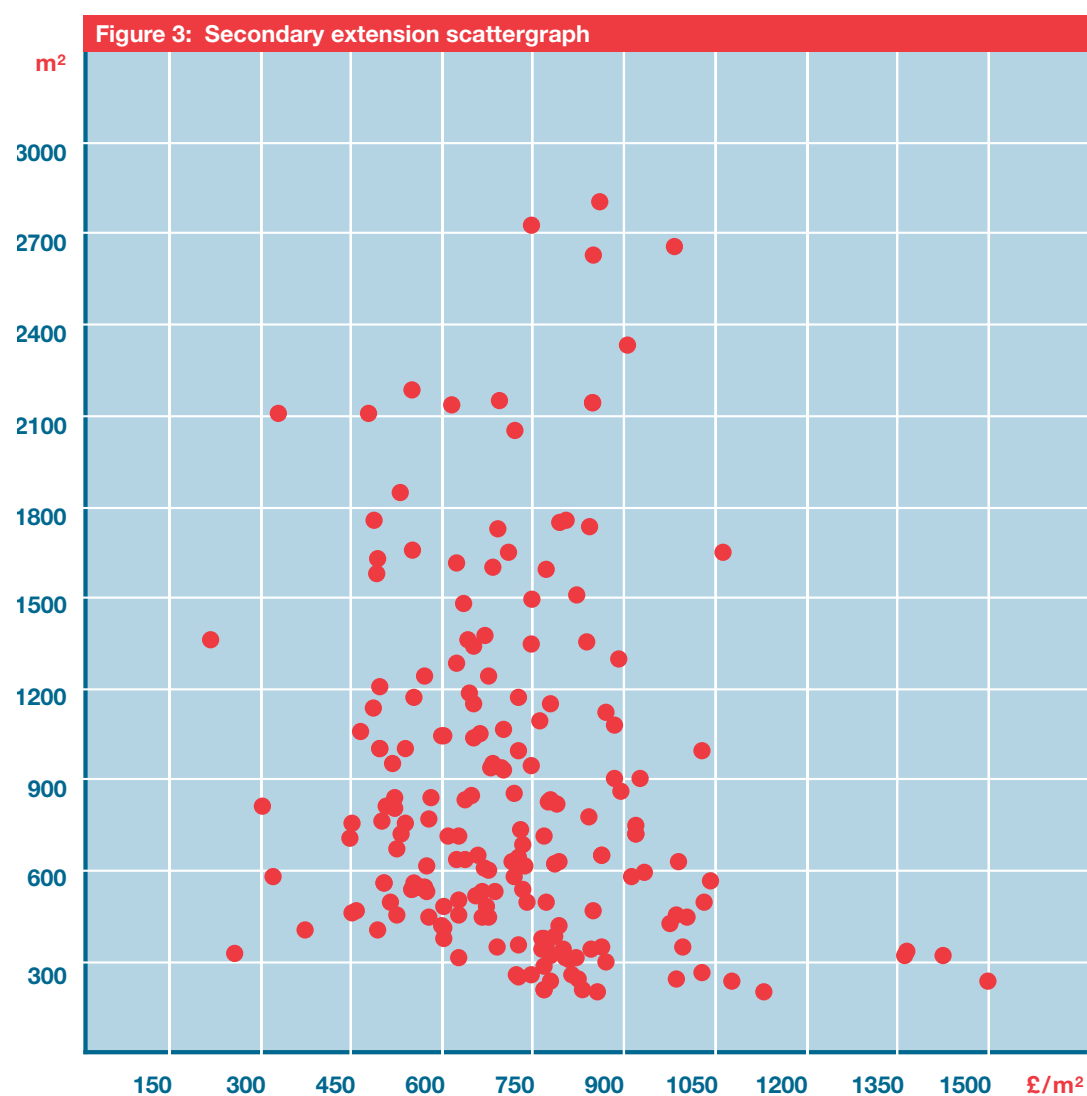


Figure 3 relates to secondary school extension projects. The median looks to be fairly low at only £730/m<sup>2</sup>. The inter-quartile range is £620/m<sup>2</sup> to £850/m<sup>2</sup>. Compared to figure 2 the average area of extension projects is nearly double, so once again this demonstrates the inverse relationship between contract size and unit rate.

It is likely that many of the extension projects in our sample will be of relatively inexpensive designs, which may explain why the costs are much lower than completely new build solutions.



### Energy and water benchmarks for maintained schools in England: 2000-01

A Government National Statistics Bulletin Issue No 11/02, ISBN 011271143X was published in December 2002.

The Statistical Bulletin reports on the energy and water cost and consumption in schools for the years ending 31 March 2000 and 31 March 2001. The data was collected for all schools, on a voluntary basis, from Local Education Authorities in England.

The aim of the data collection is to enable benchmarking of energy and water consumption in schools and to assess the carbon dioxide emissions from the school sector. This information informs the Government's national Climate Change programme and interdepartmental initiatives to reduce energy and water consumption in schools and the wider public sector.

It provides benchmark indicators for Local Authorities to assess progress towards achievement of targets for reductions in carbon dioxide emissions resulting from energy usage.

The data is shared with a number of partner organisations responsible for maintaining benchmarking websites for schools. These are:

- Heads, Teachers and Industry and their Think Leadership environmental benchmarking website for head teachers and governors [www.thinkleadership.org.uk](http://www.thinkleadership.org.uk)
- The BRE Sustainable Energy Centre (BRESEC) who manage the ActionEnergy programme for

the Carbon Trust which provides an on line energy benchmarking website for schools [www.energybenchmarking.co.uk/schools](http://www.energybenchmarking.co.uk/schools)

- The Office of Government Commerce who run the Watermark water benchmarking project for the public sector including schools. [www.Watermark.gov.uk](http://www.Watermark.gov.uk)

The bulletin compares consumption and cost of schools in the 10 Government Office Regions. Figures for LEAs will be posted on the DfES Statistics website where a range statistics about Education and Training can be found, see [www.dfes.gov.uk/statistics/](http://www.dfes.gov.uk/statistics/)

The publication of the statistical bulletin followed the publication of the Statistical First Release of the same name SFR 23/2002 in October 2002, see <http://www.dfes.gov.uk/statistics/DB/SFR/s0353/index.html>.

Information about National Statistics can be found on [www.statistics.gov.uk](http://www.statistics.gov.uk)

## A synopsis of Building Bulletin 93: Acoustic Design of Schools

BB93 will be published by the Stationery Office, ISBN 0 11 271105 7 in February 2003. It aims to:

- provide a regulatory framework in support of the building regulations for the acoustic design of schools;
- give supporting advice and recommendations for planning and design;
- provide a comprehensive guide for architects, building control officers, building services engineers, clients, and others involved in the design of new school buildings; and
- be a source book for acousticians who are not familiar with school design.

Building Bulletin 93 supersedes Section A of Building Bulletin 87 which contained the constructional standards for acoustics for new school buildings.

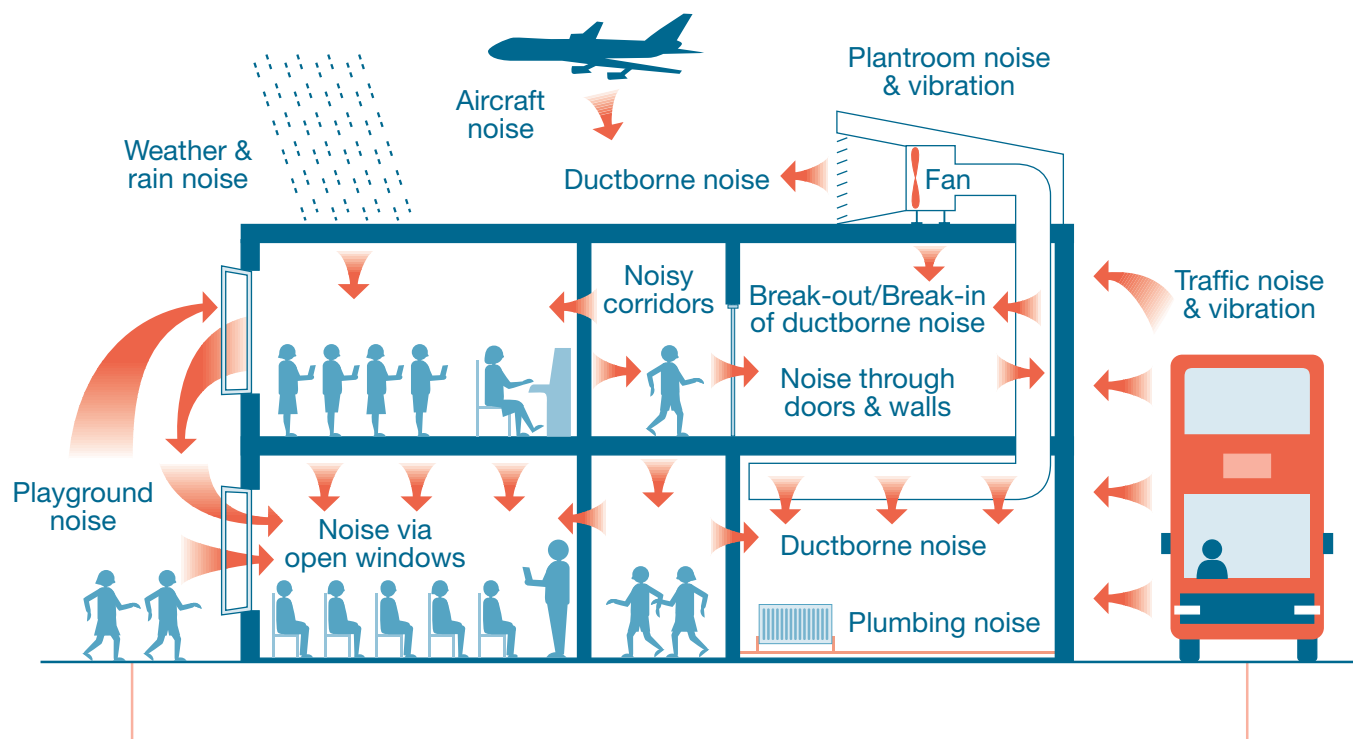
Part E: 2002 of the Building Regulations includes schools within its scope and states that the

normal way of satisfying Part E for schools will be to meet the performance standards given in Section 1 of Building Bulletin 93.

The requirements of Section 1 come into force on 1st July 2003, at the same time as those contained in the new Approved Document Part E, Resistance to the passage of sound, in support of the Building Regulations.

Unfortunately, a large number of classrooms in the UK currently suffer from poor acoustics. The most serious acoustic problems are due to noise transfer between rooms and/or excessive reverberation in rooms.

There are many reasons for the poor acoustics, for example, the acoustics of the stock of old Victorian schools are often unsuitable for modern teaching methods, and modern constructions do not always provide adequate sound insulation and may need special treatment.



Historically, there have been a number of factors preventing good acoustic design. BB93 addresses these issues:

- Before 2003, Part E of the Building Regulations did not apply to schools. It now includes schools within its scope.
- Although the Constructional Standards for Schools quoted Building Bulletin 87 as the standard for acoustics in schools many designers were unaware of the requirements of BB87 and the standards were rarely enforced. These standards have been updated to reflect the relevant requirements of the Disability Discrimination Act and included in the compliance section 1 of this bulletin.
- BB93 now gives recommendations on maximum external noise levels for schools which can be used by planners to inform their planning decisions and also contains information on façade insulation.
- The pressure on finances meant that acoustics was pushed down the list of priorities behind other more obvious requirements. This will no longer occur as the designs will be subject to building control approval procedures.
- There has been little guidance available on how to achieve the right balance of acoustics in the complex and dynamic environment of a school. Architects and designers have had a difficult time finding information to make design easy and in particular, to help them choose the right parameters and correct numerical values.

The fact that the values in Section 1 of BB93 are required to be achieved under the Building Regulations, represents a significant tightening of the regulation of acoustic design in schools. This is intentional and reflects a general recognition, supported by research, that education is an acoustically demanding process. In particular, there is a consensus that lower ambient noise levels

are required, particularly in view of the requirement of the Disability Discrimination Act for integration of children with special needs in mainstream schools.

The Disability Discrimination Act 1995 (DDA), as amended by the SEN and Disability Act 2001, places a duty on all schools and LEAs to plan to increase over time the accessibility of schools for disabled pupils and to implement their plans. Therefore, when alterations affect the acoustics of a space then improvement of the acoustics to promote better access for children with special needs including hearing impairments, should be considered.

Although Building Regulations do not apply to all refurbishment work, any refurbishment should consider acoustics and incorporate upgrading of the acoustics as appropriate. Of course, it would be uneconomic to upgrade all existing buildings to the same standards as new school buildings, but where there is a need for upgrading the acoustic performance of an existing building or when refurbishment is happening for other reasons then the designer should aim to meet the acoustic performance given in Section 1.

The Schools Building and Design Unit acoustics website ([www.teachernet.gov.uk/Acoustics](http://www.teachernet.gov.uk/Acoustics)) contains the DfES response to the public consultation on BB93 and further reference material which expands on the source material for acousticians and designers. The website will be regularly updated with new information, discussion papers and case studies. It also contains complete downloads of the bulletin.

### Reference

Building Bulletin 87, Guidelines for Environmental Design in Schools (Revision of Design Note 17), The Stationery Office, 1997, ISBN 011 271013.



# Annex A: Secondary School Cost Study

## Introduction

During 2002 SBDU commissioned a study into the cost of new secondary schools which had been recently completed. The intention was to get accurate cost information for at least 24 such establishments around the country for which costs could then be analysed in order to inform discussion on setting benchmarks for the secondary school sector. We tried to identify only those schools which were considered to be the example of best quality in the LEA sector. A format for the collection of the data was agreed, and the intention was to standardise the cost information for all the projects.

Within SBDU and beyond, we managed to identify 30 new schools that we knew had been built within the last few years, although in many cases we were unsure about the relative quality of design. Many of these had been visited by SBDU officers but there were a significant number for which there was no first-hand knowledge within SBDU.

Despite promises from LEAs for the return of the cost information, we initially only received data in respect of fourteen by our deadline in time for a detailed analysis. Of these fourteen the majority were procured under the PFI route. We did receive a further four projects which were returned later on in August after the initial analysis had been undertaken.

## Analysis

Our outsourced consultants, Norfolk Property

Consultants Ltd, undertook this analysis on our behalf. Adjustments to the base cost were made in respect of abnormal costs, standard location factor (1.00), and brought to 3Q2002 price levels.

The range of nett building costs was £884/m<sup>2</sup> to £1,223/m<sup>2</sup>, with an arithmetical mean at £1,030/m<sup>2</sup>. The variance from the mean was therefore -14% / +18% which was far greater than expected. In a sample of this size one would normally expect no more than 10% either way.

The on-costs for fees, siteworks and furniture were highly variable too. Apart from one project where the professional fee level was given as 2%, the range was from 6% to 20% of the building cost, the average being around 12%. The wide range was probably caused by the sample containing a variety of procurement routes.

Siteworks, expressed as a percentage of the building cost, was 14.7% with a range of 4% through 22%. This is quite a wide range but not entirely unexpected.

Furniture and equipment costs were not consistent either. Three of the fourteen projects did not have any allowance at all. Of the remainder, the average was about 13% of the net building cost, which is a lot lower than we would have expected. We concluded that the information returned to us did not represent the true cost of all furniture and equipment in a significant number of cases.

It was therefore decided to normalise these on-costs by substituting our own robust assumptions

based partly on these findings, partly on experience, and partly on research work which has been undertaken independently.

Due to the inconsistency in some of the figures available to us we felt we could not move forward with the PFI projects. Some PFI data supplied was based on the public sector comparator rather than as-built costs, which was not what was required and did not contribute in any way in our analysis.

We also suspected in some PFI schemes that the cost of the F&E and/or the fees may have been included in the basic cost, for example. In addition, not all the PFI schemes had been subject to a visit from SBDU so we gained limited feedback on the quality of the design from these projects.

Nevertheless, three of the fourteen projects were selected as being representative of the standard of school which was required. These were –

- Blyth Community College in Northumberland, (13-18)
- Challenge School in Bradford, (11-18)
- The Royal Docks School in Newham, London (11-16)

Each of these had been the subject of a visit by at least two SBDU officials within the last year who could attest to the quality of design. It should be noted that three different age ranges are covered by these schools.

## Area standards

The gross floor areas of this sample were generally in excess of the gross floor area guidance contained in the original BB82, which was the current guidance available when these schools were designed and built. Not all schools in our sample had provided pupil numbers, but the average derived from those which did provide the data was roughly 19% above BB82. The range was enormous. Some of these schools obviously had some community use built in.

The revised BB82 uses a different formula to calculate the gross floor area compared to the original BB82, with the revised version generally giving a 10% increase over the previous figure. The results of our survey show that LEAs are generally building to higher area standards than even our revised BB82. Nevertheless, in building up the secondary school cost model we feel that we should use the gross floor area standards based on the latest version of BB82. It should be noted that BB82 is still in draft form and the area formulae are liable to change, albeit not significantly.

## Secondary School Cost Model

The most appropriate method of working up a cost model for a Secondary School is to ascertain the basic building cost first, adjusting for location and tender index, then to add allowances for site works, professional fees, furniture and equipment, and then to consider all the abnormal costs associated with the scheme. With this in mind we followed the methodology as described below.

Focussing on the three projects identified above, the average basic cost/m<sup>2</sup> computes at £978/m<sup>2</sup> which is some £52/m<sup>2</sup> below the arithmetical mean. But as stated earlier we felt that the computed basic cost for some of the more expensive schemes almost certainly contains some elements which ought to have been separately identified, i.e. fees and furniture.

To ascertain a realistic cost for new secondaries it is considered that allowances should be made over and above the basic cost to cover the requirements of Building Regulations part L2 (environmental issues) deemed to have only been partially allowed for in the as-built costs.

It is proposed to add 5% to the basic cost to cover the impact of part L2 which covers guidelines for environmental design in schools. This will give a basic building cost at 3Q2002 price levels of £1,025/m<sup>2</sup> at a standard location, inclusive of preliminaries and contingencies.

### Site Works

Adding a straight percentage to cover site works is not a terribly scientific approach, because the cost of this item does not generally correlate to the building cost. It is of course site-specific and will vary considerably, as the results of the analysis show.

Nevertheless, we are proposing to add an allowance of 13% of the building cost for site works, being largely in line with the results of our analysis of the three schools.

### Professional fees

The Department's normal position is to stipulate that 15% should be a sufficient fee level for the many diverse types and sizes of project. Our analysis shows, however, that the range of professional fees applicable to new secondary school projects can range from 2% to 20%, depending on the method of procurement, as stated earlier. The average was computed at between 11% and 12%. One would have expected a much smaller range of fees for such a similar type of work, and this reinforces our belief that some of the data may have been inaccurate.

Given that we need to factor in the cost of statutory fees (building regulations, planning fees, insurances, site investigation and the like) over and above the design fee, we consider that the typical size of secondary project is of such a scale that an overall fee level of 13% should be considered an upper limit for replacement secondary school projects.

Projects involving remodelling will of course attract a higher fee level and will need to be dealt with in a different manner. Such projects may attract a fee level approaching 15% or 16%.

### Furniture and Equipment, ICT

Loose and fixed furniture and equipment, together with ICT hardware needs to be added to the overall cost. Over the recent years we know that the proportion of total cost being allocated to F&E has increased significantly, but we feel that this has not really been reflected in the findings of our

analysis. We doubt whether we were receiving gross costs for all loose and fixed furniture and equipment in our returns, as we had originally sought.

Nevertheless, work has been carried out independently by Alligan Ltd on appropriate allowance for F&E. A spreadsheet has been prepared which gives the cost of loose and fixed

furniture and equipment (for a 7fe secondary school) at £1800 per pupil. Within this, the proportion of fixed furniture/equipment to loose furniture/equipment has been assessed at 35% / 65%. Professional fees have been allowed for on the fixed F&E.

ICT hardware for a 7fe school has been assessed at a cost per pupil for each of the 11-16 and post 16 age ranges (£700 and £1000 respectively), plus infrastructure costs of £460k.

It should be noted that the allowance for F&E and ICT in a replacement secondary school is based upon total replacement costs. In practice many schools should be able to re-use a significant proportion of their existing F&E and ICT, especially if recently upgraded.

### Excel Spreadsheet

The attached spreadsheet will calculate a budget for a secondary school for any number of pupils of any age range. Variables can be input to cover location factor and tender price index, and the spreadsheet will calculate a total budget based on these figures. The gross floor area is computed

automatically, being based on the revised BB82, as mentioned earlier.

The total cost excludes a number of items which will need to be factored in as abnormal costs. These include temporary accommodation, demolitions, site abnormalities and building abnormalities etc.

## Local Education Authority Codes

201 - 213	Inner London	866	Swindon
301 - 320	Outer London	867	Bracknell Forest
330 - 336	West Midlands	868	Royal Borough of Windsor & Maidenhead
340 - 344	Merseyside	869	West Berkshire
350 - 359	Greater Manchester	870	Reading
370 - 373	South Yorkshire	871	Slough
380 - 384	West Yorkshire	872	Wokingham
390 - 394	Tyne & Wear	873	Cambridgeshire
420	Isles of Scilly	874	City of Peterborough
800	Bath and North East Somerset	875	Cheshire
801	City of Bristol	876	Halton
802	North Somerset	877	Warrington
803	South Gloucestershire	878	Devon
805	Hartlepool	879	City of Plymouth
806	Middlesbrough	880	Torbay
807	Redcar & Cleveland	881	Essex
808	Stockton-on Tees	882	Southend
810	City of Kingston-upon-Hull	883	Thurrock
811	East Riding of Yorkshire	884	Herefordshire
812	North East Lincolnshire	885	Worcestershire
813	North Lincolnshire	886	Kent
815	North Yorkshire	887	Medway
816	City of York	888	Lancashire
820	Bedfordshire	889	Blackburn and Darwen
821	Luton	890	Blackpool
825	Buckinghamshire	891	Nottinghamshire
826	Milton Keynes	892	City of Nottingham
830	Derbyshire	893	Shropshire
831	City of Derby	894	Telford and Wrekin
835	Dorset	908	Cornwall
836	Poole	909	Cumbria
837	Bournemouth	916	Gloucestershire
840	Durham	919	Hertfordshire
841	Darlington	921	Isle of Wight
845	East Sussex	925	Lincolnshire
846	Brighton & Hove	926	Norfolk
850	Hampshire	928	Northamptonshire
851	Portsmouth	929	Northumberland
852	Southampton	931	Oxfordshire
855	Leicestershire	933	Somerset
856	Leicester City	935	Suffolk
857	Rutland	936	Surrey
860	Staffordshire	937	Warwickshire
861	Stoke-on-Trent	938	West Sussex

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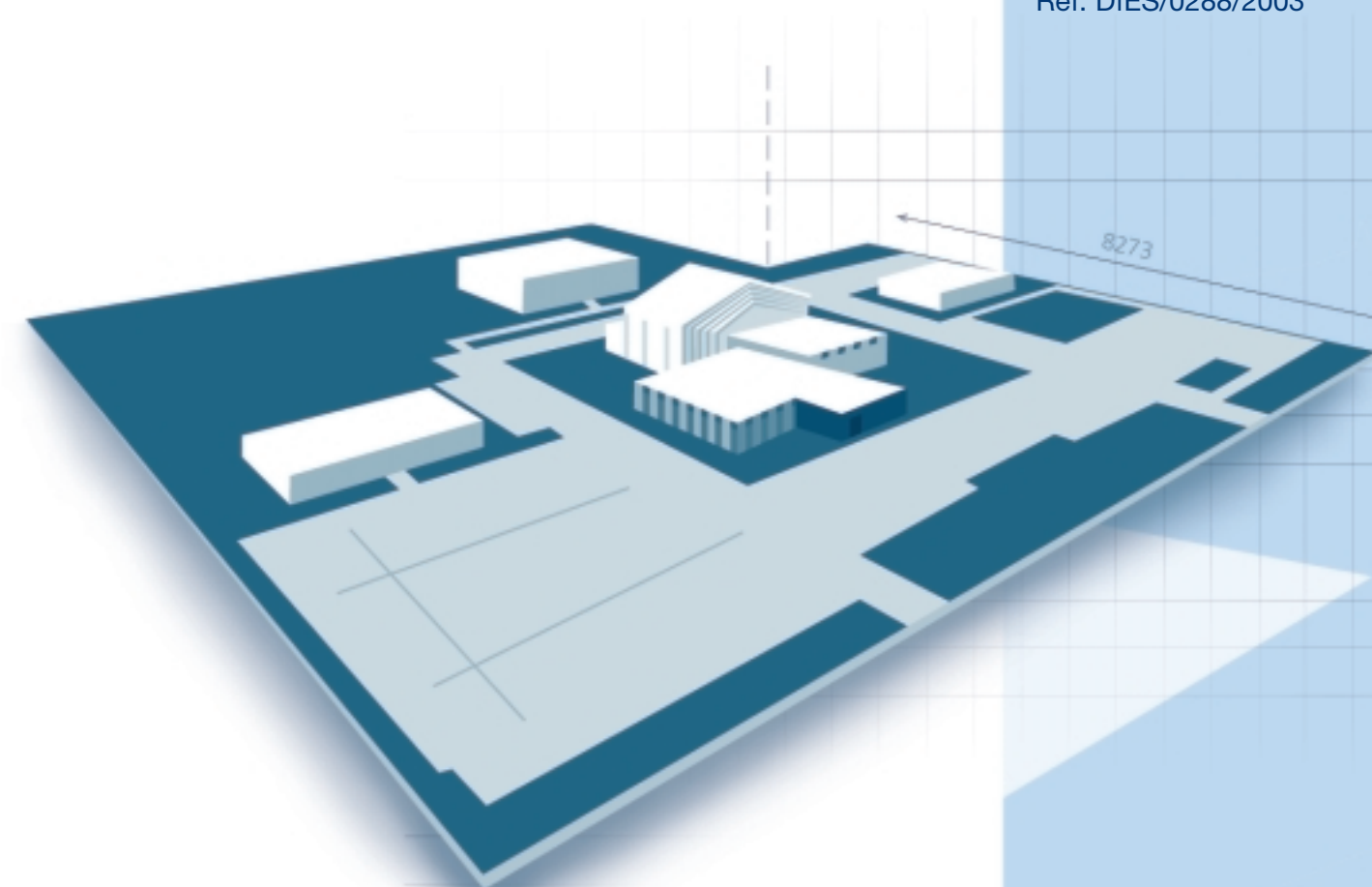
E-mail: [dfes@prolog.uk.com](mailto:dfes@prolog.uk.com)

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Information on Costs and Performance Data -  
Schools Building and Design Unit



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