Improving the school estate

AUDIT SCOTLAND

Prepared for the Auditor General for Scotland and the Accounts Commission
March 2008

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Contents

Summary

This report reviews the impact of the School Estate Strategy and what has been achieved so far.

About the study

1. Ten years ago, many of Scotland's schools were in a state of serious disrepair. Education was a high-priority policy area for both central and local government and so a major programme of school building and renewal began. The programme started at the end of the 1990s, with the first new and refurbished schools opening in 2000 and 2001.[1]

2. In 2003, the Scottish Executive and the Scottish Convention of Local Authorities (COSLA) launched the School Estate Strategy.[2] The overall aim of the strategy is to raise the quality of the school estate, ensuring that no schools are in poor condition[3] or otherwise unsuitable for 21st century education. The strategy states that new and refurbished schools should be well designed, well built, and well managed.

3. The focus of this report is to evaluate the impact of the strategy on school buildings and what has been achieved to date. Where appropriate we comment on relevant recommendations from *Taking the initiative*, a previous report published in 2002 by the Accounts Commission and the Auditor General for Scotland, which examined the use of the Private Finance Initiative (PFI) in the early projects in the programme of school building and renewal.[4]

4. This report was prepared on behalf of the Accounts Commission and the Auditor General for Scotland and addresses the following questions:

- What does the School Estate Strategy aim to achieve?

- How many schools have been rebuilt or refurbished?

- How much has this cost?

- How effective are the new and refurbished school buildings?

- How well are the Scottish Government and councils managing the improvements?

5. The purpose of the study is not to assess the merits of one funding route compared to another, but to consider what has been achieved for the investment made, whatever its source. We have not examined links between improvements to school buildings and educational performance as there is limited evidence available. Our report recommends actions that will help to achieve the aims of the strategy in the future.

6. We collected evidence for this report through:

- reviewing documentation and analysing existing data

- gathering information from all councils on the profile of their school estate and the costs of improvements made to it

- assessing the design quality of 18 new and refurbished schools

- undertaking focus groups with school pupils and issuing questionnaires to staff at ten new and refurbished schools

- interviewing officers at six councils (East Lothian, East Renfrewshire, Fife, Glasgow, Highland, West Lothian)

- interviewing key officials in the Scottish Government and other key stakeholders.

Key messages

7. When the Scottish Executive launched the School Estate Strategy in 2003, there was a lack of comprehensive and consistent information from councils about their school buildings. The strategy did not set out exactly what needs to be done or how it will be achieved. The Executive allocated financial support to councils before having reliable information and before developing the strategy. However, the information available is improving so the Scottish Government and councils should now be able to review the strategy, set specific outcomes and targets and prepare a detailed plan for achieving them (Part 2).

8. The strategy has led to many schools being improved, including 219 brand new buildings by the end of 2007. Using its own criteria, the Scottish Government can show that its two interim targets of improving first 100, and then another 200, schools by 2006 have been met. However, at current rates of progress, we estimate it could take up to 20 years to remove all schools from poor condition and make them suitable for 21st century education – the overall aims of the strategy (Part 3).

9. Investment worth £3.9 billion has been committed to improving schools in the last seven years,[5] and this is expected to have increased to over £5.2 billion by April 2008. The Scottish Government cannot accurately assess how much still has to be spent to achieve the overall aims of the strategy due to the limitations of the data and information available. If the strategy is to continue, the government now needs to assess future costs and develop a financial strategy to deliver on these.

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1   In Falkirk, Stirling, Glasgow and East Renfrewshire.
2   *Building our Future: Scotland's School Estate*, Scottish Executive and COSLA, 2003.
3   Assessed as being either 'in poor condition – major defects and/or not operating adequately' or 'in bad condition – life expired or at serious risk of imminent failure', *School Estate Statistics 2004,* Scottish Executive, 2005.
4   *Taking the initiative: using PFI contracts to renew council schools*, Audit Scotland, 2002.
5   From 2000/01 to 2006/07.

Councils also need to plan ahead in the longer term to make sure that the PFI contract commitments they have made can be paid for and that adequate resources are allocated to building maintenance for schools without PFI contracts (Part 4).

10. Pupils and staff are generally satisfied with the design quality of new and refurbished schools but when assessed against good practice standards the schools could be better designed.

11. Two areas of design require particular attention in future:

- Environmental conditions – the balance between daylighting, ventilation and temperature is often unsatisfactory and is an area that pupils and teachers identify as being very important.

- Environmental sustainability – factors to improve the long-term environmental friendliness of schools have not been important features in the early projects to improve school buildings and are only included where they do not significantly increase overall costs (Part 5).

12. The management process introduced in 2003, including School Estate Management Plans (SEMPs) is driving improvements to the school estate and helping councils and the Scottish Government to plan and prioritise what is needed. However, longer term demand planning varies between councils and there are significant risks to the school estate if this is not improved. There is scope for better joint working between councils for sharing good practice (Part 6).

13. This report identifies some of the major challenges ahead (Part 7) and makes a number of recommendations that are set out at the end of each section and collated in Part 8. Progress in implementing these recommendations will be monitored through future audit work, including local audits and audits of Best Value and Community Planning.

Part 1. Introduction

A major programme of renewing schools began in the late 1990s and continues today.

14. A major programme of school building and renewal started at the end of the 1990s and is continuing today. The programme is intended to create a school estate that achieves the government's vision for 21st century schools that are well designed, well built and well managed.[6] This report reviews what has been achieved so far, how much it is costing, how effective the improvements are and how well the Scottish Government and councils are working together to manage improvements to the school estate. It also recommends actions to help improve arrangements and support future achievements.

Background

15. There are 2,720 council-run schools in Scotland,[7] 2,167 primary, 377 secondary and 176 special schools (Exhibit 1). Over 692,000 children are educated in these schools, over 95 per cent of all school-age children in Scotland. Schools vary considerably in size, from small rural primary schools with fewer than ten pupils to large urban secondary schools with over 1,700 pupils. The smaller schools, especially those with spare capacity, cost significantly more to run per pupil than larger, fully occupied schools.

16. Pupil numbers have been falling steadily since 2000 and, until recently, were predicted to continue falling. School rolls are affected by changes in birth rates and factors such as the number of people coming to live in Scotland from other parts of the UK and from other countries.

Exhibit 1
The number of schools in each council area varies considerably
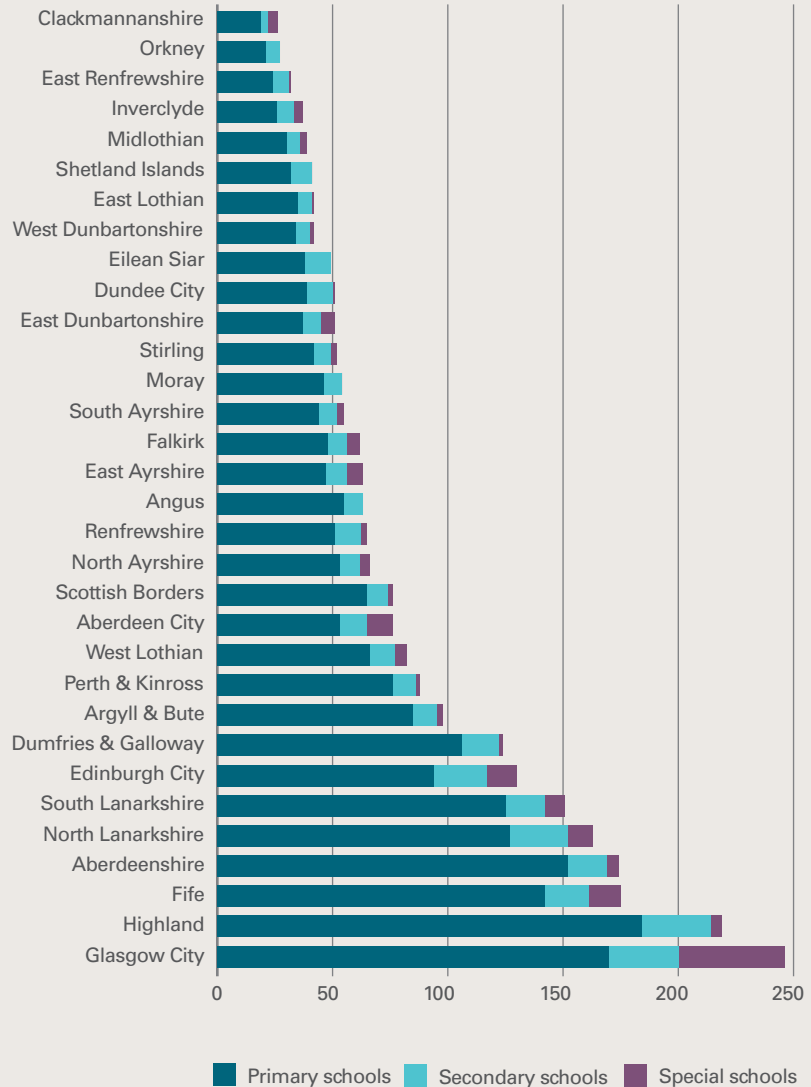
Source: *Pupils in Scotland 2007*, Scottish Government, 2008 (numbers as at September 2007)

17. A major programme of improvements began in 1998, when Scottish ministers announced financial support for building and refurbishing schools. A key element of the approach was the use of the Private Finance Initiative (PFI).[8] The first of the new and refurbished schools opened in 2000 and 2001.[9] Through a series of interim targets,[10] the programme aims to have renewed 400 schools by 2009.

6   *Building our Future: Scotland's School Estate*, Scottish Executive and COSLA, 2003.
7   *Pupils in Scotland 2007*, Scottish Government, 2008. Our report does not include stand-alone nursery centres except where specifically noted, because nursery education does not have to be provided in state-run nurseries.
8   This report generally refers to PFI contracts, PFI being the particular form of contract in all cases so far for the provision of new and refurbished schools in partnerships between the public and private sectors. PFI contracts are part of the Public Private Partnership (PPP) approach.
9   In Falkirk, Stirling, Glasgow and East Renfrewshire.
10   *Making it Work Together: Programme for Government*, 1999. *The Scottish Budget 2003-2006*, Scottish Executive, 2002. *Building a Better Scotland: Infrastructure Investment Plan: Investing in the Future of Scotland*, Scottish Executive, 2005.

18. Prior to 1998, the condition of school buildings had been deteriorating steadily over many years. By 2000, (before the schools in the early projects had opened) it was estimated that it would cost £1.3 billion[11] to carry out all the necessary repairs and maintenance to existing school buildings. By the end of 2004, even after 120 schools[12] had been replaced or improved, the Scottish school estate had deteriorated to the point that around 40 per cent (approximately 1,200) of all schools were assessed to be in poor or bad condition. Assessments use four condition categories, which were introduced by the Scottish Executive in 2004:[13]

- A: good condition – performing well and operating efficiently.

- B: satisfactory condition – performing adequately but showing minor deterioration.

- C: poor condition – major defects and/or not operating adequately.

- D: bad condition – life expired or at serious risk of imminent failure.[14]

19. To address this decline in a coordinated way, the Scottish Executive and COSLA developed the School Estate Strategy, which was launched in 2003. The strategy aims, over a period of at least ten to 15 years, to raise and maintain the quality of the school estate, leaving no schools in poor condition or otherwise unsuitable for 21st century education. The Scottish Executive reported that it was on track to meet its first target (set in 1999) of improving 100 schools when the strategy was launched. An additional target was set in 2002 and updated in 2005[15] – to enable (through funding support and guidance) the

rebuilding or refurbishing of another 300 schools by 2009.

20. Exhibit 2 (overleaf) sets out the key events in the school improvement programme in recent years. It shows when the School Estate Strategy and related guidance were launched, when financial support for PFI projects was announced, and when the first schools opened in each phase of PFI projects.

Our report

21. This report seeks to review how effective recent investments in the school estate have been in terms of improving the quality of the buildings in which learning and teaching take place. We examine:

- the aims of the School Estate Strategy (Part 2)

- what has been achieved and how much remains to be done (Part 3)

- the cost of these achievements (Part 4)

- how effective the new or refurbished buildings are (Part 5)

- how well the school estate improvements are being managed (Part 6).

22. The use of Public Private Partnerships (PPP), or the Private Finance Initiative (PFI), as a means of funding schools projects is a much-debated and politically charged issue. The purpose of this study is not to assess the merits of one funding route compared to another, but to consider what has been achieved for the investment made, whatever its source.

23. In our 2002 report *Taking the initiative*[16] we found that the use of PFI to provide new schools had been managed well and had delivered real benefits in terms of project management, risk transfer and financial control. However, these advantages came at a cost, both financial and in terms of future flexibility. It also made recommendations for the Scottish Executive. These included promoting real choice between procurement options, taking a lead role in developing and sharing staff skills and knowledge, and providing guidance and minimum standards for the learning environment. We report on progress against these recommendations in Parts 5 and 6.

11   Submission to the Inquiry by the Scottish Parliament, Education, Culture and Sports Committee into schools infrastructure, Association of Directors of Education Scotland and COSLA, May 2000.
12   Achievement of the 1999 Programme for Government commitment to build or substantially renovate 100 schools by 2003.
13   School Estate Statistics 2004, Scottish Executive, 2005.
14   Redefined as 'bad condition – economic life expired and/or risk of failure', *The Condition Core Fact*, Scottish Executive, 2007.
15   *Building a Better Scotland: Infrastructure Investment Plan: Investing in the Future of Scotland*, Scottish Executive, 2005.
16   *Taking the initiative: using PFI contracts to renew council schools*, Audit Scotland, 2002.

Exhibit 2
Key milestones in the programme of school improvements from 1998

1998
Scottish Office allocates financial support for the first ten PFI schools projects.

2000
Full service commences at the first of the ten PFI school projects.

June 2002
Scottish Executive announces financial support for 15 PFI schools projects and invites further council bids by December 2002.

September 2002
Scottish Executive publishes Scottish standard PPP schools contract.

2004
Service commences at the first of the 24 second-phase PFI schools.

Scottish Executive publishes guidance on:
- sustainability
- evaluation
- option appraisal
- output specification
- managing schools during construction projects.

November 2006
Scottish Executive announces that it is now supporting a total of 30 PFI schools projects in phase 2, which started with the announcement in June 2002.

September 2001
Scottish Executive invites bids for the second phase of PFI school projects by December 2001.

The Executive and council leaders agree to establish a joint Core Group to give a strategic overview of the way forward for the school estate.

Feb 2003
Scottish Executive and COSLA publish strategy *Building Our Future – Scotland's School Estate*.

March 2003
Scottish Executive announces financial support for a further nine PFI schools projects (total in phase 2 is now 24).

August 2003
Scottish Executive publishes guidance on:
- the 21st century school
- school estate management plans
- school design
- core facts.

Scottish Executive collects 'core facts' from councils for the first time.

2007
Scottish Executive publishes guidance on:
- school design: optimising the internal environment
- assessment of school condition.

1998	1999	2000	2001	2002	2003	2004	2005	2006	2007

Part 2. What does the School Estate Strategy aim to achieve?

The School Estate Strategy does not set out how the Scottish Government will achieve its vision for a better school estate.

Key messages

- When the strategy was launched in 2003, there was a lack of comprehensive and consistent information about the school estate.

- As a result, the strategy does not set out exactly what needs to be done or how it will be achieved.

- However, the information available is improving so the Scottish Government should now be able to set specific outcomes and targets, and prepare a detailed plan for achieving them.

24. The School Estate Strategy aims, over a period of at least ten to 15 years, to raise and maintain the quality of the country's schools, leaving no school buildings in poor condition or otherwise unsuitable for 21st century education. It states that new and refurbished schools should be well designed, well built and well managed (Exhibit 3).

25. The strategy documents contain limited detailed information on the scale and nature of the improvements that are needed. There are few specific targets for achieving the strategy's aims and therefore no clear way of monitoring progress. This is primarily because there was no comprehensive and consistent information available from councils at the time about the physical condition and fitness for purpose of all schools. Not every council had made recent, formal assessments of all their schools, and even where they had, the methods of assessment varied. However, there was no doubt that many school buildings needed to be improved.

Exhibit 3
The School Estate Strategy sets out the Scottish Executive's and COSLA's vision and objectives

Our vision is for:

- well-designed, well-built and well-managed schools that:

  – support national and local priorities
  – inspire children, young people and communities

- a future school estate that:

  – meets our aspirations
  – responds to evolving needs
  – is effectively managed and maintained over the long term.

Our objectives for the 21st century school are:

- to deliver better services through the school environment that focus on:

  – the child at the centre: meeting the needs of individual children
  – the school at the heart of the community: meeting the needs of communities

- to deliver these services, in respect of the school estate, through the right:

  – condition: a safe, secure environment
  – sufficiency: schools that match demand
  – suitability: supporting the delivery of better public services including the provision of the right facilities
  – life-cycle management: taking the long-term view
  – design: turning our objectives into reality.

Implementation of the strategy is likely to take at least ten to 15 years.

Source: *Building a Better Scotland: School Estate Strategy*, Scottish Executive and COSLA, 2003

26. The Scottish Executive set an interim target of enabling (through financial support and guidance) the renewal of another 300 schools by 2009 (ie, in addition to the 120 schools it reported as being improved by 2003).[17] However, it is not clear what is meant by the term 'renewal' for two reasons.

27. Firstly, it is not clear what type of refurbishment work is considered to be renewal, so schools might be described as renewed when the work done to them still leaves them far short of achieving the standard set out in the strategy – the right condition, sufficiency, suitability, life-cycle management and design. For example, the physical condition of a school may be improved while the building remains unsuitable due to inadequate and inflexible teaching spaces. For any strategy to be effective, clear targets should be stated in terms of the strategy's

17   *Building a Better Scotland: Infrastructure Investment Plan: Investing in the Future of Scotland*, Scottish Executive, 2005.

aims and a common understanding of definitions and language needs to be established. This would mean that a school should only be considered to have been improved, in the context of the School Estate Strategy, if it meets defined standards for all five key elements – condition, sufficiency, suitability, life-cycle maintenance and design. Other smaller-scale improvements are generally outwith the scope of the strategy.

28. Secondly, it is not clear how many schools have been improved as a result of building or refurbishment. Improved schools are not always straightforward replacements of existing schools. For example, a new-build school on a new site sometimes replaces two schools that have been closed, with their pupils and staff merging to create the new school. In other cases, catchment areas may change, affecting not just the new-build school but other neighbouring schools as well. Clearer targets would be achieved by basing them on reducing the number of school buildings that are not of the 'right' condition, sufficiency, suitability, life-cycle maintenance or design. This would lead to targets expressed in terms of the number of schools that still do not meet the minimum standard, rather than how many schools have been improved.

29. Since 2003, the government and councils have been working together to develop a robust and consistent way of assessing the condition of school buildings. The results of this work are beginning to improve the information available. This will make it possible in the near future to review the strategy and to set specific, measurable and meaningful targets against which progress can be monitored.

30. Following the Scottish Parliamentary elections in May 2007, a new administration led by the Scottish National Party (SNP) was established. It is not yet clear how this will affect the future of the School Estate Strategy. However, the government and councils have agreed a concordat, which will mean that councils have more freedom to spend their resources in a way that will best meet their local needs as well as the broad targets agreed in the concordat. School estate improvements are not a specific target in the concordat. A commitment has been made[18] to honour existing offers of financial support for school PFI projects and, as a result, the new administration does not anticipate any delays.

Recommendations

- The Scottish Government and councils should review the School Estate Strategy and set specific, measurable and meaningful targets to ensure that the aims of the strategy are clearly expressed and progress can be properly assessed.

- The strategy should contain an implementation plan which sets out what has to be done, when and by whom.

- The Scottish Government and councils should report progress using information collected at an agreed time and to an agreed standard.

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18   Scottish Parliament written answer (S3W-2599), 14 August 2007.

Part 3. What has been achieved?

Many schools have already been improved but it could take a further 15 to 20 years to achieve the aims of the strategy.

Key messages

- Using the Scottish Government's criteria, early targets have been met for the number of schools to be improved.

- Although it is clear how many brand new schools have been built, it is not clear how many school buildings have been improved through refurbishment, extension, or other work.

- Councils have been using a variety of approaches to assess the condition and suitability of their schools.

- At current rates of progress, it may take another 15 to 20 years to lift all schools out of poor condition.

Exhibit 4

Interim targets on new and refurbished buildings have been met or are on course to be met, according to Scottish Government criteria

Target	Achieved?
To build or significantly renovate 100 schools by 2003 (Source: *Making it Work Together: Programme for Government,* Scottish Executive, 1999)	Yes, but depends on definition of 'significantly renovate'
To complete an additional 200 new or substantially refurbished schools by 2006 (Source: *Closing the Opportunity Gap: Scottish Budget for 2003-2006,* Scottish Executive, 2002)	Yes, but depends on definition of 'substantially refurbished'
To enable the renewal of 300 schools by 2009 (including the 200 schools above) (Source: *Building a Better Scotland: Infrastructure Investment Plan: Investing in the Future of Scotland,* Scottish Executive, 2005)	Current rate of building new schools alone suggests it will be achieved

Source: Audit Scotland

31. It is very difficult to say exactly how many schools have been improved as a result of the investments by the Scottish Executive and councils because of a lack of clear definitions and targets. While a brand new school building is clearly an improvement, there are many other types of school building projects that may or may not be considered to be improvement through 'significant renovation', 'substantial refurbishment' or 'renewal' – all terms used in the various commitments and targets set by the Executive. For example, would a new PE block or classroom extension count as an improvement to the whole school? Or a new roof, windows and boiler? Or refitted science and home economics labs? Or new lifts and ramps for disabled access? While all these undoubtedly improve the learning and teaching conditions, they are unlikely on their own to result in schools that meet the standards set out in the strategy.

32. In this section we set out what is known about the scale of the improvements so far, and the nature of these improvements, although it is not possible to give definitive numbers.

Early targets have been met according to government criteria

33. In 1999, Scottish ministers set a target of 'building or significantly renovating' 100 schools by 2003.[19] While the lack of clear definitions limits our ability to give unqualified assurance that this target was met, councils have identified more than 100 schools that the Executive considers to have been built or significantly renovated by 2003. These have all involved capital expenditure of over £500,000 (primary schools) or £1 million (secondary schools) and have been judged by the Scottish Executive to have resulted in a material difference to the school. On the basis of these criteria, the target has been met.

34. In 2002, ministers made a further commitment to 'complete 200 new or substantially refurbished' schools by 2006.[20] They later extended this target to 'enabling the renewal' of a total of 300 schools by 2009.[21] The Scottish Government now looks to be on track to meet this most recent target, using the same criteria.

35. We asked all councils to tell us how many, and which, schools have been built or refurbished between 2000 and 2006. We compared this with what the Scottish Executive reported to us. Analysis of the data from each source individually, provides reasonable evidence that the 2006 target for improvement has also been met (Exhibit 4). However, when we looked at the data in some detail the schools listed from each source were not the same. This highlights the need for consistent definitions to be agreed and used.
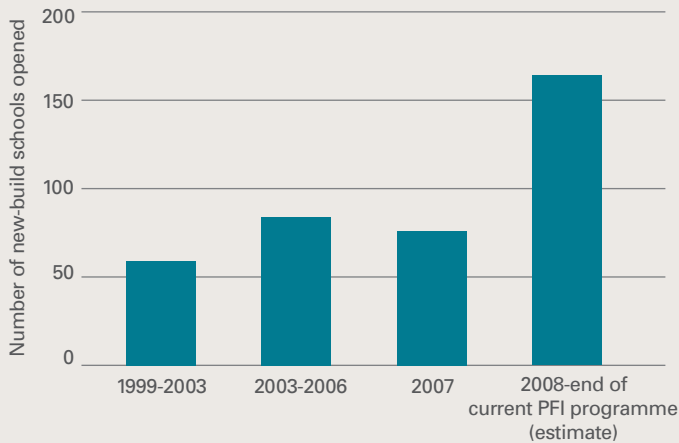
19   *Making it Work Together: Programme for Government,* Scottish Executive, 1999.
20   *Closing the Opportunity Gap: Scottish Budget 2003-2006,* Scottish Executive, 2002.
21   *Building a Better Scotland: Infrastructure Investment Plan: Investing in the Future of Scotland,* Scottish Executive 2005.

Exhibit 5
Newly built schools are continuing to open

Source: Audit Scotland

36. Although we cannot be definitive about the number of schools that have been refurbished, we can be confident about the number of new schools built.

37. Between 1999 and 2006, 143 newly built schools[22] opened. New schools have continued to open since then, including 76 in 2007.[23] It is estimated that at least another 160 will open between 2008 and the end of the current programme of PFI projects (around 2012). This will give a total of over 380 newly built schools since 1999 (Exhibit 5).

38. There is a lot of variation between councils in how they report on schools that have had some work done to them but have not been rebuilt. For example, some only listed work that involved stripping back whole buildings and undertaking major refits in every part of it, while others included improvements such as:

- alterations to a single school department, eg music/art/science

- a new roof/new windows

- refurbished kitchen

- new office accommodation

- new games hall and pool

- replacement of temporary (hutted) accommodation

- classroom extensions.

39. There are many criteria that could be used to develop a clearer definition of what constitutes substantial refurbishment. For example, the amount spent, the proportion of a school's teaching space affected, the overall condition of the school after the work, or the nature of the work. However, using the amount spent on a project, as the Executive did, along with a relatively subjective judgement about material difference, does not produce consistent or easily understood results. This is partly because councils cannot always isolate the costs of each project for each school, but mainly because of the variation in the types of work and size of schools.

40. Kingussie High School in the Highlands is an example of a school that the Scottish Executive has counted towards its target because

more than £1 million was spent on it. However, it did not undergo refurbishment to most of the school, which remains in relatively poor condition. The money was spent on adapting one part of the building and installing a lift to make the upper floors of the school accessible to pupils with mobility difficulties. A small PE staff base was also added.

41. This confusion could be eliminated by expressing targets in terms of standards for the condition, sufficiency, suitability, life-cycle management and design criteria, ie the aims of the strategy.

Improvement to buildings is about more than physical condition

42. Many factors influence councils' decisions about their local school estate. These include the three key factors in the strategy:

- condition – the physical condition of the buildings

- sufficiency – whether there is enough pupil capacity in the right locations to meet demand

- suitability – the extent to which the buildings are fit for their educational purpose.

43. The Scottish Executive's guidance on school estate management planning recommends that councils set out the profile of the local estate in terms of condition, suitability and sufficiency, identify important short-falls and prioritise what needs to be done to address them. There may be other important local factors, for example site constraints, and priorities should also be set in the context of wider policies and plans for local areas, and any anticipated demographic changes. For example, Glasgow City Council's plans were developed within the context of a political priority for education and rapidly decreasing school rolls.

22   Includes 11 stand-alone nursery centres.
23   Including one stand-alone nursery centre.

**Around 200 schools have been lifted out of poor condition in the last three years**

44. It is very difficult to make an accurate assessment of the impact of investment in the school estate on the physical condition of schools. This is because historically councils have used very different ways of assessing the condition of each school. However, based on data published by the Scottish Executive we estimate that the long-term aim of lifting all schools out of poor condition may take another 15 to 20 years at current rates of progress.

45. The Scottish Executive collected condition data from all 32 councils for the first time in 2004. It asked councils to rate the condition of each school on a scale from A to D.[24] The data suggest that nearly 1,200 schools were assessed as being in poor condition (rated C or D) at this time. In 2007, councils reported that there were nearly 1,000 schools in poor condition (rated C or D) (Exhibit 6), a difference of around 200 schools. However, this is only indicative due to differences between councils in the way that they assessed condition.

46. Bearing in mind the limitations of the data, the proportion of schools reported as being in condition C or D had reduced from 42 per cent in 2004 to 36 per cent in 2007. Over a broadly similar time period,[25] the total number of schools in the whole estate had reduced by 55 (from 2,785 to 2,730). Exhibit 7 shows that at this rate of progress (and excluding schools which will deteriorate into poor condition in future), it will take another 16 years from now to address all the remaining condition C and D schools. It could be as long as 20 years if more schools slip from condition A or B into condition C or D during that time, or it may be shorter if some of the schools currently in poor or bad condition are closed as part of rationalisation programmes.

Exhibit 6

The programme of school improvements is lifting schools out of condition C and D and into condition A and B, although limitations of the data mean that we cannot say exactly how many
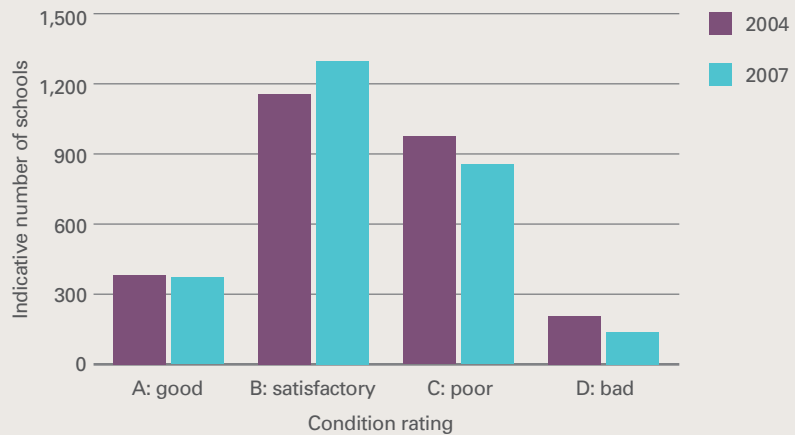
Caution: These figures should be treated as indicative only due to differences in the way that councils assessed condition.
Source: School Estate Statistics 2004 and School Estate Statistics 2007, Scottish Executive

Exhibit 7

At the current rate of improvement in poor condition schools it will take another 15 to 20 years to have no schools in condition C or D

	2004	2007
Number of schools in poor condition, ie condition C or D	1180	992
Percentage of schools in poor condition, ie condition C or D	42%	36%
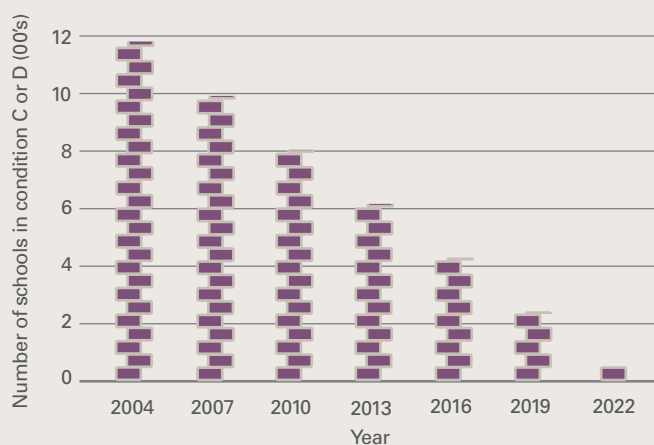
Source: Audit Scotland, using data from School Estate Statistics 2004 (2005) and School Estate Statistics 2007 (2007), Scottish Executive

24   Condition of school buildings is graded into four categories from A to D: A – good condition: performing well and operating efficiently, B – satisfactory condition: performing adequately but showing minor deterioration, C – poor condition: major defects and/or not operating adequately, D – life expired or at serious risk of imminent failure. *School Estate Statistics 2004*, Scottish Executive, 2005.
25   September 2004 to September 2006 – from *Pupils in Scotland 2004*, Scottish Executive, 2005 and *Pupils in Scotland 2006*, Scottish Executive, 2007.

47. The government has recognised the need for better information on the condition of schools and in March 2007 issued guidance on grading condition for councils.[26] It expects all councils to adopt the guidance by the end of 2008. However, as a number of councils carry out condition surveys on a rolling five-year basis, it may be 2013 by the time all schools are assessed using this standard methodology.

48. The 219 new schools (opened between 1999 and 2007) have created condition A buildings, many of which replaced condition C or D buildings. We do not know exactly how many because some were not formally assessed and recorded. Refurbishments and extensions, on the other hand, are often done mainly to address other issues, not just poor condition. These include increasing capacity to meet demand, removing the need for temporary (hutted) units, or addressing other aspects of suitability such as refitting practical laboratories.

Councils with changing pupil numbers prioritise 'sufficiency'

49. Councils have a statutory duty[27] to provide school education to all school-aged children and so provision that matches the demand, or 'sufficiency', can often be the primary driver of changes in the school estate. Changes can be, for example, through new buildings, closures, extensions or the use of temporary accommodation. Many factors contribute to such decisions, including councils' own education policies (eg, optimum school rolls, travel distances, catchment areas, pupil intakes) and national policies (eg, reducing class sizes, keeping small, rural schools open (see Part 7 of this report)).

50. Coping with variable growth and decline in school populations across their area is a significant challenge for many councils in managing their school estate. In 1995, the Accounts Commission published a report[28] that advised councils to take account of a range of factors in making decisions about their school estate. The factors include occupancy; when a school's occupancy level is very low or falls significantly, its future viability needs to be considered.

51. Since 1994, councils have reported annually on the occupancy levels in their schools.[29] By 2006/07 over a third of primary schools and nearly one in eight secondary schools were no more than 60 per cent occupied, while at the other end of the spectrum some 89 primary schools and 53 (one in seven) secondary schools were over occupied.

52. There is no fixed level at which a school should automatically be considered for closure. Occupancy levels alone should not determine what councils decide. But the implications of schools having very low or significantly falling rolls must be effectively managed. (Demand planning is considered in more detail in Part 6.)

53. Some councils have used major building and refurbishment projects to improve occupancy levels in their schools. Faced with a declining school population, Glasgow rationalised its number of secondary schools from 38 to 29 (see case study opposite).

Progress on improving suitability is not clear

54. The extent to which schools are fit for purpose can be different from their physical condition. For example an old school in excellent physical condition may be quite unsuitable in terms of its layout, number and size of rooms, scope for making good use of ICT, and so on. The approach that councils take to assess suitability varies from being a simple questionnaire completed by head teachers to being a systematic assessment using site visits, set criteria, an independent assessor and consistency checks. This makes it impossible to take a consistent Scotland-wide view of suitability and whether it has improved since the launch of the School Estate Strategy.

55. The government has recognised the inconsistencies and has initiated a project to review the approaches and develop, if appropriate, a standard methodology for councils to use.

Recommendations

- The Scottish Government and councils should implement standardised approaches for collecting reliable information about the condition and suitability of school buildings.

- The Scottish Government and councils should agree to report progress in terms of new, clearly defined targets reflecting key standards for condition, suitability and sufficiency.

26   *The Condition Core Fact*, Scottish Government, 2007.
27   The Education (Scotland) Act 1980.
28   *Room for Learning: Managing Surplus Capacity in School Buildings*, Accounts Commission, 1995.
29   Accounts Commission Statutory Performance Indicators, Audit Scotland, annually.

Case study

Occupancy levels in Glasgow's secondary schools

The Glasgow Schools PPP project addressed its entire secondary school portfolio, reducing its 38 secondary schools to 29 and resulting in 11 newly built schools and 18 others which were refurbished and/or extended.

The first schools became available for use in August 2001 with almost all in use by August 2002. This chart shows how the occupancy levels in Glasgow's secondary schools improved between 1999 and 2003.

Percentage of schools

| Occupancy level | 1999/2000 | 2000/01 | 2001/02 | 2002/03 |
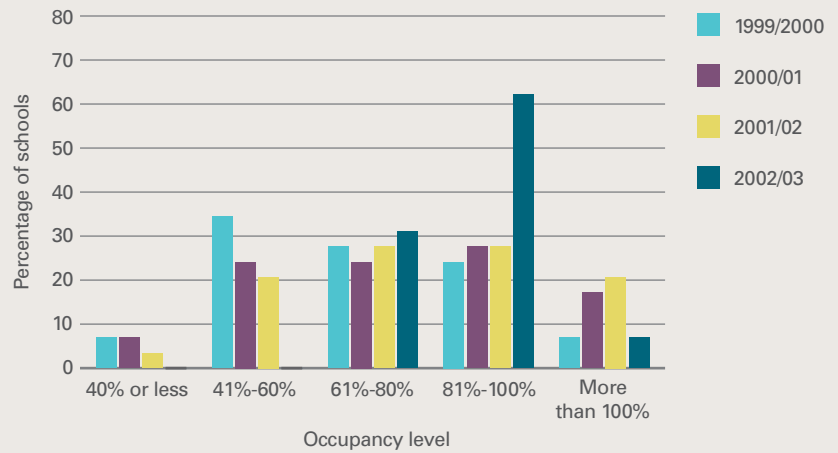
Source: Accounts Commission Statutory Performance Indicators (1999/2000 to 2002/2003), Audit Scotland

Part 4. How much is it costing?

Improvements worth £3.9 billion have been committed in the last seven years and this is expected to increase to over £5.2 billion by April 2008.

Key messages

- Investment in the school estate has increased significantly in recent years.

- £3.9 billion[30] of school building work has been committed in the seven years from 2000/01 to 2006/07.

- This is likely to have increased to over £5.2 billion by April 2008.

- The Scottish Executive allocated financial support to councils before reliable information about the school estate was available and before fully developing the strategy.

- The Scottish Government cannot accurately assess how much still has to be spent to achieve the aims of the strategy until targets are clarified.

- Not all councils have effective long-term plans in place to pay for increases in their PFI charges.

- Councils need to identify the costs of maintenance for non-PFI schools and allocate adequate resources for this.

Exhibit 8

Expenditure on the school estate has increased significantly in recent years, largely due to PFI contracts (for which their capital value is shown in this graph)

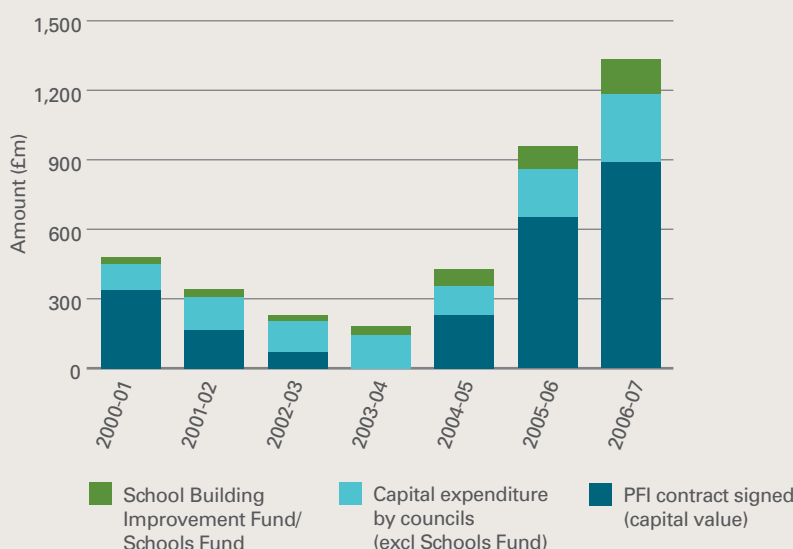|	2001-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	Total
▮	26.7	38.7	26.7	36.7	76.7	96.7	151.35	453.55
▮	113.1	140.3	133.25	144.6	122.4	208.0	245.2	1,106.85
▮	337.3	165.2	70.0	0.0	230.8	651.7	887.9	2,342.9
Totals	477	344	230	181	430	956	1,285	3,903

Source: Scottish Executive

56. There are a number of sources of funding that councils can use to improve school buildings. The relative merits of these are a matter for councils to consider, using Best Value principles and options appraisal exercises to assess which best meet their needs. Decisions will seldom rest exclusively on costs or price. Other factors that may need to be taken into account include: the urgency with which significant improvements need to be made; the scale of funding required; the availability of specific sources at the time they are needed. It is not therefore the purpose of this study to assess the relative merits of particular methods for funding improvements to school buildings.

57. Expenditure on the school estate has increased significantly in recent years. Councils and the Scottish Executive have spent, or committed, the equivalent of £3.9 billion on capital improvements to school buildings in the last seven years (2000/01 to 2006/07) (Exhibit 8). Based on approvals and financial support already allocated by the Executive and the Scottish Government, this is likely to reach a total of over £5.2 billion by April 2008, with most of the additional investment due to PFI contracts (est £896 million in 2007/08).

58. In very simple terms, there are two principal funding routes that councils may take to build or refurbish schools – 'traditional' capital expenditure,[31] including funds borrowed under the Prudential Code,[32] and PFI contracts. PFI contracts tend to be used for new-build schools more than refurbishments, which are more likely to be funded through traditional funding routes. Until now, councils have also been able to draw on central government funding support, such as the Schools Fund.[33] However, from 2008/09, grants specific to school buildings will be incorporated into the general funding allocation provided to councils by the government. Councils will then be free to choose how much they will spend on school buildings.

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30 Expenditure figures shown in this section are in cash terms.
31 This includes all funding routes other than PFI, eg capital borrowing, proceeds from selling off council-owned assets, developer contributions under Section 75 of the Town and Country Planning (Scotland) Act 1997, insurance claims.
32 CIPFA Prudential Code.
33 The Schools Fund is an annual capital grant allocated to councils by the Scottish Executive/Scottish Government to spend on school buildings.

59. Councils' total capital spending each year (excluding Scottish Government grants) has increased in the last two years, though much of the increase is due to expenditure only in Glasgow and South Lanarkshire. In contrast, investment in PFI contracts has increased dramatically. The size of the Schools Fund has also increased.

60. Of the 219 newly built schools opened by 2007, 124 (57 per cent) were built under PFI contracts and 95 were built using traditional funding. However, secondary schools, which are much more expensive to build than primaries or nursery centres, were almost all done through PFI (44 of the 47 secondary schools).

£1.56 billion has been spent by councils through capital expenditure

61. Councils can pay for improvements and elements of maintenance through traditional capital expenditure. The council will usually borrow money for this, although there are other sources, including the Schools Fund, capital receipts,[34] developer contributions[35] and insurance claims, that can be included in a package of funding. Borrowing means that the council must repay the original, or 'principal', sum and pay interest charges on these loans over a number of years. Councils do not borrow to fund individual projects, but borrow to meet the capital requirements of the council as a whole as this is more efficient. When funding is in place, the council will engage a construction company to build or refurbish schools owned by the council.

62. In addition to loan repayments and interest charges, councils usually have to make other ongoing revenue payments to provide facilities management services, (eg, catering, cleaning, janitorial) repairs and maintenance. Often these services are provided by a council's own staff. Therefore, reporting capital expenditure alone does not provide the full picture, but it can be used to gauge the extent of investment in the school estate.

Improvements worth £2.34 billion have been committed through PFI contracts

63. In 1998, Scottish ministers announced financial support for ten PFI projects to build and refurbish 74 schools. This was in line with the government's policy of using Public Private Partnerships as a procurement model. Between 2002 and 2006, the Scottish Executive allocated financial support to a further 30 PFI projects, involving over 200 more schools. The first of the new and refurbished schools in the PFI contracts opened in 2000 and 2001.

64. The features of a PFI contract are substantially different from traditional capital expenditure arrangements. While individual PFI projects can differ, essentially the agreement with a PFI provider is that a package is supplied to the council that includes an asset (in this case a school building, new or refurbished) as well as the day-to-day services to support the building (repairs and maintenance, cleaning, security, etc). Commonly these contracts cover a 30-year period. The council pays an annual charge to the provider for the whole package.

65. The level of traditional capital expenditure for a project cannot be directly compared to the charges paid or committed under a PFI contract. This is because these PFI payments cover not only the cost of construction, but also a number of ongoing services over a typical 30-year term. The services typically include janitorial, cleaning, maintenance and energy costs, but individual contracts vary. The payments are, subject to indexation, spread equally over the life of the contract. By reporting only the capital value of PFI projects we can treat these and traditionally funded projects in a broadly comparable[36] manner for the purposes of this study.

66. By April 2007, councils had signed 28 PFI contracts for work worth £2.34 billion of capital investment in schools (Exhibit 9). By April 2008, this is expected to rise to 36 signed PFI contracts with a capital value of over £3 billion.

Government has supported both funding routes…

67. Central government has provided councils with specific funding for school building improvements in two ways. The first is through the Schools Fund, which is an annual capital expenditure grant to all councils. It increased from £26.7 million per annum in 2000/01 to £151.35 million per annum in 2006/07 (£0.45 billion in total over seven years) (Exhibit 8, page 19). The grant is divided among councils to reflect broadly the number of pupils and classes provided by each council.

68. The second, and much larger, funding support from the government comes through revenue support for PFI contracts. For every PFI project, the government funds up to 80 per cent of a project's capital costs and up to 40 per cent of the maintenance costs through equal annual payments over the length of the contract. The annual charges for all the PFI contracts are likely to reach over £500 million a year by 2012, when all the contracts currently in the

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34   Income from selling council-owned assets.
35   Under Section 75 of the Town and Country Planning (Scotland) Act 1997.
36   Capital value also includes an element of capitalised maintenance, eg items that will be replaced during the life of the contract because they are not expected to last for the full 25 or 30 years. This element is typically between five per cent and 13 per cent of the total amount.

pipeline become operational. Just over £200 million of this will be funded through revenue support from the Scottish Government.

**…but support was allocated before the strategy was launched**

69. The Scottish Executive allocated funding in support of an estimated £2.5 billion (capital value) of PFI school building projects between 1998 and 2003, most of it before launching the School Estate Strategy, and all of it before having robust data to determine the true scale of the need. This committed the government to long-term revenue support of approximately £120 million a year over 30 years. Since then, support for an additional £1 billion has been allocated, which will bring the revenue support costs to over £200 million a year until the 2030s (Exhibit 2, page 8).

70. At the time there was wide consensus on the need for major investment in the school estate, and it was clear that the total amount needed would be far in excess of what was initially committed. Final decisions about financial support for councils' PFI projects were made on the basis of full business cases, in which councils were required to set out:

- a comprehensive analysis of the proposed project

- a full options appraisal

- details of the procurement process and selection of preferred bidder

- a project output specification giving a clear statement of the service delivery required

- a Public Sector Comparator. This estimates what the project would cost if it was funded by traditional means, and includes an assessment of the risk to the council inherent in the project.

Exhibit 9
Capital investment through PFI contracts increased dramatically from 2004/05, when contracts in the second phase of PFI funding support began to be signed

Year in which PFI contract was signed
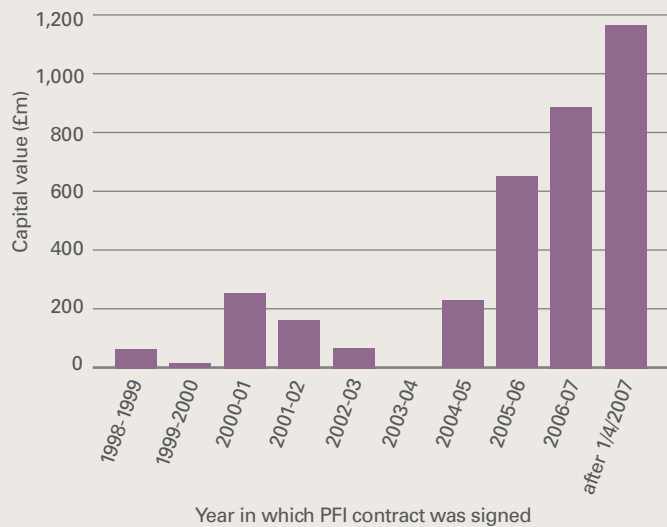
Source: Scottish Government Financial Partnerships Unit, 2008

The Scottish Government should now develop a financial strategy

71. Until the introduction of the Prudential Code in 2004, which eased constraints on council capital expenditure, PFI was realistically the only way that councils could implement large-scale school improvement programmes within reasonable timescales, and without sacrificing other projects competing for funds. Prudential borrowing removes direct Scottish Government control over capital expenditure by councils, but so far only two councils have chosen to fund major school projects explicitly through prudential borrowing. Other councils report that they have not increased their level of capital expenditure significantly since 2004, and that the availability of revenue support funding for PFI projects from the Scottish Executive was an important factor in their decision to proceed with PFI projects after 2004. Comparable levels of specific revenue support are not available to councils for loans taken out under prudential borrowing.

72. Future levels of funding support for improving the school estate will be determined by government policy. The new Scottish Government elected in May 2007, has indicated a wish to introduce a 'Scottish Futures Trust' as a replacement for the PFI approach.

73. Whatever the sources of funding, the Scottish Government should now identify a financial strategy if support for councils to achieve the aims of the School Estate Strategy is to continue. As the quality of data available from councils improves in the next few years, it will become easier to estimate how much more investment is required and over what period of time. The amount of financial investment required should be estimated now and kept under review as the information improves and progress towards targets continues. Importantly, the financial strategy should allow for the long lead-in time that experience in the early projects indicates is required for major school-building programmes. If the scale and trends of the improvement work continue, the strategy may involve

committing revenue funding over a long period of time, perhaps up to 50 years.

Some councils are not planning adequately for future increases in PFI charges

74. The funding support committed by the Scottish Executive is for a fixed amount each year, but the PFI contract charges are increased by an indexation rate each year. This means that councils fund an increasing share of the charges each year. The net impact of this is that councils must find relatively more money each year to pay the contract charges. The shortfall between identified funding sources and the cost of the annual charge is referred to as the 'affordability gap'.

75. Sources that councils have identified to fund the increasing contract charges include council tax rises at the start of the contract, savings on services transferred to the PFI provider, general revenue savings and capital receipts. Some have also indicated a reliance on the Schools Fund, although at the time there was no guarantee that this would continue in future years. In fact, from 2008/09 the fund will be incorporated into the general financial allocation from the Scottish Government to councils, and will therefore not be 'ring-fenced' specifically for spending on schools.

76. Not all councils involved in PFI contracts have effective plans in place to meet these increased costs, putting pressure on future budget planning as a result. Difficult decisions may have to be made about use of limited resources with a risk of important services being cut or new service developments being prevented.

77. Additionally, as the contractually binding PFI charges will have to be paid, maintenance budgets for non-PFI schools may suffer a squeeze with the possibility that the condition of these schools could deteriorate more quickly.

Councils may not be able to spend enough on maintaining non-PFI schools

78. The fact that maintenance of the facilities to an agreed standard is ensured for the length of the contract is a significant strength of PFI contracts. Due to a lack of detail in data about councils' expenditure on schools maintenance, it is not possible to accurately assess or compare the levels of maintenance in PFI and non-PFI schools. But the councils we visited expressed a view that the maintenance standard in PFI schools is higher than in the rest of the school estate. The Royal Institute of Chartered Surveyors (RICS) estimates that the average annual maintenance spend for a primary school is £25 per m^2 and £21 per m^2 for a secondary school.[37] The six councils we visited all confirmed that they are unable to spend as much as they would wish each year to maintain their non-PFI schools in as good a condition as PFI schools.

79. The Scottish Government and councils should review the potential long-term effects of the current levels of maintenance spend on school buildings. Not enough is being spent at present to sustain required standards, and there is a risk that maintenance budgets may become squeezed further as councils' PFI contract charges increase and other demands continue to be made on council funds. This may mean that the condition of school buildings will deteriorate faster in non-PFI schools, creating poorer conditions for pupils and staff and running the risk that

relatively new schools will need to be replaced sooner. Overall this may threaten the successful achievement of the School Estate Strategy.

Recommendations

- The Scottish Government should identify a financial strategy for achieving the aims of the School Estate Strategy. The amount of financial investment required should be estimated now and kept under review as information improves and progress towards targets continues. The financial strategy should allow for the long lead-in time required for major school-building projects.

- Councils should develop plans for the duration of their PFI contracts that identify how they will pay the increasing charges for their PFI contracts.

- The Scottish Government and councils should ensure that adequate resources are allocated to building maintenance for schools without PFI maintenance contracts.

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37 Estimates are based on information from a variety of sources in England and Wales. They reflect the amount that has been spent on maintenance rather than recommended spend. *Review of maintenance costs 2007*, Royal Institute of Chartered Surveyors, 2007.

Part 5. How effective are the improvements?

Our study suggests that both new-build and refurbished schools could be better designed.

Key messages

- The new-build schools we assessed meet some aspects of good practice in school design, but fall short in others. This varies a lot between schools.

- Refurbishments can leave schools well short of good practice standards.

- Environmental conditions are important to staff and pupils but school design does not fully take account of these.

- Environmental sustainability is not a key factor in the design of both new-build and refurbished schools.

- School design generally meets good practice in site and space planning, but pupils complain of lack of space in classrooms, corridors and social spaces.

- School buildings vary in terms of their flexibility, general attractiveness and community facilities.

- Progress in improving school design could be faster.

The Scottish Executive identified key elements of good school design

80. The Scottish Executive included ten features of a well-designed school in its guidance to councils on school design (Exhibit 10). We found wide variation in the extent to which new and refurbished schools meet these features.

81. Separate guidance[38] was issued on designing sustainable schools. It sets out the Scottish Government's commitment to sustainability and the role of school design in this. Environmental sustainability in school design involves taking a holistic approach to factors such as materials, energy, transport, health and well-

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Exhibit 10
The Scottish Executive included ten features of a well-designed school in its guidance to councils

- Good environmental conditions throughout, including appropriate levels of natural light and ventilation.

- Robust materials that are attractive, that will weather and wear well, and that are environmentally friendly.

- Good clear organisation, a clear plan and full accessibility.

- Circulation that is well organised and sufficiently generous.

- Spaces that are well-proportioned, efficient, fit for purpose and meet the needs of users.

- Flexible design that will facilitate changes in policy and technology and which allows expansion or contraction in the future, where appropriate.

- Attractiveness in design, comparable to that found in other quality public buildings.

- Good use of the site and public presence as a civic building.

- Attractive external spaces with a good relationship to internal spaces and offering appropriate security and a variety of different settings.

- A layout that encourages broad community access and use out of hours, where appropriate.

Source: *School Design, Building our Future: Scotland's School Estate*, Scottish Executive, 2003. Taken from *Achieving well-designed schools through PFI*, Commission for Architecture and the Built Environment (CABE), 2002

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being, ecology, water and pollution to minimise any undesirable impact on the environment. It should be a key element in the design of new and refurbished schools if they are to be truly sustainable.

Design of new-build and refurbished schools could be better

82. We commissioned the Building Research Establishment (BRE) to undertake design quality reviews at a sample of 18 new or refurbished schools. They assessed the school buildings against a set of generally accepted standards for school design and against the ten features of a well-designed school. We also commissioned pupil focus groups and a staff survey at some of the same schools to examine their experience of the improved schools. Details about BRE and the methods used are in Appendix 1.

83. Our study indicates that new-build schools generally meet good practice standards for site and space planning, internal and external design details, choice of materials and fittings, and safety and security. They fall short of the standards for environmental conditions (temperatures, levels of daylight, acoustics, air quality and noise or visual distractions), environmental sustainability and the mechanical and electrical engineering systems that control heating, lighting, ventilation, plumbing, etc.

84. The refurbished schools fall below the standards being met by new-builds in every aspect. Refurbishment work can have unintended consequences resulting in a negative impact. In relation to environmental conditions for example, installation of poorly designed replacement windows can reduce

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38   *Sustainability, Building our Future: Scotland's School Estate*, Scottish Executive, 2004.

the levels of daylight and introduce difficulties with ventilation and summertime overheating. This can have a significant negative impact on staff and on pupils' educational performance.[39]

85. To maximise the positive impact of refurbishments, they need to be designed taking a holistic view of a school. In the context of the School Estate Strategy, a refurbishment should aim to result in a well-designed school that meets the needs of pupils and staff, within the constraints of the existing building.
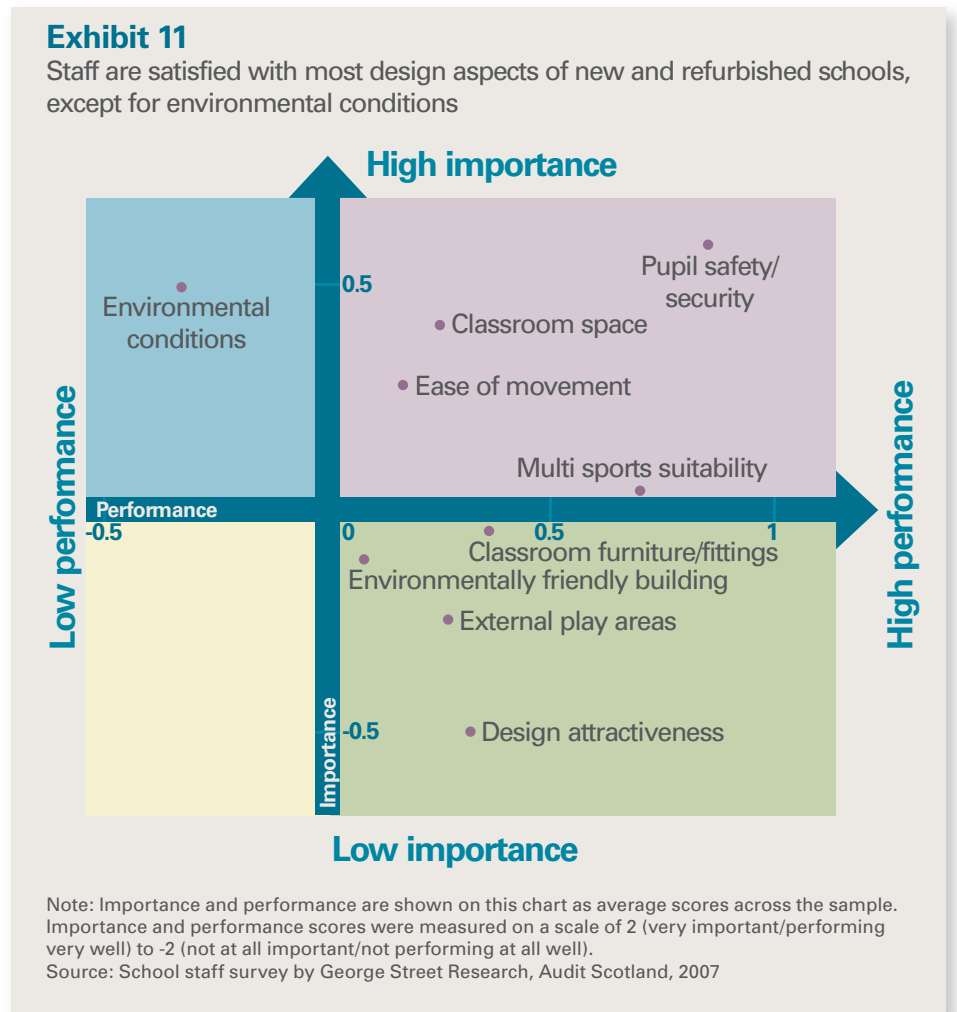
86. The problem of poor ventilation and overheating is not confined to refurbishments. The design aspects that rated most poorly in both the new and refurbished schools are those relating to user comfort, in particular temperatures, ventilation and levels of natural daylight.

87. We also found little evidence of environmental sustainability being a key element in the design of any of the schools in our sample.

Pupils and staff identified a number of issues but are generally satisfied overall

88. Pupils and staff are generally satisfied with new or refurbished accommodation but some expressed dissatisfaction with a few aspects. In general, those in primary schools are more positive about changes to their school than those in secondary schools. They view new-build schools more favourably than refurbishments. Pupils in schools with new extensions expressed a sense of injustice on behalf of those who had to use the older spaces.

89. Staff were asked to rate the importance of various aspects of design using a scale of 2 (very important) to -2 (not at all important). They were than asked to score how well they thought their school

Exhibit 11
Staff are satisfied with most design aspects of new and refurbished schools, except for environmental conditions

Note: Importance and performance are shown on this chart as average scores across the sample. Importance and performance scores were measured on a scale of 2 (very important/performing very well) to -2 (not at all important/not performing at all well).
Source: School staff survey by George Street Research, Audit Scotland, 2007

performed in this respect using a scale of 2 (performing very well) to -2 (not performing at all well). Exhibit 11 shows their performance rating for each design aspect compared with the importance they attach to it.

90. They put the safety and security of pupils at the top of their priorities for school design, and feel that their new or refurbished schools are performing well in this respect. After that, the aspects they feel to be the most important are:

- environmental conditions (eg, heat, light)

- good classroom space per child

- ease of movement around the school.

91. Environmental conditions are very important to staff (second only to pupils' safety), and yet they rate their school's performance in this much lower than any other aspect.

92. Staff are concerned about how well the building performs on environmental sustainability, although they do not see this as being especially important to them in doing their work.

93. Exhibit 12 (overleaf) summarises how the schools measure up to the ten features of a well-designed school as assessed by BRE and school pupils and staff.

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39 *Daylighting in schools*, Heschong Mahone Group, USA, 1999.

Exhibit 12
Overall, schools do not meet good practice design standards, but this varies for different aspects of design

Design feature	Our assessment
Good environmental conditions throughout, including appropriate levels of natural light and ventilation	Environmental conditions are important to staff and pupils but design does not fully take account of these: • Air quality (ventilation) and temperature are overwhelmingly a cause for concern at almost every school in the sample. • Temperature, in particular, is of major concern to staff and pupils.
Robust materials that are attractive, that will weather and wear well, and that are environmentally friendly	Environmental sustainability is not a key factor in school design: • There is no evidence in any of the sample schools that it was a key factor in design. • There are some examples of minor initiatives that contribute to saving on use of natural resources.
Good clear organisation, a clear plan and full accessibility Circulation that is well organised and sufficiently generous Spaces that are well proportioned, efficient, fit for purpose and meet the needs of users	School design generally meets good practice in site and space planning but pupils complain of lack of space in classrooms, corridors and social spaces: • Physical accessibility for pupils with disabilities almost meets best practice standards (ie, higher than good practice standards). • Lack of space is a key issue for pupils though less of an issue for staff. • There are some reservations about using spaces for a number of different purposes. • Circulation space and corridors are an issue in several schools, chiefly in secondaries. • Pupils have a range of complaints about social/eating spaces.
Flexible design that will facilitate changes in policy and technology and which allows expansion or contraction in the future, where appropriate	School buildings vary as to how much flexibility is incorporated into their design.
Attractiveness in design, comparable to that found in other quality public buildings Good use of the site and public presence as a civic building Attractive external spaces with a good relationship to internal spaces and offering appropriate security and a variety of different settings	Staff and pupils consider new schools to be more attractive than refurbishments: • Most new schools in the sample are close to good practice standards for their architecture and site usage. • Most staff and pupils find the buildings attractive. • Refurbished schools are generally viewed less positively. • Children appreciate the colour and variety in their primary school environments but secondary schools can seem dull. • External spaces vary from spacious landscaping and planting to large areas of unimaginative hard surface.
A layout that encourages broad community access and use out of hours, where appropriate	New-build schools, particularly secondaries, are often designed with community use in mind.

Note: The assessments are based on a sample of 18 new or refurbished schools opened by April 2007.
Source: Audit Scotland

Exhibit 13
Poor ventilation can result from windows that have only one opening section in the centre

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Photograph: Building Research Establishment

Environmental conditions are important to staff and pupils but design does not fully take account of these

94. Air quality (ventilation) and temperature are overwhelmingly a cause for concern at almost every school in the sample.

95. Poor ventilation is an issue for staff and pupils in many schools. A small majority of staff feel there is inadequate ventilation in the spaces where they work and a larger majority feel it is not easy to control.

96. Inferior design features in both new-build schools and refurbishments have resulted in missed opportunities to improve ventilation particularly in relation to room dimensions and windows. For example, there are many instances of fixed roof-lighting in corridors and other spaces, or the installation of double glazing with fewer than the optimal number of opening windows. These both lead to inadequate ventilation and temperature control (Exhibit 13). In some cases high and low level opening windows are installed but are not being used properly by staff. This can be because they do not know that the windows open, they do not know how to open them, or they cannot

reach them. Some councils avoid this problem by issuing a simple user guide or instructions to staff.

97. Temperature is of major concern to staff and pupils. Their experience reflects the views of the design experts. The vast majority feel that temperatures in working areas are not maintained at suitable levels for comfort and that it is not easy to control. Overheating, especially in the summer, is a common problem. Some of this could be addressed by better management or maintenance of the current systems but most is due to poor design.

Environmental sustainability is not a key factor in school design

98. There is no evidence in any of the sample schools that environmental sustainability was a key factor in the design. Environmental sustainability features are only included where they do not increase costs significantly. There are good examples of minor initiatives which make small contributions to saving energy and natural resources and demonstrate sustainable development principles to the pupils.

99. Some of the smaller initiatives include:

- Large rooflights to maximise daylight in corridors and areas without windows.

- Opening and/or projecting rooflights to maximise natural ventilation.

- Ample insulation to minimise heat loss in winter.

- Systems to minimise water use.

- Daylight or movement sensors to control lighting.

- Energy efficient boilers.

100. There are missed opportunities for incorporating environmentally friendly features into overall design. For example, maximising the use of daylight in classrooms to minimise electric lighting (Exhibit 14, overleaf), or fitting optimal configurations of opening windows to aid ventilation and reduce the need for mechanical air conditioning.

101. Some schools use mechanical cooling units in areas such as IT suites and home economics rooms. If this trend increases, there are implications for costs and environmental sustainability.

102. Environmental sustainability should be a key element of school design, not an added extra, if schools are to become the environmentally sustainable buildings described in the Executive's guidance document, *Sustainability: Building our Future: Scotland's School Estate* (2004). There are signs that this is beginning to happen in some more recent schools. For example, Deanburn Primary School in Bo'ness and Windygoul Primary School in Tranent both incorporate a number of environmental sustainability features (see case study, overleaf). Windygoul recently won the Carbon Trust in Scotland's Low Carbon Building Award 2008.

Exhibit 14
Good daylighting in this gym reduces the need to use energy for lighting

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Photograph: Building Research Establishment

Case study
Environmental sustainability features at Deanburn and Windygoul Primary Schools

Deanburn Primary School, Falkirk Council, was opened in September 2005 following a major refurbishment, and Windygoul Primary School, East Lothian Council, is a new-build school that was opened in August 2007.

Deanburn Primary School, Falkirk Council	Windygoul Primary School, East Lothian Council
• Green living roof of grass or sedum. Green roofs have good insulation properties keeping the building warm in winter and cool in summer. • 'Breathing walls' which reduce the need for artificial ventilation and recycled wallpaper, which improve the air quality in the building. • A non-mechanical ventilation system. • A wind turbine which can generate 15kw electrical power. • Rainwater is collected, stored in cisterns and used to flush school toilets. • A heat recovery system. • SUDS – A drainage system which channels water runoff from the grassy areas in a sustainable way.	• Green living roof of grass or sedum. • Walls made of 'breathing' materials which help provide a toxin-free environment within the school. • Solar panels to heat water and provide electricity. • Natural lighting and ventilation.

Sources: Falkirk Council and East Lothian Council

103. In addition, in November 2007, the Highland Council decided to replace Acharacle Primary School as a sustainable pilot project. The project aims to deliver a school which:

• is a sustainable building that is highly insulated, has high levels of natural light and is naturally ventilated

• has a minimal mechanical and electrical engineering requirement

• incorporates materials which provide a toxin-free environment

• has very low energy use, contributing to the reduction of CO_2 emissions and carbon footprint.

School design generally meets good practice in site and space planning but pupils complain of lack of space in classrooms, corridors and social spaces

104. Many schools can demonstrate good clear organisation in the way that the classrooms and other spaces are laid out in relation to each other and in the way that the building is situated on the site.

105. Physical accessibility for pupils with disabilities almost meets best practice design standards. This is not wholly endorsed by the staff survey. On average, over half of the staff (55 per cent) who responded feel it is possible to meet the needs of children with disabilities in their workspaces, but over a third (36 per cent) disagree.

106. New-build schools have disabled access and facilities to help meet the needs of pupils with disabilities. However, older buildings often need to be adapted. Some councils have set out to make the buildings accessible as part of refurbishment work, making universal access a priority whether or not any pupils with disabilities are on the roll. Others use a mixture of physical features and management strategies to accommodate such pupils, for

example by rotating classes to exploit ground floor accessibility.

107. While accessibility for pupils with disabilities is considered to be good, pupils and staff are less satisfied with the amount and use of space in classrooms and other areas of the school. Lack of space in classrooms is a key issue for pupils, although less of an issue for staff. Pupils raised problems with classroom space in most schools, both new and refurbished (Exhibit 15).

108. Moving about the building at busy times can be a problem. Circulation space and corridors are an issue in several schools, mainly in secondaries. At busy times there can be serious congestion that could be caused by long, dim corridors or where there are lockers taking up space in the corridor. For health and safety reasons some schools have introduced arrangements to relieve pressure such as one-way systems, or by declaring certain corridors out-of-bounds. This can increase travel time between lessons.

109. Pupils have some reservations about joint use of space. For instance, where a dining hall is also used as a teaching space, mess and noise from cleaning up is a distraction. A multi-use hall which combines a gym and a theatre can be out of action for PE for some time when set up as a theatre.

110. Secondary pupils are more likely than primary pupils to have access to indoor social spaces though this is often combined with dining facilities. While welcome, the size and functionality of a single space for the whole school can create problems. Pupils find it congested, noisy, short of places to sit and eat and difficult to meet up with their friends. Sometimes they feel it could be addressed by managing better the use of other spaces, eg the assembly hall or a seminar room. Pupils commented negatively about the lack of a communal staff room in one building where staff only have departmental bases and have to eat with the children.

Exhibit 15
Pupils complained about lack of space in classrooms and circulation areas but they particularly appreciate new or improved PE facilities

Classroom space in primary schools

"There's a wall beside where my desk is and when I try to stand up I normally can't stand up because of the way my table is, and the wall is right beside me, so… all the paintwork has been all scratched off from me and previous people sitting there. I just think we need a classroom arrangement. It's quite arranged, it's quite orderly, but I think if we changed around that certain piece of furniture, I think we'd all be able to get out a bit better."

"We had to get rid of a group 'cos there wasn't enough room in the classroom for the four ….there wasn't enough room for three tables."

New or improved PE facilities

"There's the big PE hall and there's a small gym thing in another room. It's really good."

"We do have good equipment for gym that's all really good."

"In the gym hall I like the basketball nets, the big ones that are up on the wall because they're like, yeah for the backboards. They give you a taste of the real basketball, not just the wee netball nets that other schools use."

Circulation space

"That's the thing about those corridors is, it was small anyway, so people are standing all at their lockers, people are bent down, and then there's people trying to get through, so it's ….there's always like a traffic jam."

Source: School pupil focus groups by George Street Research, Audit Scotland, 2007

111. For pupils, the most popular improvements are those to PE and sports facilities (Exhibit 15). Improvements to other activity-based spaces were also acknowledged, eg libraries and music rooms.

112. Almost universally staff find it easy to report a problem and that problems are generally dealt with satisfactorily.

School buildings vary as to how much flexibility is incorporated into their design

113. Flexibility within the building tends to be interpreted as flexibility of classroom spaces through moveable partition walls. This feature has been incorporated into a number of new school buildings but there are mixed reports of the extent to which the flexibility provided is being used at present.

114. Adaptability, ie the ease with which the building can be expanded or altered, has been designed into some new schools, particularly those where anticipated housing developments will increase pupil rolls in future years.

Staff and pupils consider new schools to be more attractive than refurbishments

115. Most new schools in the sample are close to good practice standards for their architecture and site usage. Pupils and staff are very satisfied with their school's appearance, although refurbished schools are generally viewed less positively. Some staff reported that levels of vandalism are reduced in new-build schools. Only one of the sampled schools achieves best practice design standards, demonstrating good use of the site and a sense of public presence as a civic building (Exhibit 16).

116. There is generally a greater challenge in making refurbished older buildings attractive, but sometimes unimaginative and poorly designed alterations are responsible for their disappointing appearance. Building extensions present even greater issues, with new parts serving to highlight the lack of appeal in the original part of the building.

117. Pupils said that they appreciate colour and variety in their surroundings. Primary schools are living up to their expectations by providing a colourful and stimulating environment. In contrast, some secondary school pupils find their school buildings bland and characterless (Exhibit 17). Sometimes this is attributed to a ban on fixing or sticking anything to walls.

118. Children also identify and appreciate good and interesting architecture. They like internal space to be 'spacious', 'clean', 'cool' and 'bright' and they want good social spaces (inside and outside) where they can meet friends during break and lunchtimes.

Exhibit 16
Some schools achieve a number of best practice design standards, including a sense of public presence as a civic building

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Photograph: Building Research Establishment

Exhibit 17
Secondary school pupils feel that their new and refurbished schools are attractive but could provide more colour and variety

"All the classrooms look the same and boring colours."

"Well the school – the way it looks now, compared to the way it used to look like, there's quite a difference. The way the school used to be there was vandalism everywhere and like the corridors smelled really bad and everything, but the way the school looks now is quite different. It looks good."

"Every one [classroom] you walk into is exactly the same as the one you have just been in."

"I think it would be easier to learn; I would be so much happier if it was brighter and stuff. Like … totally depress you."

Source: School pupil focus groups by George Street Research, Audit Scotland, 2007

119. External spaces vary from spacious landscaping and planting to large areas of unimaginative hard surface (Exhibit 18). In primary schools the playground is usually the social area and is often the pupils' favourite space. For them, improvements are generally about better play equipment, though in schools where garden areas with planting had been provided these are appreciated by the children. Lack of seating was a common complaint.

120. External spaces in secondary schools do not seem designed to include social space for pupils. Few pupils feel they have access to space which could be considered a playground and, as with primary schools, a common complaint was lack of seating.

Exhibit 18
External spaces vary from landscaped courtyards to large areas of unimaginative hard surface

PHOTO REDACTED DUE TO THIRD PARTY RIGHTS OR OTHER LEGAL ISSUES

Photograph: Building Research Establishment

New-build schools, particularly secondaries, are often designed with community use in mind

121. Many schools are providing community access to their facilities outside of school hours but only a few have community facilities that can be used during the school day. New-build schools, particularly secondaries, are often designed with community use in mind.

122. In some, mostly refurbished, schools there is little evidence of a layout that encourages broad community access. Councils recognise the benefits of sharing school facilities with the community, most commonly halls, PE facilities and meeting rooms. Because they are shared, the school uses them during the school day and at other specific times such as Saturday mornings. The community has access to them at other times. However, where there are facilities that the community can use during the school day, staff are concerned about security and disruption. One example which overcomes this is in a new-build primary school in Fife, which has an annex for community use sited to the opposite side of the entrance hall from the school.

123. Some examples have been publicised in local media of community use declining where charges have increased for PFI schools. This happened in some early PFI contracts that allowed private sector management companies to set the charges for community use. However, most of the councils we visited now charge the same tariff for all their schools whether they are PFI funded or not, and this is specified in PFI contracts.

124. A recent study by sportscotland[40] found that while some councils had taken the opportunity to improve outdoor sports facilities while improving school buildings, others had failed to do so. They had either not included outdoor facilities in the project or had used cheaper, poorer artificial surfaces.

Progress in improving school design could be faster

125. Our design quality assessments do not provide conclusive evidence that the design of more recent schools is any better or worse than schools built or refurbished in the earlier stages of the programme. However, councils that have completed more than one major schools project can point to a number of important lessons they have learned about school design in the first project and taken forward into subsequent projects.

126. These lessons include specific design features such as classroom sizes and layouts, the width of corridors, and multiple uses of large spaces such as halls and dining areas. There are also some lessons about the process, including the need to consult and involve school users in the design, even though this lengthens the design process.

127. Some of the shortcomings in the design of schools already built, in particular those relating to environmental conditions and the comfort of pupils and staff, would not necessarily have been expensive to avoid if councils and their contractors had placed more emphasis on recognised good practice and its proven impact on learning and teaching. Our 2002 report identified a need for specific guidance on heating, lighting and other factors affecting the learning environment. The Scottish Executive has now issued guidance *Optimising the internal environment*[41] to help councils specify their environmental requirements for school design. Councils should use this to make sure that future school designs strike a good balance for the comfort of everyone who uses the building.

128. In the schools that have already been built and are suffering from problems with ventilation, temperature control and levels of daylight, some of the difficulties can be addressed retrospectively through better management of the facilities and spaces but many cannot be addressed without expensive alterations.

129. After a school is operational, post-occupancy evaluations (POEs) can provide insights into what works well and what does not, for pupils, staff and other school users. Councils' implementation of POEs vary widely from doing nothing at all, through questionnaires to head teachers/janitors focusing on the standard of workmanship, to full surveys involving a range of school users. There is widespread recognition of the value of POE, and many councils who have not yet carried out any, say they plan to do so.

130. Our fieldwork suggests that until recently many councils have not been sharing good and bad practice with each other. This presents a risk that weaknesses in design may be repeated, and that the process of improving school design may be slower than necessary. The Scottish Government has recognised the need to encourage councils to communicate with each other and has recently facilitated a Local Authority School Estates Network. Although this initiative has been welcomed by councils, and the six-monthly meetings have been well attended, the network has yet to become well established, with a core of council representatives taking the opportunity to liaise with each other on common issues.

131. This sharing and learning process should incorporate issues around facilities management too. For example, some councils have found the helpdesk model and performance standards associated with external PFI facilities management providers so successful that they are considering developing them for their non-PFI schools. They also report benefits from the external provider approach to janitorial services, where facilities management staff are multi-functional and provide a first line of facilities management support.

Recommendations

- To maximise their positive impact, refurbishments need to be designed taking an overall view of the whole school.

- Environmental sustainability should be a key element of school design, not an added extra.

- Councils should consider preparing user guides for all new and refurbished schools to ensure that staff know how to make the best use of the facilities in their building.

- Councils should use the Scottish Executive's guidance *Optimising the internal environment* to make sure that future school designs strike a good balance for the comfort of everyone who uses the building.

- The Scottish Government and councils need to continue working to identify and share good (and bad) practice to ensure that the quality of design keeps improving.

- Councils should make sure they consult and involve school users at the design stages, even if this means the process takes longer.

- Councils should complete post-occupancy evaluations as a matter of priority. They should make the results available to other councils and take up the opportunities offered through the Local Authority School Estates Network to compare notes and learn from each other.

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41   *School Design: Optimising the Internal Environment, Building our Future: Scotland's School Estate*, Scottish Executive, 2007.

Part 6. How well are the improvements being managed?

The school estate management process introduced by the Scottish Executive is driving improvements to the school estate but longer term planning needs to improve.

Key messages

- Councils' School Estate Management Plans (SEMPs) are helping them to plan and prioritise improvements.

- Demand planning varies considerably between councils.

- The Scottish Government and councils could work more closely with each other to maximise the impact of the school improvement programme.

The SEMP process is helping councils to improve their school estates

132. The Executive and COSLA launched their joint School Estate Strategy in 2003, and at that point began the process of more robust and consistent school estate management planning across all 32 council areas. All councils prepared a School Estate Management Plan (SEMP), although some had very little robust information about the physical condition and fitness for purpose of their school buildings.

133. The Scottish Executive published detailed guidance on how councils should develop their SEMPs.[42] The guidance was designed to help councils implement the strategy. It sets out the principles and purpose of the SEMP, its scope and a six-step process for its development (Exhibit 19). It also includes a model plan.

134. Most local authorities submitted a summary of their SEMP, as requested, to the Scottish Executive by the deadline of December 2003. The remainder submitted one in 2004. Councils have continued to produce updates to their plans on a regular basis and the process is now well established in most councils.

Exhibit 19
The Scottish Executive set out a six-step process for developing a School Estate Management Plan

Step 1: Definition of local objectives
The local authority defines its local objectives, reflecting the strategy and local circumstance. These should be strategic, taking account of the wider picture, the long term and sustainability.

Step 2: Assessment of current position
This is followed by an audit of the existing school estate – taking account of condition, sufficiency, suitability, life-cycle management and design – and the extent to which it currently meets the objectives.

Step 3: Consideration of options
The next step is to identify and assess the range of options to meet the objectives. Each option needs to be appraised using economic evaluation techniques: this should consider costs and benefits of each option over the short and long term, take account of resources and identify the option that offers the best solution.

Step 4: Development of the plan
The plan needs to be detailed and long term, although the level of detail will inevitably be far greater for earlier years.

Step 5: Implementation
Implementation should be phased and will need to balance maintenance, refurbishment and replacement requirements.

Step 6: Monitoring, review and evaluation
Progress against the plan's objectives should be regularly monitored and evaluated. The plan should be reviewed, maintained and regularly updated so that it continues to provide good quality management information.

Source: *Building our Future: Scotland's School Estate*, Scottish Executive/COSLA, February 2003

135. Full school estate management planning was not widespread until the introduction of the SEMP process with the strategy. Councils had prepared detailed business plans in support of their PFI projects but strategic planning for the whole estate had not been a priority in most councils because there was little money available to be spent on the estate other than for essential maintenance and repairs.

136. Councils' SEMPs are still developing and improving, but already they have helped councils to prioritise the work they need to do to improve their school estates, and are helping the Scottish Government to understand the nature and scale of the improvements still needed. Many councils have also used it as the basis for developing their approach to managing all their assets, not just schools.

137. One important benefit of having SEMPs is that they enable a more effective balance in decision-making between political factors and objective delivery issues. Schools are very important to local communities and so any decisions about schools are very sensitive and attract a lot of attention and activity from local people and their elected representatives. SEMPs set out objective criteria as a basis for making decisions and some include a full options appraisal based on these criteria.

### Demand planning varies considerably between councils

138. Future planning for school places to meet projected demand must be based on robust pupil number projections for at least ten years ahead. Demand planning varies considerably across councils, with fewer than half currently estimating the number of pupils they expect in their schools beyond ten years. All councils now have SEMPs but some focus only on the next one to five years (Exhibit 20).

139. Beyond 15 years it is more difficult to plan for demand, and the benefit reduces as there is a greater risk of uncertainty around longer term projections. However, the average planned lifetime of a new school is 50 years, and any funding decisions should be based on reasonable expectations that assets will be appropriately used for a substantial proportion of their life. Given the greater uncertainty of longer term demand estimates, there is a need for flexibility across the estate. This might include school buildings that can be readily expanded or easily converted to other uses.

140. Despite good demand planning that looks ahead ten to 15 years, there can be unexpected demographic changes. For example, in Edinburgh

Exhibit 20
Fewer than half of councils estimate the number of pupils they expect in their primary schools beyond ten years ahead
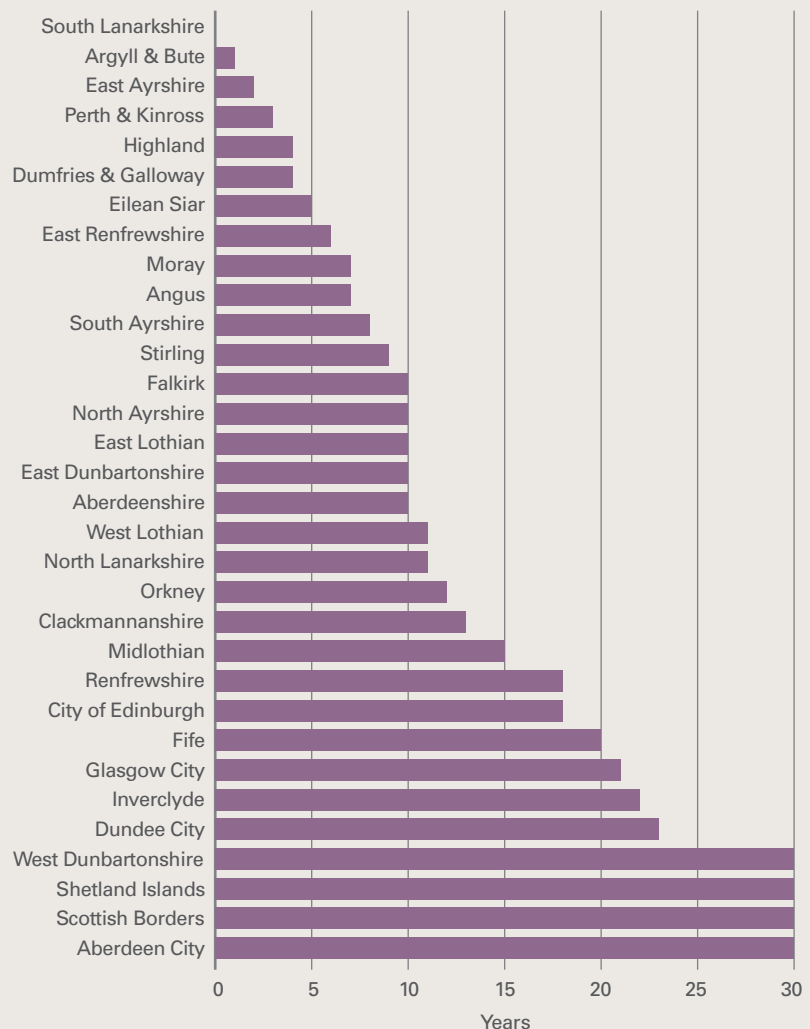
Note: Most councils forecast primary and secondary projections over the same period. The exceptions are Dumfries & Galloway which makes projections for secondaries over 11 years, East Dunbartonshire which makes projections over seven years, Inverclyde which makes projections over 29 years, and South Lanarkshire which makes projections over seven years.
Source: Audit Scotland

recent increases in house prices have caused growing families to move out of the city to find larger accommodation at affordable prices in Mid, East and West Lothian council areas. The primary school roll reduced by 19 per cent in a period of just five years.[43] In other places, new developments have created 'hotspots', putting pressure on local schools, eg

Dunbar in East Lothian. And in schools in the Highlands the influx of, mostly Eastern European, immigrants has seen an increase of 80 per cent in the number of bilingual pupils in just two years to a current total of over 700.[44] This emphasises the need for flexibility to increase or decrease provision in response to unforeseen demographic changes.

43   City of Edinburgh Council.
44   Highland Council.

There is scope for better joint working

141. The Scottish Government is providing leadership through guidance and support to councils. It has been working with them, and with relevant experts, to contribute to continuous improvements in the way that the school estate is being improved.

142. Our 2002 report recommended that the Scottish Executive consider developing a leadership role to ensure that the special experience and skills learned from early PFI schools projects be transferred to future projects. It also identified a need for specific guidance on standards for classroom size, heating, lighting and other factors affecting the learning environment. The Executive has since taken forward a number of initiatives, working with councils, to provide them with guidance and support, including actions to encourage sharing experiences of early schools projects. These include:

• Specifying the SEMP process and discussing progress with individual councils annually.

• Developing written guidance and running seminars on school design.

• Working with councils to agree a common methodology for assessing condition and suitability of school buildings.

• Initiating the Scottish Schools PPP Group and Local Authority School Estates Network to encourage councils to share experiences.

143. Despite all these initiatives, a small number of councils identified a continuing need for guidance on minimum standards for room sizes, and examples of good practice. Several called for a single comprehensive, up-to-date document setting out all aspects of school design, claiming that the many

current sources of guidance can be conflicting. Conversely, some councils have now developed their own views and standards and would not favour any standardisation of room sizes or other detailed design issues.

144. The Scottish Government should continue to consult regularly with councils to identify their guidance needs. In some cases their needs may be met by learning from other councils or countries.

145. As well as guidance and support, the Scottish Government is keeping in touch with councils to develop the school estate management planning process and a consistent approach to assessing the condition and suitability of school buildings. Each year, the School Estates Team meets with officers from every council to discuss their local estate plans and exchange views and information. The Local Authority School Estates Network, set up in 2006, builds on these relationships and encourages councils to share experiences and learn from each other.

146. Councils have tended to be slow to share their early experiences with each other and, in many cases, are only now beginning to benefit from this better networking.

147. Due to the very limited amount of investment in the school estate in previous years, most councils had little experience and expertise in procuring major school building projects. Those involved in early schools projects had to answer many educational, financial, technical, managerial and contractual questions where no precedent or experience existed, either in councils or the private sector.

148. Councils have carried forward lessons they have learned from their first schools projects into their subsequent projects – both PFI and non-PFI. And the Scottish Schools PPP Group and Local Authority

School Estates Network now provide opportunities for councils to work more closely with each other and with the Scottish Government.

149. There is scope for more shared approaches in improving the school estate. This could lead to efficiency savings through councils sharing staff and technical expertise as well as sharing design ideas and procurement experience.

Recommendations

• Councils should estimate pupil rolls for at least ten years ahead and should review these assessments at least annually.

• Councils need to build flexibility into their school estate plans to accommodate both longer term demographic changes and unforeseen local changes. This might include school buildings that can be readily expanded or easily converted to other uses.

• The Scottish Government and councils should do more to share experiences and develop joint approaches to improving the school estate. There are potential efficiency savings to be made from more sharing of staff and technical expertise.

• Councils should transfer learning from experiences on school estate management to improve general asset management across their organisations as appropriate. COSLA should take a lead role in coordinating this, in consultation with the Scottish Government and the Improvement Service if appropriate.

Part 7. What challenges lie ahead?

If the School Estate Strategy is to succeed, it must respond to constantly changing and evolving needs.

Key messages

- Improving the school estate is a long-term process, moving from a programme of building and refurbishment to a programme of cyclical maintenance, adaptation and replacement.

- The Scottish Government and councils face competing demands for resources.

- Education and other policies can have a direct impact on what school buildings need to provide, so the school estate must be adaptable.

150. Following the Scottish Parliamentary elections in May 2007, a new administration led by the Scottish National Party (SNP) was established. Any new government has new priorities which may affect the future of existing plans and strategies. We have recommended (Part 2) that the government and councils review the strategy to clarify its aims and set out in more detail what still needs to be done and how it will be achieved.

Improving the school estate in the longer term means not only building and refurbishment, but also maintenance and adaptation

151. The programme of school improvement is likely to take up to another 20 years to complete if recent pace and trends continue. However, 'completion' is not the end of the strategy. As school buildings age and as educational practices evolve, schools will continue to become unfit for purpose, even if they are adequately maintained and adapted. If the strategy continues with its current vision for a future school estate that responds to evolving needs and is effectively managed and maintained over the long term, the school estate should reach a state of equilibrium, where the rate at which schools become unfit for purpose is matched by the rate at which they are improved. This includes expansion and rationalisation of schools to reflect local socio-demographic changes.

152. If the strategy is to continue successfully, there are a number of major challenges that the government and councils must face. These include:

Funding the programme
153. The programme of improving school buildings as set out in the strategy, is less than halfway through. This suggests that at least another £5 billion of capital investment is likely to be needed before the school estate reaches that state of equilibrium. Ongoing annual investment is also needed to maintain, adapt and replace schools for the foreseeable future. This will have to be at a level higher than it was in the 1990s if the government and councils are to avoid the school estate slipping back into its previous state of decay. We have recommended (Part 4) that the government and councils develop a financial strategy to support the programme, and that they identify and allocate the resources needed to adequately maintain schools that are outside PFI contracts.

154. With the new Scottish Government comes a new approach to allocating funding to councils.[45] Specific grants will now be incorporated into the general funding allocation provided to councils by central government. Councils will have the freedom to use the funds in the way that they decide will best achieve the targets they have agreed with the government. They may decide to direct more or less funding to their school estates than they have up to now. The challenge is for councils to balance competing demands on their funds to ensure adequate resources are directed to all their priority areas, including the school estate.

155. The government has indicated a wish to introduce a 'Scottish Futures Trust' as a replacement for the PFI approach, and has made a commitment to honour existing offers of financial support for school PFI projects. The challenge for government is to develop an alternative to PFI that supports the aim of creating schools that are well-designed, well-built and well-managed.

Responding to education and other policies
156. A number of key national education policies are being developed or implemented, that have a direct impact on school buildings. Often, schools need to be adapted to fully accommodate these changes. Current policies include:

Curriculum for Excellence
157. The Curriculum for Excellence[46] was launched in 2004. It sets out the aims of education – to enable all young people to become successful learners, confident individuals, responsible citizens and effective contributors. It envisages transformational changes in the content of the curriculum and in the way it is delivered.

158. All Scottish schools will be working to deliver this new approach to education by 2009/10. It is hard to know the extent or nature of its implications for school buildings, but there is broad consensus among the education professionals that school buildings have a major part to play in its successful delivery.

45   Concordat between Scottish Government and local government, Scottish Government and COSLA, November 2007.
46   *Curriculum for Excellence*, Scottish Executive, 2004.

159. A series of events have been run during 2007 on 'Building Excellence' to explore the implications of the Curriculum for Excellence for the design and use of space in existing schools. Detailed plans for implementing the new approach are being developed over the next year. The challenge for councils is to actively engage with the developments and respond in innovative ways to maximise the flexibility and adaptability of their school estates.

Changes in class sizes
160. The Scottish Government has a policy to reduce class sizes in P1 to P3 to 18 pupils. This is one of the targets agreed between the Scottish Government and COSLA in the new approach to funding and delivering services relevant to national policy objectives. While the local government representatives have agreed to achieve this 'as quickly as is possible', specific targets will be negotiated at an individual council level to allow local circumstances to be taken into account.

161. Class sizes have an impact on school buildings and on staffing. Buildings may need to be expanded in areas with increasing school rolls, where schools are running at, or close to, full capacity. Conversely there may be little cost to councils in areas with decreasing school rolls, where schools may be operating a good bit under capacity.

Environmental sustainability
162. The school estate contributes two per cent to UK national carbon emissions overall, and almost 15 per cent of UK public sector carbon emissions.[47] If it is to meet the target of at least 60 per cent reduction by 2050,[48] the Scottish Government must address the issue of schools' carbon emissions now, while the schools that will be operating over the next 50 years are being designed.

47   Submission from the Sustainable Development Commission to the Education and Skills Committee Inquiry on sustainable schools, 15 June 2006.
48   Draft Climate Change Bill, Cm 7040, EFRA, 13 March 2007, paragraph 5.4.

Part 8.
Recommendations

This report makes recommendations to the Scottish Government and councils to help them maximise improvements to the school estate.

Part 2. What does the School Estate Strategy aim to achieve?

- The Scottish Government and councils should review the School Estate Strategy and set specific, measurable and meaningful targets to ensure that the aims of the strategy are clearly expressed and progress can be properly assessed.

- The strategy should contain an implementation plan, which sets out what has to be done, when and by whom.

- The Scottish Government and councils should report progress using information collected at an agreed time and to an agreed standard.

Part 3. What has been achieved?

- The Scottish Government and councils should implement standardised approaches for collecting reliable information about the condition and suitability of school buildings.

- The Scottish Government and councils should agree to report progress in terms of new, clearly defined targets reflecting key standards for condition, suitability and sufficiency.

Part 4. How much is it costing?

- The Scottish Government should identify a financial strategy for achieving the aims of the School Estate Strategy. The amount of financial investment required should be estimated now and kept under review as information improves and progress towards targets continues. The financial strategy should allow for the long lead-in time required for major school-building projects.

- Councils should develop plans for the duration of their PFI contracts that identify how they will pay the increasing charges for their PFI contracts.

- The Scottish Government and councils should ensure that adequate resources are allocated to building maintenance for schools without PFI maintenance contracts.

Part 5. How effective are the improvements?

- To maximise their positive impact, refurbishments need to be designed taking an overall view of the whole school.

- Environmental sustainability should be a key element of school design, not an added extra.

- Councils should consider preparing user guides for all new and refurbished schools to ensure that staff know how to make the best use of the facilities in their building.

- Councils should use the Scottish Executive's guidance *Optimising the internal environment* to make sure that future school designs strike a good balance for the comfort of everyone who uses the building.

- The Scottish Government and councils need to continue working to identify and share good (and bad) practice to ensure that the quality of design keeps improving.

- Councils should make sure they consult and involve school users at the design stages, even if this means the process takes longer.

- Councils should complete post-occupancy evaluations as a matter of priority. They should make the results available to other councils and take up the opportunities offered through the Local Authority School Estates Network to compare notes and learn from each other.

Part 6. How well are the improvements being managed?

- Councils should estimate pupil rolls for at least ten years ahead and should review these assessments at least annually.

- Councils need to build flexibility into their school estate plans to accommodate both longer term demographic changes and unforeseen local changes. This might include school buildings that can be readily expanded or easily converted to other uses.

- The Scottish Government and councils should do more to share experiences and develop joint approaches to improving the school estate. There are potential efficiency savings to be made from more sharing of staff and technical expertise.

- Councils should transfer learning from experiences on school estate management to improve general asset management across their organisations as appropriate. COSLA should take a lead role in coordinating this, in consultation with the Scottish Government and the Improvement Service if appropriate.

Appendix 1.

School design quality assessment methods

163. We commissioned the Building Research Establishment (BRE) to assess the design quality of a sample of 18 recently built or refurbished schools. Architects and engineers from BRE used the Design Quality Method[49] to benchmark school design against good and best practice standards. This approach has been used by other UK audit bodies and by Government agencies.

164. Exhibit 21 describes the aspects of design quality which are assessed. As the sample was only 18 schools it cannot be representative of the whole of Scotland but it was structured to include a range of schools (Exhibit 22). The sample was selected from seven councils and included a balance of new-build and refurbishment, a mix of primary and secondary, and PFI and non-PFI approaches.

165. We commissioned George Street Research to seek the views of staff and pupils at a sample of ten of the schools which had been assessed by BRE. We arranged focus groups with pupils from a range of classes, and sent self-completion questionnaires to teaching and non-teaching staff and to school boards and Parent Teacher Associations (PTAs).

166. The sample structure is shown in Exhibit 22.

Exhibit 21
Six key design elements are assessed within the Design Quality Method (DQM)

- Architecture (aesthetic merit, site and space planning).

- Environmental engineering (lighting, noise, temperature and air pollution levels).

- User comfort (summertime overheating, visual environment, heating comfort, audible and visual intrusion, acoustics quality).

- Whole life costs (occupancy costs, performance of building fabric, flexibility).

- Detail design (external and internal detail, furniture and furnishings, fittings, safety and security).

- User satisfaction (anecdotal evidence).

Note: We do not use the results of the user satisfaction element in this report.
Source: Building Research Establishment (BRE)

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49   *Design Quality Manual: Improving Building Performance*, Martin Cook, Building Research Establishments, Blackwell, 2007.

Exhibit 22
The sample for the design quality assessments and consultation with pupils and staff was selected to include a range of different schools

	PFI/ non-PFI	If PFI, earlier or later phase		Size/location	New-build or refurbished	Number of schools in sample	Schools in user view surveys
		Primary or secondary					
1	PFI	Phase 1 (earlier: opened 2000-2003)	Primary	Larger/urban	New-build	1	
2					Refurb	1	
3				Smaller/rural	New-build	1	1
4			Secondary		New-build	2	1
5					Refurb	2	2
6		Phase 2 (later: opened 2003-2006)	Primary	Larger/urban	New-build	2	1
7					Refurb		
8				Smaller/rural	New-build		
9			Secondary		New-build	1	1
10					Refurb		
11	Non-PFI	Primary		Larger/urban	New-build	1	1
12					Refurb	1	1
13				Smaller/rural	New-build	1	
14					Refurb	1	1
15		Secondary		Larger/urban	New-build	1	
16					Refurb	1	1
17				Smaller/rural	New-build		
18					Refurb	2	

Note: Where no schools are sampled in a category (eg, PFI primary school refurbishment) this is because there are no, or there are very few, schools in this category. Instead, there are two schools sampled in categories where there are a relatively large number of schools (eg, PFI new-build secondary schools).
Source: Audit Scotland

Appendix 2.

Study advisory group members

Keir Bloomer	Former Chief Executive, Clackmannanshire Council
Annette Bruton	Chief Inspector, HM Inspectorate of Education
Maire Cox (until end 2006)	Research and Communications Officer, Architecture and Design Scotland
Greg Dempster	General Secretary, Association of Head Teachers and Deputes in Scotland
Eileen Gill	Head of School Estates, Scottish Government Schools Directorate
Judith Gillespie	Development Manager, Scottish Parent Teacher Council
George Haggerty	Past President, Head Teachers' Association of Scotland
Jason McDonald	Policy Manager, Children and Young People, Convention of Scottish Local Authorities
Bruce Robertson	President, Association of Directors of Education Scotland Director of Education and Recreation, Aberdeenshire Council
George Rubienski	Member of National Executive (until June 2007), Educational Institute of Scotland
Joyce Wighton	Chair, Local Authority School Estates Network Group Service Manager, Planning and Resources, Childrens' Services, Stirling Council

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