


SCOTLAND'S SCHOOLS FOR THE FUTURE

Inspiring learning, aspiring nation

Interim Findings Report









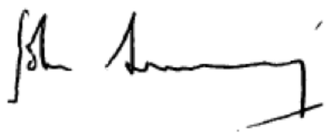


Foreword by the Deputy First Minister and Cabinet Secretary for Education and Skills

Since 2009, the Scottish Government and all 32 local authorities have worked together through the Schools for the Future Programme to deliver 117 new and refurbished school projects, 83 of which are operational, 25 in construction with the remaining 9 in the final stages of design. The School Estate Strategy: Building Better Schools (2009), said that schools should be “well designed, well maintained, and well managed”, and this philosophy underpins the programme’s objectives. As we near the completion of the programme, it is appropriate that we reflect on the success we have achieved to date.

The establishment of clear objectives supported by good project governance has helped to ensure the efficient and effective delivery of school and community facilities. These buildings support curriculum delivery, foster relationships between the school and wider community, encourage parental involvement in the life of the school, and embrace the opportunities available through digital technology. Collaboration between learner groups, incorporation of public facilities such as libraries, cafes, leisure and enterprise space, and integration of workplace initiatives, are all enriching the learner journey in schools across Scotland.

Scotland`s Schools for the Future Programme has nationally developed shared processes, parameters and guidance, demonstrated their benefit by the construction of pilot projects, and disseminated knowledge gained and lessons learned to benefit subsequent projects. This Interim Findings Report will continue that learning, providing detailed feedback that has been gathered from across the Schools for the Future Programme and promoting enhanced collaboration across Scotland`s Learning Estate.



John Swinney MSP
Deputy First Minister and Cabinet Secretary for Education and Skills
May 2018

The Scottish Government
Riaghaltas na h-Alba

SCOTTISH FUTURES TRUST

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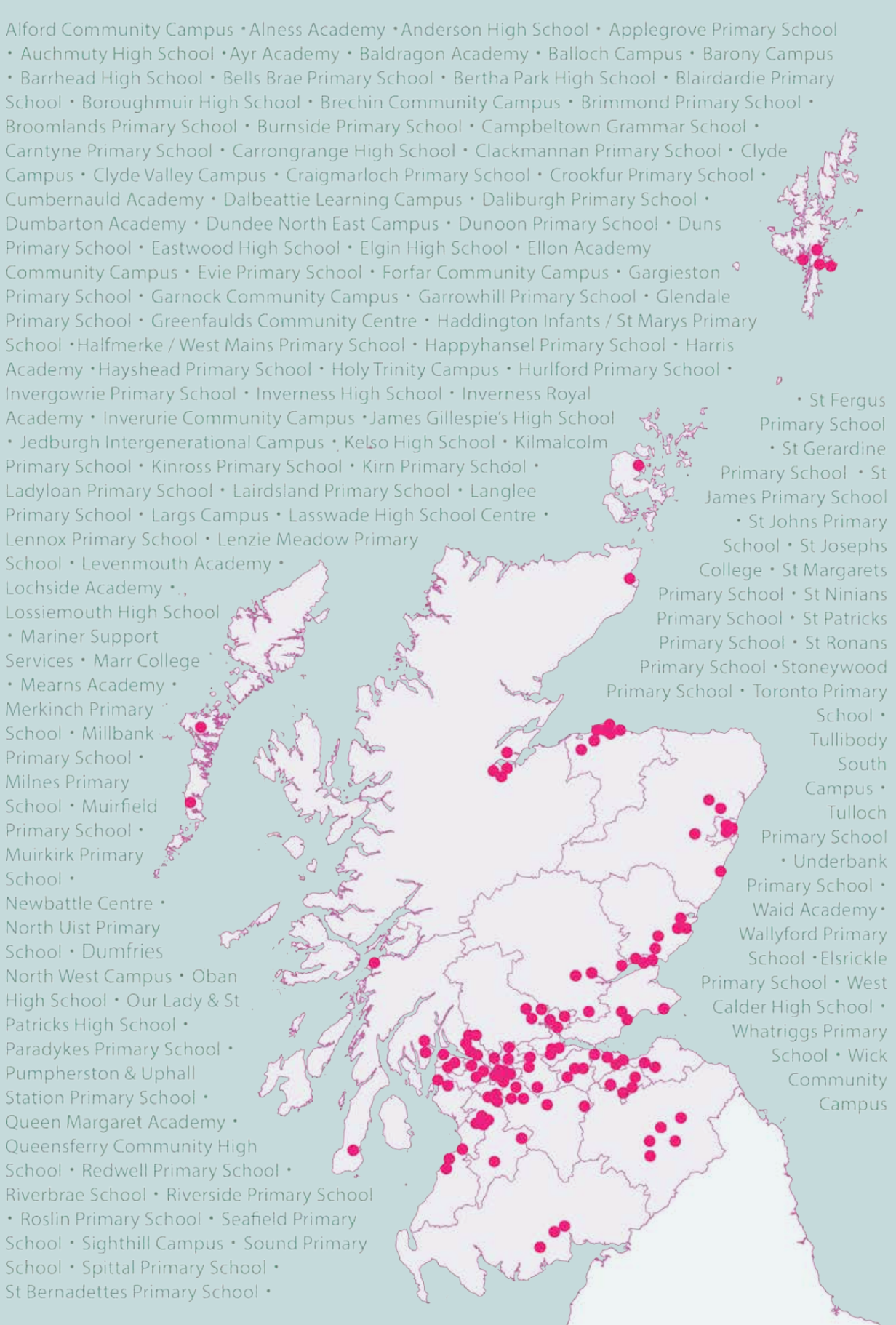


Executive Summary

Background

Scotland`s Schools for the Future Programme was established in 2009 to manage the replacement or upgrading of poor condition schools in collaboration between the Scottish Government and all of Scotland's 32 local authorities.

Throughout its lifetime, the programme has supported the joint Scottish Government and COSLA **School Estate Strategy: Building Better Schools** which envisaged that **"All children and young people will be educated in, and community users will use, schools that are 'fit for purpose' in terms of condition, suitability and sufficiency".**

The strategy recognises that a holistic, long term approach is required to provide facilities which support delivery of the Curriculum for Excellence, enhance community provision and engagement, and provide whole life value for money. The strategy summarised that schools should be **"well designed, maintained and managed".**

In announcing the programme in 2009, Scottish Ministers set out an overarching aim of delivering around 55 new schools through £1.25bn of investment, with £800m contributed by Scottish Government and local authority partners contributing £450m. SFT were asked by Scottish Ministers to manage the delivery of this programme. Building on initial successes, the programme was expanded to 112 schools with a combined investment of £1.8bn. Following the announcement of the final phase of the programme in August 2017, the programme, once complete, is expected to replace or refurbish 117 schools within the same funding levels.

Purpose of this Interim Findings Report

Following the announcement of the final phase of the programme in August 2017, and the 100th school starting construction in October 2017, the programme has reached a significant milestone at which to reflect on the progress achieved to date. This report:

- describes the programme management approach
- reviews progress against programme objectives
- highlights key findings from feedback information
- identifies next steps

Programme Management Approach

At inception, a suite of delivery objectives was agreed by the partners involved in ensuring the programmes' success. These included: effective and efficient procurement; cost efficiency; sustainable lifecycle solutions; improved environmental performance and reduced carbon footprint; implementation of the nine guiding principles included in the School Estate Strategy; and delivery of the first primary school(s) in 2011 and the first secondary school(s) in 2013.

To enable delivery of these objectives, the programme team developed an approach which would build relationships with stakeholders, provide guidance, challenge and support, define programme parameters, raise aspirations, track progress, share knowledge, and importantly facilitate collaboration across the broad range of programme stakeholders. This approach is summarised into three phases:
Develop, Demonstrate, Disseminate.

Develop

A process was developed to provide structure to each project, comprising a series of checkpoints, workshops and feedback requirements to track project development progress. To support local authorities to illustrate how they have met the Programme Objectives, **guidance** was developed and used to structure the workshop process. To quantify the key parameters of the programme, **metrics** were established for area per pupil, cost per square metre, BREEAM and Energy Performance Certificate rating.

Demonstrate

To influence change and demonstrate the viability of the principles and parameters of the programme, two pilot secondary schools were designed and constructed in a collaboration between two councils. The collaboration resulted in a fundamental shift in the design of secondary schools in Scotland, and as the programme has progressed, further evolution has been evident.

Two reference primary school designs were also commissioned, with one being selected for development and construction, providing a built example to illustrate the reference principles.

The £5m Inspiring Learning Spaces fund provided the opportunity for 20 local authorities to develop innovative, low cost, high impact spaces exploring new learning and teaching styles, vocational training facilities and digital learning.

Two lower carbon demonstration projects are under development, focussed on creating high quality internal environmental conditions with minimal environmental impact.

Disseminate

The sharing of knowledge and utilisation of demonstration projects encouraged interaction, communication and collaboration between designers, contractors, schools, communities and local authorities. Relationships have also been developed between the four UK nations with lessons also being learnt from the Republic of Ireland and other EU countries. The programme team has assisted in developing this communicative culture at all levels, becoming a centre of expertise and collating information from projects across the programme.

Progress Against Objectives

The first programme primary school, Pumpherston and Uphall Community Primary School in West Lothian, was completed in 2011. The pilot secondary schools, Eastwood High School in East Renfrewshire, and The Lasswade Centre in Midlothian, opened their doors for school and community use in 2013. A huge amount of progress has been made across the programme since then. Currently, all 117 schools in the programme have been identified, with 83 operational, 25 in construction and 9 to start on site by the end of 2018.

Effective procurement and a focus on **cost efficiency** has delivered 17 more schools than originally anticipated within the same time and budget parameters. **55,000 pupils have moved into "Good" and "Satisfactory" condition** schools, contributing towards the Government`s ambition to halve the number of pupils in "Poor" or "Bad" condition buildings. Schools and communities have been **involved in the decision making stage** of project development, enhancing the suitability of the completed buildings, and nurturing an increased sense of ownership. Enhanced facilities also encourage wider community health and wellbeing, and facilitate parental involvement with the schools. Sharing facilities has increased asset utilisation, and along with **improved environmental performance** and consideration of **whole life costs**, has improved the efficiency of the learning estate.

The school building programme provides **support to curriculum delivery and pupil health and wellbeing.** The basic comfort of the learner in terms of light, temperature and acoustics are all important factors, along with their sense of safety, security and privacy.

Buildings and grounds encourage active learning, celebrate achievements, and provide intrigue and interest through visible learning opportunities. The sense of school community, staff morale and ability to communicate effectively are all enhanced in well designed schools.

Blended school and community use has been encouraged, with **multiple combinations of early years, primary, secondary, college and community integration.** Feedback from users highlights that these enhance the parent/school interface, promote inclusion, improve transitions between age groups, provide bridges to third level education, and create links to the community and **workplace**.

Digital devices have led to new ways of teaching and learning, with schools trialling innovative online techniques for research, preparation and review of teacher and pupil material. This provides the freedom to study in different locations, and to connect to peers and teachers at more **flexible** times. The latest evolution of the Schools for the Future designs are embracing this approach, with **fluid spaces to support fluid learning.** The e-sgoil project supported through the Inspiring Learning Spaces fund has grown into a learning and teaching network supporting **equality of opportunity** for pupils across Scotland.

KEY FINDINGS

This interim report seeks to highlight the key findings received from feedback gathered from a cross-section of stakeholders through a variety of channels.

Stakeholders identified that having a **central programme management team** provided a positive focal point for the delivery of the programme and its objectives. The processes, guidance and **parameters established created a strong, flexible framework** within which each unique solution could be developed. Demonstration of the programme principles through **built exemplar projects was very beneficial,** and their influence has helped embed a **culture of efficiency, challenge and collaboration.** Stakeholders acknowledged that the adoption of a design concept should be assessed for applicability in relation to the building size and educational approach envisaged in each case. **Strong governance arrangements** that are established at the outset of a project, are accessible and remain continuous throughout, are vital to efficient project delivery, as are robust options appraisals and "closed loop" consultations.

Feedback observed that individual projects have been creative in the **assimilation of education, public service and community facilities,** and have evolved local, **learner focussed solutions** to encourage learner integration with the community, and community access to learning. The opportunities provided by **embracing digital technology** are becoming increasingly evident across the programme. The user experience is linked to the **quality of the building** at handover, and simple but protracted snagging issues can undermine positive feedback. Data on the use patterns, **environmental performance and energy efficiency** of buildings is being gathered and interpreted to develop a more efficient learning estate. These lessons learnt have the potential to be a very **beneficial knowledge resource** for others, and continued effort is required to gather feedback from all projects in the programme. The **strong relationships developed** between Scottish Government, SFT, local authorities, schools, designers, contractors and development partners have underpinned the success of the programme to date.

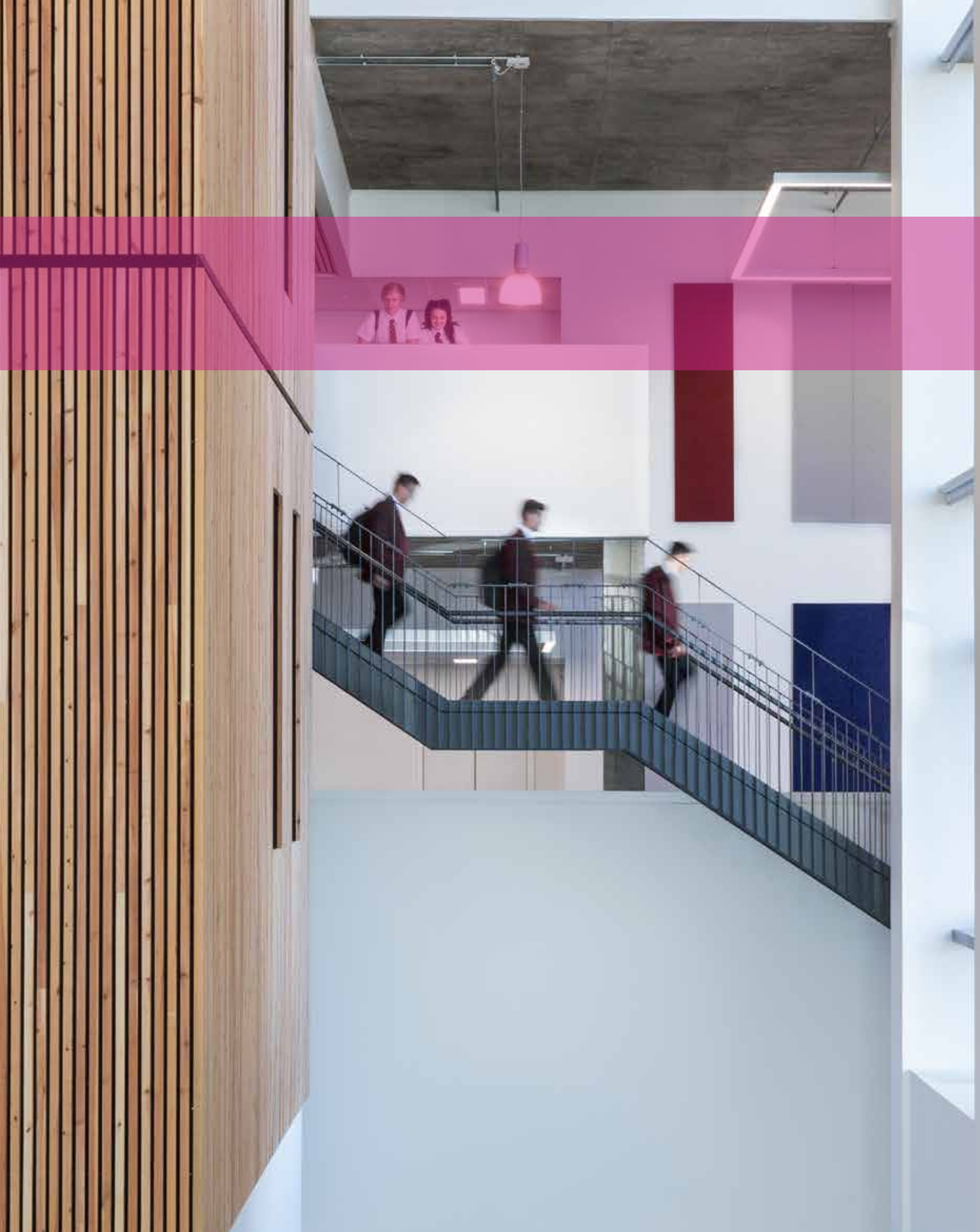
Next Steps

This interim report identifies the steps required to successfully deliver the remainder of the programme and considers 'what next'.

To achieve the successful completion of the Scotland's Schools for the Future programme, seven schools currently in development will start construction by the end of 2018. 117 schools will be complete by 2020.

To ensure continued achievement of the Programme Objectives, and assimilation of learning, it will remain important to collate Post Project Reviews and Post Occupancy Evaluations as school projects are completed after a period of operation. The lower carbon pilot projects will continue to be developed and monitored. The impact of the Inspiring Learning Spaces will be assessed, and knowledge shared. Further opportunities will be identified to share initiatives encouraging pupil and parental involvement, community integration, educational collaboration and links to training and employment.

The role of SFT as a centre of expertise will continue to evolve along with the programme. Looking ahead to the development of the Scottish Government`s Learning Estate Investment Plan, it will be important to build on the successes of Scotland's Schools for the Future Programme, to consider the feedback from it, and incorporate the learning from other programmes of investment across the educational landscape.



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Introduction

SECTION 1 Introduction

1.1 Aims of the Report

Scotland`s Schools for the Future Programme was established in 2009 to manage the replacement or upgrading of a programme of schools in collaboration between all 32 local authorities in Scotland and the Scottish Government. This was in support of the Scottish Government School Estate Strategy which committed to:

"All children and young people will be educated in, and community users will use, schools that are 'fit for purpose' in terms of condition, suitability and sufficiency ".

The strategy recognised that a holistic, long term approach was required to provide facilities which would support the Curriculum for Excellence, enhance community provision and engagement, and provide whole life value for public money. The strategy summarised that:

"New and refurbished schools should be well designed, well maintained and well managed."

The Schools for the Future Programme was initially tasked with providing a minimum of 55 schools within an investment programme of £1.25 bn, by March 2018, later increasing to 112 schools within an extended budget of £1.8bn by March 2020. The programme has now confirmed all of the projects which will be included, and this provides a milestone at which to reflect on the progress achieved to date.

Project snapshot March 2018

- 117 confirmed
- 83 completed
- 25 in construction
- 9 in development

Key achievements

- 55,000 pupils moved from condition C/D to A/B helping to halve the number of pupils in C/D buildings (39% in condition C/D 2007, 13% in 2017)
- Additional 17 schools provided within overall budget
- 16 additional schools completed by March 2018 target
- All 32 councils collaborated in the programme
- Enhanced community facilities encouraging Health and Wellbeing and Parental Involvement
- Increased learning estate asset efficiency

AIMS: The aims of this review are to collate information and identify findings which will:

- describe the programme management approach
- review progress against Programme Objectives
- highlight key findings from feedback information
- identify next steps

1.2 Report scope and parameters

This report focusses mainly on those projects which have been completed and are operational. The feedback from these projects can be reviewed against all of the Programme Objectives in a manner which those still in construction or development are not yet able. There is, however, useful information to be extracted from incomplete projects which have passed significant stages, and is therefore included.

The impact of the Schools for the Future Programme could be looked at in many different ways, and this report reviews the overall Programme, and the constituent projects, against its initial Objectives. Where themes have emerged which may assist continual improvement, these are identified for further consideration.

The report is a snapshot of a programme which is still to be completed, and has been compiled using a data collection cut off date of 31 Jan 2018. Update and revision of data and assessment could be provided at key future programmed stages, for example when all projects are operational and all projects have completed a Post Occupation Evaluation.

1.3 Report Methodology

As the managers of the SSF Programme on behalf of the Scottish Government, SFT have had a central perspective and developed relationships with all 32 of Scotland`s local authorities. This has provided access to the people, processes and projects which form the programme, and has facilitated the collation of the data to inform this report, with varying levels of feedback depending on the stage of project development. The contribution from every authority is invaluable in providing a robust starting point for this review. These sources have been gathered, reviewed and collated by SFT to align with the Programme Objectives. Analysis of the feedback has been undertaken relative to each objective, with numerical, graphical, visual and narrative outputs used to convey the findings.

2 Background

SECTION 2 Background

2.1 Scottish Government Strategy

In 2008 Audit Scotland published a report entitled "Improving the School Estate". This document defines the core intention of the original School Estate Strategy as:

"The overall aim of the strategy is to "All children and young people will be educated in, and community users will use, schools that are 'fit for purpose' in terms of condition, suitability and sufficiency. New and refurbished schools should be well designed, well built and well managed."

As a result of this report, the School Estate Strategy 2009 was published to provide an updated strategy for the next phase of school improvement.

2.2 School Estate Strategy

"Building Better Schools – Investing in Scotland`s Future, 2009"

The School Estate Strategy "Building Better Schools" responds to the observations and recommendations of the "Improving the School Estate" report with a set of key aims:

1. Address Poor and Bad condition buildings (C and D) target 90% in A/B.
2. Address issues raised by the Disability Discrimination Act (and subsequent Equality Act 2010)
3. Provide learner focussed experience
4. Support the delivery of the Curriculum for Excellence
5. Contribute to reducing C02 emissions as part of The Climate Change (Scotland) Act 2009

In addition, the School Estate Strategy also establishes **9 Guiding Principles** to assist local authorities to deliver the aims of the strategy:

PRINCIPLES FOR GUIDING AND MANAGING CHANGE

1 CONSULTATION Good consultation means better outcomes

2 DESIGN Innovative design and change is better informed by experience

3 CHANGE A more integrated, holistic and longer-term approach to change

PRINCIPLES WHICH RELATE TO THE STATE OF THE SCHOOL ESTATE

4 CONDITION Schools whose condition supports and enhances their functions

5 SUITABILITY More 'suitable' & 'inclusive' schools, better future-proofed for flexibility & adaptability

6 SUSTAINABILITY Schools which are 'greener', more sustainable and environmentally efficient

7 MANAGEMENT A well-managed school estate which represents and delivers best value

PRINCIPLES WHICH RELATE TO SCHOOL FUNCTIONS

8 CURRICULUM Schools which both drive and support effective learning and teaching through Curriculum for Excellence

9 COMMUNITY Schools which best serve their communities

2.3 Scotland`s Schools for the Future Programme 2009

To drive the implementation of the School Estate Strategy, the Scottish Government established Scotland`s Schools for the Future Programme in 2009, with a financial funding commitment, governance structure and management partner with a clear set of objectives.

The Cabinet Secretary set out an overarching programme aim of delivering around 55 new schools through £1.25bn of capital investment, with £800m contributed by Scottish Government with local authority partners providing the balance of £450m. The initial target was to deliver 28 secondary schools and approximately 27 primary schools within budget, with an aspiration to maximise the number of schools delivered within the available investment.

The Programme is underpinned by Scottish Government's strategic objectives:

- Wealthier and Fairer
- Healthier
- Safer and Stronger
- Smarter
- Greener

2.3.1 Roles and Responsibilities

The governance and management structures of the Programme were established at the outset to ensure that all aspects were accurately defined and subsequently implemented by those with the most appropriate skills:

Scottish Government (SG)

- SG commit to £1.25bn programme Scottish Government/ LA £800m / £450m split
- Scottish Ministers decide which schools to be funded
- SG sets Scottish Futures Trust (SFT) tasks/objectives to manage the programme on it's behalf and assist LAs in achieving programme principles
- SG controls funding and retains overall control of the programme
- School Infrastructure Unit assists Scottish Ministers with the school selection process
- Monitors LA delivery of programme goals
- Issues grant awards and approves LA grant claims

National Programme Board

- Established to oversee and take responsibility for the strategic direction and decision making in relation to the delivery of the programme.
- Set delivery objectives for the programme and take responsibility for risk management.
- Incorporate Local Authority representation

Scottish Futures Trust (SFT)

- Manages the programme on behalf of SG
- Assists LAs in development of projects
- Promotes best practice and brokers collaboration
- Manages the programme budget

2.3.2 Programme Objectives

The following programme specific objectives were identified by the National Programme Board, and SFT was tasked with managing the Programme to achieve these objectives:

Objective 1:
Effective and efficient procurement

Objective 2:
Cost efficiency

Objective 3:
Sustainable lifecycle solutions

Objective 4:
Improved environmental performance and reduced carbon footprint

Objective 5:
Implementation of the nine guiding principles included in the School Estate Strategy

Objective 6:
Delivery of the first primary school(s) in 2011 and the first secondary school(s) in 2013

It is these objectives which determined the approach and methodology developed to ensure that they were delivered, and it is therefore these objectives against which the progress of the Programme to date is reviewed in this report.

2.4 Programme Context

The Schools for the Future Programme was established in 2009, and the context within which it has operated has varied throughout the intervening period. These issues have varied from global to local in scale and been political, social, financial and technical in nature, for example:

- 2008 global economic crash implications
- Scottish independence Referendum 2014
- UK General Election 2015
- UK Brexit Referendum 2016
- Growth in global digital communication
- Global environmental awareness

More specifically, a range of legislative and technical issues have arisen during the Programme which alter the environment in which projects are developed, delivered and operated, for example

- Scottish Technical Standards updates in 2010 and 2015.
- BREEAM updates 2011 and 2014
- Consultation on revisions to the School Premises Regulations, 2017/18
- SEPA Flood Map and Regulation revisions 2014
- ESA 10 funding classification clarification 2016.
- BB101 Ventilation of School Buildings 2016 revision

In addition, other initiatives such as the Scottish Government commitment to increasing free early learning and childcare from 600 to 1140 hours annually by 2020, have come into being during the life of the programme, and have influenced the way projects have developed.

During the Programme, two events in the UK have refocussed the design and construction industry on quality and safety. The 2017 Cole Report on the Construction of Edinburgh Schools and the fire at Grenfell Tower in London in June 2017, highlighted the importance of providing schools which are “well designed, maintained and managed.”

A team from SFT assisted during the Edinburgh Schools closure incident and relayed information to the local authorities to ensure emerging lessons were disseminated.

The Programme and projects have needed to adapt to changing influences, while retaining a focus on the objectives established at the outset.

3

Approach

SECTION 3 Approach

3.1 Programme Strategy

Responsibility for the management of the Schools for the Future Programme rests with SFT. From the outset this team has recognised the varied nature and broad scope of the Programme Objectives, and utilised individuals with financial and technical expertise to carry out this function. The approach of the team has been to work with all stakeholders to encourage the development of solutions which are efficient, affordable, sustainable, responsible and effective. The central position of the team provides the opportunity to work collaboratively with all councils, and to engage across the country with designers, contractors, funders and operators to collate knowledge, and assist in making this available to as wide an audience as possible. The approach can be summarised as **Develop – Demonstrate – Disseminate**, as this captures the broad range of activities undertaken by SFT both throughout the Programme as a whole and the stages of an individual project.

3.2 DEVELOP

Programme Management – PROCESS, GUIDANCE, PARAMETERS

At the outset of the programme, it was recognised that the broad overall objectives would require a range of initiatives to establish focussed programme parameters, and also to guide and encourage creative and aspirational solutions.

To focus all parties involved in briefing, designing, constructing and operating new or refurbished school facilities, key process stages, guidance and metrics were established to support delivery of the Programme Objectives.

3.2.1 PROGRAMME PROCESS

Key milestones are established throughout the development and operation of each project to provide formal feedback on progress against the Objectives. These gateways are planned to provide information at appropriate times to allow validation of the approach being taken, or for the direction to be challenged and altered.

Pre Selection

1. Funding application local authority proposes a project for inclusion within the programme

2. Project selection SFT and the Schools Infrastructure Unit provide advice on project scope and key issues. Final selection made by Scottish Government ministers.

3. Project Status Evaluation Collate key project information from Local Authority on project scope, costs and programme.

4. Funding Confirmation Confirm Scottish Government project funding to Local Authority

Project Development

5. Quarterly Project Update Collate project information for reporting purposes

6. Workshop 1 Local authority present project strategy to SFT

7. Interim Workshops Assist local authorities and delivery teams with project development

8. Workshop 2 Local Authority present project proposals to SFT and Schools Infrastructure Unit

9. Final Funding Award SFT assist Scottish Government to finalise funding position to Local Authorities.

Construction

10. Quarterly Project Update Continue to collate project information for reporting purposes

Post Completion

11. Post Project Review Assist Local Authority to complete report

12. Post Occupancy Evaluation Assist Local Authority to complete report

While the initial stages up to project selection and after project completion are important to the strategic aims and continual learning of the programme, the main focus of managing the programme is the period from project selection to contract close. This is typically when all key decisions are made, briefs and designs developed, stakeholders consulted, statutory consents obtained, costs established, contractor appointed and funding confirmed. The key checkpoints developed to manage this phase are the Workshops. At each of these, evidence is requested to demonstrate that the project is being developed in a manner which will support the Objectives.

3.2.2 PROGRAMME GUIDANCE

A series of tools has been developed to assist local authorities and delivery teams to achieve the objectives of the programme for every individual project. These comprise general guidance and specific metrics, and are used as the basis for review during the project development period, and evidenced at the Workshops.

Guidance on Achieving Programme Objectives

The guidance notes issued to each Local Authority provide suggested pointers to consider which will help ensure that the general structure and management of the project is in place to assist in making good decisions at each subsequent stage.

OBJECTIVE 1: Effective and Efficient Procurement

Councils are asked to provide evidence which demonstrates that conditions for achieving success are in place in the following areas:

PEOPLE

a. Governance/Management
b. Performance Management
c. Appropriate People
d. Teamwork
e. Productivity
f. Communication

PROCEDURE

g. Procurement route selection
h. Funding
i. Design Quality Process
j. Cost Control
k. Realistic Programme
l. Risk Management plan
m. Sustainable Procurement Action Plan
n. Clear Purpose / Vision
o. Clarity of requirements
p. Options appraisal
q. Precedent review

OBJECTIVE 2: Cost Efficiency

Similarly to the guidance for Objective 1, councils are asked to provide evidence which demonstrates that a structured approach to whole life cost efficiency is in place, through, for example:

a. Benchmarking
b. Modelling and rigour
c. Options appraisal
d. Whole life costing
e. Process improvement
f. Shortening of timescales
g. Reducing transaction costs
h. Simplification
i. Standardisation
j. Supply chain management opportunities
k. Collaboration and aggregation opportunities
l. Sharing resources
m. E procurement opportunities

OBJECTIVE 3+4: Sustainable lifecycle solutions, Improved environmental performance and reduced carbon footprint

Objectives 3 and 4 are closely related to Guiding Principles 3, 6 and 7 embedded within the School Estate Strategy, and throughout the programme have been considered concurrently to avoid duplication of reporting. Collectively these issues are often summarised by reporting of the overarching metrics of BREEAM and EPC ratings as described in Section 3.3.3 and reviewed in Section 5.

OBJECTIVE 5: Implementation of the 9 guiding principles included in the School Estate Strategy

To help achieve Objective 5, Local authorities are asked to demonstrate the adoption of the 9 Guiding Principles prior to the award of programme funding. This is carried out during Workshop 2:

The 9 Guiding Principles

1. Good consultation means better outcomes
2. Innovative design and change is better informed by experience
3. A more integrated, holistic and longer term approach to change
4. Schools whose condition supports and enhances their functions
5. More suitable and inclusive schools, better future-proofed for flexibility and adaptability
6. Schools which are greener, more sustainable and environmentally efficient
7. A well-managed school estate which represents and delivers best value
8. Schools which both drive and support effective learning and teaching through Curriculum for Excellence
9. Schools which best serve their communities

Collectively, the Programme Process and Guidance provided local authorities with a framework within which to develop their specific project solutions in general qualitative terms. To assist with the delivery of the key quantitative objectives, a set of specific programme target metrics was also developed, and used for continual assessment of each project.

3.2.3 PROGRAMME PARAMETERS

In addition to the Programme Process and Guidance described above, key Programme Metrics were developed which encompass the ethos of the programme, and are fundamental to the underlying achievement of many of the wider Programme Objectives. Having single reference points which distil the essence of the Programme Objectives simplifies assessment at all stages, and aids communication between all parties involved. These metrics often support more than one Objective concurrently, for example the area/pupil metric assists delivery of cost efficiency, carbon footprint reduction and lowering of whole life costs. Similarly, the BREEAM rating encompasses a wide range of factors, including heating, lighting and ventilation referenced within Objective 5 principle 3 (Integrated holistic long term solutions), and also Objective 5 principle 6 (Improved Environmental Performance and reduced carbon footprint). The parameters utilised to date are:

- Area per pupil metric
- Cost per square meter metric
- BREEAM Rating
- EPC Rating

AREA PER PUPIL METRIC

The size of a building has a fundamental effect on its functionality, and also its cost in terms of construction, maintenance, operation and energy consumption. To provide guidance, a range of area allocations per pupil was developed based on assessment of previous benchmark built examples. This guidance recognises the inherent efficiencies which larger buildings can realise, for example by utilising fixed area items such as plant space, stairs, and kitchen to serve larger areas of teaching and learning space when a pupil roll is increased. In addition, it acknowledges that there are inherent differences in the spatial requirements of primary and secondary schools. Consequently a banding approach was developed to provide different area metric targets for individual projects.

These area metrics are used to determine the size which each project should target when being designed, and also form part of the funding calculation to determine the Scottish Government contribution in each case.

Secondary Area Metric Table

Space Allocation (based on pupil numbers)	SQM/Pupil
Up to 400	13
401-800	12
801-1200	11
1200+	10

Primary Area Metric Table

Space Allocation (based on pupil numbers)	SQM/Pupil
Up to 231	8.5
232-462	7.5
463+	6.5

COST PER M2 METRIC

While the size of a school is important to the efficient delivery of each project and the overall programme, the cost for each square meter is also crucial in achieving this aim. This is informed by a wide range of factors such as the area, shape and type of site, the number of storeys and form of building, the building structure and services strategies, and the finishes and fittings utilised. By benchmarking against a range of successfully completed projects in a range of locations and sizes, target cost caps were established.

Secondary base cost: £1900/m2 @ Q2 2011

Primary base cost: £2350/m2 @ Q2 2012

These have been applied across the programme as below:

AREA: nursery provision within primary schools is treated as primary provision

COST: shared primary/secondary campuses target secondary cost metric

COST: adjustments made at contract close to reflect inflation for each project using BCIS data

BREEAM (Building Research Establishment Energy Assessment Method)

At the start of the programme in 2009, the objectives of providing appropriate learning and teaching environments in efficient ways are tested by requiring each project to achieve a BREEAM Excellent rating. This was intended to provide a mechanism for reviewing a wide range of environmental issues which would affect the design, construction and operation of a school, and embody it in one simple rating using a recognised independent assessment organisation. This approach was subject to influence from outside factors such as alterations to the BREEAM standards, and also the Scottish Technical Standards during the programme. Its implementation is discussed in more detail in Section 5, Guiding Principle 6.

EPC Rating

The Energy Performance Certificate rating of a building envelope provides an indication of the expected CO2 emissions, excluding user operational power requirements, using a national standard approach to allow comparison between buildings. Ratings are banded from A-G, with A = Excellent and G = Very poor. The use of this single measure indicates both the achievements of the design in minimising energy consumption required, and the performance of the building in utilising the energy provided. Provision of this rating was identified by SFT as a programme metric to provide a clear target during the development of projects. The target minimum established was to achieve a rating of B+ before consideration of any renewable technology such as biomass boilers or photovoltaic panels.

Over the course of the programme, the Technical Standards were amended and compliance with Section 6 Energy now routinely includes the installation of renewable technology. The implications of this amendment on the application of this metric are explored in Section 5, Guiding Principle 6.

3.3 DEMONSTRATE

The programme process, guidance and metrics created a framework which if applied could deliver projects which would meet the Programme Objectives. To illustrate that this would be achievable in practice, and therefore provide examples which could inform and inspire subsequent projects, an opportunity to develop demonstration projects was identified.

3.3.1 JOINT SCHOOLS PILOT PROJECT

Joint Schools Pilot Projects – Design

In 2009, Midlothian and East Renfrewshire Councils identified the need to replace Lasswade and Eastwood High Schools as a result of their poor condition. It was agreed that there could be potential benefits from designing and procuring these separate projects in a joint collaborative process, learning from each other and streamlining the efforts required, while also testing a basic design model in two different scenarios.

In late 2009, an OJEU notice was issued inviting submissions from multidisciplinary design teams to concurrently develop designs for the two separate schools, with the intention that these would form the basis of a Secondary School Development Handbook, and also be developed for construction at the two pilot sites. The successful team, led by BDP Architects, was selected early in 2010 and worked with the two councils and schools to create a common model which could be tailored to the needs of each individual school`s requirements. For example at Lasswade in addition to the replacement of Lasswade HS, there was a need to incorporate a public library, specialist gymnastics centre, shared use leisure facilities, crèche and community café. All of these facilities were intended to be newbuild. At Eastwood, the swimming pool had been recently upgraded, and therefore was required to be retained. An existing listed building, Capelrig House, was also to be retained on site and considered for potential inclusion within the design solution.

Pilot Concept Design

To inform the design development of any new secondary schools in the Schools for the Future Programme, SFT carried out a “Lessons Learnt” review of 28 recently completed schools, and this was made available to all involved both within the Pilot Schools Project and across Scotland for use by as wide a range of stakeholders as possible (see Section 3.4). This helped inform the conceptual design solution for both projects which centered around the use of a rectangular multistorey block with peripheral spaces enclosing a central atrium space. This became known as the “megablock”, and was adapted on each site to respond to site and school specific requirements. For example at Lasswade, all of the facilities are incorporated into one single building which is zoned to facilitate shared school and community use, whereas at Eastwood, the main high school block sits adjacent but disconnected from the existing buildings on site.

Key characteristics to support the Curriculum for Excellence which are common to both projects include:

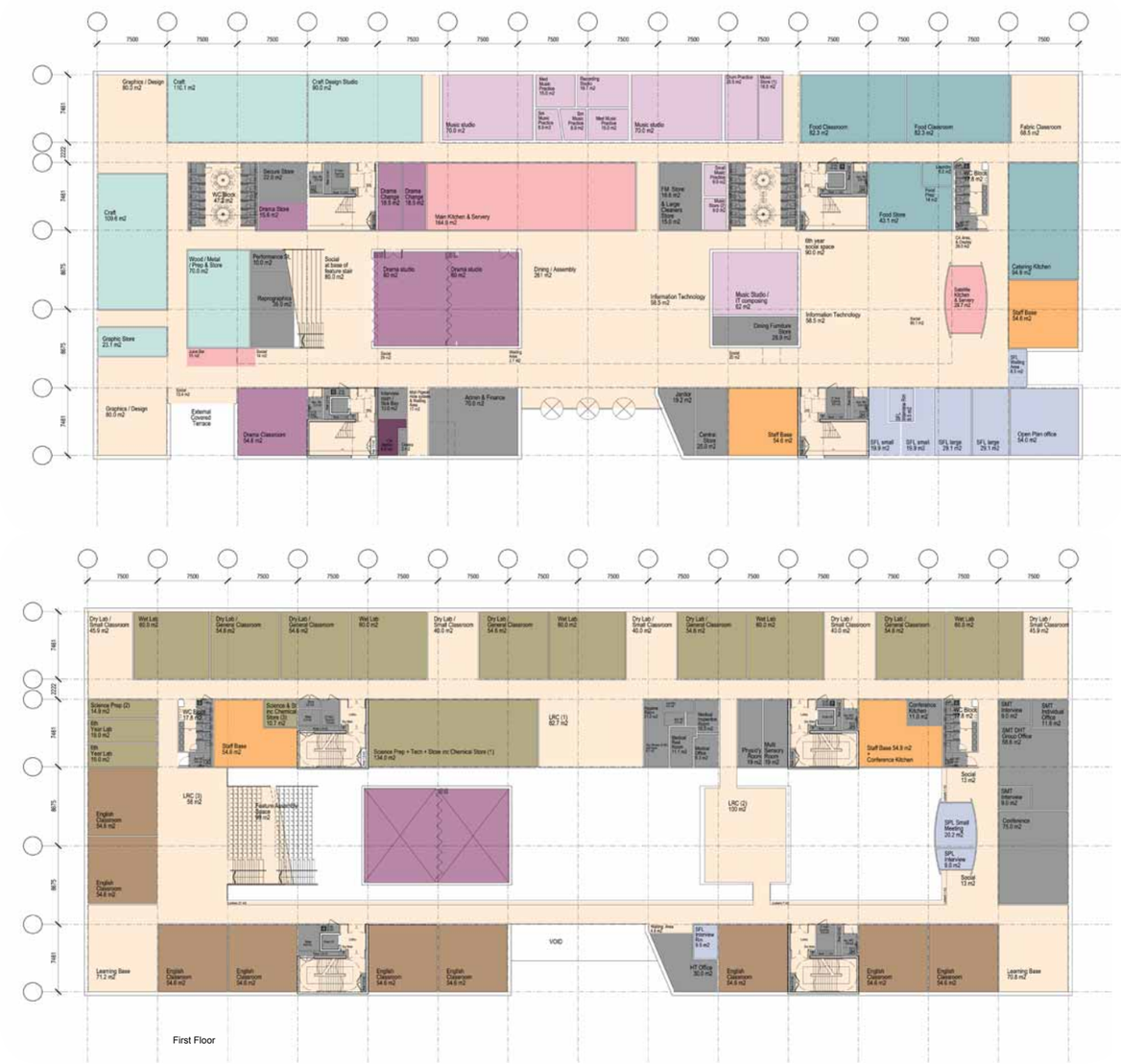
- Central atrium pupil focussed social/performance space
- Open learning plazas to facilitate passively supervised independent and group study
- Collaboration areas to encourage inter-subject scenario based learning

To assist with the efficient adoption of this design in different local authorities, SFT approached the SBSA to agree a standard interpretation of regulatory compliance in relation to fire engineering. This recognised that each authority has different capability in this specialist field, and reduced the burden on local building control officers. In addition this assisted design teams to reduce time and increase certainty during the design process.

The designs were progressed to RIBA Stage C Concept Design (subsequently revised in the 2013 RIBA Plan of Work to Stage 2), in preparation for the tender procurement process.

Joint Schools Pilot Projects – Competitive Dialogue Procurement

In order to complete the concept designs prepared by the BDP team and to select a main contractor led delivery team, a process was developed to shortlist 3 design and build teams managed by construction contractors. This process established the elements of the



designs which were critical to project success for the councils and schools, and also areas where suggestions for development and amendment to improve the designs, save costs, or facilitate construction were welcome. These “negotiables and non-negotiables” formed the basis for discussion at a series of dialogue meetings during the procurement process, and allowed the bidding teams the opportunity to discuss initiatives with the councils, the concept design team, and the Project Management Team. At the end of the bid period, each team then submitted their developed design proposals and associated costs for consideration. A team led by BAM Construction was successful and was awarded contracts to construct both of the Pilot Projects concurrently.

An assessment of the Joint Schools Project determined that a saving of £3m was achieved compared with procuring the projects individually.

Joint Schools Pilot Projects - Construction

Detailed design development, the securing of statutory approvals, and construction was undertaken by the BAM team for each project, with information sharing and design commonality being maximised where appropriate. Both of the projects were completed and became operational in 2013. In order to maximise the benefits to the wider School`s for the Future Programme, a strategy was developed to disseminate the Lessons Learnt document and Secondary Schools Development Handbook, and this is described further in Section 3.4.

Joint Schools Pilot Projects – Operation

To conclude the Joint Schools Pilot Project, a post occupation evaluation report “Response to lessons learnt – The Pilot Project” was compiled with input from users. This was published in August 2015 and provided an end-to-end exemplar of both process and product which could be utilised by others in the development of their projects (see section 3.4). This model has been developed in all areas of Scotland, including examples from Anderson HS in Shetland, Boroughmuir HS in Edinburgh to Ayr Academy in South Ayrshire. An analysis of the adoption of this design is included in Section 5 Objective 2.

3.3.2 REFERENCE PRIMARY SCHOOL

Reference Primary School Project – Design

The objective of the Scotland’s Schools for the Future programme is to deliver good quality, well designed and sustainable schools. To further that objective and having learnt from the Pilot Secondary School project, in 2012 two architects, Reiach and Hall, Edinburgh and Walters and Cohen, London, were invited to design a reference primary school. The challenge was to create high-quality, efficient, flexible, sustainable and affordable designs that could be delivered in line with the Scotland’s Schools for the Future objectives. The project was also aimed at challenging conventional thinking, and was also intended to develop a design that could be easily adapted to suit different sizes of primary schools in different locations.

The response to the challenge from each architectural practice was different, providing opportunity for comparison and dialogue on a wide range of subjects. For example, one design adopted a single storey approach with a network of interlocking internal spaces and external courtyards, while the other proposed a two storey design with an internal atrium, open plan class spaces, and covered external terraces. Both provided creative solutions to the brief, and also presented different challenges were they to be developed further for construction, and varying opportunities for eventual end users.

Reference primary School – Construction

East Dunbartonshire council had a requirement to replace an existing building which was in poor condition, and reviewed the two designs and elected to develop the Walters and Cohen concept for development and construction of Lairdsland Primary School. The site was next to the Forth and Clyde Canal and constrained by an

adjacent road and canal basin. The two storey design chosen minimised the amount of land required by comparison with the single storey alternative.

The new school has been built, and since opening in 2015 has gone on to win numerous design and architecture awards:

- Education Category of the Civic Building of the Year at the SPACES Awards
- GIA Education Award 2015
- Development of the Year, Public Buildings – Scottish Property Awards 2016
- RIAS Award 2016
- Scottish Design Award

This design concept has subsequently been developed for East Dunbartonshire Council at Lenzie Meadow PS. Other councils have also adopted the design principles, for example at Crieff PS in Perth and Kinross and St John`s PS for City of Edinburgh Council. An analysis of uptake of the reference primary design is included in Section 5 Objective 2.

Reference Primary School – Operation

The reference primary school design developed for Lairdsland Primary School has a range of design initiatives which encourage the individual, group and collaborative learning approach of the Curriculum for Excellence:

- Semi open plan class zones to flexi spaces
- Full visibility of atrium flexi spaces from class zones
- Connection to outdoor learning opportunities from both upper and lower levels
- Presentation and collaboration zones
- Stepped internal social/learning space

Many councils considering newbuild primary schools have visited Lairdsland PS to see it in operation and discuss its educational suitability with staff, and requested the reference design information pack from SFT. A Post Occupancy Evaluation of this project was carried out in March 2016, and its outputs are incorporated in this report.

3.3.3 Inspiring Learning Space Concept

In 2014 the £5m Inspiring Learning Spaces (ILS) Fund was launched by Scottish Government to encourage the creation of innovative spaces for flexible learning, that had the potential to be rolled out across the Education Estate. They were also designed to foster relations between schools, further education and local businesses in line with the Scottish Government education policy objectives of Getting it Right for Every Child (GIRFEC), Curriculum for Excellence (CfE) and Developing the Young Workforce (DYW).

Local Authorities were asked to put forward projects for consideration for funding that complied with the funding objectives of creating spaces that were of relatively low value but delivered a high impact. Twenty projects received funding across Scotland, with the projects covering three broad categories:

- Agile spaces in which to explore new learning and teaching styles
- Vocational training facilities
- Digital and virtual environments.

These initiatives were then implemented throughout 2016/17, and have stimulated much discussion within schools, between schools and between councils. They formed the basis of much of the discussion at the 2017 Education Buildings Scotland Conference, with many Local Authorities looking to replicate these spaces or resulting ideas throughout their estate. This is explored further in Section 3.4.

3.3.4 Lower Carbon Schools initiative 2017/18

One of the aims of the School Estate Strategy 2009 which has been incorporated into the Objectives of the Schools for the Future Programme is that schools should “contribute to reducing C02 emissions as part of The Climate Change Scotland Act 2009”. In 2017, additional funding was made available through the programme to develop “Lower Carbon Pilot Schools” to design, implement and assess innovative initiatives. A number of projects were considered for funding depending on the stage of design progress, willingness of the councils to participate, and the ability of the design teams to develop creative solutions.

Two projects were identified for further development and potential additional funding:

Queensferry Community HS, City of Edinburgh Council

Jedburgh Intergenerational Community Campus, Scottish Borders Council

Lower Carbon Pilot proposals

The Queensferry HS project was identified first for inclusion as a Lower Carbon Pilot. The team opted to take a first principles holistic approach, and reviewed all aspects of the project including the design process, indoor environmental quality standards, construction, operation, energy consumption and C02 emissions. The Jedburgh project has been developed by a different design team, with SFT acting as focal point to assist in collaborating between the two projects. This has included internal collaboration between SFT Education, Low Carbon and BIM workstreams, and has resulted in an alignment of overall approach and target standards, with bespoke application and solutions to suit each location and design. Key innovations from the proposals are summarised below:

PROCESS

- Innovative BIM modelling to improve links between the architectural model and the environmental analysis, facilitating optimised iterative design.
- Adaptive Thermal Comfort assessment method to recognise variation in human reaction to indoor temperature depending on external conditions.
- Climate Based Daylight Modelling used to assist design of building form and apertures.
- Recognition that indoor air quality is directly related to user concentration levels and exploration of best practice standards.
- Response to draft BB101 2016 Ventilation of School Buildings analysis highlighting that winter scenarios often result in long periods of closed windows to avoid cold drafts, leading to high CO2 concentration levels.
- Review of building form and fabric to optimise internal environmental quality (temperature, daylight, CO2) while minimising energy demand.
- Review of fuel strategy and renewable technology alternatives to reduce reliance on fossil fuel generated heat and power, while optimising capital, FM and lifecycle replacement costs.

As a result of this approach and analysis, the building designs have been enhanced with the following key items:

DESIGN

- Window size and position varied on elevations to respond to sunlight direction.
- Horizontal sun screens added externally to shade south elevation windows in summer.
- Building fabric insulation values increased.
- Mechanically assisted natural ventilation strategy incorporated to provide controlled ventilation, heat recovery, elimination of cold drafts and reduced C02 levels.
- Incorporation of Combined Heat and Power (CHP) unit to provide on-site electricity generation as a by product of heat generated for the swimming pool.
- Installation of photovoltaic panels to provide renewable on-site electricity generation
- Incorporation of high efficiency, long life LED lighting to all spaces.

The projects are currently in the final stages of design and costing prior to anticipated construction commencement in summer 2018. The Pilot assessment requires a three year period of review after completion of the buildings in 2020 to gather information and assess performance against the design intent.

The outcomes of the Lower Carbon Pilots will be shared publicly via SFT website to provide a resource for other councils and designers to utilise. Initially this will be predictive based on the design approach and proposals and will be followed up with lessons learnt during the operational phase.

3.3.5 ELC Pilot Nursery Design

In 2017 the Scottish Government committed to increasing the annual number of free hours of Early Learning and Childcare across Scotland from 600 to 1140 by 2020. This is to provide an equitable quality experience for all children, and also to provide flexibility for parents and carers in relation to their own continued training or employment. Councils are working to assess how this will be achieved and to identify their potential requirements in terms of facilities. While this is a separate stream of work from the Schools for the Future Programme, there are overlaps with the later phase projects which are being developed to deliver an 1140 hour service.

Learning from the positive benefits of commissioning the Pilot Secondary School and Reference Primary School designs, SFT is working with East Ayrshire Council to develop Pilot nursery designs for potential future construction on two test sites. These are being designed collaboratively by two separate architectural practices, aiming to validate the Scottish Government working assumptions in terms of required area per child, and the required cost per square meter of any new facilities which may need to be constructed. The designs are also being developed to reflect the varied operational models which the increase in hours will necessitate, and to illustrate the principles of the “Space to Grow” guidance published by the Care Inspectorate. The outcomes of this exercise will become public both at the design report stage in spring 2018, and potentially at the completion of construction in the future.

3.3.6 Relationships

Through the initiatives described, relationships have developed between the programme team and local authorities, between councils who may have similar challenges, and also across the consultant and contracting community in Scotland. These networks have increased the collective knowledge and debate related to school projects, and assisted in delivering the Programme Objectives.

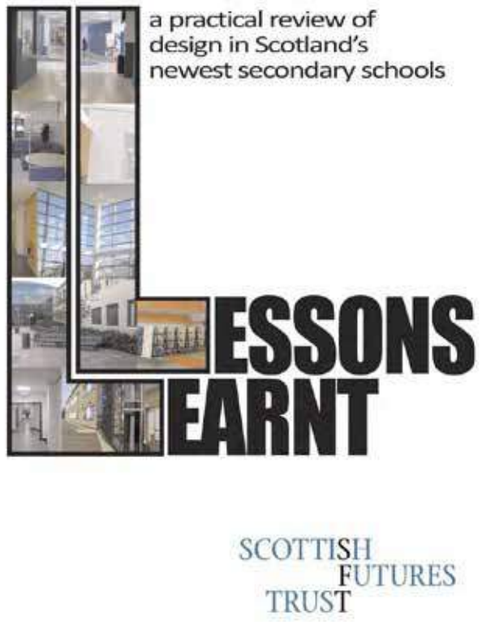
3.4 DISSEMINATE

The third component of the **Develop-Demonstrate-Disseminate** strategy aims to utilise the central position and widespread relationships of the programme team with all councils in Scotland to share lessons learnt. This encompasses both formal compilation of reference material, and also the continual informal sharing of experiences and making of connections between project teams dealing with similar issues and challenges. Examples of the structured sharing of lessons learnt are provided in the following sections.

Lessons Learnt Document 2009

To inform Scotland`s Schools for the Future Programme, specifically the brief for the Pilot Schools Projects, SFT produced a review of secondary schools across Scotland. This surveyed 28 new secondary school buildings by visiting the schools and interviewing senior management teams, facilities management staff and student representatives. These schools were across 16 local authorities with different educational and design approaches, and had been operational for at least six months. In parallel, an experienced architect helped review how the schools were briefed in the relevant authority requirements. The correlation of user feedback and specification documentation allowed lessons to be drawn to help inform future specification documents. The Carbon Trust were involved in the overall review of findings to help draw out relevant points, particularly in terms of energy efficiency.

This document was published with positive lessons and points of challenge and improvement, and was produced without reference to specific projects to encourage openness of feedback. The report was made public as a resource for designers and councils to utilise, encouraging knowledge share and collaboration, and providing time savings and cost efficiency.



Key themes which emerged were:

- **Circulation**
- **Ventilation and overheating**
- **Student social space**
- **Catering and dining**
- **Practical subject classrooms**
- **Project documentation**

These themes and other issues such as toilet design, flexible learning areas and finishes were explored in the pilot school designs, which formed the basis of the Schools Development Handbook published in 2012.

Schools Development Design Handbook 2012

During the construction of the two pilot projects for East Renfrewshire and Midlothian Councils, the valuable experience gained through the development stage was compiled by SFT and BDP into a reference document which was intended to inform and inspire others. The purpose of this document was:

"to narrate the journey of the Schools Pilot Project, highlighting areas of commonality, and to share information that has been prepared through the project offering guidance on Best Practice and solutions to the Lessons Learnt exercise".

The information included was based on information and processes used in the Pilot Project. This was not promoted as the only solution, but suggested that:

"Local Authorities consider the content, use where appropriate or preferably use the information as a stimulus and implement solutions which exceed the outcomes of the Pilot Project".

This document was made available electronically online, and was designed to be read in this format as it contained links to other digitally available resources and guidance.

The handbook offered experience and guidance on all aspects of the development of a school project, including consultation, briefing, options appraisal, design, whole life costing, sustainability and continual evaluation.

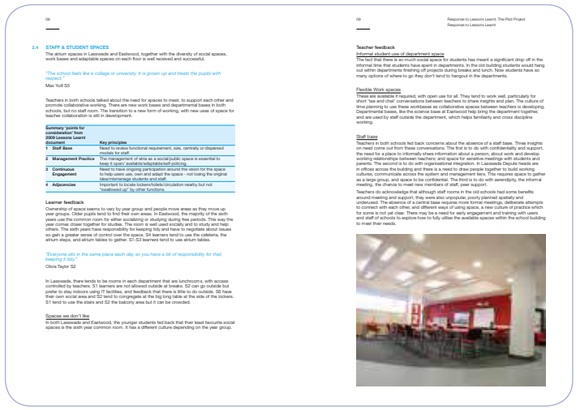
SCOTLAND'S SCHOOLS FOR THE FUTURE
Inspiring learning, aspiring nation

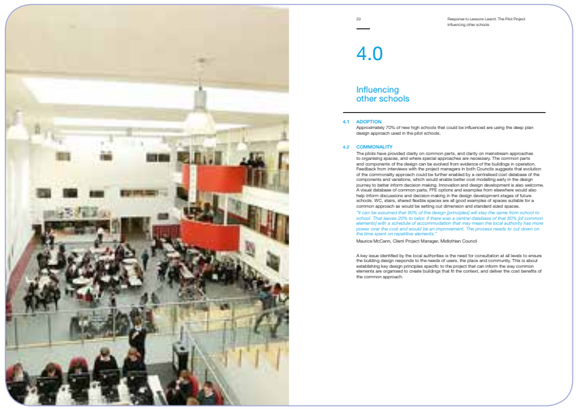
Schools Development Handbook

Response to Lessons Learnt Aug 2015 (The Pilot Project)

To complete the cycle of learning from the Joint Pilot Secondary Schools projects, a review was undertaken after the schools had been completed (2013) and had been operational for a full school year. A series of interviews and workshops with user groups users (learners, staff, parents and community users) and commissioners (Scottish Government, SFT, Local Authorities), were facilitated by Architecture and Design Scotland. Feedback was recorded and collated to mirror the themes which had arisen in the original Lessons Learnt document. This approach was designed to assess how the projects had responded in practice to the survey information which had informed the brief for the pilot projects.

A statement in the Executive Summary concludes, "The message from users and local authority project teams is positive. The spaces provide open, flexible, and inspiring environments. The schools feel like part of the community, enabled in particular by community use of sports and leisure facilities. Users report that the spaces raise aspirations".





Key Issues

While the majority of themes raised in the original Lessons Learnt had been successfully addressed in the two designs, for example improved circulation, social spaces and connectivity between subjects, there were a small number of initial concerns regarding the temperature and ventilation control within some internally located rooms. It was also noted that while the joint procurement route had brought advantages to both projects, the communication and integration of the efforts of two council teams required additional management and resources.

To encourage maximum utilisation of the lessons learnt from all stages of the Pilot Projects, two documents were produced and published on SFT website in 2015:

Response to Lessons Learnt – The Pilot Project

Response to Lessons Learnt – Executive Summary

These along with all of the other documents relating to the Pilot Project have remained available publicly to assist with subsequent project development.

Visits to completed projects

In addition to the reviews which have been compiled on the completed Pilot and Reference projects, the buildings themselves have been utilised widely by other councils and designers involved with school projects. Formal and informal tours have taken place since each of the projects was completed, enabling users to provide first hand feedback on all aspects of how the buildings have performed. This direct link has been instrumental in determining the design direction of a number of subsequent projects within the programme, and has also inspired continual design development across the whole school estate. Each completed project becomes a reference design in itself, and collaboration between councils, design teams and contractors has been encouraged at every opportunity.

In addition to project visits in Scotland, other trips have been undertaken to schools in the UK and Ireland by the Schools Infrastructure Unit, SFT, local authorities and school representatives, expanding the vision for projects within the programme.

Design and Local Authority Forums

Design forums with local authorities have been held to discuss the successes and challenges arising from the design, construction and operation of the schools in the programme. Initially these were focussed on the Pilot secondary and Reference primary projects, but have developed along with the portfolio of completed buildings. Similar sessions were held with design teams to share knowledge and challenge current thinking. This will continue to expand as each project is handed over, and will also mature as buildings from earlier in the programme are used, adapted and maintained.

Conferences

To maximise the value of the knowledge gained from the School`s for the Future Programme, the team have participated in conferences sharing the experience from the programme covering a wide range of topics:

- Programme Management
- Scottish Government integrated Curriculum for Excellence/ Schools for the Future approach
- Area and Cost Parameters
- Learning and teaching space development
- Demonstration projects
- Local Authority collaboration initiatives

Recent examples of conferences celebrating the success of Scottish Government and Local Authority collaboration are noted below:

Education Buildings Conference, Manchester 2017

This conference and exhibition provided a forum for the 4 UK nations to present and discuss their individual schools programmes. A joint presentation was delivered by Scottish Government and SFT, reviewing the key successes and lessons learnt through the Schools for the Future Programme. The

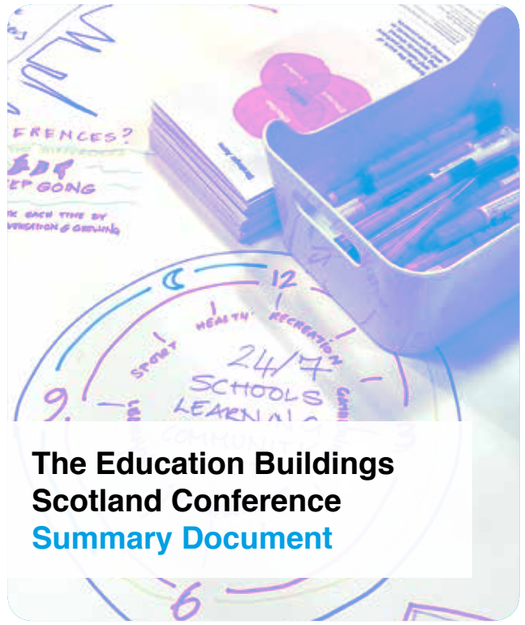
representatives from the other nations were interested in the approach to design, curriculum integration across age groups, and programme management, and have initiated further discussions to share experiences which may assist in the development of their school estate planning. A follow up 4 nations forum is in discussion to continue to share experience which may be beneficial to others

Education Buildings Scotland Conference, 2017

Working collaboratively, the Scottish Government, Architecture and Design Scotland, and SFT planned and managed the inaugural Education Buildings Scotland Conference, held at the Edinburgh International Conference Centre in November 2017. This exhibition and conference explored how technology and spaces can be developed to assist with the learning and teaching necessary in Scotland`s learning estate. Contributors included teaching professionals, pupils, research academics, architects, school estate managers from local authorities, and representatives from SFT, A+DS, and the Scottish Government, including John Swinney Deputy First Minister and Cabinet Secretary for Skills and Education. The conference lasted for two days, and the format was a central hall for exhibition and key speech and discussion sessions, with a series of smaller scale workshops and presentations in adjacent spaces throughout the conference. The collaborative success of the Schools for the Future Programme was evidenced at the presentations during the conference.

To provide a focal point for feedback and discussion, the Scottish Government, SFT and A+DS hosted a stand adjacent to the main keynote stage area. This allowed discussion between sessions, with feedback being captured on a “Conveyor Belt of Ideas” by participants. This has been analysed and key themes emerging will inform the content for the conference planned in 2018.

Feedback from the conference has been very positive, with attendees indicating that it was very beneficial in raising debate on the learning estate, and providing a forum for collaboration. It was also a focal point for recognising the collective success and effort of all partners in achieving the Programme Objectives.



Media

The learning which has come out of the Schools for the Future Programme has also been disseminated by using as wide a variety of media as possible to suit the needs of users. Press articles, reports and guidance have been published, in a publicly accessible resource area on SFT website. This approach will continue to be utilised and expanded as further information becomes available from the programme and associated initiatives, such as the Inspiring Learning Spaces reviews and the Lower Carbon Pilot Projects. This Findings Report will also be available on the website.

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FRIENDS OF THE SCOTSMAN / EDUCATION

Lessons learned from building the same schools with shared knowledge

Grant Robertson reports on an impressive collaboration which is producing more new facilities for Scotland's pupils

The magnificent Queensferry Crossing over the Firth of Forth has been viewed as a structure changing the landscape of Scotland. But allow me to suggest another Scottish project which also connects communities and provides opportunities for future generations.

As the Education Design Director within Scottish Futures Trust (SFT), which manages the Scotland's Schools for the Future programme on behalf of the Scottish Government, it seems an appropriate time to reflect on what we have achieved and learned as construction starts on our 100th new school, Bertha Park in Perth.

SFT's role is to encourage efficient, effective, excellent solutions through increased collaboration and commonality of design.

It is obvious that everyone involved in the schools programme – from councils, teachers, pupils and communities through to designers and construction companies are passionate about creating modern learning environments which support better learning outcomes.

In working towards this, I would like to acknowledge the foresight of two councils, East Renfrewshire and Midlothian, who made a bold bid to the Scottish Government to develop their projects in parallel, proposing to be part of an innovative pilot project and work collaboratively.

This was the first time two Scottish councils had come together to procure and deliver two schools simultaneously using similar designs. This innovative approach proved so successful that it has been used by other councils to achieve benefits and savings.

The result of the pilot initiative led to the creation of two new schools, Eastwood High and The Lasswade Centre, both built using the same, highly efficient 'block' design concept, yet both are unique design solutions looking completely different, which are specific to their local requirements.

This commonality of approach provided education, design and financial benefits. From then on, and in subsequent buildings, it has been about evolution and fine-tuning. Most users are unaware their new learning environment shares common elements with many other projects in the programme, because each is individually tailored.

These pilot schools became showcases, and demonstrated that the design approach has been tested and proven. Once the main projects were underway we shared the knowledge gained and lessons learnt to help inform councils with the development of all future projects.

When the schools programme was launched, we set out to build 55 schools from the original £1.25bn budget. Thanks to our interventions, focusing on collaborative working and on sharing design principles, this brought about significant savings which led to 12 more high-quality schools to be built using the same budget.

Based on this work, the Scottish Government extended the programme to £1.8 billion increasing the number of schools to 112. SFT's work has allowed four additional schools to be built taking the total in the programme to 116.

So what kind of facilities have we created? The schools of today and tomorrow are substantially different from even a generation ago. Learning environments need to be bright and welcoming spaces, where staff, learners and the community at large are included and feel a genuine sense of ownership. The classroom still has a place but increasingly there is more open plan learning space with glass walls improving connection and collaboration between learners and different curriculum areas supporting the delivery of a blended learning experience.

Many of the new facilities are encouraging even more use during evenings, weekends and holidays.

These are vibrant community assets where we have seen pensioners enjoy a reading group in a café run by students, or where community groups can undertake classes simultaneously with other learners.

Really, it is up to the community and the teaching professionals to decide how to best use their facilities.

The schools programme has been a concerted effort by all involved that is now positively impacting on communities across Scotland and we feel a real sense of pride in what has been achieved. While the Queensferry Crossing connects across the Forth, these projects are making connections which support learning across the whole of Scotland.

Grant Robertson, Education Design Director at the Scottish Futures Trust.

SCOTTISH FUTURES TRUST

Eastwood High School in East Renfrewshire was built in tandem with The Lasswade Centre in Midlothian, using common designs which were tweaked to meet local requirements

Students are now a whole lot more engaged with building excellence in the workplace

Dr Miles Weaver details how business is changing its thinking

Turn on the news and you get Brexit, America First, "building walls", "civil unrest in other parts of Europe", "profit over people and planet" and even rockets! Whatever you think of the political and economic climate, it feels as if the world around us is becoming ever more protectionist and isolated. In the workplace, many of us are faced with cuts and constraint, while 'need' exists. The problems don't simply go away, the cogs just keep turning, albeit with some grinding.

What we need is for organisations to question 'purpose', its 'soul', and realign business goals with those of society. This requires holistic thinking, the bringing of people together to see the 'whole' and not just the subsequent 'parts'. At the level of the individual, the organisation, their interactions and relationships with stakeholders and the wider world around us. We must avoid "not seeing the elephant in the room".

In the classroom, Quality Scotland has acted as a real client, getting our postgraduate business students excited about their role to make excellence a national characteristic of Scotland.

The students are learning about the importance of continuous improvement and the approaches that can be adopted to build a truly excellent organisation.

Quality Scotland has considerable reach into the private, public and third sectors in Scotland and are open to new ways to engage with organisations to help them stimulate continuous improvement and be recognised for their efforts, benchmarked against the best in Europe.

This has helped the students to engage and apply learning in the real world and to bring about results for people, customer and society and at the same time deliver real business success. We often hear the term a "unique Scottish approach" which incorporates the building of a fairer, more inclusive society while simultaneously stimulating growth. Our students and the organisations that adopt the EFQM model and work with Quality Scotland – "see the elephant" from multiple perspectives and vistas.

Our students are forming new perspectives and questioning the artificial boundaries that we place around us. They are applying relevant models and concepts, learning from successful companies which have adopted the EFQM Excellence Model and have supported the embedding of excellence as a national characteristic of Scotland.

Adopting the EFQM model in your organisation will pay dividends – not only will participating organisations be part of a vibrant community and get recognition, the model brings people together around a common purpose. It enables you to question what you do in a supportive environment and identify best practice in your sector both nationally and beyond.

Quality Scotland draws on a range of approaches and tools, such as international standards for quality management systems Lean and Six-Sigma. This learning and practical application will best place our students in the workplace to apply as well as to develop solutions and analysis that matters.

The EFQM Model places significant focus on enabling partners and resources and processes that transcend the business. Organisations are only as a strong as their supply chains and must constantly assess need and design business processes that deliver for customers. The new value proposition is in realising the potential in what Martin Christopher, a professor at Cranfield University, stresses – that it is supply chains that compete, not companies, and the benefits of co-creating solutions with customers and key business partners. To "see the elephant" our students need to understand the parts and how they make up the whole. Holistic thinking is needed more than ever in our current and turbulent environment.

In our classrooms, Quality Scotland have renewed our purpose and connection to real world application, not only as a valuable learning experience, but to meet a real client, offer new ideas and solutions that will be bought to action.

Also, in the spirit of recognising excellence the best performing students will have an opportunity to see for themselves the importance and benefits of excellence frameworks and to be engaged in the annual Quality Scotland Scottish Awards for Business Excellence, an additional benefit to get engaged with hundreds of organisations across Scotland who are also celebrating their success.

Dr Miles Weaver, associate professor in Sustainable Business & SCM, Edinburgh Napier University Business School.

QUALITY SCOTLAND

WHAT DO YOU THINK? www.scotsman.com

Introduction

Teaching and learning in Scotland is in the midst of transformation. The Curriculum for Excellence puts the learner at the centre, a dynamic participant in how learning happens. Schools are engaging in new learning situations which have proven benefits,for,equipping,the, adults of tomorrow.

In this context, learning spaces are being reimagined. The conventional classroom, which has changed little in 100 years, is transforming into a flexible space which enables individual, collaborative and interdisciplinary working and gives the learner more choice in how they learn.

In August 2014, the Scottish Government made £5million available to encourage local authorities to imagine teaching and learning spaces differently. Inspiring Learning Spaces (ILS), administered by the Scottish Futures Trust, did not set down a list of criteria. Applicants were encouraged to think creatively, to find low-cost interventions which made high impacts.

ILS encouraged local authorities to look at spaces within school buildings which could be transformed: an old Home Economics lab became a state-of-the-art restaurant kitchen, a storeroom became a skills academy for the construction industry. Some local authorities used the funding to trial new kinds of learning space to better inform forthcoming new-build schools. Innovative partnerships were formed with FE colleges, local businesses and a Science Centre.

In collaboration with SFT, Architecture & Design Scotland captured learning on the early impacts and benefits of the ILS projects based on interviews with 20 project leads. The majority of the projects fell into three broad categories: flexible learning spaces in which to explore new learning styles; vocational training facilities; and digital and virtual classrooms which expand the use of technology in learning. The projects were very different in size and scale, ambition and intended educational outcomes, and, as you'd expect in an innovation initiative, some aspects were more successful than others. From those projects able to report early results, there were both expected and unexpected benefits. In some cases, the ILS proved transformative for pupils, teachers, and the wider school community.

Many of those who took part in ILS are keen to share their ideas more widely. This publication brings together the lessons learned during the initiative for those in the learning and estates community across Scotland. Whether you are in a position to make a large change or a small one, it invites you to pause for a moment and imagine new and innovative ways of learning.

Inspiring Learning Spaces Publications

In 2014 Local Authorities were asked to put forward projects for consideration for funding that complied with the objectives of creating spaces that were of relatively low value but delivered a high educational impact. Twenty projects received funding totalling £5m across Scotland, with the projects covering three broad categories:

- Agile spaces in which to explore new learning and teaching styles;
- Vocational training facilities;
- Digital and virtual environments.

These spaces have been hugely well received, forming the basis of much of the discussion at the 2017 Education Estates Building Conference Scotland, with many Local Authorities looking to replicate these spaces or ideas throughout their estate.

To learn lessons from these spaces and to understand the potential impact they were having on learners, in conjunction with Architecture and Design Scotland, an ILS booklet was prepared to draw on some of these key lessons and early impacts:

- confidence, pride and ownership was instilled pupils through planning and design phase
- increased engagement and attendance of pupils
- different ways of learning and teaching including project, skills-based and active learning
- opportunities for collaborative and peer-to-peer learning;
- informal nature of the new spaces has resulted in more positive teacher/pupil relationships.

A link to the full ILS document is shown below: (https://www.scottishfuturestrust.org.uk/publications/tag/schools)

Many of the reported successes emerged when multi-disciplinary teams were formed including the local authority including educationalists, estates and procurement colleagues and the end users. This allowed a clear vision and strategy to be developed and ensured good communication channels.

Challenges were faced in terms of timeframe and decision-making processes in relation to the internal collaborative approach, but these were overcome by having the clear educational vision for the project that could be referred back to.

Collaboration was also evident on a wider basis between projects, with ILS workshops enabling Authorities to discuss ideas, challenges and perceived barriers in relation to making these spaces work to their full potential.

A key learning would be that these collaborative workshops should happen not just in the development phase of a project, but also once projects are operational. Local Authorities can learn from each other about what went well within individual projects, and potentially highlight ways in which they can continue to improve and develop the spaces.

Extended ILS Evaluation

Due to the initial positive feedback received around the ILS projects, evaluation is ongoing to learn lessons from the ILS approach to establish:

a. if there are any measurable, positive benefits on learning outcomes
b. if any lessons from these projects can be applied to future investment projects
c. to ensure that these spaces are used to their full potential.

An independent group of professional educationalists, "The Learning Crowd" has been commissioned to perform a piece of work focussing on the following:

- Develop an evidence base of the benefits of these new teaching/learning spaces;
- Identify 10 things to think about if schools/ teachers were looking to develop/ create an inspiring learning space;
- Provide advice on how to use these new teaching/learning spaces to their full potential.

This will result in a "toolkit" which sets out a clear process map so that schools and local authorities can draw on this to get the best from future capital investment and know how best to successfully embed change through their projects. This work will be completed in spring 2018.

The Local Authorities involved are all very pleased with their respective spaces and the learning that is occurring within them. There is a belief that these projects will "sell themselves", and visits to these spaces by those developing future projects is encouraged to understand what aspects could be transferred.

4

Delivery Status

SECTION 4 Delivery Status

The £1.8bn SSF Programme set out to deliver 67 schools by March 2018. As the programme has developed and further funding been announced, a further 50 schools have been included within the programme, taking the total number of schools awarded funding to 117, to be completed by 2020. The 50 additional schools are to be completed and open to pupils by March 2020.

The programme has been divided into 5 phases to align with funding announcements, all of which have delivered a combination of secondary, primary, campus and additional support need schools. A wide range of community facilities has also been incorporated, providing extended facilities for pupils and increased community engagement with the schools.

Phase	Date Announced	Campus	Secondary	Primary	ASN	Total
Phase 1	June 2010	4	10	19	1	34
Phase 2	December 2010		2			2
Phase 3	September 2012	3	16	10	2	31
Phase 4.1	October 2014	1	3	22		27
Phase 4.2	January 2016		7	12	1	19
Phase 5	August 2017	1		3		4
Total		9	38	66	4	117

At the time of publication of this report 83 schools were open to pupils, 25 schools were in construction, with 9 schools still in development. As such the programme target of 67 schools open to pupils by March 2018 was exceeded, with the open schools having the capacity for c.55,000 children to learn in state of the art education facilities. By 2020 it is expected that the new facilities in the programme will provide the capacity for c.75,000 young people across both Early Years and Schools to learn in modern, safe, 21st century learning environments.

SSF involvement across all projects tends to be most acute at the beginning of the development phase to understand the scope of the project and define the budget and funding parameters.

Contact is maintained with the Local Authorities throughout the development phase to provide support and challenge, and to ensure an appropriate solution to any challenges or issues can be determined. These issues vary from project to project, but all highlight the need for strong governance and highlight the benefits that arise when a left of the process approach is adopted. This means all major issues can be identified and mitigated against to provide clarity to the design solution, cost and programme at an early stage, by giving time to explore alternative options.

A key lesson for any future investment project, is that a “left of process approach” (i.e. focussing on good early decision making), is crucial for a successful project. This could be adopted in line with the recommendations of other Scottish Government initiatives such as SCIM (Scottish Capital Investment Manual – NHS) and the Construction Procurement Review. Adoption of this approach should help deliver great quality infrastructure, within defined timeframes, and for value for money to the public sector.

The focus for the remainder of the SSF programme is to work with Local Authorities to ensure all remaining projects enter construction, to enable them to be open to pupils by 2020.

The completion of Post Project Reviews and Post Occupancy Evaluations across all projects in the programme is imperative to ensure learnings from all projects can be incorporated into future projects and investment programmes, to ensure that education buildings continue to evolve and develop to the benefit of all learners.

5

Evaluation

SECTION 5 Evaluation

5.1 Aims of evaluation

Having described the background, approach and current progress status of the Programme in the preceding sections, this section reviews the information collected throughout the programme against the Programme Objectives. It also reviews the Programme Management tools (Process, Guidance, Metrics) to determine lessons which can be learnt in relation to the approach taken in managing the programme.

5.2 Schools for the Future Programme Objectives

As listed in Section 2 Programme Background, the Programme Objectives are:

Objective 1: Effective & efficient procurement

Objective 2: Cost efficiency

Objective 3: Sustainable lifecycle solutions

Objective 4: Improved environmental performance and reduced carbon footprint

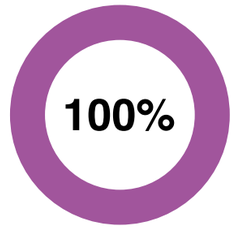
Objective 5: Implementation of the nine guiding principles included in the School Estate Strategy

Objective 6: Delivery of the first primary school(s) in 2011 and the first secondary school(s) in 2013

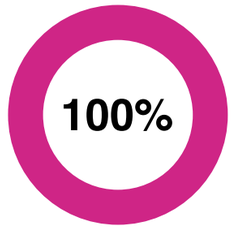
These are evaluated individually, although it is recognized that there are overlaps between objectives, and between the 9 Guiding Principles in Objective 5 and other Objectives. In particular, those Guiding Principles relating to Sustainability and Environmental performance relate closely to Objectives 3 and 4. To avoid duplication, observations and lessons are collated within the most appropriate location for clarity.

5.3 Data Collection Analysis

Information has been collated from a variety of sources to provide a broad spectrum of perspectives from different projects, councils, and types of stakeholder. Feedback has been achieved from all 32 local authorities in Scotland, greatly assisting in creating this report and reflecting the collaborative nature and positive relationships which have been developed during the Schools for the Future Programme. This data has been assimilated into searchable databases which were then used to highlight key themes, trends, and observations. Source data was available as opposite:



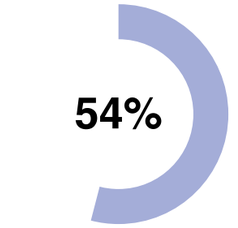
Area/Pupil metric data
77 no. projects



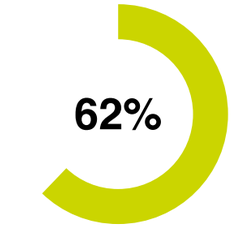
Cost/m2 metric data
77 no. projects

Procurement Time
77 no. projects

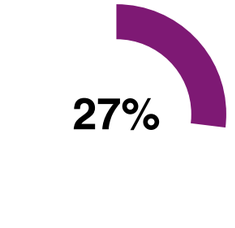
(projects which are comparable to current published metrics)



Post project Reviews
22 out of 41



Post Occupancy Evaluations
13 out of 21



EPC/BREEAM
22 out of 82

(out of completed /applicable projects)

Observation

From the data above, it is evident that the collection of financial and area metric data, which is collated prior to contract sign produces a more complete source of information than data which is required to be produced after projects have been completed. The period up to signing of a contract to deliver a project is an intense and highly controlled series of focussed activities, with all parties resourced to achieve this key stage. Key facts such as overall cost and project area are defined and are required for purposes other than purely reporting on Programme Objectives. This makes the data available for review on a programme basis. Conversely, after project completion teams may have already begun to move away from the project, and the focus to complete the PPR and POE reports is hard to achieve. In addition, the issues which require to be addressed are broad and harder to define than earlier numerical data, and may involve contentious issues which parties are reluctant to discuss or commit to a written report, potentially due to fear of criticism.

The central Programme Management function has been found to be useful during the post handover stage of projects, especially when the PPR or POE report is accompanied by a discussion workshop to explore the draft report contents. SFT can assist in providing a sufficient degree of focus and guidance to allow these reports to be completed, and feedback received has welcomed this input, recognising the benefits of reflection on completed projects to inform those still in development. Plans have been prepared by LA's to demonstrate how their PPR and POE reports will be completed.

FINDINGS

- **Collation of cost, area and procurement duration data has been consistent and complete.**
- **SFT assistance to local authorities is beneficial to quality and delivery of PPR and POE reports.**

5.4 SFT Programme Management - PROCESS

The process established by the Schools for the Future Programme (see Section 3 Programme Approach) is intended to define, influence and monitor the development of each project from the point of inclusion in the programme until its Post Occupation Evaluation 18 months after completion. In addition to the data collection points reviewed above, observations have been collated on the process itself. In addition to the regular ongoing reporting mechanisms, the key interfaces between SFT as Programme Managers and the local authorities in receipt of funding are through the Workshops.

A review of the Workshop records produced a number of observations:

Workshop Observations

Workshop 1

Workshop 1 is a key formal introduction of projects into the Programme, however feedback suggests that while high level commitment to Programme Goals is positive, there may be more opportunity to utilise these sessions to inform the development of the project to meet Programme parameters. Problems encountered later in the project are often issues which if explored more thoroughly at the initial stages could have been averted or minimised.

Interim Workshops

Interim Workshops provide ongoing informal assistance from SFT to local authorities during the entire development of most projects. This influence can relate to all aspects of the project including procurement, technical and financial, and is often carried out in discussion rather than formal meeting scenarios. These sessions are important opportunities to challenge project decisions, and to share experiences from other projects within the programme. They also allow relationships and trust to be developed which encourages increased openness of discussion.

Workshop 2

The most detailed project discussions occur at the finalisation of the project prior to construction commencement when the Local Authority present final project proposals to the SG. This is naturally when the most complete information is available, and therefore able to be holistically presented. It is also a requirement of funding, and is attended by representatives from the Schools Infrastructure Unit, which brings additional focus to the event.

FINDINGS

- **More in depth options appraisal challenge is needed in Workshop 1 to address issues at the earliest opportunity.**
- **Interim workshops provide a forum for beneficial collaboration and challenge. Potential to hold joint project workshops on common themes.**
- **Continue with successful Workshop 2 process. Review benefits of these being made publicly available.**

5.5 SFT Programme Management - GUIDANCE

In principle, the guidance document provided to assist local authorities achieve the Programme Objectives has been beneficial, by giving structure to the workshop review process, and acting as a check to ensure issues are not overlooked. The Programme Guidance is related specifically to each objective, and is therefore reviewed in the following sections alongside observations of how the Objectives have been met at project level.

5.6 SFT Programme Management - METRICS

The metrics were devised as a mechanism to assist projects achieve the overall Programme Objectives, and in general have served a useful function in providing a robust framework of parameters which can be easily assessed throughout the development of each project. They relate closely to specific objectives, and are therefore reviewed in the following sections alongside observations of how the Objectives have been met at project level.

5.7 Programme Objectives Evaluation

5.7.1 - Objective 1 Efficient and Effective Procurement

The people involved in a project and the processes they use are key to providing the conditions to support the objective of efficient and effective project procurement. The following section reviews feedback from the programme which has been collected through project visits, Post Project Review Reports and feedback workshops. This data has been collated into topic headings to align with Scotland`s Schools for the Future Programme – Guidance to Achieving the Programme Goals. Observations have been grouped into Programme Level and Project Level, and Findings identified.

PEOPLE – GOVERNANCE, MANAGEMENT, RESOURCES

Within the Programme as a whole and each individual project, there is a need for decision making on all issues from the macro strategic level to micro details. These decisions are influenced by external factors, and by each other as they interact. Decisions also build on each other over time, with early decisions impacting on every other subsequent issue. It is vital therefore that these decisions are made well, from an informed position, by people with the appropriate skills and responsibility, and at the right time.

Programme - Feedback at Programme level indicated that there had been a clear governance and reporting structure put in place at the outset, and that there had been a good level of continuity within this arrangement which allowed ongoing relationships and understanding to develop.
It was also noted that as the Programme accelerated from its initial starting point, the resource levels within SFT team lagged in some instances until adequate numbers of staff were in place. The rate of delivery and level of resource have been closely aligned since this initial period in the programme.

Project - From an individual project perspective, the feedback was varied. In some instances the Project Team was unaware of any formal governance structure, making decision making difficult to achieve at an appropriate level. In other instances, councils had recognised that projects of the scale and complexity of schools needed a Project Board with suitable expertise, availability and access to the highest council levels to assist the project. Where there was a clear commitment from the Directorate level and Administration, feedback was that a successful project was more likely to ensue.

The number and frequency of major projects being delivered in each council area varies according to population and location. Smaller councils can sometimes have a lack of project continuity and experience, whereas larger councils may have ongoing programmes allowing staff to learn from project to project. Conversely smaller and often more remote areas may have staff continuity which is higher than in urban areas where workforces are more mobile. Flexibility of resource levels and project demands may also be easier to manage in larger teams, although in these instances there is an increased likelihood of being required to work on multiple concurrent projects.

The observations are therefore not specific to circumstance, and the principles of the findings are relevant to all projects.

FINDINGS

GENERAL

- **Strong governance needs to be in place from the outset of a project.**
- **Governance needs to be accessible to Project Teams throughout.**

PROGRAMME

- **Structure at Programme level was established early and maintained throughout providing useful stability.**
- **Lessons Learned through the Programme have improved over time.**
- **Strong continuity within SSF team over the programme.**
- **Programme Objectives established at the outset. Some points may benefit from simplification/reduction to make them easier to implement.**
- **SFT team resource availability lagged at some points as the initial programme delivery accelerated.**

PROJECT

- **Not enough time anticipated by local project teams.**
- **Some lack of clarity of governance structures and objectives within project teams.**
- **Review of Scottish Public Sector Procurement in Construction 2013 1.1.5 highlights the need for "clearer leadership to ensure that construction is properly planned".**

PEOPLE - CONTINUAL IMPROVEMENT

The process established to ensure that lessons are learnt is the Post Project Review and Post Occupancy Evaluation Reports. These are sessions which are structured to promote discussion, provide positive feedback, and identify challenge areas for improvement. SG require these reports to be produced by local authorities as part of their funding conditions.

Examples of beneficial knowledge transfer were contained within the feedback reports, ranging from strategic to detailed. In one council, they had experienced issues with building services integration on a number of previous projects, and through an internal lessons learned review identified a strategy of using the same M+E subcontractor across 4 bundled projects. They reported a benefit in speed, cost and installation quality using this approach. Another council had recently procured schools which had exposed concrete soffits with a poor quality surface finish. Learning from this, the same council insisted that sample concrete panels were produced to act as a quality reference point on subsequent projects.

FINDINGS

PROGRAMME

- **Having Post Project Reviews and Post Occupancy Evaluations as a condition of funding provides feedback loop into the Programme.**
- **Knowledge could be collected and shared more effectively than currently.**

PROJECT

- **Post Project Reviews and Post Occupancy Evaluations are difficult to resource.**
- **Consider clarifying feedback expectations for remaining projects.**
- **Successful transfer of lessons learnt can have immediate benefits**

PEOPLE - EXPERIENCE AND RESPONSIBILITY

The feedback received was generally positive about the expertise of people involved across all elements of the Programme, including SFT team, councils and delivery partners. SFT team incorporates individuals from financial and technical backgrounds to assist in the delivery of the programme, and has expanded over the programme duration. The main area for potential improvement within council teams is in relation to well informed decision making. For example, in an early project, a decision was made not to carry out any internal environmental modelling in an effort to reduce design costs. Subsequent experience during school operation indicated that this was an inappropriate decision, as rectification to solve temperature control issues has cost in excess of the original saving.

At construction stage, feedback highlighted difficulties between client teams and contractors in relation to lack of expertise and responsibility to manage the Reviewable Design Data and Contractor Design Portion processes.

In addition, as a response to the recommendations of the Cole Report, some councils have indicated that they have already employed Clerks of Works while others were encouraged to do so, to assist with on-site construction monitoring. Feedback also identified that clearly defining all roles during construction is important to avoid confusion and gaps or duplication of responsibilities.

FINDINGS

PROGRAMME

- **Continuity of staff greatly assists project delivery.**
- **Input from FM provider should be as early as possible.**
- **The programme benefited through involvement with school projects across all council areas.**

PROJECT

- **Clerk of Works input potentially beneficial, but roles and responsibilities need clarity.**
- **Contractor Design Management of RDD and CDP elements is important to final quality.**
- **Contractor Building Services co-ordinator can be very useful to manage integration**

PEOPLE - TEAMWORK, COOPERATION AND COLLABORATION

From the beginning of the programme, the benefits of collaboration have been integral to delivering the objectives. The Joint Schools Pilot Secondary Project was an innovative large scale collaboration between two councils, sharing procurement route, design team, project management and design concept. It demonstrated the efficiencies that could be achieved by reducing development phase costs by £3m, and maximised the use of knowledge sharing by using similar design solutions. This was further utilised in the Development Handbook which was made publicly available. Feedback indicated that a key benefit to making this project a success was having a central shared management team facilitating the collaborative activities. Subsequent attempts to replicate this process had reduced benefits due to an increased divergence between projects. A two primary school joint procurement collaboration with two councils used the same design team and contractor, and benefited from shared details and specification, and reduced design fees.

In the North Collaboration 3 councils are working together to pool funding to streamline procurement to produce savings across 3 projects. In addition, sharing of work package pricing between projects has resulted in additional accuracy to project costing at an earlier stage.

The aim of increasing cooperation and collaboration has been supported by the Hub programme which promotes inter council cooperation in 5 territories across Scotland. This network encourages communication within each hub, between supply chain members and also between the hub regions.

Communication, cooperation and collaboration is promoted across all areas and projects. As the number of projects and people involved has increased, this promotion and collaboration is sometimes limited by resources, and alternative ways of sharing experience such as conferences and published documents has been utilised.

FINDINGS

PROGRAMME

- **Collaboration is difficult as individuals focus on immediate tasks.**
- **Collaboration needs a belief that time spent sharing will improve outcomes.**
- **Collaboration works best when there is a dedicated facilitator.**

PROJECT

- **BIM being increasingly utilised to share information in an efficient way.**
- **Collaboration benefits are powerful at all levels when achieved.**

PEOPLE - COMMUNICATION

The feedback highlighted key stages when effective communication is vital. For example, when a client is developing a brief with a design team, each comes to the discussion with their own set of experiences, assumptions and language. Mistakes can arise from differences in interpretation of the same information. Many of the projects in the programme involved bringing together different groups, for example merging two secondary schools, combining a primary and secondary into a campus, or linking school and community facilities. In these scenarios where the background of each group is different, the value of properly understanding each other is paramount.

To assist with this process, it is often useful to have a facilitator who can test the degree of understanding between parties.

To arrive at the common understanding required, the feedback indicated that the number of interfaces needs to be minimised. This can be achieved by having appropriately sized teams and meetings to cut down the number of times information is conveyed. It was also noted that where multiple stakeholders are involved the most efficient approach is to have all parties together at the same time, so that cross checks of interpretation can be identified and clarified.

FINDINGS

GENERAL

- **Individual approach is more important than processes.**
- **Appropriate skills can enhance effective communication.**
- **Good relationships support good communication.**
- **Common understanding of information is vital.**

PROGRAMME

- **Communication at Programme level (SG/SFT) structured and effective.**
- **SFT team often used as a vehicle for communication between projects and councils.**

PROJECT

- **Communication between council departments needs to be effective to avoid siloed decision making.**
- **Dedicated school project link person can be very effective.**
- **Direct communication between designers and clients is essential to success.**
- **Openness and honesty is required to ensure common understanding.**

PROCESS – CLARITY OF PURPOSE

The Schools for the Future Programme high level purpose is clear, in that selection of projects for inclusion is based on moving staff and pupils out of poor and bad condition buildings into excellent environments which will support learning and teaching. The programme metrics, funding condition timelines and School Estate Strategy Guiding Principles have assisted in setting clear development parameters across all projects, and are reviewed through the Workshop reviews.

Most projects are now good at defining and achieving the strategic purpose and aims, with some exceptions where lack of clarity at the outset has led to protracted development periods or negotiations. For example, there have been instances where strategic decisions

to amalgamate two schools, or include community facilities have occurred late in the design process, leading to delay, abortive work, increased cost, or compromised solutions. Feedback also indicated that on many projects there was a lack of clarity in terms of the purpose of individual spaces, which led to confusion during construction. One council response was increasing the proportion of agreed room layouts at construction start from 50% to 85%, greatly reducing problems on site and increasing user satisfaction. Some councils suggested that a standard suite of Authority Requirements which could be adapted for local circumstances would assist. Councils have been starting to share these between projects, and between councils.

Within design and build projects, the design is often not complete in detail when construction starts, and there is an ongoing process of Reviewable Design Data (RDD) being submitted by contractor teams for agreement with the council. Feedback indicates that this area of uncertainty and lack of clarity was the cause of many of the problems experienced.

FINDINGS

PROGRAMME

- **Overall Programme purpose is clear**
- **Programme metrics have created a useful framework.**
- **Metrics could be extended to other groups e.g. early years, ASN.**

PROJECT

- **Strategic decisions need to be made early and be adhered to.**
- **Good brief definition reduces confusion and enhances satisfaction with projects.**
- **Consultation isn't just asking for input, it needs to achieve clear shared decisions which are communicated. Completing this cycle improves stakeholder ownership.**

PROCESS – OPTIONS APPRAISAL

Post completion feedback indicates that project success is often attributable to choices which were made at a very early stage in the project. At a strategic level, the Options Appraisals are variable in breadth and depth across the programme. This could be due to a range or combination of factors, for example inexperience, time pressure, community preferences or short term financial constraints.

Macro level option appraisal has included, for example, the amalgamation of schools, inclusion of community facilities, or incorporation of NHS or Police provision. This is accompanied by a review of site location options. Feedback would indicate that there is often a reluctance to "waste money" examining sites in detail at this stage which will later be excluded. This issue has also been identified once a site has been selected and the site strategy is being developed. Lack of a thorough knowledge of the site issues, for example underground services, flood, ground conditions, can lead to site strategies which are not informed by fundamental issues, causing design, time and cost issues when they later become known.

On redevelopment projects, for example a retained Listed Building, the same principle applies that maximising the knowledge of the issues by investing in early survey and investigation work will result in more design, time and cost certainty.

FINDINGS

PROGRAMME

- **Increased project option appraisal at strategic planning stage could provide more robust outcomes.**

PROJECT

- **Understanding of project specific issues (e.g. site conditions, brief, flood, planning, roads etc.) at an earlier stage would assist project development within Programme parameters.**
- **Existing building redevelopment has better outcomes when informed by detailed knowledge of the building.**

PROCESS - PROCUREMENT

There are a range of mechanisms available for engaging design teams, contractors, subcontractors and potentially FM operators to deliver a project for a council. The programme does not prescribe procurement routes, and a range of alternatives have been used:

- Approximately 50/50 hub/non hub
- Open tender
- Design and contractor frameworks
- Traditional and Design and Build contracts
- Maintained and non-maintained contracts

The hub process has been instrumental in developing the DBFM (Design Build Finance Maintain) projects using a standardised form of contract which assists in reaching contract close efficiently. Hub has also utilised the standard DBDA (Design and Build Development Agreement) for non maintained projects. Feedback has indicated that in some instances there was a difference in understanding between parties of how the hub process is structured, leading to councils underestimating the resources they required, or communication routes being unclear. Hub was a new initiative at the outset of the programme, and understanding has improved as the number of projects has increased. Feedback indicated that it would be beneficial to ensure the process, and roles and responsibilities are reiterated frequently.

Within non hub contract arrangements, a range of options have been used, with positive feedback on using frameworks which can assist relationships to develop, reduce procurement time, and encourage collaboration. Some councils also preferred utilising in house design expertise, especially at the early stages of a project, indicating that the close proximity to other council staff such as education and finance can improve communication. The procurement of design services also varies, from individual appointments, to full team under one lead consultant to provide a single point of responsibility.

The importance of understanding the implications of procurement selection was illustrated in Post Project Review feedback which linked poor project outcomes to the initial procurement decisions. An open tender process with a cost/quality ratio of 70/30 was issued with no minimum quality score. A very low tender, which also had the lowest quality score, was accepted and the project delivered late, with very poor quality. Learning from this experience, the council now implements a 35/65 cost/quality assessment, with a minimum quality threshold.

FINDINGS

PROGRAMME

- **Early understanding of the implications of procurement route is important.**
- **Poor procurement decisions can cause ongoing problems.**
- **Councils are not always familiar with the hub process.**

PROJECT

- **Community Benefits responsibility lacking, improving with later projects**
- **Scope definition on redevelopment projects is essential.**

PROCESS – DESIGN QUALITY

The aims of the School Estate Strategy reiterate that schools should be

“well designed, well maintained and well managed”. The approach was to develop example design concepts to demonstrate what could be achieved, and to encourage continual evolution from this benchmark. Design quality is also reviewed through the Workshop process.

The availability of the pilot schools has been widely appreciated and adapted for subsequent projects. In most iterations the feedback from users has been positive, however there have been observations that the rectangular form with a wide plan can result in a higher degree of internal space than designs with “wings” or “fingers”. This can be difficult to utilise if the educational approach requires cellular spaces which can become dark and suffer from a lack of ventilation. This is particularly the case in larger schools where the proportion of internal space in relation to the perimeter decreases.

Observations from completed projects, which are mainly procured through design and build contracts, has highlighted some areas where the process has influenced the design quality. In some situations the completed design quality was very high, and attributed to the advanced state of design development prior to construction commencement. Other feedback linked disappointing outcomes to the process by which M+E systems and FF+E are procured. This tends to happen late in the construction process, and hence is harder to integrate than if it was defined earlier. Observations noted that the development of design detail in Contractor Designed Portions within traditional contracts needed careful consideration and management.

Overarching concerns generated by the Cole Report and Grenfell Tower incident provide the context within which design and construction decisions are taken and highlight the importance of co-ordinated input from all parties.

FINDINGS

PROGRAMME

- **Principles of design influenced by Pilot and Reference projects.**
- **Each project developed to suit individual project requirements.**
- **Designs reviewed through Workshop process**

PROJECT

- **Building form and educational approach need to align**
- **Internal spaces result in a high number of negative observations**
- **Uncertainty of Contractor Design Portions needs to be managed.**
- **Projects can be let down by finishes which deteriorate quickly.**
- **Co-ordination of M+E and FF+E difficult as they are often undeveloped at contract sign, and procured late in the construction process.**
- **Samples of complete rooms and of junctions between materials can assist in agreeing quality benchmarks.**

PROCESS - COST CONTROL

The Schools for the Future Programme has managed its budget to deliver more schools than were originally anticipated for the same cost. The use of the metric framework, and having regular checkpoints prior to contract award has assisted in achieving this objective. There is also an requirement to consider whole life costs, including construction, operational, maintenance, lifecycle replacement and energy consumption.

Individual projects vary in regard to cost control, with some being delivered in an efficient way with no cost difficulties, and others requiring additional effort to deal with abnormal issues. Cost management throughout design work is important to ensure cost certainty and reduce client risk. Fixed programmes relating to funding or term dates have been observed to put pressure on the project to accept higher than anticipated costs or design reduction when abnormal costs are identified late in the process.

Observations have been made that definition of an accurate scope of work in redevelopment projects and the associated difficulty with fluctuating costs can be problematic to manage. Similarly, Change Control processes need to be well operated to ensure that the cost implications are understood prior to implementation. Managing the process can be difficult, as the pace of the document processing can lag behind the work on site. Some projects have found it beneficial to use a banding system whereby changes up to a defined cost threshold can be implemented more quickly by the project team with a simplified approval process.

FINDINGS

PROGRAMME

- **Costs have been successfully managed at Programme level by utilising metrics and workshops.**
- **Costs associated with abnormals can cause late challenge.**
- **Abnormal costs are harder to benchmark than general metric costs.**
- **Whole life cost analysis needs to inform design and construction decisions.**

PROJECT

- **Poor selection of procurement route can make cost certainty difficult to achieve.**
- **Poor management of design and costs of CDPs in traditional tenders.**
- **Inadequate scope definition of redevelopment projects can lead to cost pressure.**

PROCESS - PROGRAMME

The Schools for the Future Programme has been delivered in phases with defined announcement and completion dates established at the outset. These dates are linked to the award of funding, which provides clarity for each project and helps to keep focus on the high level objectives. The duration from funding confirmation to contract close has been decreasing over the life of the programme.

Projects delivered through the hub DBFM route include Key Stage Reviews which incorporate specific task programmes with owners identified to track the contract close process. This assists in maintaining momentum during a complex stage of the project.

Project level programmes are subject to individual circumstances, and have in specific instances been extended, mainly due to late understanding of abnormals such as ground conditions and subsequent requirement for VE/ funding review.

During construction, a number of useful observations have been made. For redevelopment projects there is often concern that ongoing work will cause disruption which could affect exams. Contractors are often asked to plan their works to avoid these periods. In one instance, alternative arrangements were made with a local community facility to use this space for exams. This provided reassurance that disruption would not affect exams, and also allowed the works to be planned on site more flexibly.

Other redevelopment projects have used decant facilities to minimise the disruption to teaching and learning and minimise the construction period. Visits to decant facilities by project teams considering this strategy has been useful in demonstrating the advantages which it can deliver.

Feedback has clearly indicated that the most crucial aspect of programme is the period associated with completion, handover and transition to the new building. As there are limited opportunities in a school calendar when this can be achieved to minimise disruption to learning and teaching, the programme is tied to these points. This can lead to high levels of snagging at handover which requires rectification after completion.

The pressure to achieve completion dates can also negatively affect the transition process for staff and pupils. Familiarisation visits have been shown to greatly enhance the process and experience of moving from one building to another, however in some cases these have been reduced or removed leading to increased difficulties in the initial period of occupation.

FINDINGS

PROGRAMME

- **Project development time reducing throughout the Programme.**
- **Accurate handover date important to schools decant planning.**
- **Lack of flexibility in handover dates can cause problems with contractors.**
- **Potential to increase programme flexibility by planning for alternative exam venues.**
- **Hub process closely tracks progress against programme.**

PROJECT

- **Buildings handed over with snagging to maintain planned handover dates to coordinate with school term dates.**
- **Development programme durations do not always recognise the specific difficulties of a project, or reflect the stage of design development at the point of inclusion in the Programme.**
- **Familiarisation visits important to plan into programme to aid transition.**

SUSTAINABLE PROCUREMENT – COMMUNITY BENEFITS

The Scottish Government's Sustainable Procurement Action Plan was introduced in 2009,

"to assist the public sector to build sustainable procurement into their corporate culture, take proper account of sustainability in procurement activity and to be able to demonstrate how this is being achieved".

The sustainability requirements of the programme include a target of BREEAM Excellent, which incorporates sections which support the overall aims of the plan, for example sustainable specification. The hub and main contractor procurement processes also contribute by initiatives such as engaging local supply chains through "Meet the buyer" events, and evidence these through Key Performance Indicators (KPIs).

The approach to achieving sustainable solutions for each project is evidenced at Workshop 2. This is a complex and important area of the programme which evolves over time, and benefits from ongoing review. Closer links between the individual public procuring authority and the specific programme targets may be beneficial.

Community Benefits

Through the quarterly reporting requirements, SFT request details of any community benefits that have been delivered. This could include value of work awarded to Small and Medium sized Enterprises (SME), number of jobs created by the project, work placements supported, site visits carried out, graduate recruitment and apprentice/trainees supported through the individual projects. These categories are not mandated by the programme and some projects have identified their own criteria for the delivery of community benefits.

From the information that has been collected so far from 56 operational projects, it is clear that the programme has delivered a huge amount of benefit to local communities and Scotland as a whole, in addition to the new schools that have been built:

- Over £560m of work has been awarded to SMEs
- 842 new jobs created to SMEs
- 5,339 work placements delivered
- 11,629 site visits carried out
- 70 graduate recruitment opportunities filled
- 621 apprentices/trainees supported so far in the programme

There are a number of operational projects, as well as those projects still in construction/ development, for which the community benefit data has not yet been finalised and therefore the total community benefits to be delivered by the programme as a whole will increase from the headlines noted above.

The benefits that are required, and others which arise throughout the project, should be considered and recorded in any further investment programmes.

FINDINGS

PROGRAMME

- **Community Benefit performance information is reported at Programme level. Opportunity to complete feedback loop by inclusion in Post Project Review template.**

PROJECT

- **Continual evolution of sustainability targets can be difficult to track and manage.**
- **Hub and main contractor input valuable to implementing Sustainable Procurement Action Plan and Community Benefits.**

Objective 1: QUANTITATIVE EVALUATION - DEVELOPMENT TIME

A key objective of the programme was that of efficient and effective procurement. For each project in the programme the period from the announcement of the project to the commencement of construction has been recorded. Those projects which were already significantly through the development phase, at time of announcement in the SSF programme, have been discounted from the analysis.

The analysis shows that over the life of the programme, the development and procurement period for primary and secondary schools has reduced by an average of 47.5%.

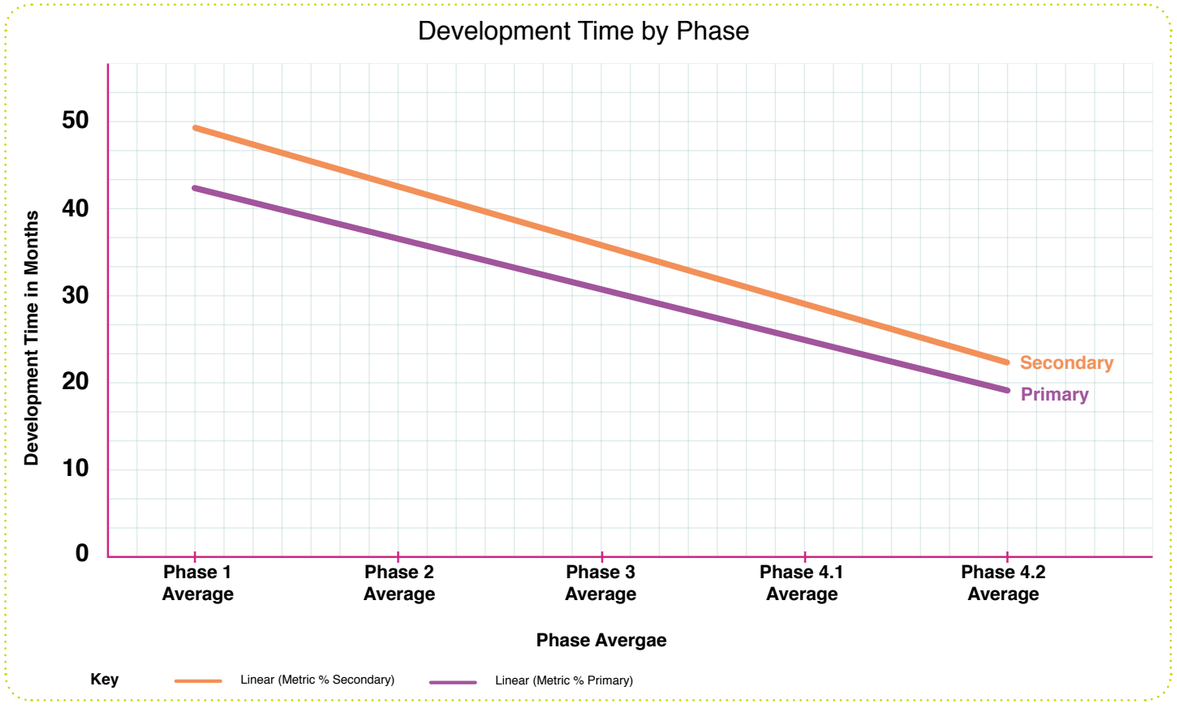
The decrease in development time for projects in the programme is likely to be a combination of factors, including shorter programme timelines, incorporating lessons learnt from previous projects including the pilot and reference designs, inflation risk lying with the authorities and greater collaboration.

Shorter Time Frames

Shorter time frames ensure that focus is maintained on the project by all parties, to ensure decisions can be taken as and when is necessary. This corroborates the learning from the Inspiring Learning Space projects, many of which stated that the short timeframes were a challenge and resource intensive. However, it led to the projects being delivered earlier, than they might otherwise have been, with a reduction in inflation costs and end users being able to make use of the facilities sooner. This should be considered as a positive.

Lessons learnt from previous projects

A second reason for a reduction in time scales could be that authorities have incorporated lessons learnt from early phases into later phases, with many replicating design principles and room data sheets across their projects. This should see a reduction in design times and consultation if there is a model that can be presented and replicated for stakeholder agreement.



Fixed Inflation

In 2012 (when phase 3 was announced) the SNPB took the decision to fix funding to the anticipated tender/stage 2 submission date, meaning that the inflation risk remained with the authority. This provided a real incentive for authorities to ensure projects were developed efficiently so that they didn't incur costs for increased inflation or conversely could benefit from delivering a project earlier than anticipated, without receiving a reduction in funding.

Collaboration

Both internal and external collaboration may contribute to reduced development times, especially if structures for effective collaboration are already in place, meaning that learning from others is a continuous process. It has been commented that short timeframes potentially reduce the ability to collaborate as decisions have to be made quickly. This again enforces the need for appropriate structures to be put in place early in the process to allow effective collaboration to take place.

The downward trend over the life of the programme in terms of development times is positive and Authorities should continue to challenge and develop programmes and structures, to ensure that top quality facilities continue to be developed in a manner that is value for money and also allows the end user to benefit as early as possible.

FINDINGS

- **Appropriate time frames should be set for the project to ensure focus is maintained;**
- **Funding for inflation should be fixed at an agreed point to provide incentive to develop the project in line with agreed parameters;**
- **Lessons Learnt from previous projects both within and outwith the Local Authority should be incorporated to drive efficiencies in development.**

5.7.2 Objective 2 - Cost Efficiency

As expected with any public sector investment programme, cost efficiency is paramount. The introduction of both area and cost metrics to the SSF programme was a key parameter both in terms of central budget management and in delivering quality, value for money educational facilities.

The metrics were agreed after careful consideration of the size and cost of recent school builds at the time. The metrics were also tested and adjusted, particularly in relation to the secondary schools, through the design and build of the two pilot schools at Eastwood and Lasswade. These schools demonstrated that the area and cost metric could be met, whilst delivering a facility that included all educational requirements, for modern teaching methods and to deliver curriculum for excellence.

The metrics which were introduced were considered achievable whilst also posing a challenge to Local Authorities to consider the design and approach to their new school building projects differently.

The metrics which have been applied consistently across the programme in terms of the funding awarded to each project are shown in the table below:

Secondary School	
Space Allocation (based on pupil numbers)	**SQM/Pupil**
Up to 400	13
401-800	12
801-1200	11
1200+	10
Base cost per sqm	**£1900 @ 2Q 2011***
Primary School	
Space Allocation (based on pupil numbers)	**SQM/Pupil**
Up to 231	8.5
232-462	7.5
463+	6.5
Base cost per sqm	**£2,350 @ 2Q 2012**

*This metric and base date was finalised post delivery of the pilot schools at Eastwood and Lasswade

There are four main project costs that are not included in the metric, otherwise it is expected that all other costs (including internal client costs) can be delivered within the metric parameters. The four items that are not included within the metric are:

- Land acquisition costs
- ICT hardware (the infrastructure is included but not the physical assets e.g. computers)
- Offsite costs – e.g. roadworks
- School move decant costs

The lower cost per sqm for the secondaries was due to these buildings being larger and able to achieve efficiencies compared to the primaries. Therefore, with the campus schools, which have become more prevalent as the programme has developed, there is an expectation that these buildings, including the primary and nursery elements should be able to be built for the secondary metric of £1,900/sqm indexed.

It is recognised that refurbishment projects should not cost as much as new builds, otherwise options should be considered as the whether it is more beneficial from a value for money and product perspective to build a new school. As such the benchmark cost metric for refurbishment projects, is c.70% of the new build rate. There are exceptions, especially if a project is particularly complex or a listed building is involved, but this figure remains a reasonable guide for the cost of refurb projects. Area metrics on a refurb project are more difficult to adhere to as the shell is already in place, but efforts should be made to maximise the space available to its full potential.

There is also a recognition that Additional Support Needs spaces are more expensive in terms of the equipment and resources required and therefore these schools have an increased space allowance allocated to them, on a case by case basis, depending on the individual needs of the school.

Budget Management

Metrics

The introduction of metrics, at the start of the programme, has been critical to the successful management of the SSF budget. They allowed individual funding awards to be forecast from published information, to ensure that each project announced in the programme was affordable in the wider budget context. It also ensured that each project was allocated funding in a fair and equal manner across the country.

Inflation

Another key principle in relation to budget management, was the move in 2012 to fix funding for inflation at the outset, to the tender/ Stage 2 submission date, as advised by the Council. This meant the risk for inflation, more appropriately, lay with the Council, where the control also sits in terms of the programme for each project. Not only was this a useful tool for maintaining certainty over the budget, but also may have contributed to the reduction in project development time for the later phases of the programme, as discussed in section 5.7.1 above.

Contingency

The holding of a programme contingency also helped greatly with budget management, whilst ensuring there were funds available to assist councils in situations, where despite best efforts, unavoidable costs, that would not normally be envisaged, were incurred. This contingency, to fund exceptional project specifics has only been utilised when all other options have been explored and exhausted.

The careful management of this contingency, enabled phase 5 to be announced towards the end of the programme, increasing the number of schools in the programme by 4 and creating the capacity to benefit a further 1,575 children.

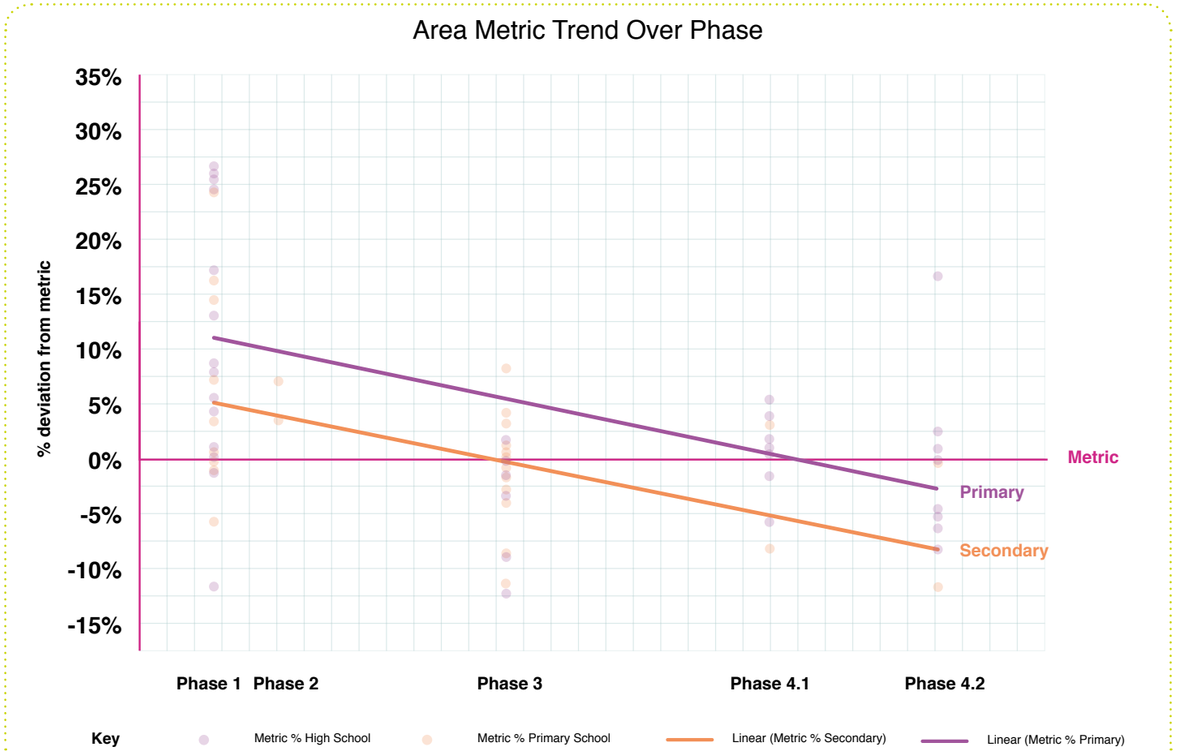
Looking forward to future investment programmes, from a central budget management point of view it would be anticipated that all three criteria noted above would be implemented in terms of metrics, inflation being fixed at the point of funding award and a central contingency being maintained.

From recent experience in the programme it would also be advised for future programmes that funding for exceptional programme specifics is only agreed once a full options appraisal has been developed and a justified recommendation made. This will ensure that pressure is maintained on both authority and contractor to continue to develop the most efficient and value for money scheme as is possible. If the project is not affordable to the authority at the outset, thought should be given as to whether this is the most appropriate solution for the education estate.

Metrics – analysis against objectives

This findings report is not intended to detail the metric position for each project but instead is interested in trends, relating to cost and area metrics over the phases of the programme to establish if there is any learning that can be taken from this. All phase 1 to 4 projects that can be compared to the current metrics have been included within the analysis as detailed below.

Trend Analysis Of Project Area Metric Compliance



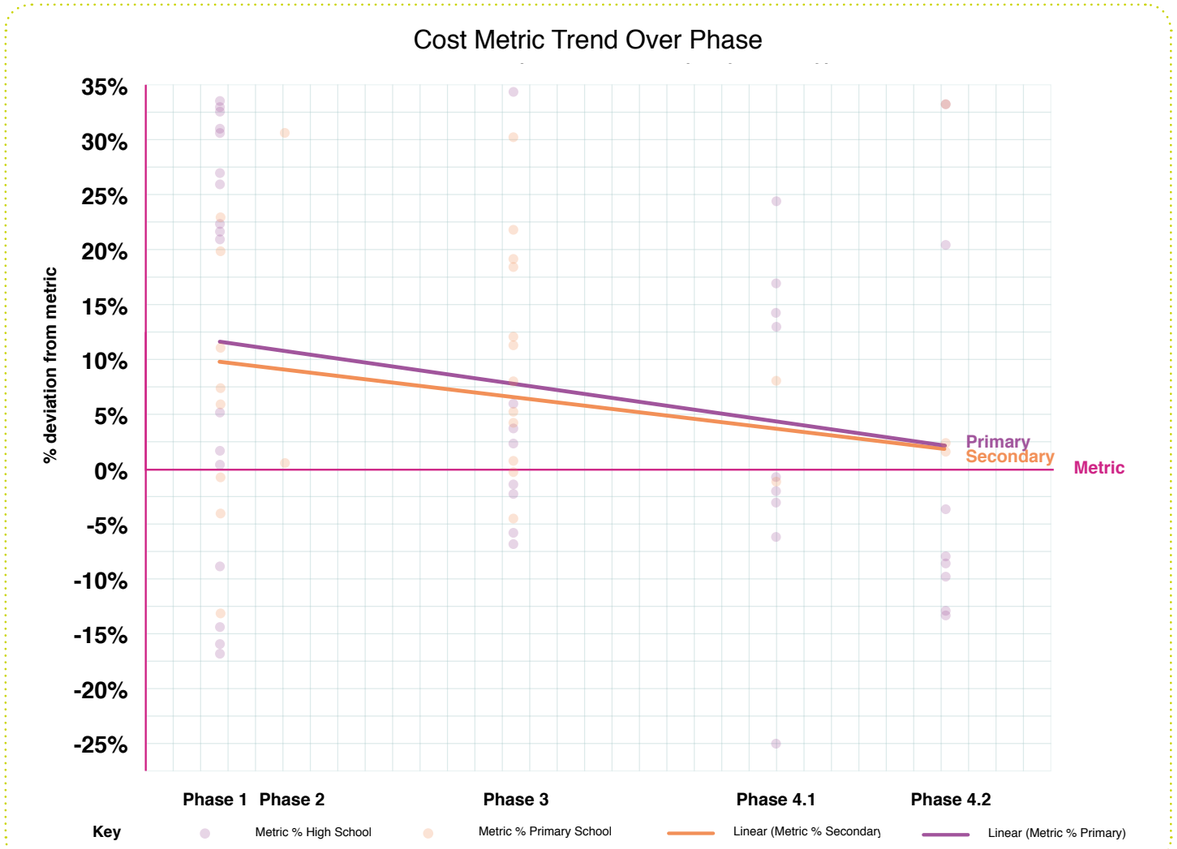
From the analysis above, it is encouraging to see that the trend across both primary and secondary schools is that the area of schools, compared to their respective metric is reducing over the phases, with a large cluster of projects now on metric or below it.

All secondary schools within the programme, apart from three of the early phase 1 projects are within 10% of the respective space metrics, 80% are within 5% and 34% of projects are below the metric. This is regardless of the project size i.e. the smaller secondary schools in the programme (800 pupils or less) have still been able to meet the respective area metrics whilst providing all key accommodation requirements to deliver the curriculum and meet the educational needs of the pupils.

79% of all primary schools are within 10% of the area metric, again regardless of size, with 38% of primary schools across the programme under the area metric. There are now many examples across Scotland of new schools, with all the required educational space, to meet the needs of curriculum for excellence, that are below metric.

Looking forward to any future investment programme, the trend would suggest that it is possible for both primary and secondary schools to be built to the relevant area metric. Authorities should continue to challenge the metric, not only for cost savings in terms of the initial capital outlay and ongoing maintenance costs of a smaller area but also to allow educational briefs to continue to evolve and challenge the status quo to ensure innovative and stimulating educational solutions are developed.

Review of performance v cost metric



When the average costs are analysed on a phase by phase basis, as with the area metrics, there has been a decrease over time, with many of the latter phase secondary schools being on or below the cost metric.

The smallest high school in the programme has the greatest variance from cost metric. This is perhaps to be expected, due to reduced areas where efficiencies can be achieved and the fact that fixed cost items such as a 3G pitch will be relatively more expensive per sqm in a school with a smaller GIFA. However, the increase in area metric for a smaller secondary school takes cognisance of this and there are smaller schools in the programme which are on metric or within 1% or 2% it. This should be taken as a positive into future programmes, that metric compliance can be delivered no matter the size of the school.

Similarly, for the primary schools, 45% of the relevant primaries were below cost metric, with 60% within 10%. There are still schools that are above cost metrics, often due to Council decisions, but the downward trend is positive and one that should be continued going forward into future investment programmes, to ensure best value for public finances.

A main reason for the downward trend in both cost and area metric is due to repetition and that the pilot and reference primary schools proved the metrics could be achieved. Eastwood and Lasswade were both open in August 2013, with Lairdsland opening in April 2015. These schools provided benchmarking material for future projects and a reference point to authorities to challenge costs.

The influence of the pilot and reference projects has been significant as noted below:

Phase	Number of secondary schools	Number of schools able to be influenced by pilot schools	Number of schools influenced by pilot	% of able schools influenced by pilot	Comments regarding the reasons for not being influenced by pilot schools
One	10	6	6	100%	4 early projects with limited time to be influenced
Two	2	2	2	100%	
Three	16	14	13	93%	1 was unique with ties to the college, 1 was a refurb, 1 took the reference deep plan building and evolved this, influenced by St John Bosco's in Liverpool.
Four	10	9	6	67%	1 was a refurb, 2 evolved designs influenced by St John Bosco's , and 1 took its own educational design
Total	**38**	**33**	**27**	**82%**	

The table above highlights the positive influence of the pilot designs across the programme. Although the figures suggest the pilots may be becoming less influential, this is because authorities are taking that design and evolving it to create solutions that are more efficient and effective in terms of space and cost, as well as individualised to meet their own specific educational and community needs. It is a positive that school design has continued to evolve across the life of the programme.

Out of the 66 primary schools in the programme 50% were able to be influenced by Lairdsland. This is due to a number of primaries in the programme being refurbishments but also because of the timing of Lairdsland opening. A handful of primaries have replicated the internal design of Lairdsland, with many more requests received to view the project plans. Project teams have visited the school and taken aspects of the design they liked, for inclusion within their own designs. This highlights that although Lairdsland, on paper, does not seem as successful a reference project as the two secondaries, it continues to play an influencing role by having a core design and educational approach that can be adapted to meet specific needs of the individual authority and school, which has been a key component to the SSF programme approach.

The main reason for the different influencing factors of the pilot and reference designs is due to timing. The timing of the reference design opening meant that many of the phase 1-3 primary schools were already well advanced in terms of the design and development process before Lairdsland was complete, making it more challenging for the reference project to influence as much as the secondary pilots, simply because it wasn't available for authorities to physically visit and visualise how the different spaces could work.

There is still progress to be made in ensuring that all projects are metric compliant in terms of both cost and area. This will become more prevalent in future investment programmes as increasing scrutiny is given to public projects and ensuring they are delivering value for money solutions. From where the programme started, with some authorities seriously questioning whether the metrics could be achieved, it is encouraging to see that many Local Authorities across Scotland now use the programme metrics

and funding principles as the basis for setting their own capital budgets, in relation to school building projects, the pilot and reference projects have a large part to play in this.

FINDINGS

- **Pilot and reference designs are a very useful tool for influencing both design and metric compliance but they need to be operational early enough in the programme to allow the maximum amount of influence on the greatest number of projects in the programme.**
- **Metrics need to be clearly communicated and articulated to ensure that all stakeholders understand exactly what is expected to be delivered for the metrics and what costs are expected to be included within this.**
- **Authorities should continue to strive to deliver the best education solution for their projects whilst adhering to both the cost and area metrics.**

5.7.3 Objective 3 – Sustainable Lifecycle Solutions

The review and analysis of data collected relating to this objective is derived from School Estate Strategy Guiding Principle 7 and is reviewed with the other Guiding Principles under Objective 5.

5.7.4 Objective 4 – Improved Environmental Performance and Reduced Carbon Footprint

The review and analysis of data collected relating to this objective is derived from School Estate Strategy Guiding Principle 6 and is reviewed with the other Guiding Principles under Objective 5.

5.7.5 Objective 5 – Implementation of the 9 Guiding Principles of the School Estate Strategy.

From the Post Occupancy Evaluation Reports reviewed and feedback notes from 33 completed project visits, 1505 comments were extracted and compiled in a searchable database. These have been classified according to the 9 Guiding Principles and each comment was rated from 0 Bad – 5 Excellent. This provides an insight into the relative importance and degree of success of each principle across the programme.

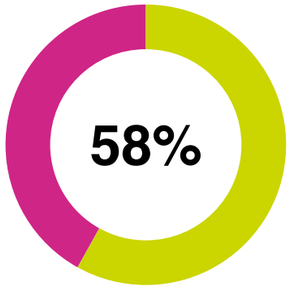
The 9 Guiding Principles		Comments		0	1	2	3	4	5
		No.	%	Bad	Very Poor	Poor	Good	Very Good	Excellent
1.	Good consultation means better outcomes	38	2.2%	0	4	12	10	6	6
2.	Innovative design and change is better informed by experience	80	4.6%	0	2	17	44	16	1
3.	A more integrated, holistic and longer term approach to change	75	4.4%	1	3	31	30	10	0
4.	Schools whose condition supports and enhances their functions	85	4.9%	2	4	19	49	11	0
5.	More suitable and inclusive schools, better future-proofed for flexibility and adaptability	143	8.3%	1	4	23	74	33	8
6.	Schools which are greener, more sustainable and environmentally efficient	202	11.7%	4	13	71	80	27	7
7.	A well-managed school estate which represents and delivers best value	104	6.0%	0	3	9	69	20	3
8.	Schools which both drive and support effective learning and teaching through Curriculum for Excellence	476	27.6%	4	16	102	198	122	34
9.	Schools which best serve their communities	302	17.5%	1	11	61	114	89	26
		1505	100%	13	60	345	668	334	85
				418 (NEGATIVE) 28%			**1087 (POSITIVE) 72%**		

High Level Observations

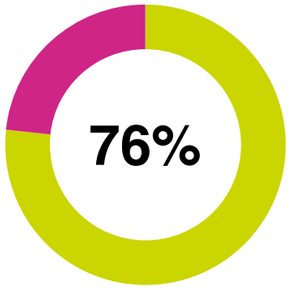
- 72 % positive comments
- 27.6 % comments - Learning and Teaching
- 17.5 % comments - Community
- 11.7 % comments - Internal environment and sustainability

The top 3 issues account for more than half of all comments.

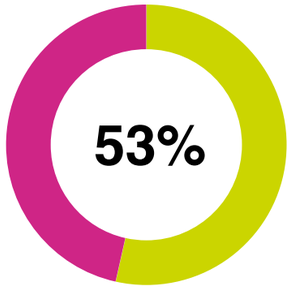
The distribution of positive and negative feedback within each Guiding Principle is illustrated overleaf.



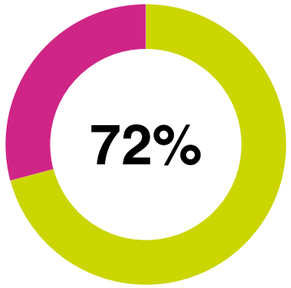
Good consultation means better outcomes



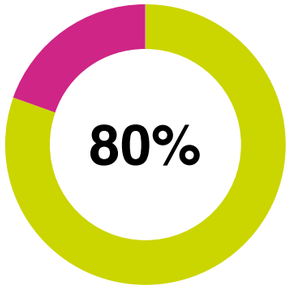
Innovative design and change is better informed by experience



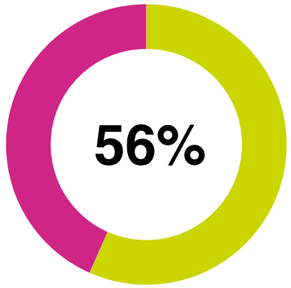
A more integrated, holistic and longer term approach to change



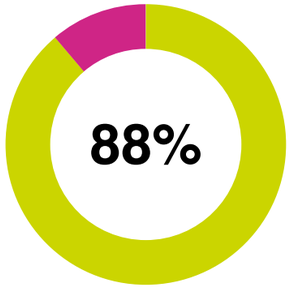
Schools whose condition supports and enhances their functions



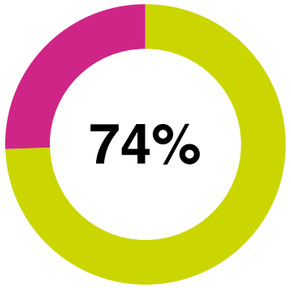
More suitable and inclusive schools, better future-proofed for flexibility and adaptability



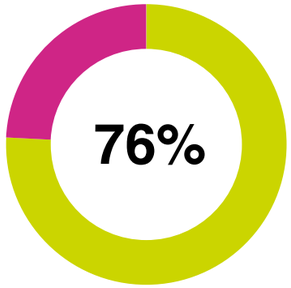
Schools which are greener, more sustainable and environmentally efficient



A well-managed school estate which represents and delivers best value



Schools which both drive and support effective learning and teaching through Curriculum for Excellence



Schools which best serve their communities

Observations

1. The feedback on all Guiding Principles is more positive than negative.
2. All themes had a mix of positive and negative comments.
3. Of the top 3 issues by number of responses:
   - Learning and Teaching 74 % positive
   - Community 76 % positive
   - Environment and Sustainability 56 % positive
4. Most positive comments - Well managed school estate 88 %
5. Most negative comments – Integrated holistic approach to change 53 % positive

In the following sections, the feedback relating to each Guiding Principle is reviewed individually, and Findings highlighted.

Guiding Principle 1: Good consultation means better outcomes

Observations

In the feedback received, all projects had undertaken a degree of consultation, although this varied in extent, duration and approach. Between different schools, variation ranged from consulting with all staff to only consulting with the Head Teacher. Similar variation was evident with pupils and the wider community, although the Planning process afforded the community a chance to participate in the process at least once in most cases. Pupil consultation was often carried out, but the transient nature of the pupil population makes it more difficult to capture feedback than with staff or community.

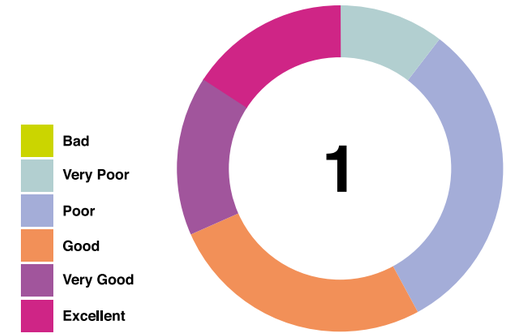
Example 1: At one project the community was involved before design commenced in the decision to amalgamate the nursery, primary school, public library, medical centre, leisure centre and community café. The combined facility has been extremely well received by the community, with increased participation and improved community engagement with the library and school.

Example 2: Drop off and traffic congestion issues around a school highlighted the need for a layby. By consultation with the community, this was located to also solve a traffic issue at evenings and weekends around local shops and takeaways.

Example 3: Primary parents highlighted the difficulty of dropping off and picking up younger children in bad weather. The design was developed to have the main hall at the front of the building to allow it to be used to provide shelter. This also encouraged parents and carers to engage with the staff which assists in pupil support.

Example 4: Expectation was unrealistically high, people thought the building would solve everything. The purpose, process and outcomes of consultation was not clear enough.

- Quantity Ranking: 9th (2.2% of comments)
- Quality Ranking: 7th (58% positive)



FINDINGS

- **Limited options clearly presented are more useful to stakeholders.**
- **The purpose and process of consultation needs to be understood at the outset.**
- **Communicate decisions back to stakeholders to avoid feeling that “it was a waste of time”.**
- **Successful consultation starts early when strategic decisions are being made.**
- **Consultation can usefully highlight issues which the core team may not appreciate**

Guiding Principle 2: Innovative design and change is better informed by experience

Observations

The comments received indicated that people involved in the development of school projects greatly benefited from using other projects as reference points. This was particularly the case with the Pilot Secondary and Reference primary schools, but has increasingly expanded to utilise projects throughout the programme. There is a willingness to visit, assess and discuss the values of these completed projects, and to adapt the design for the specific requirements of the developing project. The Inspiring Learning Space experiences have also helped inform the design ethos.

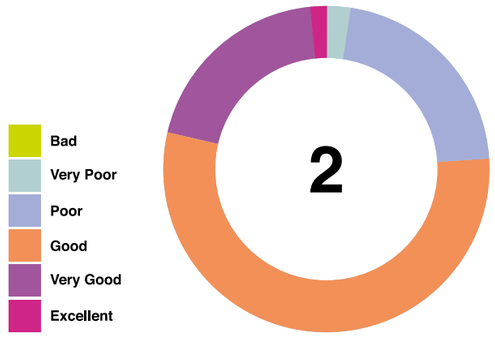
Example 1: A review of timetable and group sizes led to the brief requiring classrooms of varying area e.g. smaller classrooms for 20 people depending on age and subject. Space was reallocated to increase the dimensions of other heavily utilised areas.

Example 2: Experience of early projects in the programme indicated that some heating and ventilation systems were too complicated, expensive to run and difficult for users to understand. Subsequent projects learned from this experience and simplified the environmental strategy.

Example 3: Acceptance of open circulation toilet areas is much easier when seen in practice, and feedback from users is positive.

Example 4: Understanding of learning plaza use was greatly enhanced by reviewing how other schools have made use of them in practice.

- Quantity Ranking: 7th (4.6% of comments)
- Quality Ranking: 3rd (76% positive)



FINDINGS

- **Examples seen in practice are powerful influences on people`s acceptance of design ideas.**
- **The ability to experiment with spaces and learning and teaching through ILS has been positive.**
- **Councils and designers have difficulty staying up to date with the range of projects and design innovations being implemented. The dissemination role of SFT across the programme is valued and could become more important as increasing numbers of projects reach completion.**

Guiding Principle 3. A more integrated, holistic and longer term approach to change

Observations

From review of the feedback comments, change takes place continually and at all levels. This could encompass change to a community through increase or decrease in population, change in technology and the availability of digital tools, or the incorporation of schools of different age groups or faith backgrounds. The feedback, which has an almost equal number of positive and negative comments, indicates that regardless of the type of change occurring, other associated changes will be required. The main change is often focused on, whereas the consequential change is either not identified or not adequately addressed.

Example 1: New head teacher started on the first day of occupation of the new building. This created too many changes for the staff, parents and pupils all at once. A more integrated plan would have been beneficial.

Example 2: No gas was available to the school for the first year of occupation due to difficulties in strategic integration of school plans with an adjacent residential development.

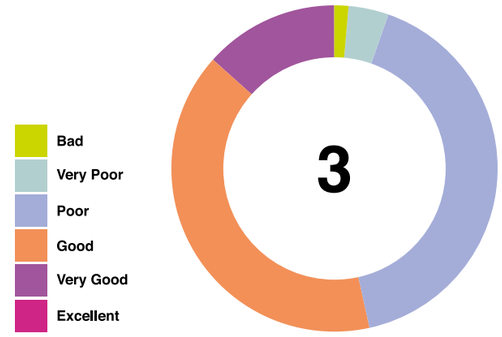
Example 3: ICT was a problem as the internal council ICT team were not properly involved.

Example 4: The school used local leisure centre for PE for 6 months during construction to maintain curriculum delivery.

Example 5: Fantastic facilities have been provided but the teachers are not familiar with using connected double rooms, breakout spaces and active learning.

Example 6: Changing the timetable, faculty structure, learning and teaching practices in advance of moving to the new building prepared staff and pupils for the new spaces.

Quantity ranking – 8th (4.4% of comments)
Quality ranking – 9th (56% positive)



FINDINGS

- **Change management is often siloed rather than connected.**
- **Overall change management responsibility not always identified.**
- **Change management planning should start early to inform subsequent actions.**
- **Building and educational practice changes need to be integrated.**

Guiding Principle 4. Schools whose condition supports and enhances their functions

Observations

The schools selected for inclusion in the Schools for the Future Programme were all previously graded as condition C (Poor) or D (Bad). Moving into a new or refurbished building would therefore be expected to provide a very positive response. While the feedback would generally support this, there were instances where the extent of problems and ongoing snagging reduced the positivity of the initial period. In addition to this being a disappointment and distraction for the school users, it is also not a good starting point for maintaining the overall condition of the school estate.

Confidence in the building quality is enhanced when items are finished to a high quality. The importance of this is highlighted given the ongoing Edinburgh Schools and Grenfell Tower safety issues. Maintenance is carried out in a number of ways by individual schools, councils and FM providers.

Example 1: ICT cabling issues in first year meant that many rooms were “out of action”

Example 2: Insulated precast concrete sandwich wall panels delivered self- finished internally. Provides high quality, robust finish in one factory made component.

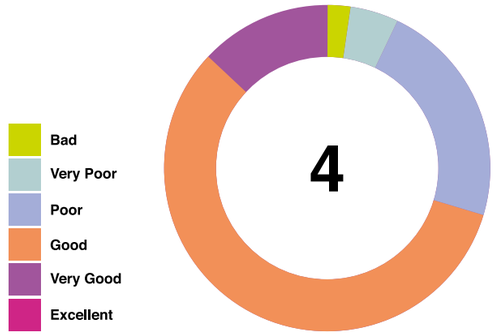
Example 3: Trough washbasin with hand driers above means less drips on the floor.

Example 4: Circulation space walls were susceptible to marking. Council repainted with gloss finish which saves approx. 2 hrs/week cleaning time. This issue was reported more than any other in relation to building condition. Wide circulation or learning plaza arrangements suffer less wall damage than corridors.

Example 5: Glazed balustrades to atrium and stair edges are difficult to keep clean.

Example 6: Flat roofs, parapet edges and poor litter management cause seagull problems. Bird

Quantity Ranking – 6th (4.9% of comments)
Quality Ranking – 4th (71% positive)



guano can cause a cleaning and maintenance burden. One school had a “ROBOP” installed (Robotic Bird of Prey) to deter seagulls.

FINDINGS

- **Condition at handover is sometimes below expectation due to outstanding snagging items.**
- **Short term reductions in initial cost can cause longer term increased maintenance cost and disruption.**
- **Simple solutions and specifications informed by cleaning and maintenance considerations can have very positive impacts on building condition and reduce ongoing costs.**
- **Preservation of long term condition is affected by the building form, internal layout, detail and specification.**

Guiding Principle 5. More suitable and inclusive schools, better future-proofed for flexibility and adaptability

Observations

In addition to the core aim of providing schools which are in good condition, the Scottish Government is also committed to schools which are appropriate in terms of suitability. This term incorporates how spaces are able to be used, whether the design and layout supports functionality, inclusivity, flexibility and adaptability. Reports of school suitability are made by councils to the Scottish Government annually. Guidance on how to assess suitability was refreshed in Nov 2017. Examples illustrative of the range of feedback received is included below:

Example 1: In one school, open plan toilets were cleaner and pupils experienced less bullying than in more traditional ones which had vandalism, bullying and are permanently closed now by staff action.

Example 2: Lack of separate assembly hall causes reduced flexibility at exam times. Exams use connected classrooms with flexi walls. Need more invigilators but pupils prefer smaller spaces than large hall.

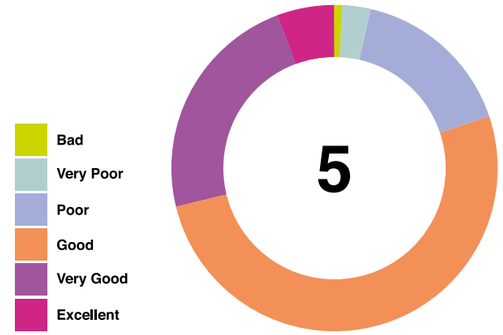
Example 3: All areas of school open to pupils at break and lunchtimes. Pupils trusted to behave. Staff bases around the building provide passive supervision. Central social/dining calm. Staff encouraged to meet and eat in main dining atrium at same time as pupils.

Example 4: All areas of school except dining out of bounds to pupils at break and lunch. Lots of congestion, noise and litter with all pupils in one dining space. Adjacent assembly space with flexible walls never opened. Staff all in staffroom.

Example 5: Issues with noise congestion and litter in dining space. School considering creating a staggered lunch arrangement to reduce issues.

Example 6: ASN was in separate building previously, now integrated within school, but with potential for appropriate degrees of separation to suit individuals.

Quantity Ranking – 4th (8.3% of comments)
Quality Ranking – 2nd (80% positive)



Example 7: Retractable bleacher seating within assembly/drama/sports space to maximise flexibility.

Example 8: movable teaching wall furniture can subdivide learning plaza in different proportions.

FINDINGS

- **Dining logistics reported as problematic in some instances. Flexibility of buildings not always exploited by users.**
- **Management of space use as important as the spaces provided**
- **Vandalism and bullying reported to be reduced in open circulation toilets but toilet use not quantified so could be due to reduced use.**
- **Increased integration of ASN facilities positive.**

Guiding Principle 6. Schools which are greener, more sustainable and environmentally efficient

Observations

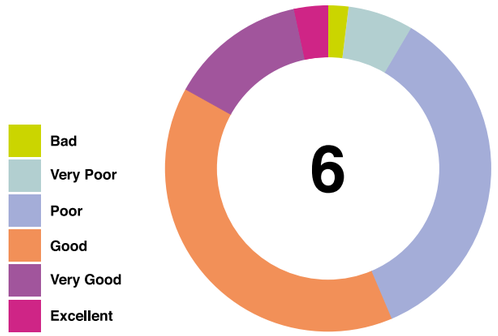
This theme was in the top 3 by quantity of observations, and of those it had the highest proportion of negative comments. The creation of high quality indoor environments (daylight, air quality, acoustics) at minimum environmental impact and cost is a challenge with multiple dynamic variables. In addition to the daily volatility of weather and use patterns, the global need to reduce energy consumption and CO2 emissions makes this a very complex topic. The desire for users to have a feeling of connection to the external environment while also being sheltered from it, is a real challenge for designers.

At the outset of the programme, targets were put in place to design buildings to achieve a BREEAM Excellent Rating and an EPC Rating of B+ before the consideration of renewable technologies. Over the duration of the programme, the BREEAM assessment process has been updated and the SBSA Technical Standards have been evolving. To comply with the Technical Standards, base energy related requirements have increased, with improved insulation values and reduced CO2 emissions limits. As a result, Low and Zero Carbon Technologies are now integral in most cases to comply with the standards. The Objective of "Improved Environmental Performance and Reduced Carbon footprint" is therefore increasingly verified within the programme by Technical Standards compliance and achievement of EPC B+ (assuming renewables included). This is a reflection of the progress made in the Technical Standards and simplifies the target for project teams.

Example 1: High incidence of complaints about internal rooms, light, temperature and air quality

Example 2: Cold drafts in winter from open windows discourages use, makes rooms stuffy (high CO2 levels)

Quantity Ranking – 3rd (11.7% of comments)
Quality Ranking – 8th (56 % positive)



Example 3: Access to windows can be difficult at high level or across fixed furniture

Example 4: Blinds in front of windows hampers access to handles and blocks ventilation.

Example 5: Centralised control of heating/ ventilation not popular, sense of lack of control.

Example 6: Problems balancing daylight, glare and use of monitors/smartboards.

Example 7: Orientation and intensity of room use have high impact on temperature.

Example 8: Quantifiable reporting and understanding of building performance in use is low.

Example 9: Interactive 'green screen' displays energy savings based on first year benchmark. Pupil share in energy savings for school funds.

Example 10: Lighting in a refurbishment project changed from fluorescent downlight to LED up and downlight. A teacher who had suffered from regular migraine headaches reported that these have now stopped.

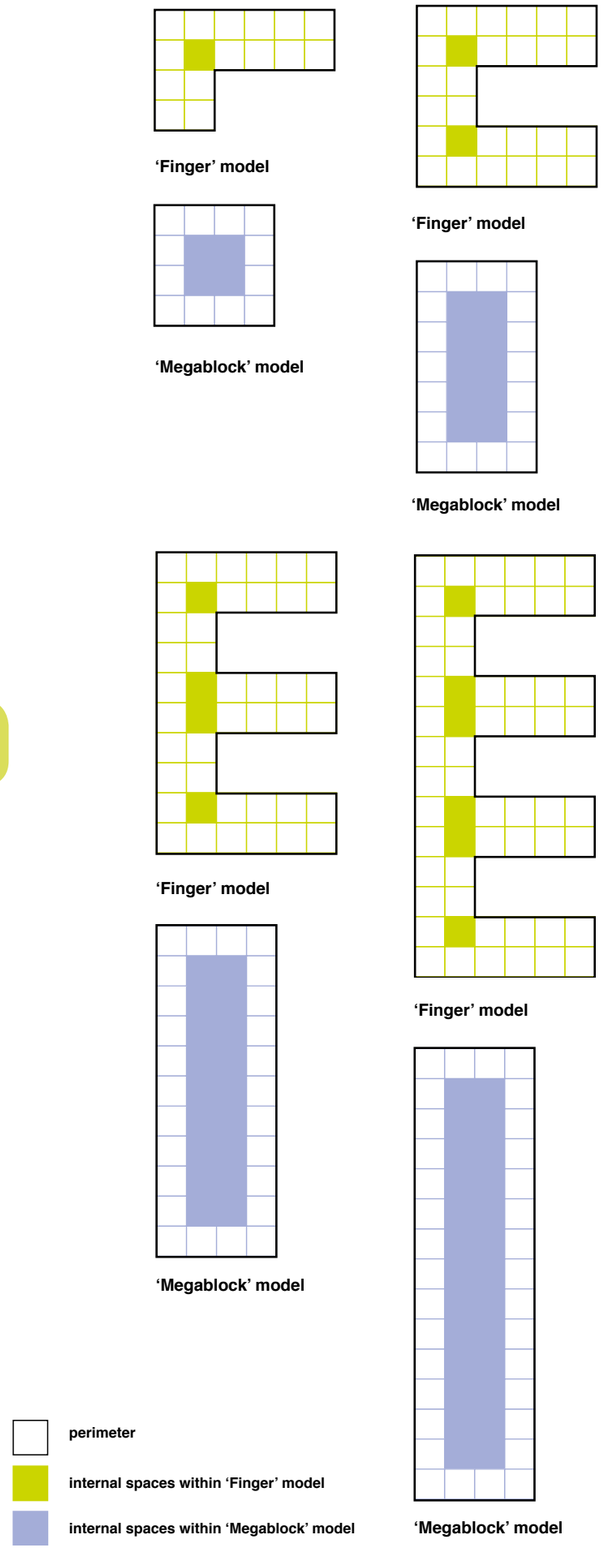
Example 11: One project in particular was briefed with internal environmental conditions and reduced environmental impact as key drivers. Follow up POE evaluation and reporting from this project is summarised below:

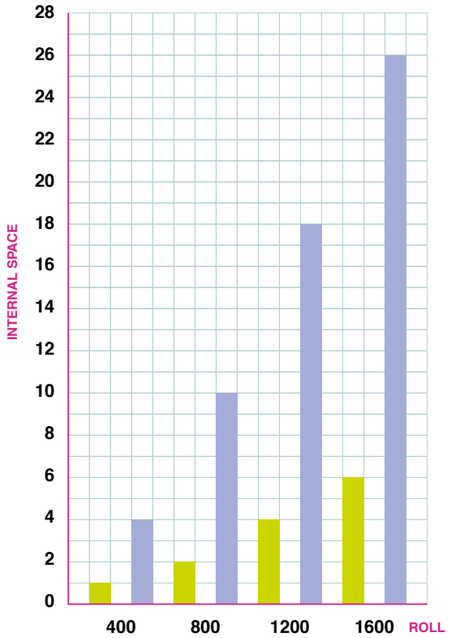
- Electricity consumption reduced 5%
- Heating fuel reduced 42 %
- C02 emissions reduced 55%
- 50% reduction in water usage
- Biomass RHI income of £18,000 per annum
- Large windows provide good daylight in classrooms
- Good draft free ventilation via roof mounted stacks.

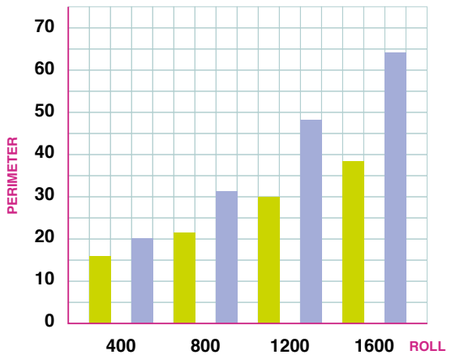
This building achieved good internal environmental conditions and minimised energy consumption by adopting an holistic, low user input approach. A simplified solution makes the building easy for the user to understand.

'Finger' and 'Megablock' Design Concept Comparison

Across the secondary schools in the programme there are essentially two design models utilised. These are often referred to as the "fingers" and "megablock" approaches. Each form has different characteristics in relation to the amount of perimeter wall in relation to the floor area and the proportion of space close to the perimeter or located within the "deep plan". These fundamental qualities influence the build cost, degree of mechanical ventilation, availability of daylight, and nature of spaces available to users. Exercises have been carried out to make quantitative comparisons which can assist in the direction of design development for any specific project.

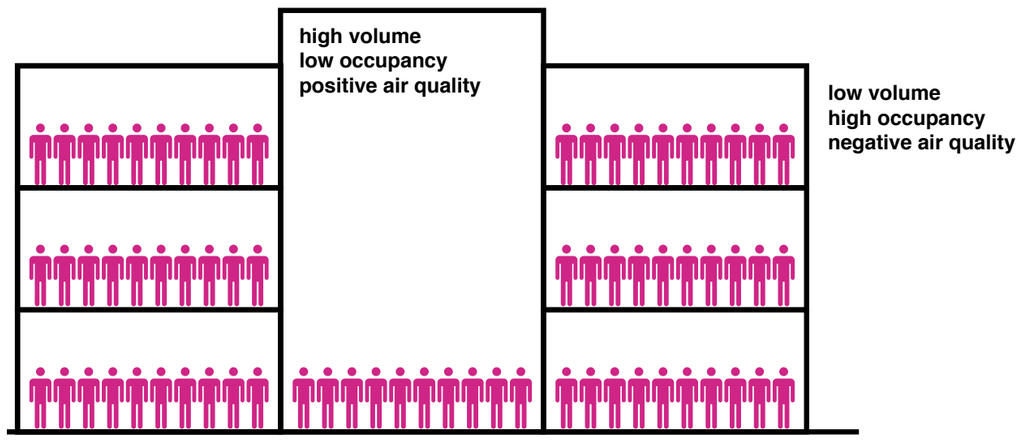






FINDINGS

- **Internal rooms not popular. Some councils reported actively designing them out.**
- **Temperature and air quality difficult to control in standard cellular classrooms.**
- **Larger, more open areas less prone to temperature extremes**
- **Complex interaction of weather, user patterns, building systems, energy use and time make it difficult to regulate internal environmental conditions.**
- **Dramatic improvement in internal environment and reductions in energy use and emissions are achievable with focused briefing and design.**



Guiding Principle 7. A well-managed school estate which represents and delivers best value

Observations

This was the most positive response to all of the guiding principles. The range of topics on which feedback was collected is broad, but the common theme is that good strategic decisions have been made which are appreciated by the school and community. The examples below all illustrate decisions which have either delivered improved efficiency, provided immediate user benefit, or have demonstrated long term planning. These are all tangible or reassuring to users and communities, and may be reflected in the high positivity reported. In addition to the strategic planning, good management of the estate also includes ongoing issues of cleaning and maintenance. There is a variable level of service, with some feedback expressing a very poor level of maintenance, and evidence of low quality cleaning in some instances.

Example 1: New building planned to accommodate increasing roll due to local housebuilding.

Example 2: Space for future roll increase available to community groups to maximise asset utilisation.

Example 3: Hospitality delivered in adjacent new college which saved on providing HE in school.

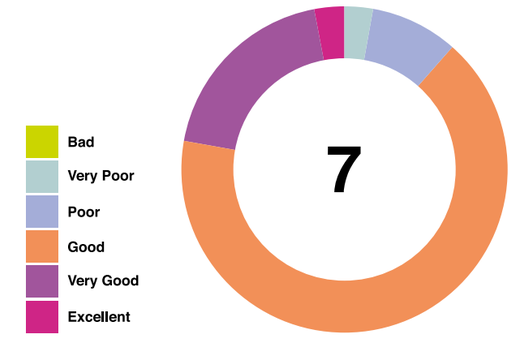
Example 4: Individual teaching/learning wings have space to the rear where extensions could be added. Site also has space for potential increase in parking.

Example 5: One kitchen serves two separate dining spaces (primary/secondary).

Example 6: Most PE provided at existing sports centre reducing the need for new buildings.

Example 7: Land reserved on old site for overflow parking also used by wider community.

Quantity Rating – 5th (6.0 % of comments)
Quality Rating – 1st ((88% positive)



Example 8: 4 schools refurbished which improved facilities for more pupils than a smaller number of newbuilds.

Example 9: New school created a Centre of Excellence for ASN in the whole council area.

FINDINGS

- **A well managed school estate spans strategic planning decisions to ongoing maintenance.**
- **Good decisions can save money and time with no reduction in service level.**
- **Creative timetabling and approach to community integration can improve estate efficiency, maximise asset utilization and improve school/community engagement.**
- **Ongoing maintenance and cleaning affects the ability of a building to function and the overall perception of quality.**

Guiding Principle 8. Schools which both drive and support effective learning and teaching through Curriculum for Excellence

Observations

The Schools for the Future Programme was created to provide appropriate spaces and facilities to support the delivery of the Curriculum for Excellence. The intention of the CfE is to provide "the skills for learning, life and work", by ensuring young people become:

- Successful learners
- Confident individuals
- Responsible citizens
- Effective contributors

The building programme has developed alongside the practice of the Curriculum for Excellence, and encouraged the provision of spatial experience which support the "coherent, flexible and enriched" ethos of this transformational approach. The buildings which have been created encourage more collaboration between curriculum areas, across age groups and between schools and other education and employment organisations. This topic attracted more feedback comments than any other, with largely positive reaction. The examples below are grouped for clarity.

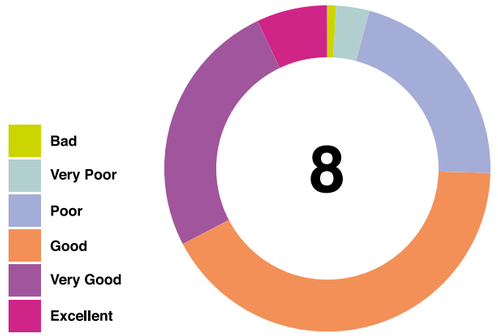
Examples 1: Skills for work

- Local roofing company do staff training in school construction area, with pupil involvement
- Community crèche started in secondary school. Starting early years training in collaboration with the college.
- Skills Development Scotland investment into cross college/school course delivery
- Automotive maintenance area run like a professional workshop.
- Hospitality area developed to create professional catering environment.

Examples 2: Collaborative teaching

- Better sharing of teacher preparation (learning stations) classes rotate
- double classroom sliding wall allows team teaching which is transforming learning

Quantity Ranking: 1st (27.6 % of comments)
Quality ranking: 5th (74 % positive)



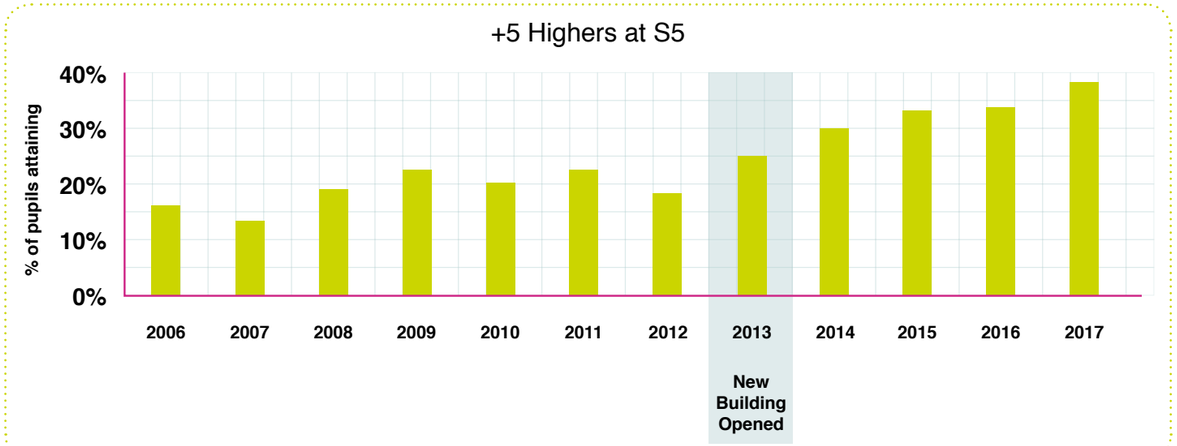
- Fluid ability groupings depending on topic
- Joint planning and teaching reduces preparation time and improves quality.
- Teachers learning from each other
- Fewer breakdowns less fragmentation (6 groups i.e. 2 x 3 became 3)
- Less breaking out of struggling groups

Examples 3: Community connections

- pupils use community café giving them sense of responsibility and maturity
- S4 work experience in community café and canteen working toward SQA certificate

Example 4: Attainment example from one project:

- Highest recorded S5/S6 performance in recent years
- Absences reduced by 65% since moving to new building (20% to 7%)
- Huge improvement in behaviour
- Exclusion rate decreasing year on year, halved from previous levels.
- Pupil perception, ambition and image in community has improved. School now the centre of the community.
- "transformational impact of the new building on the pupil`s achievement and attainment"
- Learning area has greatly encouraged children`s reading



Feedback from one project indicated:

- Percentage of pupils achieving 5 or more highers in S5 averaged 17% before the new building, and has since consistently increased to reach 34%

Examples 5: Behaviour

- "No bells" strategy to deinstitutionalize experience for pupils, staff and community.
- "No bells" behaviour better, calm transitions between classes
- "No bells" pupils trusted to keep time
- No staff have keys, pupils allowed to go anywhere at lunchtime. Only eat downstairs.
- Pupils banned from using central hub atrium at break and lunch because of litter.
- Pupils banned from using breakout spaces except at breaks.

Examples 6: Attitude

- Increase in take up of extra curricular activities and after hours study groups in new school
- More positive and enthusiastic attitude to learning
- Pupils like having exams in classes, less intimidating than large halls
- Corridor end windows very positive, provide connections to wider landscape and community.
- 90% of survey said building would enhance learning and teaching

Examples 7: Staff connections

- Introduction of secondary school staff bases (not subject specific) has encouraged staff mixing and built relationships.
- Staff bases with glazed screens located to passively supervise WC circulation areas.
- More staff support now they are better connected
- Staff bases are not subject allocated which encourages collaboration
- Improved staff morale in new building
- Building very open, staff see each other all the time, so much more dialogue on teaching and learning takes place.
- "Connections cement relationships"

Examples 8: Connections

- Open Research Areas encourage collaborative, visible learning and teaching.
- Glazed panels between classrooms and circulation encourage awareness of activities.
- Design makes it easier to interact allowing better levels of collaboration
- Openness of new building encourages more working together

Examples 9: Learning styles

- Variety of class sizes more accurately reflects needs of different learning groups
- CfE fluid learning supported by fluid spaces
- Learning plazas encourage scenario and team work during BGE phase, and

individual study in the senior phase.
- better layout and additional ICT aids investigation and study.
- Breakout spaces support vertical learning across all age groups, mainly in topic learning.
- Building allows and facilitates 21C learning and teaching
- Use of breakout spaces very low in some curriculum areas
- Breakout spaces not well used
- Some open learning plaza areas being enclosed with walls being erected
- Glazed panels and openness causes distractions and noise nuisance.
- “I don’t know how I taught without break out spaces”

Examples 10: Exam settings

- Logistical challenge at exam time with no assembly hall, could use PE
- Pupils prefer small scale settings like normal classrooms for exams. Requires more supervision but may be worth it to reduce pupil anxiety.

FINDINGS

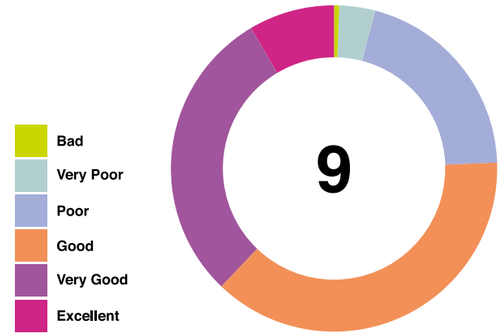
- **Collaboration needs communication which needs connection**
- **Wide range of acceptance of openness, connectivity, trust, degrees of pupil access to facilities**
- **Teaching and learning need to adapt to more flexible connected approach, spaces can only support.**
- **Building design can greatly alter the behaviour and experience of the users**
- **Lack of understanding of flexi spaces by designers or users makes them difficult to use**

Guiding Principle 9. Schools which best serve their communities

Observations

This section attracted the second highest number of comments in the feedback reflecting the importance of the school/community relationship. In many of the projects in the programme, a conscious strategic effort has been made to increase the community use of school buildings. This varies from occasional use of a hall out of hours, to full concurrent access of a school by the community. Examples of the intergenerational approach are in rural and urban communities and demonstrate an inclusion which has not been achievable in many other instances.
The interface between schools and the wider community can be sensitive, and can require additional control and management, however has also resulted in creative synergies which has benefited all parties either by improved use of resources, enhanced sense of community or increased parental involvement.

Quantity Ranking: 2nd (17.5% of comments)
Quality Ranking: 4th (76 % positive)



Examples 1: Efficient use of facilities

- Any free school space is made available any time for community use.
- Local Farm bakery business using school facilities to trial expansion.
- Presence of community in school during the day tempers pupil activity
- Co-location assists pupils to access leisure facilities and the community to access learning.
- Pool time shared school/public concurrently

Examples 2: Community access to school

- Open plan library with self-service kiosks is open when library staff are not present. Lending rate increased dramatically. Observed big increase with children reading.
- New building had highest ever attendance at “book bug” events in that council
- Community Crèche in school general purpose room helps community access leisure and learning opportunities. Led to the school introducing a childcare course delivered with in partnership with the college.
- ICT café where pupils will teach the community digital skills and learn hospitality skills.
- Men`s cooking group, CLD team use the kitchen in Home Economics
- Pensioners club, Life Skills, Job Club all located on school site
- Problems with segregation of community/school has means that community use has been stopped.
- Problems with maintenance responsibility on gym equipment means community not able to use fitness suite.
- Very high community use of leisure facilities out of hours, 600 hours on Saturday morning.
- Parents bringing toddlers to “book bug” sessions in the school. Senior pupils take part which increases their sense of responsibility.

Examples 3: School access to community facilities

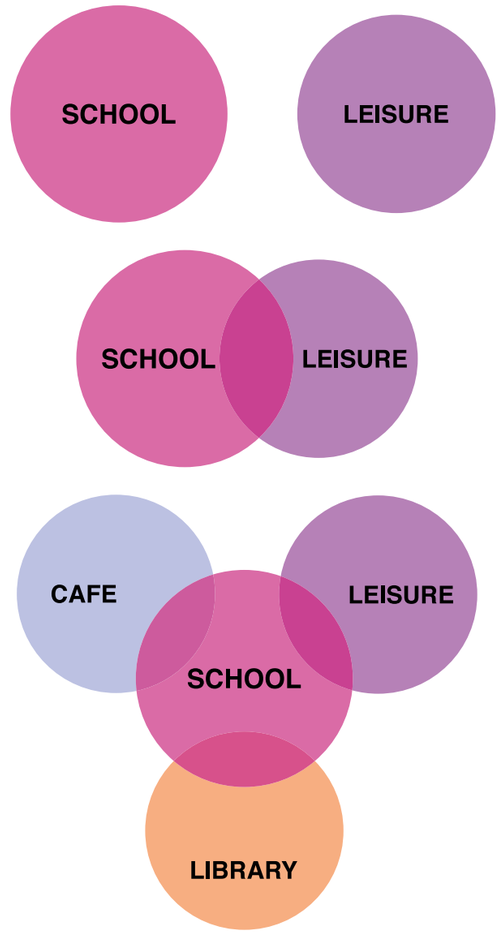
- Community theatre and cinema facility in school campus well used.
- Additional sports spaces provided for community use, accessible to school during the day.
- Primary pupils use community kitchen facilities to learn about cooking.

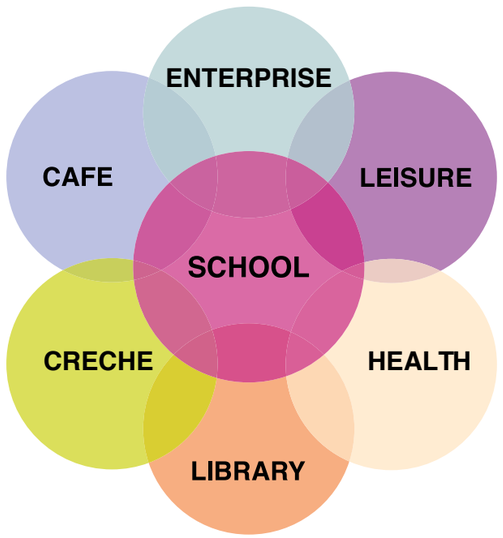
Examples 4: School/parent involvement

- Children meet parents/carers for lunch in community café
- Staff use the community café during free periods
- Community use of café provides parental involvement with secondary school
- Community use of café in secondary school by primary parents assists with transitions
- Use of school hall as drop off area for P1 provides environment for increased parental involvement with each other and the school. Informal coffee and chat opportunities.
- Additional community outdoor areas have encouraged an increase in outdoor play for the local community, and after school groups.

FINDINGS

- **Integration of the school into the community assists pupils to integrate with their community.**
- **There is a wide variation in the degree of community/school integration.**
- **Buildings have assisted parental involvement with the life of the school in informal ways.**
- **Parental involvement at secondary level encouraged with community café on site.**
- **Sharing facilities increases efficiency.**
- **Community access and maintenance issues can be obstacles to engagement.**





Support Learning and Teaching through Curriculum for Excellence

A key driver of the SSF programme is to ensure that the built, learning environment focuses on the educational needs and wishes of the learners. This can be seen by the many different types of spaces that are now included as part of the design brief of new schools in the programme, including vocational space, break out space, enterprise space, learning plazas and technology bridges, alongside spaces for wider community use.

It is still very much in the control of the local authority to determine what spaces are required to meet the particular needs of learners in their own community, but where a programme wide approach really helps is the ability for the sharing of knowledge and best practice. This has been achieved through the pilot projects, workshops, forums and conversations.

Open and Collaborative spaces

From the pilot projects and their promotion of open teaching and learning spaces, alongside the more traditional classroom, open learning and social space has become common place within new schools both at a secondary and primary level. These, more open, collaborative spaces are designed to facilitate CfE through the promotion of interdisciplinary learning and skills development which are both priority components of CfE. This could be done through co-teaching in a super lab or a learner finding a quiet space, out with the classroom environment to focus on their own individual learning and skills. More recently, schools have incorporated enterprise areas into the school building where local businesses can rent a space to not only develop their own business but also to become involved in the school life and provide skills and trainings to pupils. This local input will become more valuable, to ensure that learners are equipped with skills to meet the needs of the local employers.

Agile spaces

A new educational environment should facilitate the learning and teaching process, especially as the focus looks towards more project and themed based learning which could incorporate many different subjects at once. As such adaptable and agile spaces are required and allow the learner to fully engage with the learning process, as they can set up the space to suit the task in hand. The furniture that is incorporated within the spaces is just as important, if not more so, to the learning experience, than the space itself. Therefore, it is imperative that the correct furniture solution is incorporated into the design process from an early stage, to ensure it enhances the space as oppose to being an afterthought.

The Inspiring Learning Space programme also highlighted the use for different types of spaces within a learning environment, to ensure that all learners had a space, which most met their individual learning style. This could be a vocational space to enhance a particular skill, a quiet zone, a more informal space where learners feel more at ease and willing to make mistakes or indeed a more traditional style classroom set up. What is evident, is that only providing one type of space will not fully meet the needs of all learners.

Use of space

It is exceedingly important to ensure that the users (learners, teachers and management) know how to use different learning and teaching spaces to their full potential and what the purpose of them is, whether that is within their current schools or in a new facility.

The built environment itself cannot change learning outcomes. If the new space is designed in accordance with the learners needs so that they feel fully engaged and invested in and processes are put in place so that the spaces are used to their full potential for both learning and teaching, then the space (whether new or old) can really help facilitate modern teaching methods through the delivery of curriculum for excellence.

FINDINGS

- **Different types of educational spaces are beneficial within a learning environment to best meet the needs of all learners;**
- **Spaces should be agile and flexible, to allow the same space to meet different learning and teaching methods based on the task in hand;**
- **Training should be provided to staff and users on how best to make use of individual spaces within the school building to allow the best possible learning outcomes to be achieved. This would also be useful for existing facilities also.**

5.7.6 Objective 6 –Delivery of the first primary school(s) in 2011 and the first secondary school(s) in 2013

The first primary school in the programme to open to pupils was Pumpherston and Uphall in West Lothian, which was complete in December 2011, with five further primary schools opening the following year.

The first High School was Auchmuty in Fife, which opened in August 2013, closely followed by Dumbarton Academy and the two pilot programmes.

The impact of the first schools delivered is still evident in cementing the programme and the principles, parameters and objectives surrounding it.

In line with the programme processes of develop, demonstrate, disseminate, the delivery of two pilot secondaries in collaboration with each other and a reference primary was also considered crucial to the Programme Objectives to:

a. challenge what the delivery of a school in Scotland might look like;

b. to prove/refine the metrics position and

c. to explore whether any benefits of a collaborative approach could be demonstrated.

This approach has proved useful and for future investment programmes it would be recommended that pilot projects were developed, as is currently the case with the Early Learning and Childcare, 1,140 hours expansion programme.

6

Findings Summary

SECTION 6 Findings Summary

PROCESS

GOVERNANCE

- Strength, accessibility and continuity are positive

PROCUREMENT

- Need to understand route, roles and responsibilities

OBJECTIVES

- Consider streamlining Programme Objectives

METRICS

- Very useful tools to provide focus

OPTION APPRAISAL

- Robust early analysis is essential to inform strategic project direction

WORKSHOPS

- Good focal points, consider utilising Workshop 1 to review options assessment

COLLABORATION

- Strong relationships and exchange of experiences invaluable

CONSULTATION

- Communicating decisions to stakeholders before implementation improves outcomes

LEARN FROM OTHERS

- Valuable lessons are being learnt from other people and projects

BIM

- Benefits of utilisation throughout design, construction and operation increasing

COMMUNITY BENEFITS

- Consider clearer targets and tracking

FEEDBACK LOOP

- Encourage completion of PPR/ POE for all remaining projects

ENERGY USE

- Learn from lower carbon pilot projects to inform others

KNOWLEDGE SHARE

- Consider initiatives to make programme learning more widely accessible

PROJECT

OBJECTIVES

- Clear definition of project aims essential at the outset

COMBINED FUNCTIONS

- Multi user facilities create links and increases building usage, making more efficient use of the public estate

MAINTENANCE

- Better connections between design decisions and maintenance to reduce cost

SPACE / LEARNING INTERFACE

- Consider how spaces support learning and teaching activities at different stages

CLERK OF WORKS

- Positive feedback from projects, many considering this approach for future projects

DESIGN MANAGEMENT

- RDD process, CDP development and Building Services integration need managed

SUSTAINABLE PROCUREMENT

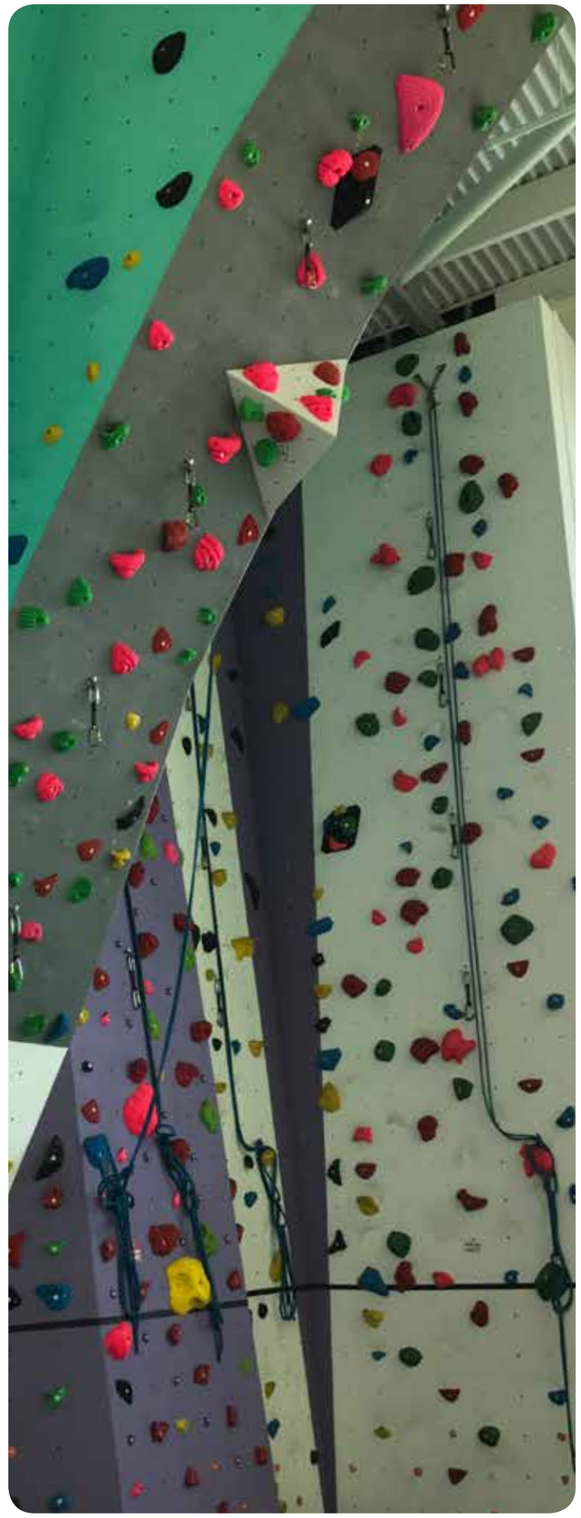
- Community Benefits tracked through programme to support Action Plan

THERMAL COMFORT

- Difficulties balancing building, systems and users to achieve comfortable environment

HANDOVER

- Familiarisation visits positive, ongoing snagging negative and disruptive



SECTION 6 Findings Summary

PRACTICE

TOILETS

- Reported reduction in bullying and vandalism in open circulation toilet arrangements

INNOVATION

- “No-bell” arrangement reduces stress and noise, improves pupil responsibility

SPACE USE

- Wide range of feedback on learning plazas, connected classrooms and breakout spaces.

SOCIAL/DINING

- Some schools allow full school access at breaks, others only into a defined space. Flexibility of space connection not always utilised to alleviate congestion

SPACE FOR EXAMS

- Is smaller better, does familiarity reduce stress?

PARENTAL INVOLVEMENT

- Engagement in community cafés, library, drop off in hall, waiting benches outside

COMMUNITY / SCHOOL INTEGRATION

- Operation ranges from no concurrent use to every free school space being made available to the community throughout the day.

NEXT STEPS

DEVELOP

- Continue to deliver the remainder of the Programme
- Consider BIM/space connections tool
- Complete PPR/POE data collection

DEMONSTRATE

- Lower Carbon Pilots
- ILS Follow up/expansion

DISSEMINATE

- Findings workshops, publish report, EBS conference
- Reference Primary Lessons Learnt review
- Consider knowledge share initiatives