

Report on Edinburgh Schools – Midlothian Council Position**Report by Garry Sheret, Head of Property and Facilities Management****1 Purpose of Report**

Following the publication of the Edinburgh Schools Inquiry Report, by Professor John Cole CBE into matters relating to the closure of Edinburgh Schools as a result of the collapse of a masonry wall at Oxfords Primary School, Audit Scotland has issued councils with their report. The report concludes that there were serious faults in the procurement, design and construction of the Edinburgh Schools and the need to ensure devolved public bodies studied the Cole Report and review their estates in light of the findings.

The Cole Report provided 10 headings with a total of 40 recommendations. Each recommendation has been considered by Midlothian Council. This report sets out Midlothian Council's position with regard to the recommendations.

2 Background**2.1 Edinburgh Schools Inquiry Report Recommendation Headings**

1. Procurement
2. Independent certifier
3. Client's Relationship with the Design Team
4. Information sharing
5. Construction
6. Training & Recruitment
7. Building Standards
8. Sharing information
9. Recommendations for the City of Edinburgh Council
10. Further Inspections

3.0 Procurement**3.1 Expertise and resources**

Public sector bodies engaged in the procurement of public buildings should maintain, or have assured access to, a level of expertise and resources that allows that body to act as an 'intelligent customer' in undertaking transactions with Private Sector Construction Companies. Before commencing a programme of work or an individual project, a public body should first assess this requirement and ensure that it has in place the requisite and appropriate resources in terms of governance arrangements, type of expertise, allocated time and the funding required to enable it to act as an 'Intelligent Customer'.

Midlothian's Position

Property and Facilities Management maintain a level of expertise and resources to allow Midlothian Council to act as "Intelligent Customer" when procuring public buildings.

Project Management ensures that the procurement route meets the agreed time, cost and quality criteria for each project and that governance arrangements are in place through:

- In house resources
- Framework resources

3.2 Ensuring compliance with specification

In any construction contract let by a public body, the public body should ensure that due diligence is undertaken at an appropriate level to confirm that the requirements of that contract are actually delivered in accordance with the terms of that contract. The level of due diligence applied should be determined through an informed assessment of risk of the likelihood or implications of non-compliance.

Midlothian's Position

Sufficient measures are in place to ensure specification is delivered as per the contract. Project control measures which include design meetings, progress meetings, site inspections, site reports, valuations and change control procedures ensures compliance with contract.

3.3 Public bodies cannot delegate duties

In seeking to transfer as much risk as possible away from themselves in relation to the design and construction of facilities, public bodies should understand that they cannot delegate to others the duty that they ultimately owe to the public to ensure the provision of a safe environment for the delivery of services to their communities and this should inform their approach to their quality assurance processes of projects. There should always be an appropriate level of independent scrutiny in relation to all aspects of design and construction that are in effect largely or partly self-certified by those producing them.

Midlothian's Position

Independent scrutiny to all aspects of design and construction work is achieved by close partnership working with project managers, consultants and commissioning a Clerk of Works service to monitor workmanship and compliance with specification. Whilst this recommendation relates to procurement of facilities, it is also applicable to the operational phase, where an appropriate level of monitoring is in place to ensure compliance with contracted services. During the operational phase, Midlothian Council allocates maintenance surveyors to oversee contracted services in non PPP facilities and contract monitoring staff for the PPP facilities. Both PPP contracts are managed by a central contract management team consisting of a PPP Service Manager and a Monitoring and Administration Officer. The central aims of the contract management activity are to ensure that:

- The local authority's agreed contractual position is protected
- The agreed allocation of risk is maintained
- Monitoring of the service provider's performance against the output specification is undertaken to ensure that the financial implications of any

failure to perform have been taken into consideration and appropriate action taken

- Payment for the service is conditional upon the quality of performance of the service provider
- Services are delivered in accordance with the contract

3.4 Building it right first time

The procurement strategies adopted by public bodies should include appropriate investment in the provision of informed independent scrutiny of projects when they are being designed and constructed so that they are built right first time, rather than clients subsequently seeking to rely on their ability to seek remediation or compensation if they are not. It is the view of the Inquiry that seeking savings through cutting investment in quality assurance is inevitably a false economy.

Midlothian's Position

Contractors design proposals are scrutinised not simply to ensure that they comply with Building Standards, but also with regard to The Construction (Design and Management) Regulations (CDM) for managing the health, safety and welfare of construction projects.

Midlothian Council construction projects are closely monitored by a Clerk of Works service, commissioned to ensure projects are constructed correctly, rather than relying on the ability to seek remediation or compensation if they are not. Midlothian Council specify what is expected from the Clerk of Works service, in terms of inspections, recording workmanship and reporting any defects.

3.5 Quality of design and construction

There should be a more informed approach among public bodies as to how best practice methodologies aimed at optimising the quality of design and the quality of construction can be incorporated into the current models of procurement of public buildings, whilst maintaining other benefits of these processes. One key element of such processes is a clear and considered articulation in a comprehensive brief by the client of the quality objectives for a project and of the methodology to be used for ensuring the achievement of that quality in both the design and construction phases.

Appropriate time and resource should be allocated by clients during the initial stages of a project and during the development of the brief in order to establish and clearly define these quality objectives and approaches to ensuring quality.

Midlothian's Position

A Comprehensive brief is provided by Midlothian Council stating the quality objectives for a project and the methodology to be used for ensuring the achievement of that quality in both the design and construction phases. Appropriate price/quality ratio is factored into tender scoring for both design team and contractor appointment. Following selection of design team and contractor, Midlothian Council Project Management staff or private sector Project Managers (appointed by Midlothian Council) ,control quality of design and construction. These control measures include design reviews, design sign off, design team meetings, construction progress meetings. Construction progress meetings include design team consultants' reports, contractor's report and Clerk of Works report.

4.0 Independent certifier

4.1 Nature of inspection

There would appear to be a lack of shared understanding, both by those commissioning and providing the services of an Independent Certifier in PPP forms of contracts, with regard to the level of inspection to be undertaken by the Independent Certifier and the degree of reliance that clients can place on the issue of Availability Certificates as to the quality of the construction.

The level of service provided by Independent Certifiers needs to be reviewed and contracts of appointment written to reflect what clients actually require of the role, so that clients better understand exactly what they are getting and providers of the service better understand what is required of them. Standard forms for these appointments should spell out the nature of the inspection required.

The Inquiry is of the view that one possible model or option to overcome the type of issues identified in the PPP1 project would be to extend the range of services required in the appointment of Independent Certifiers to include the provision and management of Clerk of Works services.

Midlothian's Position

Clerk of Works services are commissioned on all major construction projects. The Clerk of Works scope of works specifies in terms of frequency of inspections, recording workmanship and reporting any defects and providing progress reports.

4.2 Professional indemnity insurance and Liability Period

The level of professional indemnity insurance sought and the liability period for Independent Certifiers should be assessed to properly and appropriately reflect the significance of their Certification processes and the degree of reliance that is to be placed on it.

Midlothian's Position

Level of professional indemnity insurance and liability period is project specific and written into all Midlothian Council contracts. The scale is relevant to cost of works and complexity of the project.

4.3 Method of appointment of Independent Certifier

Given the essential requirement that those undertaking the role of Independent Certifier are truly independent, the appointment of Independent Certifiers should be made following properly advertised and conducted public procurement processes and not through nomination or recommendation by the private sector party (as appears frequently to have been the case).

Midlothian's Position

On Midlothian's current on site construction project, Newbattle Community Campus, an Independent Certifier was joint nominated by the Design & Build main contractor and Midlothian Council. In addition to the Independent Certifier role, Midlothian Council insisted to Scottish Future's Trust that a Clerk of Works service was scoped and commissioned to provide complete independent scrutiny of construction works.

4.4 Fees of Independent Certifier

The fees for undertaking the Independent Certifier role should reflect the level of service required, rather than the service being restricted to fit a predetermined budget.

Midlothian's Position

Whilst undertaking a Public Private Partnership project, the role of the independent certifier is agreed between Design and Build Contractor and Midlothian Council. Over and above this, Midlothian Council insist that Clerk of Works service, commissioned independently by Midlothian Council, is also in place to ensure appropriate level of scrutiny on site.

4.5 Independent Inspection of the works

Public sector clients should engage appropriately qualified individuals or organisations with the necessary professional construction expertise to undertake on their behalf an appropriate level of ongoing inspection of the construction of their buildings. This is in order to identify and report defective work to the client and to ensure proper rectification of same.

Depending on the nature of the project, this inspection role, at the level at which the defects in the Edinburgh PPP1 schools occurred, is traditionally undertaken by a combination of resident architects, resident engineers and Clerk of Works, the use of whom has dramatically reduced over recent years, yet the essential role they played does not appear to have been effectively provided for by alternative arrangements within the forms of procurement currently in vogue.

Clients need to reappraise this gap in the assurance processes which has been allowed to develop.

Midlothian's Position

Midlothian Council tenders for all design team appointments. The design team is selected on a quality/ price ratio, depending on the complexity of the works. Design consultants roles are specified in the tender, this includes site inspections, site reports and design team meetings and progress meetings. Additionally Midlothian Council appoint independent Clerk of Works to oversee works as they progress on site.

5.0 Client's relationship with the design team

5.1 Scope of service of design team members

Under current models of procurement, the relationship between the client and key members of the design team has tended to become at least one or more steps removed, yet the inherent fundamental quality and safety of projects as determined by the design of spaces, the specification of materials and the structural intent behind the design, relies on the creativeness and effectiveness of their designs and the proper implementation of these on site. The extent of their appointments and the level of involvement of design team members (either with clients or on site) is now frequently delegated to contractors to determine.

Public bodies should review current procurement arrangements to ensure they are providing the optimum level of communication between clients and key members of the design team and that clients are able to benefit to the fullest extent from their professional advice and expertise. They may wish to consider how more direct communication could be incorporated into current forms of contract, in addition to the existing requirement for the provision of collateral warranties.

Midlothian's Position

Midlothian Council appoints the design team which is then novated to the contractor. Midlothian Council continues its relationship with consultants from project inception to project completion. Midlothian Council attends all site meetings with the contractor

and consultants and receives on going reports from consultants throughout the duration of works.

5.2 Role of design teams in inspecting works on site

If clients do not wish to prescribe in their tender documentation the minimum level of services which they require to be provided by design team members when employed by a contractor, public sector clients should at least require that submitted tenders include a full description of the proposed scope of design team services, including any proposed role in the inspection of the works on site.

This, in addition to the quality of the proposed design team or proposed design, should be important factors in the assessment of such tenders.

Midlothian's Position

Midlothian Council does not delegate the role of the design team to the contractor. Midlothian Council specifies the role of design teams, which is included in tender documents. This ensures design team members are responsible for inspecting their areas of work on site.

5.3 Notification of issues to public sector client

The Inquiry is of the view that, where possible, there should be a mandatory provision built into such contracts that where, to the knowledge of a professional design team member, a contractor has failed to take appropriate action as advised by a member of the professional design team on issues that could impact on the subsequent safety of building users or functionality of the building, the consultant in question should be required to inform the public sector client of the advice provided to the contractor.

Midlothian's Position

Midlothian Council's approach of being instrumental in appointing the design team and keeping a close relationship with the design team from project inception to project completion ensures that any design issues or defects are raised with Midlothian Council.

6.0 Information sharing

6.1 Production, retention and updating of information

The production, retention and updating of accurate construction and operational information and related documentation on projects should be regarded as a fundamental requirement and requires a systematic and disciplined approach by all parties to the contract.

Public bodies should establish a mandatory protocol for receipt and processing of all such project information within their own organisations.

Midlothian's Position

In practice the production, retention and updating of information is ensured by the retention of planning, building warrant and as built drawings; change controls; construction progress records – including photographs; and the compilation of the Operations & Maintenance Manual, throughout the delivery of the project. The Operations & Maintenance Manual contains all as built drawings with revisions recording any changes through the design and construction phases. Project Hand Over requires the submission of a completed Operation and Maintenance Manual.

6.2 Provision of as-built drawings

The process of producing as-built drawings is frequently included in appointment documents as a requirement of the design team. In evidence to the Inquiry, design team members have stated a practical limitation on them in that they may be unaware of the detail of on-site changes to the issued design drawings or specifications that may be made by the contractor or its supply chain.

Contractors should be required to put in place appropriate arrangements for the recording of all subsequent changes to final 'construction issues' drawings and arrange for the production of a final as-built set of documents to a standard suitable for issue to the client for retention as a permanent record of the detail of the project.

Contractors should also be required to certify that the 'as-built' documentation as provided is an accurate record of what has actually been built.

Midlothian's Position

The Operation and Maintenance Manual contains all as built drawings with revisions recording any changes through the design and construction phases. Project Hand Over requires the submission of a completed Operation and Maintenance Manual.

6.3 Provision of as-built drawings to building control

It is also recommended by the Inquiry that consideration be given to the requirement for 'as built' drawings as prepared for and certified by the Contractor to be submitted to Building Standards as a definitive record of what was built. This could be a formal part of the Completion Certificate process.

Midlothian's Position

Building Standards, where they are aware of relevant changes either during their inspection or by notification from the contractor, will request a formal amendment to warrant application (an application which highlights any deviation/changes from the original approved building warrant application) to regularise the building warrant. The approval of the amendment to warrant is required prior to the acceptance of a completion certificate. Generally this would only apply to work considered as part of the building warrant system. As in 4.2 above, other work changes which the client (Midlothian Council) consider appropriate would need to be controlled through the Councils own contract agreement. All building warrant drawings are archived by Building Standards and kept for a minimum of 25 years. Significant buildings such as schools are generally kept for the duration of the buildings existence.

Consideration should also be given to the recording of works and changes which do not require to be the subject of an amendment to building warrant and this may be processed through the same requirements set out in 4.2 above.

6.4 On site accessibility of design information

It is critical that there is effective communication of essential design information in an accessible form to tradesmen such as bricklayers working on site. In relation to the construction of walls and the incorporation of related structural accessories, in order to avoid mistaken omissions of accessories such as wall ties, head restraints or bed joint reinforcement, it is recommended that all relevant information should be fully integrated into a single document, rather than requiring reference by bricklayers to a range of different documents produced by different members of the design team.

The design and construction professions should consider the need for the development of a better approach to the integration of documentation to reflect the

practical needs associated with the implementation of design information in a building site environment.

From the evidence provided to the Inquiry, there was a unanimous view that a comprehensive set of all such information in regard to the construction of external cavity walls should be provided on a document produced by the structural engineering consultants.

Midlothian's Position

Site information management is the remit of the main contractor. However, the prelims within the design team consultant tender specify format and number of sets of design information to be issued to site, which also applies to any revisions to information.

6.5 Communication of design intent

The evidence to the Inquiry suggested that the design intent in relation to the importance to the structural integrity of masonry panels of the proper installation of wall accessories and secondary steelwork, may not always be adequately conveyed in design documentation and may not be fully understood by those reviewing the documentation (or perhaps more importantly by those actually building the walls).

Structural engineers should be required to describe in their documentation and drawings the approach and design philosophy adopted in their designs in terms of the reliance on the inclusion of bed joint reinforcement, wall head and lateral restraints or windposts in the required locations and in accordance with the specification, and the relative inter dependence of these various components.

Midlothian's Position

The project's appointed structural engineer is responsible for issuing a full set of structural information and drawings package, detailing all structural components, methods of fixing and complete structural integrity requirements.

6.6 Structural amendments to be approved

The approved building warrant system relies on buildings being constructed in accordance with the approved drawings.

Contractors should ensure that any amendments to the structural design of buildings should only be implemented after having undertaken any necessary checks or amendment to the design by the structural engineer and any changes to the approved design should be documented and processed in compliance with the statutory obligations imposed by the Buildings Standards regulations under the amendment to warrant process.

Midlothian's Position

Within Building Standards, the current position with any amendment to the structural design requires to be approved in compliance with amendment to warrant process. It is acknowledged that there is the potential for changes to the design during the construction process to be missed. Due to the limited number of inspections carried out by Building Standards, unless the changes are volunteered by the contractor and in many cases it is only offered if it is picked up by Building Standards during an inspection, drawings which were approved as part of the original building warrant may be the only drawings held by Building Standards at the completion stage. Prior to completion Building Standards as part of the completion process request written confirmation from the engineer that works on site reflect the original design. In some

cases this confirmation is provided, with a statement that minor changes did take place, and the original design certification for the building will cover the works. If Building Standards felt the deviations were significant they would ask for a set of revised drawings and an updated design certificate to cover the changes.

6.7 Access to original construction information

The City of Edinburgh Council was not automatically provided with all relevant design, construction and survey information relating to the original construction, the subsequent investigations and the implementation of the remedial works to the PPP1 schools.

In response to requests for elements of this information, the Council was advised by various members of the supply chain that it did not have a direct contractual right to this information and would have to seek it through the various levels of ESP's supply chain, including members of their original supply chain who may be out of contract.

PPP contract arrangements should incorporate clearly the right for public sector clients to be provided, by members of current and original PPP supply chains (and where relevant in return for an appropriate fee), with copies of all design and technical information, surveys, proposed amendments and as built documentation in relation to their projects.

Midlothian's Position

Midlothian Council have been provided with Operations and Maintenance Manuals for both PPP1 and PPP2 projects. The same will apply on hand over of future projects including Newbattle Community Campus.

7.0 Construction

7.1 Building of leaves of cavity walls separately

The evidence from this Inquiry suggests that the subsequent practical difficulties that arise from building the inner and outer leaves of cavity walls at different times may have been significant contributory factors in the lack of embedment of wall ties achieved.

The construction industry should carefully review this practice and if the separate building of the leaves of cavity walls is still required to achieve programme dates, it is recommended that standard wall ties should not be used and instead be replaced by alternative approved ties or by alternative construction to blockwork for the inner leaf e.g. use of structural framing systems.

Midlothian's Position

Midlothian Council advise against this method, although it is a construction industry issue rather than a contract controlled item. It is worth noting that this practice is not uncommon and with suitable site control and high degree of workmanship there is no reason that this method could not continue. It should be noted that the failure in respect of this method was to do with the relevant trades not being suitably monitored and possibly trained. If the wall ties were not crossing the cavity and suitably bedded into the outer leaf, work should not have continued, relevant design team alerted to the issue and the wall design reconsidered.

7.2 Design of wall ties

There would be significant benefit if the design of wall ties, particularly the type used on the Oxbgangs School, more readily enabled both those laying the bricks and those inspecting cavity walls before closure, to determine that the minimum or

recommended embedment of wall ties was being or had been achieved. Clearer calibration or marking of these points through the introduction of colour, texture or shape could assist in this process, by making the level of embedment more clearly visible.

Midlothian's Position

Clearer calibration or marking with colour or texture to demonstrate embedment achieved is a sensible recommendation and Midlothian Council support this recommendation – this would however be up to wall tie manufactures to incorporate this in their products.

7.3 Design and use of head restraints

There may be benefit in designers, contractors and manufacturers reviewing the practical complexity of installing the different forms of head restraints, particularly when being connected to sloping beams, and seeking to simplify this in terms of specification, design and fixing of this component, thereby reducing the time required to fit them and any potential reluctance on the part of bricklayers to install them.

As in the case of the wall ties, it would be beneficial if they were designed to incorporate some visible indicator to prove in any subsequent inspections that they had actually been fitted, thus preventing the need for avoidable intrusive investigations.

Midlothian's Position

Design to incorporate some visible indicator to prove existence in any subsequent inspections is a sensible recommendation and Midlothian Council support this recommendation. This however would be up to head restraint manufacturers to incorporate this in their products.

7.4 Payment of bricklayers

The most common method of paying bricklayers in recent years has tended to be based on the number of bricks laid rather than on the time that bricklayers work. As generally applied, this approach would appear not to take account of the number, type and complexity of accessories that are required to be incorporated. The construction industry should seek to review this approach to remove any perverse incentive of the payment mechanism to encourage the omission of elements providing the essential structural integrity of walls.

Midlothian's Position

Construction industry should review the current payment system. This is a sensible recommendation and Midlothian Council support this recommendation. This recommendation is not controlled by the public sector and should be reviewed by the construction industry.

7.5 Contractor quality assurance processes

The quality assurance processes applied by the contractors on the PPP1 projects failed to identify or rectify fundamental non-compliance with required standards in the construction of masonry walls. Irrespective of the potential role of independent inspections by agents of the client, such failures are and remain the direct responsibility of the contractor.

The repeated failures across many different projects would suggest that either the quality assurance processes themselves or the manner in which these processes are implemented have frequently proved inadequate.

It is therefore recommended that the construction industry should seek to introduce, develop and promulgate standardised best practice methods in relation to the requirements of the related quality assurance processes, how they are implemented and who implements them.

The design of such processes should consider the potential greater use of modern technology in relation to the digital recording of such areas of work.

Midlothian's Position

Midlothian Council supports this recommendation and agrees with this suggestion. Consideration should be given to put in place a recording system capable of controlling quality assured work.

7.6 Inspection and sign off of cavity walls

It is particularly important to note that in the case of the 17 PPP1 projects, visual only inspections of the external walls of these schools, by experienced teams of qualified structural engineers, failed to identify any indications of the subsequently identified presence of significant deficiencies in the construction of the walls.

While visual inspections are clearly the first part of any structural assessment of walls and can help identify any movement, bulging or alignment issues, they should not be relied upon as evidence that the walls are properly constructed and have the required structural capacity to resist strong winds.

It is therefore recommended that quality assurance processes on site are such that they prevent the closure of walls before proper inspection and sign-off has been facilitated to confirm the quality and completeness of the work.

Midlothian's Position

Quality assurance processes on site should consider the type and method of sign off processes and that a percentage of work elements are inspected rather than spot inspections. The method of evidencing visual inspection should also be supported by photographs in order to provide the relevant assurances, rather than reliance on a written statement. This evidence should form part of the documentation handed to the client when hand over is agreed. Current projects on site include a responsibility for the Clerk of Works to photographically record construction of masonry walls, these photographs are either included in the Clerk of Works weekly reports or provided electronically.

7.7 Brick laying profession

The Inquiry is of the view that, given the widespread nature of similar defective construction across the 17 PPP1 projects, undertaken by bricklayers from different sub-contracting companies, and from different squads within these companies, there is clear evidence of a problem in ensuring the appropriate quality in this fundamental area of construction.

It is therefore recommended that the construction industry should re-examine its approach to recruitment, training, selection and appointment of brick-laying subcontractors, means of remuneration, vetting of qualifications and competence, supervision and quality assurance of bricklayers.

Midlothian's Position

Midlothian Council support this recommendation and agrees with the suggestion that better training, selection and supervision of bricklayers is explored. This recommendation is not controlled by the public sector.

7.8 Fire-stopping and fire-proofing

Fire-stopping and fire-proofing are fundamental aspects of the safety of buildings and must be treated with the importance that they deserve due to the potential implications for the safety of building users and the risk to property as a result of defects in their incorporation into the building.

There has been significant evidence of failures of fire-stopping in PPP projects in England and questions have been raised as a result of the initial surveys of fire-stopping undertaken across the 17 PPP1 projects in Edinburgh.

It is recommended that, in relation to these aspects, consideration be given to the introduction of independent in-depth inspection and certification by a suitably qualified person or specialist company, in accordance with the provisions made within the Building (Scotland) Act 2003, and that this certification be required to be provided to Building Standards as evidence of fully compliant installation, prior to the approval of the Completion Certification by Building Standards.

Midlothian's Position

Midlothian Council support this recommendation. However, it should however be noted that Building Standards do not have legislative powers to insist that certification is provided in this way.

Building Standards can ask for suitable evidence that works have been carried out however to insist that this work is certified and installed by a specialist is out with the remit of Building Standards.

There is scope within the contractual agreements, for the client to insist that work of this nature is processed by independent inspection and certification prior to issue of the completion certificate.

Midlothian Council has 8 PPP Primary Schools at Gorebridge, Lawfield, Loanhead and St. Margaret's joint campus, Moorfoot, Stobhill, Strathesk and Tynewater. At these schools inspection of fire stopping works, are carried out routinely as part of any variations where fire barriers are affected. General checks of fire stopping, forms part of the annual fire risk assessment.

As a result of the Edinburgh Inquiry Report an independent surveying company has been scheduled to carry out fire compartmentation surveys at these schools over the next few months. At the Dalkeith Schools Campus at year 10, the end of the defects liability period, Aberdeen Assets commissioned a construction review including fire compartmentation.

In addition to this BAM will be introducing a permit system to be signed by any contractors carrying out works affecting fire compartmentation. Similar quality assurance process will be implemented across all non PPP buildings.

8.0 Training and Recruitment

8.1 Provision of training and recruitment

The evidence to the Inquiry from several experienced sources suggested that there is an increasing shortage of essential skills and/or deskilling in the construction industry

which is impacting on its ability to deliver and ensure the required quality of construction.

Three particular areas were identified where a combination of a lack of funding, lack of appropriate training courses and lack of recognition of the level of requirement has led to serious skills shortages and difficulties in recruitment. The three areas were:

- Bricklaying
- Clerk of Works
- Building Standards Inspectors

The appropriate authorities should undertake a review of the current level of provision of training in these areas, and any others considered relevant, to ensure that the construction industry has access to an adequate properly trained and qualified resource in each of these areas.

Midlothian's Position

Midlothian Council commission a good level of Clerk of Works service. Brick laying training is out with the control of the public sector.

Building Standards should not be considered as a robust tool to inspect works which are ongoing. Resource within Building Standards is there fundamentally to carry out inspection to protect the public interest in terms of compliance and the frequency of inspection is assessed by the verifier, taking into account matters such as the type of work, quality of information submitted, etc.

It must be stressed that inspections are not to ensure that all work is constructed as the person paying for the work would want it. Responsibility for the quality of construction lies with the building owner, as they are the relevant person under the Building (Scotland) Act 2003.

However since 2013, Building Standards have introduced a construction compliance notification plan system which requests notification from the contractor that certain parts of the building are available for inspection. This system has been brought in to try and provide a consistent level of inspection to improve compliance on site. It should be noted that this process is voluntary and non-enforceable by Building Standards. The system is reliant on the applicant, contractor contacting the Building Standards section to advise that works are available for inspection. It should also be noted that inspections are limited and photographic evidence and written statements from qualified professionals can be provided in lieu of physical site inspection.

Following the recent building failures the Scottish Government has intimated that there may be a review of how the Building Standards service is expected to perform in relation to site inspection. The extent of review and timing has not been made public to date.

8.2 Apprenticeships

In relation to the training of bricklayers, the Construction Industry Training Board (CITB) should review with the industry the effectiveness of current apprenticeship arrangements in meeting the objective of developing a highly skilled bricklaying workforce.

The current apprenticeship course and skills tests should also be reviewed to ensure that there is sufficient focus on understanding the function of and the practical installation of brickwork accessories.

Midlothian's Position

This is a Construction Industry Training Board (CITB) responsibility. Midlothian Council do not currently directly employ apprentice bricklayers.

9.0 Building Standards

9.1 Scope of Building Standards inspections and certification

The Inquiry formed the view that there was a common misconception as to the extent of the reliance that can be placed on the quality of construction of a building because it had successfully gone through the statutory Buildings Standards process.

The typical frequency of site visits and the level and nature of inspections undertaken, as provided in evidence, can only confirm that buildings are being built generally in accordance with approved warrants.

It would not appear to be either practical or appropriate for Building Standards Departments to be expected to undertake the type and level of detailed inspection that would be necessary to identify the risks to user safety that have been identified in this Report. However, an underlying core objective of their function as expressed in the Building (Scotland) Act 2003 is 'securing the health, safety, welfare and convenience of persons in or about buildings'.

To resolve this issue, there is a need for Government and the construction industry to consider the introduction of methods that would provide Buildings Standards with the required level of assurance in risk areas.

In this regard, it is recommended that consideration be given to the practicality of extending the concept of mandatory inspection and certification of construction by approved certifiers to elements of the building that could potentially pose significant risk to users if not constructed properly and which level of inspection cannot practically be undertaken by Building Inspectors themselves.

Midlothian's Position

Midlothian Council agrees with this recommendation that consideration be given to the mandatory inspection of structural elements that could pose risk. It is clear from the report that the failures were caused by the incorrect installation of elements of construction considered to be fundamental and a basic element, and therefore with hindsight equally as important and possibly over looked until now. Therefore inspection by structural engineers should not be restricted to structural elements considered either ground breaking or highly technical. It is now apparent that to reduce the risk of this type of failure all elements of construction should be considered as equally important and deserved of the same level of inspection and scrutiny.

The design process with regard to structural certification at the Building Warrant application stage has been improved since the introduction of the new Building (Scotland) Act 2003. However the same consideration by the industry should be given to the inspection of structural works during the construction stage.

9.2 Sanctions for non-compliance with Building Standards

The evidence provided to the Inquiry showed a number of breaches in relation to the PPP1 schools compliance with the statutory applications and certification processes required under the Building (Scotland) Act 2003.

The Inquiry noted that: (a) there does not appear to be an automatic follow up by Building Standards Departments to require compliance, where proper processes have not been complied with; and (b) that the non-application for and non-issue of completion certificates for new buildings would not appear to be an infrequent occurrence.

The Inquiry would recommend that in order to improve the effectiveness of the revised Building (Scotland) Act 2005, in delivering the key stated policy objective of, 'securing the health, safety, welfare and convenience of persons in or about buildings', systematic and appropriate administrative arrangements should be developed and implemented by verifiers to identify, pursue and sanction those who fail to comply with its statutory requirements.

Midlothian's Position

Building Standards do pursue developers and contractors who undertake works without the relevant Building Warrant in place and also those who occupy buildings without the relevant completion or temporary certificate. It has to be acknowledged that this process is generally risk based and enforced where Building Standards have been made aware either through our inspection or notified by the public of unauthorised occupation.

It should however be noted that there has to be the support and back up from the judicial system to pursue and apply sanctions for non-compliance or occupation. Midlothian Council have had experience of pursuing those who have undertaken work without the relevant Building Warrant and have been advised that unless the service can prove that the building is a danger and not just that they are occupying a building, there is little chance that the case will be taken further due to what are considered more pressing breaches of the law and therefore its not in the public interest to pursue.

It is unfortunate however it may be that recent events place more significance on these types of breaches and greater consideration is given by the judicial service to pursue.

9.3 Temporary Occupancy Certificates

In circumstances in PPP contracts where the Building Standards Certificate of Completion cannot yet be issued, and the issue of an Availability Certificate is permitted under the contract on the basis of a Temporary Occupancy Certificate, it is recommended that there should be a specific requirement that the Independent Certifier issuing an Availability Certificate should formally advise the public sector client of this fact and qualify the documentation to reflect this position.

Additionally, it is recommended that there should be a requirement under the contract that, in such circumstances, a date should be set by which the Project Company should be required to have achieved an accepted Certificate of Completion or be in default.

Midlothian's Position

Midlothian Council schools projects generally require a completion certificate which is an essential document in obtaining the Care Inspectorate Certificate. Should only a Temporary Occupancy Certificate be provided, Midlothian Council will ensure it has measures in place to guarantee completion certificate by a certain date, for example, deduction of unitary charge. Completion certificate was a requirement on PPP1 and PPP2 to allow projects to be operational.

9.4 Prioritisation of risk factors

The Inquiry noted, from the evidence provided, the number and preponderance of visits by Building Inspectors which focussed on drainage issues compared to the limited number of visits that were undertaken in relation to the compliance of the construction of the general structure and fabric of the buildings, the design and specification of which would have represented the vast majority of information submitted and scrutinised by Building Standards prior to approval of the design warrant.

It is recommended that a review be undertaken as to the overall objective of site visits undertaken by Building Inspectors to ensure that the planning of these properly reflects a prioritisation of the identification and inspection of areas of highest risk.

Midlothian's Position

Building Standards are in the process of reviewing their site inspection regime. Consideration has been given to the building type, complexity and frequency required. This will involve a system of sampling against a risk based model. It has been accepted that there is a preference, which is linked to the historic requirement to carry out drainage inspections, that this type of inspection is disproportionate to the number of inspections carried out in relation to other elements of the building. Construction Compliance Notification Plans have been introduced and assist with the spread of inspection type. There is however clear evidence from our figures that there is still a large proportion of inspection around drainage and measures and training is being put in place to rectify this.

9.5 Building Standards Department of the City of Edinburgh Council

It is recommended that a review be undertaken of the staffing and funding of the Building Standards Department in Edinburgh Council to ensure that these are adequate to meet the demand for services and to provide the level of service that is required.

Midlothian's Position

Recommendation is specific to resources within City of Edinburgh Council

10.0 Sharing information

10.1 Sharing of information on matters of structural consent

The Inquiry found that there was a degree of reluctance on the part of some Local Authorities to reveal to the Inquiry full details of the extent and nature of defective construction that had been found as a result of investigations undertaken at some of their schools. This reluctance could be related to possible on-going litigation or a reluctance on their part (or that of their project company) to have this information made public.

It is recommended that there should be a formal requirement on public bodies to make automatic disclosure to a central source of information on building failures, particularly in relation to building failures that bring with them potential risks to the safety of building users.

In particular, the collation and dissemination of information relating to matters of structural concern is a vital element of achieving safe structures. The Standing Committee on Structural Safety (SCOSS) has introduced the Confidential Reporting

on Structural Safety (CROSS) scheme, to facilitate this process in circumstances where those providing the information may wish to retain a degree of anonymity. This should be used more widely.

Midlothian's Position

There is a requirement to disclose to a central source, information on building failures. This central source is facilitated by the Standard Committee on Structural Safety (SCOSS). The public sector should use this central source more widely.

11.0 Recommendations for the City of Edinburgh Council

11.1 Minor changes within PPP1 schools

The Council may wish to investigate what flexibilities there may be, or may be negotiated, in relation to the application of the provisions of the PPP1 Project Agreement that might better facilitate the implementation of requests for minor changes within the schools. This was identified as an on-going source of frustration by those members of staff and of Parent Councils who gave evidence to the Inquiry.

Midlothian's Position

Within Midlothian Council schools changes are facilitated by "permitted alterations" or "change control" depending on size / impact of change.

11.2 Parents' and schools' review of management of closure

The Inquiry would suggest that, if not already done, the Council should facilitate a joint meeting with representatives of the Parent Councils and heads of schools to review all issues relevant to the management of the closure, to benefit from any learning gained from the experience and to help inform the development of protocols for future emergency situations.

Midlothian's Position

The recommendation is specific to City of Edinburgh Council. Midlothian Council will reflect this recommendation within the schools' incident response plans.

11.3 Fire-stopping

In light of the results of the fire-stopping surveys of the PPP1 projects, it is recommended that the City of Edinburgh Council should, in addition to the ongoing checking of fire safety measures and components across its wider estate, require that appropriately frequent on-going inspections are undertaken by those responsible for the management of these buildings to ensure that these are properly maintained over time.

Midlothian's Position

Independent inspection and certification occur prior to issue of completion certificate and review of fire compartmentation in existing buildings. Midlothian Council have 8 PPP Primary Schools, Gorebridge, Lawfield, Loanhead and St. Margaret's joint campus, Moorfoot, Stobhill, Strathesk and Tynewater. At these schools fire stopping works, are carried out routinely as part of any variations where fire barriers are affected. General checks of fire stopping forms part of the annual fire risk assessment. As a result of the Edinburgh Inquiry Report an independent surveying company has been scheduled to carry out fire compartmentation surveys at these schools over the next few months. At the Dalkeith Schools Campus at year 10, the end of the defects liability period, Aberdeen Assets commissioned a construction

review including fire compartmentation. In addition to this BAM will be introducing a permit system to be signed by any contractors carrying out works affecting fire compartmentation. Similar quality assurance process will be implemented across all non PPP buildings.

12.0 Further Inspections

12.1 Other clients of recently constructed buildings

In relation to the potential presence of further defective construction in the external walls of other of their buildings, the City of Edinburgh Council is undertaking a proportionate and structured risk-based approach to investigating their wider estate, specifically regarding the issues identified on the PPP1 Estate i.e. wall tie embedment and the provision of appropriate restraints to masonry panels.

Other clients of recently constructed buildings of a similar scale and form of construction to the PPP1 schools, if concerned that their buildings may contain similar defects, may wish to adopt a similar risk-based approach to any investigation process they may feel necessary.

Midlothian's Position

Proportionate and structured risk-based visual and intrusive surveys of Midlothian Council's PPP schools estate were carried out during 2016. These surveys identified minor remedial works which were completed during 2016.

On 29th April 2016 and 8th July 2016 intrusive surveys were carried out at Lawfield Primary School, Tynewater Primary School and Moorfoot Primary School.

From the 2nd to the 4th of December 2016 intrusive surveys were carried out at The Dalkeith Schools Community Campus.

In May 2016 intrusive surveys were carried out at Bonnyrigg Primary School Woodburn Primary School and Penicuik Leisure Centre.

Any Further Actions required out with report recommendations in Section 2 above

The City of Edinburgh Council, due to the extent of wall tie failures uncovered in their investigations, decided to retrospectively fix wind posts to a number of walls.

Midlothian Council Officers considered whether this measure, over and above the structural requirements already in place, was appropriate for Midlothian Council buildings. Midlothian Council will consult with independent structural engineer on recommendations for retro-fitting wind posts.

13 Report Implications

13.1 Resource

This report is a response to recommendations made by Audit Scotland and individual items requiring resource in all future projects, plans and reports.

13.2 Risk

The risks are identified in each recommendation/ response contained in item 3 to 12.

13.3 Single Midlothian Plan and Business Transformation

Themes addressed in this report:

- Community safety
- Adult health, care and housing
- Getting it right for every Midlothian child
- Improving opportunities in Midlothian

- Sustainable growth
- Business transformation and Best Value
- None of the above

13.4 Key Priorities within the Single Midlothian Plan

Insert text here

13.5 Impact on Performance and Outcomes

Improved practices as recommended will improve Health and Safety outcomes on all construction projects.

13.6 Adopting a Preventative Approach

New practices will avoid future Health and Safety issues.

13.7 Involving Communities and Other Stakeholders

All parties directly involved in the construction process have been included in the review of their procedures/recommendations.

13.8 Ensuring Equalities

EQIA required

13.9 Supporting Sustainable Development

Long term durability of construction projects is supported through this report.

13.10 IT Issues

None

14 Recommendations

Audit Committee is recommended to note and approve the responses made to the Audit Scotland Report on Edinburgh Schools.

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Background Papers: 2016/17 audit of The City of Edinburgh Council Report on Edinburgh Schools