

EAST RENFREWSHIRE COUNCILCABINET30 August 2018Report by Director of EnvironmentCOLE REPORT**PURPOSE OF REPORT**

1. To update the Cabinet on the ERC action plan prepared in response to the Cole report.

RECOMMENDATION

2. The Cabinet is asked to note:
 - (a) The proactive approach taken by the Council in relation to the Cole report and in particular the resulting action plan prepared by Property & Technical Services (PATS) and Building Standards (BS); and
 - (b) The quarterly action plan monitoring regime which has been in place since 1st April 2018.

BACKGROUND

3. An independent inquiry was commissioned by the Chief Executive of the City of Edinburgh Council following the collapse of a wall at Oxfangs School. The inquiry was chaired by Professor John Cole CBE, an architect and retired senior civil servant and his findings were published in an extensive report in February 2017.

4. The inquiry report provided a comprehensive step by step summary of the problems faced once the wall collapsed and the culmination of factors that caused the collapse.

5. The collapse of the wall at Oxfangs School and the defects found in the construction of 17 Edinburgh Council PFI and PPP projects were in essence the result of a combination of poor quality of workmanship, inadequate supervision and ineffective quality assurance within the construction industry. The level of independent scrutiny applied to the construction on behalf of the Council was also insufficient to identify and seek rectification of the defective construction that subsequently caused the failure of the wall.

6. Following the publication of the report The Director of Environment instructed a full programme of visual and intrusive surveys for our PFI/PPP properties. An independent structural engineer confirmed there were no major structural defects in any of the buildings or any risk to the health and safety of staff and pupils. However, the surveys did highlight where some remedial works were required and these were carried out by the PFI/PPP providers.

REPORT

7. The Cole report raised 75 points relating to construction, quality control and supervision. These points were reviewed by officers from Property and Technical Services and Building Standards in 2017 and the Council's Action Plan was prepared in response to the relevant Cole Report recommendations; (Appendix 1).

8. Importantly the Action Plan has been and will be reviewed quarterly from 01/04/18 to ensure the practices recommended or already in place are being adhered to and embedded within methods of working.

9. The Council's Action Plan seeks to minimise the risks associated with similar defects to those found in the Cole Report occurring (such as presence and suitability of wall ties and head of wall restraints). To do this three main actions have been initiated

- Building Standards set a mandatory inspection schedule at approval stage.
- Property and Technical Services ensure that the procurement arrangements provide for an appropriately qualified Clerk of Works to provide independent scrutiny. This is to provide the necessary level of assurance as to the quality of the buildings being procured.
- Property and Technical Services specify that photographic records are to be included within contract administration. On a project specific basis, use will be made of Multi – Vista (or a similar product) to provide a comprehensive photographic database, recording all elements and stages of construction across the entire project.

Key Recommendations

10. Key recommendations from the Cole Report are detailed below together with associated actions. The full list of relevant recommendations and actions are detailed in the Action Plan (Appendix 1).

11. **Recommendation 1.1** - 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.

- There is already a requirement that Property and Technical Services and Building Standards officers must be not only adequately qualified but available to meet the demand. Adequate staff availability will be ensured on a project by project basis supplementary training will be provided to staff.

12. **Recommendation 1.2** - 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.

- This is part of existing Building Standards remit. All submissions will be assessed against the Building Standards in force at that time by suitably qualified and experienced surveyors.

13. **Recommendation 1.3** - 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.

- Property and Technical Services has addressed this by appointing independent Clerk of Works on all future projects
- Building Standards do carry out independent verification of plans for design. All submissions are assessed against the Building Standards in force at that time by suitably qualified and experienced surveyors.

15. **Recommendation 4.1** - 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.

- Property and Technical Services specify Multi-Vista or a similar product be used to record all events photographically during build. There will also be the use of e-portals for central storage. This is in place for major projects. There have been no IT issues in the use of these portals once set up.

16. **Recommendation 4.2** - Provision of as-built drawings: Contractors should be required to certify that the 'as-built' documentation as provided is an accurate record of what has actually been built.

- East Renfrewshire Council construction projects are finalised with a completion certificate. By signing the completion certificate submission form the contractor/agent is confirming that all works have been carried out to the approved plans and building standards. It is an offence to make a false statement. Multi vista will assist in confirmation of "as built". This is in place for major projects.

17. **Recommendation 4.6** - 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.

- Any amendments must be approved and certified at an early stage and prior to site installation. An appropriate communication process between the project Design Team and Building Standards is already in place.

18. **Recommendation 5.6** - Inspection and sign-off of cavity walls: It is particularly important to note that in the case of the 17 PPP1 projects in Edinburgh, 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.

- There will be a requirement from Property and Technical Services for sign off by a Structural Engineer prior to closure of walls plus Clerk of Works reports on installation of major elements. Property and Technical Services specify use of photo records ie Multi Vista or similar together with mandatory inspection schedule. This is in place for future projects.

19. **Recommendation 5.6** - Inspection and sign-off of cavity 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.

- Contract requirements now ensure that no major element is closed off until approved by relevant members of the design team and/or Building Standards, as appropriate. This has been in place for current and future projects since 01/04/2018.

FINANCE AND EFFICIENCY

20. At present the additional cost to projects cannot be fully measured as there will be costs incurred by contractors in implementing some of these recommendations. These will be reflected in actual tender costs. (The cost of undertaking a photographic record database, such as Multi Vista, for a major capital build would be in the region of £15,000).

CONSULTATION

21. Consultation was undertaken with PATS and Building Standards officers.

PARTNERSHIP WORKING

22. Partnership working between PATS and Building Standards officers produced the Action Plan (Appendix 1).

IMPLICATIONS OF THE PROPOSAL

23. The additional measures in the action plan in conjunction with existing procedures will minimise the risk that retrospective inspections will be required to confirm building integrity and building user safety.

24. For new projects, regardless of how they are procured, the Council needs adequate independent checks carried out at the right times to ensure that our buildings are designed and built to required standards. Clerk of Works appointments for projects will meet this requirement. However, additional Building Standards resource may be required in the future depending upon the extent of capital projects. In the same way we also need to consider our approaches to “condition assessments” of existing buildings. This will incur additional expenditure and staff resource. Two additional maintenance officers have been recruited to assist with compliance for which there is existing budgetary provision in 2018/19. The implications for Building Standards will be monitored.

CONCLUSIONS

25. The inquiry report provided a comprehensive step by step summary of the problems faced in relation to the collapse of the wall at Oxfangs Schools and the culmination of factors that caused the problem. In summary the Council needs to ensure there is an effective balance between innovation, efficiency and effective inspection. The Action Plan will ensure that the Council has additional measures and practices alongside existing procedures to minimise the risks of the issues raised in the Cole Report being experienced in future new build projects.

RECOMMENDATION

26. The Cabinet is asked to note:

- (a) The proactive approach taken by the Council in relation to the Cole report and in particular the resulting action plan prepared by Property & Technical Services (PATs) and Building Standards (BS); and
- (b) The quarterly action plan monitoring regime which has been in place since 1st April 2018.

Director of Environment

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August 2018

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Action Plan based upon SECTION 13 – REMIT ITEM 8: RECOMMENDATIONS (Appendix 1)

ref	Recommendations	Actions	Lead Officer	Date to be Resolved
1	The collapse of the wall at Oxfangs School and the defects found in the construction of the 17 Edinburgh projects were fundamentally the result of a combination of poor quality of workmanship, inadequate supervision and ineffective quality assurance within the construction industry. The level of independent scrutiny applied to the construction on behalf of the Council was also insufficient to identify and seek rectification of the defective construction that subsequently caused the failure of the wall.	PATS to appoint independent Clerk of Works on all future projects	PATS	Project specific, actioned already
2	Whilst it is not suggested that this lack of quality is representative of the construction industry as a whole, the recurring nature of similar defects in relation to the construction of masonry walls undertaken by a range of contractors, subcontractors and bricklaying squads in the Edinburgh schools and other schools across Scotland, can only indicate that the risk of occurrence of defects of this nature is high. Accordingly, clients should ensure that they incorporate into their procurement arrangements the provision of appropriately qualified and resourced independent scrutiny that provides the necessary level of assurance as to the quality of the buildings being procured.	Clerk of Works appointment At approval stage Building Control will set a mandatory inspection schedule. PATS will specify use of photographic record to be included within contract administration. Use of Multi – Vista or similar to record all stages of construction.	As above BS PATS	Actioned already
3	By independent scrutiny, the Inquiry is referring to inspection by individuals or organisations appointed or directly employed by the client who are independent of the contractor undertaking the project.	Clerk of Works appointment	PATS as per ref 1	
4	Recommendation 1.1 - 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'.	Property and Technical Services and Building Standards officers. Not only adequately qualified but available to meet the demand. Supplementary training to be provided to identified staff	PATS BS PATS	In hand on project by project basis

5	<p>Recommendation 1.2 - Ensuring compliance with specification</p> <p>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.</p>	<p>Part of existing Building Standards remit. All submissions will be assessed against the Building Standards in force at that time by suitably qualified and experienced surveyors.</p> <p>Recognition must be made that workload should be reasonable to ensure adequate time for appropriate inspection otherwise staff and council could be put at risk.</p>	<p>BS</p> <p>BS</p>	<p>In Place</p>
6	<p>Recommendation 1.3 - Public bodies cannot delegate duties</p> <p>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.</p>	<p>Clerk of Works appointment. Building Standards do carry out independent verification of plans for design.</p> <p>All submissions will be assessed against the Building Standards in force at that time by suitably qualified and experienced surveyors.</p> <p>Recognition must be made that workload should be reasonable to ensure adequate time for appropriate inspection otherwise staff and council could be put at risk.</p>	<p>See item 1</p> <p>BS</p> <p>BS</p>	<p>In Place</p> <p>In Place</p>
7	<p>Recommendation 1.4 - Building it right first time</p> <p>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.</p>	<p>PATS- to ensure that brief is comprehensive and all stakeholders are actively engaged in design</p>	<p>PATS</p>	<p>In place for all major projects</p>

8	<p>Recommendation 1.5 - Quality of design and construction</p> <ul style="list-style-type: none"> • 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. 	Brief- share best practice with other authorities and take lead from Scottish Futures Trust. Liaise with Hubs and other external agencies A+DS (Architecture and Design Scotland)	PATS	In place
9	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.	PATS to ensure appropriate timescales for preparation of brief	PATS	In place
10	<p>INDEPENDENT CERTIFIER RECOMMENDATIONS</p> <p>Recommendation 2.1 - Nature of Inspection</p> <ul style="list-style-type: none"> • There would appear to be a lack of shared understanding, both by those commissioning and providing the services of 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. 	Independent Clerk of Works appointed for NPD projects	PATS	In place
11	<p>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.</p> <p>Standard forms for these appointments should spell out the nature of the inspection required.</p>	PATS to appoint independent clerk of works to fulfil client requirement role	PATS	In place

12	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 Clerks of Works services.	PATS to appoint independent clerk of works to fulfil client requirement role This needs to be apportioned with a project value limit per clerk of works. (£10m per clerk of works) or dedicated to one project and identified on specialist need	PATS	In place
13	<p>Recommendation 2.2 - Professional indemnity insurance and Liability Period</p> <ul style="list-style-type: none"> 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. 	Carried out by Hubs		In place
14	<p>Recommendation 2.3 - Method of appointment of Independent Certifier</p> <p>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).</p>	Independent appointment by PATS on recommendation of Hubs		In place
15	<p>Recommendation 2.4 - Fees of Independent Certifier</p> <p>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.</p>	These costs must be built into the contract. Already in place for NPD Projects		In place
16	<p>Recommendation 2.5 - Independent Inspection of the Works</p> <ul style="list-style-type: none"> 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. 	Clerk of Works appointment	See ref 1 PATS	In place

17	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 Clerks 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.	Site inspection by CofW, Client (PATS) and mandatory inspections by Building Standards	PATS BS	In place
18	Clients need to reappraise this gap in the assurance processes which has been allowed to develop.	See above		
19	<p>CLIENT'S RELATIONSHIP WITH THE DESIGN TEAM Recommendation 3.1 - Scope of service of design team members</p> <ul style="list-style-type: none"> 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. <p>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.</p>	Regular site meetings with Design Team/Contractor.	PATS	In place
20	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.	Define acceptable communication chain/methods/timescale. As above minuted design team/progress meetings. Client updates provided by PATS post regular meetings.	PATS	In place

21	<p>Recommendation 3.2 - Role of design teams in inspecting works on site</p> <p>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.</p>	PATS to specify as per contract documentation through Authority Construction Requirements.	PATS	In place
22	<p>Recommendation 3.3 - Notification of issues to public sector client</p> <p>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.</p>	Updates via regular update/design team meetings	PATS	In place
23	<p>Recommendation 4.1 - Production, retention and updating of information</p> <ul style="list-style-type: none"> • 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. 	Multi-Vista or similar product used to record all events photographically during build. Use of e portals for central storage eg 4 Projects	PATS	In place for major projects
24	Public bodies should establish a mandatory protocol for receipt and processing of all such project information within their own organisations.	ERC will use e portal	PATS	In place for major projects

25	<p>Recommendation 4.2 - Provision of as-built drawings</p> <ul style="list-style-type: none"> 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. 	<p>As built drawings must be provided to support photographic record.</p> <p>All approved building warrant drawings including as built drawings can be stored in IDox or similiar</p>	PATS	In place for major projects
26	<p>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.</p>	<p>BS to review as built drawings to confirm satisfactory compliance for warrant. Any changes to the original approved building warrant drawings would be subject to an amendment to warrant application being required and assessed. Contractor would need to be satisfied works complied. All final documents stored in e portal</p>	BS	In place
27	<p>Contractors should also be required to certify that the 'as-built' documentation as provided is an accurate record of what has actually been built.</p>	<p>By signing the completion certificate submission form the contractor/Agent is confirming that all works have been carried out to the approved plans and Building standards. It is an offence to make a false statement. Multi vista will enable confirmation of "as builds"</p>	PATS	In place
28	<p>Recommendation 4.3 - Provision of as-built drawings to Building Control</p> <p>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.</p>	<p>As above.</p>	BS	In place

29	<p>Recommendation 4.4 - On-site accessibility of design information</p> <ul style="list-style-type: none"> 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. 	<p>Contractor responsibility with CofW to supervise all aspects.</p> <p>Ensure document control in place. The use of stamped version of plans from Building Standards.</p> <p>Architects drawings to include all relevant construction requirements</p>	PATS	To be implemented in all future projects
30	<p>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.</p>	<p>Appropriate detail drawings and specification provided and monitored by CofW for compliance. Architects drawings to include all relevant construction requirements</p>	PATS	To be implemented in all future projects
31	<p>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.</p>	<p>Architects drawings to include all relevant construction requirements</p>	PATS	To be implemented in all future projects
32	<p>Recommendation 4.5 - Communication of design intent</p> <ul style="list-style-type: none"> 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). 	<p>Ensure design is correctly conveyed and understood. Structural Engineer to sign off after construction.</p> <p>Architects drawings to include all relevant construction requirements</p>	PATS	To be implemented in all future projects
33	<p>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.</p>	<p>Discussed via design team meetings and will be incorporated in architectural design drawings</p>	PATS	To be implemented in all future projects
34	<p>Recommendation 4.6 - Structural amendments to be approved</p> <p>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</p>	<p>BS process already in place.</p> <p>Any amendments to be approved and certified at an early stage and prior to site installation.</p> <p>This needs communication from</p>	Ian Moore	In place

	Standards regulations under the amendment to warrant process.	Design Team to Building Standards.		
35	<p>Recommendation 4.7 - Access to original construction information</p> <ul style="list-style-type: none"> 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. 	Use of e portal	PATS	In place for major projects
36	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.	Can be input to e portal	PATS	To be put in place

37	<p>Recommendation 5.1 - Building of leaves of cavity walls separately</p> <p>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.</p>	<p>Any variation to proposed construction must be approved by the client and design team prior to implementation.</p> <p>Any such alteration may also require signed approval from Building Control</p>	<p>PATS BS</p>	<p>To be put in place</p>
38	<p>Recommendation 5.2 - Design of wall ties</p> <p>There would be significant benefit if the design of wall ties, particularly the type used on the Oxfangs 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.</p>	<p>Must be signed off by a Structural Engineer as appropriate.</p> <p>Design certified by Structural Engineers Registration Ltd (SER) certificate at Building warrant approval stage. No requirement for the engineer to sign off the as built for Building Standards. Use of Site Photographic Records (eg Multi Vista) and Clerk of Works. Each key stage to be approved as installed as per contract requirements.</p>	<p>PATS</p>	<p>To be put in place for future projects</p>
39	<p>Recommendation 5.3 - Design and use of head restraints</p> <ul style="list-style-type: none"> • 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. 	<p>Ease of use and all fixings etc must be reviewed and discussed during Design Team Meetings pre tender stage at design stage.</p>	<p>PATS</p>	<p>To be put in place for future projects</p>
40	<p>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.</p>	<p>Use of Multi-Vista or similar would give reassurance that ties are installed correctly</p>	<p>PATS</p>	<p>In place for major projects</p>

41	<p>Recommendation 5.4 - Payment of bricklayers</p> <p>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.</p> <p>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.</p> <p>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.</p>	This is a contractor/sub contractor relationship and relates to all trades.	Main Contractor	As per contract
42	<p>Recommendation 5.5 - Contractor quality assurance processes</p> <ul style="list-style-type: none"> • 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. 	Contractor is responsible for all construction matters. The use of independent clerk of works and site photographic records provides client assurance	PATS	In place for future projects
43	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.	Contract to specify contractor's own internal quality procedures. The use of independent clerk of works and site photographic records provides client assurance	Contractor PATS	As per contract In place for future projects
44	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.	Hub is already reviewing these on behalf of the participants	Hub	In hand
45	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.	Hub is already reviewing these on behalf of the participants	Hub	In hand

46	<p>Recommendation 5.6 - Inspection and sign-off of cavity walls</p> <ul style="list-style-type: none"> 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. 	<p>Use of Multi-Vista or similar together with mandatory inspection schedule</p> <p>Sign off by Structural Engineer prior to closure of walls. Plus Clerk of Works reports on installation of major elements</p>	PATS	In place for future projects
47	<p>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.</p>	<p>Contract requirements to ensure that no major element is closed off until approved by relevant members of design team and/or Building Control</p>	PATS BS	In place for future projects
48	<p>Recommendation 5.7 - Bricklaying profession</p> <p>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.</p> <p>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.</p>	<p>PATS- This is a contractor issue. Contract required to ensure time served/ supervision and continuity of bricklayer squad.</p> <p>Contractors retain own squads</p>	Contractor	

49	<p>Recommendation 5.8 - Fire-stopping and fire-proofing</p> <ul style="list-style-type: none"> • 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. 	<p>CofW to sign off fire stopping.</p> <p>PATS have a specific line added to all works orders to ensure fire stopping is completed.</p> <p>A programme of checking fire stopping is being implemented. This will take considerable time and is focussing initially on fire corridors in schools.</p>	PATS	In place for future projects
50	<p>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.</p> <p>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.</p>	Agreed	PATS	In place for future projects
51	<p>TRAINING AND RECRUITMENT RECOMMENDATIONS</p> <p>Recommendation 6.1 - Provision of training and recruitment</p> <ul style="list-style-type: none"> • 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. 	BS- ensure adequate funding for in house Building Standards Inspectors to cover construction phases of projects. And ensure fully staffed and experienced surveying team to deal with manageable workloads.	BS	
52	<p>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:</p> <ul style="list-style-type: none"> • Bricklaying • Clerks of Works • Building Standards Inspectors 	Appoint suitably qualified Clerk of Works to carry out the role specific project demands including any specialised items.	PATS	In place for future projects
53	<p>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.</p>	Professional Bodies		

54	<p>Recommendation 6.2 - Apprenticeships</p> <ul style="list-style-type: none"> 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. 	Contractor responsibility		
55	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.	Contractor responsibility		
56	<p>BUILDING STANDARDS RECOMMENDATIONS</p> <p>Recommendation 7.1 - Scope of Building Standards inspection and certification</p> <ul style="list-style-type: none"> 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. 	Building Standards check compliance through checking submitted plans against current standards. An inspection regime is detailed at approval stage (CCNP). BS surveyors/inspectors can only report what they see at a particular time. Contractor must take more responsibility for ensuring compliance and informing BS of changes to build/problems.	BS	In place for future projects
57	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.	And only at the time they were seen. BS undertake inquiry inspections to check compliance prior to closure	BS	In place for future projects
58	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'.	In place already	BS	In place
59	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.	This is something we try and do but resources and time are very limited when considering the overall workload of the BS service	BS	To be in place for future projects
60	In this regard, it is recommended that consideration be given to the practicality of extending the concept of mandatory inspection and certification of	Mandatory inspection as part of notification plan. Require sign off	BS	To be in place for

	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.	at key stages prior to closure as a MUST. Approved certifiers:- Engineers Plumbers Electricians or Energy Assessor All must be appropriately qualified.		future projects
61	Recommendation 7.2 - 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.	BS to amend processes to ensure compliance and follow up procedure.	BS	
62	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.	“Certificate of Design Procedures” Building Standards raise any issue in writing to PATS. The job cannot be stopped on this basis however need to ensure a follow up from Clerk of Works to confirm rectification of issue.		
63	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.	BS notices/enforcement in place. Action is taken against the building owner and or Agent, who may not be the contractor who is carrying out the work. Difficult to serve enforcement notice on your own Authority....who would sign the notice?	BS	In place

64	<p>Recommendation 7.3 - Temporary Occupancy Certificates</p> <ul style="list-style-type: none"> • 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. 	Common practice to accept applications for temporary occupation certificates. Generally these are only accepted when it can be proved through sign off that only minor works remain outstanding	BS	In place
65	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.	PATS to build into contract. Defined by issue of temporary completion certificate	BS	In place
66	<p>Recommendation 7.4 - Prioritisation of risk factors</p> <ul style="list-style-type: none"> • 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. 	BS- Built into notification plan already. Historically drainage inspection was one of the main inspections required.	BS	Actioned already
67	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.	Already in place. Applications and CCNP (Construction Compliance Notification Plan) are risk assessed accordingly by experienced staff.	BS	In place
68	<p>Recommendation 7.5 - Building Standards Department of the city of Edinburgh Council</p> <p>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.</p>	Also relevant for ERC to ensure adequate staffing to enable delivery.	BS	Staff restructure currently under review

69	<p>INFORMATION SHARING RECOMMENDATIONS</p> <p>Recommendation 8 - Sharing of information on matters of structural concern</p> <ul style="list-style-type: none"> 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. 	Pass to Scottish Heads of Property Forum to discuss and SFT to maintain.		
70	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.	Under current Hub/SFT rules and regulations may inhibit full disclosure		
71	<p>In particular, the collation and dissemination of information relating to matters of structural concern is a vital element of achieving safe structures.</p> <p>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</p>			
72	<p>RECOMMENDATIONS FOR THE CITY OF EDINBURGH COUNCIL</p> <p>Recommendation 9.1 - Minor Changes within PPP1 schools</p> <p>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.</p>	<p>Change request process already in place with PPP/PFI contracts.</p> <p>PPP/PFI scheduled meetings held with Provider/PATS/Education already</p> <p>The NPD projects have a more clearly defined procedure to instigate change</p>	PATS	In place

73	<p>Recommendation 9.2 - Parents' and schools' review of management of closure</p> <p>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.</p>	<p>We engage with Education client Department to ensure that all relevant information is provided to staff, parents and pupils upon any notification of an event which may affect the school building.</p>	<p>PATS Education</p>	<p>In place</p>
74	<p>Recommendation 9.3 - Fire-stopping</p> <p>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.</p>	<p>PATS have a specific line added to all works orders to ensure fire stopping is completed.</p> <p>A programme of checking fire stopping is being implemented. This will take considerable time and is focussing initially on fire corridors in schools and accessible areas. This will then continue for all council properties.</p> <p>A certificate of construction required after completion of a project to ensuring that the contractor has to sign off works.</p>	<p>PATS</p>	<p>In place</p>
75	<p>FURTHER INVESTIGATIONS</p> <p>Recommendation 10 - Other clients of recently constructed buildings</p> <ul style="list-style-type: none"> • 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. 	<p>PATS to ensure any similarly constructed property is treated in same consistent manner.</p> <p>We have already conducted our own surveys across PPP/PFI estate and minor alterations have been carried out</p>	<p>PATS</p>	<p>In hand</p>
	<p>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.</p>			