

## DUMFRIES HIGH SCHOOL - REPORT ON CURRENT STRUCTURAL POSITION AND THE CONTINGENCY PROVISION OF A DEMOUNTABLE FACILITY TO CONTINUE SERVICE DELIVERY

### 1. Reason for Report

Members are advised on the current position of the remedial, structural and monitoring works at Dumfries High School and progress made in relation to planning approval for a contingency plan for a demountable classroom facility. This contingency facility is to fully ensure continued good quality service delivery from this school over the short to medium term.

### 2. Report Summary

The report requests Members to consider the following key points

2.1 Structural, remedial and monitoring works are in place at Dumfries High School and continue to confirm that this area of the school is currently safe.

2.2 The progress, planning approval timescales and proposed location of a demountable classroom facility, located at Dumfries High School, which can be fast tracked should the monitoring arrangements indicate further concerns.

2.3 The requirement to consider the issues at Dumfries High School within the Dumfries Secondary School Review.

### 3. Glossary of Terms

SEMG	School Estate Management Group
SEMP	School Estate Management Plan
CDM	Construction Design and Management

### 4. Recommendations

Members are asked to:

4.1 note the position statement on the remedial and monitoring works at Dumfries High School as provided by Design Services (Para 11.1), which confirm that this area of the school is currently safe;

4.2 note the current progress and proposed location of a demountable classroom facility located at Dumfries High School (Para 11.2.) (**Appendix 1**);

4.3 agree to the implementation of an Action Plan to take the proposals to planning approval and pre-tender position and to implement if further deterioration becomes evident;

4.4 note the contents of the attached risk register, in relation to both educational service delivery and works on site (**Appendix 2**); and

4.5 note that the structural condition of Dumfries High School will be taken into account in the Dumfries Secondary Review.

## **5. Corporate Plan Links and Contribution**

5.1 The proposals in this report contribute to the 'Smarter' theme in the Corporate Plan and in particular to the objective to provide all children and young people with access to positive learning environments.

5.2 The proposals in this report are consistent with the SEMP.

## **6. Resources/Value for Money Assessment**

6.1 Building asset management, strategic programme development and monitoring processes ensure sound financial, programme and project management and are essential tools in the monitoring and continual review of Service resources utilisation and performance.

6.2 The Members have agreed to a Review of Secondary Provision in Dumfries and the condition of this area of Dumfries High School will be taken into account in this Review.

## **7. Risk Assessment**

7.1 There are inherent risks with all capital projects. The risks are managed by following appropriate rules and guidance tailored to the size and complexity of the project.

7.2 The Project Monitoring, Review and Audit Process operated within ECS as a whole include:

- Identification of potential risks, impact assessment and identification of risk mitigation measures.
- Productions of monthly monitoring and progress reports.
- Application of the above framework and processes assist in minimizing the financial and physical risks to the Council.
- Measures such as Project priority scoring mechanisms, condition surveys and building safety assessments ensures where possible, investment priorities are set timeously. This however does not preclude a rapid response to unforeseen risks.

7.3 This project has risks over and above the normal risk identification and mitigation measures. These are recorded in a project specific Risk Register (**Appendix 2**) that takes account of identified risks, direct and indirect, in all areas i.e. educational delivery, construction works etc. Several Officers of the Council and Project Consultants have been consulted in the compilation of this Register i.e. Health and Safety Officer, Design Services, CDM Co-ordinator, Head Teacher, SEMG etc.

## 8. Consultations

The following have been consulted on, and concur with, the contents of this report:-

- Members of the SEMG
- Acting Director of Finance
- Corporate Director for Combined Services
- Operations Manager - Design Services

## 9. Background

In mid July 2007, during the installation of a three storey lift adjacent to the "sandstone classroom block" at Dumfries High School, it was noted that the existing concrete frame showed signs of "spalling" and cracking. A visual inspection was made of the structure and it was noted that in a number of places the reinforcement had suffered from some corrosion and this had caused concrete to delaminate from the frame. Combined with this, examination was underway to investigate previously noted wall tie concerns on this sandstone faced classroom block.

## 10. Key Issues

10.1 A structural report was commissioned through Design Services to fully investigate these apparent defects in the reinforced concrete frame. As part of this process, a concrete specialist was engaged to take samples of the concrete within the structure. An initial inspection of internal columns was undertaken in late July 2007. Laboratory tests in early August identified that there was variable carbonation of concrete which increases the likelihood of corrosion of the reinforcement within the concrete structure.

10.2 Further laboratory testing confirmed that the concrete was of variable quality and strength.

10.3 It was noted during the internal inspections that the reinforcement had little concrete cover and this had resulted in the corrosion of the steel reinforcement which, in turn, had expanded and delaminated the concrete cover, thus exposing the steel reinforcement.

10.4 Short term measures, such as monitoring, remedial wall ties and localised cladding and strengthening were agreed at this Committee in October 2007, at an estimated budget cost up to £200k. It is not possible however to fully guarantee the integrity of the structure over a specific term. Therefore, contingency plans are required to be in place in case of further deterioration of the structure. However, it was also confirmed in the report that any further deterioration would be gradual, thereby allowing time to implement a contingency plan to provide alternative demountable accommodation on site.

10.5 A further short progress statement report was presented to Members within the School Services Capital Report in January 2008.

## 11. Current Position Statement

Existing Building Structural Issues - further to the report to this Committee on 23 October 2007, the current position is:

- Remedial wall tie installation works are complete.
- The structural and cladding works to the end bay are complete and the two classrooms affected were returned to the school for use at the start of the January term.
- The electronic monitoring system and sensors are in place and are operating well, with remote monitoring from Design Services offices.

## 12. Contingency Plan

12.1 Demountable Classroom Facility - as a result of recent remedial works to the existing sandstone block, Dumfries High School is deemed to be currently safe. Notwithstanding this, a further contingency plan has been put in place to ensure both safety of the staff and pupils and the surety of continued service delivery from this school site.

12.1.1 This contingency plan is to develop design proposals, investigate several alternative layouts, complete pre-tender documentation, submit a Planning Application, and set down fast track timescales for the provision of a demountable classroom facility should the need arise. The possibility of this work being enabled is currently low but nevertheless this work is deemed essential.

12.1.2 The current design and location proposals are as contained in **Appendix 1**. The preparatory works will include for all Statutory Approvals, pre-tender documentation and tender investigations. This preparatory work would foreshorten the works required to provide the demountable facility.

12.1.3 Further to notification of deterioration, and should the need arise, the timescales required for final tender information, lead-in and on-site works are shown in Table 1:

Project Stage	Timescale
Final tender information	2 weeks
Lead in and site preparation e.g. foundations, drain etc age	6 weeks
Construction of facility	4 weeks
Fit out	2 weeks
<b>Total</b>	<b>14 weeks</b>

Table 1

12.1.4 For example, if concerns are identified on 21 April 2008 the facility would be complete and ready for occupation on or before 25 July 2008. This timescale is indicative as the response time from the manufacturer varies throughout the year and is dependent on demand. Extended timescales can be experienced prior to the school summer holiday period as other authorities also target the school holiday construction window. Therefore, this pre-tender preparation is essential to foreshorten the installation period.

12.2 Purchase or rental of facility - the method of procurement, either purchase or rental of the demountable units, will be dependent on factors such as timescales regarding reconstruction of secondary school, Dumfries Secondary Review, identification of required funding. The decision as to which route to follow will be taken, should this be necessary, having regard to relevant factors at the time

12.2.1 Purchase - the budget cost for this option is estimated at approx £2.5m inclusive of all costs. This option would appear to be preferable over a long period, but care is required with units having little or no asset value in the future and could be a further drain on maintenance funds within a few years. There may also be limited possibility of relocation in the future if these units were not able to comply with the current building regulations at that time, especially in regard to energy performance.

12.2.2 Rental - the budget cost for this option is estimated at approx £190k per annum and to be added to this would be a £250k facility set up cost and a £350k site work set up cost. Added to this there would be an equivalent figure of £250k for the removal of the units at the end of the rental period together with site reinstatement.

12.2.3 It should be noted that this large scale investment will have no asset value to DGC in the long run but provide surety of service delivery until a more permanent position is available.

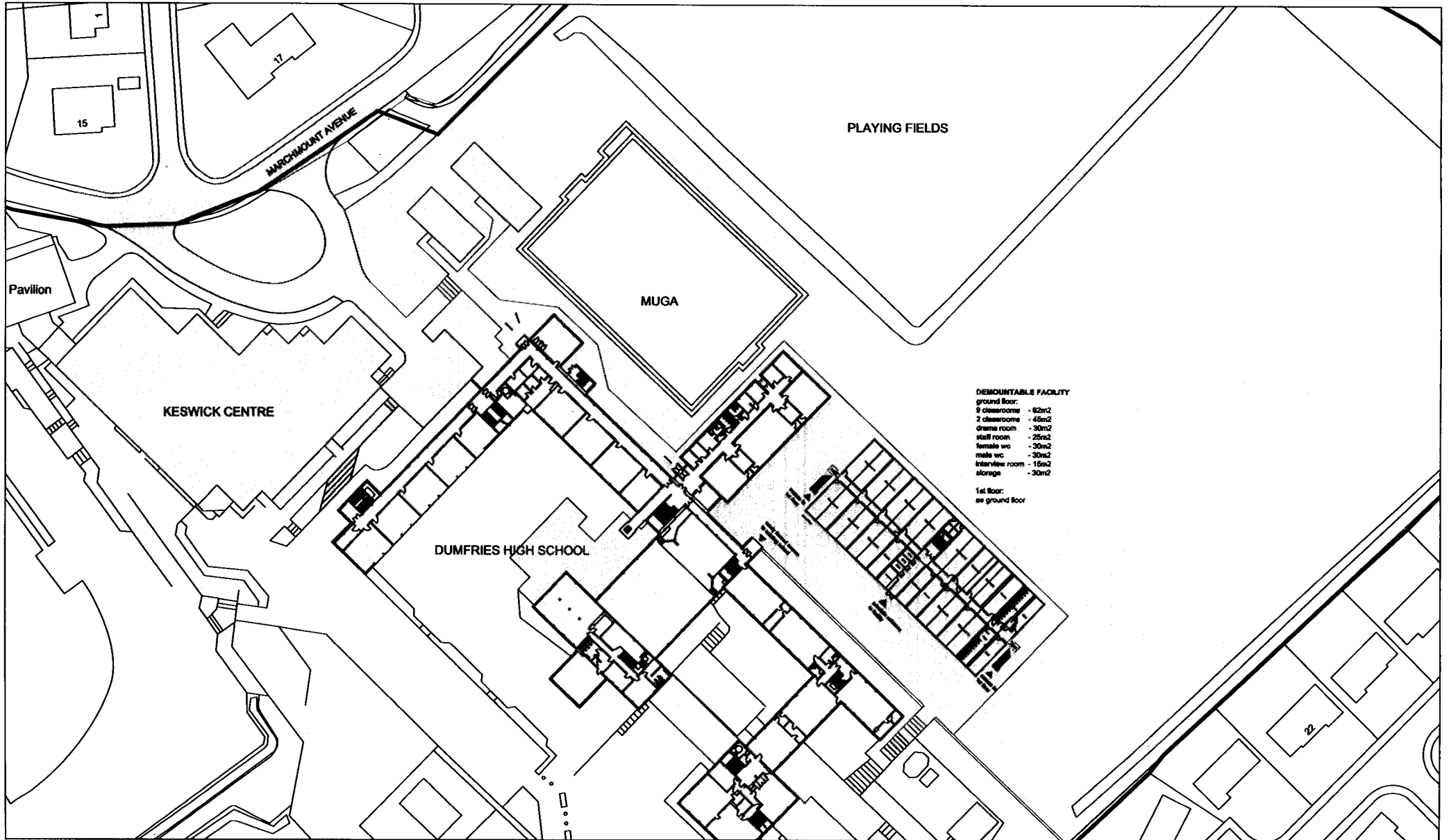
<p>Peter Nelson Service Manager - ESWCS Property Combined Services</p> <p>Date of Report: 19 February 2008</p> <p>File Ref: Dumfries High School Committee Report - 26 February 2008</p>	<p>Colin Grant Service Director Schools Services Education, Social Work and Community Services, Woodbank, 30 Edinburgh Road DUMFRIES, DG1 1NW</p>
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## APPENDICES - 2

### Background Papers:-

Education and Community Services Committee – October 2007

Education and Community Services Committee – January 2008



**DUMFRIES HIGH SCHOOL - DEMOUNTABLE FACILITY FOOTPRINT**

RISK REGISTER FOR EDUCATION SOCIAL WORK & COMMUNITY SERVICES - DUMFRIES HIGH SCHOOL

LAST UPDATED 07/02/08

Risk ID	Date Added	Risk Description	Risk Trigger	Probability	Impact	Risk Matrix	Status	Strategy	Owner	Control
1	Jan-07	Masonry cladding falling from building.	Collapse from 3rd storey occurred during high winds but, until investigated, exact cause or extent of problem not certain.	High	Catastrophic		Active	Avoidance	Service Manager - Property (ESWCS)	Heras fencing put up to form exclusion area in vicinity (01/07). Scaffold erected to provide access for inspection and to arrest any further fall (01/07). Wall ties found to be ineffective due to coursing misalignment, decision to rebuild (01/07). New stone installed, securely tied back (04/07).
	Date Re-Assessed Aug-07			Almost Impossible	Catastrophic		Retired	Acceptance	Service Manager - Property (ESWCS)	No further action.
2	Jul-07	Structural collapse of building.	Significant cracking and spalling of reinforced concrete columns and u/s of beam uncovered during works to install lift.	Significant	Catastrophic		Active	Avoidance	Service Manager - Property (ESWCS)	Engineer & architect carry out assessment (07/07). Decision to insert steel 'goal posts' as contract work proceeds (07/07). Concrete specialist consultant appointed to carry out investigation of whole structure (07/07). Columns exposed at 4 other locations and sample cores taken for testing (08/07). Engineers assess building not in danger of sudden failure and safe to be occupied (07/07).
	Date Re-Assessed Aug-07			Very Low	Critical		Retired	Acceptance	Service Manager - Property (ESWCS)	No further action.
3	Jul-07	Concrete from deteriorating and disintegrating window sills and roof edge soffit falling from building.	Concrete specialist consultant identified the condition of the sills and soffits while investigating the whole building.	Significant	Critical		Active	Avoidance	Service Manager - Property (ESWCS)	Removal of all loose material instructed using a cherry picker for access (08/07).

Risk ID	Date Added	Risk Description	Risk Trigger	Probability	Impact	Risk Matrix	Status	Strategy	Owner	Control
	Date Re-Assessed Aug-07			Almost Impossible	Catastrophic	<p>A 5x5 matrix with Probability (VH, H, S, L, VL, AI) on the y-axis and Impact (N, M, Cr, Ca) on the x-axis. An 'X' is located at the intersection of AI and N.</p>	Retired	Acceptance	Service Manager - Property (ESWCS)	No further action.
4	Jul-07	Masonry cladding falling from building.	While investigating the whole building, concrete specialist consultant identified panel of masonry cladding on south gable leaning out at head by approx. 30mm.	High	Catastrophic	<p>A 5x5 matrix with Probability (VH, H, S, L, VL, AI) on the y-axis and Impact (N, M, Cr, Ca) on the x-axis. An 'X' is located at the intersection of H and Cr.</p>	Active	Mitigation	Service Manager - Property (ESWCS)	Heras fencing erected to form an exclusion area around south end of classroom block (07/07). Arrangements made to dismantle masonry from south gable and replace with lightweight insulated cladding (08/07).
	Date Re-Assessed Sep-07			Almost Impossible	Negligible	<p>A 5x5 matrix with Probability (VH, H, S, L, VL, AI) on the y-axis and Impact (N, M, Cr, Ca) on the x-axis. An 'X' is located at the intersection of AI and N.</p>	Retired	Acceptance	Service Manager - Property (ESWCS)	Decision taken to form exclusion zone with Heras fencing around whole classroom block (08/07). Decision taken to fit remedial wall ties to all stone cladding of whole classroom block (09/07).
	Date Re-Assessed Jan-08			Almost Impossible	Negligible	<p>A 5x5 matrix with Probability (VH, H, S, L, VL, AI) on the y-axis and Impact (N, M, Cr, Ca) on the x-axis. An 'X' is located at the intersection of AI and N.</p>	Retired	Acceptance	Service Manager - Property (ESWCS)	Following completion of wall tie installation, no further action.
5	Sep-07	Structural movement in rear stair tower	While investigating masonry, engineer identified movement cracks in stair tower.	Very Low	Marginal	<p>A 5x5 matrix with Probability (VH, H, S, L, VL, AI) on the y-axis and Impact (N, M, Cr, Ca) on the x-axis. An 'X' is located at the intersection of L and M.</p>	Active	Mitigation	Service Manager - Property (ESWCS)	Foundations excavated and examined (09/07). Engineer assessed that stair safe to keep in use (09/07).



Risk ID	Date Added	Risk Description	Risk Trigger	Probability	Impact	Risk Matrix	Status	Strategy	Owner	Control
	Date Re-Assessed Sep-07			Very Low	Negligible		Active	Acceptance	Service Manager - Property (ESWCS)	Visual monitor carried out by engineer at monthly intervals. Reassess if any significant change.
6	Sep-07	Structural collapse of building.	Once masonry cladding dismantled from south gable, significant cracks in reinforced concrete frame revealed.	High	Catastrophic		Active	Mitigation	Service Manager - Property (ESWCS)	Assessment by engineer (09/07). Classrooms at south gable evacuated (09/07). End staircase limited to use as fire escape only (09/07). Concrete specialist to examine and take samples for testing (09/07). Assessed as reinforcement corrosion since construction and therefore continuing gradual deterioration (09/07). Frame tested by floor loading and analysis (10/07). Decided to reinforce structure (11/07). All recommendations verified by independent consultant engineer (11/07).
	Date Re-Assessed Oct-08			Very Low	Critical		Active	Acceptance	Service Manager - Property (ESWCS)	Decided to install constant electronic monitoring of structural movement (10/07). Engineer assessed that following reinforcement of structure building is currently safe to occupy and classrooms and stair brought back into full use (12/07).
	Date Re-Assessed Feb-08			Very Low	Critical		Active	Acceptance	Service Manager - Property (ESWCS)	Following installation of electronic movement measuring devices, structure is constantly monitored with automatic alarm if movement detected outwith predetermined parameters (01/08). In event that movement exceeds acceptable limit, engineer reassesses situation. Evacuation is also one option with the probability increasing over time.
7	Oct-07	Loss of school accommodation	Movement or other deterioration in structure identified by engineer leading to recommended evacuation of part or all of school	Low	Catastrophic		Active	Mitigation	Service Manager - Property (ESWCS)	Consider options for contingency accommodation (10/07). Decide on preferred option and develop proposals (10/07).
	Date Re-Assessed Feb-08			Low	Catastrophic		Active	Mitigation	Service Manager - Property (ESWCS)	Proceed to apply for statutory consent. Have tender documents for temporary accommodation prepared ready to issue if necessary. Progress long term replacement via Dumfries Secondary Review. Have plan in place for short term decant of pupils to other sites till temporary accommodation erected.

